Exhibit 11: SAR Test Report IHDT56DK1

Date of test: 06/04/2003 – 06/17/2003
Date of Report: 06/19/2003

Laboratory:
Motorola Personal Communications Sector Product Safety & Compliance Laboratory
600 N. US Highway 45
Room: MW113
Libertyville, Illinois 60048

Test Responsible:
Firass Badaruzzaman
Senior RF Engineer

Accreditation: This laboratory is accredited to ISO/IEC 17025-1999 to perform the following tests:

Tests:	Procedures:
Electromagnetic Specific Absorption Rate	ANSI/IEEE C95.1-1992, 1999 (SAR) IEEE C95.3-1991 IEEE P1528 (*DRAFT*) FCC OET Bulletin 65 (*including Supplements A, B, C*) Australian Communications Authority Radio Communications (Electromagnetic Radiation – Human Exposure) Standard 1999 CENELEC EN 50361 (2001)
Simulated Tissue Preparation	APP-0247
RF Power Measurement	DOI-0876, 0900, 0902, 0904, 0915

On the following products or 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 IHDT56DK1 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 IHDT56DK1). 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	Internal Antenna	
Location	Back of Phone	
Dimensions	Length	20mm
	Width	35mm

Device description

FCC ID Number	**IHDT56DK1**	
Serial number	L350150199 & L350150179	
Mode(s) of Operation	GSM 850	GSM 1900
Modulation Mode(s)	GSM	GSM
Maximum Output Power Setting	32.50 dBm	29.60 dBm
Duty Cycle	1:8	1:8
Transmitting Frequency Rang(s)	824.20 - 848.80 MHz	1850.20 – 1909.80 MHz
Production Unit or Identical Prototype (47 CFR §2..908)	Identical Prototype	
Device Category	Portable	
RF Exposure Limits	General Population / Uncontrolled	

3. Test Equipment Used

3.1 Dosimetric System

The Motorola Personal Communications Sector Product Safety & Compliance Laboratory utilizes a Dosimetric Assessment System (Dasy3™ v3.1d) manufactured by Schmid & Partner Engineering AG (SPEAG™), of Zurich Switzerland. The overall RSS uncertainty of the measurement system is ±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 DAE3 V1	SN365	10-Dec-03
	SN434	19-Feb-04
	SN383	2-Sep-03
E-Field Probe ET3DV6	SN1502	27-Sep-03
	SN1522	21-Mar-04
	SN1523	17-Jan-04
Dipole Validation Kit, D900V2	SN078	23-Aug-03
	SN425tr	13-Nov-04
S.A.M. Phantom used for 800MHz	TP-1106	
	TP-1005	
Dipole Validation Kit, D1800V2	SN272tr	14-Nov-04
	SN273tr	17-Jul-04
S.A.M. Phantom used for 1900MHz	TP-1250	

3.2 Additional Equipment

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3847A04822	6-Feb-05
	3847A04845	5-Nov-04
	3847A04633	11-Oct-04
Power Meter E4419B	GB39511807	6-Feb-04
	GB39511086	6-Feb-04
	US39250622	5-Nov-03
Power Sensor #1 – E9301A	US39210929	6-Feb-04
	US37296471	5-Nov-03
	US37296475	5-Nov-03
Power Sensor #2 - E9301A	US39210933	6-Feb-04
	US37296473	5-Nov-03
	3318A25036	5-Nov-03
Network Analyzer HP8753ES	US39172529	18-Jun-03
Dielectric Probe Kit HP85070C	US99360070	N/A

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, 07-Jun-03	40.7	0.89	20-21
		Measured, 10-Jun-03	40.6	0.89	20-21
		Measured, 11-Jun-03	41.6	0.9	20-21
		Measured, 12-Jun-03	42.1	0.91	20-21
		Recommended Limits	41.5	0.90	20-25
	Body	Measured, 10-Jun-03	54.4	0.97	20-21
		Measured, 13-Jun-03	55.1	0.98	20-21
		Recommended Limits	55.2	0.97	20-25
1880	Head	Measured, 06-Jun-03	39.0	1.46	20-21
		Measured, 10-Jun-03	38.9	1.46	20-21
		Measured, 11-Jun-03	39.3	1.45	20-21
		Measured, 11-Jun-03	38.7	1.46	20-21
		Measured, 12-Jun-03	38.1	1.47	20-21
		Recommended Limits	40.0	1.40	20-25
	Body	Measured, 14-Jun-03	51.4	1.58	20-21
		Measured, 15-Jun-03	51.4	1.58	20-21
		Measured, 15-Jun-03	51.4	1.59	20-21
		Measured, 16-Jun-03	51.3	1.59	20-21
		Recommended Limits	53.3	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 ±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 0.01 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, 06/07/2003**	10.99	39.90	0.95	20	20.3
	Measured, 06/10/2003	10.98	39.90	0.95	20	20.2
	Measured, 06/12/2003	11.26	41.30	0.98	20	20.5
	Measured, 06/13/2003	11.16	40.50	0.97	20	19.9
	Recommended Limits	11.30	40.30	0.95	n/a	n/a
	Measured, 06/11/2003	9.96	41.60	0.90	20	20.9
	Recommended Limits	10.04	41.90	0.89	n/a	n/a
1800	**Measured, 06/06/2003**	40.04	39.50	1.38	20	20.6
	Measured, 06/10/2003	40.08	39.30	1.38	20	21.1
	Measured, 06/11/2003	38.90	39.10	1.37	20	21
	Measured, 06/12/2003	39.68	38.50	1.39	20	20.5
	Measured, 06/14/2003	40.08	38.70	1.37	20	19.6
	Measured, 06/15/2003	38.49	38.70	1.39	20	20.3
	Measured, 06/16/2003	39.05	39.20	1.39	20	20.2
	Recommended Limits	38.80	39.60	1.37	n/a	n/a
	Measured, 06/06/2003	39.80	39.50	1.38	20	20
	Recommended Limits	38.80	39.60	1.37	n/a	n/a

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

Description	Serial Number	f (MHz)	Conversion Factor	Cal Cert pg #
E-Field Probe ET3DV6	SN1523	835	6.5	**2 of 10**
	SN1522	900	4.7	**2 of 8**
		1800	3.4	**2 of 8**
	SN1502	1800	5.6	2 of 10

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 3.0 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.

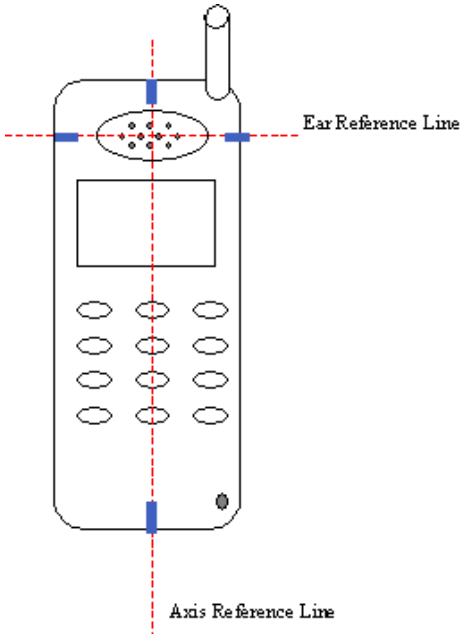
The Cellular Phone (FCC ID IHDT56DK1) has AANN4204A as the only available battery option. This battery was used to do all of the SAR testing. The phone was placed in the SAR measurement system with a fully charged battery.

6.1 Head Adjacent Test Results

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.

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	Cal Cert pg #
E-Field Probe ET3DV6	SN1523	835	6.5	**2 of 10**
	SN1522	900	4.7	**2 of 8**
	SN1502	1800	5.6	2 of 8

There are five different external housings for this phone. They are:
Butterfly Housing
Hour Glass Housing
"Metal" Box Housing
Mini Housing
Peanut Shaped Housing
Premium Housing

Because each has a different form factor, they were SAR measured independently.

6.1.1 Head Adjacent Test Results with "Butterfly" Housing

			Cheek Position SAR, 1g							
f		Conducted Output Power (dBm)	*Left Head*				*Right Head*			
(MHz)	Description		Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Digital 800MHz	Channel 128	32.40	1.02	-0.22	1.07	20	1.19	-0.17	1.24	20
	Channel 190	32.40	1.20	-0.01	1.20	20	1.20	-0.01	1.20	20.1
	Channel 251	32.41	1.14	-0.04	1.15	19.9	1.21	-0.02	1.22	19.90
Digital 1900MHz	Channel 512	29.56	0.768	-0.26	0.82	21	0.653	-0.04	0.66	19
	Channel 661	29.55	0.80	-0.01	0.80	21	0.657	-0.94	0.82	19
	Channel 810	29.51	0.573	-0.34	0.62	21	0.419	-0.15	0.43	19

Table 1: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the head with the Butterfly Housing.

			15° Tilt Position SAR, 1g							
f		Conducted Output Power (dBm)	*Left Head*				*Right Head*			
(MHz)	Description		Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Digital 800MHz	Channel 128	32.40								
	Channel 190	32.40	0.743	-0.17	0.77	20	0.722	0.01	0.72	20
	Channel 251	32.41								
Digital 1900MHz	Channel 512	29.56	0.787	-0.12	0.81	20				
	Channel 661	29.55	0.84	0.38	0.84	21	0.677	-0.14	0.70	19
	Channel 810	29.51	0.63	-0.19	0.66	18.7				

Table 2: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the head with the Butterfly Housing.

6.1.2 Head Adjacent Test Results with Hour Glass Housing

			Cheek Position SAR, 1g							
			Left Head				*Right Head*			
f (MHz)	Description	Conducted Output Power (dBm)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Digital 800MHz	Channel 128	32.40	1.21	0.05	1.21	20.6	1.16	0.03	1.16	20.6
	Channel 190	32.40	1.11	-0.04	1.12	20.5	1.03	-0.16	1.07	20.6
	Channel 251	32.41	0.886	-0.02	0.89	20.6	0.89	-0.08	0.91	20.5
Digital 1900MHz	Channel 512	29.56	0.88	0.02	0.88	18.8	0.674	-0.01	0.68	18.7
	Channel 661	29.55	1.08	-0.16	1.12	18.9	0.735	-0.39	0.80	18.7
	Channel 810	29.51	0.787	-0.08	0.80	18.7	0.587	-0.40	0.64	19.30

Table 3: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the head with the Hour Glass Housing.

			15° Tilt Position SAR, 1g							
			Left Head				*Right Head*			
f (MHz)	Description	Conducted Output Power (dBm)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Digital 800MHz	Channel 128	32.40								
	Channel 190	32.40	0.701	0.05	0.70	20.5	0.631	-0.05	0.64	20.50
	Channel 251	32.41								
Digital 1900MHz	Channel 512	29.56	0.84	-0.10	0.86	18.7	0.702	-0.08	0.72	19.2
	Channel 661	29.55	1.05	-0.52	1.18	18.7	0.833	-0.34	0.90	19.3
	Channel 810	29.51	0.759	-0.27	**0.81**	19.4	0.585	-0.16	0.61	19.1

Table 4: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the head with the Hour Glass Housing.

6.1.3 Head Adjacent Test Results with Metal Box Housing

			Cheek Position SAR, 1g							
			Left Head				*Right Head*			
f (MHz)	Description	Conducted Output Power (dBm)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Digital 800MHz	Channel 128	32.40	1.15	-0.14	1.19	20.2	0.997	-.08	1.02	20.5
	Channel 190	32.40	1.17	-0.13	1.21	20.2	1.17	-0.11	1.20	20.5
	Channel 251	32.41	1.16	-0.18	1.21	20.3	1.17	-0.04	1.18	20.5
Digital 1900MHz	Channel 512	29.56	0.929	0.16	0.96	20.3	0.693	0.08	0.69	20
	Channel 661	29.55	1.05	-0.13	1.08	20.2	0.787	-.30	0.84	20
	Channel 810	29.51	0.782	-0.28	0.83	20.3	0.623	-.14	0.64	19

Table 5: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the head with the Metal Box Housing.

			15° Tilt Position SAR, 1g							
			Left Head				*Right Head*			
f (MHz)	Description	Conducted Output Power (dBm)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Digital 800MHz	Channel 128	32.40	0.75	-0.39	**0.82**	20.2				
	Channel 190	32.40	0.757	-0.27	0.81	20.3	0.749	-0.07	0.76	20.5
	Channel 251	32.41	0.745	0.00	0.75	20.2				
Digital 1900MHz	Channel 512	29.56	0.86	0.28	0.86	20	0.739	-0.09	0.75	18.8
	Channel 661	29.55	1.05	0.19	1.05	20	0.868	-0.17	0.90	19
	Channel 810	29.51	0.797	0.16	0.80	20	0.668	-0.08	0.68	18.8

Table 6: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the head with the Metal Box Housing.

6.1.4 Head Adjacent Test Results with Mini Housing

			Cheek Position SAR, 1g							
			Left Head				*Right Head*			
f (MHz)	Description	Conducted Output Power (dBm)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Digital 800MHz	Channel 128	32.40	1.27	-.36	**1.38**	20.4	1.2	0.00	1.20	20.7
	Channel 190	32.40	1.24	-.03	1.25	20.9	1.25	-0.04	1.26	20.7
	Channel 251	32.41	1.11	-.03	1.12	20.1	1.07	-0.03	1.08	20.7
Digital 1900MHz	Channel 512	29.56	1.01	.44	1.01	21				
	Channel 661	29.55	0.984	.16	0.98	21	0.675	0.04	0.68	20
	Channel 810	29.51	0.687	-.19	0.72	21				

Table 7: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the head with the Mini Housing.

