



Exhibit 11: SAR Test Report IHDT56BJ3

Date of test: 05/01/2002 – 05/10/2002
Date of Report: 05/15/2002

Laboratory: Motorola Personal Communications Sector Product Safety & Compliance
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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 IHDT56BJ3 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 IHDT56BJ3). 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	Stub	
Location	Right Side	
Dimensions	Length	25 mm
	Width	5 mm
Configuration	Helix	

Device description

FCC ID Number	IHDT56BJ3		
Serial number	A88BFB82 / A88BFC43		
Mode(s) of Operation	800 AMPS	800 CDMA	1900 CDMA
Modulation Mode(s)	AMPS	CDMA	CDMA
Maximum Output Power Setting	27.50 dBm	25.00 dBm	24.80 dBm
Duty Cycle	1:1	1:1	1:1
Transmitting Frequency Rang(s)	824-849MHz	824-849MHz	1851-1909MHz
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 $\pm 12.0\%$ (K=1) with an expanded uncertainty of $\pm 24.0\%$ (K=2). The list of calibrated equipment used for the measurements is shown below.

Description	Serial Number	Cal Due Date
DASY3 DAE V1	SN 365	09/26/2002
E-Field Probe ETDV6	SN 1508	10/25/2002
Dipole Validation Kit, DV900V2	SN 95	01/03/2003
SAM Phantom used for 800MHz	TP-1005	
Dipole Validation Kit, DV1800V2	SN 277tr	01/04/2003
SAM Phantom used for 1900MHz	TP-1085	

3.2 Additional Equipment

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3847A04848	01/19/2003
Power Meter - E4419B	GB39511090	11/28/2002
Power Sensor #1 – E9301A	US39211077	12/19/2002
Power Sensor #2 – E9301A	US39210929	12/19/2002
Network Analyzer HP8753ES	US39172529	07/05/2002

4. Electrical parameters of the tissue simulating liquid

Prior to conducting SAR measurements, the relative permittivity, ϵ_r , and the conductivity, σ , of the tissue simulating liquids were measured with a HP85070 Dielectric Probe Kit. These values 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, 04/30/2002	42.30	0.92	N/A
		Recommended Limits	41.50	0.90	20-25
		Measured, 05/09/2002	42.10	0.92	N/A
		Recommended Limits	41.50	0.90	20-25
		Measured, 05/08/2002	42.30	0.92	N/A
		Recommended Limits	41.50	0.90	20-25
		Measured, 05/01/2002	41.90	0.92	N/A
		Recommended Limits	41.50	0.90	20-25
	Body	Measured, 05/07/2002	53.50	0.97	N/A
		Recommended Limits	55.20	0.97	20-25
1880	Head	Measured, 05/02/2002	38.20	1.46	N/A
		Recommended Limits	40.00	1.40	20-25
		Measured, 05/03/2002	38.10	1.46	N/A
		Recommended Limits	40.00	1.40	20-25
	Body	Measured, 05/15/2002	53.10	1.59	N/A
		Recommended Limits	53.30	1.52	20-25

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 $\pm$ 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 0.00 W/kg.

<i>f</i> (MHz)	Description	SAR (W/kg), 1gram	Dielectric Parameters		Ambient Temp (°C)	Tissue Temp (°C)
			ϵ_r	σ (S/m)		
900 MHz	Measured, 04/30/2002	12.11	0.98	41.60	23.00	21.50
	Recommended Limits	11.40	0.95	40.30	20-25	20-25
	Measured, 05/01/2002	11.98	0.98	41.10	23.00	21.50
	Recommended Limits	11.40	0.95	40.30	20-25	20-25
	Measured, 05/07/2002	11.96	0.99	42.20	23.00	22.00
	Recommended Limits	11.40	0.95	40.30	20-25	20-25
	Measured, 05/08/2002	11.97	0.98	41.50	23.00	21.50
	Recommended Limits	11.40	0.95	40.30	20-25	20-25
	Measured, 05/09/2002	11.89	0.98	41.40	23.00	22.00
	Recommended Limits	11.40	0.95	40.30	20-25	20-25
1800 MHz	Measured, 05/02/2002	38.78	1.38	38.60	23.00	20.82
	Recommended Limits	38.60	1.38	40.20	20-25	20-25
	Measured, 05/03/2002	38.00	1.37	38.60	23.00	21.70
	Recommended Limits	38.60	1.38	40.20	20-25	20-25
	Measured, 05/15/2002	38.76	1.39	39.70	23.00	21.30
	Recommended Limits	38.60	1.38	40.20	20-25	20-25

6. Test Results

The test sample was operated in a test mode that allows control of the transmitter without the need to place actual phone calls. For the purposes of this test the unit is commanded to test mode and manually set to the proper channel, transmitter power level and transmit mode of operation. The phone was then placed in the SAR measurement system with a fully charged battery. The phone was tested in the configurations stipulated in OET Bulletin 65 Supplement C 01-01. The phone was positioned into these 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 ($\pm 30\%$) at 850MHz. The Cellular Phone (FCC ID IHDT56BJ3) has the following battery options:

SNN5570A – 3.6V Lithium Ion battery

The battery with the highest capacity is the SNN5570A. This battery was used to do all of the SAR testing.

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 and the temperature of the tissue simulate after the test. The SAR measurements were performed using the SAM phantoms listed in section 3.1. The tissue stimulant depth was verified to be 15.0cm $\pm$ 0.5cm at the center of the ear by doing a Z-axis scan during the system accuracy verification. The Z-axis scans for each validation are included in appendix 1 after the system accuracy verification plots.

The test conditions indicated as bold numbers in the following table are included in Appendix 2. All other test conditions measured lower SAR values than those included.

f (MHz)	Description	Conducted Output Power (dBm)	Left Head (Cheek / Touch Position)			
			Ant Fixed			
			Measured (W/kg)	Drift (dB)	Ambient. Temp (°C)	Simulate Temp (°C)
Analog 800MHz	Channel 991	27.45	1.50	-0.12	21.50	21.60
	Channel 384	27.43	1.52	-0.09	21.50	21.60
	Channel 799	27.48	1.48	0.03	21.50	21.60
Digital 800MHz	Channel 1013	25.06				
	Channel 384	25.07	0.856	-0.03	21.50	21.20
	Channel 779	24.98				
Digital 1900MHz	Channel 25	24.75	1.41	-0.04	20.82	20.10
	Channel 600	24.81	1.23	0.25	20.82	20.10
	Channel 1175	24.71	1.17	-0.02	20.82	20.10

Table 1: SAR measurement results for the portable cellular telephone FCC ID IHDT56BJ3 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)	Ambient. Temp (°C)	Simulate Temp (°C)
Analog 800MHz	Channel 991	27.45	1.35	-0.10	20.00	20.20
	Channel 384	27.43	1.35	-0.16	20.00	20.20
	Channel 799	27.48	1.12	-0.01	20.00	20.20
Digital 800MHz	Channel 1013	25.06				
	Channel 384	25.07	0.78	-0.12	21.50	21.20
	Channel 779	24.98				
Digital 1900MHz	Channel 25	24.75	1.59	0.21	20.80	20.10
	Channel 600	24.81	1.38	0.05	20.80	20.10
	Channel 1175	24.71	1.32	-0.08	20.80	20.10

Table 2: SAR measurement results for the portable cellular telephone FCC ID IHDT56BJ3 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)	Ambient. Temp (°C)	Simulate Temp (°C)
Analog 800MHz	Channel 991	27.45				
	Channel 384	27.43	0.827	-0.02	20.00	20.20
	Channel 799	27.48				
Digital 800MHz	Channel 1013	25.06				
	Channel 384	25.07	0.619	-0.4	21.50	21.20
	Channel 779	24.98				
Digital 1900MHz	Channel 25	24.75	1.46	0.12	20.80	20.10
	Channel 600	24.81	1.21	0.04	20.80	20.10
	Channel 1175	24.71	1.17	-0.08	20.80	20.10

Table 3: SAR measurement results for the portable cellular telephone FCC ID IHDT56BJ3 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)	Ambient. Temp (°C)	Simulate Temp (°C)
Analog 800MHz	Channel 991	27.45				
	Channel 384	27.43	0.663	0.07	20.00	20.20
	Channel 799	27.48				
Digital 800MHz	Channel 1013	25.06				
	Channel 384	25.07	0.614	-0.11	21.50	21.20
	Channel 779	24.98				
Digital 1900MHz	Channel 25	24.75	1.35	-0.24	21.70	20.10
	Channel 600	24.81	1.38	0.19	20.80	20.10
	Channel 1175	24.71	1.18	-0.01	21.70	20.10

Table 4: SAR measurement results for the portable cellular telephone FCC ID IHDJ56BJ3 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 and the temperature of the tissue simulate after the test. 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 one Body-Worn Accessories, a Leather Pouch, available for this phone with two optional belt-clips:

A Leather Pouch with a Wishbone Belt-Clip: Models SYN9170A and SYN8631A

A Leather Pouch with a Universal Belt Clip: Models SYN9170A and SYN8763A

Even though the 'Wishbone' with the leather pouch is at the closest proximity to the flat phantom compared to the universal belt clip, the (leather pouch / 'Wishbone' belt clip) had the highest SAR results in the AMPS 800 MHz band where as the (leather pouch / universal belt clip) resulted in highest SAR values in the PCS 1900 MHz band. Hence, the SAR results for only those two body worn configurations have been provided in the report.

A full data set output of two test conditions with the highest SAR values from the Dasy™ measurement system is included as appendix 3 . The test conditions included are indicated as bold numbers in the following table. All other test conditions measured lower SAR values than those included. The 800MHz digital mode SAR results measured lower than AMPS mode. This is because the maximum power in the 800MHz digital mode is significantly lower than that of the analog mode, therefore the resulting SAR values are also lower and not listed.

f (MHz)	Description	Conducted Output Power (dBm)	Leather Pouch with 'Wishbone' clip (Body Worn)			
			Ant Fixed			
			Measured (W/kg)	Drift (dB)	Ambient. Temp (°C)	Simulate Temp (°C)
Analog 800MHz	Channel 991	27.45	0.627	-0.04	22.00	22.00
	Channel 384	27.43	0.619	0.25	22.00	22.00
	Channel 799	27.48	0.691	-0.09	22.00	22.00

Table 5: SAR measurement results for the portable cellular telephone FCC ID IHDT56BJ3 at highest possible output power. Measured against the body.

f (MHz)	Description	Conducted Output Power (dBm)	Leather Pouch with Universal Belt Clip (Body Worn)			
			Ant Fixed			
			Measured (W/kg)	Drift (dB)	Ambient. Temp (°C)	Simulate Temp (°C)
Digital 1900MHz	Channel 25	24.75	0.287	-0.4	22.40	21.80
	Channel 600	24.81	0.220	-0.31	22.40	21.80
	Channel 1175	24.71	0.189	-0.04	22.40	21.80

Table 6: SAR measurement results for the portable cellular telephone FCC ID IHDT56BJ3 at highest possible output power. Measured against the body.

Appendix 1

SAR distribution comparison for the system accuracy verification

Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 95 / Forward Power =251mW / Room Temp at time of measurement = 23c Simulant Temp at time of measurement = 21.5

R1: TP-1005 SUGAR (rev. 3) Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz

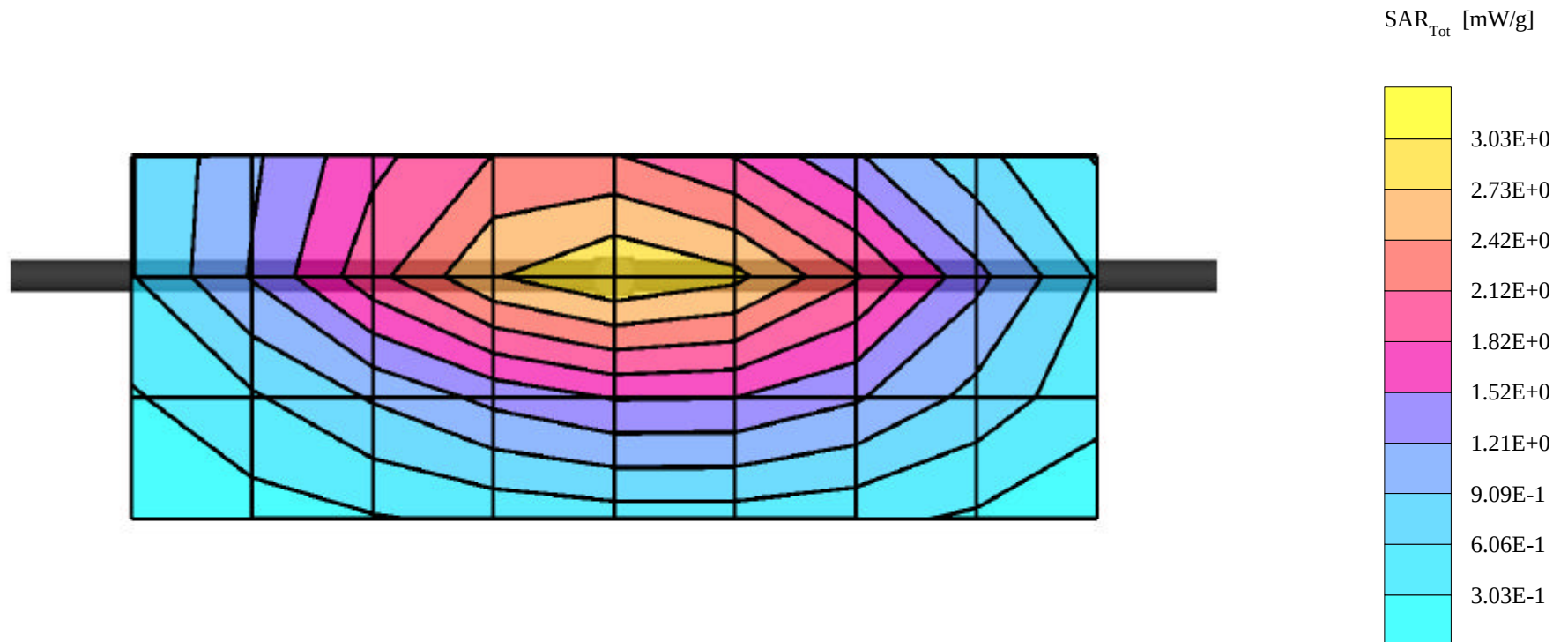
Probe: ET3DV6 - SN1508 - Validation; ConvF(6.35,6.35,6.35); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.98$ mho/m $\epsilon_r = 41.6$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 3.04 mW/g ± 0.04 dB, SAR (10g): 1.91 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: 0.01 dB



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 95 / Forward Power = 252mW / Room Temp at time of measurement = 23c Simulant Temp at time of measurement = 21.5

R1: TP-1005 SUGAR (rev. 3) Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz

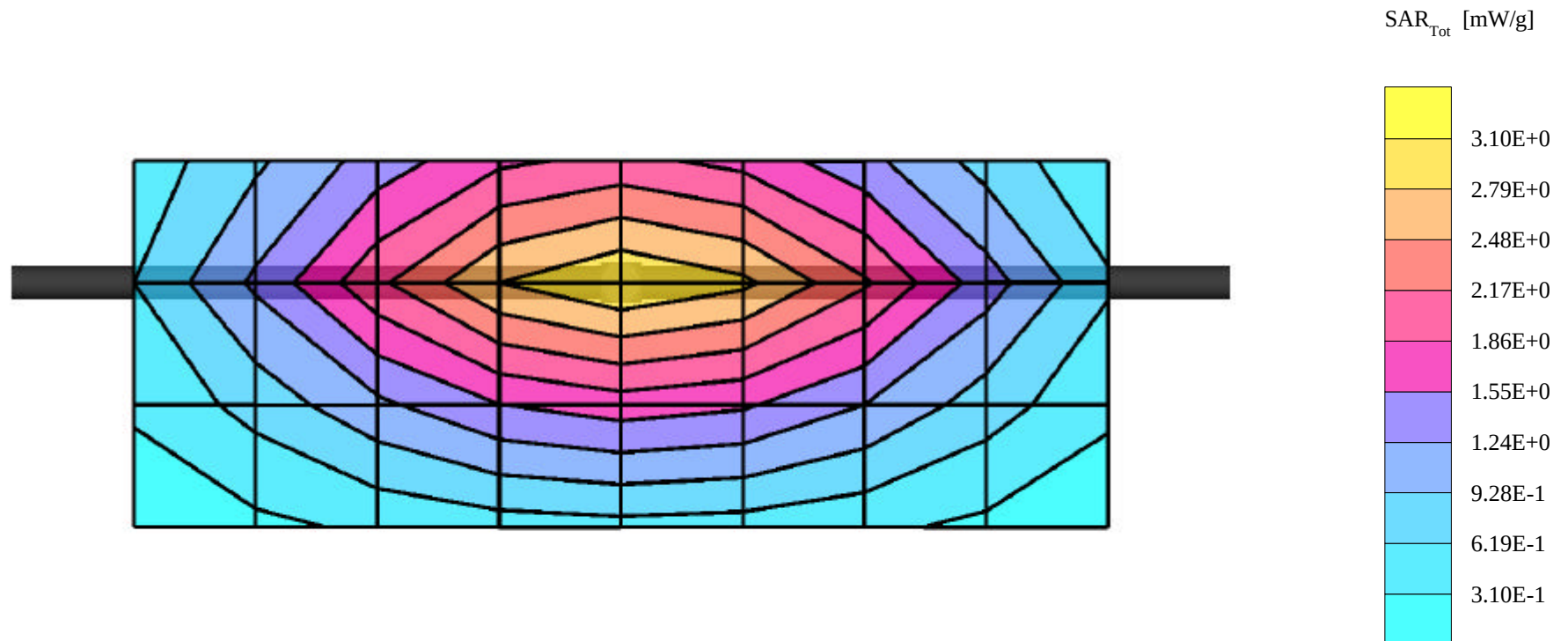
Probe: ET3DV6 - SN1508 - Validation; ConvF(6.35,6.35,6.35); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.98$ mho/m $\epsilon_r = 41.1$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 3.02 mW/g ± 0.05 dB, SAR (10g): 1.90 mW/g ± 0.05 dB, (Worst-case extrapolation)

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

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

Powerdrift: 0.01 dB



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 277tr / Forward Power = 254mW / Room Temp at time of measurement = 23c Simulant Temp at time of measurement = 20.82

R1: TP-1085 GLYCOL (rev. 3) Phantom; Flat Section; Position: (90°,90°); Frequency: 1800 MHz

