Exhibit 11: SAR Test Report IHDT56DC1

Date of test:	03/18/2003 – 04/02/2003
Date of Report:	04/04/2003
Laboratory:	Motorola Personal Communications Sector Product Safety & Compliance Laboratory 2001 N. Division Room: AS228 Harvard, Illinois 60033
Test Responsible:	Firass Badaruzzaman Senior 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 IHDT56DC1 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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References:

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 IHDT56DC1). 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	
Dimensions	Length	25 mm
	Width	6 mm
Configuration	Stubby	

Device description

FCC ID Number	IHDT56DC1		
Serial number	A8EE64BD & A8EE64BB		
Mode(s) of Operation	800 AMPS	800 CDMA	1900 PCS
Modulation Mode(s)	AMPS	CDMA	PCS
Maximum Output Power Setting	27.80 dBm	25.00 dBm	25.00 dBm
Duty Cycle	1:1	1:1	1:1
Transmitting Frequency Rang(s)	824.04 – 848.97 MHz	824.70 – 848.31 MHz	1851.25 – 1908.75 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 ±11.7% (K=1) with an expanded uncertainty of ±23.0% (K=2). The measurement uncertainty budget is given in Appendix 6. Per IEEE 1528, this uncertainty budget is applicable to the SAR range of 0.4 W/kg to 10 W/kg. The list of calibrated equipment used for the measurements is shown below.

Description	Serial Number	Cal Due Date
DASY3 DAE V1	SN434	2/19/2004
	SN398	9/17/2003
	SN383	9/2/2003
	SN365	12/10/2003
E-Field Probe ET3DV6	SN1515	7/25/2003
	SN1513	1/17/2004
	SN1523	1/17/2004
	SN1521	6/20/2003
Dipole Validation Kit, D900V2	SN78	8/23/2003
	SN92	11/13/2004
Dipole Validation Kit, D835V2	SN425	11/13/2004
S.A.M. Phantom used for 800MHz	TP-1106	
	TP-1131	
	TP-1005	
Dipole Validation Kit, D1800V2	SN273tr	7/17/2004
	SN272tr	11/14/2004
	SN259tr	1/25/2004
S.A.M. Phantom used for 1900MHz	TP-1159	
	TP-1235	

3.2 Additional Equipment

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3847A04844	01/19/2004
Power Meter E4419B	GB39511088	01/18/2004
Power Sensor #1 - 8481A	US39210918	02/11/2004
Power Sensor #2 - 8481A	US39211006	02/14/2004
Network Analyzer HP8753ES	US39172529	6/18/2003
Dielectric Probe Kit HP85070B	US33020235	

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3847A04633	10/11/2004
Power Meter E4419B	US39250622	11/5/2003
Power Sensor #1 - 8481A	US39210917	02/23/2004
Power Sensor #2 - 8481A	US39210934	02/14/2004
Network Analyzer HP8753ES	US39172529	6/18/2003
Dielectric Probe Kit HP85070B	US33020235	

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3847A04848	01/19/2004
Power Meter E4419B	GB39510961	11/5/2003
Power Sensor #1 - 8481A	2702A59572	11/5/2003
Power Sensor #2 - 8481A	US37296470	11/5/2003
Network Analyzer HP8753ES	US39172529	6/18/2003
Dielectric Probe Kit HP85070B	US33020235	

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3847A04832	1/18/2004
Power Meter E4419B	GB39511082	1/18/2004
Power Sensor #1 - 8481A	US39210932	2/14/2003
Power Sensor #2 - 8481A	US39210931	2/23/2004
Network Analyzer HP8753ES	US39172529	6/18/2003
Dielectric Probe Kit HP85070B	US33020235	

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	--	30.80
DGBE	--	--	47.0	--
Water	40.45	53.06	52.8	68.91
Salt	1.45	0.94	0.2	0.29
HEC	1.0	1.0	--	--
Bact.	0.1	0.1	--	--

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		
			ε_r	σ (S/m)	Temp (°C)
835	Head	**Measured, 03/18/2003**	41.70	0.91	20.50-21.80
		Recommended Limits	41.50	0.90	20-25
		Measured, 03/19/2003	41.50	0.91	20.50-21.80
		Recommended Limits	41.50	0.90	20-25
		Measured, 03/19/2003	41.70	0.91	20.50-21.80
		Recommended Limits	41.50	0.90	20-25
		Measured, 03/28/2003	41.90	0.91	20.50-21.80
		Recommended Limits	41.50	0.90	20-25
		Measured, 03/26/2003	40.70	0.89	20.50-21.80
		Recommended Limits	41.50	0.90	20-25
	Body	**Measured, 03/20/2003**	54.90	0.97	20.50-21.80
		Recommended Limits	55.20	0.97	20-25
1880	Head	**Measured, 03/19/2003**	38.40	1.45	20.50-21.80
		Recommended Limits	40.00	1.40	20-25
		Measured, 03/26/2003	38.60	1.47	20.50-21.80
		Recommended Limits	40.00	1.40	20-25
		Measured, 03/27/2003	38.60	1.46	20.50-21.80
		Recommended Limits	40.00	1.40	20-25
		Measured, 03/31/2003	39.10	1.47	20.50-21.80
		Recommended Limits	40.00	1.40	20-25
	Body	**Measured, 04/01/2003**	51.60	1.59	20.50-21.80
		Recommended Limits	53.30	1.52	20-25

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 0.0010 W/kg, which is below the recommended limit.

f (MHz)	Description	SAR (W/kg), 1gram	Dielectric Parameters		Ambient Temp (°C)	Tissue Temp (°C)
			ε_r	σ (S/m)		
900	**Measured, 03/18/2003**	11.39	41.00	0.97	22	21.9
	Recommended Limits	11.30	40.30	0.95	N/A	N/A
	Measured, 03/19/2003	11.23	40.70	0.96	21	21.9
	Recommended Limits	11.30	40.30	0.95	N/A	N/A
	Measured, 03/20/2003	11.35	40.80	0.97	22	22
	Recommended Limits	11.30	40.30	0.95	N/A	N/A
	Measured, 03/26/2003	11.46	40.50	0.96	21	20.5
	Recommended Limits	11.40	40.30	0.95	N/A	N/A
	Measured, 03/28/2003	10.03	41.90	0.91	21	21.1
	Recommended Limits	10.04	41.90	0.89	N/A	N/A
1800	**Measured, 03/19/2003**	42.16	38.70	1.36	21	21.2
	Recommended Limits	38.80	39.60	1.37	N/A	N/A
	Measured, 03/26/2003	39.92	39.00	1.39	21	21
	Recommended Limits	38.80	39.60	1.37	N/A	N/A
	Measured, 03/27/2003	39.70	38.90	1.37	21	20.6
	Recommended Limits	38.80	39.60	1.37	N/A	N/A
	Measured, 03/31/2003	41.70	38.40	1.38	21	21
	Recommended Limits	39.30	39.60	1.37	N/A	N/A
	Measured, 04/01/2003	42.16	39.40	1.39	21	20.7
	Recommended Limits	39.30	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	f (MHz)	Conversion Factor Head	Cal Cert pg #
E-Field Probe ETDV6	**SN1515**	900	**6.5**	**2 of 8**
		1800	**5.4**	**2 of 8**
	SN1513	900	**6.1**	**2 of 8**
		1800	**5.0**	**2 of 8**
	SN1523	900	**6.5**	**2 of 10**
		1800	**5.3**	**2 of 10**
	SN1521	900	**6.5**	**2 of 8**
		1800	**5.4**	**2 of 8**

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 requirements 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 IHDT56DC1) has the following battery options:

SNN5705B 850 mAH

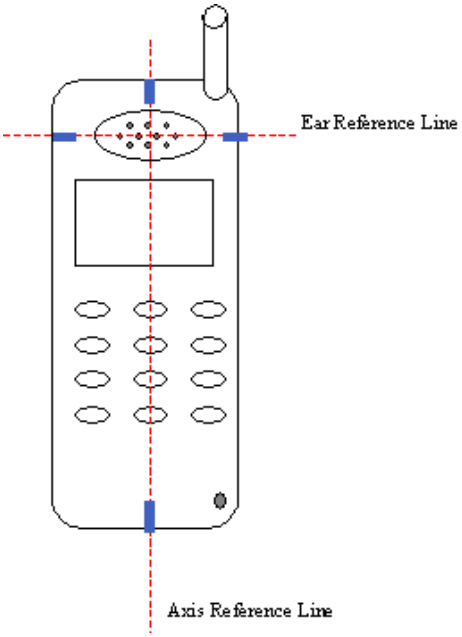
The battery was used to perform all of the SAR testing. The phone was placed in the SAR measurement system with a fully charged battery.

6.1 Head Adjacent Test Results

To aid in positioning repeatability, the ear reference line of the device and the axis reference line of the device have been physically added using a non-metallic marker.

- Per Figure 1, the "Ear Reference Line" is centered vertically through the center of the listening area (as defined by the speaker holes in the housing).
- The "Axis Reference Line" bisects the front surface of the device at its top and bottom edges.
- The intersection of these two lines defines the location of the "Ear Reference Point".

The lines drawn on the device extended to the outside edges, as shown in blue in the figure below, & wrap around the sides of the device.



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. Note that 800MHz digital mode SAR measurements were performed in accordance with Supplement C.

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

Description	Serial Number	f (MHz)	Conversion Factor Head	Cal Cert pg #
E-Field Probe ETDV6	**SN1515**	900	**6.5**	**2 of 8**
		1800	**5.4**	**2 of 8**
	SN1513	900	**6.1**	**2 of 8**
		1800	**5.0**	**2 of 8**
	SN1523	900	**6.5**	**2 of 10**
		1800	**5.3**	**2 of 10**
	SN1521	900	**6.5**	**2 of 8**
		1800	**5.4**	**2 of 8**

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)
Analog 800MHz	Channel 991	27.76	1.17	-0.08	1.19	21.90	21.50
	Channel 383	27.78	0.962	-0.26	1.02	21.90	21.60
	Channel 799	27.85	0.858	-0.27	0.91	21.90	21.60
Digital 800MHz	Channel 1013	24.90	1.26	-0.12	1.30	23.10	22.20
	Channel 384	24.95	1.10	-0.24	1.16	23.10	22.20
	Channel 777	24.90	0.829	-0.49	0.93	23.10	22.30
Digital 1900MHz	Channel 25	24.90					
	Channel 600	24.95	0.447	-0.27	0.48	21.20	21.23
	Channel 1175	24.96					

Table 1: SAR measurement results for the portable cellular telephone FCC ID IHDT56DC1 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)
Analog 800MHz	Channel 991	27.76	1.24	0.35	1.24	23.20	23.00
	Channel 383	27.78	1.05	-0.15	1.05	23.20	23.00
	Channel 799	27.85	0.873	0.04	0.87	23.20	23.00
Digital 800MHz	Channel 1013	24.90	1.23	0.02	1.24	21.90	21.30
	Channel 384	24.95	1.08	-0.04	1.09	21.90	21.50
	Channel 777	24.90	0.882	0.15	0.91	21.90	21.10
Digital 1900MHz	Channel 25	24.90					
	Channel 600	24.95	0.329	-0.06	0.33	21.20	21.40
	Channel 1175	24.96					

Table 2: SAR measurement results for the portable cellular telephone FCC ID IHDT56DC1 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)
Analog 800MHz	Channel 991	27.76					
	Channel 383	27.78	0.196	-0.14	0.20	21.90	21.70
	Channel 799	27.85					
Digital 800MHz	Channel 1013	24.90					
	Channel 384	24.95	0.243	0.04	0.243	21.90	21.70
	Channel 777	24.90					
Digital 1900MHz	Channel 25	24.90					
	Channel 600	24.95	0.145	-0.14	0.15	21.20	21.20
	Channel 1175	24.96					

Table 3: SAR measurement results for the portable cellular telephone FCC ID IHDT56DC1 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)
Analog 800MHz	Channel 991	27.76					
	Channel 383	27.78	0.203	0.02	0.20	21.90	21.80
	Channel 799	27.85					
Digital 800MHz	Channel 1013	24.90					
	Channel 384	24.95	0.172	0.02	0.17	21.10	20.50
	Channel 777	24.90					
Digital 1900MHz	Channel 25	24.90					
	Channel 600	24.95	0.129	-0.1	0.13	21.20	21.40
	Channel 1175	24.96					

Table 4: SAR measurement results for the portable cellular telephone FCC ID IHDT56DC1 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. Note that 800MHz digital mode SAR measurements were performed in accordance with OET Bulletin 65 Supplement C 01-01. 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 is one Body-Worn Accessories available for this phone:

A Plastic Holster with Clip: SYN0375A

The plastic holster SYN0375A is a rotating Holster/Belt Clip, the antenna is at the closest proximity to the flat phantom when the belt clip along with the phone is rotated +90° (clockwise direction). See Figure 11 for reference (Appendix 7). The plastic holster was also tested against the worst case head configuration (cheek touch position). Table 6 provides this data

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

Description	Serial Number	f (MHz)	Conversion Factor Head	Cal Cert pg #
E-Field Probe ETDV6	**SN1515**	900	**6.4**	**2 of 2**
		1800	**4.7**	**2 of 2**
	SN1513	900	**6.2**	**2 of 2**
		1800	**4.4**	**2 of 2**

f (MHz)	Description	Conducted Output Power (dBm)	Body Worn				
			Ant Fixed				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
Analog 800MHz	Channel 991	27.76					
	Channel 383	27.78	0.348	-0.06	0.35	20.90	21.40
	Channel 799	27.85					
Digital 800MHz	Channel 1013	24.90					
	Channel 384	24.95	0.373	-0.08	0.38	20.90	21.50
	Channel 777	24.90					
Digital 1900MHz	Channel 25	24.90					
	Channel 600	24.95	0.422	-0.32	0.45	21.20	21.20
	Channel 1175	24.96					

Table 5: SAR measurement results for the portable cellular telephone FCC ID IHDT56DC1 at highest possible output power. Measured against the body.

f (MHz)	Description	Conducted Output Power (dBm)	Body Worn				
			Ant Fixed				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
Analog 800MHz	Channel 991	27.76					
	Channel 383	27.78	0.348	-0.06	0.35	20.90	21.40
	Channel 799	27.85					
Digital 800MHz	Channel 1013	24.90					
	Channel 384	24.95	0.373	-0.08	0.38	20.90	21.50
	Channel 777	24.90					
Digital 1900MHz	Channel 25	24.90					
	Channel 600	24.95	0.422	-0.32	0.45	21.20	21.20
	Channel 1175	24.96					

Table 6: SAR measurement results for the portable cellular telephone FCC ID IHDT56DC1at highest possible output power. Measured against the head with plastic holster with clip.

6.3 Push-to-Talk/Dispatch Mode Test Results

The SAR results shown in table #6 are maximum SAR values averaged over 1 gram of phantom tissue for the Push-to-Talk/Dispatch Mode SAR measurements. Also shown are the measured conducted output powers.

The test sample was operated in an over the air call in CDMA 800 and 1900 MHz only. For the purposes of this test the unit is commanded to the proper channel, transmitter power level and transmit mode of operation. The radio was then placed in the SAR measurement system with a fully charged battery. The radio was placed with the front of the device positioned at 2.5 cm from a flat phantom, as per Supplement C 01-01 with flip open and closed configurations.

A full data set output of two test conditions with the highest SAR values from the Dasy™ measurement system is included as appendix 4. 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)	Push-To-Talk Mode (Flip Closed)				
			Ant Fixed				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
Digital 800MHz	Channel 1013	24.90	0.254	-0.26	0.27	20.70	20.00
	Channel 384	24.95	0.239	0.00	0.24	20.70	19.80
	Channel 777	24.90	0.196	-0.07	0.20	20.70	20.00
Digital 1900MHz	Channel 25	24.90	0.279	-0.21	0.29	20.90	20.30
	Channel 600	24.95	0.259	-0.15	0.27	20.90	20.20
	Channel 1175	24.96	0.191	-0.63	0.22	20.90	20.00

Table 7: SAR measurement results for the portable cellular telephone FCC ID IHDT56DC1against a flat phantom in PTT Mode (Flip Closed)

f (MHz)	Description	Conducted Output Power (dBm)	Push-To-Talk Mode (Flip Open)				
			Ant Fixed				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
Digital 800MHz	Channel 1013	24.90	0.132	0.13	0.13	20.70	19.50
	Channel 384	24.95	0.068	0.02	0.07	21.20	20.70
	Channel 777	24.90	0.121	-0.06	0.12	20.70	19.50
Digital 1900MHz	Channel 25	24.90	0.081	-0.08	0.08	20.90	19.90
	Channel 600	24.95	0.057	-0.08	0.06	20.60	19.50
	Channel 1175	24.96	0.044	-1.03	0.05	20.60	19.50

Table 8: SAR measurement results for the portable cellular telephone FCC ID IHDT56DC1against a flat phantom in PTT Mode (Flip Open)

Appendix 1

SAR distribution comparison for the system accuracy verification

Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 78 / Forward Power = 251mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 22C. Simulant Temp at time of measurement = 21.9C

R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz

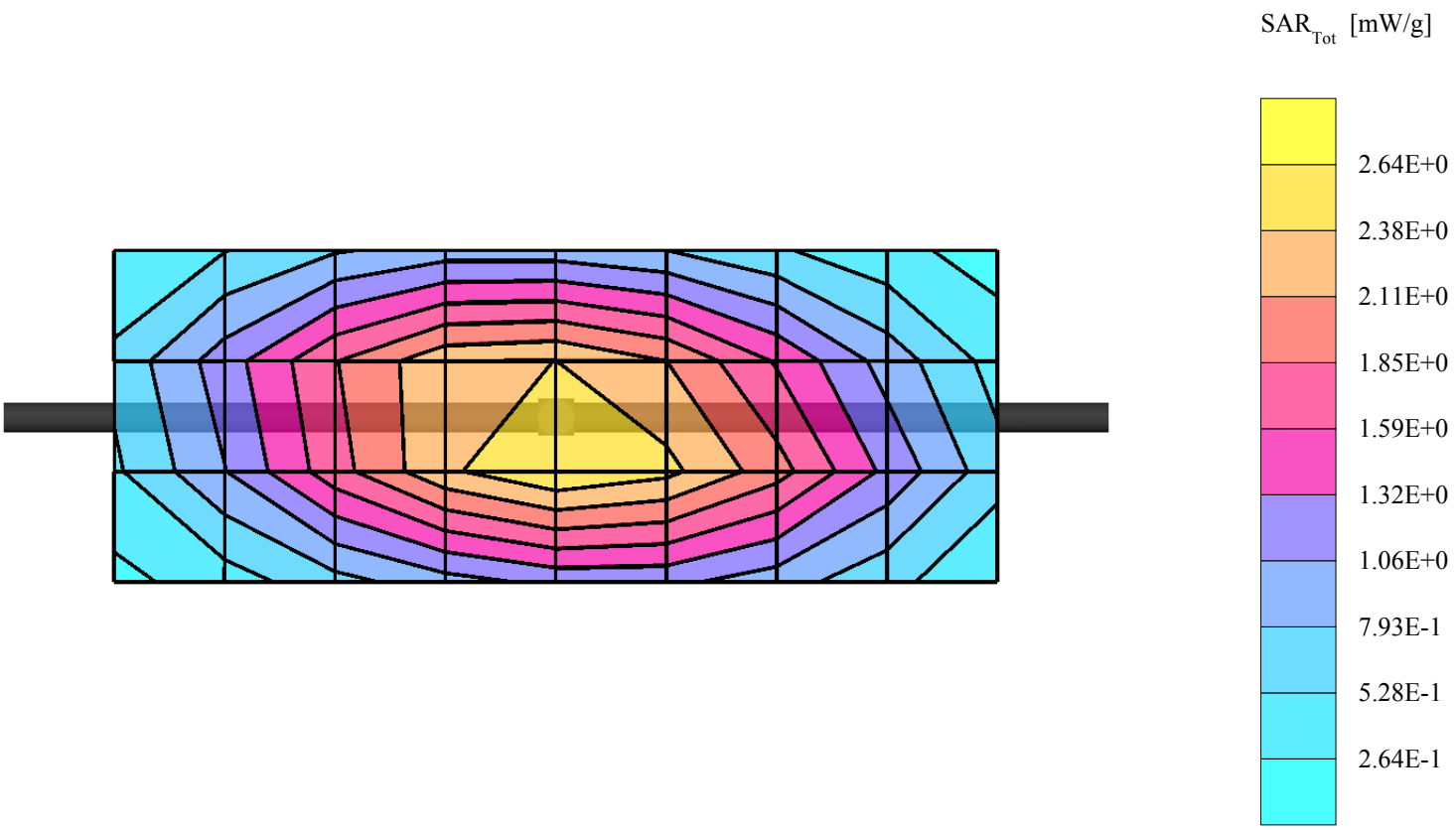
Probe: ET3DV6 - SN1515 - Validation(2); ConvF(6.50,6.50,6.50); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.97 mho/m ε_r = 41.0 ρ = 1.00 g/cm^3

Cubes (2): SAR (1g): 2.86 mW/g ± 0.03 dB, SAR (10g): 1.80 mW/g ± 0.02 dB, (Worst-case extrapolation)

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

Penetration depth: 11.5 (10.7, 12.6) [mm]

Powerdrift: -0.00 dB



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 273tr / Forward Power = 250mW / Acceptable Temp Range is 18-25°C / Room Temp at time of measurement = 21C. Simulant Temp at time of measurement = 21.2C.