			15° Tilt Position SAR, 1g							
			Left Head				*Right Head*			
f (MHz)	Description	Conducted Output Power (dBm)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Digital 800MHz	Channel 128	32.40								
	Channel 190	32.40	0.756	-0.01	0.76	20.3	0.755	0.12	0.76	20.7
	Channel 251	32.41								
Digital 1900MHz	Channel 512	29.56	0.984	0.13	0.98	21	0.788	-0.13	0.81	20
	Channel 661	29.55	1.08	0.09	1.08	21	0.869	-0.12	0.89	20
	Channel 810	29.51	0.722	0.17	0.72	21	0.553	-0.05	0.56	20

Table 8: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the head the Mini Housing.

6.1.5 Head Adjacent Test Results with Peanut Housing

			Cheek Position SAR, 1g							
f		Conducted Output Power (dBm)	*Left Head*				*Right Head*			
(MHz)	Description		Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Digital 800MHz	Channel 128	32.40	1.14	-0.12	1.17	20.6	1.13	-0.33	1.22	20.3
	Channel 190	32.40	1.20	-0.02	1.21	20.5	1.19	-0.05	1.20	20.3
	Channel 251	32.41	1.15	-0.02	1.16	20.5	1.16	-0.09	1.18	20.4
Digital 1900MHz	Channel 512	29.56	0.83	-0.43	0.92	20				
	Channel 661	29.55	0.82	-0.50	0.92	19.7	0.625	-0.41	0.69	20
	Channel 810	29.51	0.58	0.31	0.58	20				

Table 9: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the head with the Peanut Housing.

			15° Tilt Position SAR, 1g							
f		Conducted Output Power (dBm)	*Left Head*				*Right Head*			
(MHz)	Description		Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Digital 800MHz	Channel 128	32.40								
	Channel 190	32.40	0.758	0.02	0.79	20.4	0.648	-0.50	0.73	20.3
	Channel 251	32.41								
Digital 1900MHz	Channel 512	29.56	0.813	0.12	0.81	20				
	Channel 661	29.55	0.86	0.08	0.86	19.9	0.692	-0.16	0.72	20.30
	Channel 810	29.51	0.521	0.06	0.52	19.9				

Table 10: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the head with the Peanut Housing.

6.1.6 Head Adjacent Test Results with Premium Housing

			Cheek Position SAR, 1g							
f		Conducted Output Power (dBm)	*Left Head*				*Right Head*			
(MHz)	Description		Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Digital 800MHz	Channel 128	32.40	1.12	-0.33	1.21	20.3	1.07	-0.39	1.17	20.3
	Channel 190	32.40	1.22	-0.05	1.23	20.2	1.23	-0.06	1.25	20.2
	Channel 251	32.41	1.12	-0.04	1.13	20.2	1.13	-0.03	1.14	20.3
Digital 1900MHz	Channel 512	29.56	0.805	0.12	0.81	21	0.702	-0.05	0.71	21
	Channel 661	29.55	1.14	0.14	**1.14**	20.6	0.872	-0.2	0.91	21
	Channel 810	29.51	0.831	-0.10	0.85	20.7	0.637	-0.15	0.66	21

Table 11: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the head with the Premium Housing.

			15° Tilt Position SAR, 1g							
f		Conducted Output Power (dBm)	*Left Head*				*Right Head*			
(MHz)	Description		Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Digital 800MHz	Channel 128	32.40								
	Channel 190	32.40	0.778	0.03	0.78	20.2	0.704	0.04	0.70	20.2
	Channel 251	32.41								
Digital 1900MHz	Channel 512	29.56	0.726	0.34	0.73	20.3	0.67	-0.47	0.75	19
	Channel 661	29.55	1.03	-0.20	1.08	20.3	0.79	-0.40	0.87	19
	Channel 810	29.51	0.844	0.23	0.84	21	0.605	-0.15	0.63	19

Table 12: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the head with the Premium Box Housing.

6.2 Body-Worn Test Results

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

A "flat" phantom was for the body-worn tests. This "flat" phantom is made out of 1" thick natural High Density Polyethylene with a thickness at the bottom equal to 2.0mm. It measures 52.7cm(long) x 26.7cm(wide) x 21.2cm(tall). The measured dielectric constant of the material used is less than 2.3 and the loss tangent is less than 0.0046 all the way up to 2.184GHz.

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

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

The Leather Case (ATM-005-BLK-1) is for the following Housings:
Premium Housing, Hourglass Housing, Metal Box Housing, Butterfly Housing

The Mini Case (MN-33301) is available with Wishbone Belt Clip (SYN8631A) and with Universal Belt Clip (SYN8763A) for the Peanut Shaped Housing

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	Cal Cert pg #
E-Field Probe ET3DV6	SN1522	900	4.4	**2 of 2**
		1800	3.1	**2 of 2**
	SN1502	1800	5.6	8 of 10

f (MHz)	Description	Conducted Output Power (dBm)	Body Worn for Butterfly Housing			
			Leather Case (ATM-005-BLK-1)			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
Digital 800MHz	Channel 128	32.40	1.10	-0.02	**1.11**	19.8
	Channel 190	32.40	0.896	-0.14	0.93	19.8
	Channel 251	32.41	0.783	-0.18	0.82	19.8
Digital 1900MHz	Channel 512	29.56				
	Channel 661	29.55	0.557	-0.11	0.57	19.30
	Channel 810	29.51				

Table 13: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the body with Butterfly Housing.

f (MHz)	Description	Conducted Output Power (dBm)	Body Worn for Hourglass Housing			
			Leather Case (ATM-005-BLK-1)			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
Digital 800MHz	Channel 128	32.40				
	Channel 190	32.40	0.679	-0.16	0.70	19.80
	Channel 251	32.41				
Digital 1900MHz	Channel 512	29.56				
	Channel 661	29.55	0.603	-0.46	0.67	19.50
	Channel 810	29.51				

Table 14: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the body with Hourglass Housing.

f (MHz)	Description	Conducted Output Power (dBm)	Body Worn for Metal Box Shaped Housing			
			Leather Case (ATM-005-BLK-1)			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
Digital 800MHz	Channel 128	32.40	0.987	0.00	0.99	19.7
	Channel 190	32.40	0.868	-0.16	0.90	19.8
	Channel 251	32.41	0.758	-0.01	0.76	19.8
Digital 1900MHz	Channel 512	29.56	1.12	-0.42	**1.23**	20
	Channel 661	29.55	0.844	-0.31	0.91	20
	Channel 810	29.51	0.635	-0.02	0.64	20

Table 15: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the body with Metal Box Housing.

f (MHz)	Description	Conducted Output Power (dBm)	Body Worn for Mini Housing			
			Leather Case (ATM-005-BLK-1)			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
Digital 800MHz	Channel 128	32.40				
	Channel 190	32.40	0.692	-0.05	0.70	20.9
	Channel 251	32.41				
Digital 1900MHz	Channel 512	29.56	0.945	-0.12	0.97	20
	Channel 661	29.55	0.825	-0.20	0.86	20
	Channel 810	29.51	0.623	-0.04	0.63	20

Table 16: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the body with Mini Housing.

f (MHz)	Description	Conducted Output Power (dBm)	Body Worn for Peanut Housing			
			Mini case with wishbone clip in low band and universal belt clip in high band (MN-33301 / SYN8631A / SYN8763A)			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
Digital 800MHz	Channel 128	32.40				
	Channel 190	32.40	0.615	-0.02	0.62	19.90
	Channel 251	32.41				
Digital 1900MHz	Channel 512	29.56				
	Channel 661	29.55	0.249	-0.12	0.26	20.00
	Channel 810	29.51				

Table 17: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the body with Peanut Housing.

f (MHz)	Description	Conducted Output Power (dBm)	Body Worn for Premium Housing			
			Leather Case (ATM-005-BLK-1)			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
Digital 800MHz	Channel 128	32.40	0.969	-0.03	0.98	19.9
	Channel 190	32.40	0.802	-0.17	0.83	19.8
	Channel 251	32.41	0.723	-0.13	0.74	19.8
Digital 1900MHz	Channel 512	29.56				
	Channel 661	29.55	0.433	-0.26	0.46	19.4
	Channel 810	29.51				

Table 18: SAR measurement results for the portable cellular telephone FCC ID IHDT56DK1 at highest possible output power. Measured against the body with Premium Housing.

6.3 Summary of SAR Test Results

Highest Measured 1g SAR	835 MHz	1900MHz
Left Head Cheek Touch Position	**1.38 W/kg**	**1.14 W/kg**
Right Head Cheek Touch Position	1.26 W/kg	0.91 W/kg
Left Head 15° Tilt Position	**0.82 W/kg**	**1.18 W/kg**
Right Head 15° Tilt Position	0.76 W/kg	0.90 W/kg
Body-Worn Position	1.11 W/kg	**1.23 W/kg**

Appendix 1

SAR distribution comparison for the system accuracy verification

Dipole 835 MHz

835 MHz System Performance Check / Dipole Sn# 425tr / Forward Power =252mW/ Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20 C Simulant Temp at time of measurement = 20.9 C

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

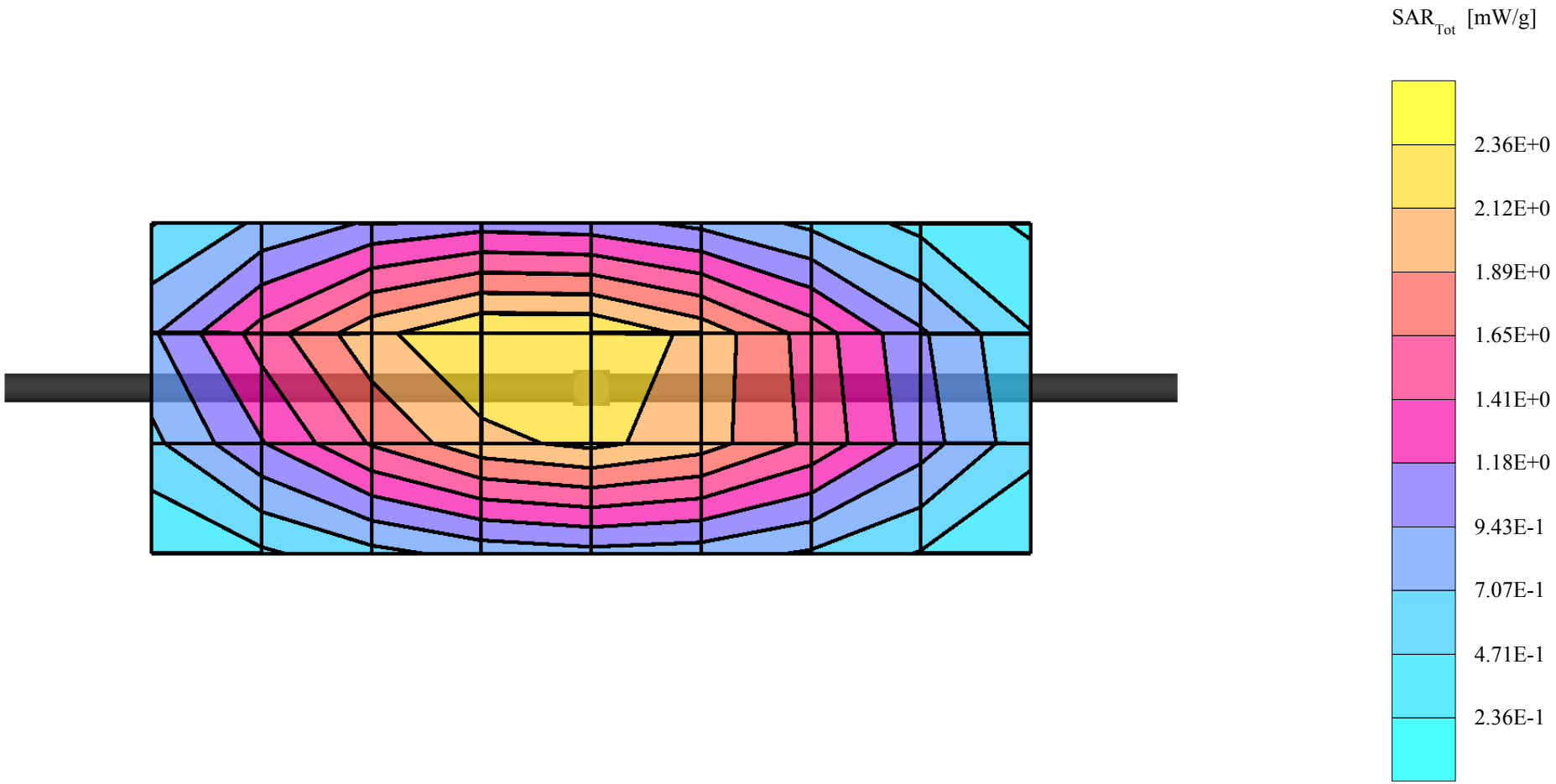
Probe: ET3DV6 - SN1523 - Validation.2; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz VALIDATION: $\sigma = 0.90$ mho/m $\varepsilon_r = 41.6$ $\rho = 1.00$ g/cm^3

Cubes (2): SAR (1g): 2.51 mW/g ± 0.12 dB, SAR (10g): 1.61 mW/g ± 0.12 dB, (Worst-case extrapolation)

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

Penetration depth: 12.1 (11.1, 13.4) [mm]

Powerdrift: -0.00 dB



Dipole 835 MHz

835 MHz System Performance Check / Dipole Sn# 425tr / Forward Power =252mW/ Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20 C Simulant Temp at time of measurement = 20.9 C

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: $\sigma = 0.90$ mho/m $\varepsilon_r = 41.6$ $\rho = 1.00$ g/cm^3