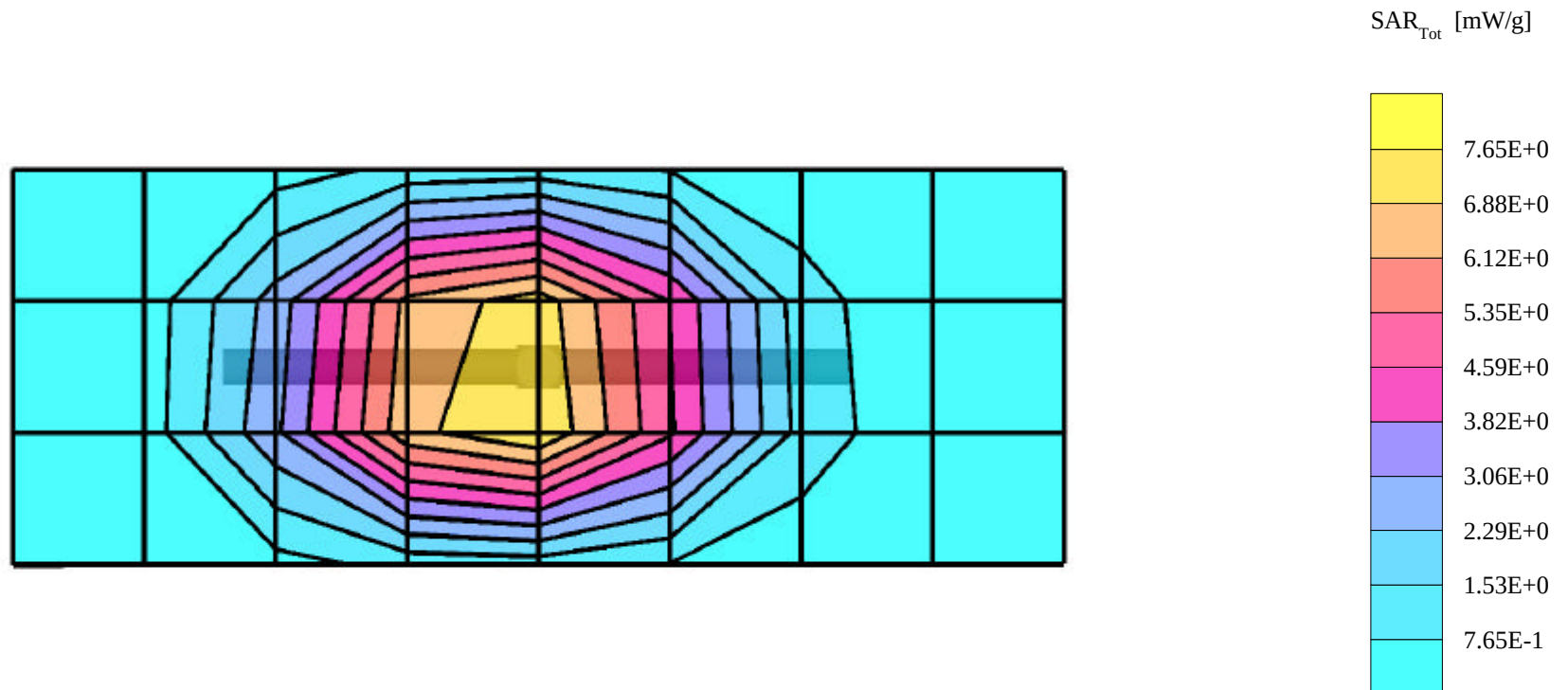
Probe: ET3DV6 - SN1508 - Validation; ConvF(5.41,5.41,5.41); Crest factor: 1.0; 1800 MHz VALIDATION: $\sigma = 1.38$ mho/m $\epsilon_r = 38.6$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 9.85 mW/g ± 0.05 dB, SAR (10g): 5.16 mW/g ± 0.05 dB, (Worst-case extrapolation)

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

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

Powerdrift: -0.03 dB



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 277tr / Forward Power = 253mW / Room Temp at time of measurement = 23c Simulant Temp at time of measurement = 21.7

R1: TP-1085 GLYCOL (rev. 3) Phantom; Flat Section; Position: (90°,90°); Frequency: 1800 MHz

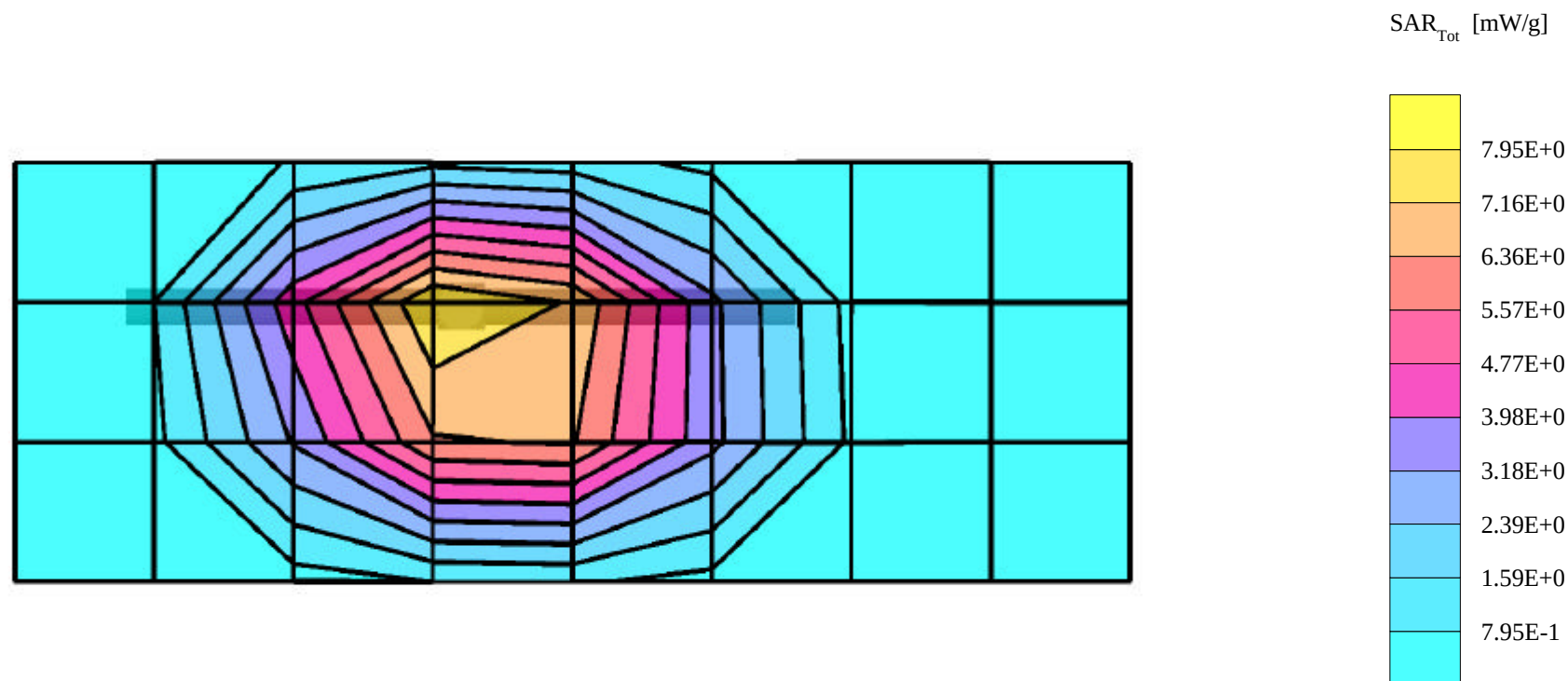
Probe: ET3DV6 - SN1508 - Validation; ConvF(5.41,5.41,5.41); Crest factor: 1.0; 1800 MHz VALIDATION: $\sigma = 1.37$ mho/m $\epsilon_r = 38.6$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 9.61 mW/g ± 0.06 dB, SAR (10g): 5.03 mW/g ± 0.07 dB, (Worst-case extrapolation)

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

Penetration depth: 8.3 (8.0, 9.0) [mm]

Powerdrift: -0.01 dB



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 95 / Forward Power = 254mW / Room Temp at time of measurement = 23c Simulant Temp at time of measurement = 22c

R1: TP-1005 SUGAR (rev. 3) Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz

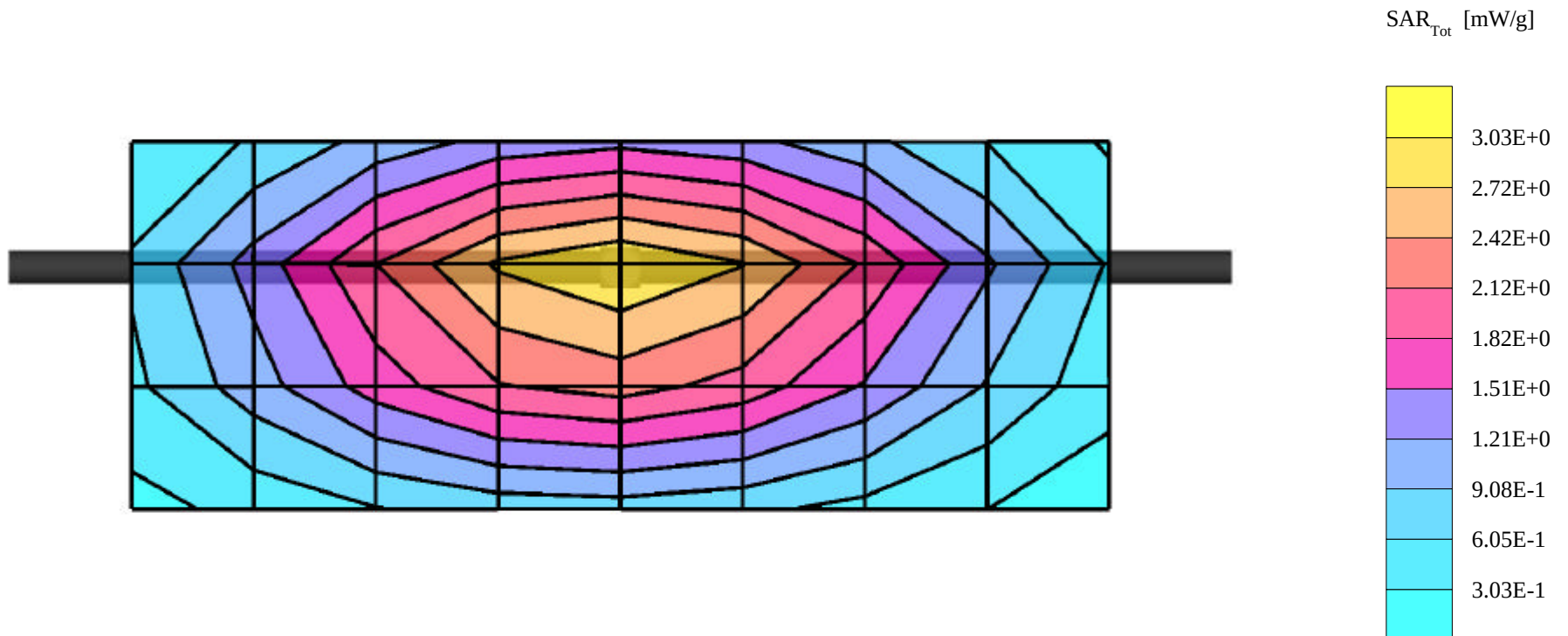
Probe: ET3DV6 - SN1508 - Validation; ConvF(6.35,6.35,6.35); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.99$ mho/m $\epsilon_r = 42.2$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 3.04 mW/g ± 0.04 dB, SAR (10g): 1.92 mW/g ± 0.03 dB, (Worst-case extrapolation)

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

Penetration depth: 11.5 (10.7, 12.7) [mm]

Powerdrift: 0.01 dB



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 95 / Forward Power = 253mW / Room Temp at time of measurement = 23c Simulant Temp at time of measurement = 21.5

R1: TP-1005 SUGAR (rev. 3) Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz

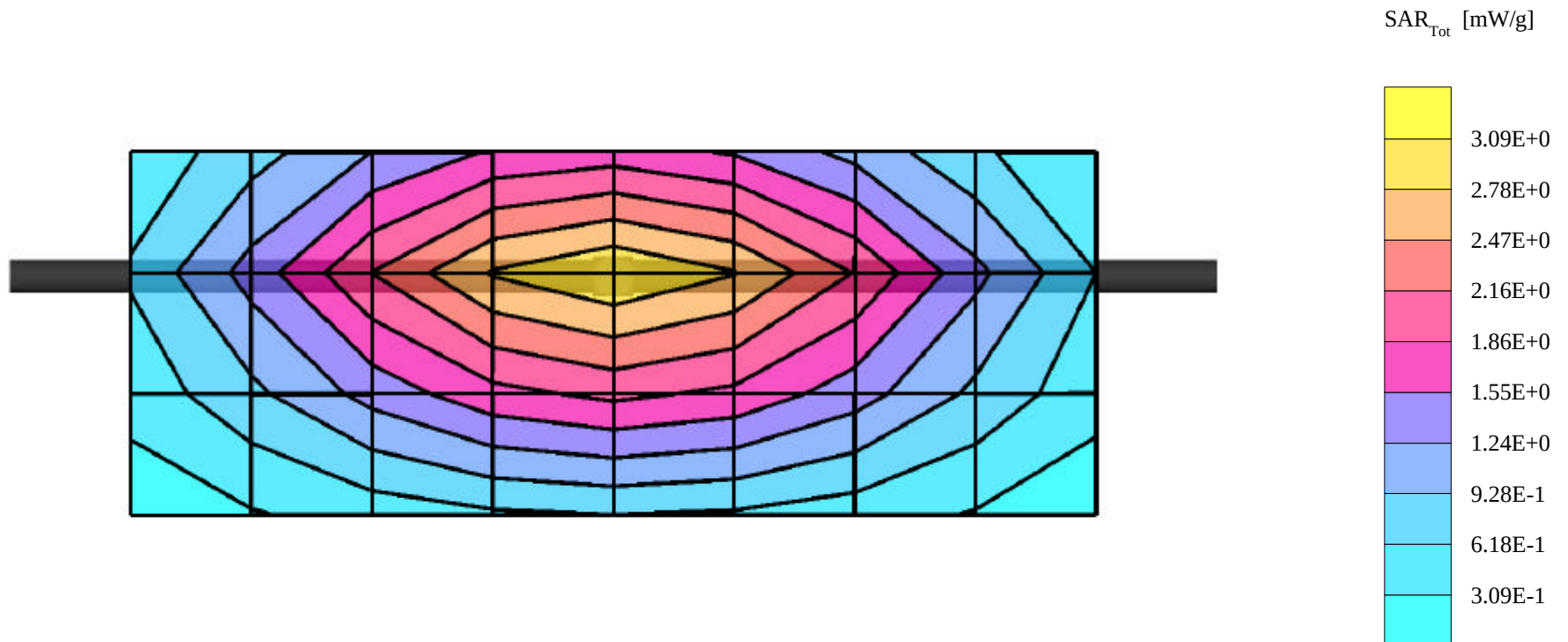
Probe: ET3DV6 - SN1508 - Validation; ConvF(6.35,6.35,6.35); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.98$ mho/m $\epsilon_r = 41.5$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 3.03 mW/g ± 0.03 dB, SAR (10g): 1.90 mW/g ± 0.03 dB, (Worst-case extrapolation)

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

Penetration depth: 11.5 (10.7, 12.7) [mm]

Powerdrift: 0.01 dB



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 95 / Forward Power = 253mW / Room Temp at time of measurement = 23c Simulant Temp at time of measurement = 22

R1: TP-1005 SUGAR (rev. 3) Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz

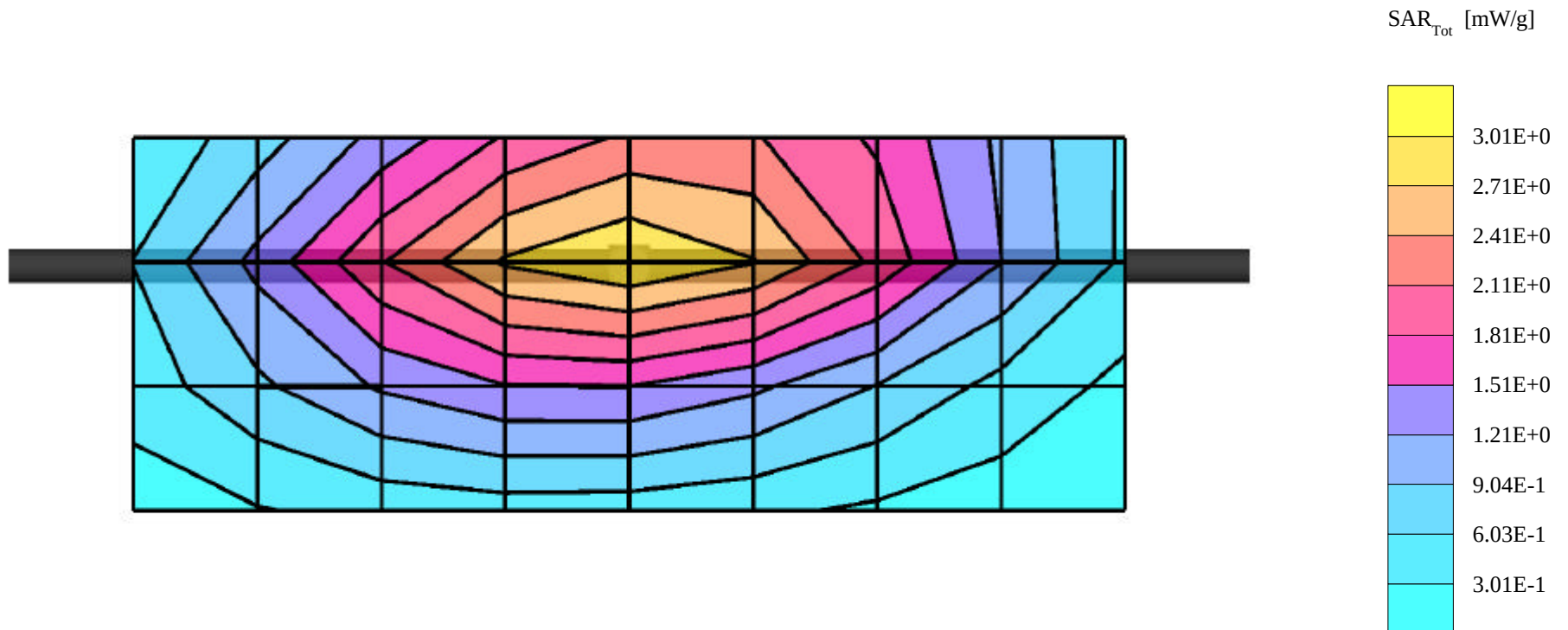
Probe: ET3DV6 - SN1508 - Validation; ConvF(6.35,6.35,6.35); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.98$ mho/m $\epsilon_r = 41.4$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 3.01 mW/g ± 0.04 dB, SAR (10g): 1.90 mW/g ± 0.03 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# 277tr / Forward Power = 252mW / Room Temp at time of measurement = 23c Simulant Temp at time of measurement = 21.3