R2 Amy Twin Phantom Rev.3 Phantom; section 1 Section; Position: (90°,180°); Frequency: 1800 MHz

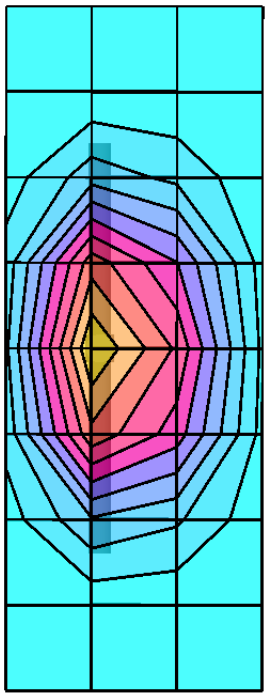
Probe: ET3DV6 - SN1515 - Validation(2); ConvF(5.40,5.40,5.40); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.36 mho/m ε_r = 38.7 ρ = 1.00 g/cm^3

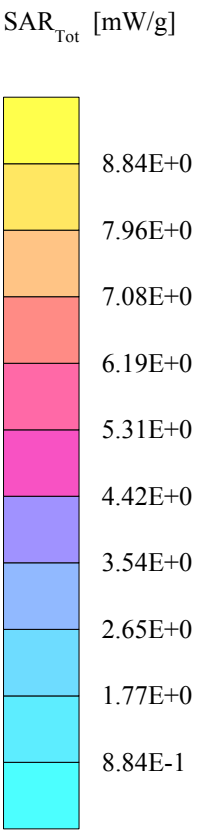
Cubes (2): SAR (1g): 9.74 mW/g ± 0.02 dB, SAR (10g): 5.19 mW/g ± 0.01 dB, (Worst-case extrapolation)

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

Penetration depth: 8.5 (8.1, 9.2) [mm]

Powerdrift: 0.01 dB





Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 78 / Forward Power = 251mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 21C. Simulant Temp at time of measurement = 21.9C

R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz

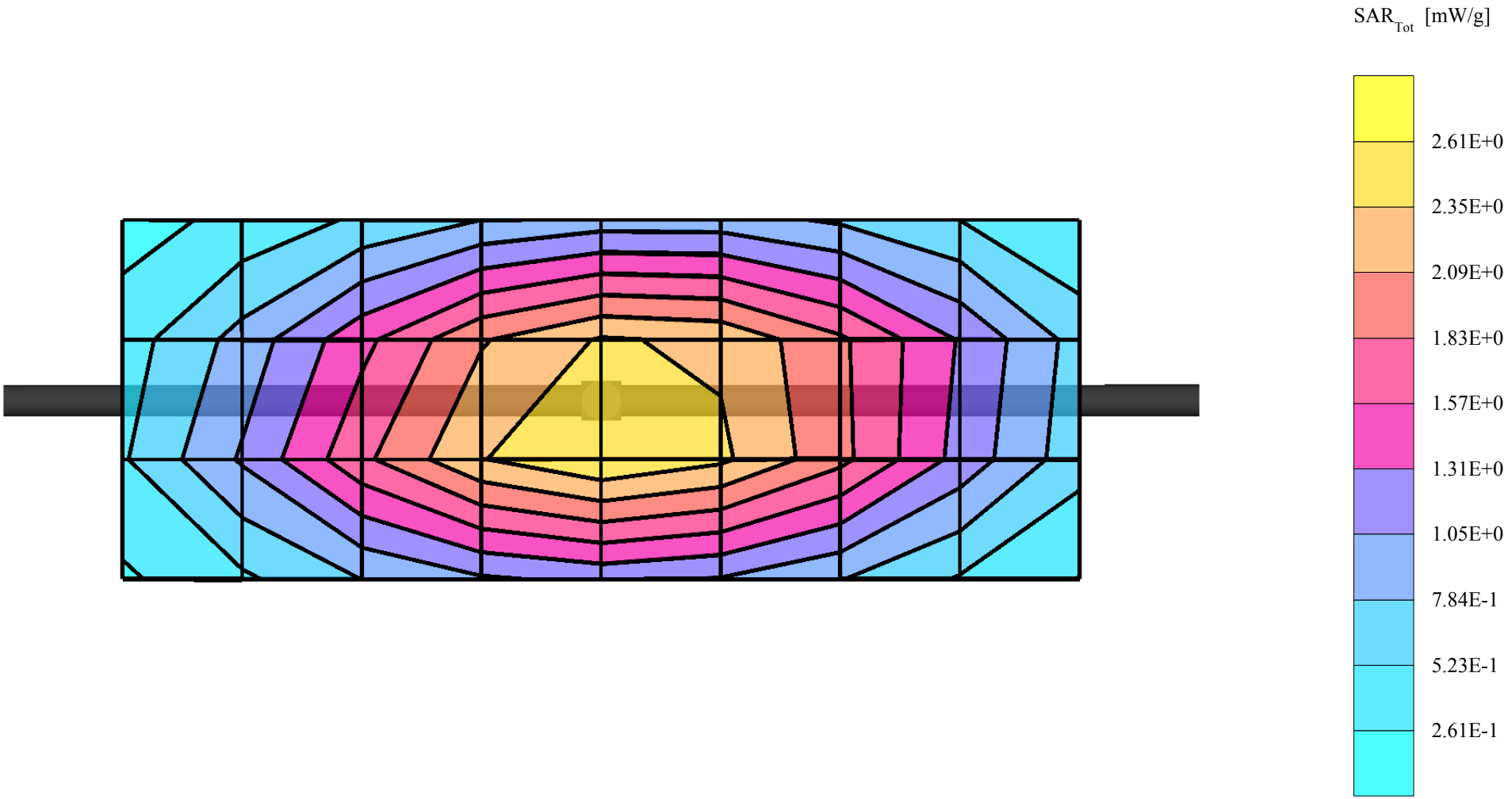
Probe: ET3DV6 - SN1515 - Validation(2); ConvF(6.50,6.50,6.50); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.96$ mho/m $\varepsilon_r = 40.7$ $\rho = 1.00$ g/cm^3

Cubes (2): SAR (1g): 2.82 mW/g ± 0.01 dB, SAR (10g): 1.78 mW/g ± 0.02 dB, (Worst-case extrapolation)

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

Penetration depth: 11.5 (10.7, 12.6) [mm]

Powerdrift: 0.00 dB



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 78 / Forward Power = 251mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 22C. Simulant Temp at time of measurement = 22.2C

R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz

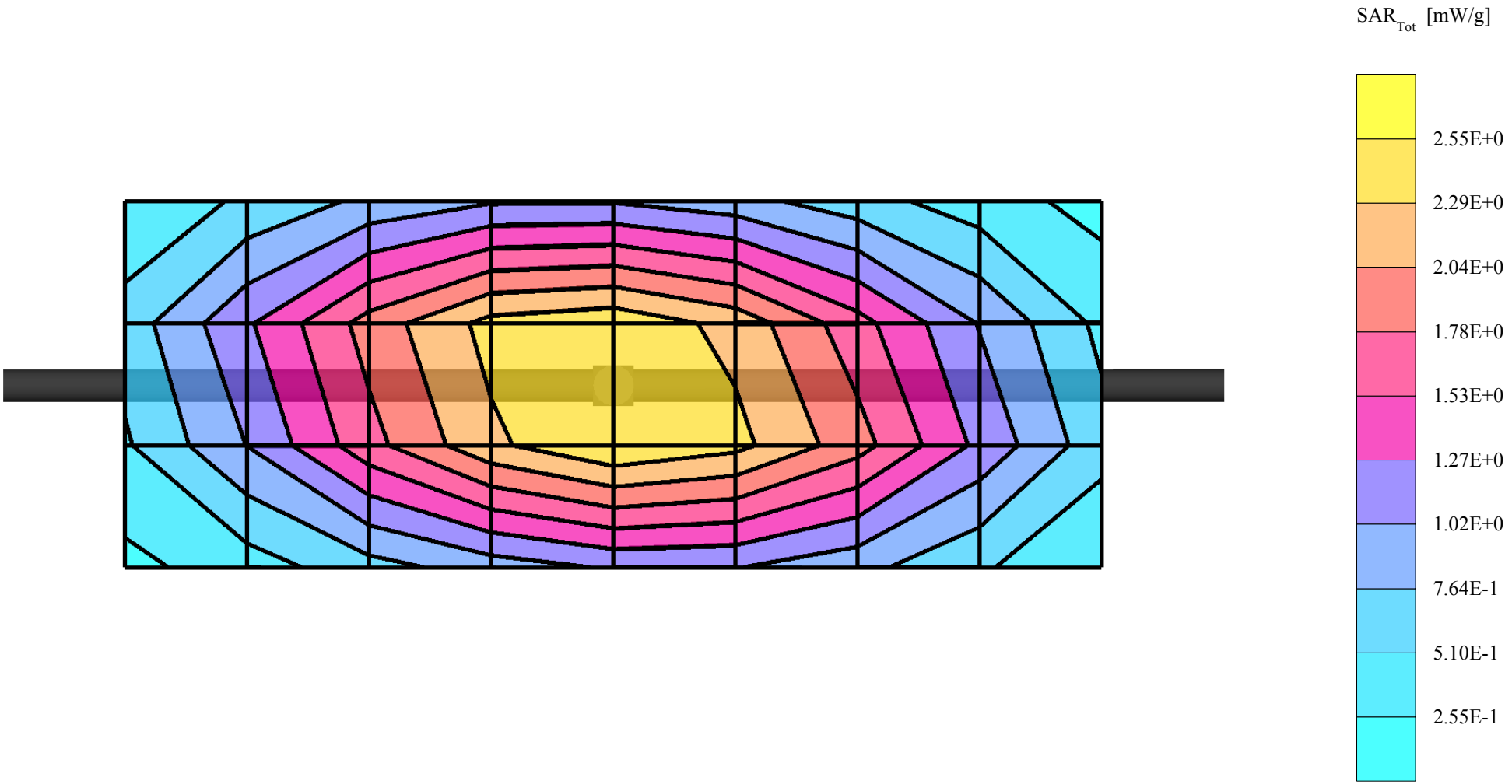
Probe: ET3DV6 - SN1515 - Validation(2); ConvF(6.50,6.50,6.50); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.97 mho/m ε_r = 40.8 ρ = 1.00 g/cm^3

Cubes (2): SAR (1g): 2.85 mW/g ± 0.01 dB, SAR (10g): 1.79 mW/g ± 0.01 dB, (Worst-case extrapolation)

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

Penetration depth: 11.5 (10.6, 12.6) [mm]

Powerdrift: 0.00 dB



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 092 / Forward Power = 253mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 21.0*C. Simulant Temp at time of measurement = 20.5*C

R4 TP-1131 SUGAR sam expanded (Rev. 2)-9Jan03 Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz

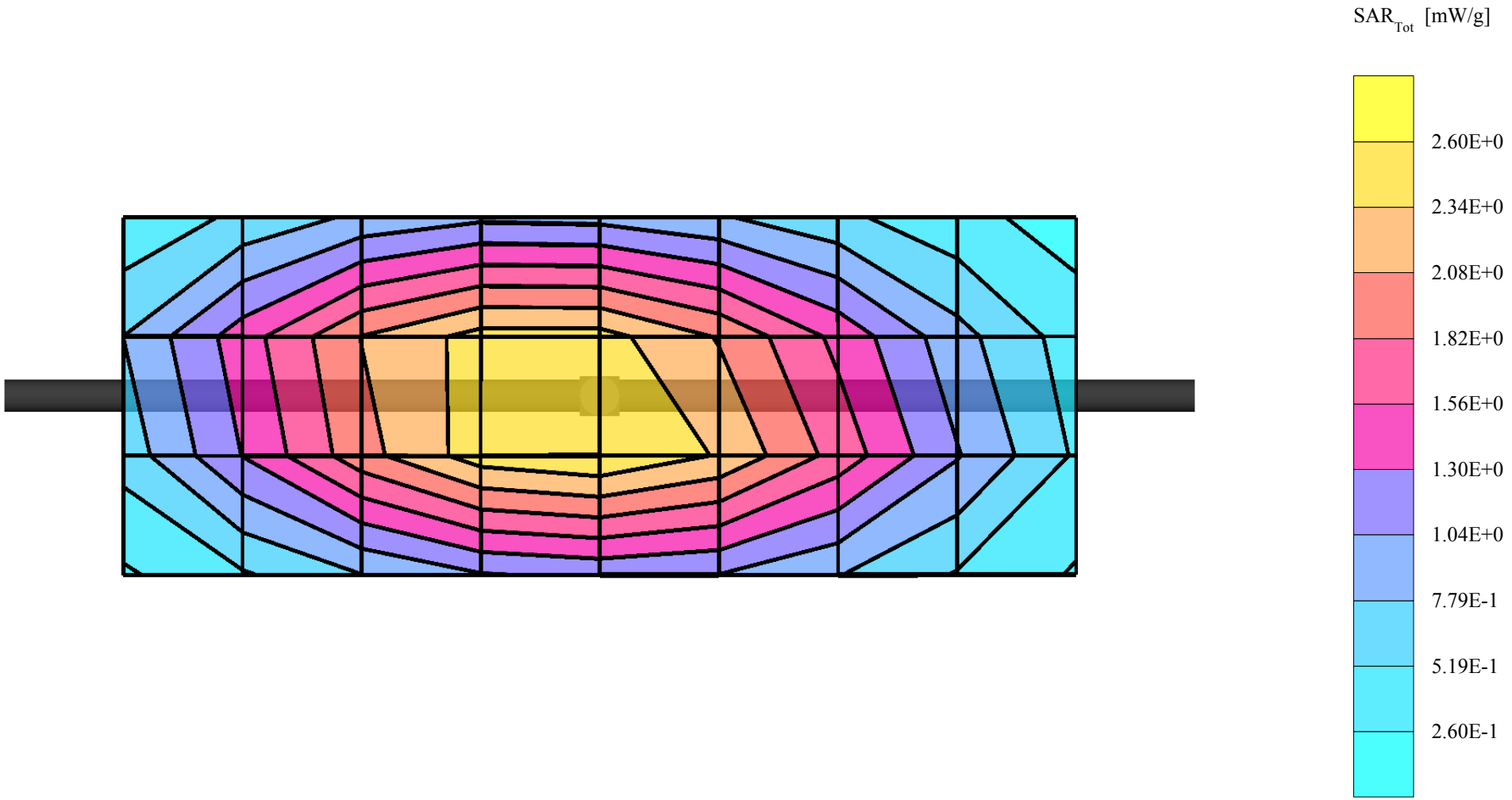
Probe: ET3DV6 - SN1521 - Validation2; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.96$ mho/m $\varepsilon_r = 40.5$ $\rho = 1.00$ g/cm^3

Cubes (2): SAR (1g): 2.90 mW/g ± 0.01 dB, SAR (10g): 1.83 mW/g ± 0.02 dB, (Worst-case extrapolation)

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

Penetration depth: 11.7 (10.9, 12.8) [mm]

Powerdrift: -0.04 dB



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 272tr / Forward Power = 253mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 21.0*C. Simulant Temp at time of measurement =21.0*C

R4 1-005 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 1 Section; Position: (90°,180°); Frequency: 1800 MHz

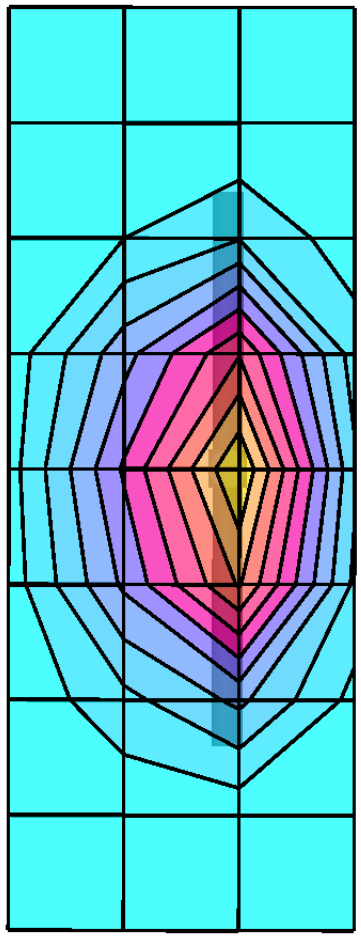
Probe: ET3DV6 - SN1521 - Validation2; ConvF(5.40,5.40,5.40); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.39 mho/m ε_r = 39.0 ρ = 1.00 g/cm^3

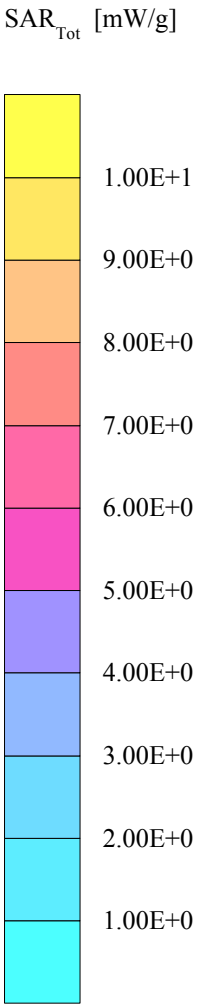
Cubes (2): SAR (1g): 10.1 mW/g ± 0.01 dB, SAR (10g): 5.32 mW/g ± 0.03 dB, (Worst-case extrapolation)

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

Penetration depth: 8.6 (8.2, 9.3) [mm]

Powerdrift: 0.06 dB





Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 272tr / Forward Power = 254mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 21.0*C. Simulant Temp at time of measurement =20.6*C

R4 1-005 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 1 Section; Position: (90°,180°); Frequency: 1800 MHz

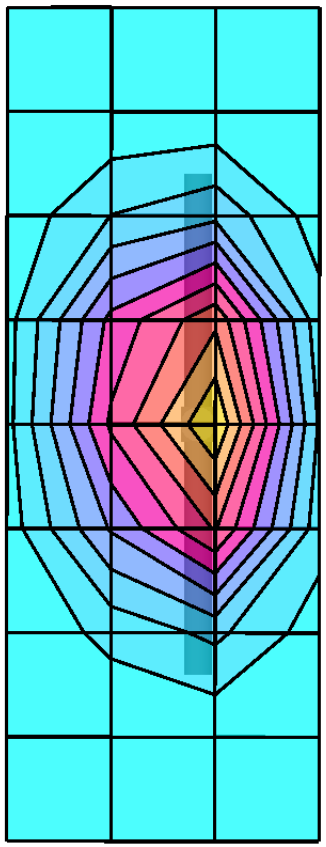
Probe: ET3DV6 - SN1521 - Validation2; ConvF(5.40,5.40,5.40); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.37 mho/m ε_r = 38.9 ρ = 1.00 g/cm^3

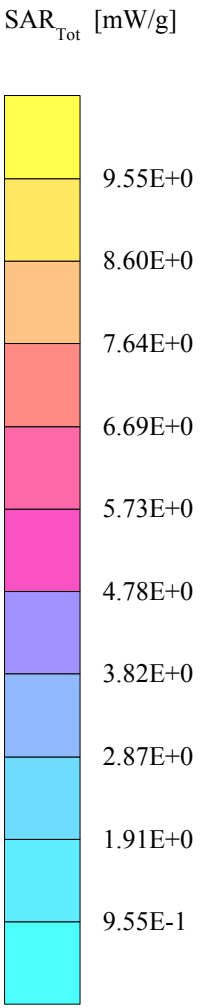
Cubes (2): SAR (1g): 10.1 mW/g ± 0.05 dB, SAR (10g): 5.28 mW/g ± 0.09 dB, (Worst-case extrapolation)

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

Penetration depth: 8.5 (8.1, 9.2) [mm]

Powerdrift: 0.03 dB





Dipole 835 MHz

835 MHz Dipole Validation / Dipole Sn# 425tr / Forward Power = 251mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 21.0 C Simulant Temp at time of measurement = 21.1C

R1 TP-1005 SAM Expanded Sugar (Rev. 2)-9Jan03 Phantom; Flat Section; Position: (90°,90°); Frequency: 835 MHz

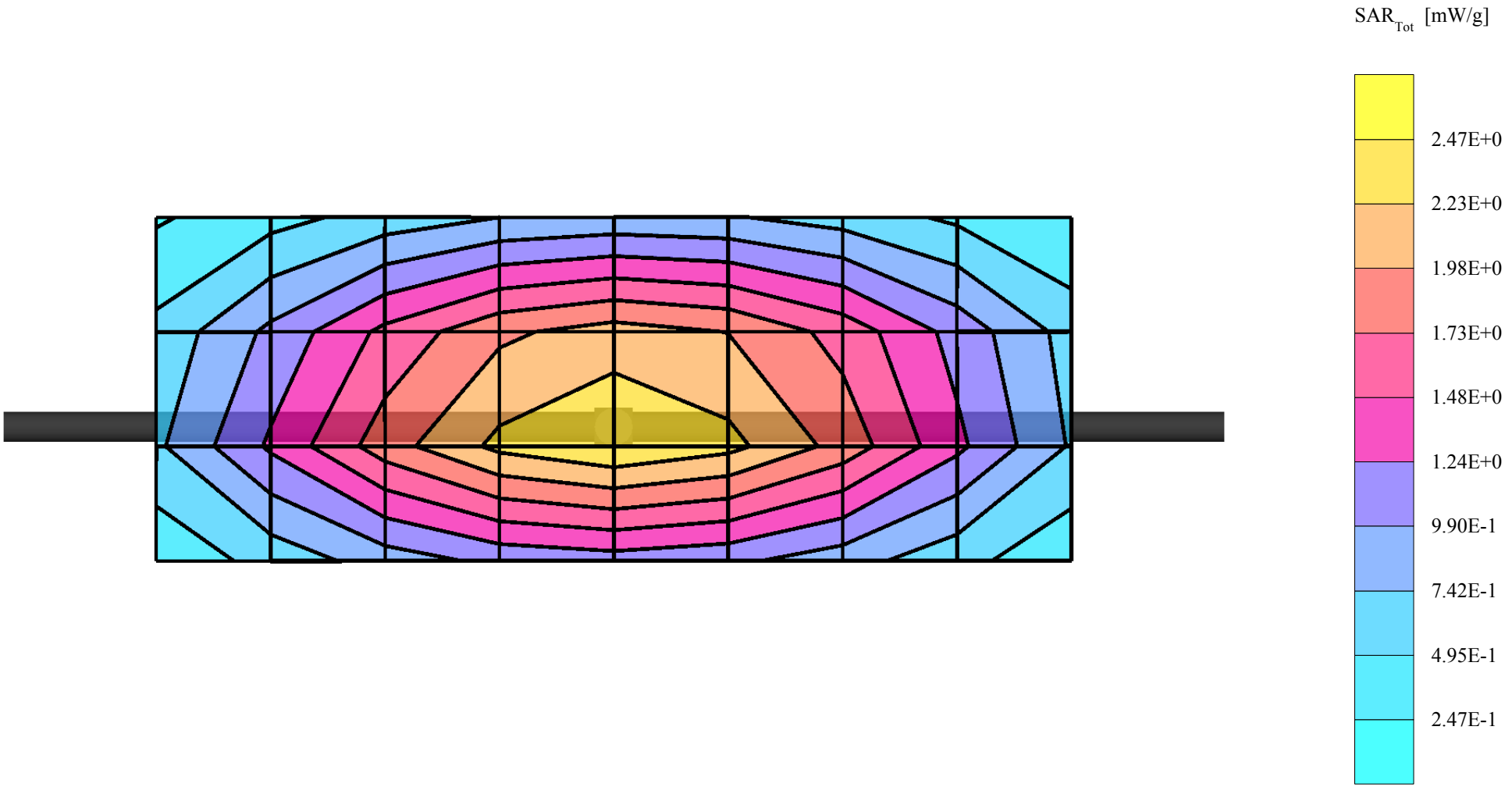
Probe: ET3DV6 - SN1523 - Validation.2; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz VALIDATION: $\sigma = 0.91$ mho/m $\varepsilon_r = 41.9$ $\rho = 1.00$ g/cm^3

Cubes (2): SAR (1g): 2.52 mW/g ± 0.13 dB, SAR (10g): 1.62 mW/g ± 0.12 dB, (Worst-case extrapolation)

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

Penetration depth: 12.1 (11.0, 13.4) [mm]

Powerdrift: 0.00 dB



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 259tr / Forward Power = 247mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 21 C Simulant Temp at time of measurement = 21 C

R3 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 1 Section; Position: (90°,180°); Frequency: 1800 MHz

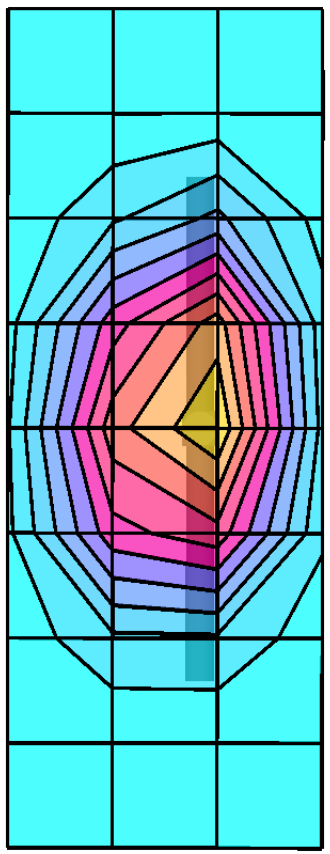
Probe: ET3DV6 - SN1513 - Validation.2; ConvF(4.90,4.90,4.90); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.38 mho/m ε_r = 38.4 ρ = 1.00 g/cm^3

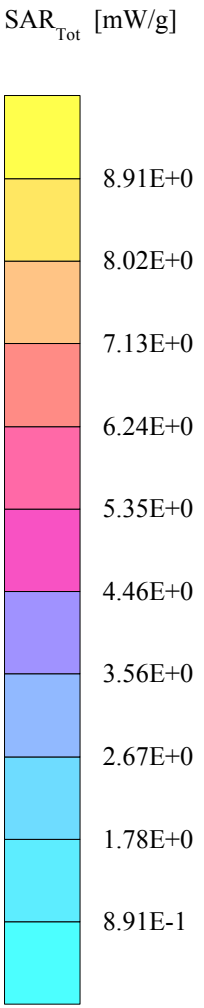
Cubes (2): SAR (1g): 10.3 mW/g ± 0.00 dB, SAR (10g): 5.39 mW/g ± 0.02 dB, (Worst-case extrapolation)