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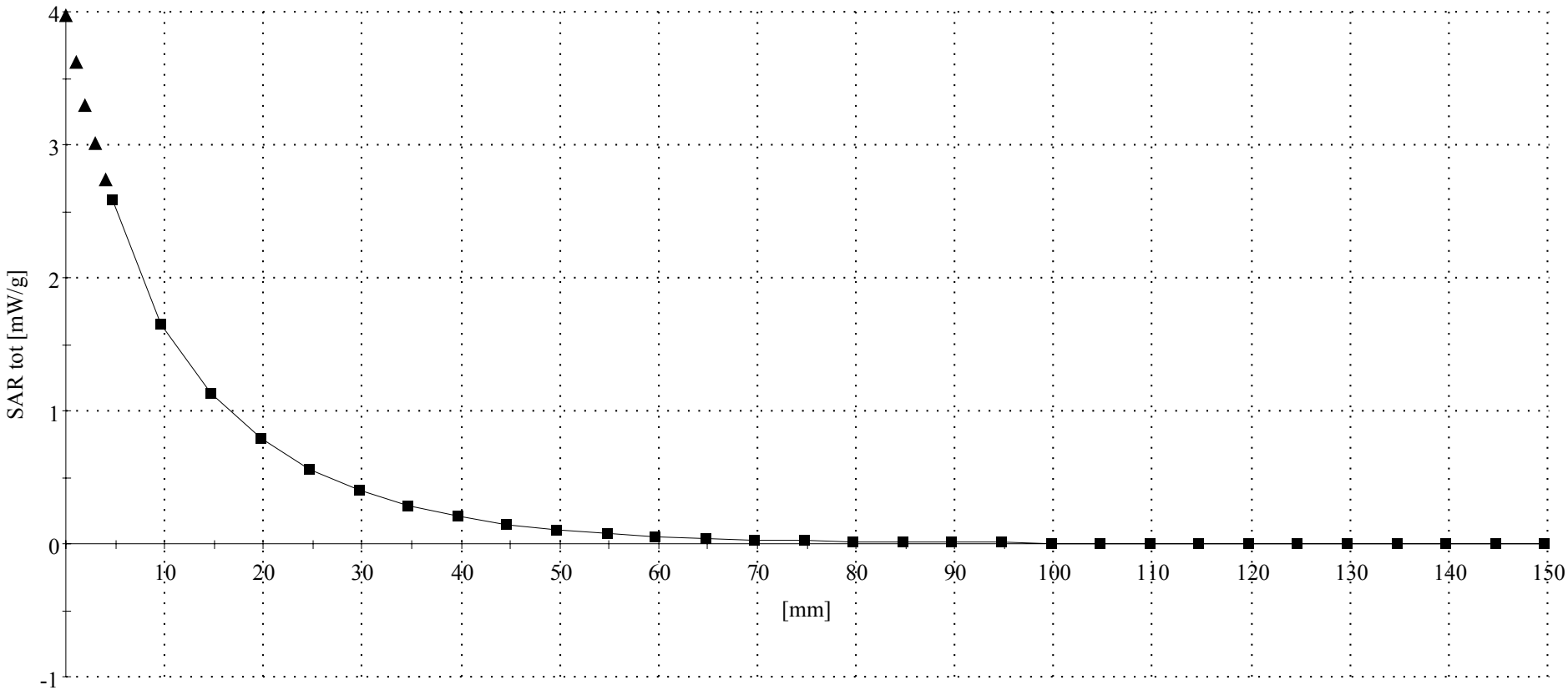
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

Penetration depth: 12.0 (11.0, 13.4) [mm]



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Dipole 900 MHz

900 MHz System Performance Check / Dipole Sn# 78 / Forward Power = 252mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20 C Simulant Temp at time of measurement = 21C

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

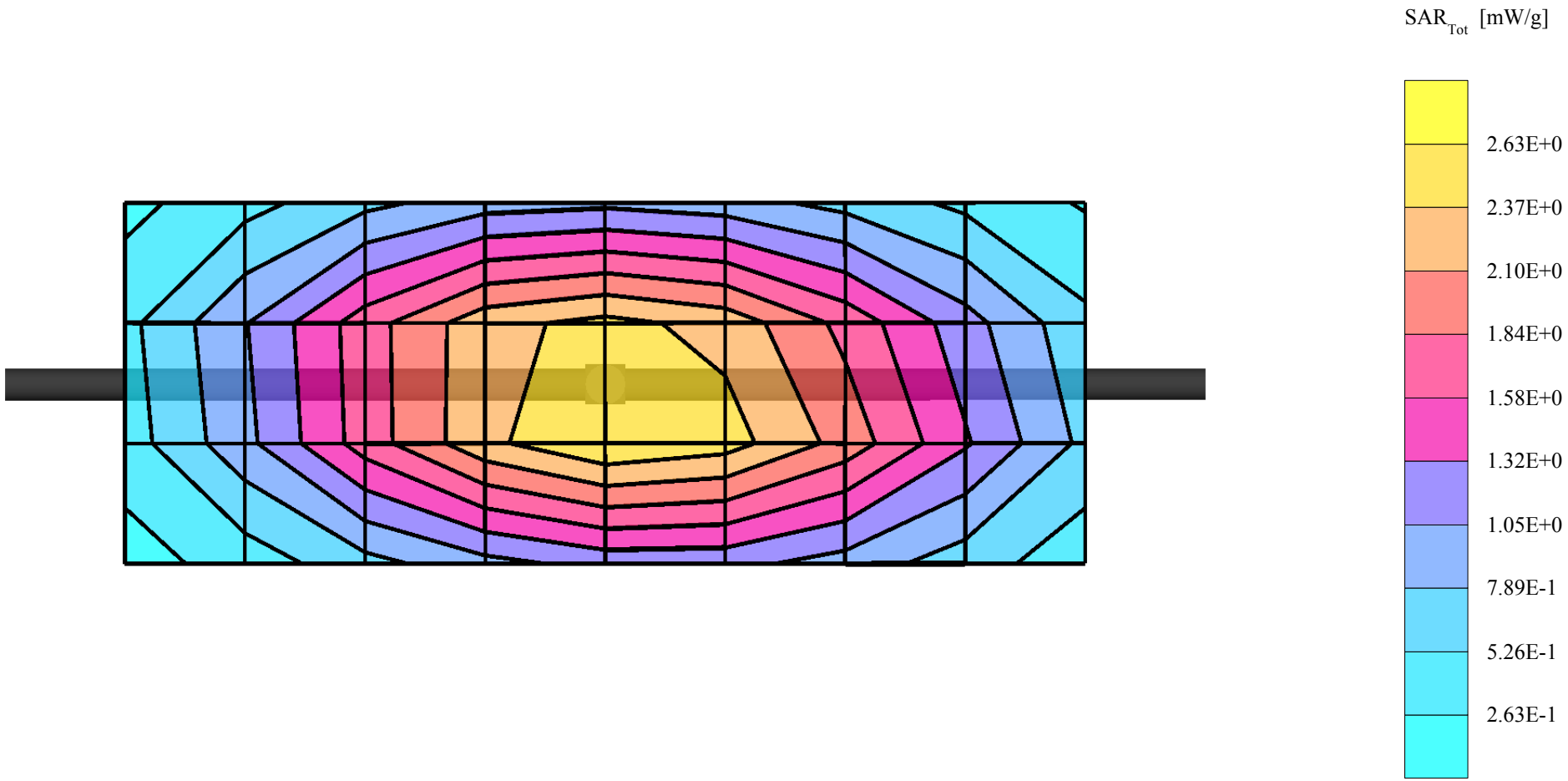
Probe: ET3DV6 - SN1522 - Validation2; ConvF(4.70,4.70,4.70); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.95$ mho/m $\varepsilon_r = 39.9$ $\rho = 1.00$ g/cm^3

Cubes (2): SAR (1g): 2.77 mW/g ± 0.12 dB, SAR (10g): 1.75 mW/g ± 0.11 dB, (Worst-case extrapolation)

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

Penetration depth: 11.4 (10.6, 12.7) [mm]

Powerdrift: -0.07 dB



Dipole 900 MHz

900 MHz System Performance Check / Dipole Sn# 78 / Forward Power = 252mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20 C Simulant Temp at time of measurement = 21C

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

Probe: ET3DV6 - SN1522 - Validation2; ConvF(4.70,4.70,4.70); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.95 mho/m ε_r = 39.9 ρ = 1.00 g/cm^3

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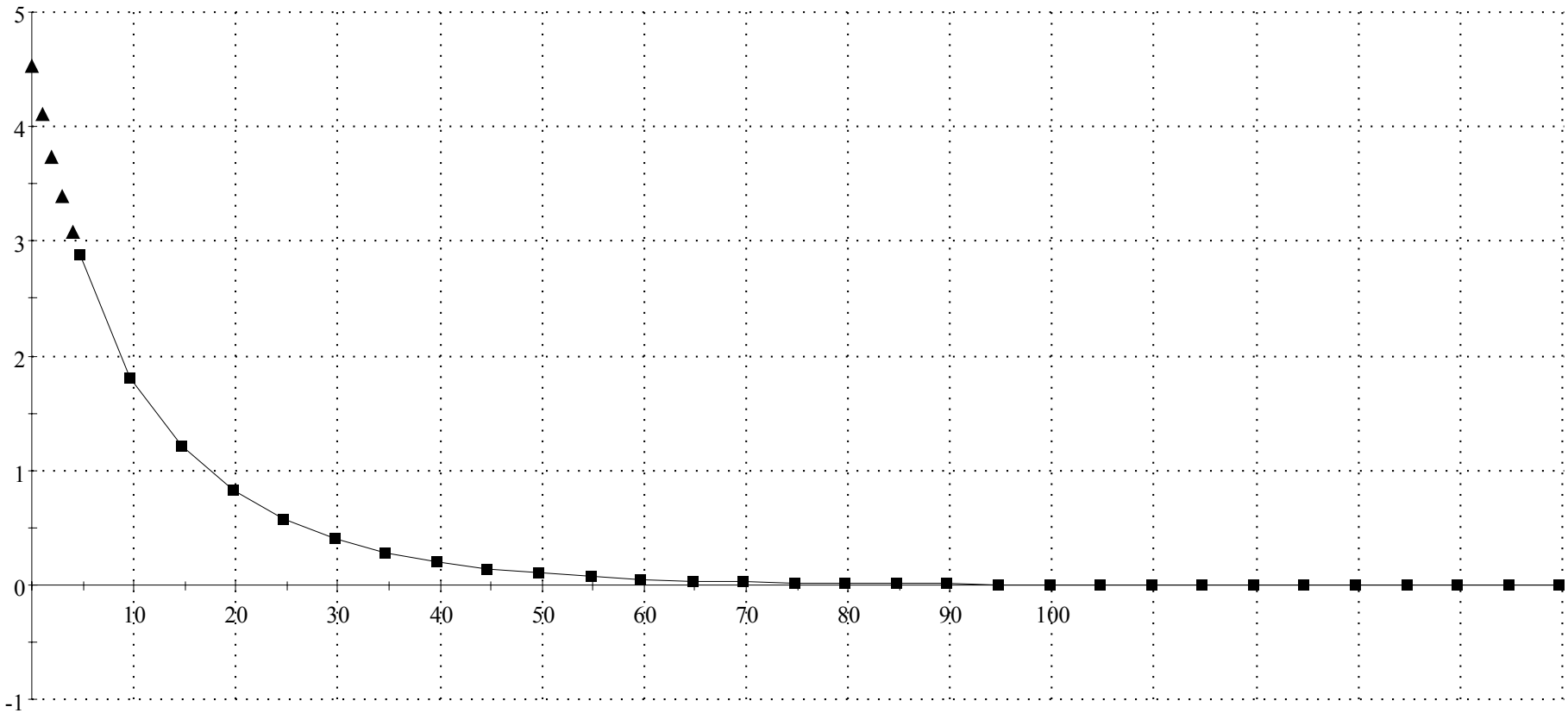
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

Penetration depth: 11.4 (10.5, 12.7) [mm]



06/10/03

Dipole 900 MHz

900 MHz System Performance Check / Dipole Sn# 78 / Forward Power = 253mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20 C Simulant Temp at time of measurement = 21 C