R1 Amy Twin Phantom Rev.3 Phantom; section 1 Section; Position: (90°,180°); Frequency: 1800 MHz

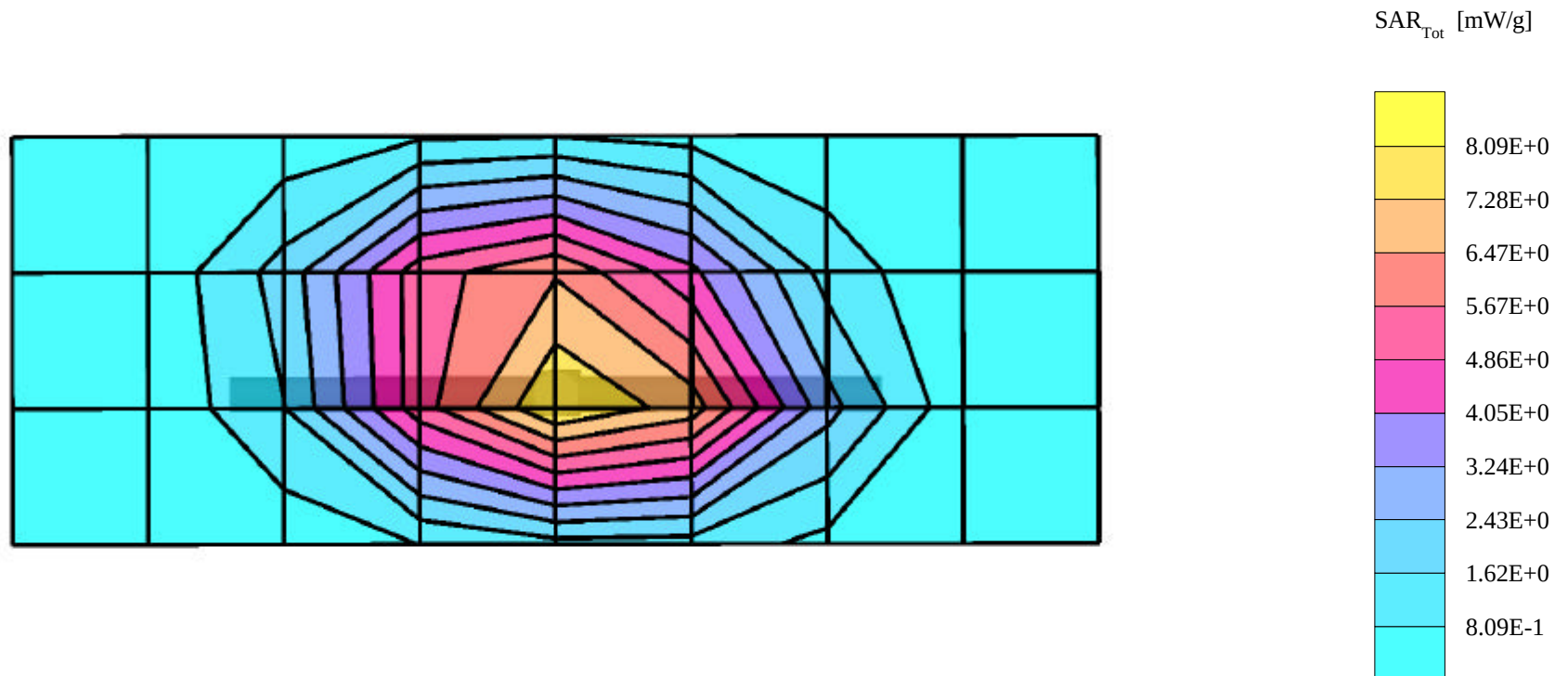
Probe: ET3DV6 - SN1508 - Validation; ConvF(5.41,5.41,5.41); Crest factor: 1.0; 1800 MHz VALIDATION: $\sigma = 1.39$ mho/m $\epsilon_r = 39.7$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 9.77 mW/g ± 0.07 dB, SAR (10g): 5.14 mW/g ± 0.05 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

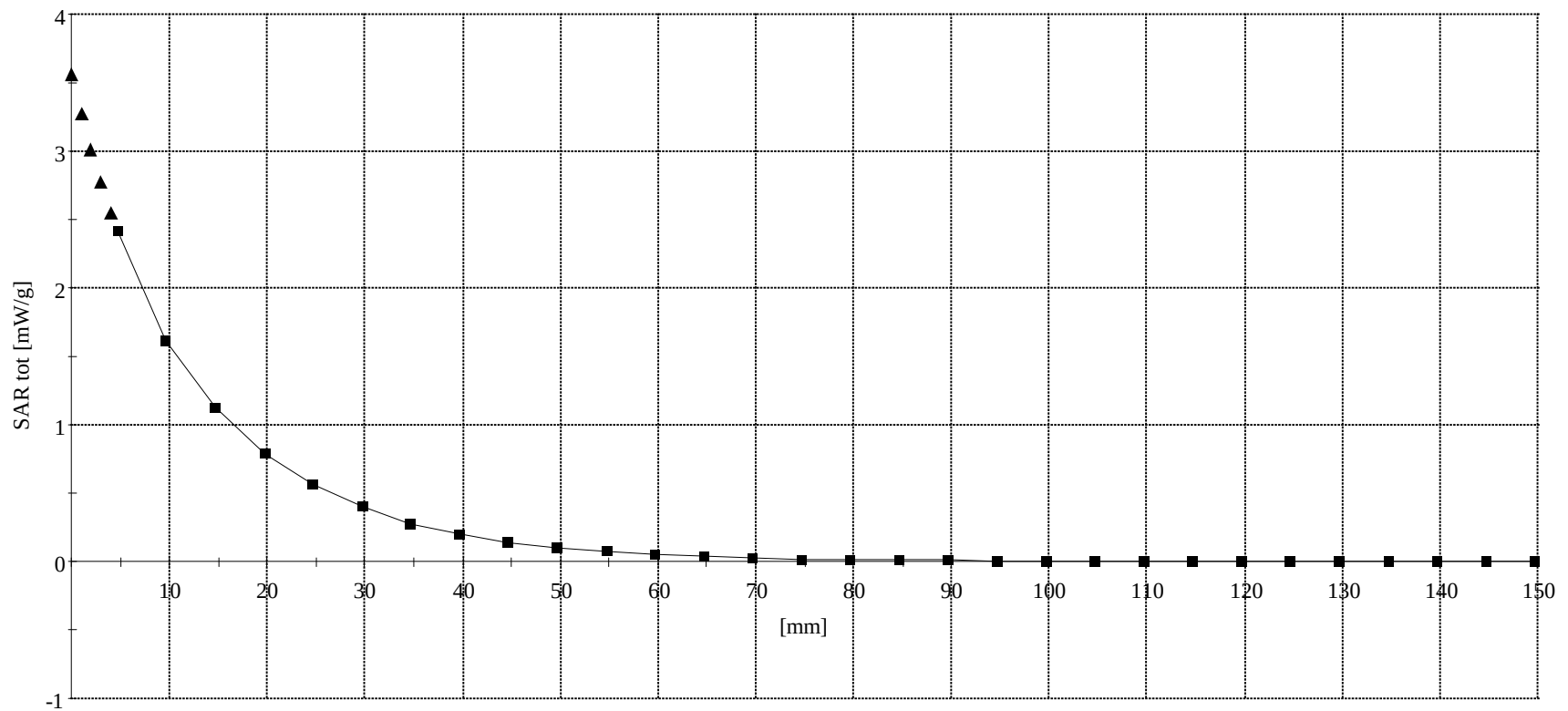
900 MHz Dipole Validation / Dipole Sn# 95 / Forward Power =251mW / Room Temp at time of measurement = 23c Simulant Temp at time of measurement = 25

R1: TP-1005 SUGAR (rev. 3) Phantom; Section; Position: ; Frequency: 900 MHz

Probe: ET3DV6 - SN1508 - Validation; ConvF(6.35,6.35,6.35); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.98$ mho/m $\epsilon_r = 41.6$ $\rho = 1.00$ g/cm³

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

Penetration depth: 13.0 (12.3, 13.9) [mm]



Dipole 900 MHz

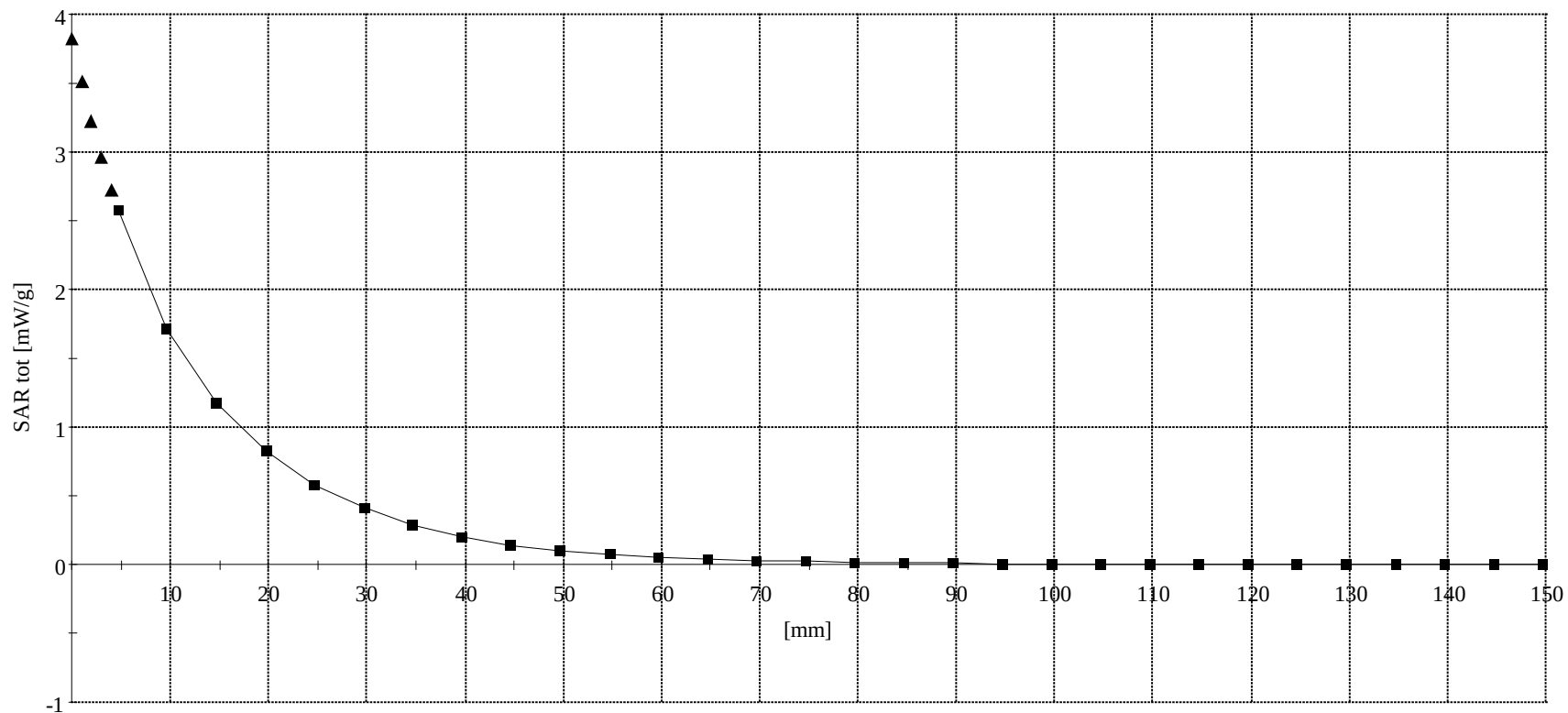
900 MHz Dipole Validation / Dipole Sn# 95 / Forward Power = 252mW / Room Temp at time of measurement = 23c Simulant Temp at time of measurement = 21.5

R1: TP-1005 SUGAR (rev. 3) Phantom; Section; Position: ; Frequency: 900 MHz

Probe: ET3DV6 - SN1508 - Validation; ConvF(6.35,6.35,6.35); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.98$ mho/m $\epsilon_r = 41.1$ $\rho = 1.00$ g/cm³

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

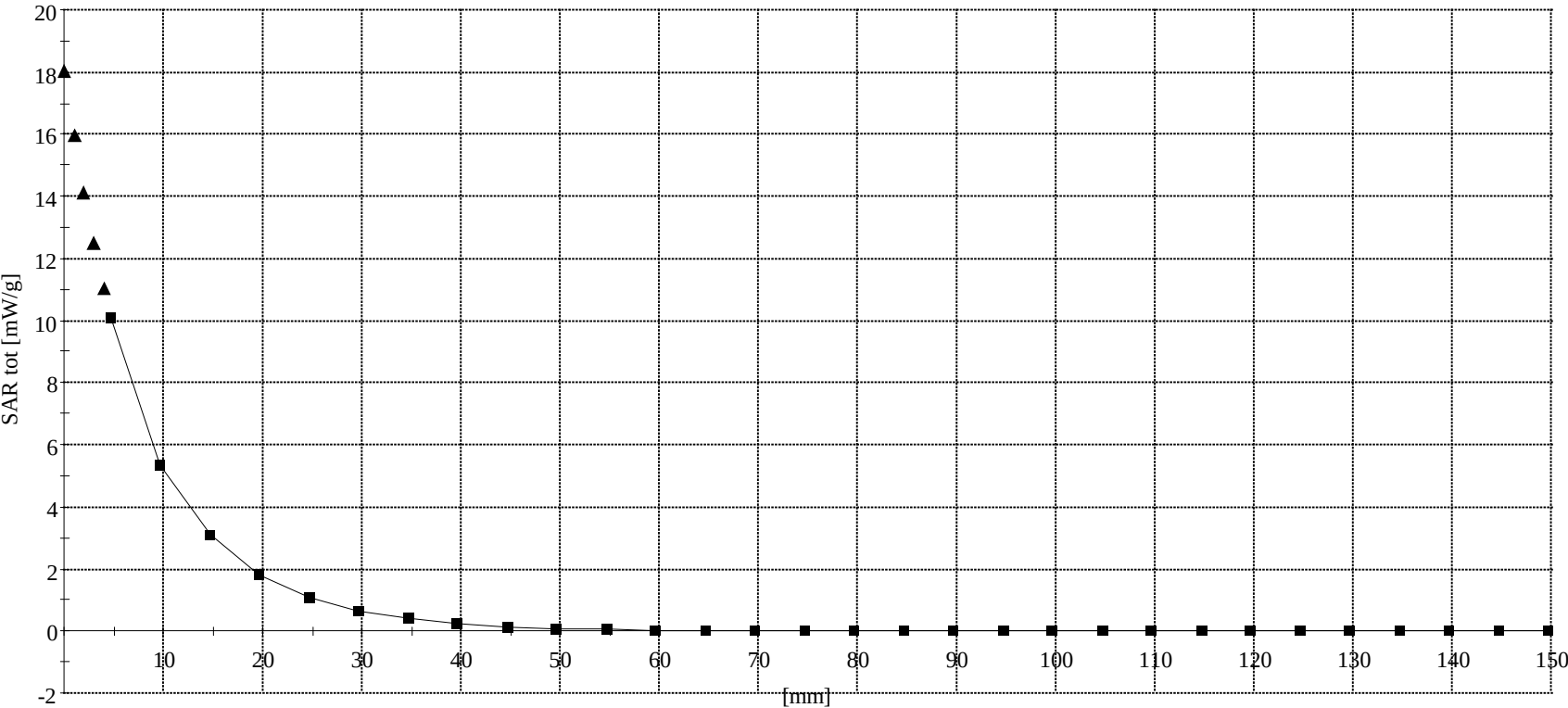
Penetration depth: 12.7 (12.0, 13.6) [mm]



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 277tr / Forward Power = 254mW / Room Temp at time of measurement = 23c Simulant Temp at time of measurement = 20.82
R1: TP-1085 GLYCOL (rev. 3) Phantom; Section; Position: ; Frequency: 1800 MHz
Probe: ET3DV6 - SN1508 - Validation; ConvF(5.41,5.41,5.41); Crest factor: 1.0; 1800 MHz VALIDATION: $\sigma = 1.38 \text{ mho/m}$ $\epsilon_r = 38.6$ $\rho = 1.00 \text{ g/cm}^3$

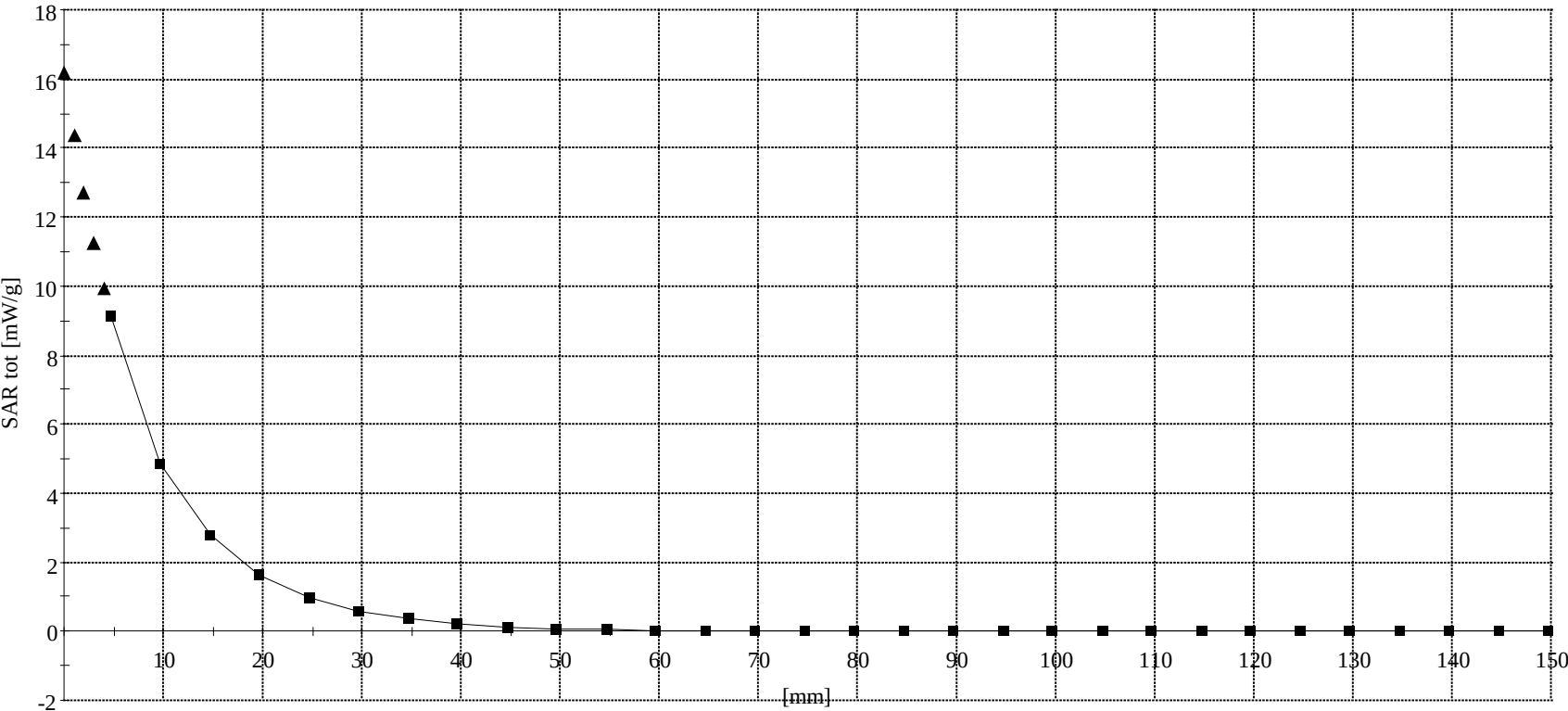
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0
Penetration depth: 8.3 (8.0, 9.0) [mm]