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

Penetration depth: 8.3 (7.9, 9.1) [mm]

Powerdrift: 0.02 dB





Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 259tr / Forward Power = 249mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 21 C Simulant Temp at time of measurement = 20.7 C

R3 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 1 Section; Position: (90°,180°); Frequency: 1800 MHz

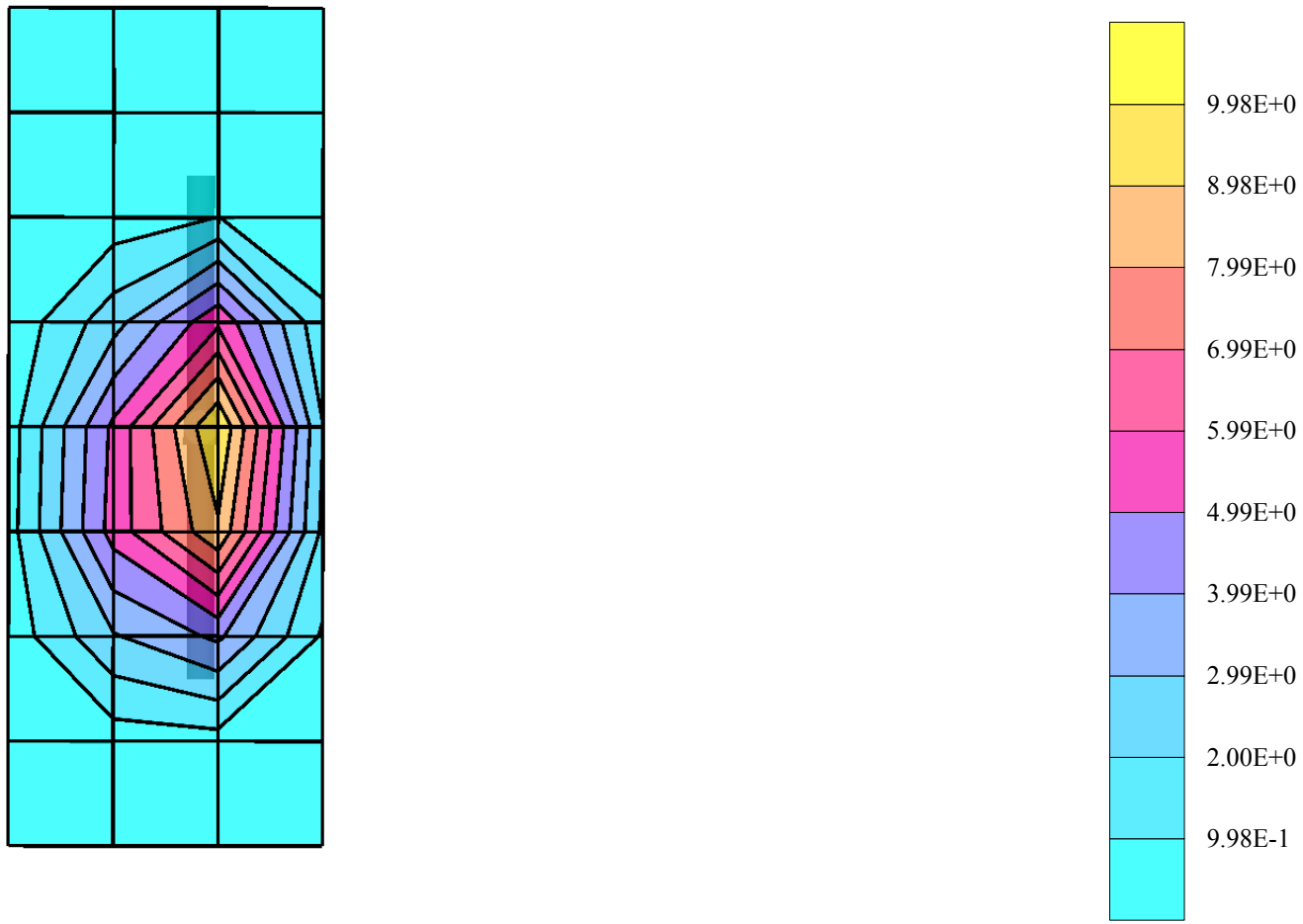
Probe: ET3DV6 - SN1513 - Validation.2; ConvF(4.90,4.90,4.90); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.39 mho/m ε_r = 39.4 ρ = 1.00 g/cm^3

Cubes (2): SAR (1g): 10.5 mW/g ± 0.03 dB, SAR (10g): 5.49 mW/g ± 0.07 dB, (Worst-case extrapolation)

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

Penetration depth: 8.5 (8.1, 9.3) [mm]

Powerdrift: 0.01 dB



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 78 / Forward Power = 251mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 22C. Simulant Temp at time of measurement = 21.9C

R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Section; Position: ; Frequency: 900 MHz

Probe: ET3DV6 - SN1515 - Validation(2); ConvF(6.50,6.50,6.50); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.97 mho/m ε_r = 41.0 ρ = 1.00 g/cm^3

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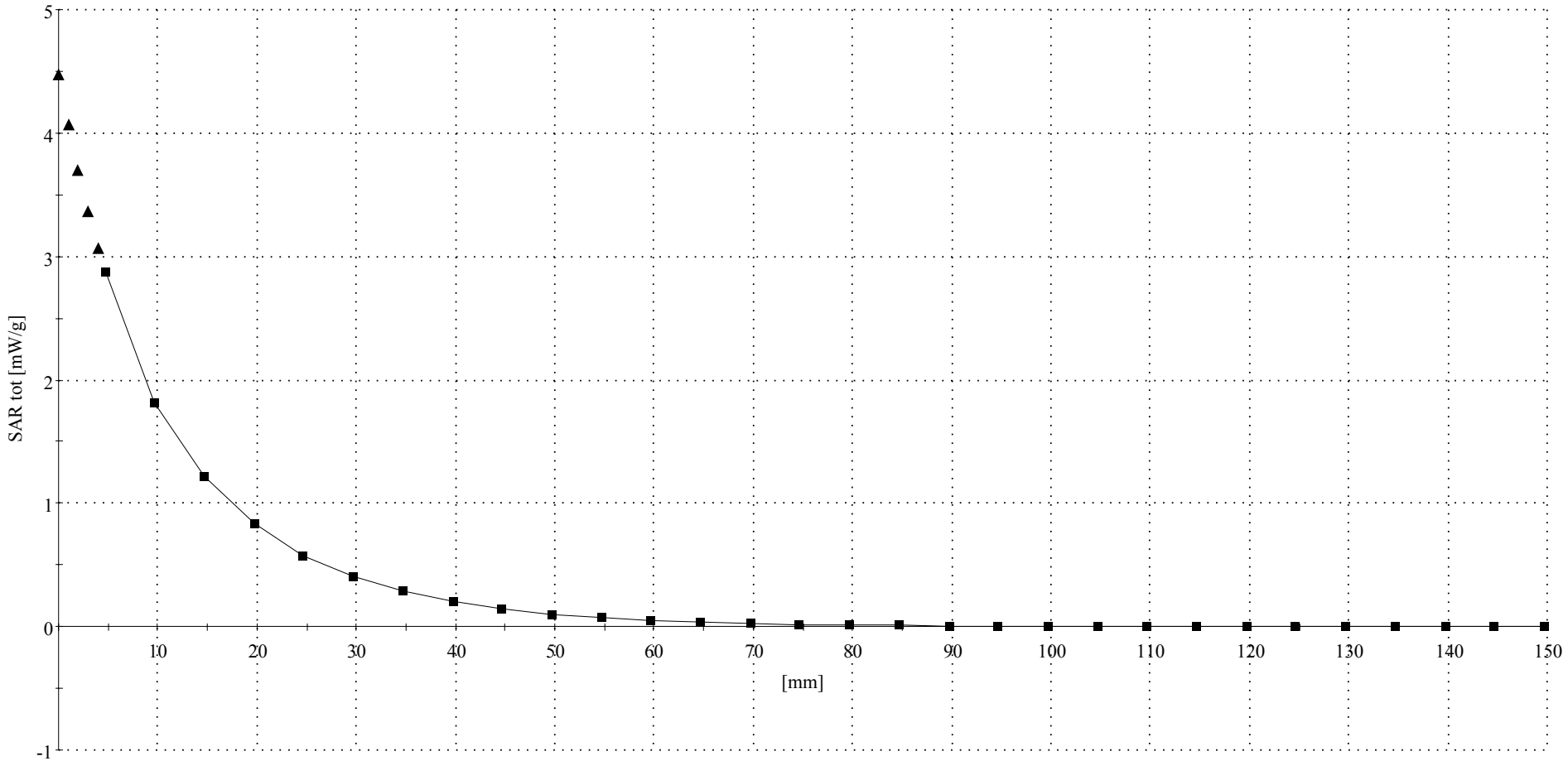
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

Penetration depth: 11.6 (10.7, 12.7) [mm]



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 78 / Forward Power = 251mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 21C. Simulant Temp at time of measurement = 21.9C

R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Section; Position: ; Frequency: 900 MHz

Probe: ET3DV6 - SN1515 - Validation(2); ConvF(6.50,6.50,6.50); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.96 mho/m ε_r = 40.7 ρ = 1.00 g/cm^3

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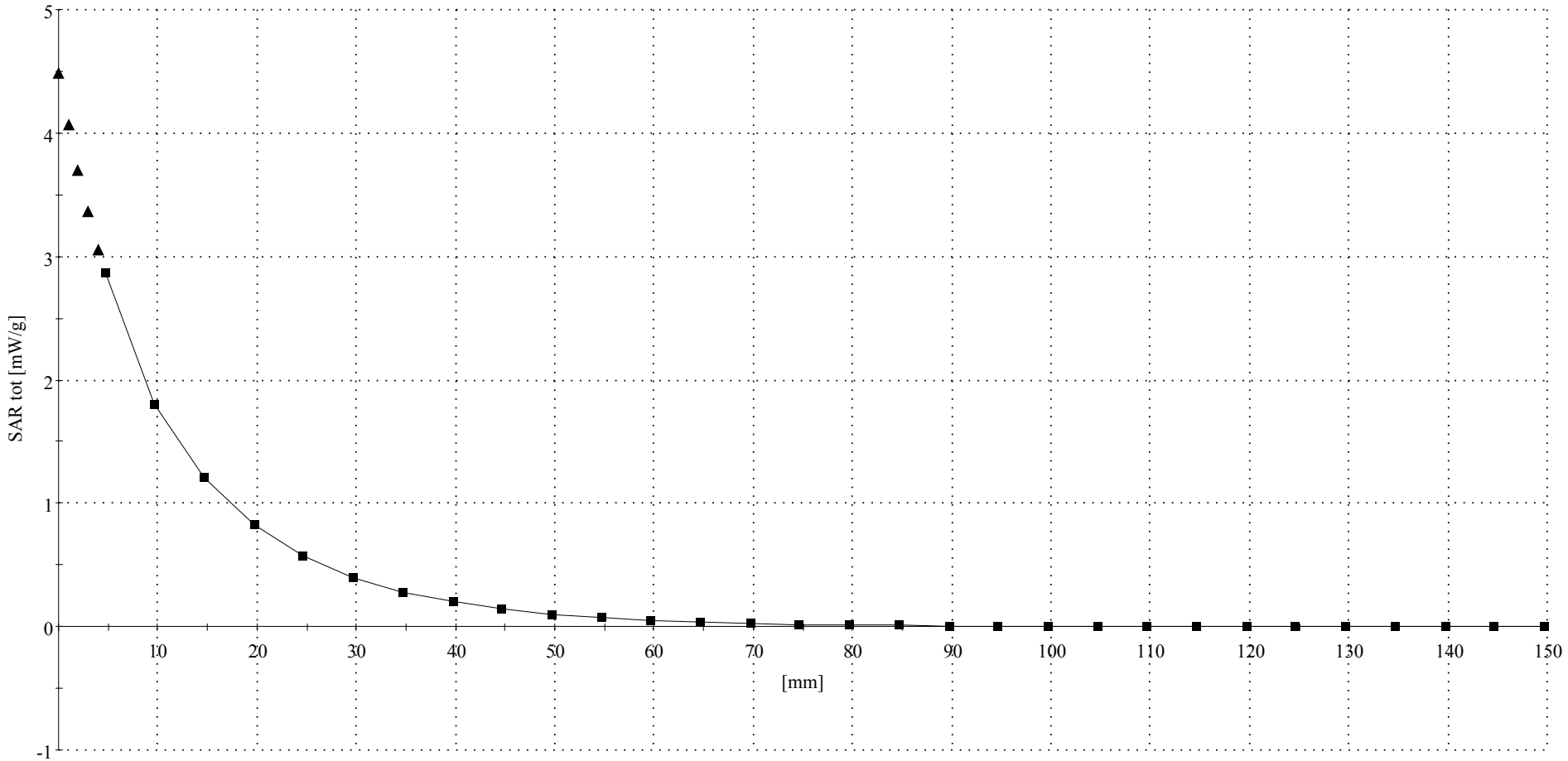
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

Penetration depth: 11.5 (10.6, 12.7) [mm]



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 78 / Forward Power = 251mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 21C. Simulant Temp at time of measurement = 21.9C

R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Section; Position: ; Frequency: 900 MHz

Probe: ET3DV6 - SN1515 - Validation(2); ConvF(6.50,6.50,6.50); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.96 mho/m ε_r = 40.7 ρ = 1.00 g/cm^3

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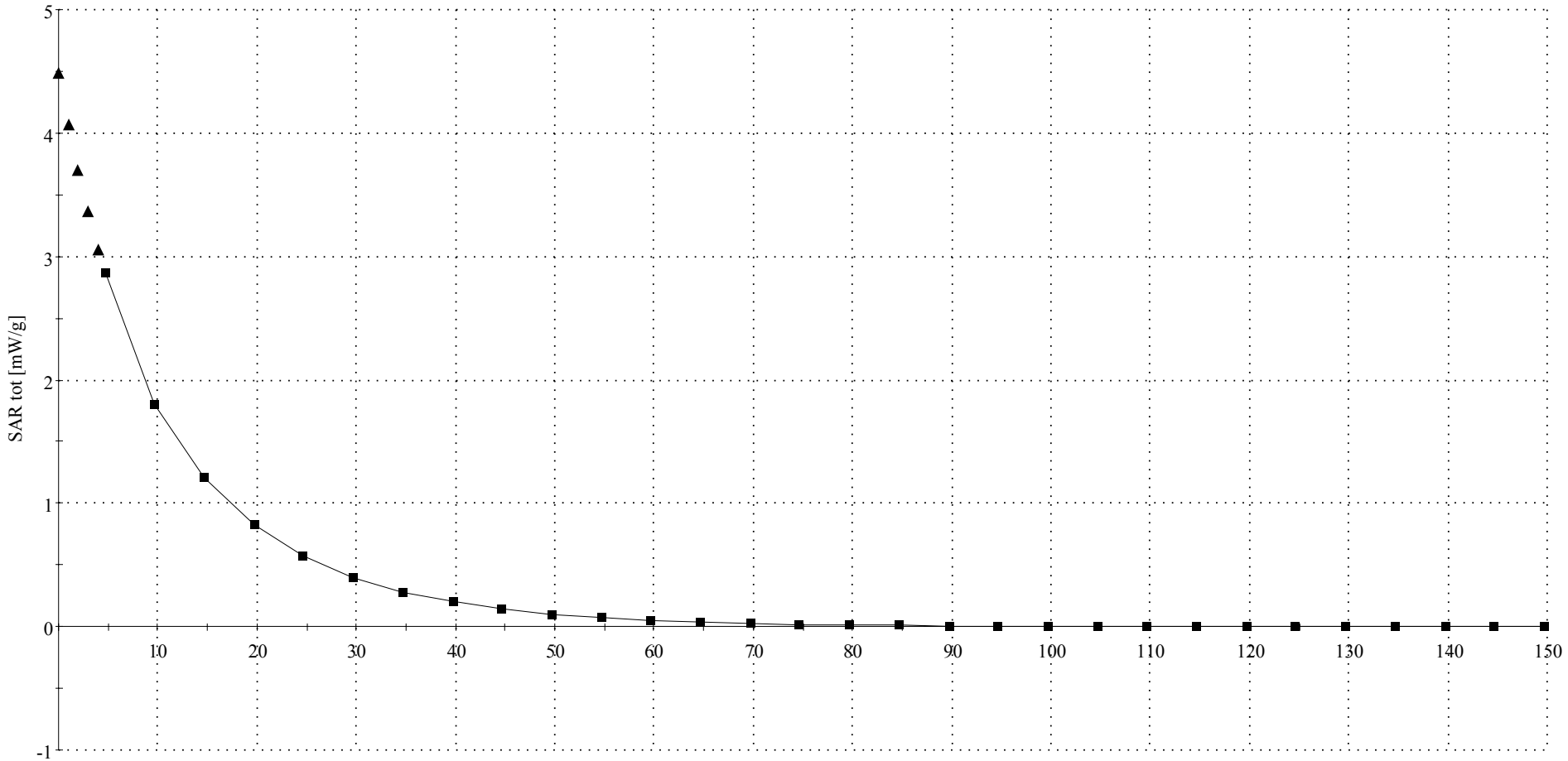
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

Penetration depth: 11.5 (10.6, 12.7) [mm]



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 78 / Forward Power = 251mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 22C. Simulant Temp at time of measurement = 22.2C

R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Section; Position: ; Frequency: 900 MHz

Probe: ET3DV6 - SN1515 - Validation(2); ConvF(6.50,6.50,6.50); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.97 mho/m ε_r = 40.8 ρ = 1.00 g/cm^3

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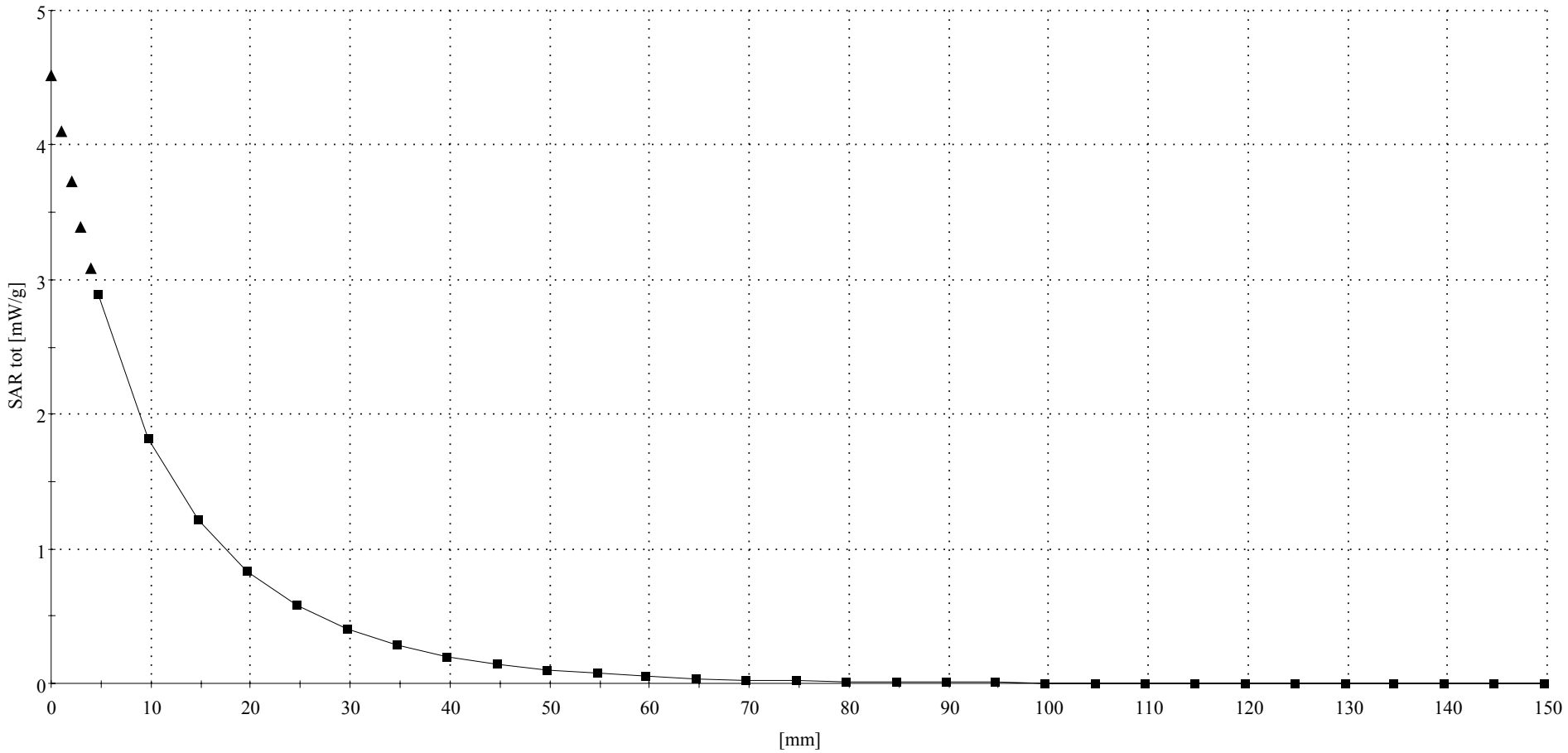
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

Penetration depth: 11.5 (10.6, 12.6) [mm]



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 092 / Forward Power = 253mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 21.0*C. Simulant Temp at time of measurement = 20.5*C

R4 TP-1131 SUGAR sam expanded (Rev. 2)-9Jan03 Phantom; Section; Position: ; Frequency: 900 MHz

Probe: ET3DV6 - SN1521 - Validation2; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.96 mho/m ε_r = 40.5 ρ = 1.00 g/cm^3

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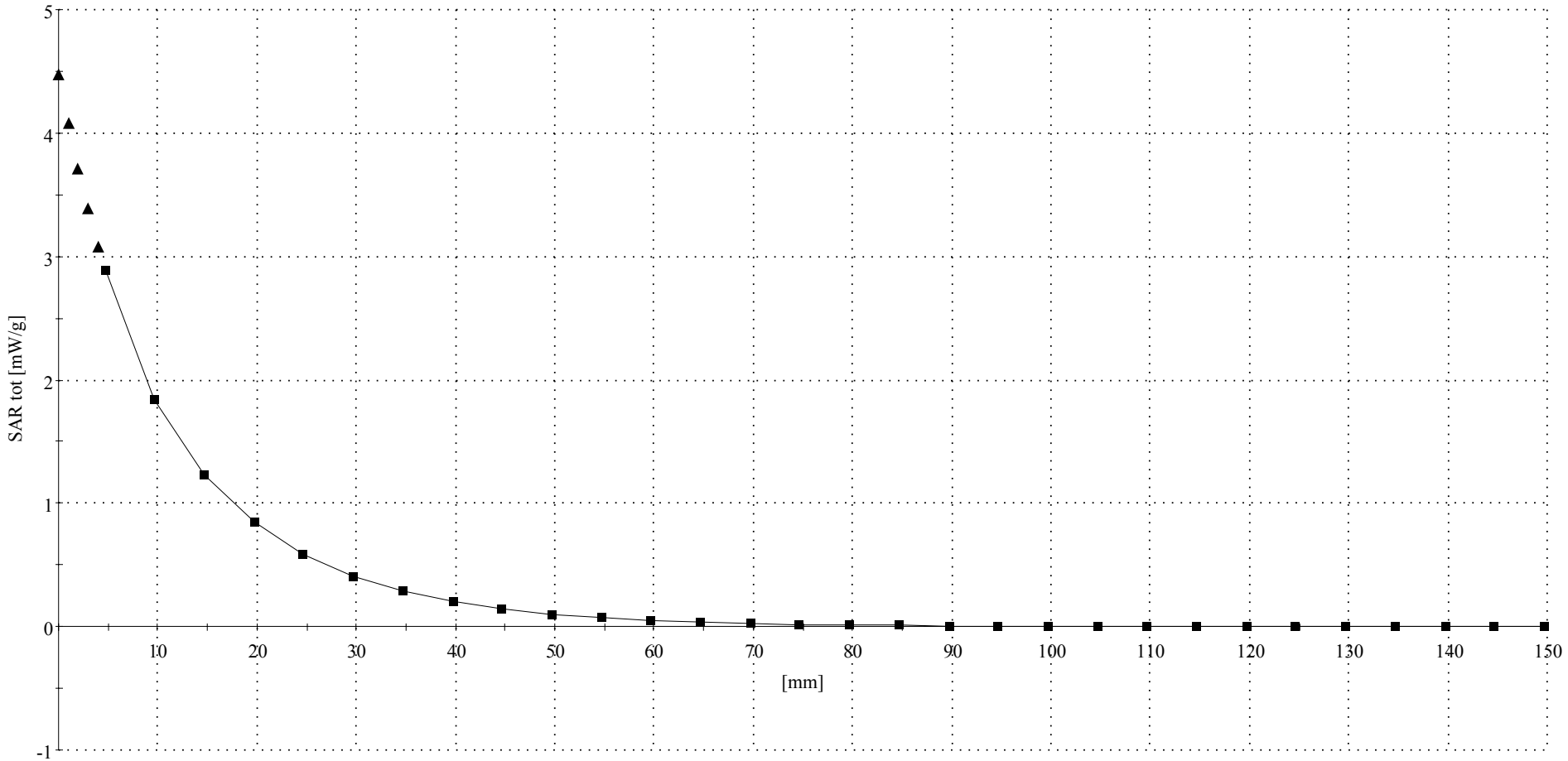
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