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

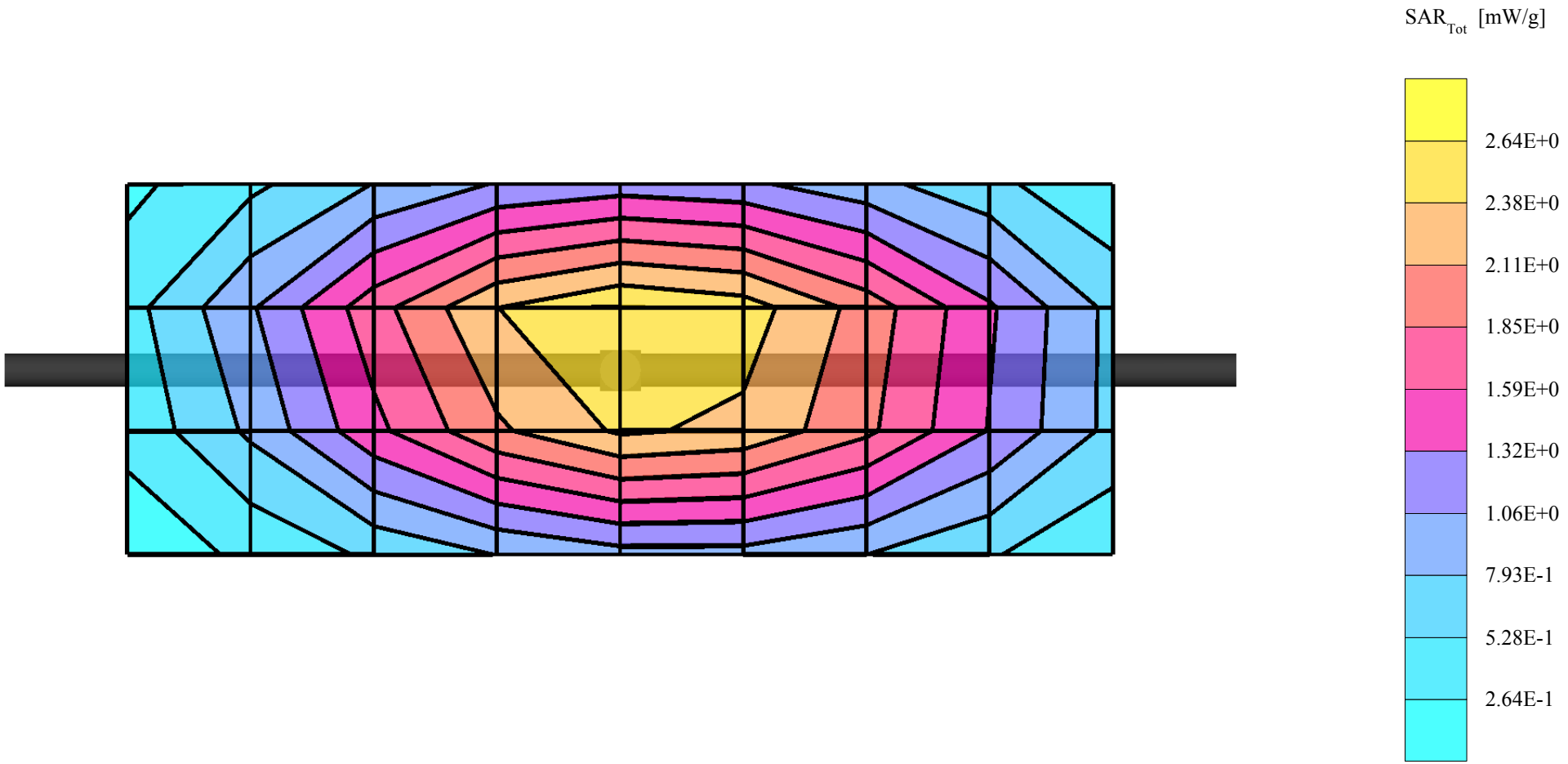
Probe: ET3DV6 - SN1522 - Validation2; ConvF(4.70,4.70,4.70); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.95$ mho/m $\varepsilon_r = 39.9$ $\rho = 1.00$ g/cm^3

Cubes (2): SAR (1g): 2.78 mW/g ± 0.11 dB, SAR (10g): 1.76 mW/g ± 0.11 dB, (Worst-case extrapolation)

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

Penetration depth: 11.5 (10.6, 12.8) [mm]

Powerdrift: -0.03 dB



Dipole 900 MHz

900 MHz System Performance Check / Dipole Sn# 78 / Forward Power = 253mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20 C Simulant Temp at time of measurement = 21 C

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

Probe: ET3DV6 - SN1522 - Validation2; ConvF(4.70,4.70,4.70); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.95$ mho/m $\varepsilon_r = 39.9$ $\rho = 1.00$ g/cm^3

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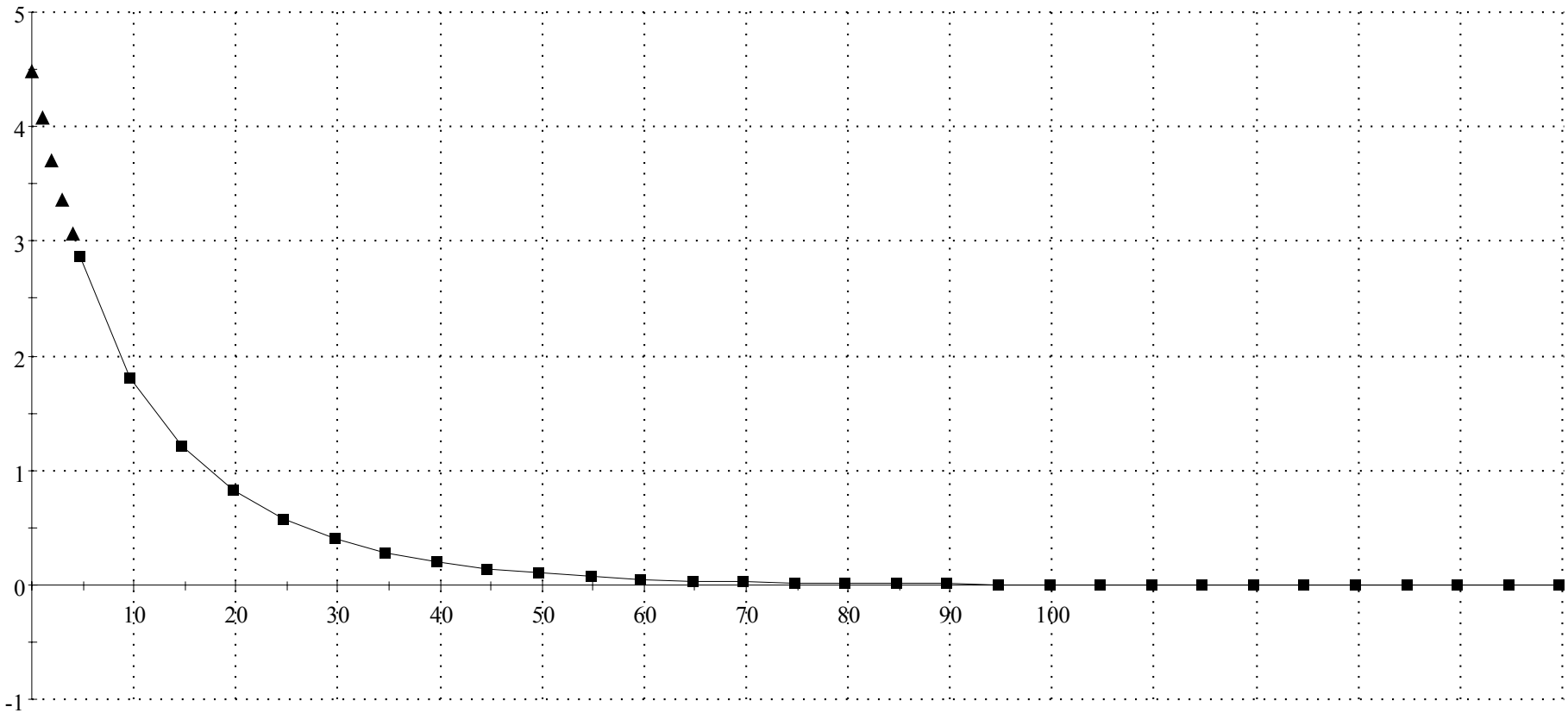
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

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



Dipole 900 MHz

835 MHz System Performance Check / Dipole Sn# 78 / Forward Power = 253mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20 C Simulant Temp at time of measurement = 20.5 C

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

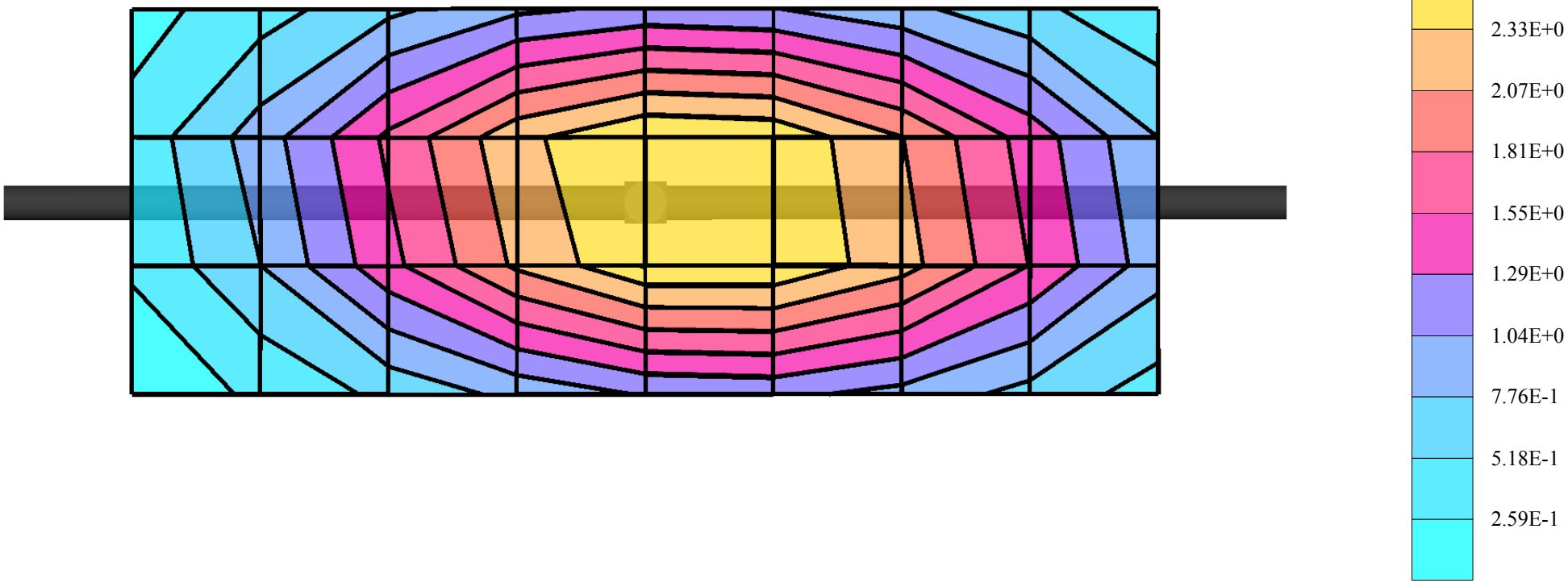
Probe: ET3DV6 - SN1522 - Validation2; ConvF(4.70,4.70,4.70); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.98$ mho/m $\varepsilon_r = 41.3$ $\rho = 1.00$ g/cm^3

Cubes (2): SAR (1g): 2.85 mW/g ± 0.12 dB, SAR (10g): 1.81 mW/g ± 0.12 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

835 MHz System Performance Check / Dipole Sn# 78 / Forward Power = 253mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20 C Simulant Temp at time of measurement = 20.5 C

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

Probe: ET3DV6 - SN1522 - Validation2; ConvF(4.70,4.70,4.70); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.98$ mho/m $\varepsilon_r = 41.3$ $\rho = 1.00$ g/cm^3

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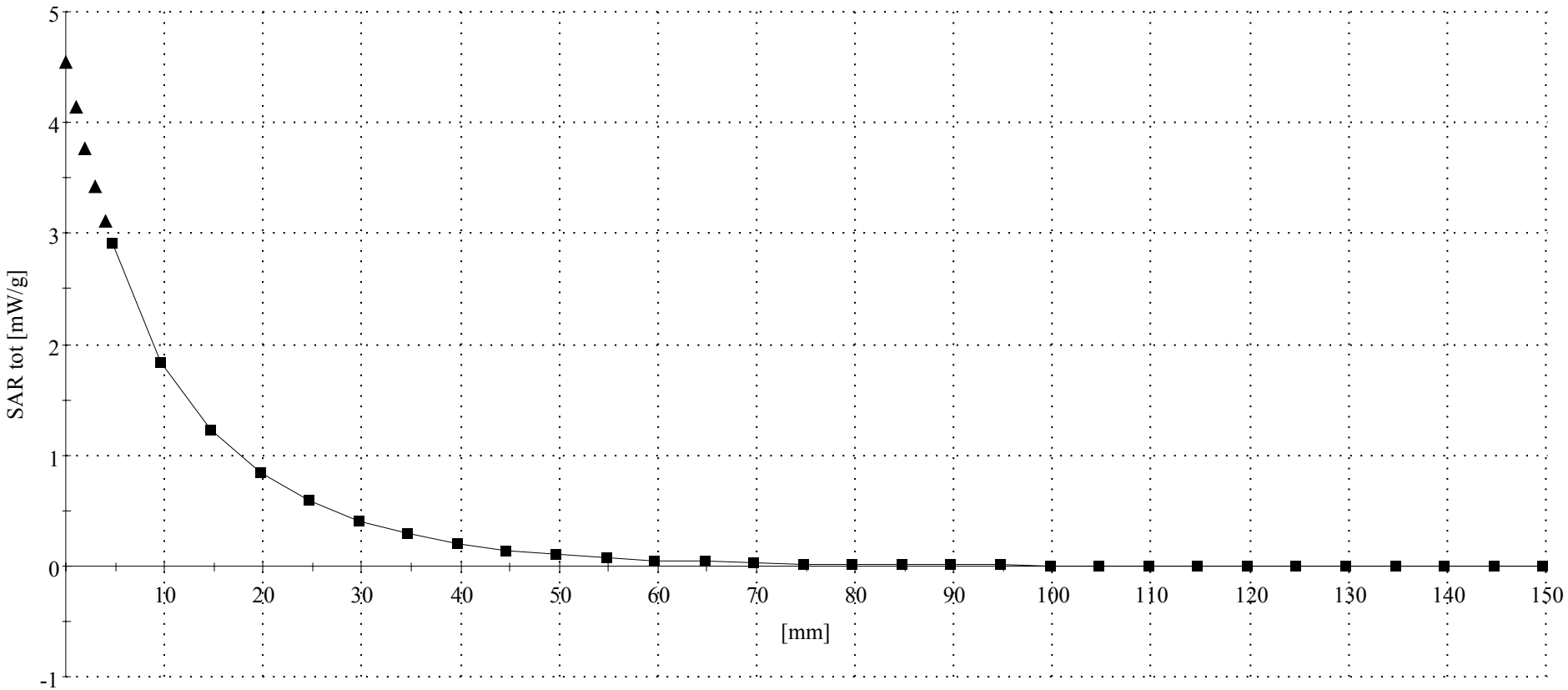
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

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



Dipole 900 MHz

900 MHz System Performance Check / Dipole Sn# 78 / Forward Power = 249mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20 C Simulant Temp at time of measurement = 19.9 C