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 277tr / Forward Power = 253mW / Room Temp at time of measurement = 23c Simulant Temp at time of measurement = 21.7
R1: TP-1085 GLYCOL (rev. 3) Phantom; Section; Position: ; Frequency: 1800 MHz
Probe: ET3DV6 - SN1508 - Validation; ConvF(5.41,5.41,5.41); Crest factor: 1.0; 1800 MHz VALIDATION: $\sigma = 1.37 \text{ mho/m}$ $\epsilon_r = 38.6$ $\rho = 1.00 \text{ g/cm}^3$

Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0
Penetration depth: 8.3 (8.0, 9.1) [mm]



Dipole 900 MHz

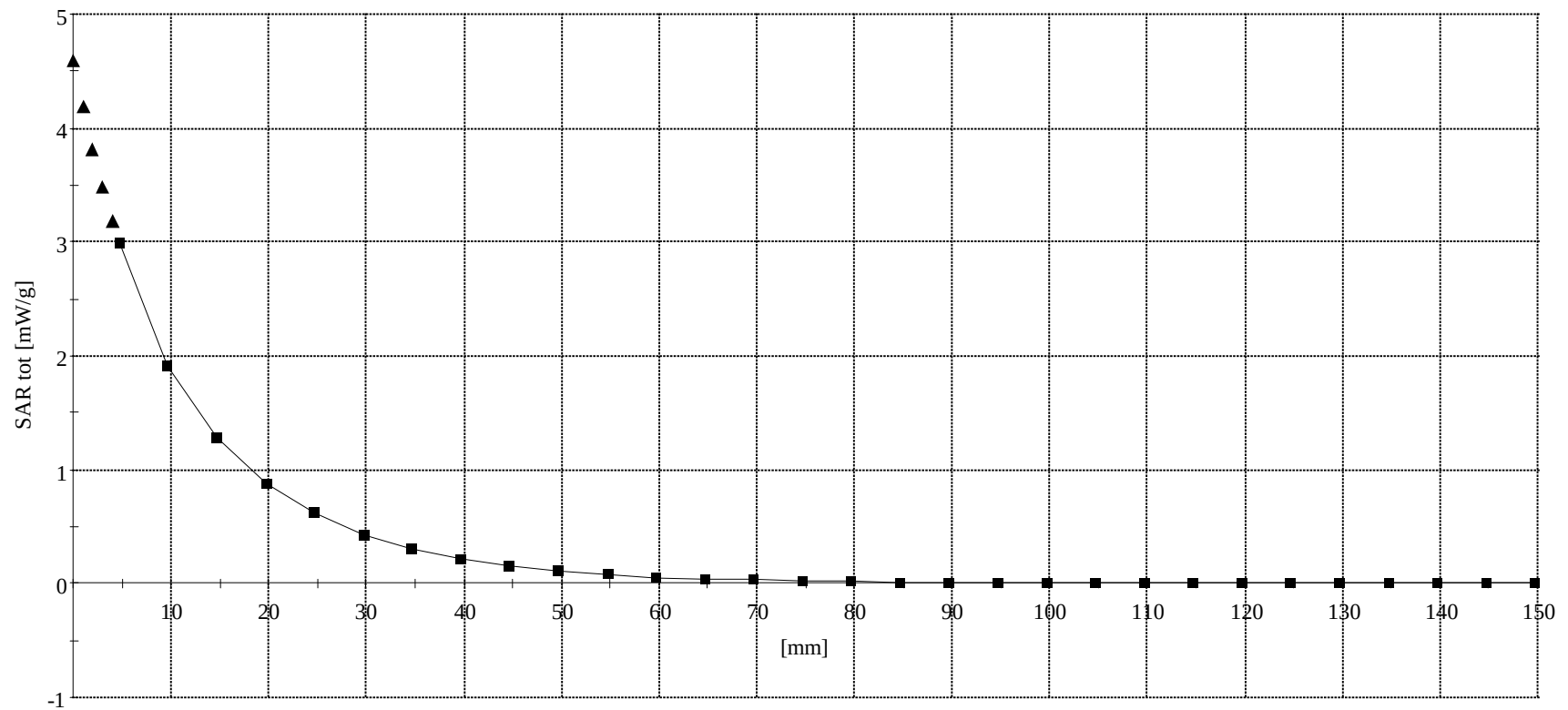
900 MHz Dipole Validation / Dipole Sn# 95 / Forward Power = 254mW / Room Temp at time of measurement = 23c Simulant Temp at time of measurement = 22c

R1: TP-1005 SUGAR (rev. 3) Phantom; Section; Position: ; Frequency: 900 MHz

Probe: ET3DV6 - SN1508 - Validation; ConvF(6.35,6.35,6.35); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.99$ mho/m $\epsilon_r = 42.2$ $\rho = 1.00$ g/cm³

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

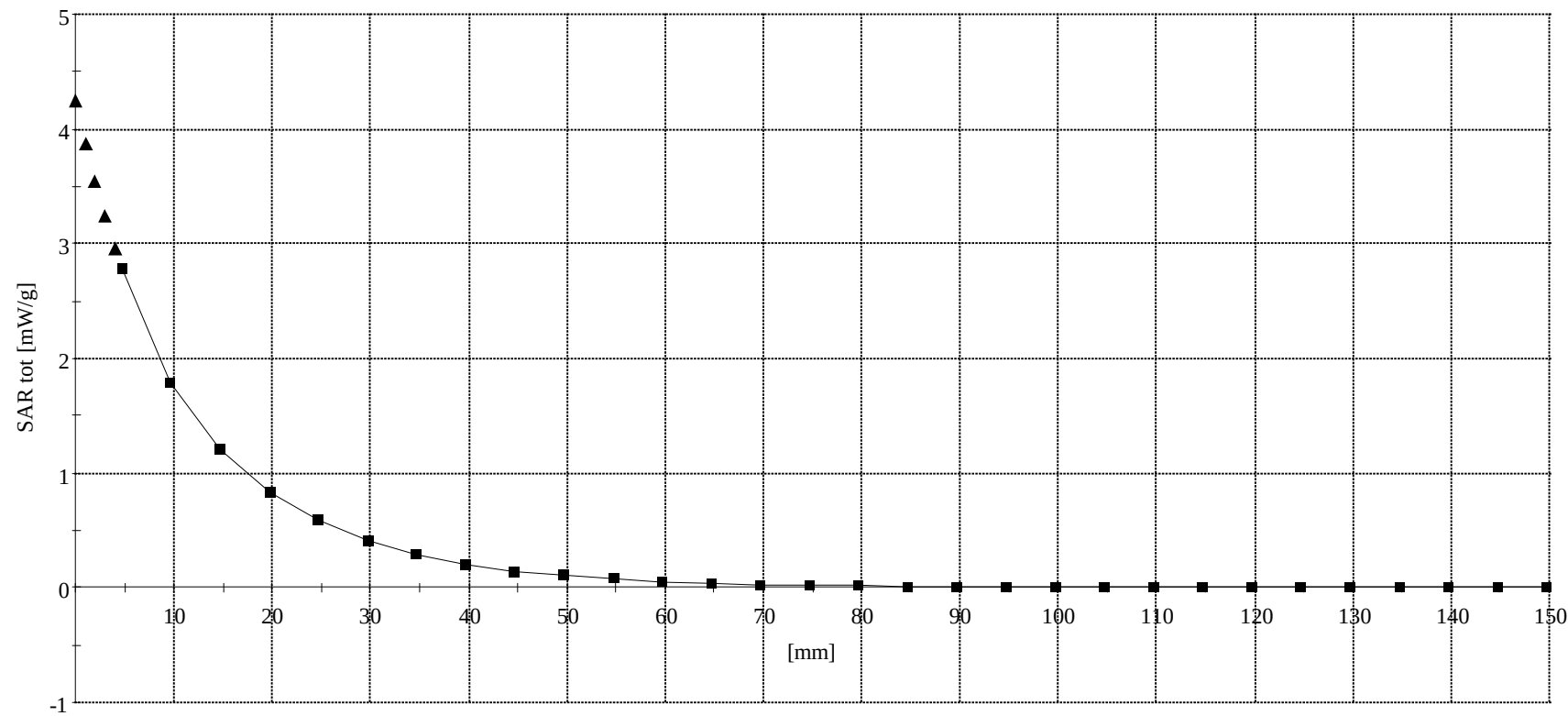
Penetration depth: 11.8 (11.0, 12.8) [mm]



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 95 / Forward Power = 253mW / Room Temp at time of measurement = 23c Simulant Temp at time of measurement = 21.5
R1: TP-1005 SUGAR (rev. 3) Phantom; Section; Position: ; Frequency: 900 MHz
Probe: ET3DV6 - SN1508 - Validation; ConvF(6.35,6.35,6.35); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.98$ mho/m $\epsilon_r = 41.5$ $\rho = 1.00$ g/cm³

Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0
Penetration depth: 11.9 (11.2, 12.9) [mm]



Dipole 900 MHz

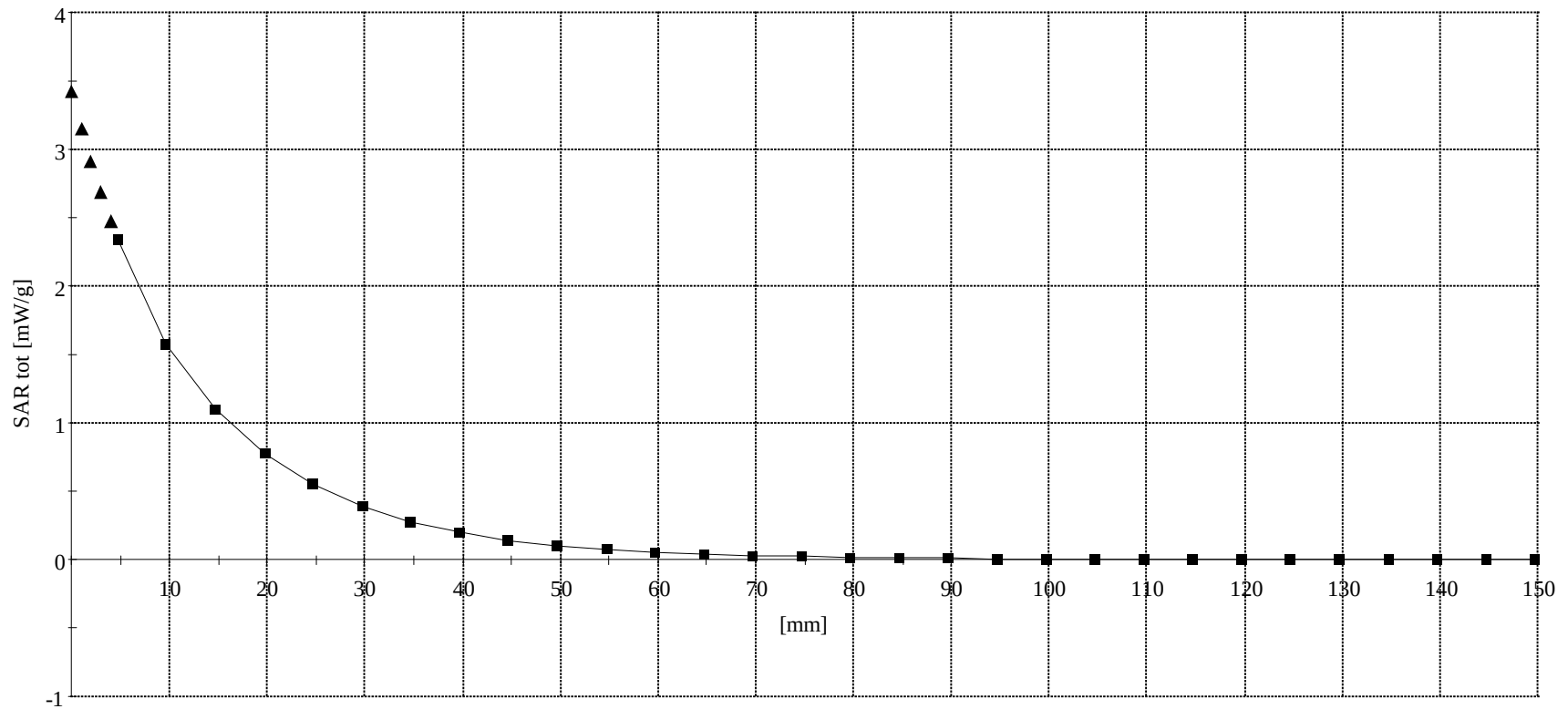
900 MHz Dipole Validation / Dipole Sn# 95 / Forward Power = 253mW / Room Temp at time of measurement = 23c Simulant Temp at time of measurement = 22

R1: TP-1005 SUGAR (rev. 3) Phantom; Section; Position: ; Frequency: 900 MHz

Probe: ET3DV6 - SN1508 - Validation; ConvF(6.35,6.35,6.35); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.98$ mho/m $\epsilon_r = 41.4$ $\rho = 1.00$ g/cm³

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

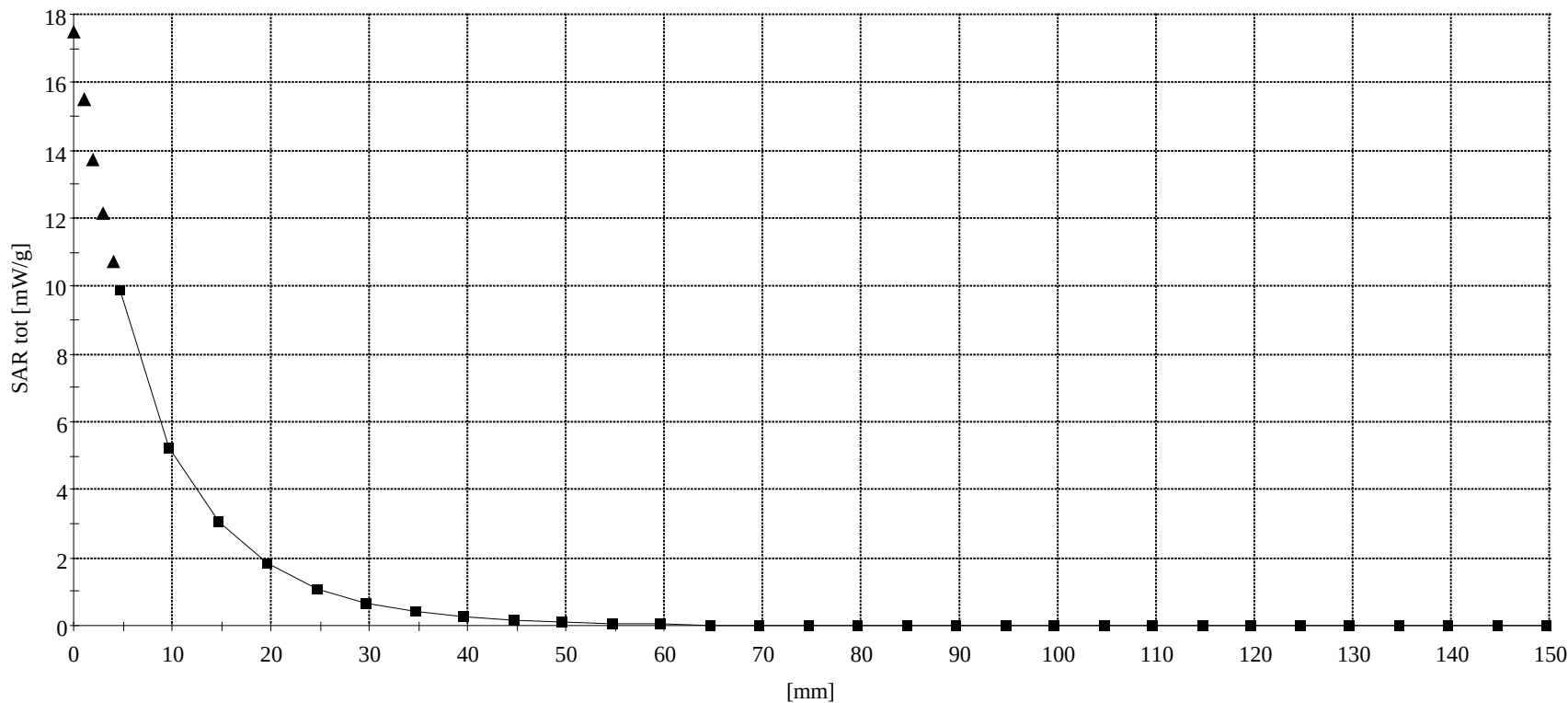
Penetration depth: 13.2 (12.5, 13.9) [mm]



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 277tr / Forward Power = 252mW / Room Temp at time of measurement = 23c Simulant Temp at time of measurement = 21.3
R1 Amy Twin Phantom Rev.3 Phantom; Section; Position: ; Frequency: 1800 MHz
Probe: ET3DV6 - SN1508 - Validation; ConvF(5.41,5.41,5.41); Crest factor: 1.0; 1800 MHz VALIDATION: $\sigma = 1.39 \text{ mho/m}$ $\epsilon_r = 39.7$ $\rho = 1.00 \text{ g/cm}^3$