Penetration depth: 11.7 (10.9, 12.8) [mm]



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 272tr / Forward Power = 254mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 21.0*C. Simulant Temp at time of measurement =20.6*C

R4 1-005 Amy Twin Phantom Rev.4 (22Aug02) Phantom; Section; Position: ; Frequency: 1800 MHz

Probe: ET3DV6 - SN1521 - Validation2; ConvF(5.40,5.40,5.40); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.37 mho/m ε_r = 38.9 ρ = 1.00 g/cm^3

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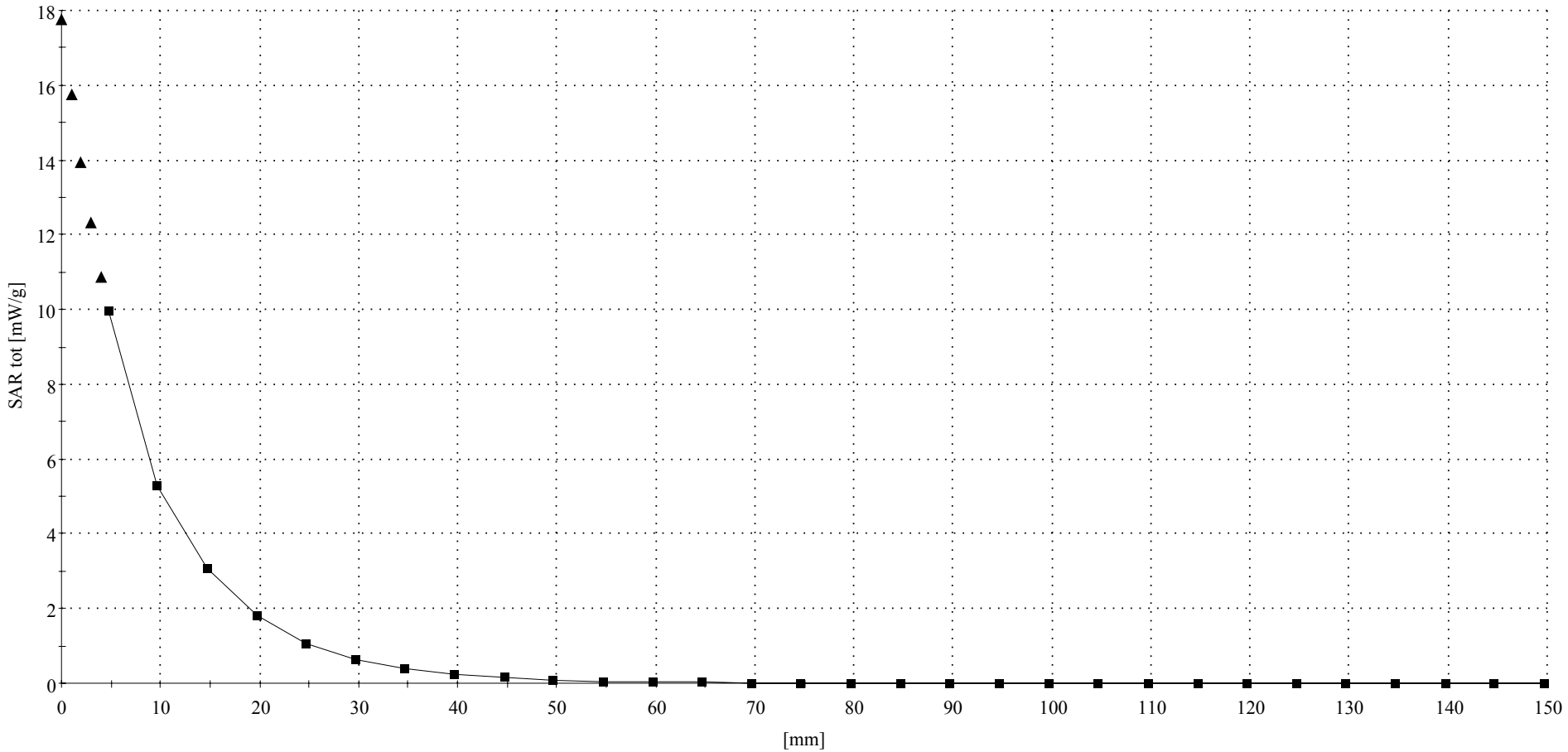
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

Penetration depth: 8.3 (8.0, 9.1) [mm]



Dipole 835 MHz

835 MHz Dipole Validation / Dipole Sn# 425tr / Forward Power = 251mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 21.0 C Simulant Temp at time of measurement = 21.1C

R1 TP-1005 SAM Expanded Sugar (Rev. 2)-9Jan03 Phantom; Section; Position: ; Frequency: 835 MHz

Probe: ET3DV6 - SN1523 - Validation.2; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz VALIDATION: σ = 0.91 mho/m ε_r = 41.9 ρ = 1.00 g/cm^3

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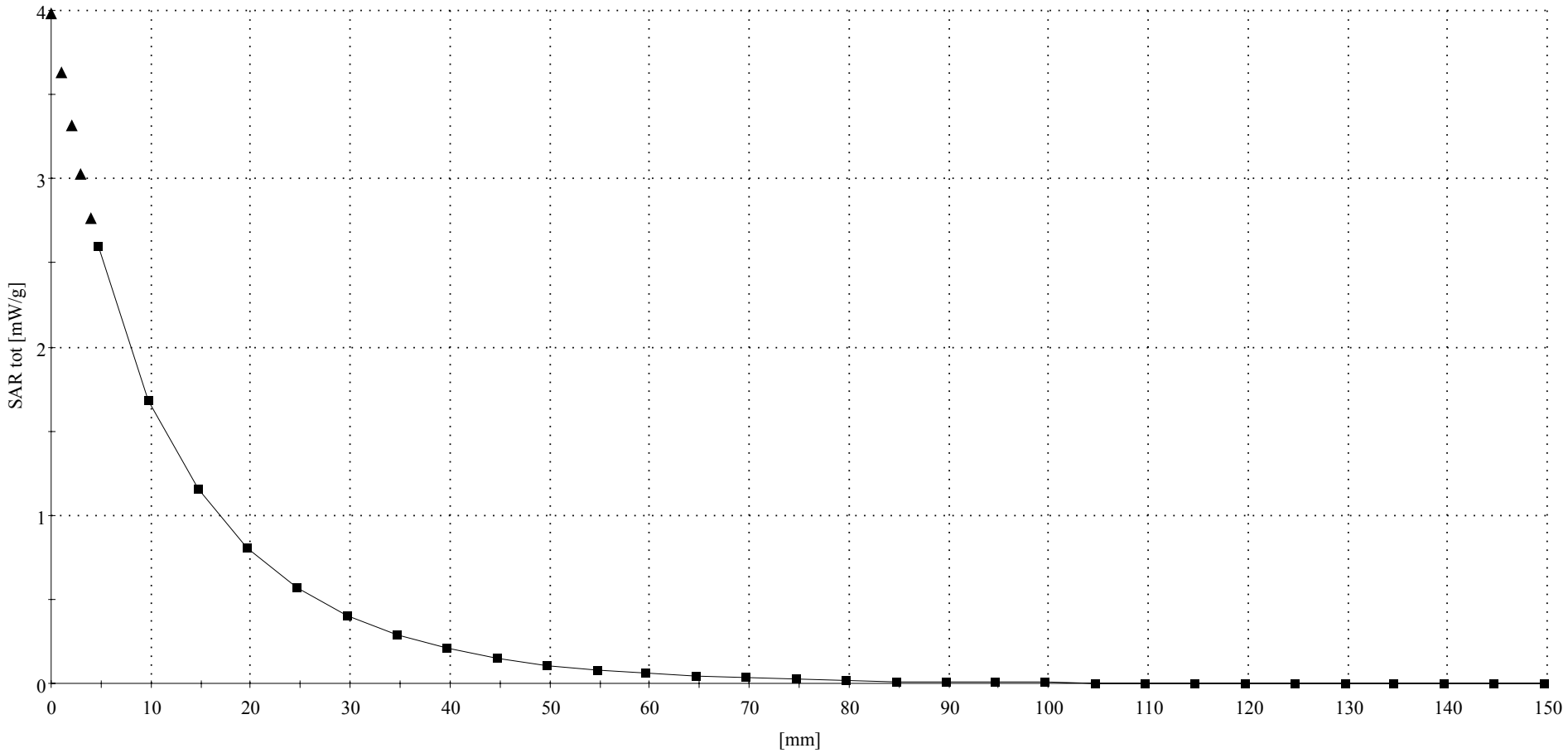
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

Penetration depth: 12.2 (11.2, 13.4) [mm]



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 259tr / Forward Power = 247mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 21 C Simulant Temp at time of measurement = 21 C

R3 Amy Twin Phantom Rev.4 (22Aug02) Phantom; Section; Position: ; Frequency: 1800 MHz

Probe: ET3DV6 - SN1513 - Validation.2; ConvF(4.90,4.90,4.90); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.38 mho/m ε_r = 38.4 ρ = 1.00 g/cm^3

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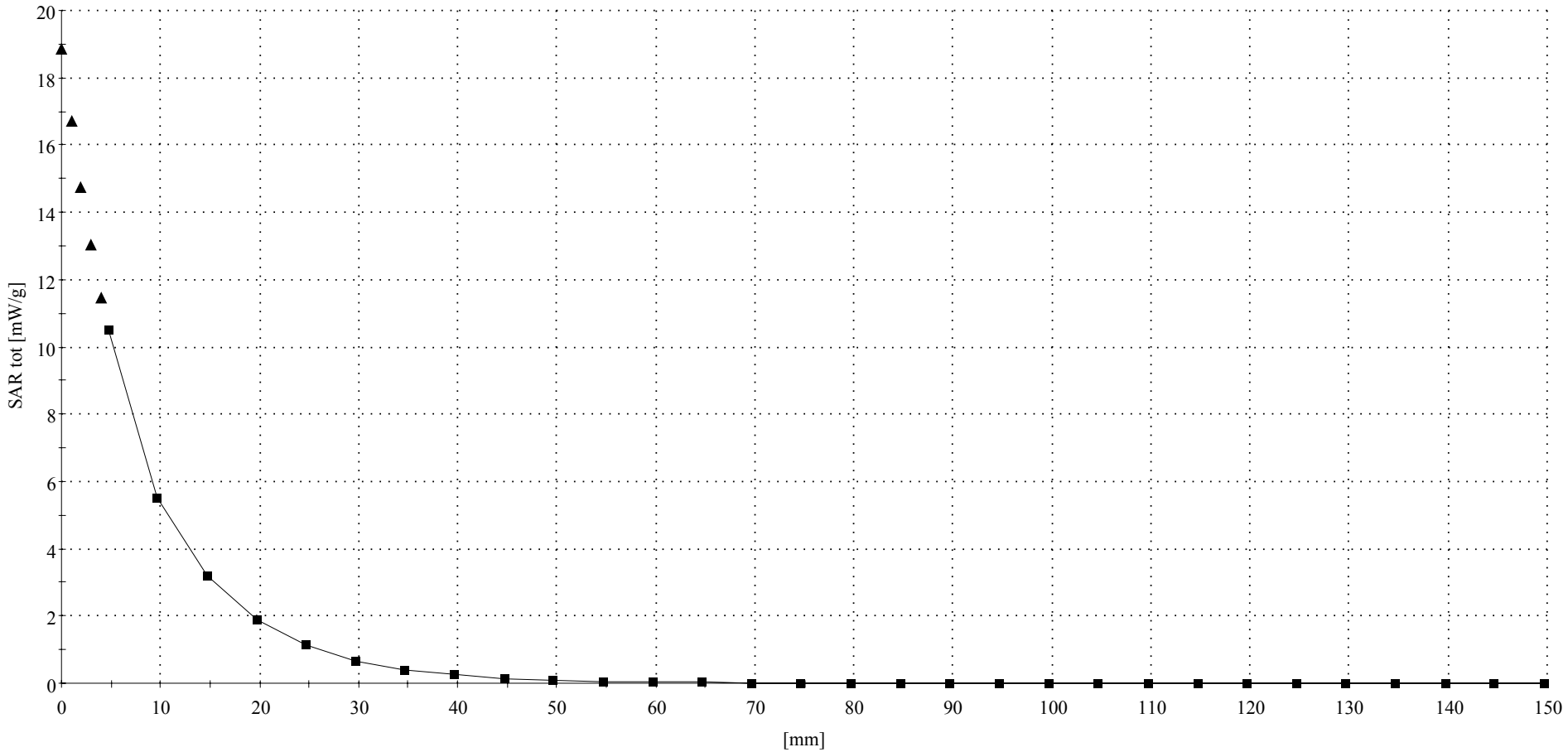
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

Penetration depth: 8.2 (7.8, 9.0) [mm]



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 259tr / Forward Power = 249mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 21 C Simulant Temp at time of measurement = 20.7 C

R3 Amy Twin Phantom Rev.4 (22Aug02) Phantom; Section; Position: ; Frequency: 1800 MHz

Probe: ET3DV6 - SN1513 - Validation.2; ConvF(4.90,4.90,4.90); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.39 mho/m ε_r = 39.4 ρ = 1.00 g/cm^3

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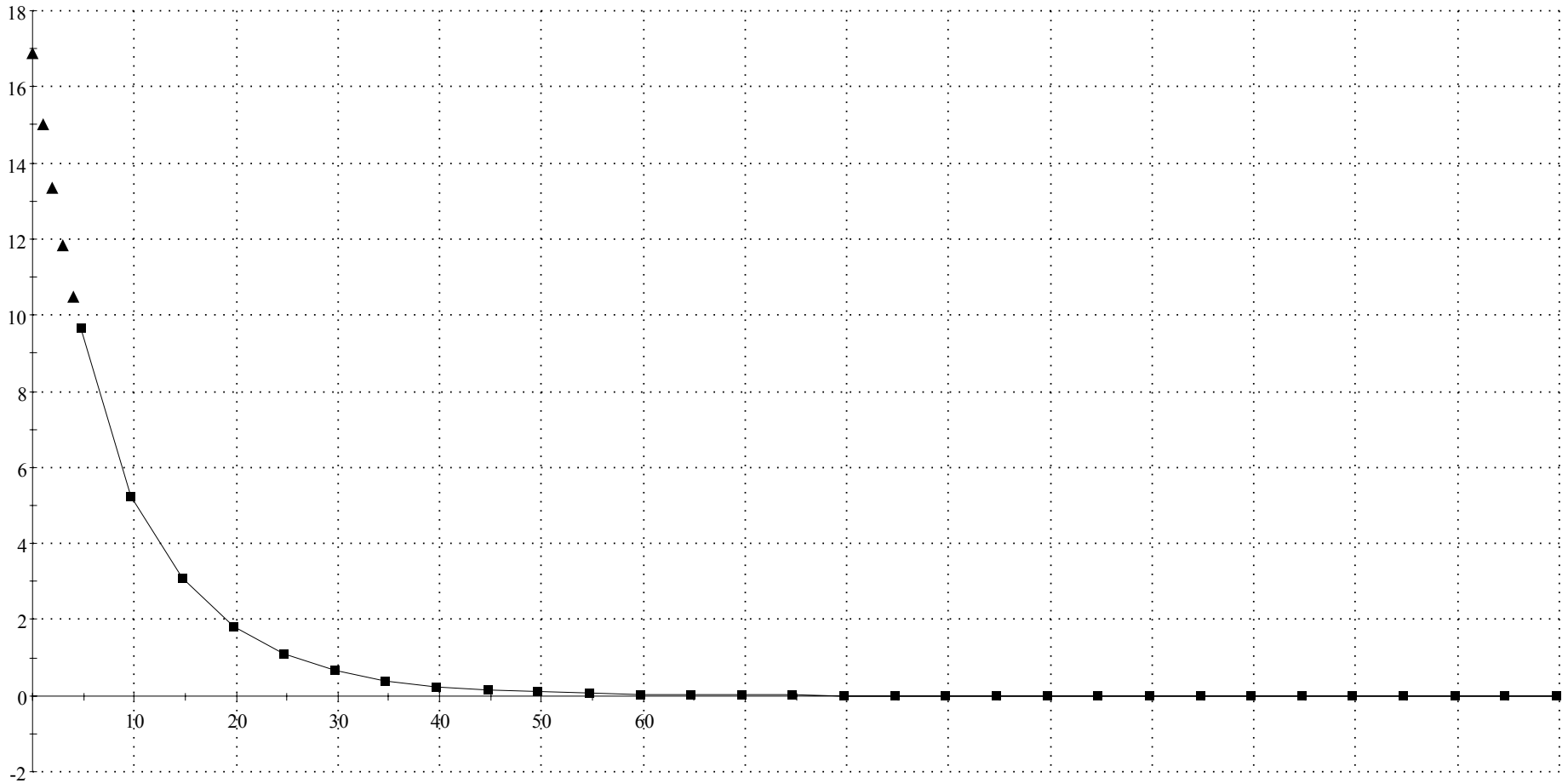
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

Penetration depth: 8.6 (8.2, 9.3) [mm]



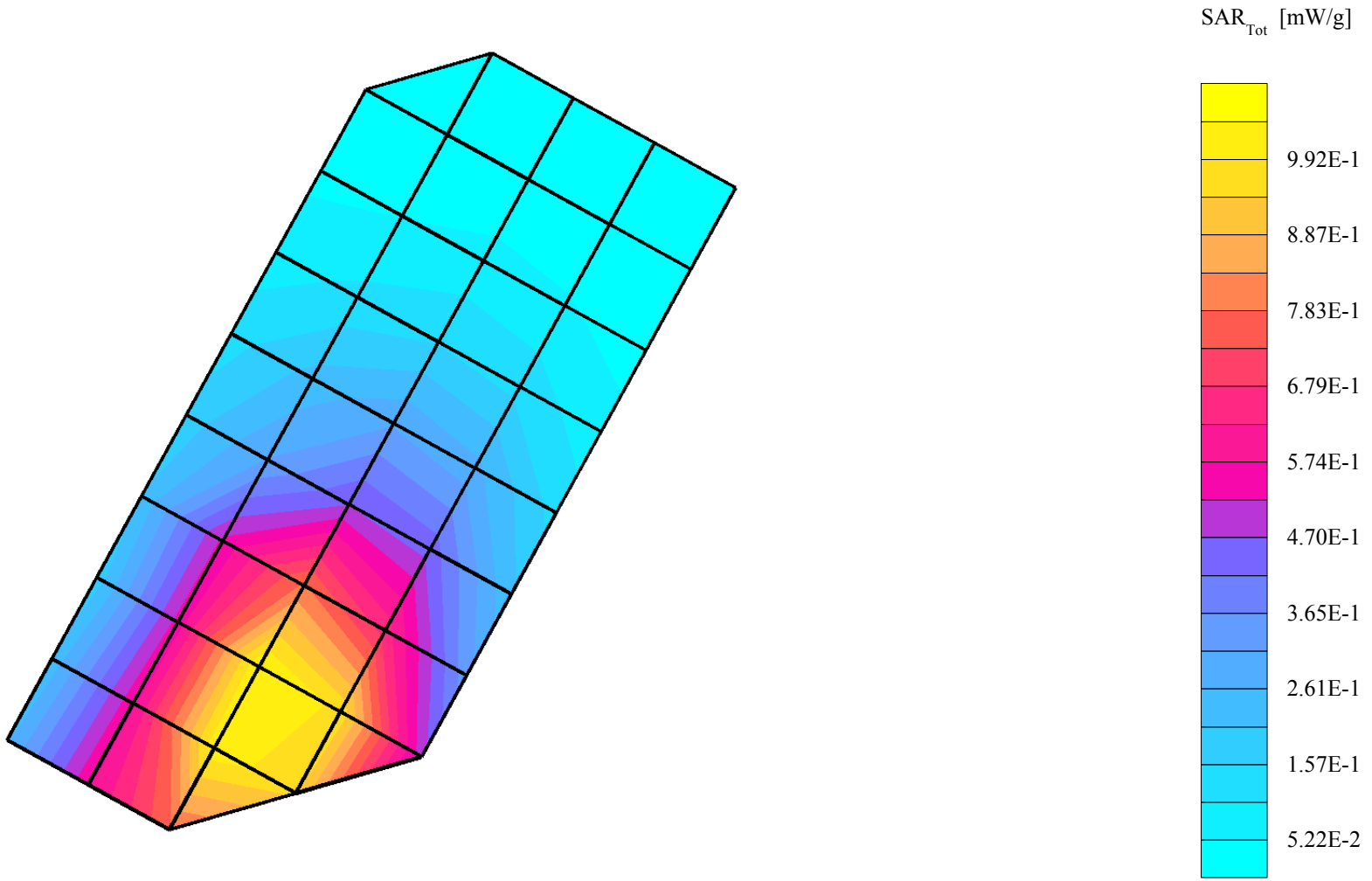
Appendix 2

SAR distribution plots for Phantom Head Adjacent Use

03/18/03

SN# A8EE64BD

Ch# 991/ Pwr Step: 2 / Antenna Position: Fixed / Battery Model #: SNN5705B / DEVICE POSITION (cheek or rotated): Cheek
R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 824 MHz
Probe: ET3DV6 - SN1515 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\varepsilon_r = 41.7$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 1.17 mW/g, SAR (10g): 0.773 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 14.0 (11.9, 16.8) [mm]
Powerdrift: -0.08 dB