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

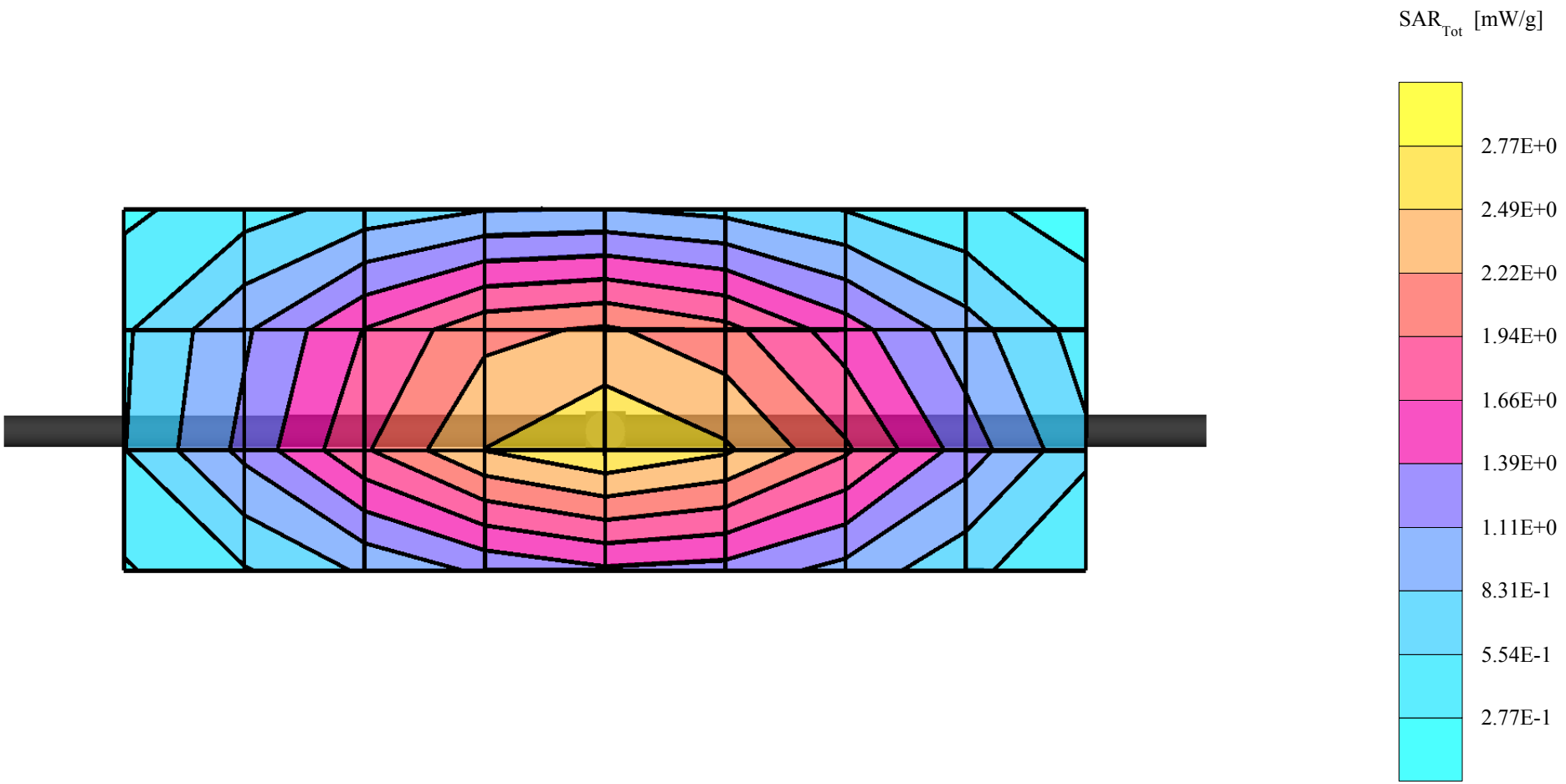
Probe: ET3DV6 - SN1522 - Validation2; ConvF(4.70,4.70,4.70); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.97$ mho/m $\varepsilon_r = 40.5$ $\rho = 1.00$ g/cm^3

Cubes (2): SAR (1g): 2.78 mW/g ± 0.10 dB, SAR (10g): 1.76 mW/g ± 0.10 dB, (Worst-case extrapolation)

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

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

Powerdrift: -0.01 dB



Dipole 900 MHz

900 MHz System Performance Check / Dipole Sn# 78 / Forward Power = 249mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20 C Simulant Temp at time of measurement = 19.9 C

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

Probe: ET3DV6 - SN1522 - Validation2; ConvF(4.70,4.70,4.70); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.97 mho/m ε_r = 40.5 ρ = 1.00 g/cm^3

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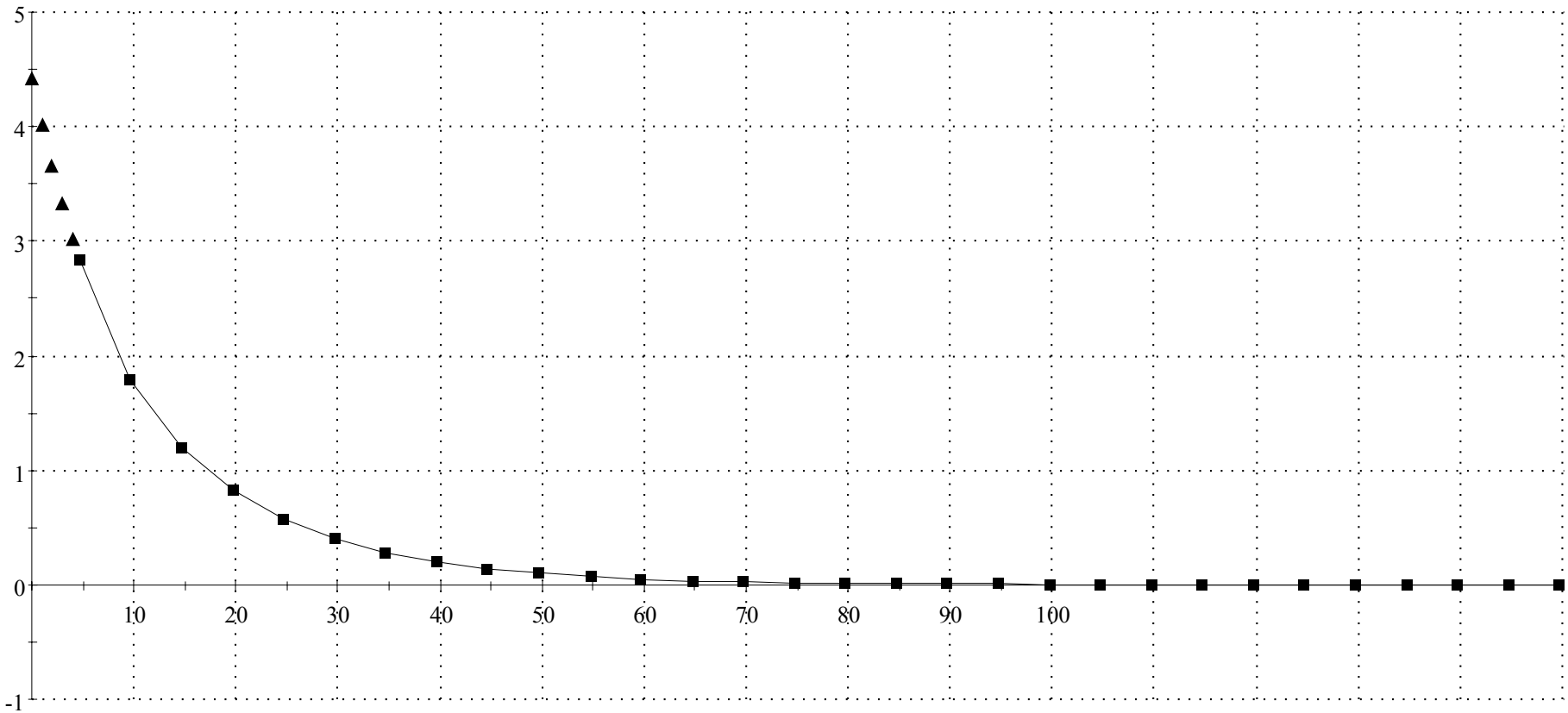
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

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



Dipole 1800 MHz

1800 MHz System Performance Check / Dipole Sn# 273TR / Forward Power = 250 mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20c Simulant Temp at time of measurement = 20.0c

R# 2 TP-1235 GLYCOL SAM Expanded (Rev. 2)-9Jan03 Phantom; Flat Section; Position: (90°,90°); Frequency: 1800 MHz

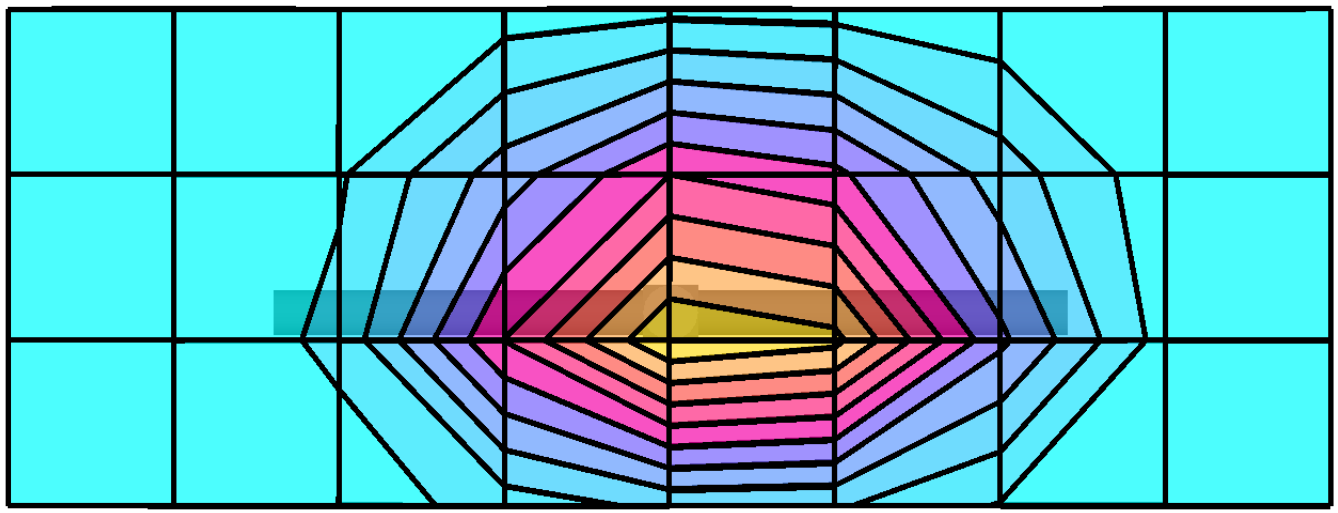
Probe: ET3DV6 - SN1522 - Validation2; ConvF(3.40,3.40,3.40); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.38 mho/m ε_r = 39.5 ρ = 1.00 g/cm^3

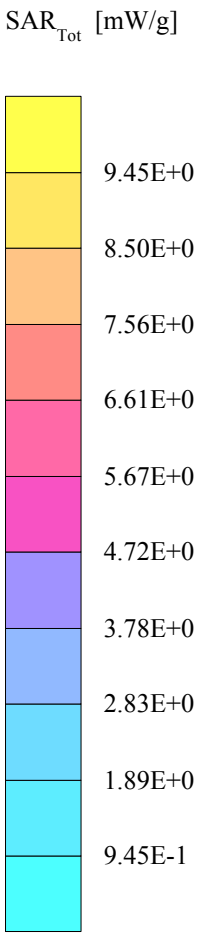
Cubes (2): SAR (1g): 9.95 mW/g ± 0.09 dB, SAR (10g): 5.29 mW/g ± 0.11 dB, (Worst-case extrapolation)

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

Penetration depth: 8.6 (8.2, 9.4) [mm]

Powerdrift: 0.01 dB





Dipole 1800 MHz

1800 MHz System Performance Check / Dipole Sn# 273TR / Forward Power = 250 mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20c Simulant Temp at time of measurement = 20.0c

R# 2 TP-1235 GLYCOL SAM Expanded (Rev. 2)-9Jan03 Phantom; Section; Position: ; Frequency: 1800 MHz

Probe: ET3DV6 - SN1522 - Validation2; ConvF(3.40,3.40,3.40); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.38 mho/m ε_r = 39.5 ρ = 1.00 g/cm^3