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



Appendix 2

SAR distribution plots for Phantom Head Adjacent Use

SN# A88BFC43

Ch# 384 / Pwr Step: 02 / Antenna Position: Fixed / Battery Model #: Snn5570A / DEVICE POSITION: cheek / SIM'T TEMP: When Measured = 21.5C After Test = 21.6 °C

R1: TP-1005 SUGAR (rev. 3) Phantom; R2 Homer Left Head Section; Position: (90°,180°); Frequency: 837 MHz

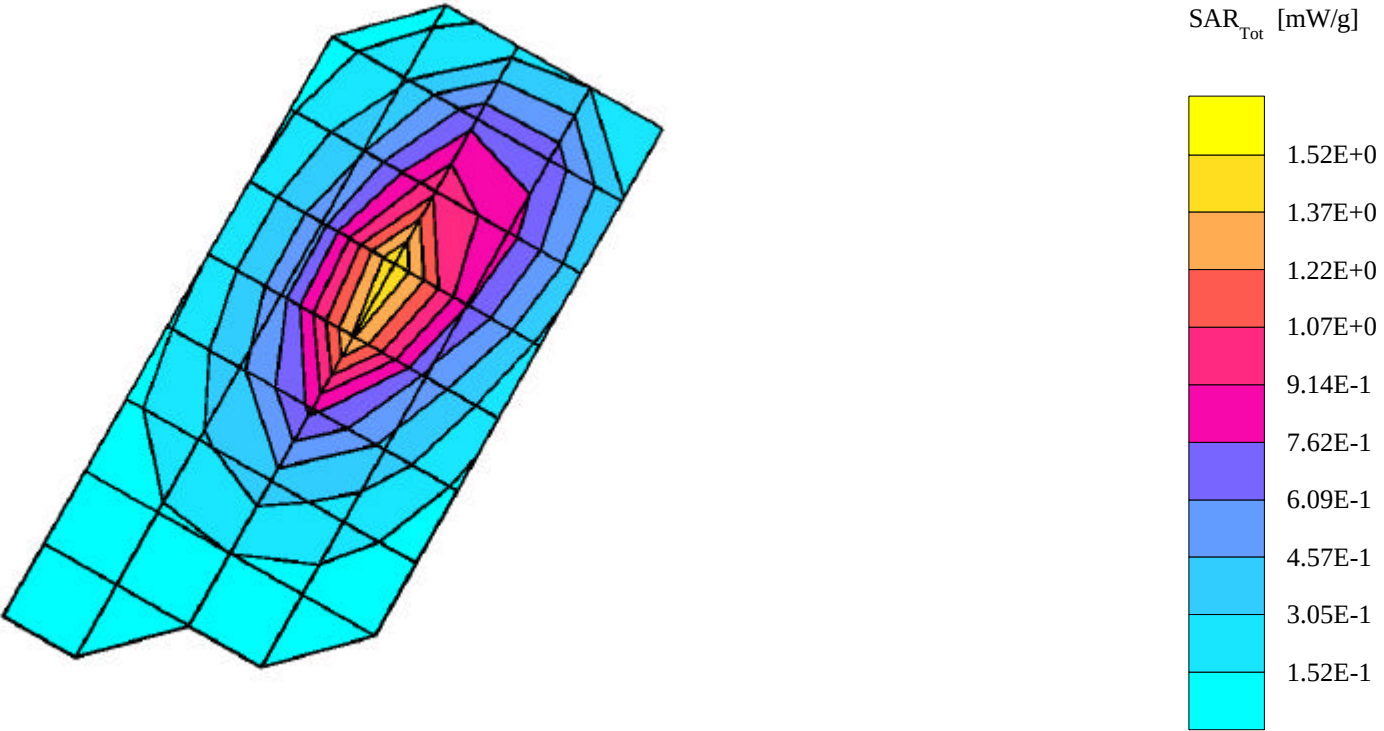
Probe: ET3DV6 - SN1508 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.92 \text{ mho/m}$ $\epsilon_r = 42.3$ $\rho = 1.00 \text{ g/cm}^3$

Cube 7x7x7: SAR (1g): 1.52 mW/g, SAR (10g): 0.898 mW/g, (Worst-case extrapolation)

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

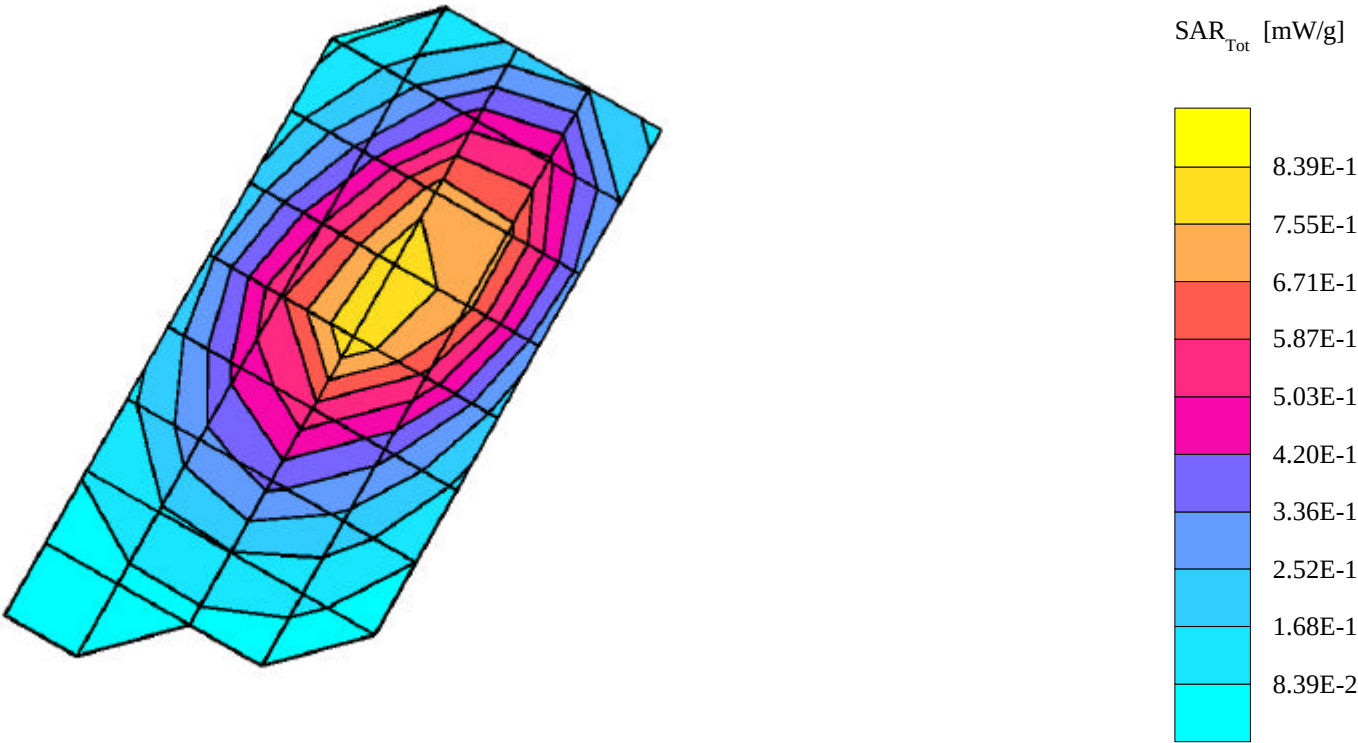
Penetration depth: 11.2 (10.4, 12.6) [mm]

Powerdrift: -0.09 dB



SN# A88BFB82

Ch# 384 / Pwr Step: OTA / Antenna Position: Fixed / Battery Model #: SNN5570A / DEVICE POSITION: cheek / SIM'T TEMP: When Measured = 21.5 °C After Test = 21.2 °C
R1: TP-1005 SUGAR (rev. 3) Phantom; R2 Homer Left Head Section; Position: (90°,180°); Frequency: 836 MHz
Probe: ET3DV6 - SN1508 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.92$ mho/m $\epsilon_r = 42.3$ $\rho = 1.00$ g/cm³
Cube 7x7x7: SAR (1g): 0.856 mW/g, SAR (10g): 0.595 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 16.0 (15.4, 16.7) [mm]
Powerdrift: -0.03 dB



SN# A88BFB82

Ch# 25 / Pwr Step: OTA / Antenna Position: Fixed / Battery Model #: SNN5570A / DEVICE POSITION: Cheek / SIM'T TEMP: When Measured = 20.8 °C After Test = 20.1 °C

R1: TP-1085 GLYCOL (rev. 3) Phantom; R2 Bart Left Head Section; Position: (90°,180°); Frequency: 1851 MHz

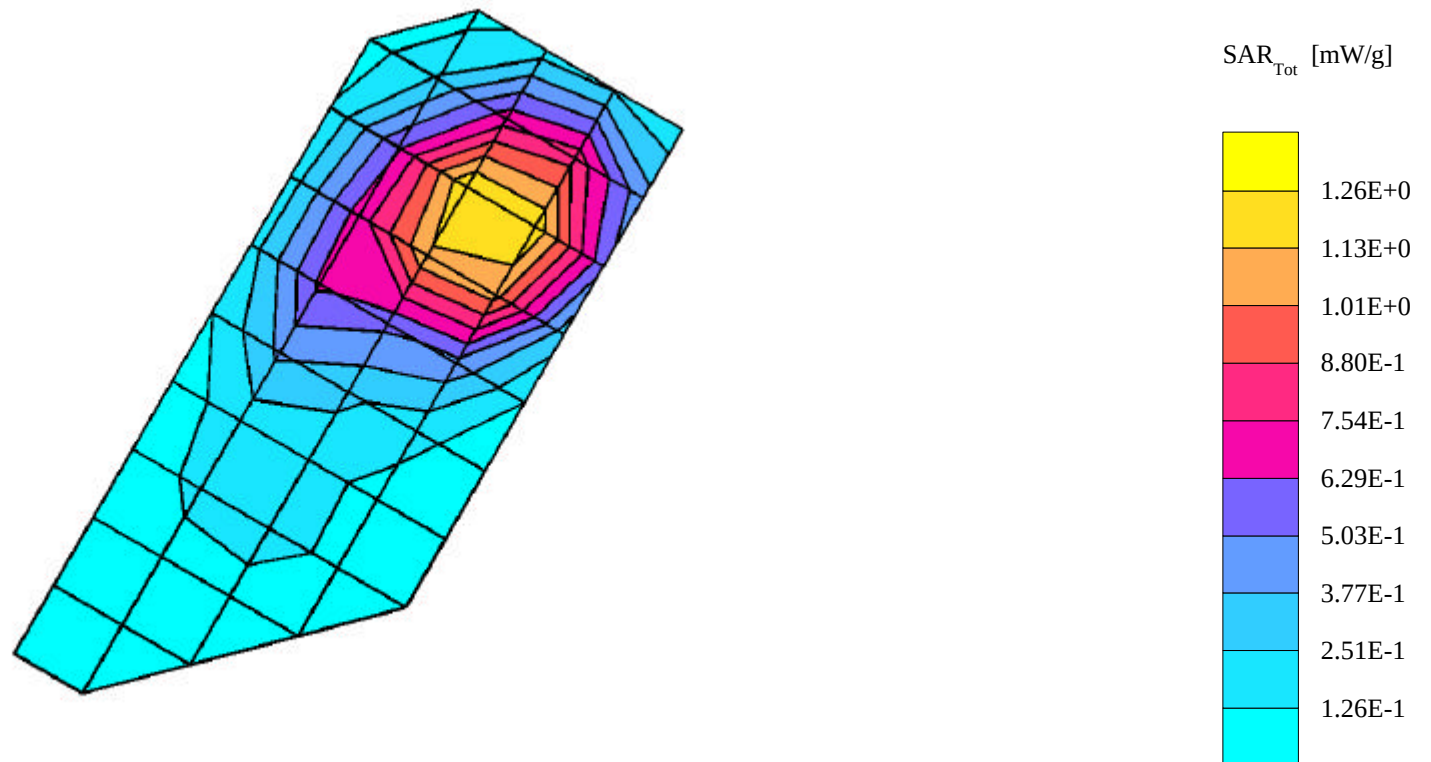
Probe: ET3DV6 - SN1508 - IEEE Head; ConvF(5.41,5.41,5.41); Crest factor: 1.0; 1880 MHz Head & Body: $\sigma = 1.46$ mho/m $\epsilon_r = 38.2$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 1.41 mW/g, SAR (10g): 0.820 mW/g, (Worst-case extrapolation)

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

Penetration depth: 9.9 (9.7, 10.3) [mm]

Powerdrift: -0.04 dB



SN# A88BFC43

Ch# 384 / Pwr Step: 02 / Antenna Position: Fixed / Battery Model #: Snn5570A / DEVICE POSITION: Cheek / SIM'T TEMP: When Measured = 20C After Test = 20.2 °C

R1: TP-1005 SUGAR (rev. 3) Phantom; R2 Marge Right Head Section; Position: (90°,180°); Frequency: 836 MHz

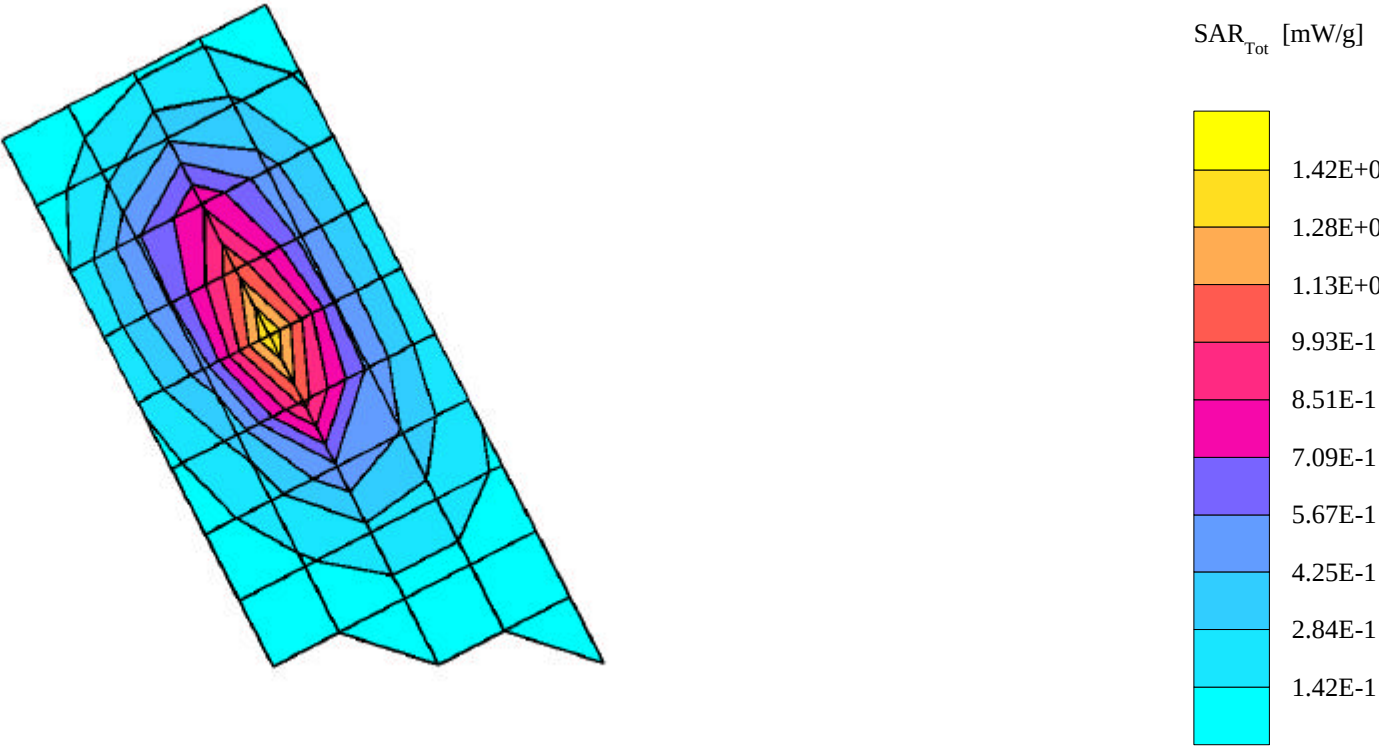
Probe: ET3DV6 - SN1508 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.92 \text{ mho/m}$ $\epsilon_r = 42.1$ $\rho = 1.00 \text{ g/cm}^3$

Cube 7x7x7: SAR (1g): 1.35 mW/g, SAR (10g): 0.797 mW/g, (Worst-case extrapolation)

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

Penetration depth: 11.4 (10.4, 12.8) [mm]

Powerdrift: -0.16 dB



SN# A88BFB82

Ch# 384 / Pwr Step: OTA / Antenna Position: Fixed / Battery Model #: SNN5570A / DEVICE POSITION: cheek / SIM'T TEMP: When Measured = 21.5 °C After Test = 21.2 °C

R1: TP-1005 SUGAR (rev. 3) Phantom; R2 Marge Right Head Section; Position: (90°,180°); Frequency: 836 MHz