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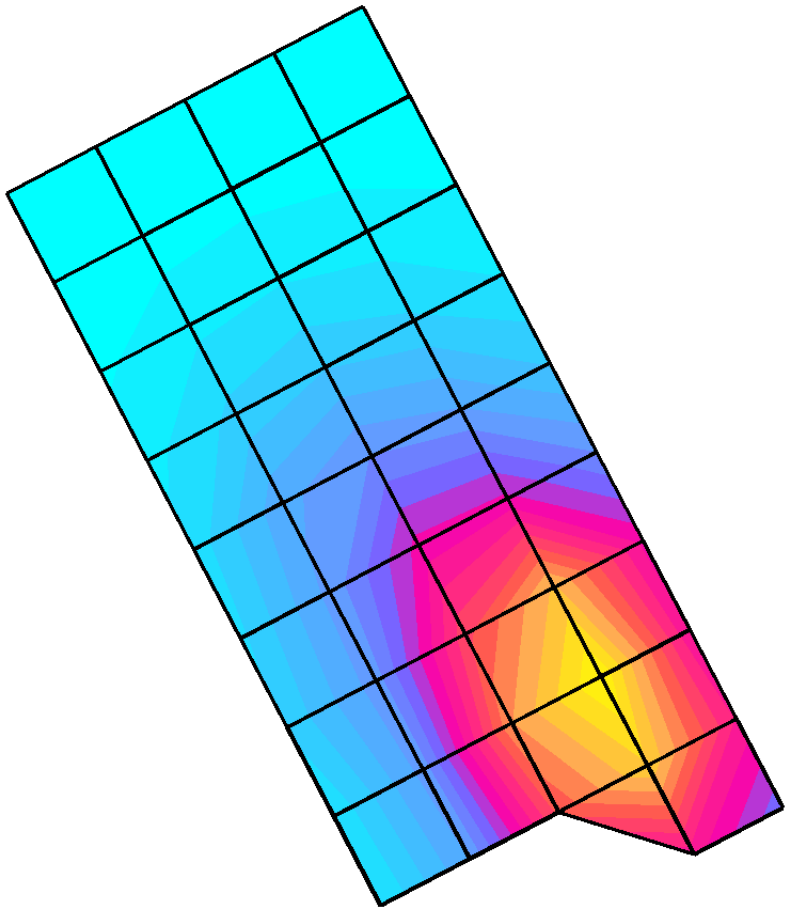
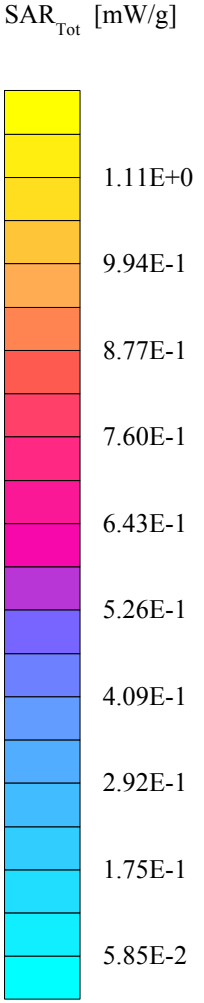
SN# A8EE64BD

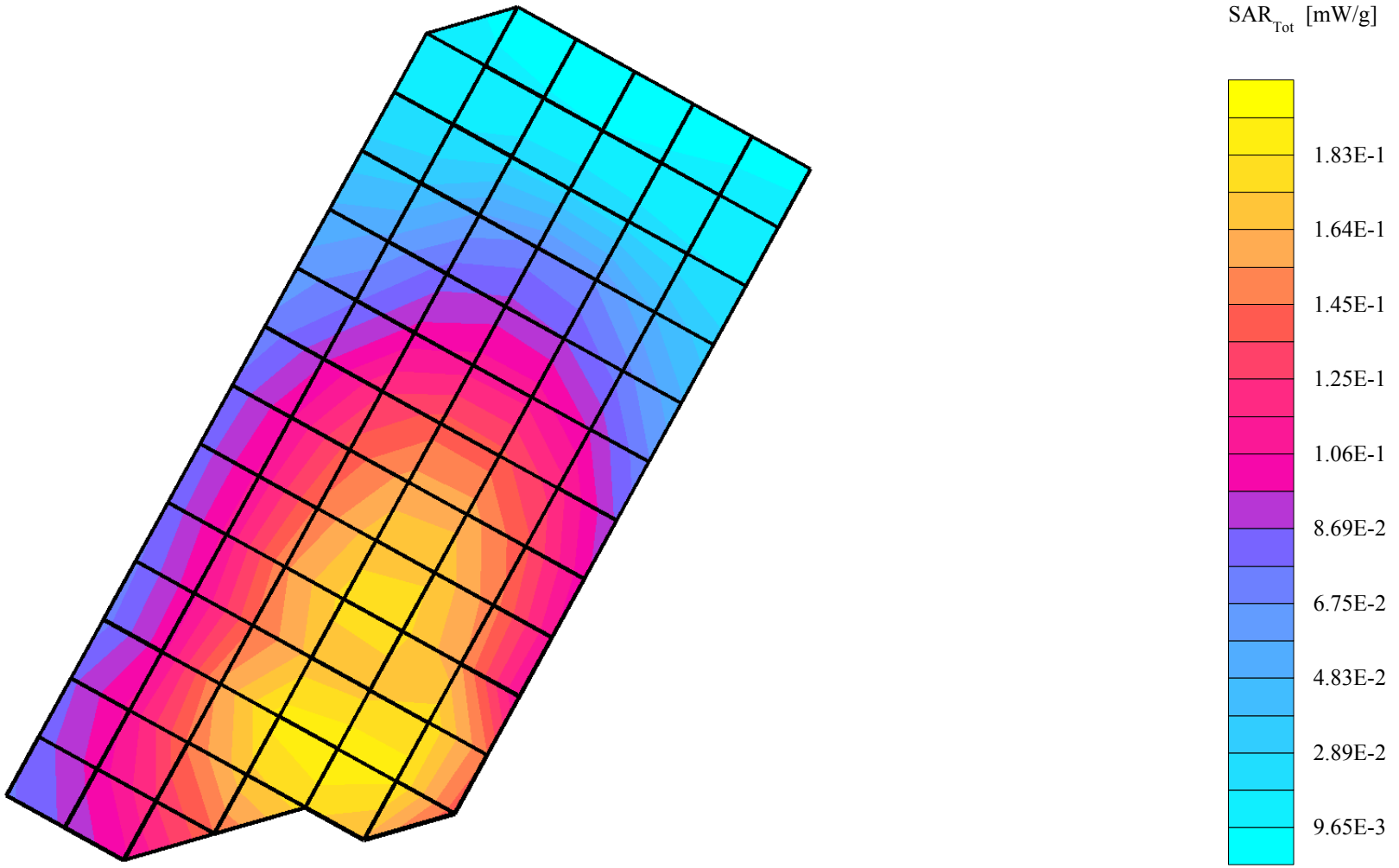
Ch# 991/ Pwr Step: 2 / Antenna Position: Fixed / Battery Model #: SNN5705B / DEVICE POSITION (cheek or rotated): Cheek
R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Right Hand Section; Position: (90°,180°); Frequency: 824 MHz
Probe: ET3DV6 - SN1515 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\varepsilon_r = 41.7$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 1.24 mW/g, SAR (10g): 0.786 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 12.6 (10.3, 16.0) [mm]
Powerdrift: 0.35 dB





SN# A8EE64BD

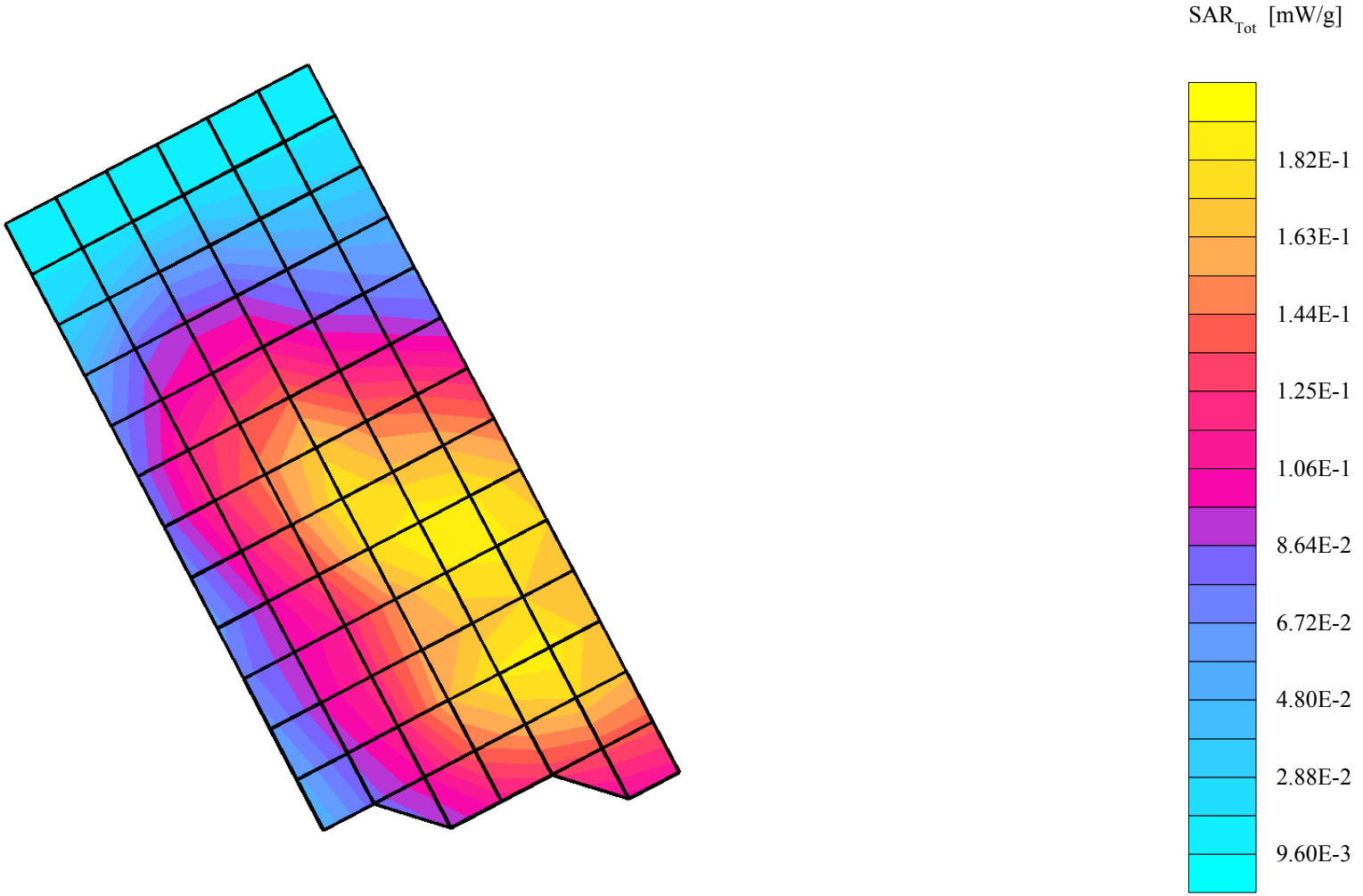
Ch# 384 / Pwr Step: 2 / Antenna Position: Fixed / Battery Model #: SNN5705B / DEVICE POSITION (cheek or tilt): Tilt
R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 836 MHz
Probe: ET3DV6 - SN1515 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\varepsilon_r = 41.7$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 0.196 mW/g, SAR (10g): 0.139 mW/g, (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Penetration depth: 18.7 (18.4, 19.3) [mm]
Powerdrift: -0.14 dB



03/18/03

SN# A8EE64BD

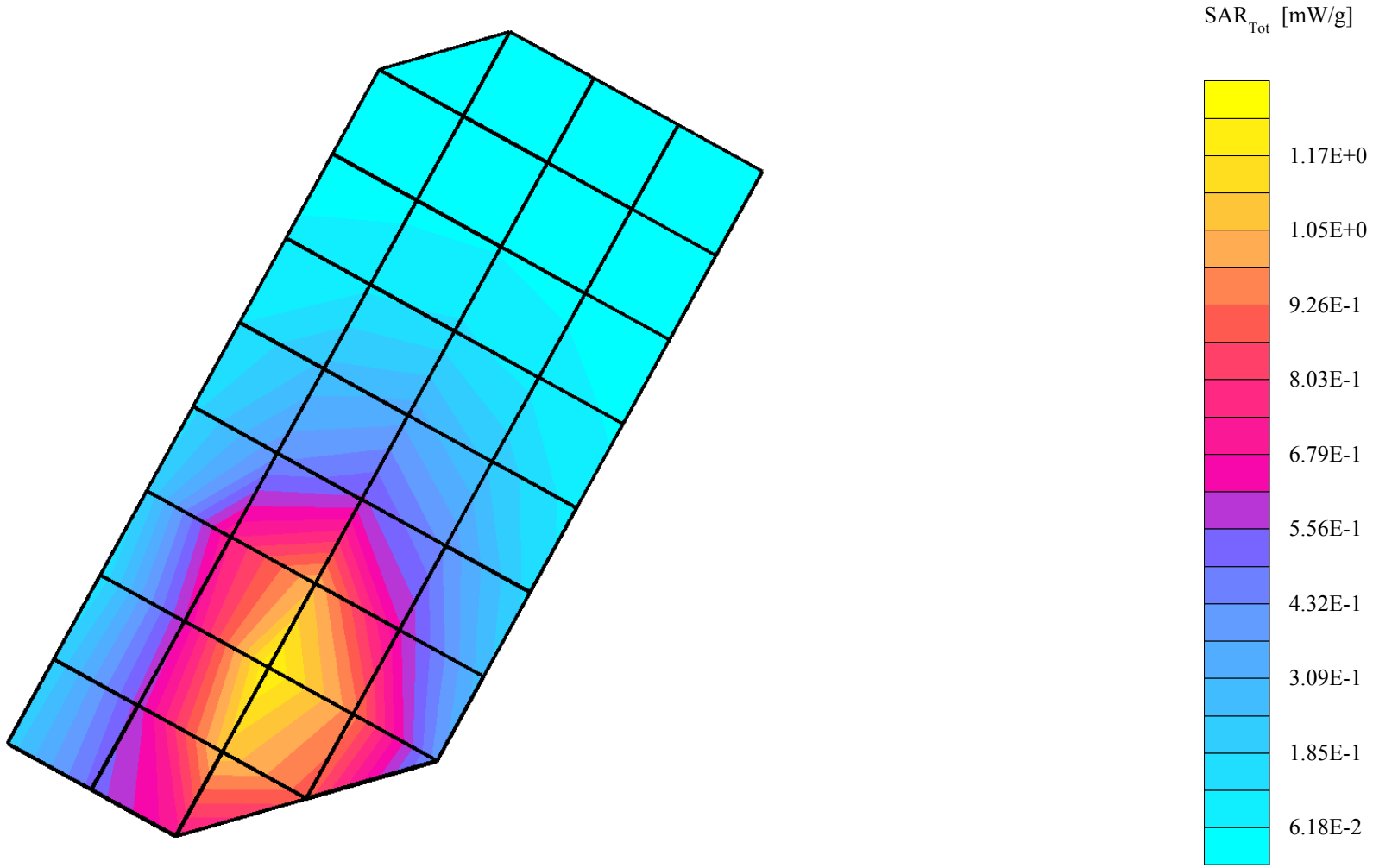
Ch# 384 / Pwr Step: 2 / Antenna Position: Fixed / Battery Model #: SNN5705B / DEVICE POSITION (cheek or Tilt): Tilt
R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Right Hand Section; Position: (90°,180°); Frequency: 836 MHz
Probe: ET3DV6 - SN1515 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\varepsilon_r = 41.7$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 0.203 mW/g, SAR (10g): 0.150 mW/g, (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Penetration depth: 18.9 (17.1, 20.7) [mm]
Powerdrift: 0.02 dB



03/20/03

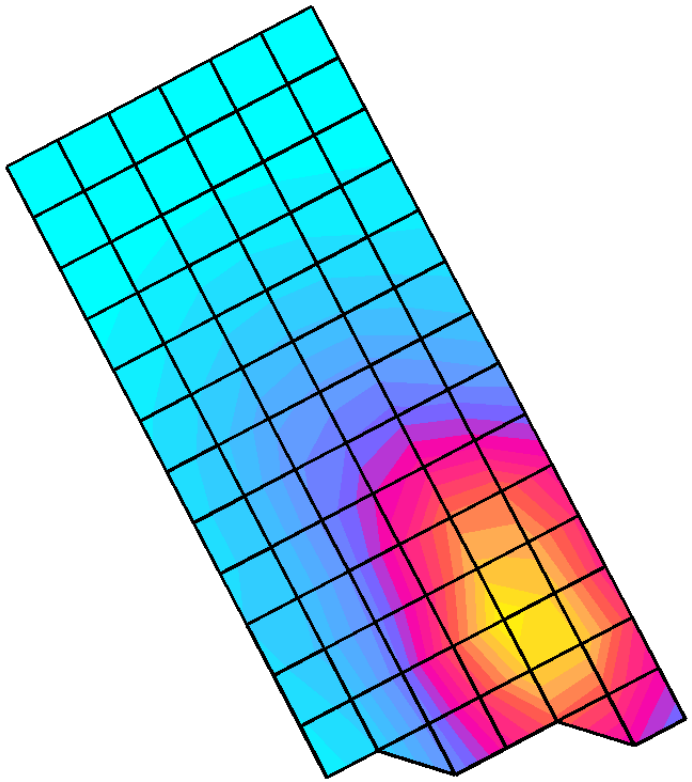
SN# A8EE64BB

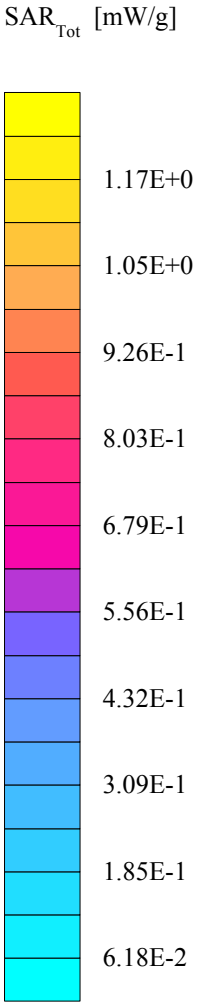
Ch# 1013 / Pwr Step: Always Up / Antenna Position: Fixed / Battery Model #: SNN5705B / DEVICE POSITION (cheek or rotated): Cheek
R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 825 MHz
Probe: ET3DV6 - SN1515 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\varepsilon_r = 41.5$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 1.26 mW/g, SAR (10g): 0.816 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 13.1 (10.6, 16.6) [mm]
Powerdrift: -0.12 dB



SN# A8EE64BD

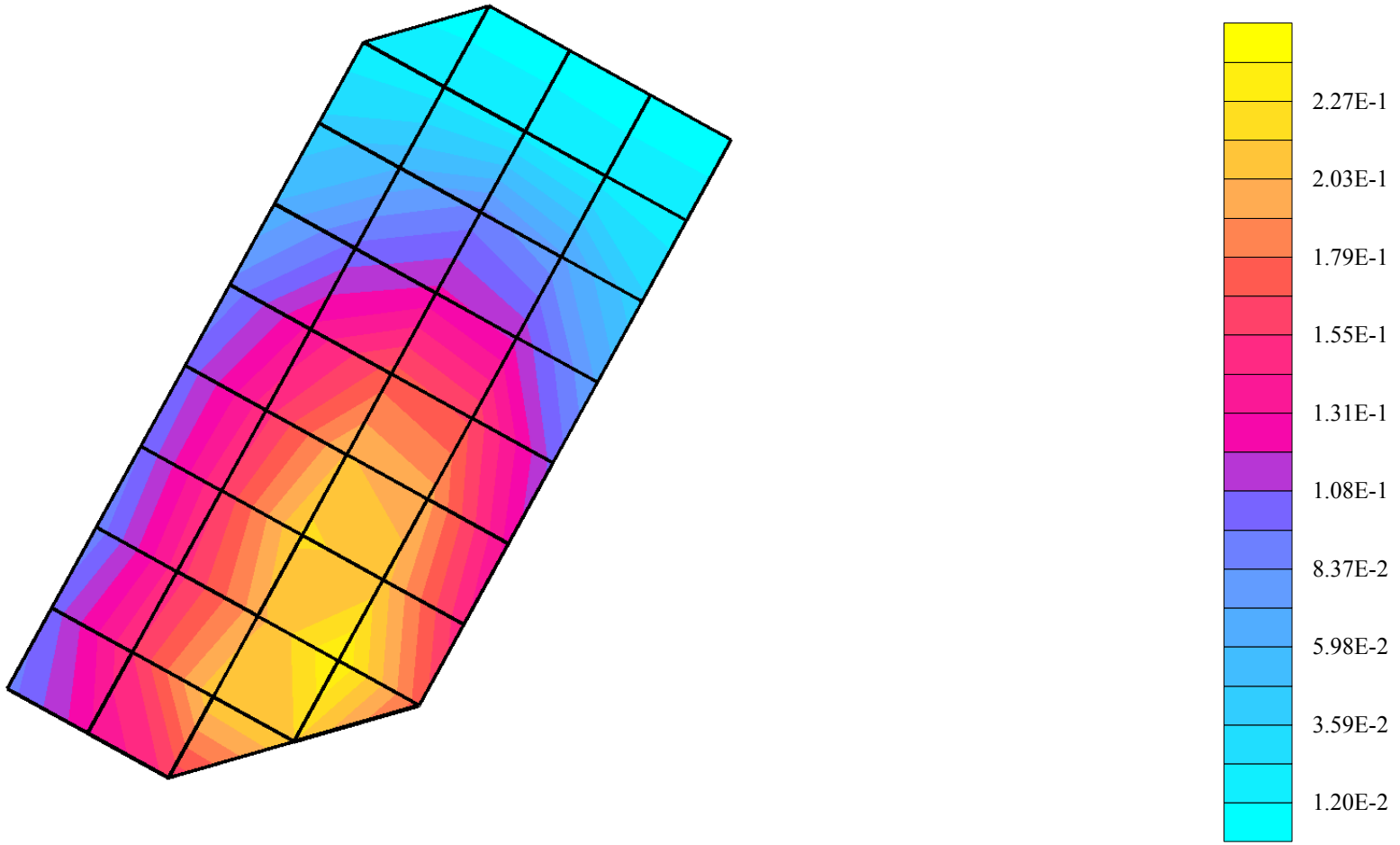
Ch# 1013 / Pwr Step: Always Up / Antenna Position: Fixed / Battery Model #: SNN5705B / DEVICE POSITION (cheek or tilt): Cheek
R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Right Hand Section; Position: (90°,180°); Frequency: 825 MHz
Probe: ET3DV6 - SN1515 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\varepsilon_r = 41.5$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 1.23 mW/g, SAR (10g): 0.801 mW/g, (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Penetration depth: 13.2 (10.9, 16.3) [mm]
Powerdrift: -0.04 dB





SN# A8EE64BD

Ch# 384 / Pwr Step: OTA / Antenna Position: Fixed / Battery Model #: SNN5705B / DEVICE POSITION (cheek or tilt):Cheek
R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 836 MHz
Probe: ET3DV6 - SN1515 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\varepsilon_r = 41.7$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 0.243 mW/g, SAR (10g): 0.172 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 17.2 (13.1, 22.2) [mm]
Powerdrift: -0.04 dB



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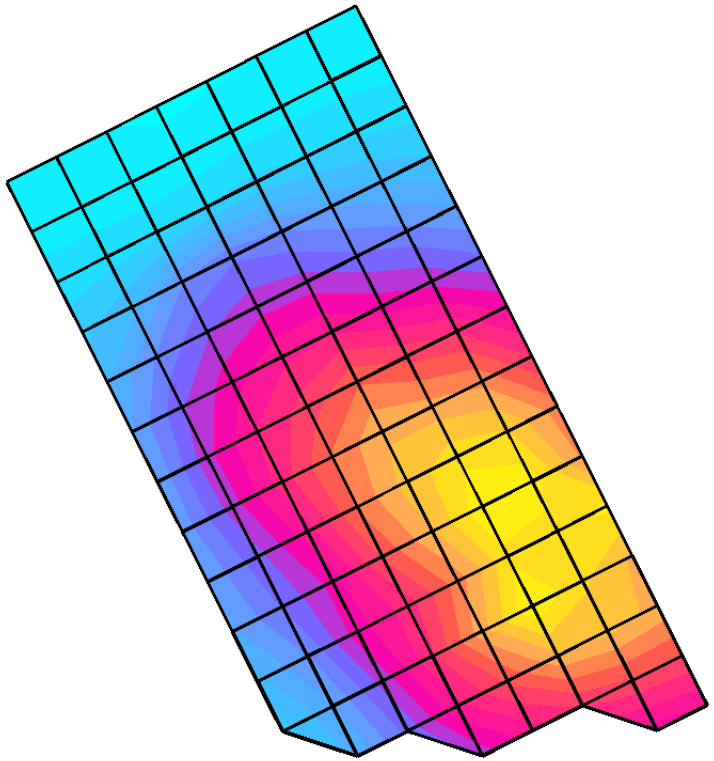
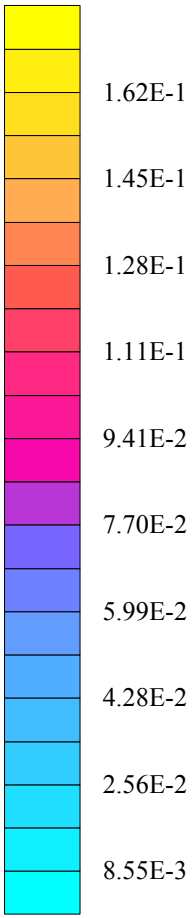
SN# A8EE64BD