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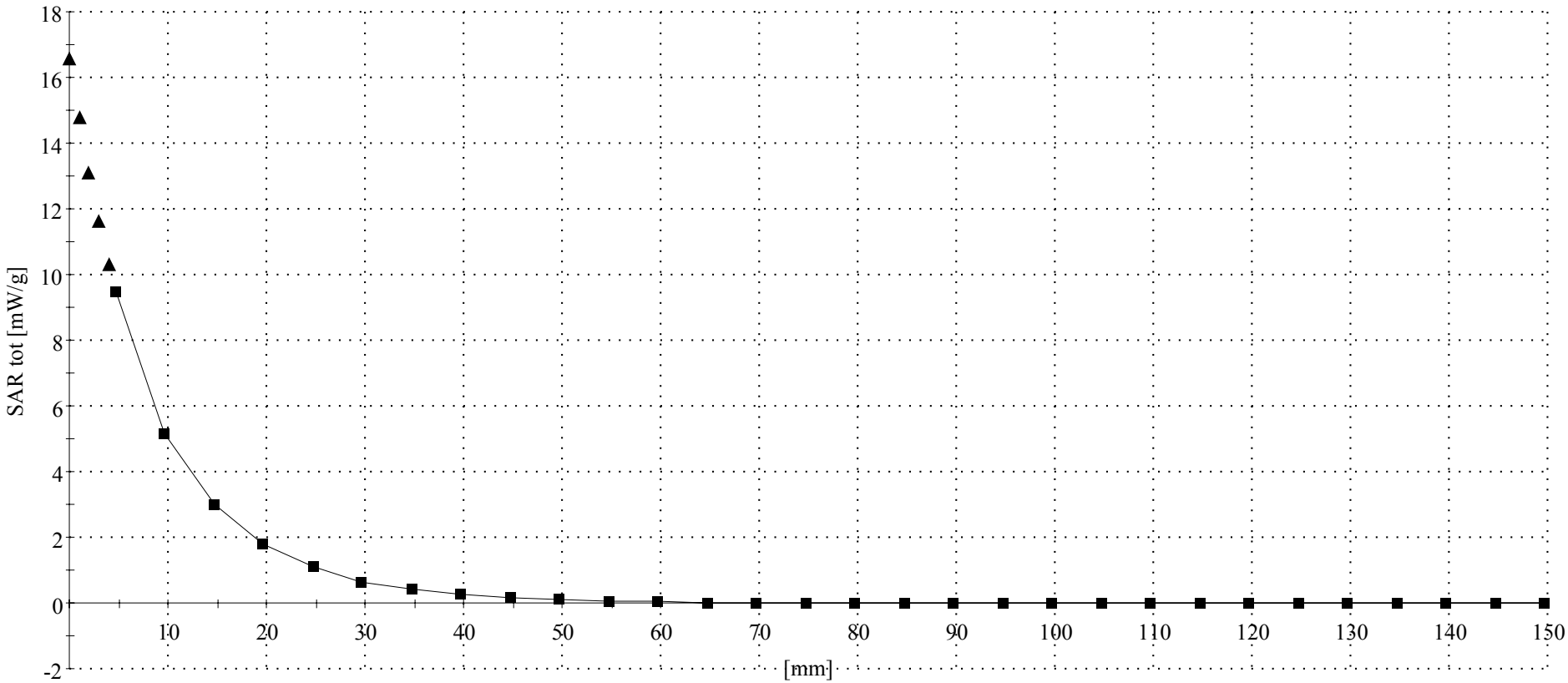
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

Penetration depth: 8.6 (8.2, 9.4) [mm]



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Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 272tr / Forward Power = 248mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20.0*C. Simulant Temp at time of measurement =20.6*C

R4 1-005 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 2 Section; Position: (90°,180°); Frequency: 1800 MHz

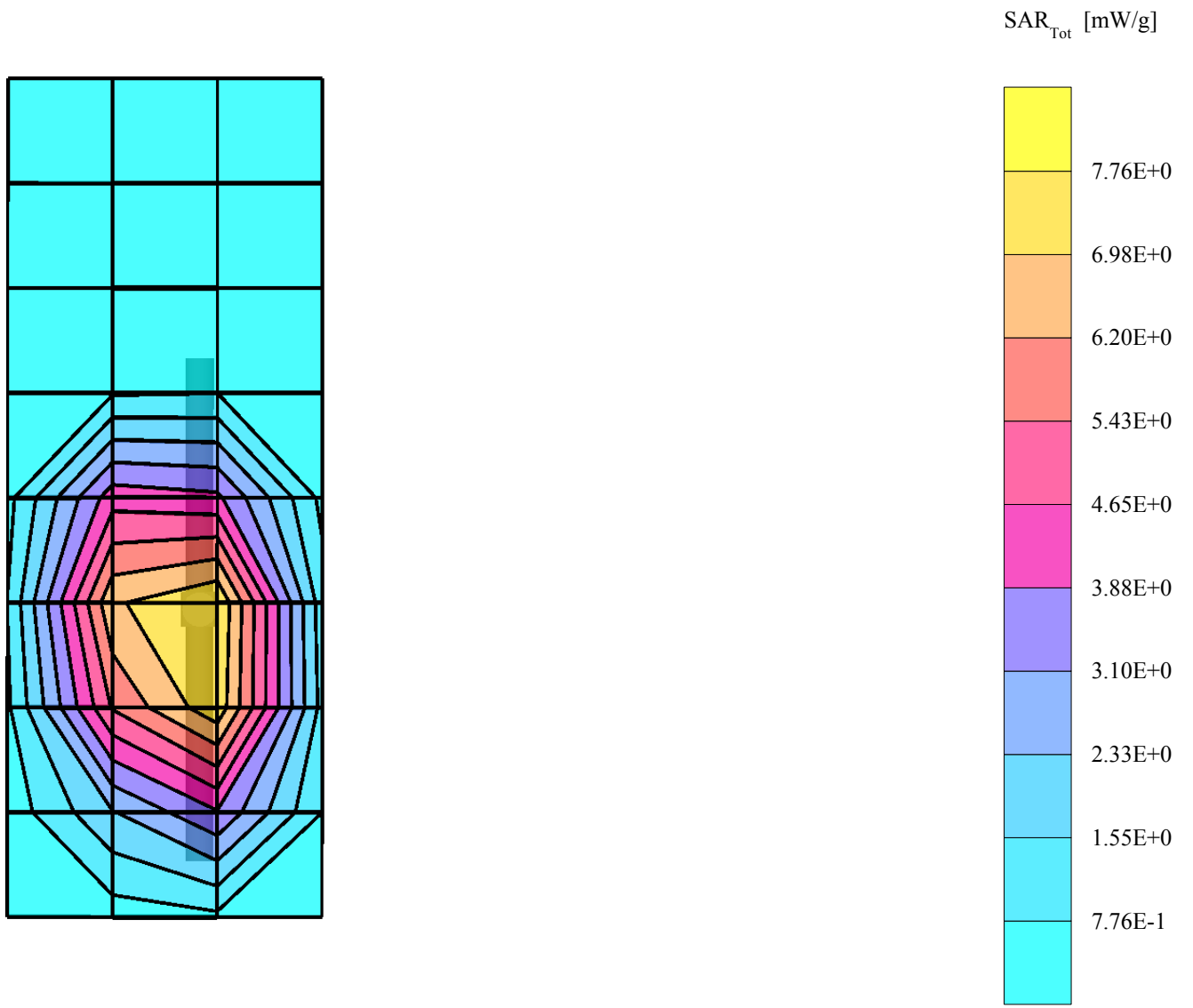
Probe: ET3DV6 - SN1502 - VALIDATION; ConvF(5.60,5.60,5.60); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.38 mho/m ε_r = 39.5 ρ = 1.00 g/cm^3

Cubes (2): SAR (1g): 9.93 mW/g ± 0.04 dB, SAR (10g): 5.20 mW/g ± 0.05 dB, (Worst-case extrapolation)

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

Penetration depth: 8.3 (7.9, 9.2) [mm]

Powerdrift: 0.02 dB



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 272tr / Forward Power = 248mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20.0*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 - SN1502 - VALIDATION; ConvF(5.60,5.60,5.60); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.38 mho/m ε_r = 39.5 ρ = 1.00 g/cm^3

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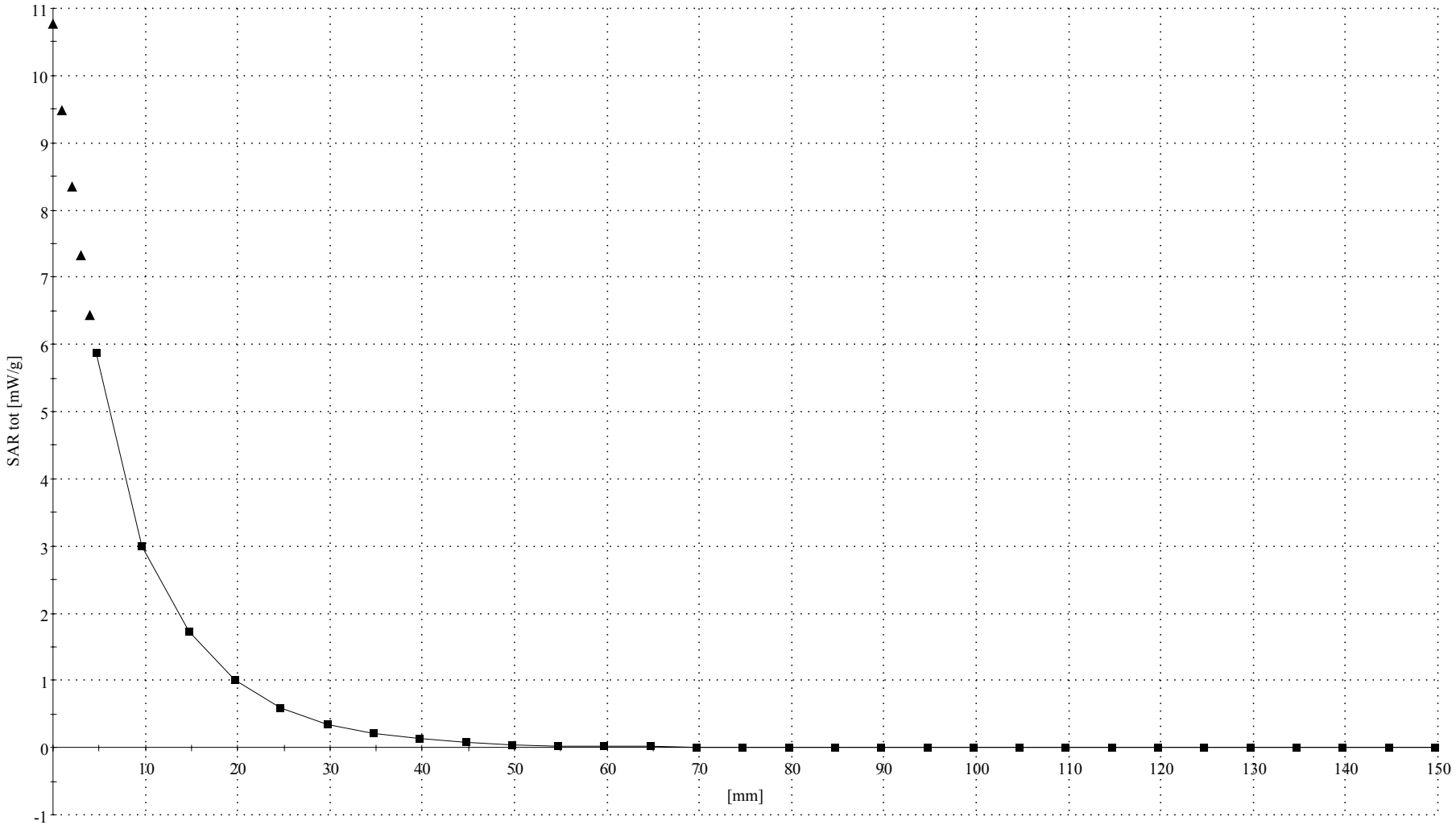
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

Penetration depth: 8.0 (7.5, 8.9) [mm]



06/10/03

Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 272tr / Forward Power = 247mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement =20.0*C. Simulant Temp at time of measurement =21.1*C

R4 1-005 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 2 Section; Position: (90°,180°); Frequency: 1800 MHz

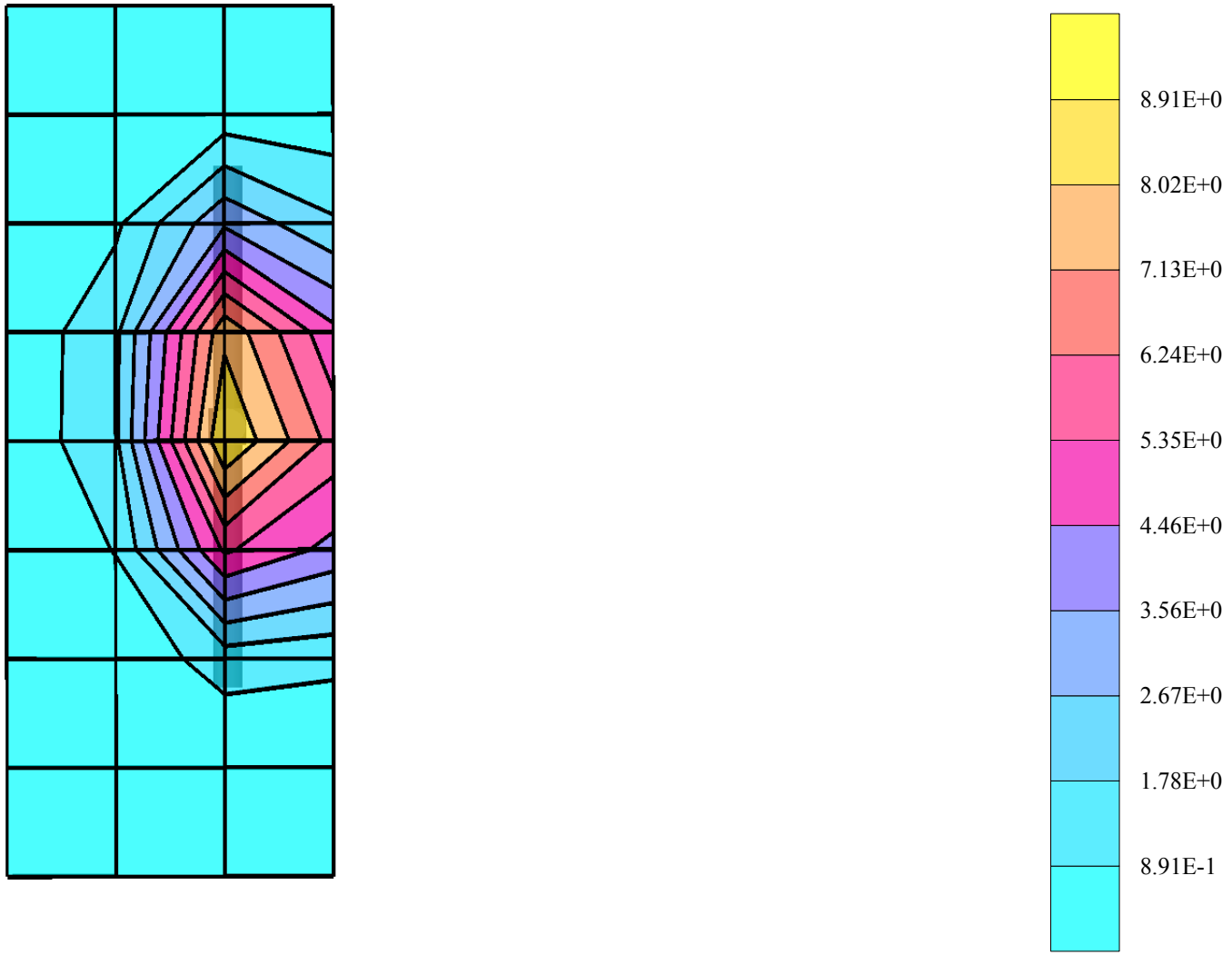
Probe: ET3DV6 - SN1502 - VALIDATION; ConvF(5.60,5.60,5.60); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.38 mho/m ε_r = 39.3 ρ = 1.00 g/cm^3