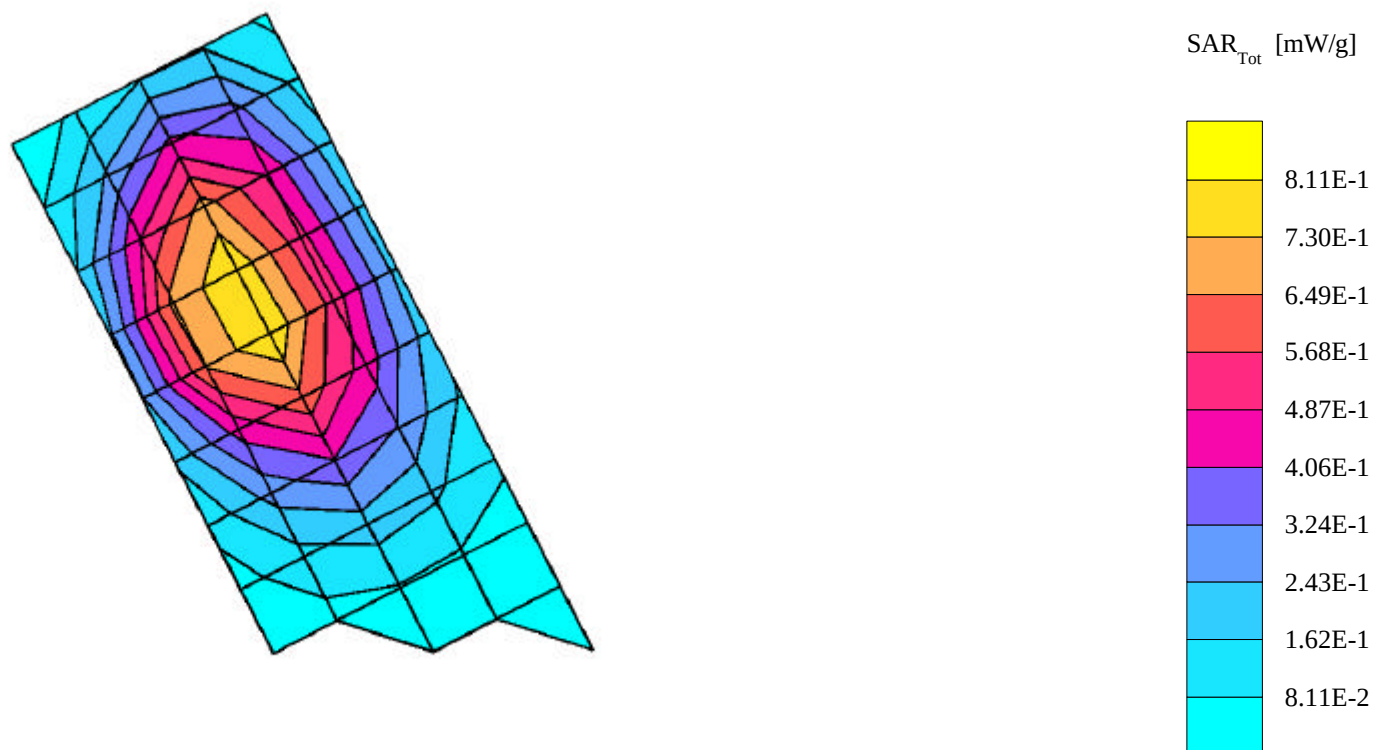
Probe: ET3DV6 - SN1508 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.92$ mho/m $\epsilon_r = 42.3$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 0.780 mW/g, SAR (10g): 0.551 mW/g, (Worst-case extrapolation)

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

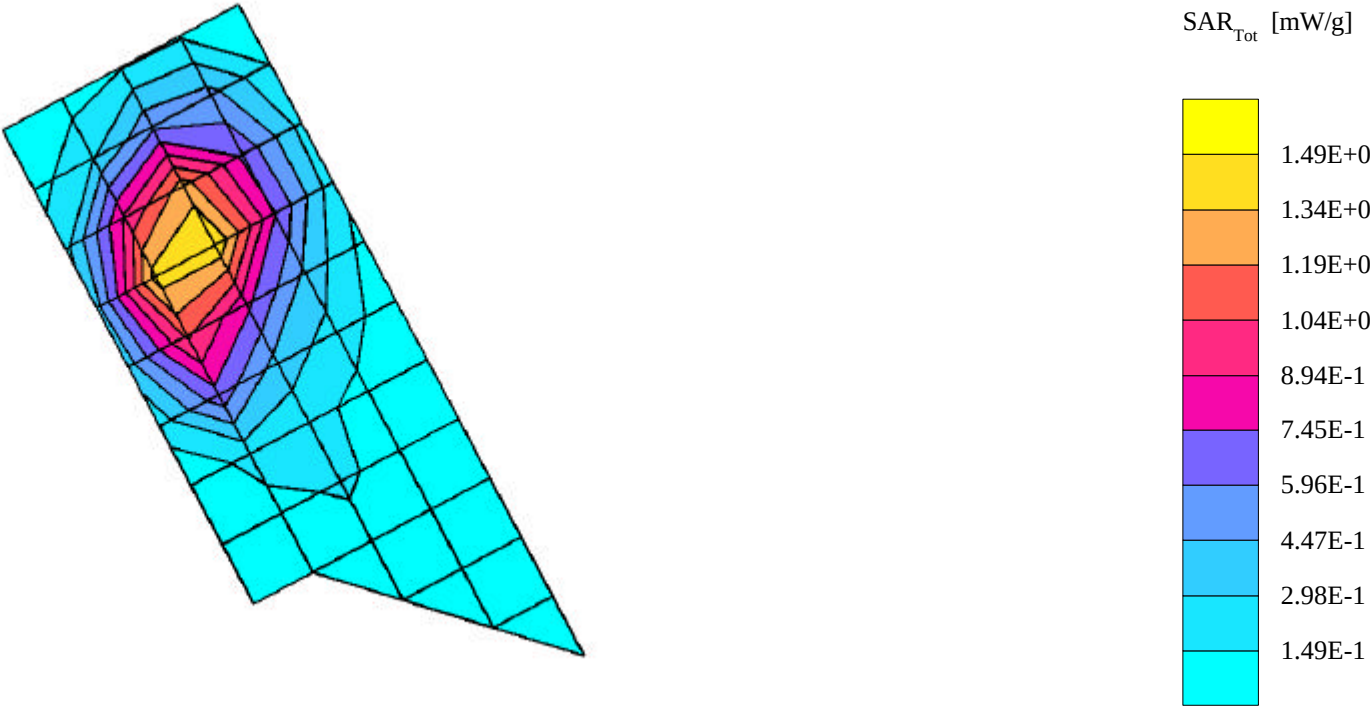
Penetration depth: 16.5 (15.8, 17.1) [mm]

Powerdrift: -0.12 dB



SN# A88BFB82

Ch# 25 / Pwr Step: OTA / Antenna Position: Fixed / Battery Model #: SNN5570A / DEVICE POSITION: Cheek / SIM'T TEMP:
When Measured = 20.8 °C After Test = 20.1 °C
R1: TP-1085 GLYCOL (rev. 3) Phantom; R2 Lisa Right Head Section; Position: (90°,180°); Frequency: 1851 MHz
Probe: ET3DV6 - SN1508 - IEEE Head; ConvF(5.41,5.41,5.41); Crest factor: 1.0; 1880 MHz Head & Body: $\sigma = 1.46 \text{ mho/m}$ $\epsilon_r = 38.2$ $\rho = 1.00 \text{ g/cm}^3$
Cube 7x7x7: SAR (1g): 1.59 mW/g, SAR (10g): 0.938 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 10.2 (10.0, 10.6) [mm]
Powerdrift: 0.21 dB



05/09/02

SN# A88BFC43

Ch# 384 / Pwr Step: 02 / Antenna Position: Fixed / Battery Model #: Snn5570A / DEVICE POSITION: Tilted / SIM'T TEMP: When Measured = 20C After Test = 20.2 °C

R1: TP-1005 SUGAR (rev. 3) Phantom; R2 Homer Left Head Section; Position: (90°,180°); Frequency: 836 MHz

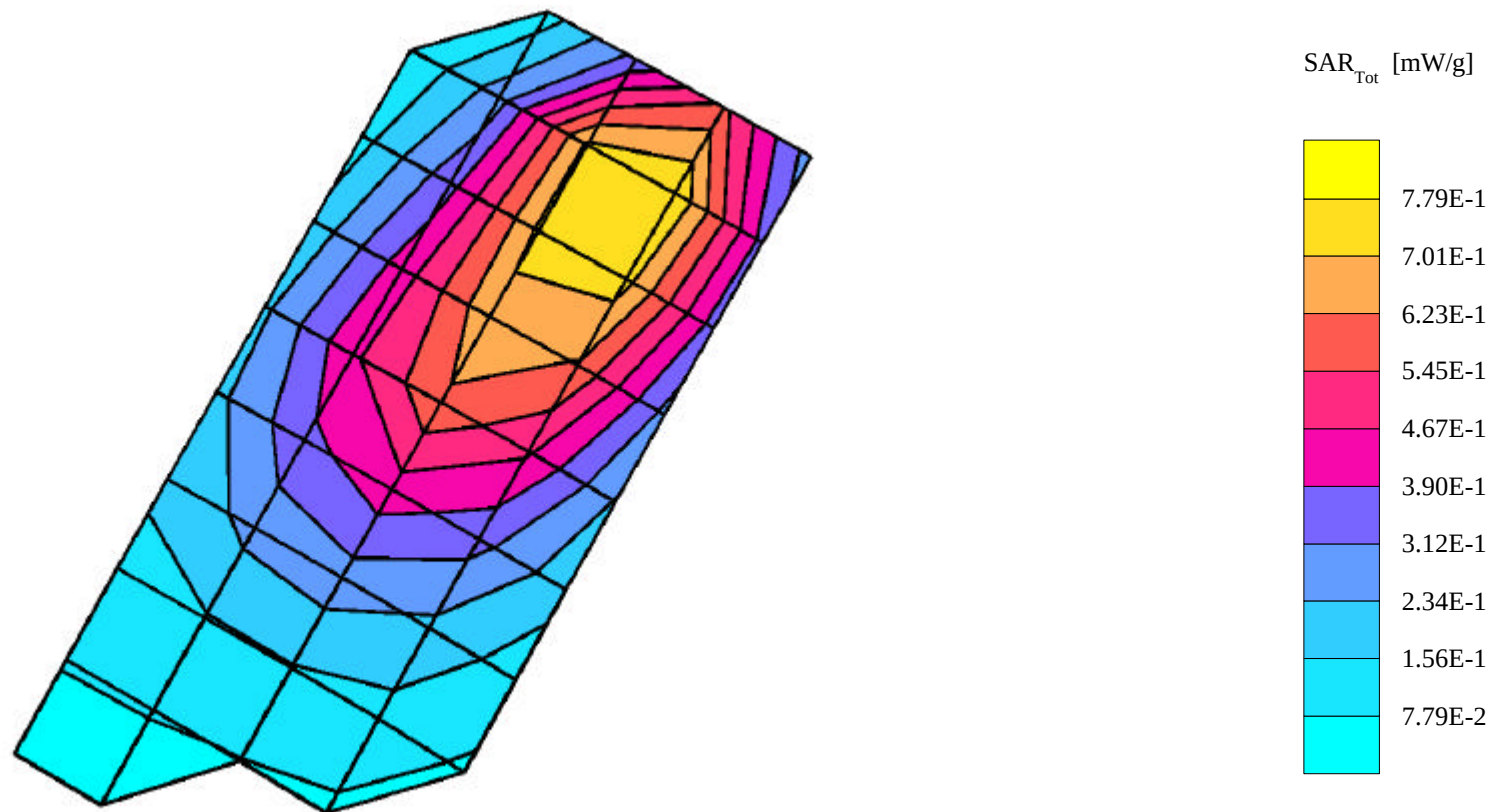
Probe: ET3DV6 - SN1508 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.92$ mho/m $\epsilon_r = 42.1$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 0.827 mW/g, SAR (10g): 0.544 mW/g * Max outside, (Worst-case extrapolation)

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

Penetration depth: 12.8 (12.4, 13.4) [mm]

Powerdrift: -0.02 dB



SN# A88BFB82

Ch# 384 / Pwr Step: OTA / Antenna Position: Fixed / Battery Model #: SNN5570A / DEVICE POSITION: Tilted / SIM'T TEMP: When Measured = 21.5 °C After Test = 21.2 °C

R1: TP-1005 SUGAR (rev. 3) Phantom; R2 Homer Left Head Section; Position: (90°,180°); Frequency: 837 MHz

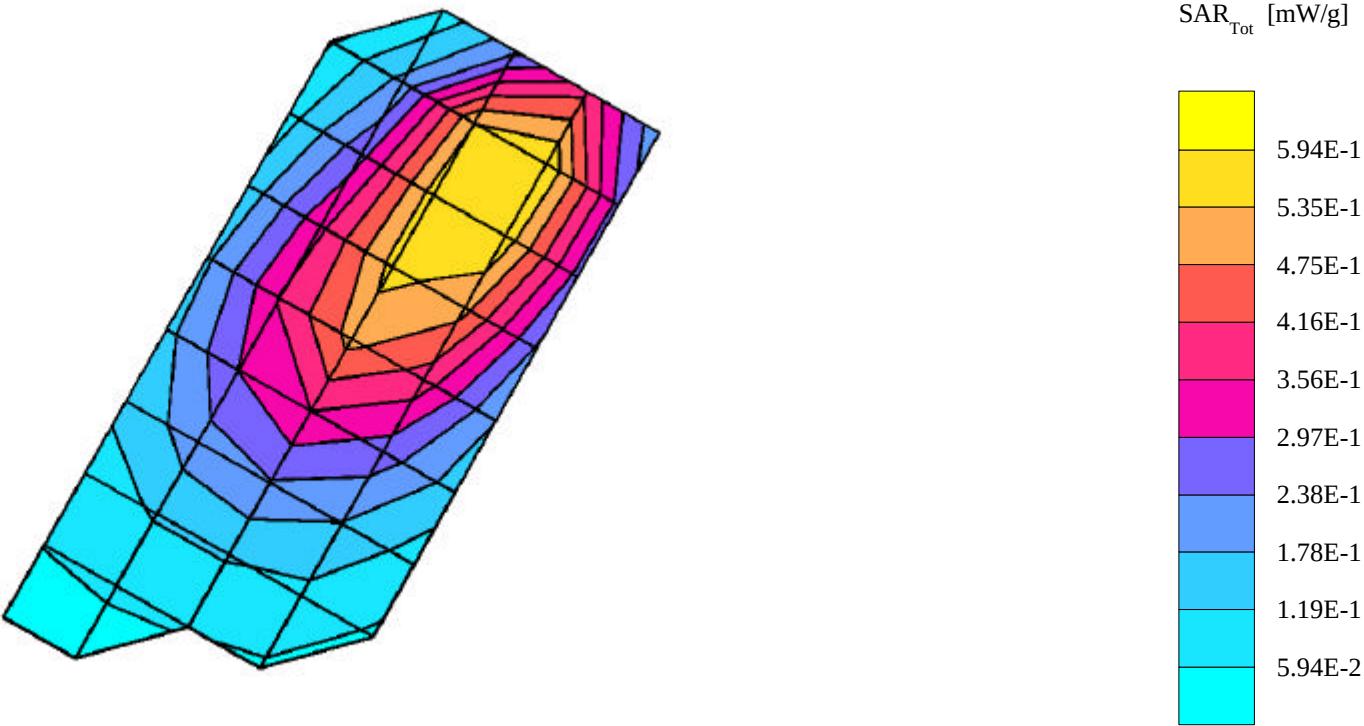
Probe: ET3DV6 - SN1508 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.92 \text{ mho/m}$ $\epsilon_r = 41.9$ $\rho = 1.00 \text{ g/cm}^3$

Cube 7x7x7: SAR (1g): 0.619 mW/g, SAR (10g): 0.406 mW/g * Max outside, (Worst-case extrapolation)

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

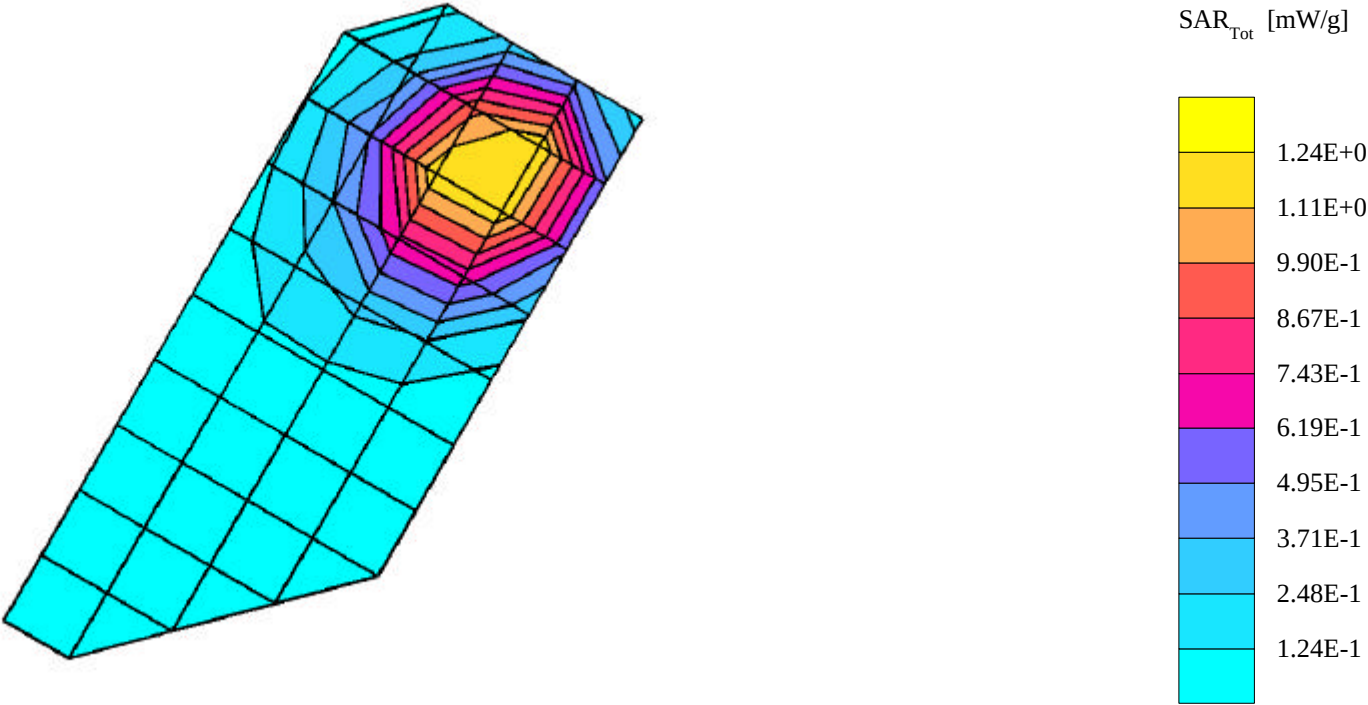
Penetration depth: 12.7 (12.2, 13.3) [mm]