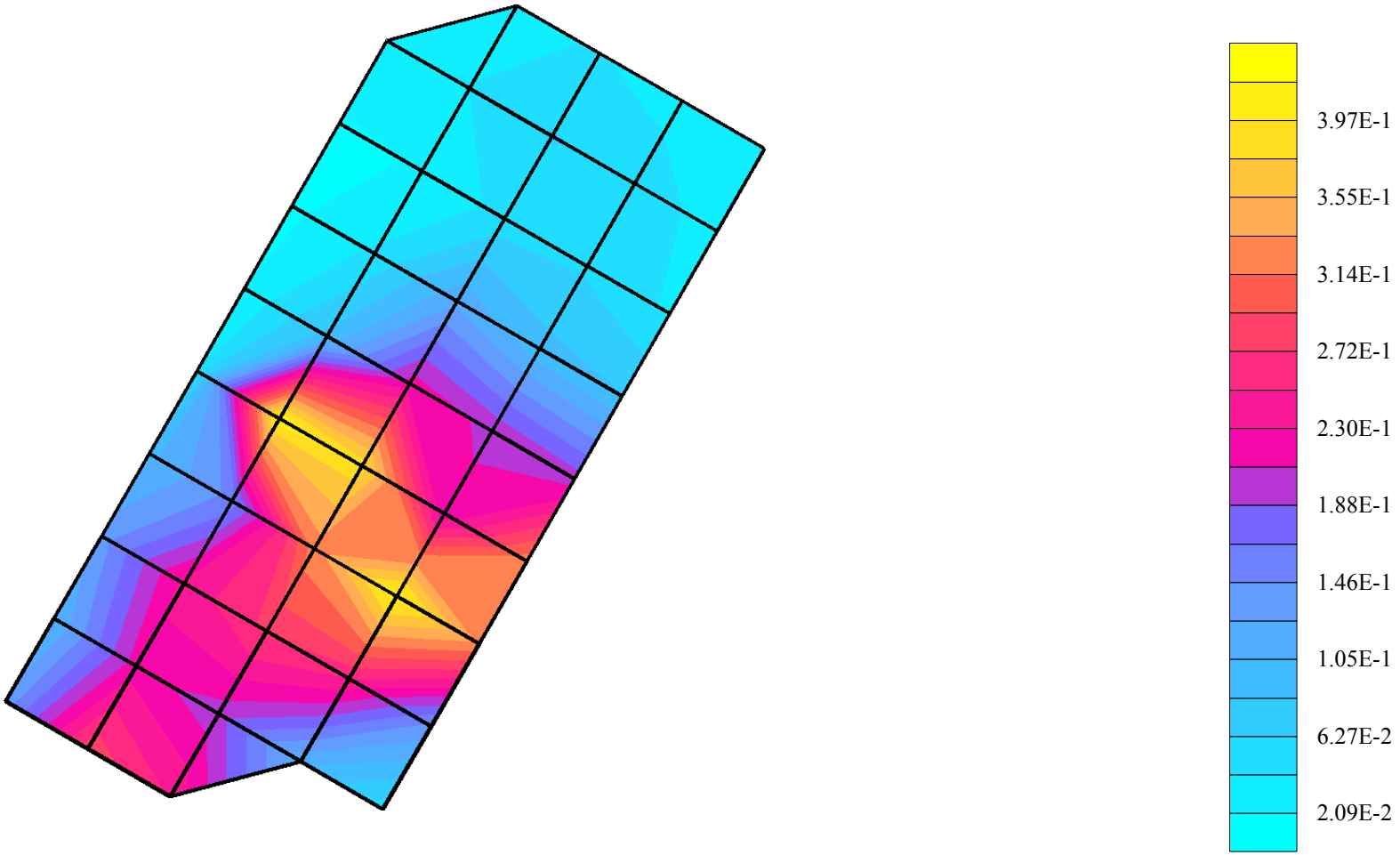
Ch#384 / Pwr Step: Always up / Antenna Position:FIXED / Battery Model #: SNN5705 / DEVICE POSITION (cheek or tilted): Tilted
R1 TP-1005 SAM Expanded Sugar (Rev. 2)-9Jan03 Phantom; Right Hand Section; Position: (90°,180°); Frequency: 837 MHz
Probe: ET3DV6 - SN1523 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\varepsilon_r = 41.9$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 0.172 mW/g, SAR (10g): 0.127 mW/g, (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Penetration depth: 19.2 (17.3, 21.3) [mm]
Powerdrift: 0.02 dB





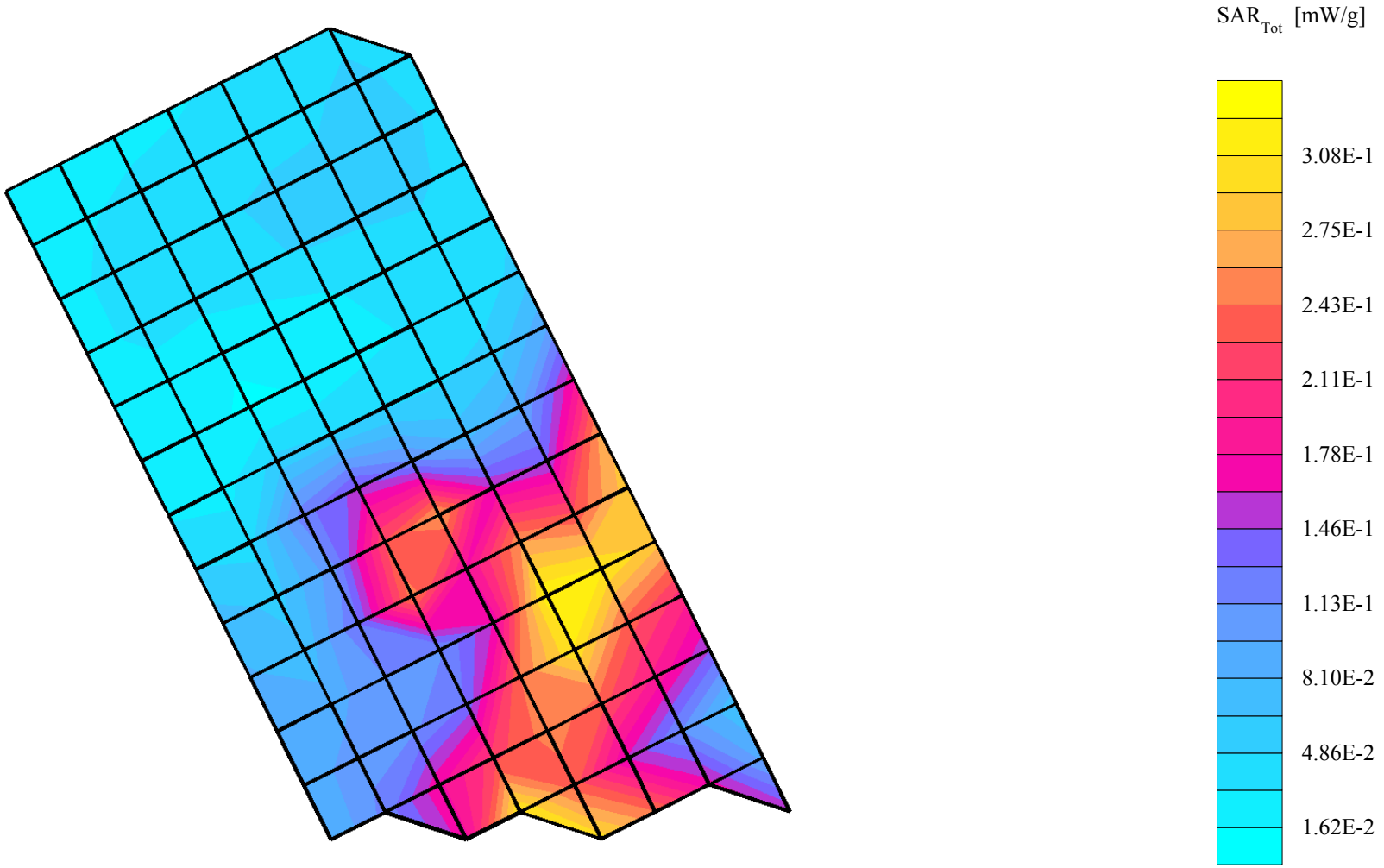
SN# A8EE64BD

Ch# 600 / Pwr Step: Always Up / Antenna Position: Fixed / Battery Model #: SNN5705B / DEVICE POSITION (cheek or tilted): Tilt
R# 2 TP-1235 GLYCOL SAM Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1515 - IEEE Head; ConvF(5.40,5.40,5.40); Crest factor: 1.0; 1880 MHz Head & Body: σ = 1.45 mho/m ε_r = 38.4 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.447 mW/g, SAR (10g): 0.233 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 9.6 (9.6, 9.7) [mm]
Powerdrift: -0.27 dB



SN# A8EE64BD

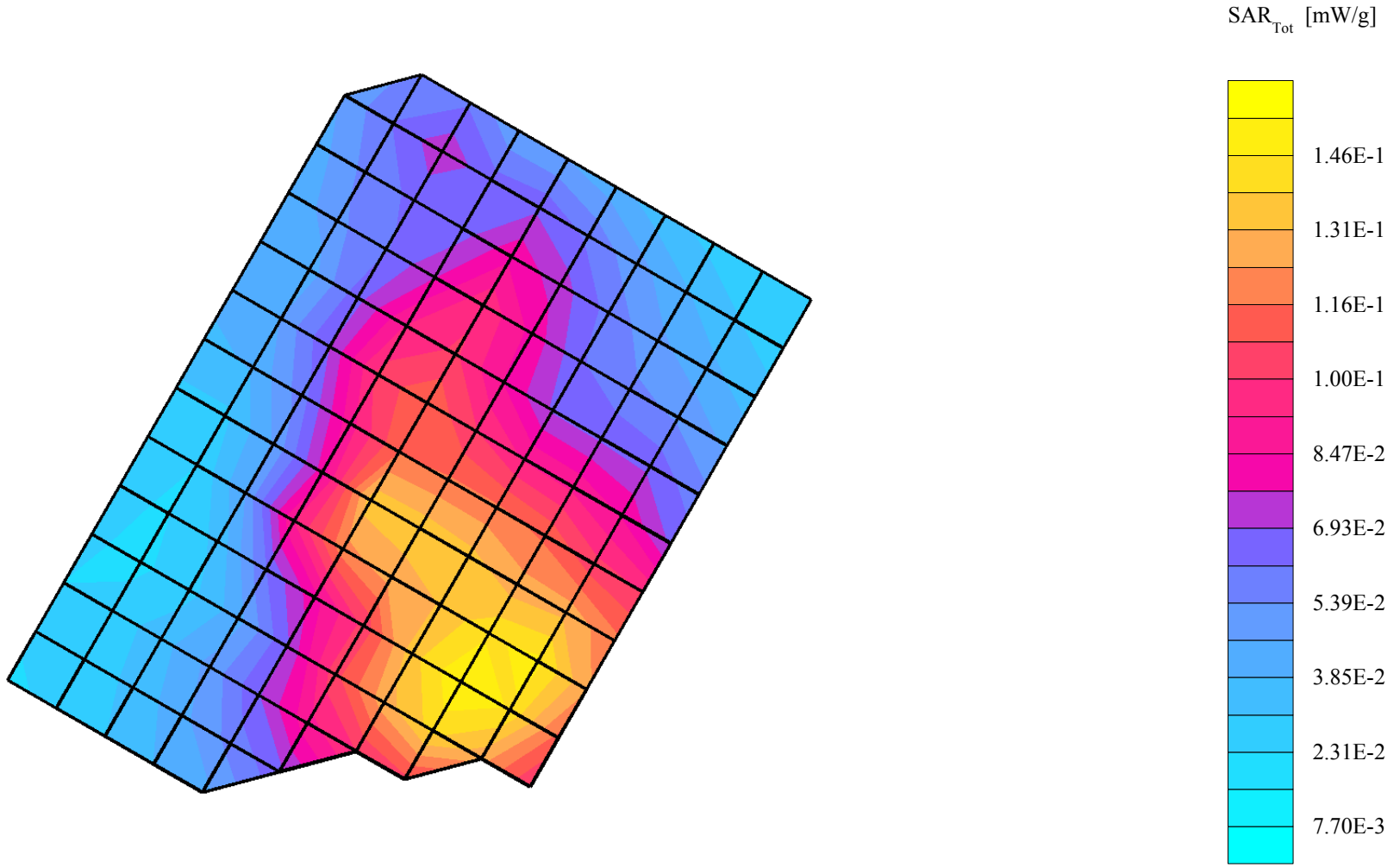
Ch# 600/ Pwr Step: OTA / Antenna Position: Fixed / Battery Model #: SNN5705B / DEVICE POSITION (cheek or tilted): CHEEK
R# 2 TP-1235 GLYCOL SAM Expanded (Rev. 2)-9Jan03 Phantom; Right Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1515 - IEEE Head; ConvF(5.40,5.40,5.40); Crest factor: 1.0; 1880 MHz Head & Body: σ = 1.45 mho/m ε_r = 38.4 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.329 mW/g, SAR (10g): 0.188 mW/g, (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Penetration depth: 8.9 (8.8, 9.3) [mm]
Powerdrift: -0.06 dB



03/31/03

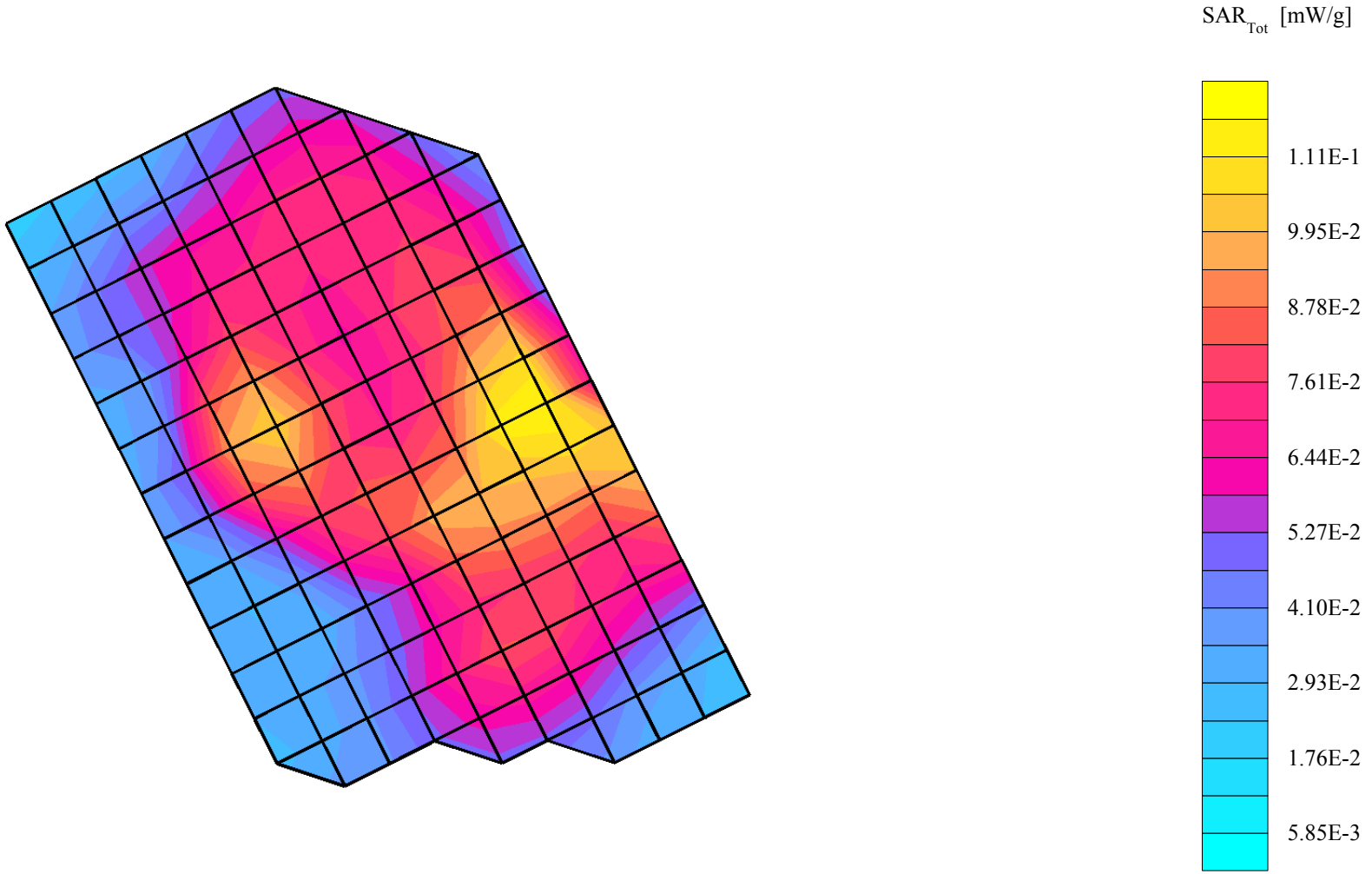
SN# A8EE64BD

Ch# 600 / Pwr Step: ota / Antenna Position: fixed / Battery Model #: snn5705b / DEVICE POSITION (cheek or tilt): TILT
R# 3 TP-1159 SAM GLYCOL Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1513 - IEEE Head; ConvF(4.90,4.90,4.90); Crest factor: 1.0; 1880 MHz Head & Body: σ = 1.47 mho/m ε_r = 39.1 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.156 mW/g, SAR (10g): 0.0991 mW/g, (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Penetration depth: 11.5 (11.0, 12.4) [mm]
Powerdrift: -0.19 dB



SN# A8EE64BD

Ch# 600 / Pwr Step: ota / Antenna Position: Fixed / Battery Model #: snn5705b / DEVICE POSITION (cheek or rotated): TILT
R# 3 TP-1159 SAM GLYCOL Expanded (Rev. 2)-9Jan03 Phantom; Right Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1513 - IEEE Head; ConvF(4.90,4.90,4.90); Crest factor: 1.0; 1880 MHz Head & Body: σ = 1.47 mho/m ε_r = 39.1 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.114 mW/g, SAR (10g): 0.0741 mW/g, (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Penetration depth: 11.6 (11.0, 12.3) [mm]
Powerdrift: 0.00 dB



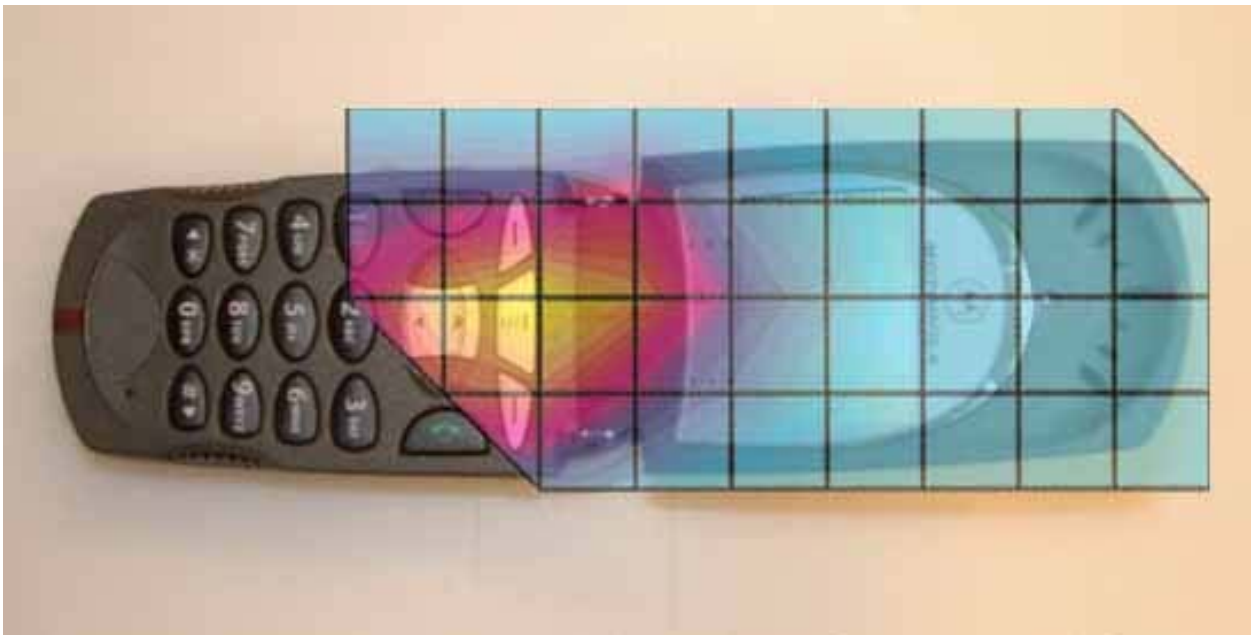


Figure 1.Typical 1900MHz Left Head Adjacent Contour Overlaid on Phone with Antenna Fixed (Cheek Touch)

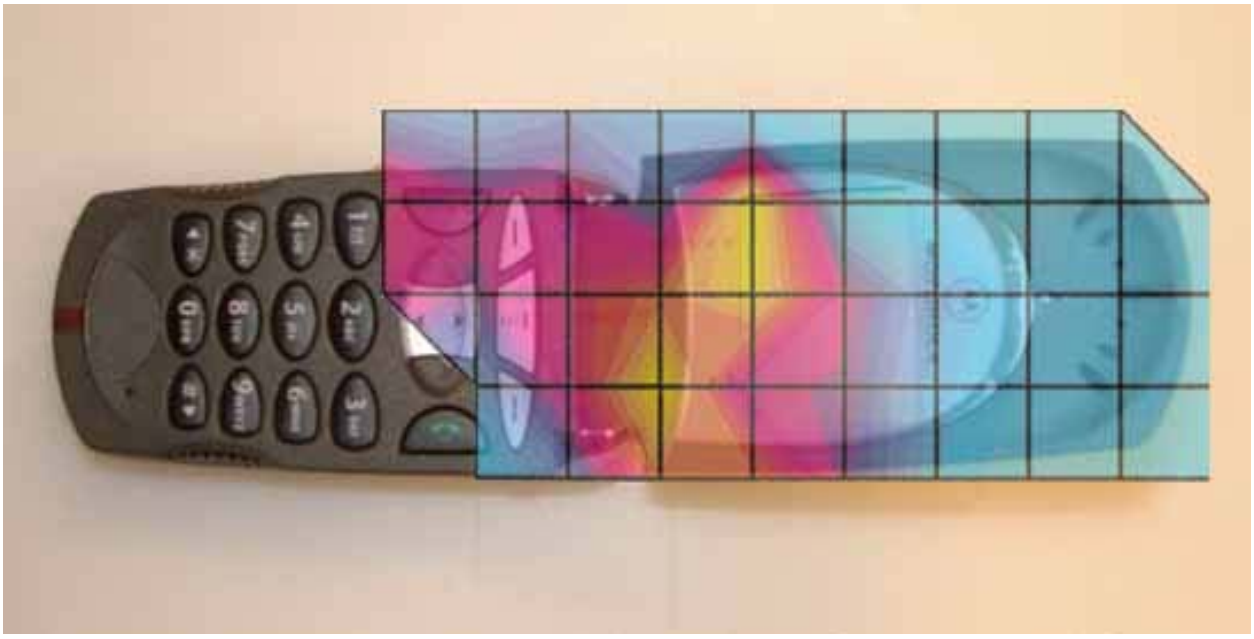


Figure 2.Typical 1900MHz Left Head Adjacent Contour Overlaid on Phone with Antenna Fixed (Cheek Touch)