Cubes (2): SAR (1g): 9.90 mW/g ± 0.02 dB, SAR (10g): 5.20 mW/g ± 0.03 dB, (Worst-case extrapolation)

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

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

Powerdrift: -0.06 dB



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 272tr / Forward Power = 247mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement =20.0*C. Simulant Temp at time of measurement =21.1*C

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

Probe: ET3DV6 - SN1502 - VALIDATION; ConvF(5.60,5.60,5.60); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.38 mho/m ε_r = 39.3 ρ = 1.00 g/cm^3

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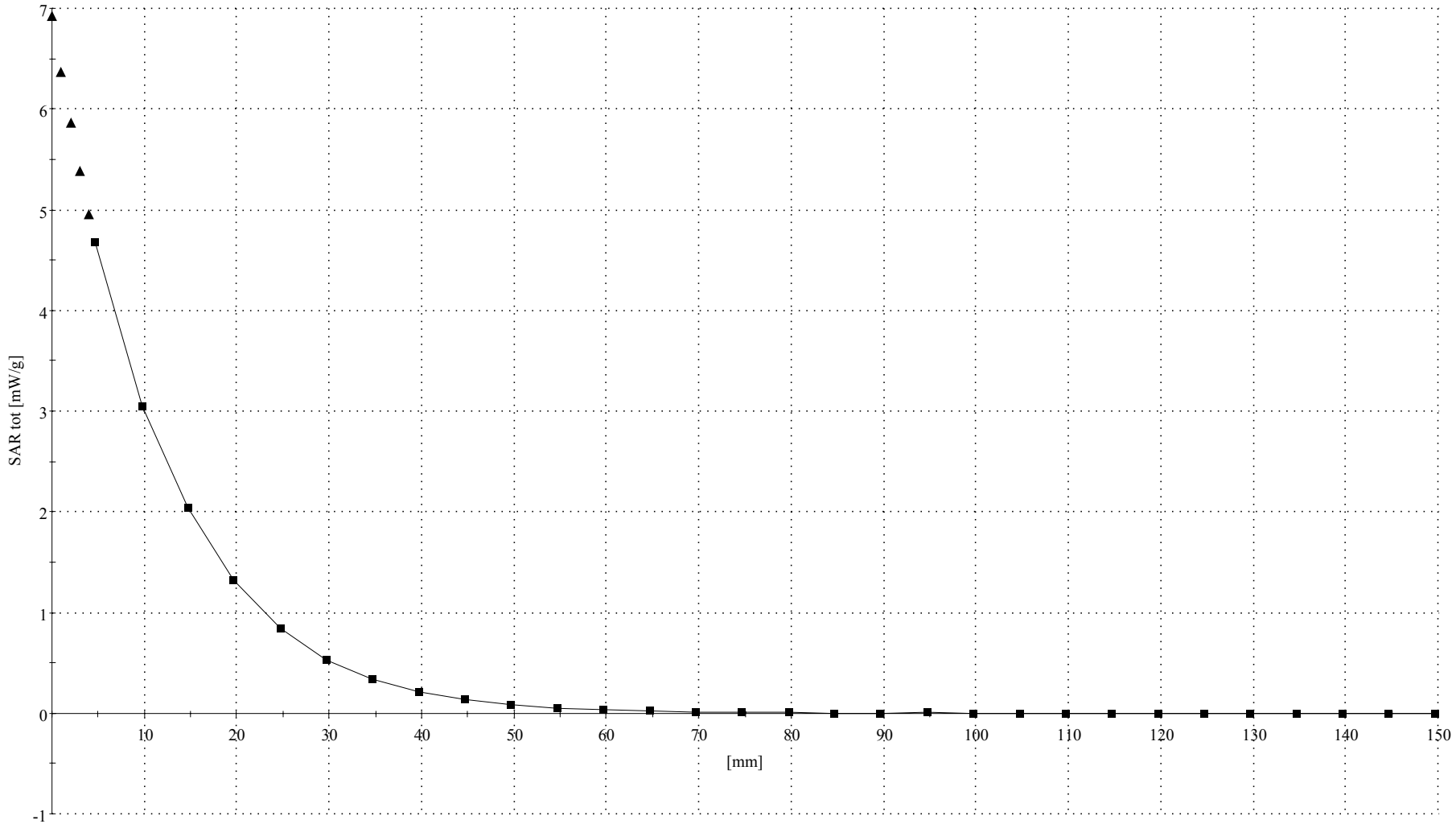
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

Penetration depth: 11.9 (11.9, 12.0) [mm]



06/11/03

Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 272tr / Forward Power = 249mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement =20.0*C. Simulant Temp at time of measurement =21.0*C

R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Flat Section; Position: (90°,90°); Frequency: 1800 MHz

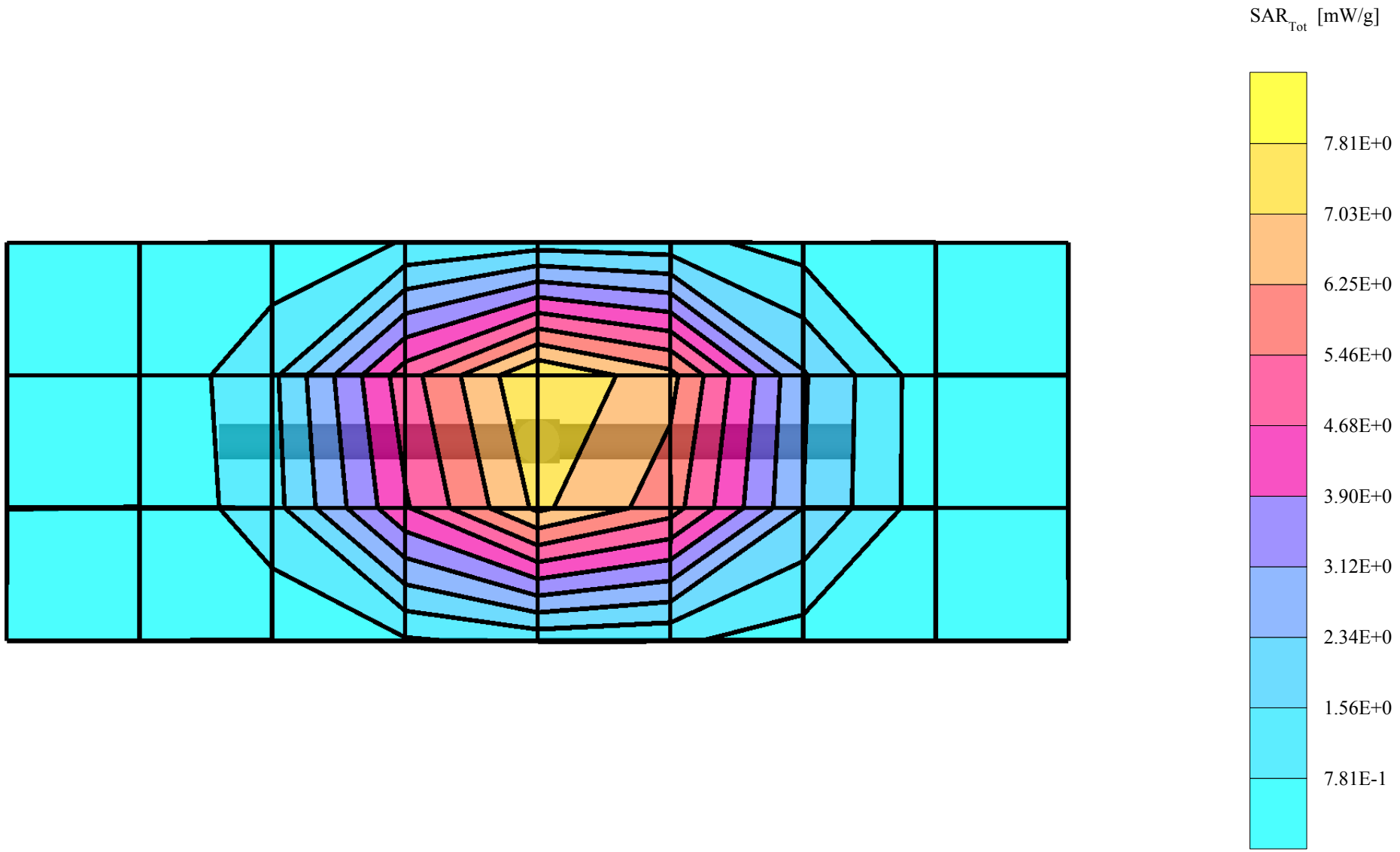
Probe: ET3DV6 - SN1502 - VALIDATION; ConvF(5.60,5.60,5.60); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.37 mho/m ε_r = 39.1 ρ = 1.00 g/cm^3

Cubes (2): SAR (1g): 9.70 mW/g ± 0.04 dB, SAR (10g): 5.09 mW/g ± 0.05 dB, (Worst-case extrapolation)

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

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

Powerdrift: 0.01 dB



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 272tr / Forward Power = 249mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement =20.0*C. Simulant Temp at time of measurement =21.0*C

R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Section; Position: ; Frequency: 1800 MHz

Probe: ET3DV6 - SN1502 - VALIDATION; ConvF(5.60,5.60,5.60); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.37 mho/m ε_r = 39.1 ρ = 1.00 g/cm^3

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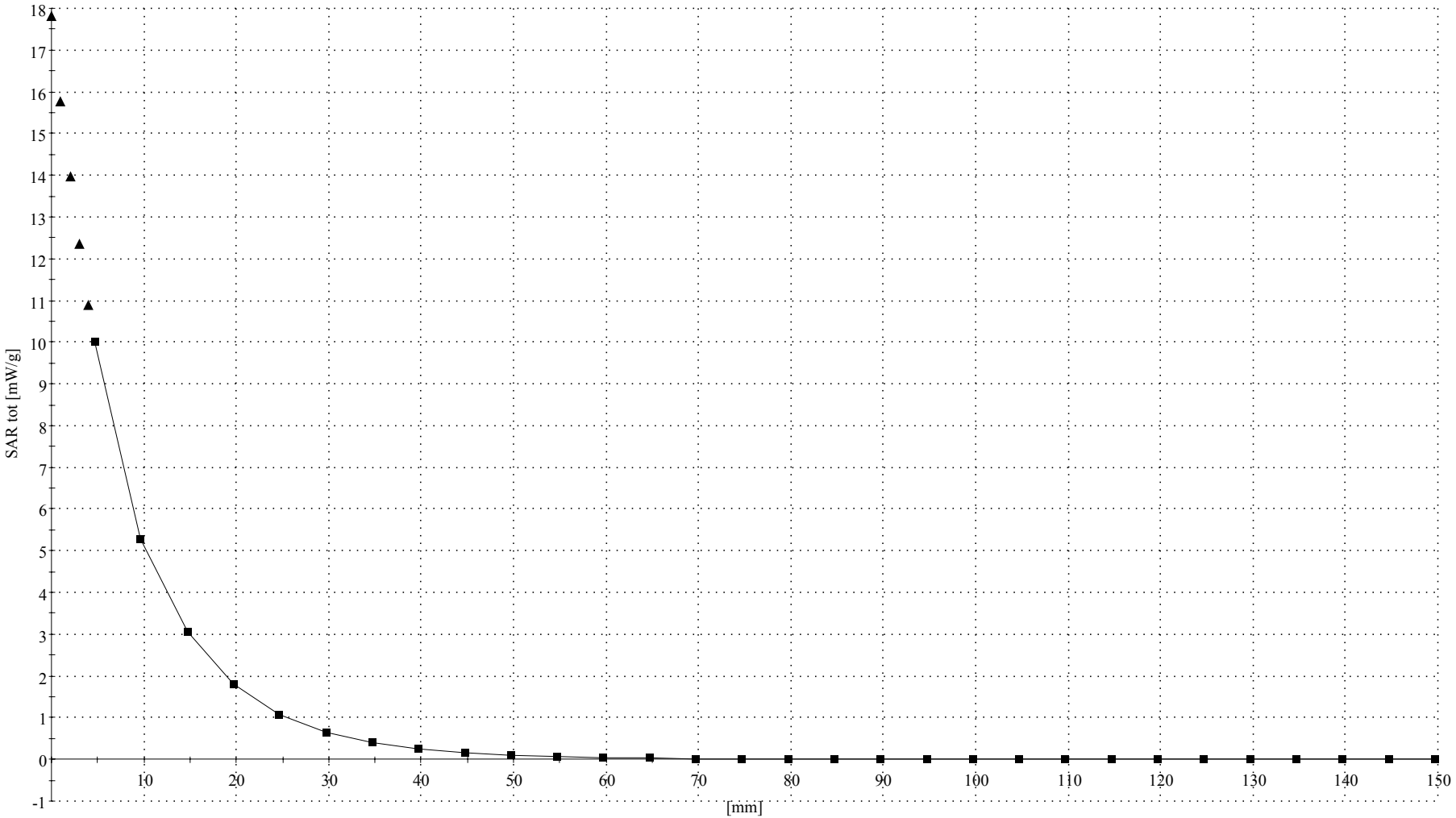
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