Powerdrift: -0.40 dB



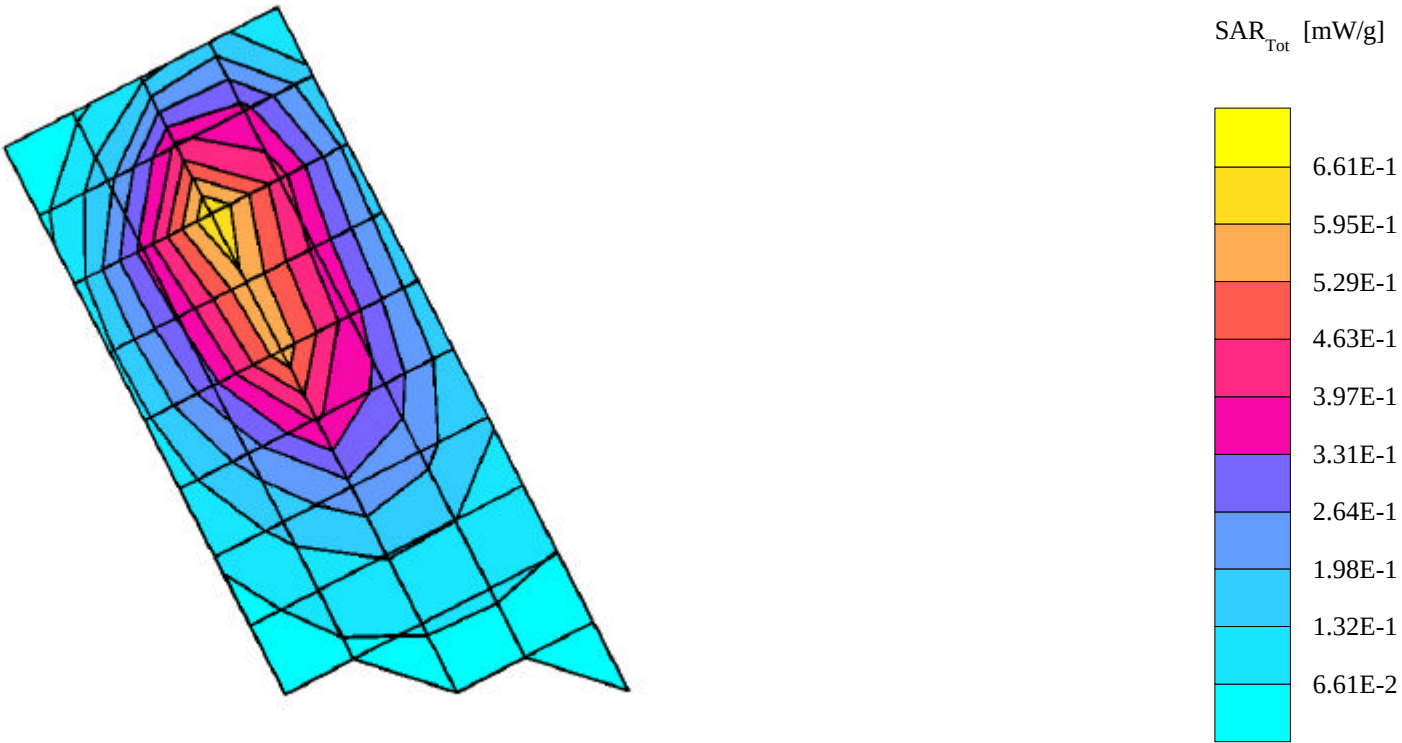
SN# A88BFB82

Ch# 25 / Pwr Step: OTA / Antenna Position: Fixed / Battery Model #: SNN5570A / DEVICE POSITION: Tilted / SIM'T TEMP: When
Measured = 20.8 °C After Test = 20.1 °C
R1: TP-1085 GLYCOL (rev. 3) Phantom; R2 Bart Left Head Section; Position: (90°,180°); Frequency: 1851 MHz
Probe: ET3DV6 - SN1508 - IEEE Head; ConvF(5.41,5.41,5.41); Crest factor: 1.0; 1880 MHz Head & Body: $\sigma = 1.46$ mho/m $\epsilon_r = 38.2$ $\rho = 1.00$ g/cm³
Cube 7x7x7: SAR (1g): 1.46 mW/g, SAR (10g): 0.836 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 9.3 (9.0, 9.8) [mm]
Powerdrift: 0.12 dB



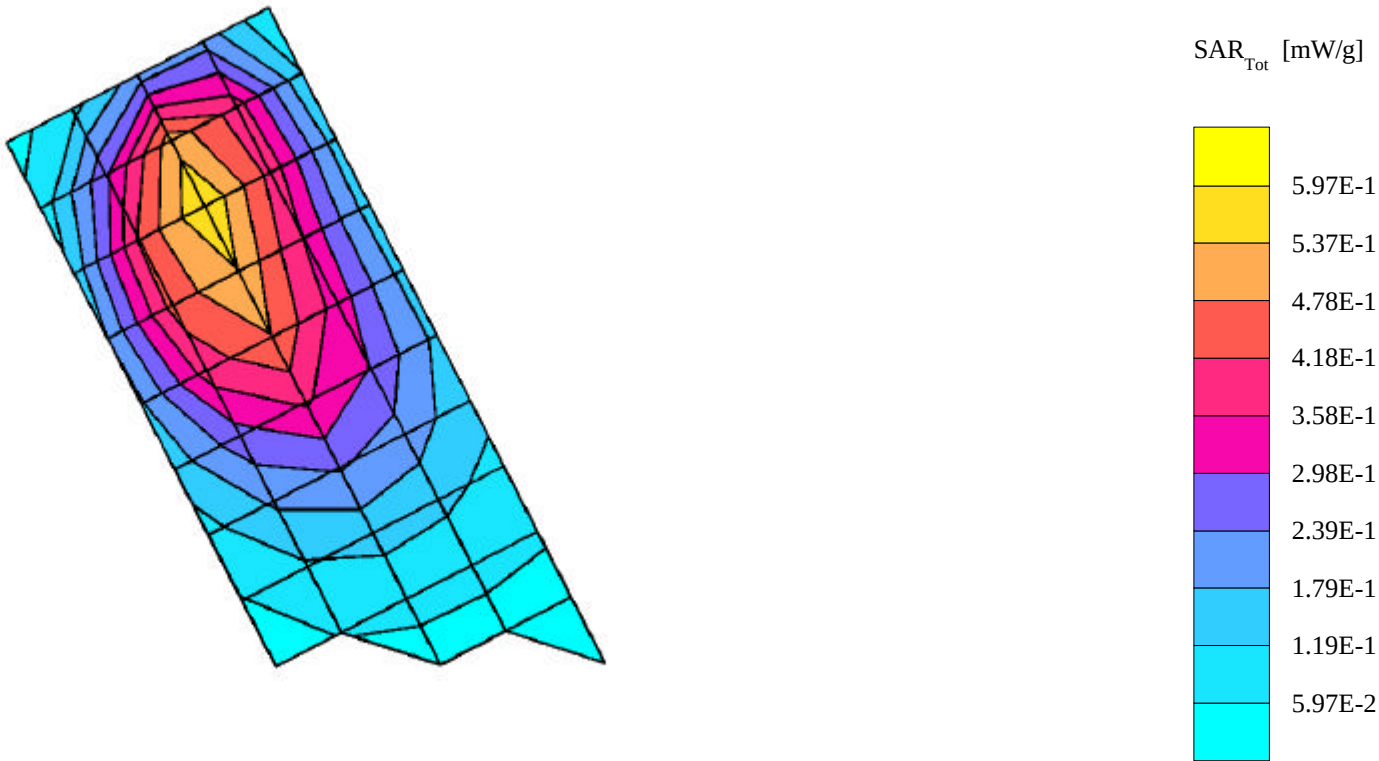
SN# A88BFC43

Ch# 384 / Pwr Step: 02 / Antenna Position: Fixed / Battery Model #: Snn5570A / DEVICE POSITION: Tilted / SIM'T TEMP: When Measured = 20C After Test = 20.2 ° C
R1: TP-1005 SUGAR (rev. 3) Phantom; R2 Marge Right Head Section; Position: (90°,180°); Frequency: 836 MHz
Probe: ET3DV6 - SN1508 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.92 \text{ mho/m}$ $\epsilon_r = 42.1$ $\rho = 1.00 \text{ g/cm}^3$
Cube 7x7x7: SAR (1g): 0.663 mW/g, SAR (10g): 0.407 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 13.2 (13.2, 13.3) [mm]
Powerdrift: 0.07 dB



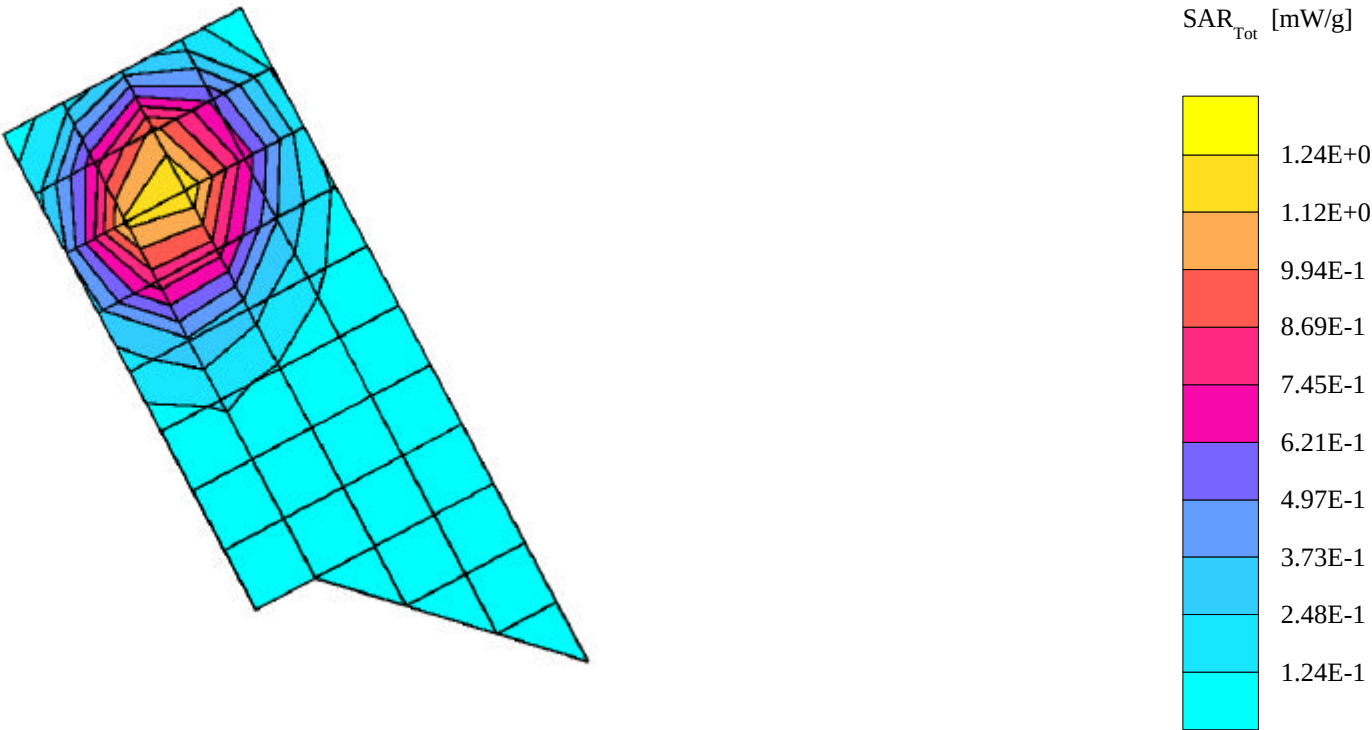
SN# A88BFB82

Ch# 384 / Pwr Step: OTA / Antenna Position: Fixed / Battery Model #: SNN5570A / DEVICE POSITION: Tilted / SIM'T TEMP: When Measured = 21.5 °C After Test = 21.2 °C
R1: TP-1005 SUGAR (rev. 3) Phantom; R2 Marge Right Head Section; Position: (90°,180°); Frequency: 836 MHz
Probe: ET3DV6 - SN1508 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.92$ mho/m $\epsilon_r = 42.3$ $\rho = 1.00$ g/cm³
Cube 7x7x7: SAR (1g): 0.614 mW/g, SAR (10g): 0.399 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 13.7 (13.5, 13.9) [mm]
Powerdrift: -0.11 dB



SN# A88BFB82

Ch# 25 / Pwr Step: OTA / Antenna Position: Fixed / Battery Model #: SNN5570A / DEVICE POSITION:15DEG Tilted / SIM'T TEMP: When Measured = 21.7 °C After Test = 20.1 °C
R1: TP-1085 GLYCOL (rev. 3) Phantom; R2 Lisa Right Head Section; Position: (90°,180°); Frequency: 1851 MHz
Probe: ET3DV6 - SN1508 - IEEE Head; ConvF(5.41,5.41,5.41); Crest factor: 1.0; 1880 MHz Head & Body: $\sigma = 1.46 \text{ mho/m}$ $\epsilon_r = 38.1$ $\rho = 1.00 \text{ g/cm}^3$
Cube 7x7x7: SAR (1g): 1.35 mW/g, SAR (10g): 0.793 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 10.0 (9.7, 10.6) [mm]
Powerdrift: -0.24 dB



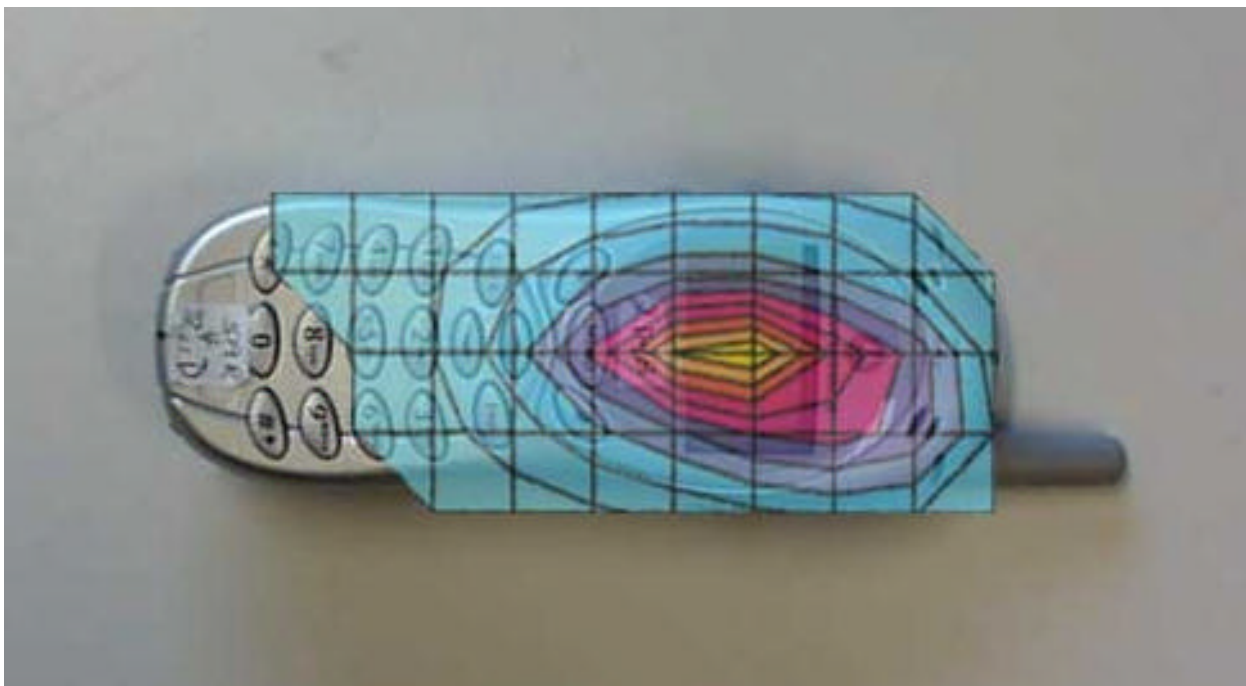


Figure 1. Typical 800MHz Left Head Adjacent Contour Overlaid on Phone with Antenna Fixed (Cheek Touch)

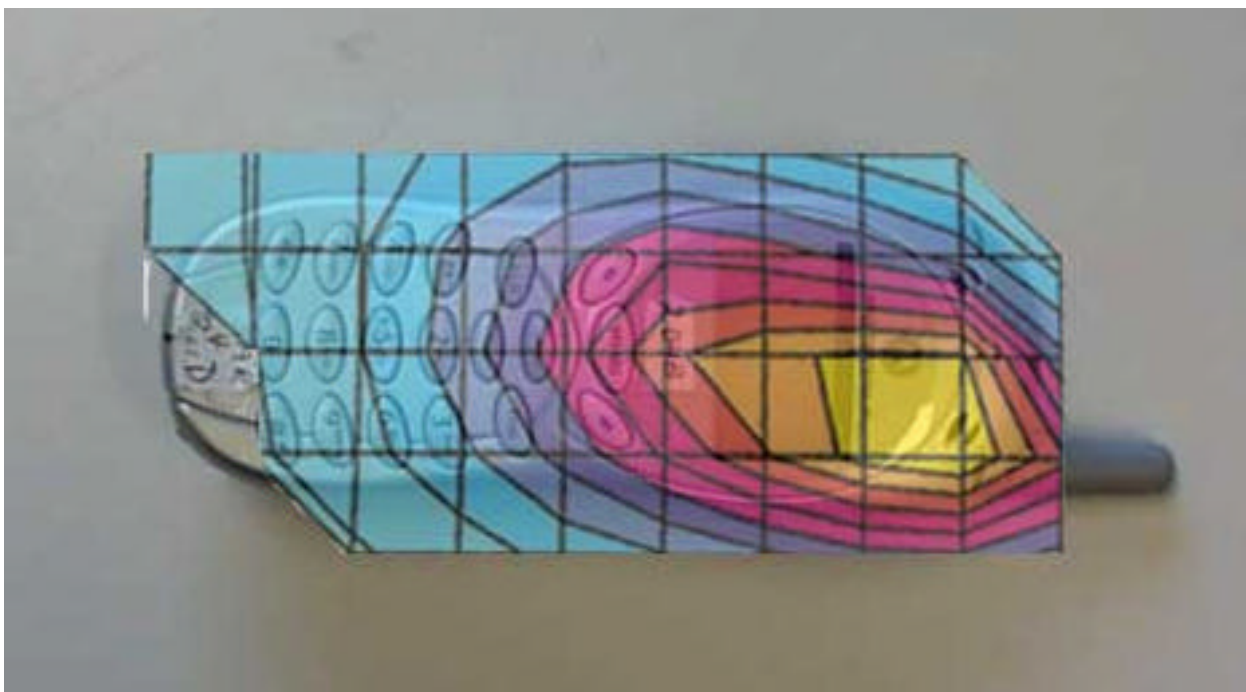


Figure 2. Typical 800 MHz Left Head Contour Overlaid on Phone with Antenna Fixed (15° Tilt)