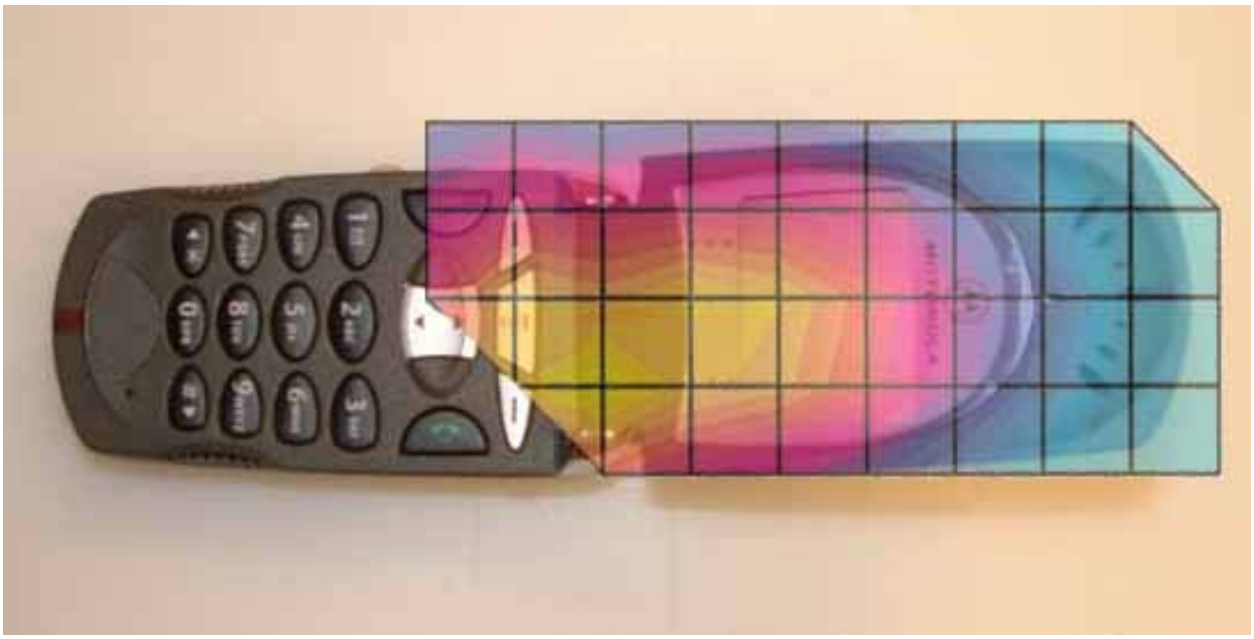


Figure 3.Typical 800MHz Left Head Adjacent Contour Overlaid on Phone with Antenna Fixed (15 ˚ Tilt)

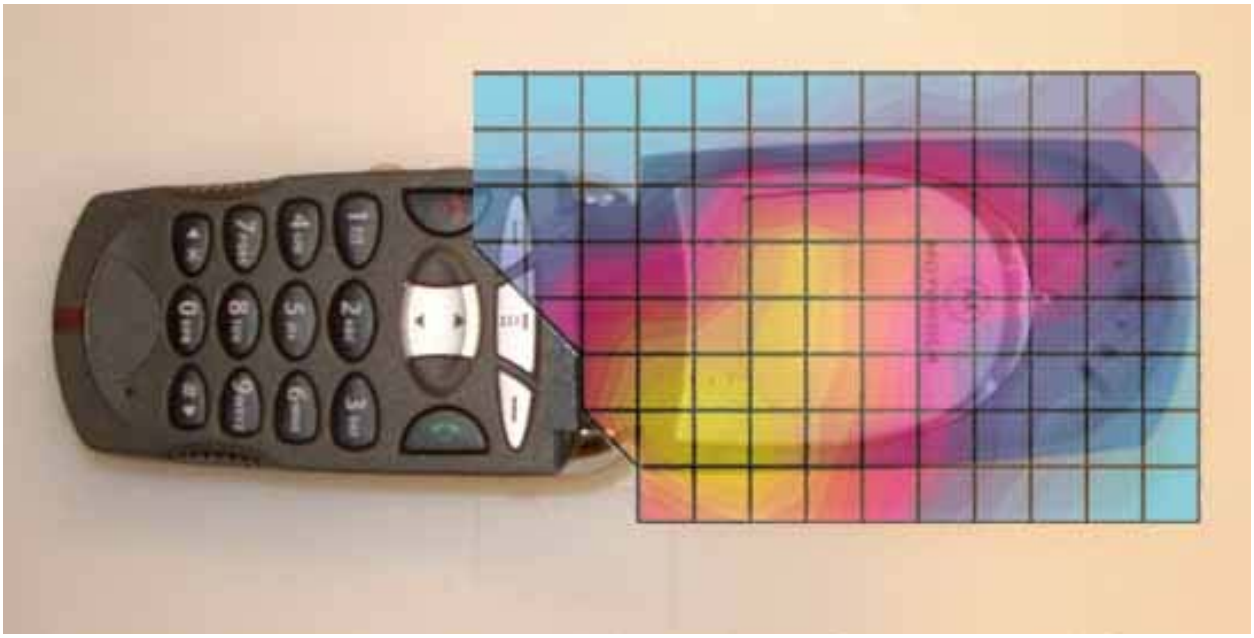


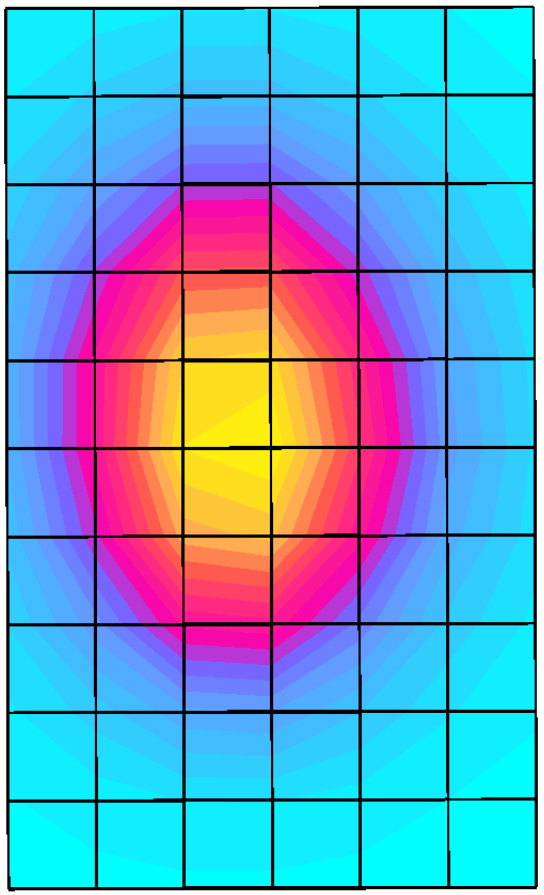
Figure 4.Typical 1900MHz Left Head Adjacent Contour Overlaid on Phone with Antenna Fixed (15 ˚ Tilt)

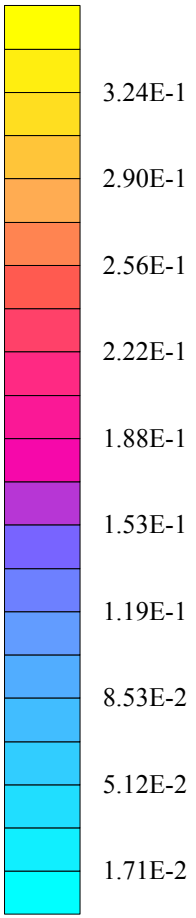
Appendix 3

SAR distribution plots for Body Worn Configuration

SN# A8EE64BD

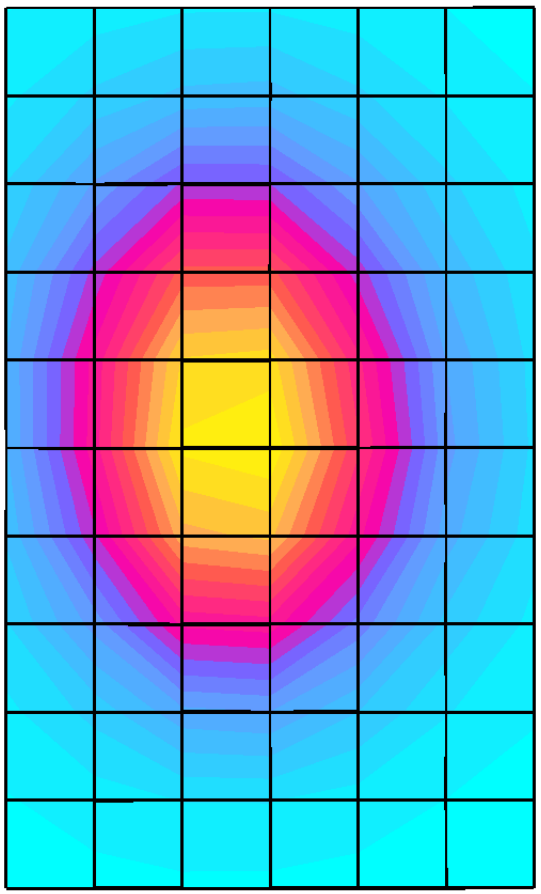
Ch# 384 / Pwr Step: 2 / Antenna Position: Fixed / Battery Model #: SNN5705B / Accessory Model #: ROTATING HOLSTER (SYN0375A) ROTATED 90 DEGREES
R2 Amy Twin Phantom Rev.3 Phantom; section 2 Section; Position: (0°,0°); Frequency: 836 MHz
Probe: ET3DV6 - SN1515 - FCC Body; ConvF(6.40,6.40,6.40); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.97$ mho/m $\varepsilon_r = 54.9$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 0.348 mW/g, SAR (10g): 0.248 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 16.4 (15.1, 17.8) [mm]
Powerdrift: -0.06 dB

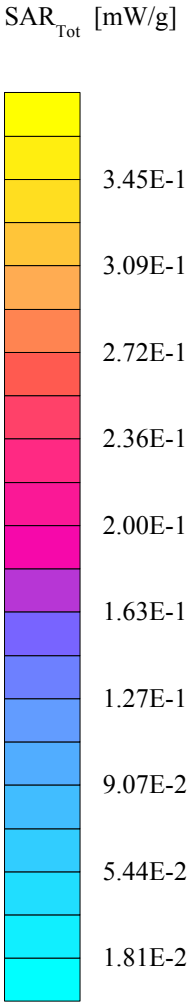




SN# A8EE64BD

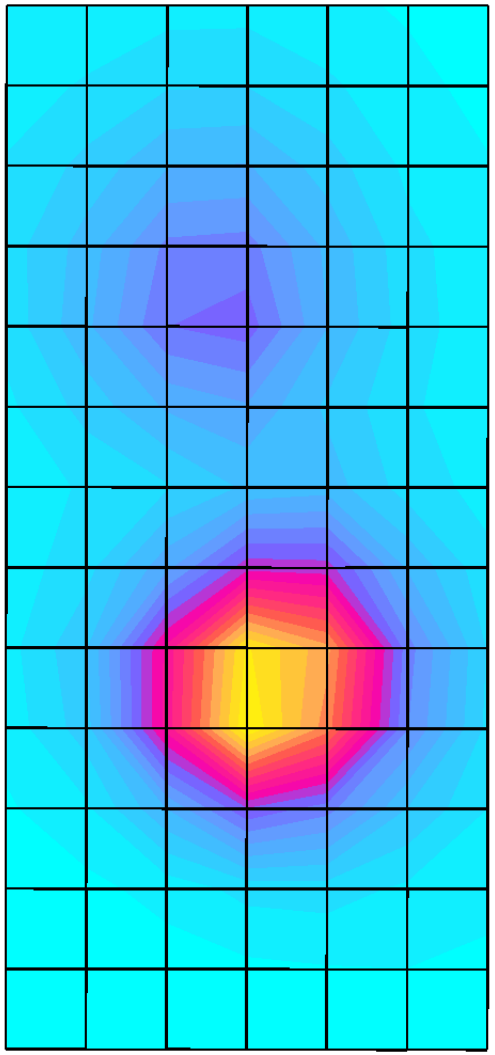
Ch# 384 / Pwr Step: OTA / Antenna Position: Fixed / Battery Model #: SNN5705B / Accessory Model #: ROTATING HOLSTER (SYN0375A) ROTATED 90 DEGREES
R2 Amy Twin Phantom Rev.3 Phantom; section 2 Section; Position: (0°,0°); Frequency: 836 MHz
Probe: ET3DV6 - SN1515 - FCC Body; ConvF(6.40,6.40,6.40); Crest factor: 1.0; 835 MHz Head & Body: σ = 0.97 mho/m ε_r = 54.9 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.373 mW/g, SAR (10g): 0.265 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 16.4 (14.9, 17.9) [mm]
Powerdrift: -0.08 dB

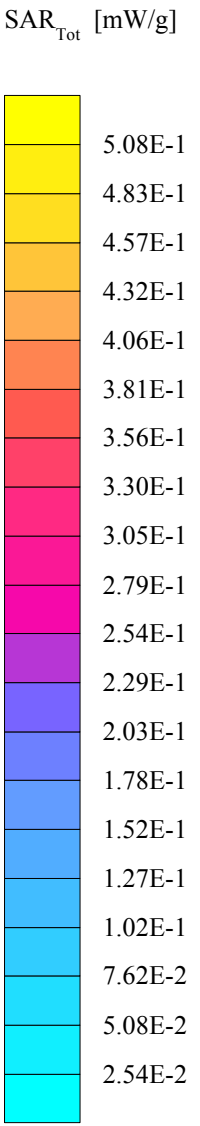




SN# A8EE64BD

Ch# 600 / Pwr Step: 0 ota / Antenna Position: fixed / Battery Model #: ssn 5705b / ROTATING HOLSTER (SYN0375A) (Bodyworn)
R3 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 1 Section; Position: (0°,0°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1513 - FCC Body; ConvF(4.40,4.40,4.40); Crest factor: 1.0; 1880 MHz Head & Body: σ = 1.59 mho/m ε_r = 51.6 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.537 mW/g, SAR (10g): 0.327 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 11.3 (10.0, 12.8) [mm]
Powerdrift: -0.16 dB





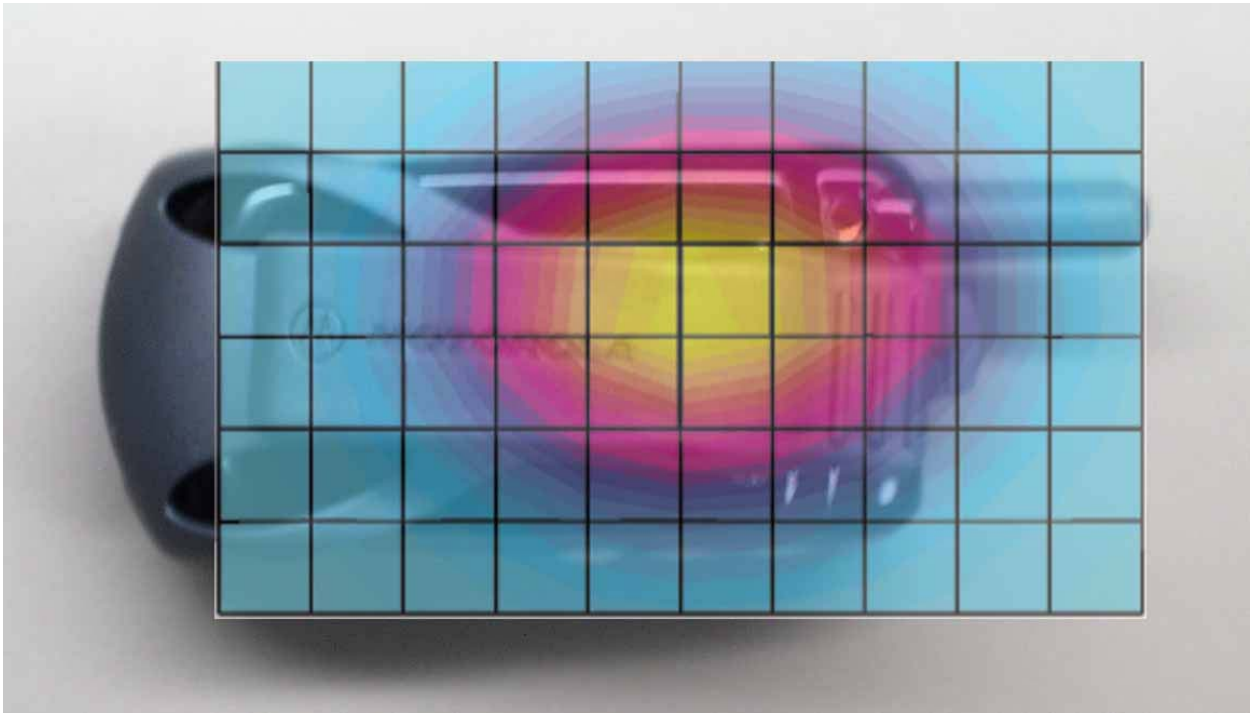


Figure 5.Typical 800 MHz Body-Worn Contour Overlaid on Phone with Antenna Fixed

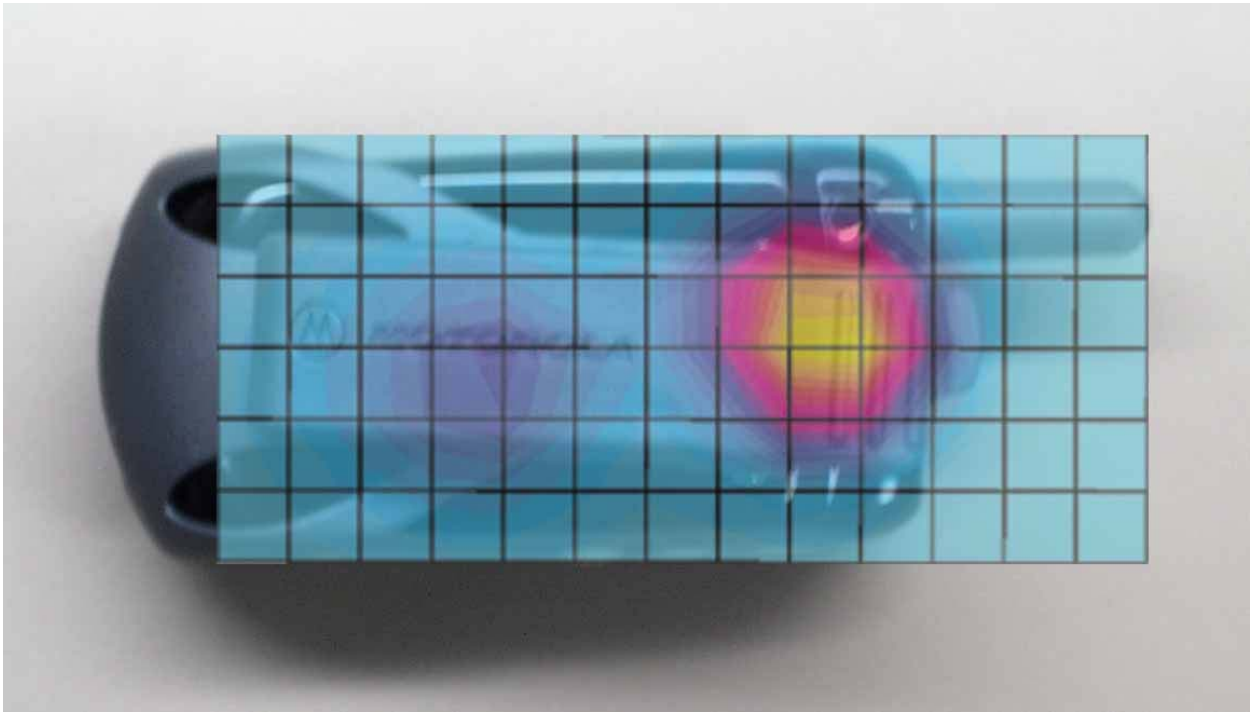


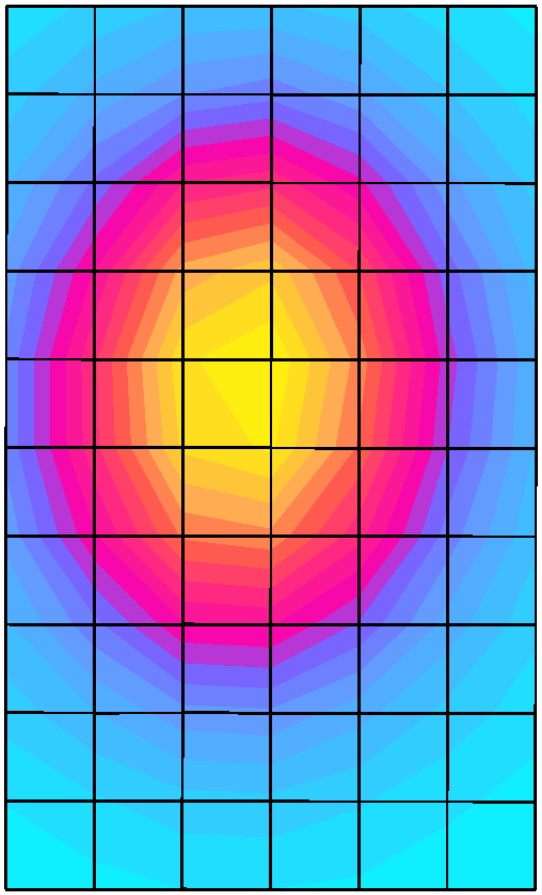
Figure 6. Typical 1900 MHz Body-Worn Contour Overlaid on Phone with Antenna Fixed

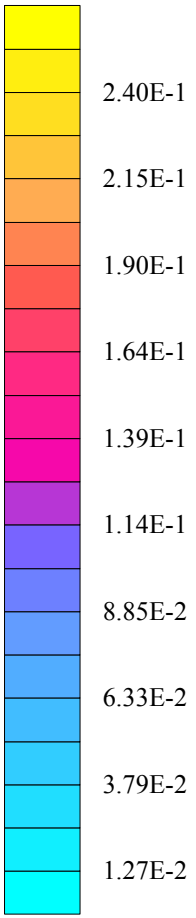
Appendix 4

SAR distribution plots for Push-To-Talk Configuration

SN# A8EE64BD

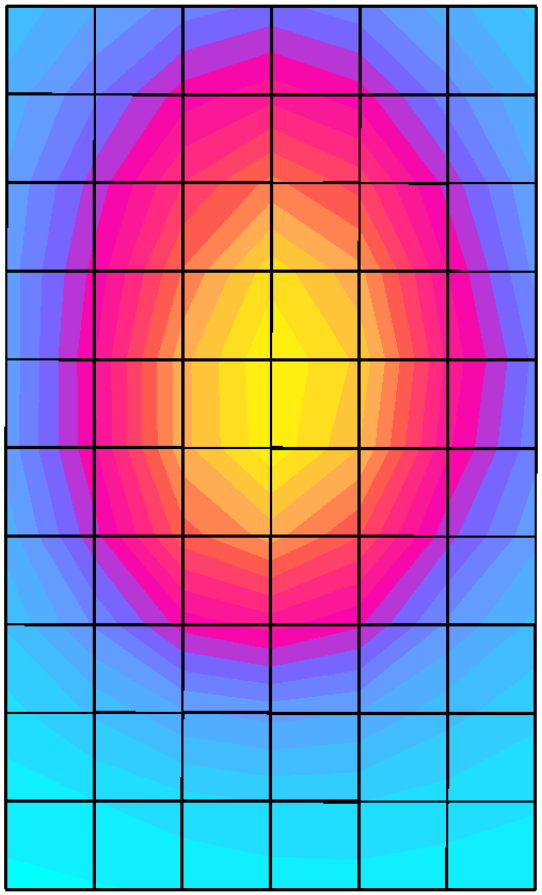
Ch# 1013 / Pwr Step: Always Up / Antenna Position: Fixed / Battery Model #: SNN5705B / Simulate Temp when Measured: 20.7 C Simulate Temp after Test: 20.0 C
R4 1-005 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 1 Section; Position: (0°,0°); Frequency: 825 MHz / (Flip Closed)
Probe: ET3DV6 - SN1521 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.89$ mho/m $\varepsilon_r = 40.7$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 0.254 mW/g, SAR (10g): 0.182 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 16.1 (14.9, 17.5) [mm]
Powerdrift: -0.26 dB