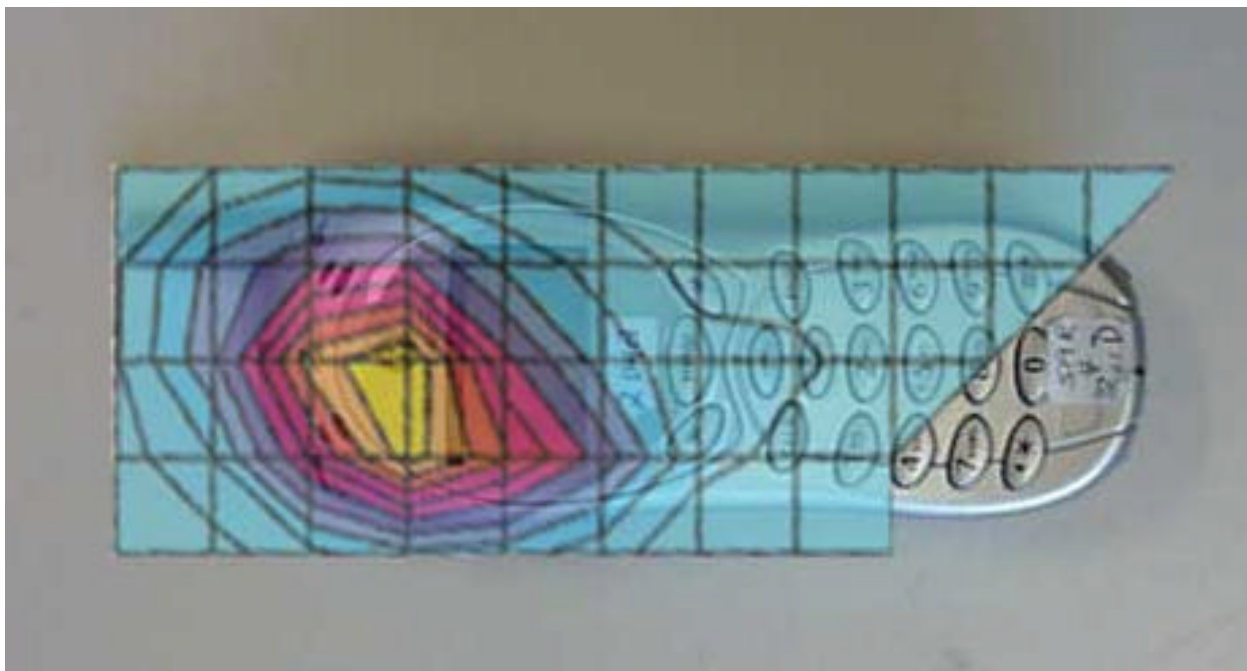


Figure 3. Typical 1900MHz Right Head Adjacent Contour Overlaid on Phone with Antenna Fixed (Cheek Touch)

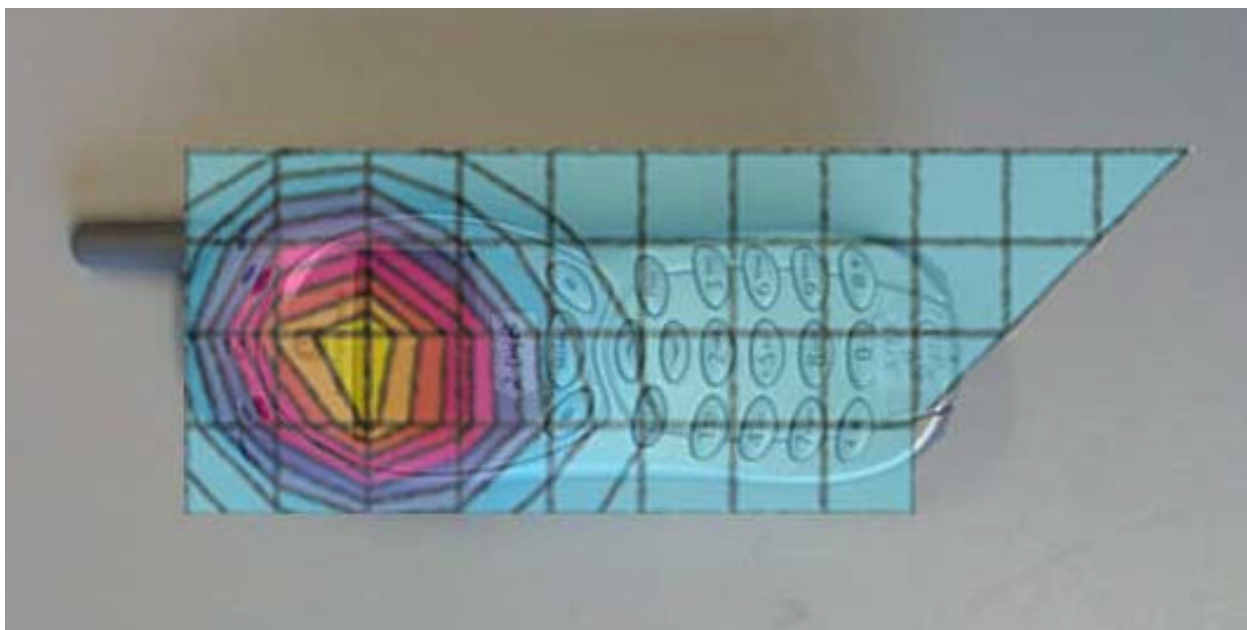


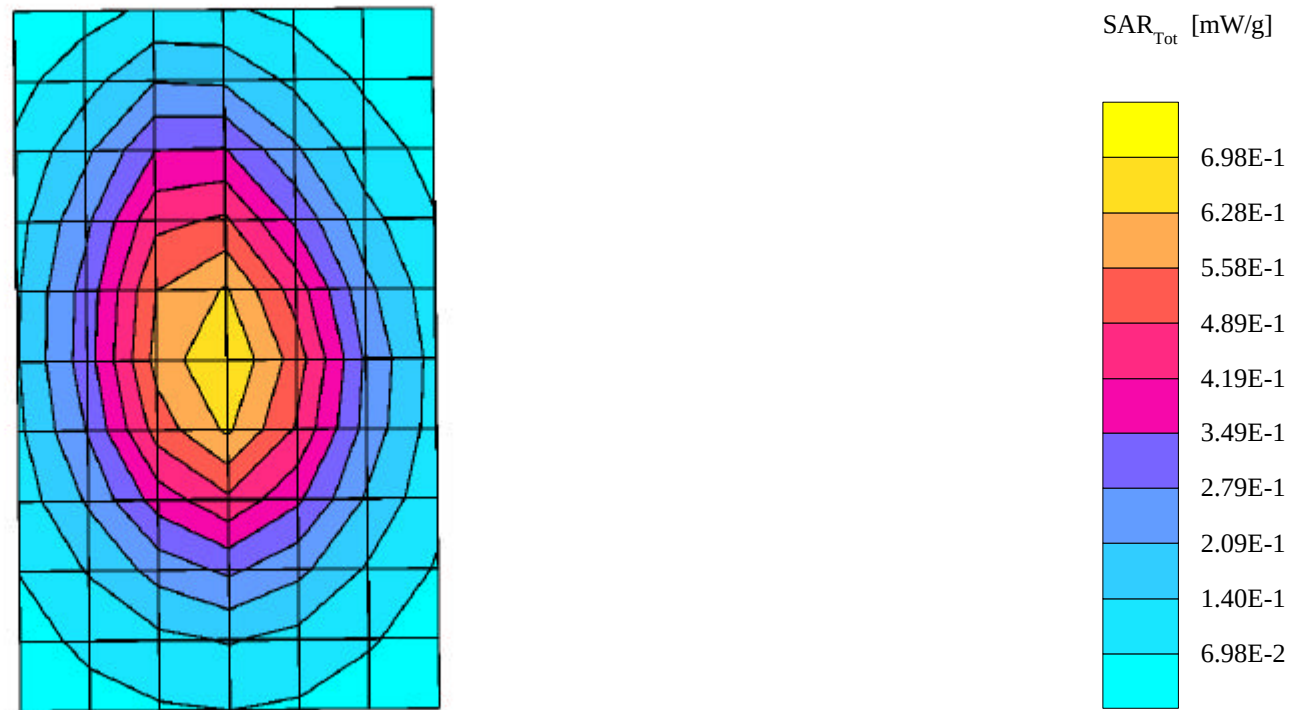
Figure 4. Typical 1900MHz Right Head Contour Overlaid on Phone with Antenna Fixed (15° Tilt)

Appendix 3

SAR distribution plots for Body Worn Configuration

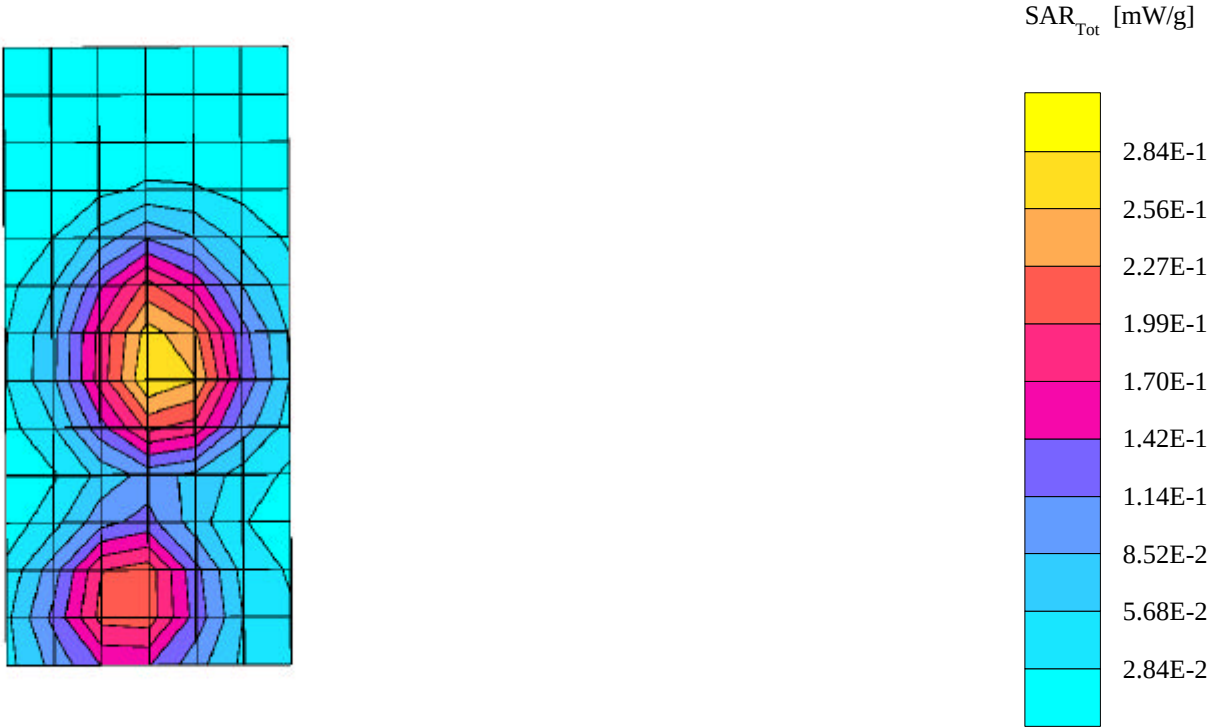
SN# A88BFB82

Ch# 799 / Pwr Step: 2 / Antenna Position: Fixed / Battery Model #: SNN5570A / SIM'T TEMP: When Measured = 22 °C After Test = 22 °C / Accessory Model # = SYN9170A Leather Pouch with wishbone SYN8631A
R1 Amy Twin Phantom Rev.3 Phantom; section 1 Section; Position: (0°,0°); Frequency: 848 MHz
Probe: ET3DV6 - SN1508 - FCC Body; ConvF(6.20,6.20,6.20); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.97 \text{ mho/m}$ $\epsilon_r = 53.5$ $\rho = 1.00 \text{ g/cm}^3$
Cube 7x7x7: SAR (1g): 0.691 mW/g, SAR (10g): 0.491 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 16.1 (14.8, 17.6) [mm]
Powerdrift: -0.09 dB



SN# A88BFB82

Ch# 25 / Pwr Step: Always up / Antenna Position:Fixed / Battery Model #: SNN5570 / Accessory Model # = Leather Pouch SYN9170A with universal belt clip SYN8763A
R1 Amy Twin Phantom Rev.3 Phantom; section 2 Section; Position: (0°,0°); Frequency: 1851 MHz
Probe: ET3DV6 - SN1508 - FCC Body; ConvF(5.00,5.00,5.00); Crest factor: 1.0; 1880 MHz Head & Body: $\sigma = 1.59 \text{ mho/m}$ $\epsilon_r = 53.1$ $\rho = 1.00 \text{ g/cm}^3$
Cubes (2): SAR (1g): $0.261 \text{ mW/g} \pm 0.43 \text{ dB}$, SAR (10g): $0.164 \text{ mW/g} \pm 0.45 \text{ dB}$, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 10.8 (9.4, 12.6) [mm]
Powerdrift: -0.40 dB



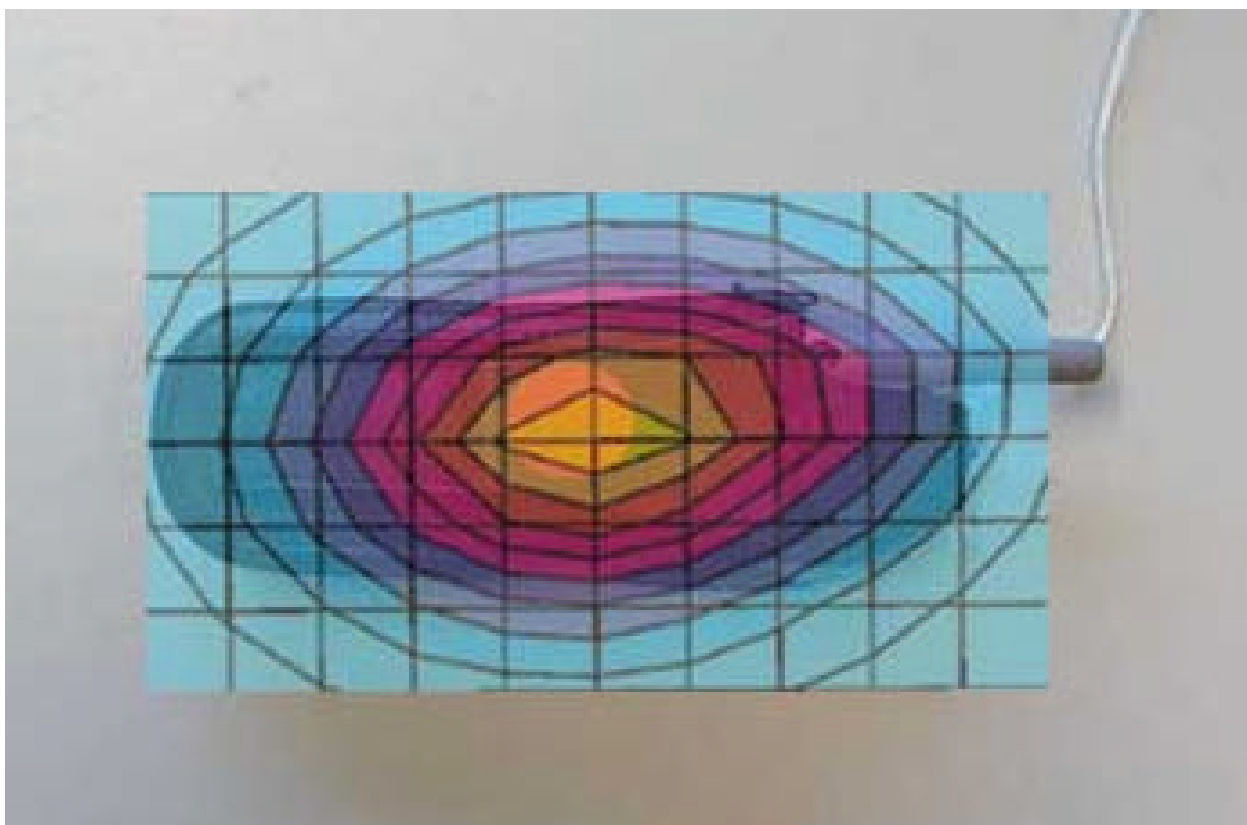


Figure 5. Typical 800 MHz Body-Worn Contour Overlaid on Phone with Antenna Fixed

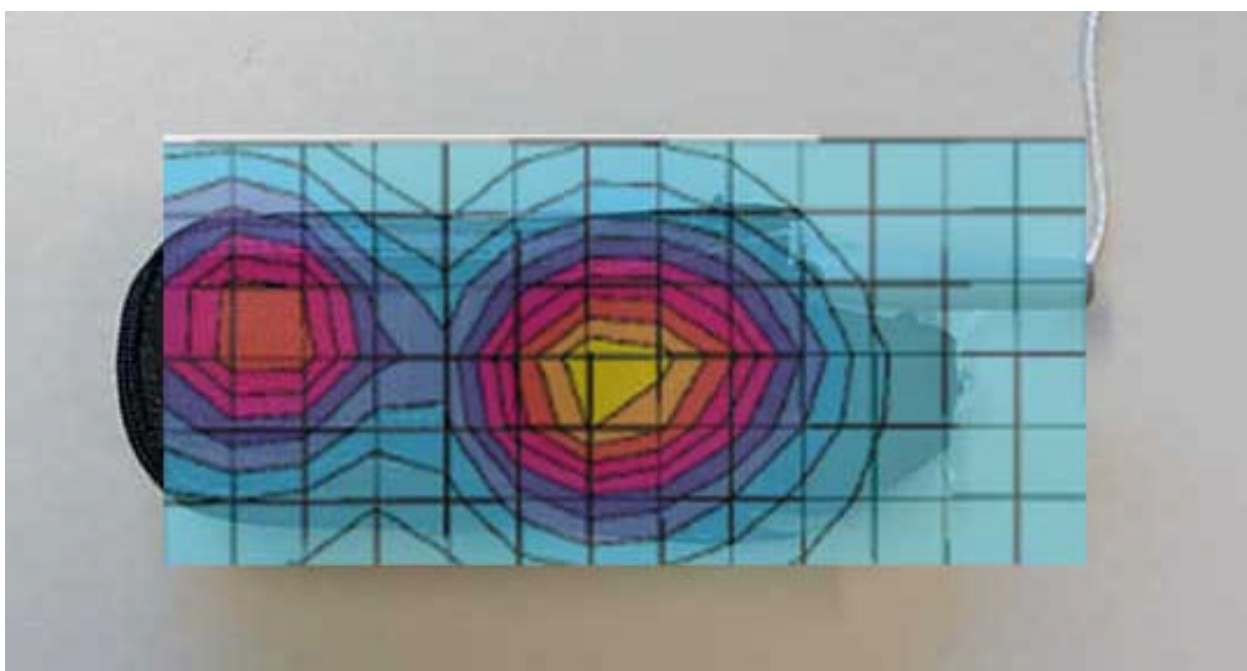


Figure 6. Typical 1900 MHz Body-Worn Contour Overlaid on Phone with Antenna Fixed