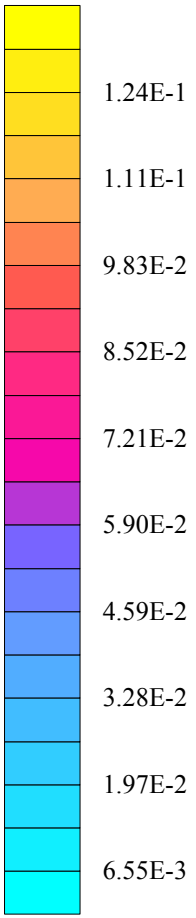




SN# A8EE64BD

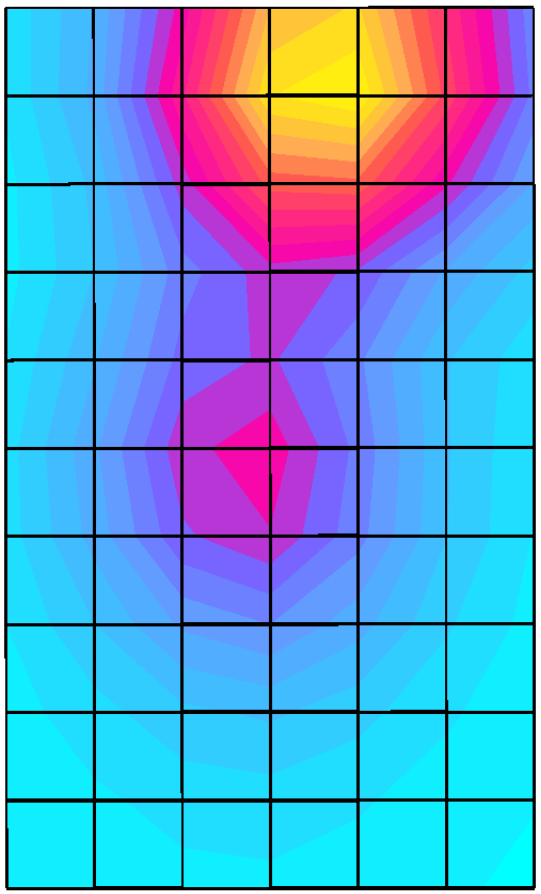
Ch# 1013 / Pwr Step: Always Up / Antenna Position: Fixed / Battery Model #: SNN5705B / Simulate Temp when Measured: 20.7 C Simulate Temp after Test: 19.5 C
R4 1-005 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 1 Section; Position: (0°,0°); Frequency: 825 MHz / (Flip Open)
Probe: ET3DV6 - SN1521 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.89$ mho/m $\varepsilon_r = 40.7$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 0.132 mW/g, SAR (10g): 0.0949 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 16.1 (15.0, 17.2) [mm]
Powerdrift: 0.32 dB

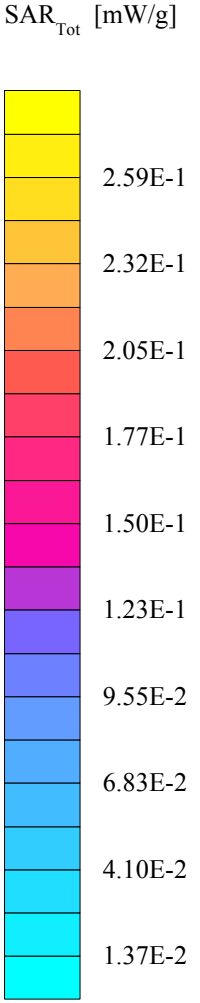




SN# A8EE64BD

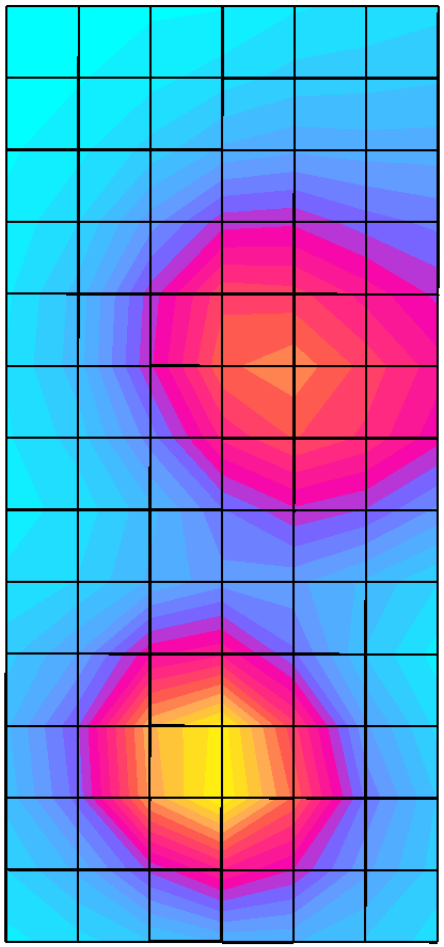
Ch# 25 / Pwr Step: Always Up / Antenna Position: Fixed / Battery Model #: SNN5705B / Simulate Temp when Measured: 20.9 C Simulate Temp after Test: 20.3 C
R4 1-005 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 2 Section; Position: (0°,0°); Frequency: 1851 MHz / (Flip Closed)
Probe: ET3DV6 - SN1521 - IEEE Head; ConvF(5.40,5.40,5.40); Crest factor: 1.0; 1880 MHz Head & Body: σ = 1.47 mho/m ε_r = 38.6 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.279 mW/g, SAR (10g): 0.171 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 9.8 (9.1, 10.9) [mm]
Powerdrift: -0.21 dB

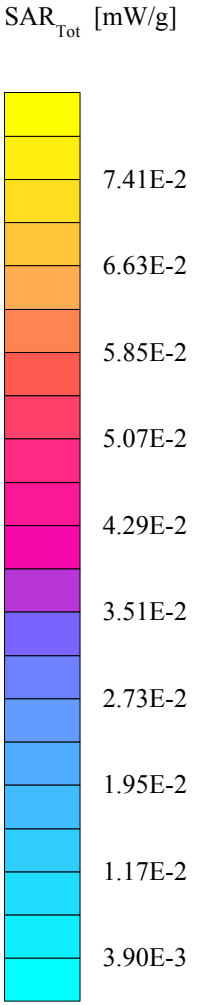




SN# A8EE64BD

Ch# 25 / Pwr Step: Always Up / Antenna Position: Fixed / Battery Model #: SNN5705B / Simulate Temp when Measured: 20.7 C Simulate Temp after Test: 19.5 C
R4 1-005 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 1 Section; Position: (0°,0°); Frequency: 1851 MHz / (Flip Open)
Probe: ET3DV6 - SN1521 - IEEE Head; ConvF(5.40,5.40,5.40); Crest factor: 1.0; 1880 MHz Head & Body: σ = 1.46 mho/m ε_r = 38.6 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.0813 mW/g, SAR (10g): 0.0493 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 9.9 (9.2, 11.0) [mm]
Powerdrift: -0.08 dB





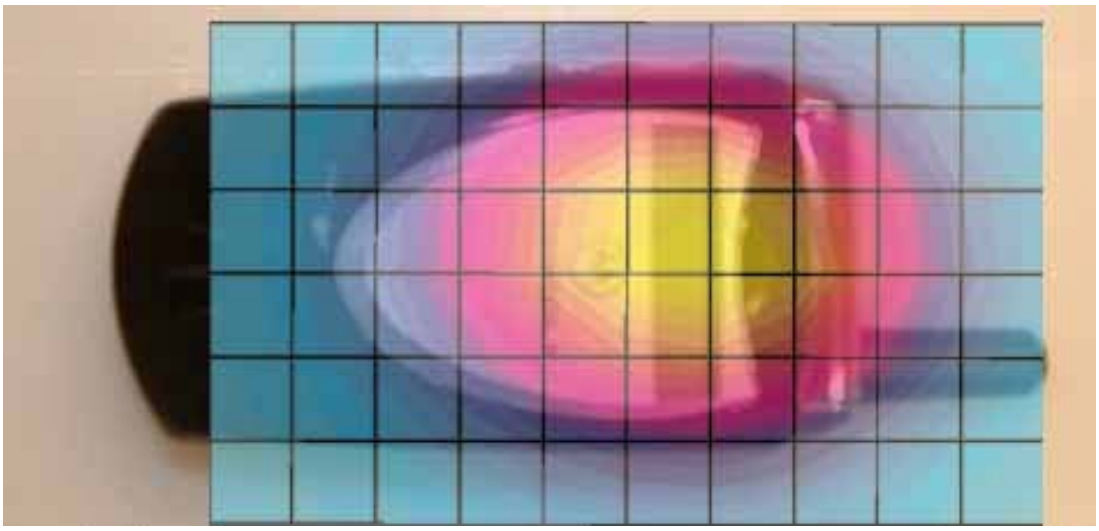


Figure 7. Typical 800 MHz Body-Worn Contour Overlaid on Phone with Antenna Fixed (Flip Closed)

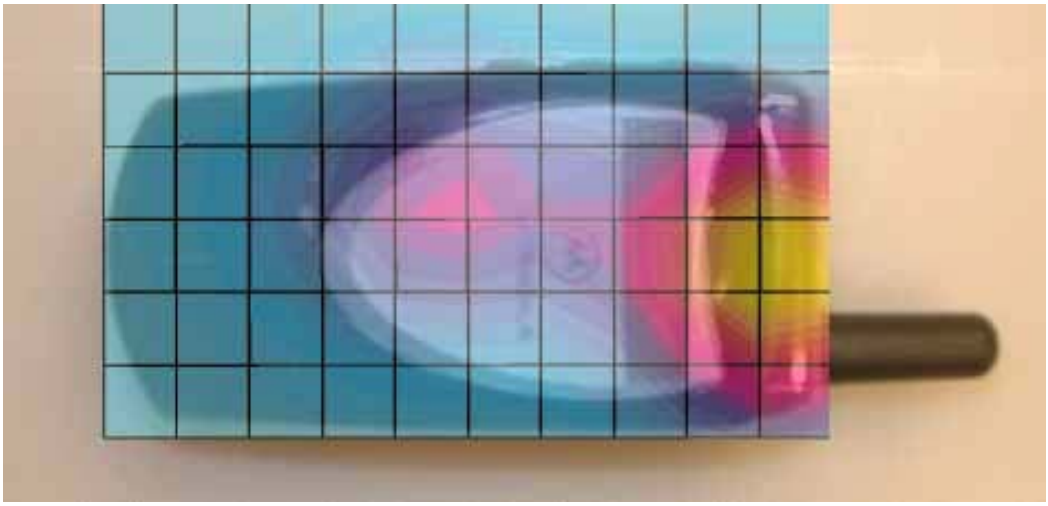


Figure 8. Typical 1900 MHz Body-Worn Contour Overlaid on Phone with Antenna Fixed (Flip Closed)

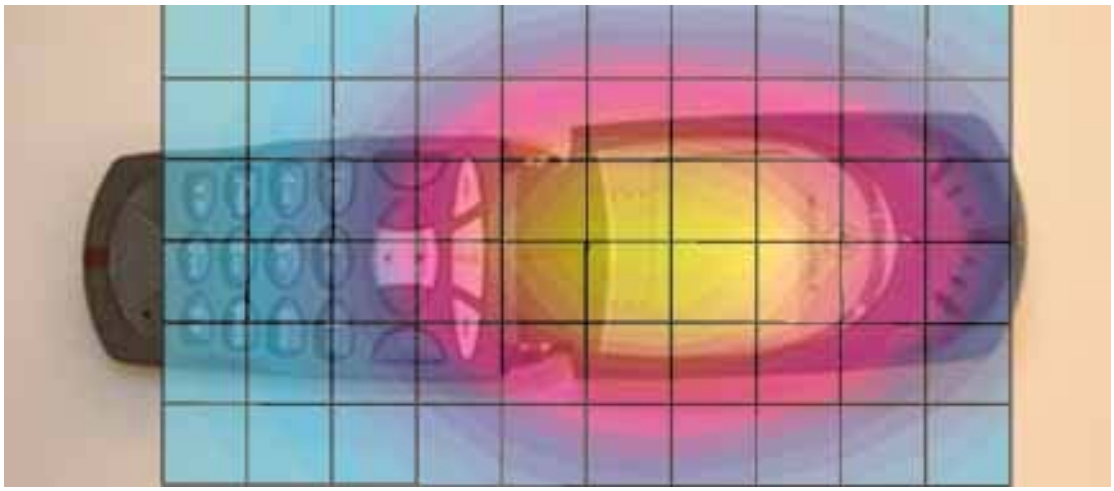


Figure 9. Typical 800 MHz PTT Contour Overlaid on Phone with Antenna Fixed (Flip Open)

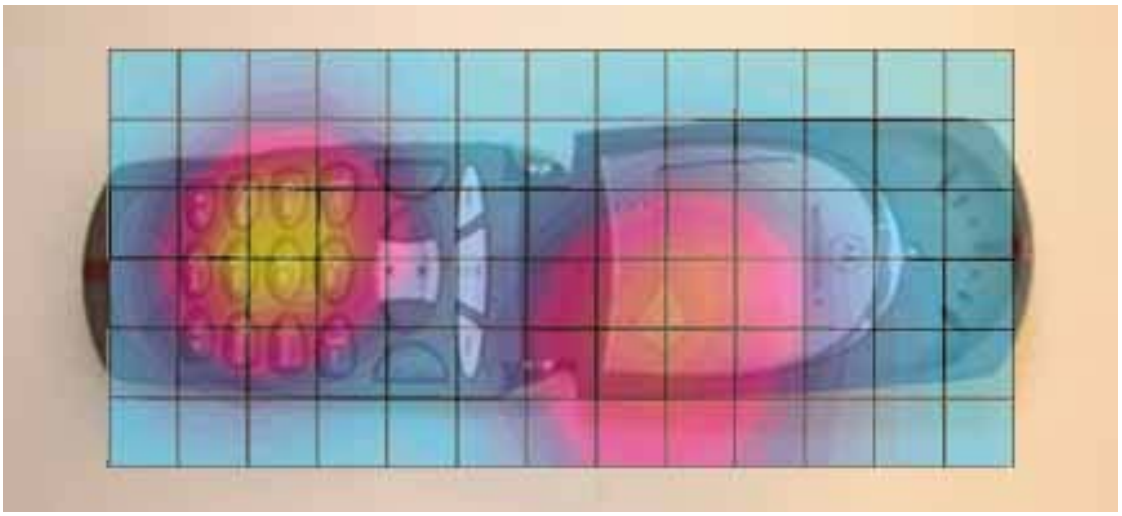


Figure 10. Typical 1900 MHz PTT Contour Overlaid on Phone with Antenna Fixed (Flip Open)

Appendix 5

Probe Calibration Certificate (Please see attachments)

Appendix 6

Dipole Characterization Certificate (Please see attachments)

Appendix 7

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	5.0	R	1.73	1	1	2.9	2.9	∞
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				11.72	11.09	1363
Expanded Uncertainty (95% CONFIDENCE LEVEL)			*k* =2				22.98	21.75	

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 8

Photographs of the device under test

Figure 11. Front of Phone (Flip Closed)

Figure 12. Front of phone (Flip Open)

Figure 13. Back of phone

Figure 14. Side of phone

Figure 15. Phone in a rotating holster against a flat phantom

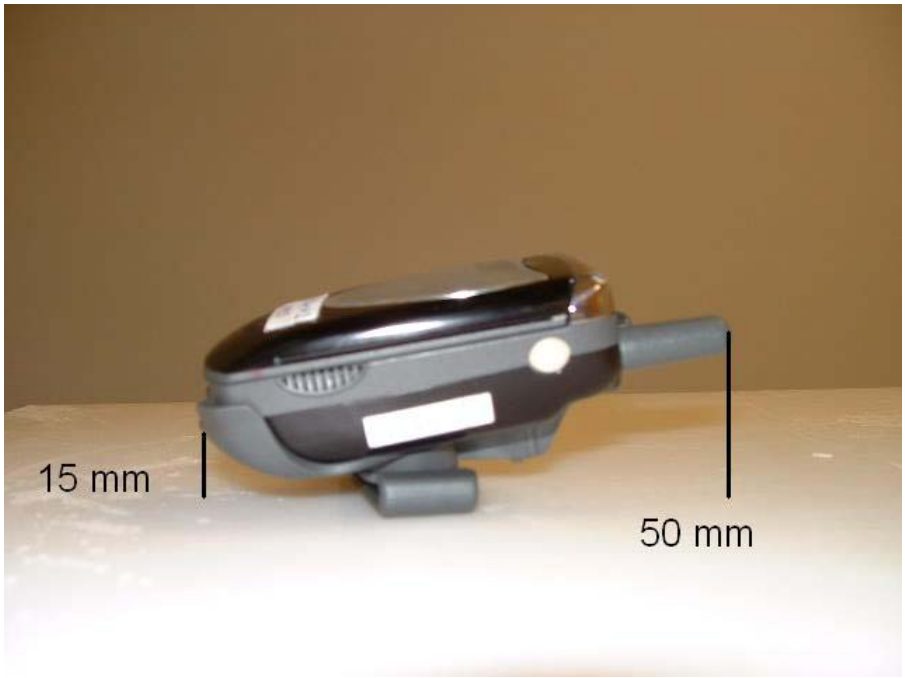


Figure 16. Separation distance from the antenna and the base of the phone to flat surface

Figure 17. Phone under a flat phantom in PTT mode (Flip Closed)

Figure 18. Phone under a flat phantom in PTT mode (Flip Open)

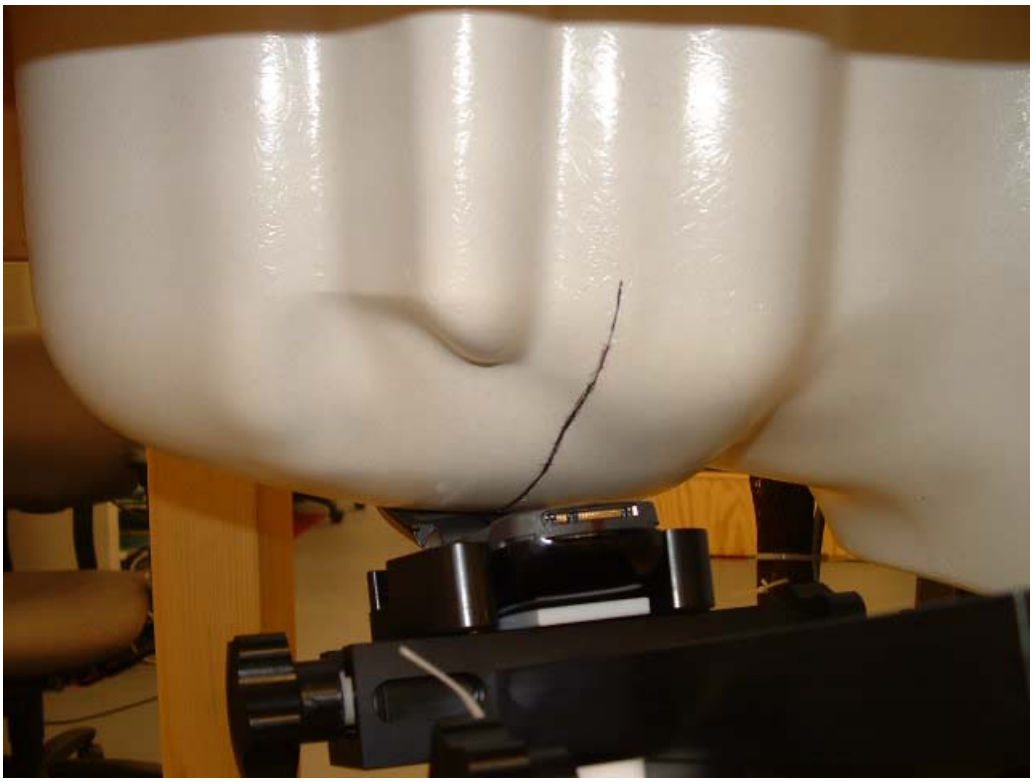


Figure 19. Phone against the head (Cheek touch)

Figure 20. Phone against the head (Cheek touch)

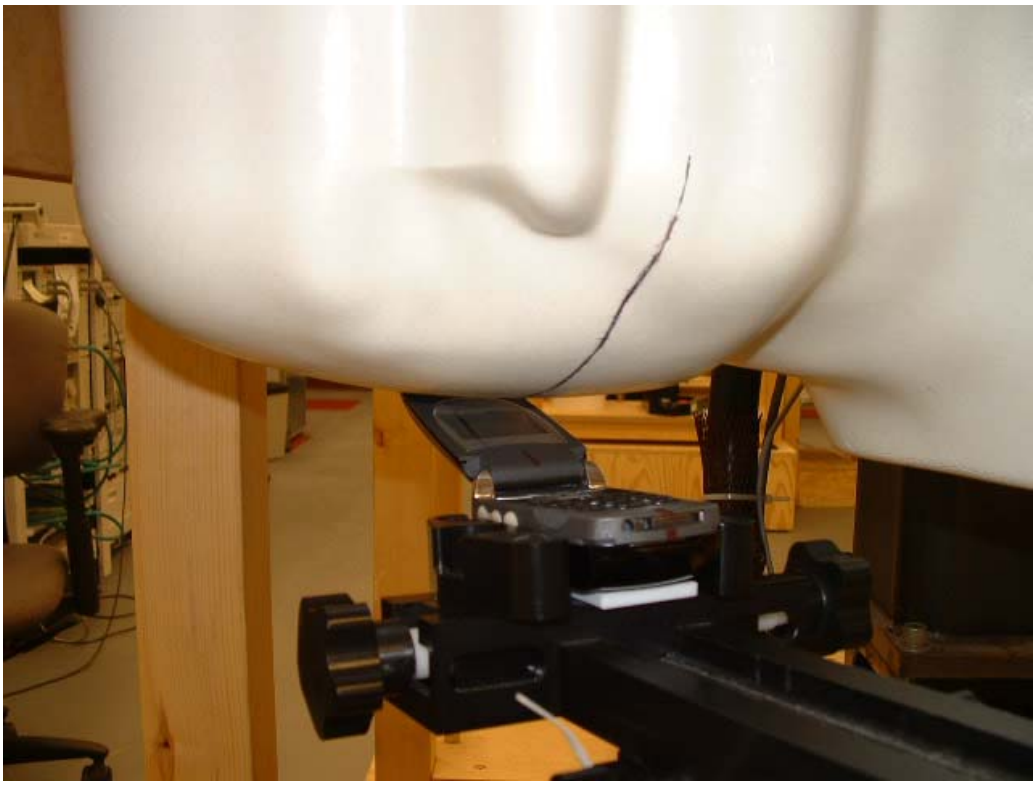


Figure 21. Phone against the head (Tilt position)

Figure 22. Phone against the head (Tilt position)