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



06/12/03

Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 272tr / Forward Power = 250mW/ Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20.0*C. Simulant Temp at time of measurement = 20.5*C

R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Flat Section; Position: (90°,90°); Frequency: 1800 MHz

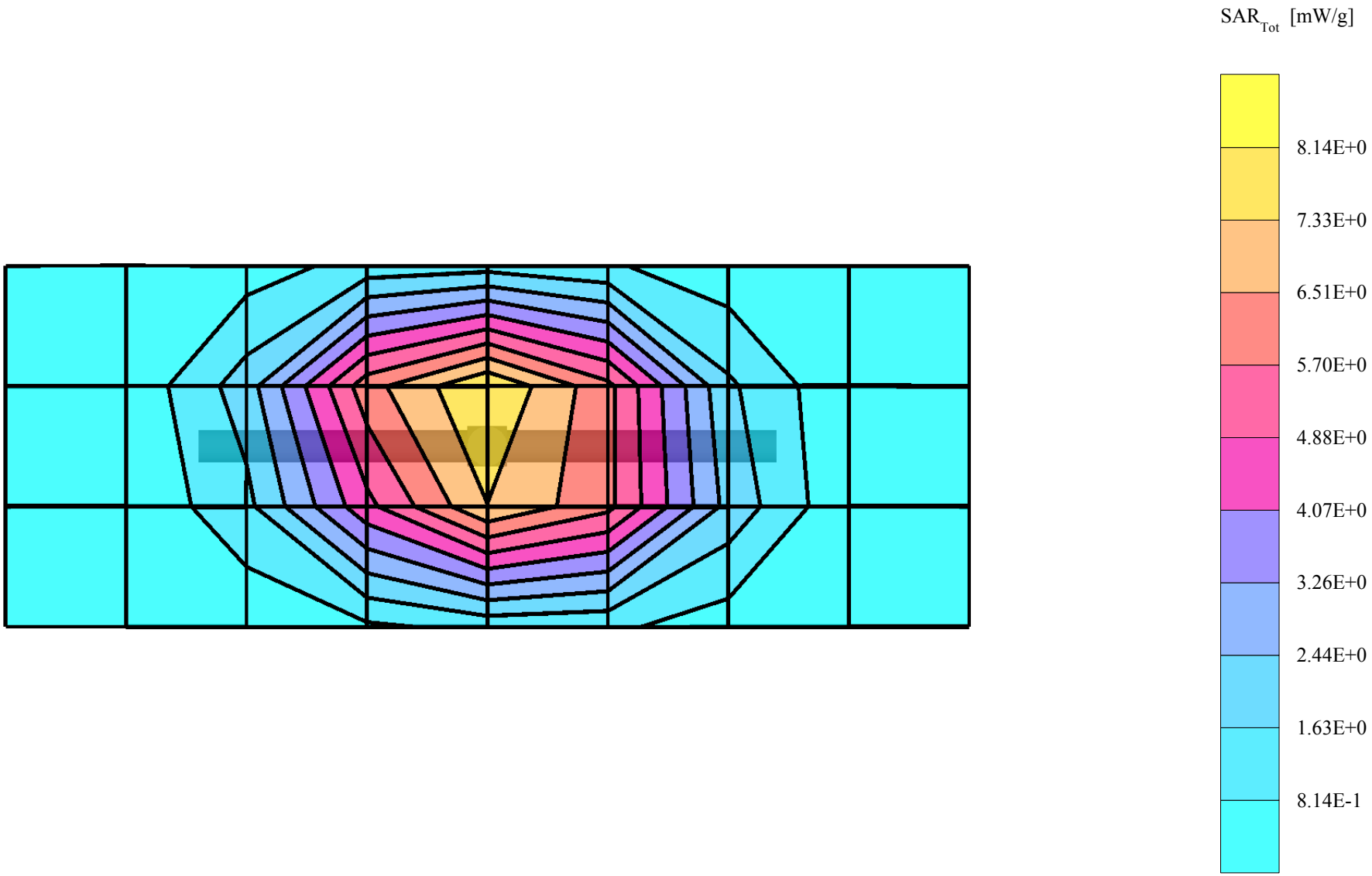
Probe: ET3DV6 - SN1502 - VALIDATION; ConvF(5.60,5.60,5.60); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.39 mho/m ε_r = 38.5 ρ = 1.00 g/cm^3

Cubes (2): SAR (1g): 9.92 mW/g ± 0.04 dB, SAR (10g): 5.18 mW/g ± 0.05 dB, (Worst-case extrapolation)

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

Penetration depth: 8.2 (7.9, 9.0) [mm]

Powerdrift: 0.03 dB



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 272tr / Forward Power = 250mW/ Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20.0*C. Simulant Temp at time of measurement = 20.5*C

R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Section; Position: ; Frequency: 1800 MHz

Probe: ET3DV6 - SN1502 - VALIDATION; ConvF(5.60,5.60,5.60); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.39 mho/m ε_r = 38.5 ρ = 1.00 g/cm^3

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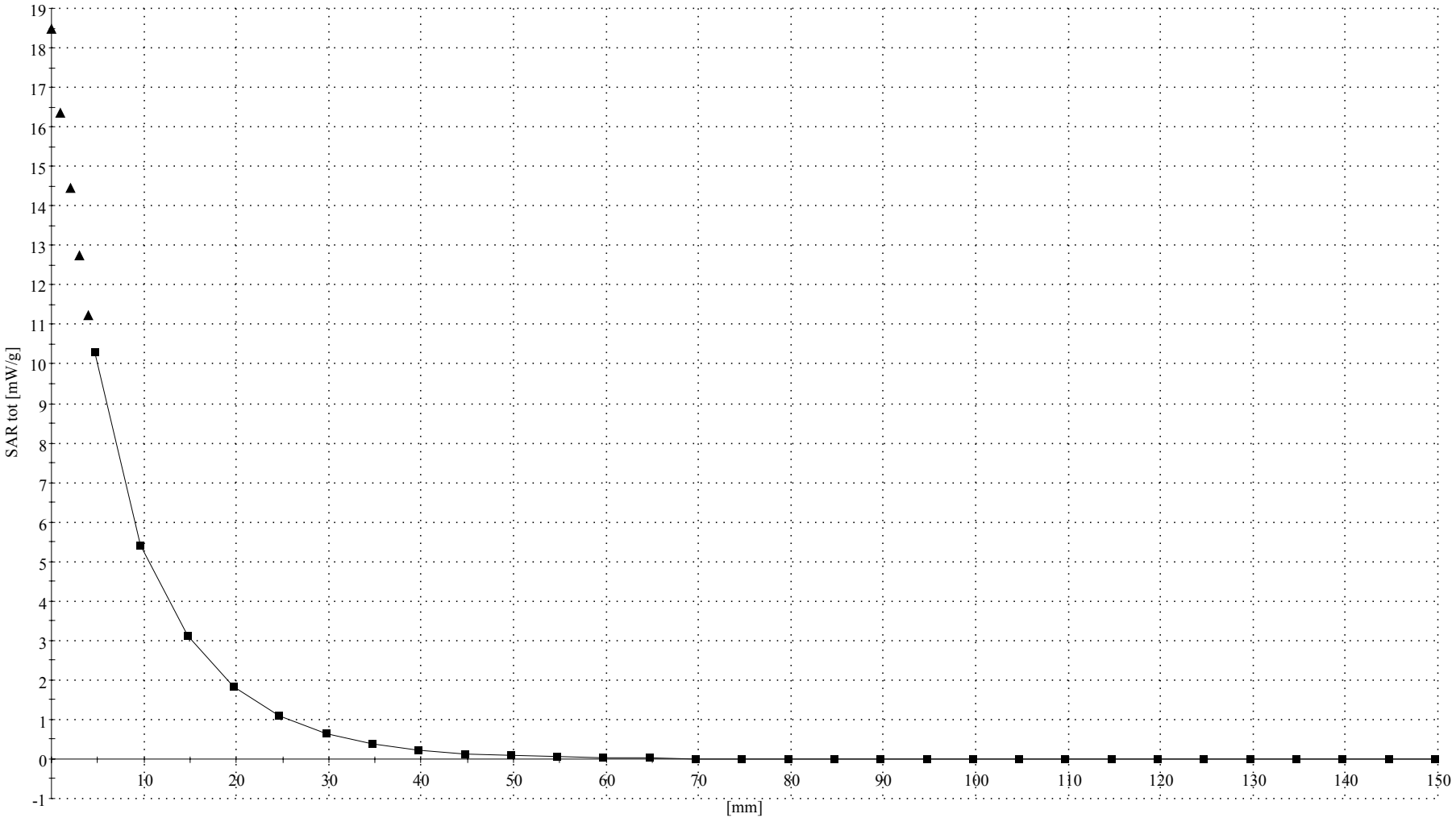
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

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



06/14/03

Dipole 1800 MHz

1800 MHz System Performance Check / Dipole Sn# 272TR / Forward Power = 247mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20C Simulant Temp at time of measurement = 19.6C

R4 1-005 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 2 Section; Position: (90°,180°); Frequency: 1800 MHz

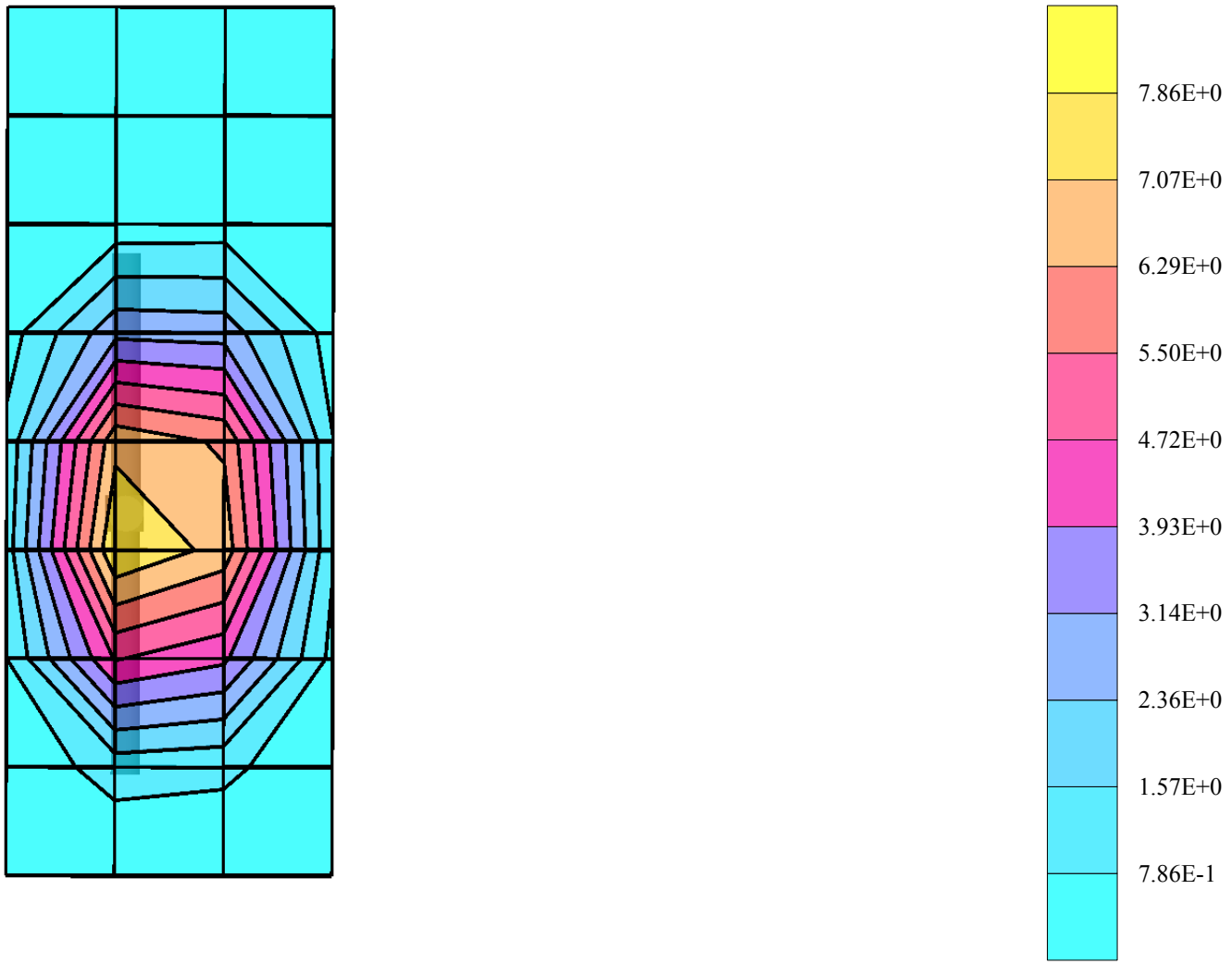
Probe: ET3DV6 - SN1502 - VALIDATION; ConvF(5.60,5.60,5.60); Crest factor: 1.0; 1800 MHz VALIDATION: $\sigma = 1.37$ mho/m $\varepsilon_r = 38.7$ $\rho = 1.00$ g/cm^3

Cubes (2): SAR (1g): 9.90 mW/g ± 0.03 dB, SAR (10g): 5.20 mW/g ± 0.05 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 System Performance Check / Dipole Sn# 272TR / Forward Power = 247mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20C Simulant Temp at time of measurement = 19.6C

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

Probe: ET3DV6 - SN1502 - VALIDATION; ConvF(5.60,5.60,5.60); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.37 mho/m ε_r = 38.7 ρ = 1.00 g/cm^3

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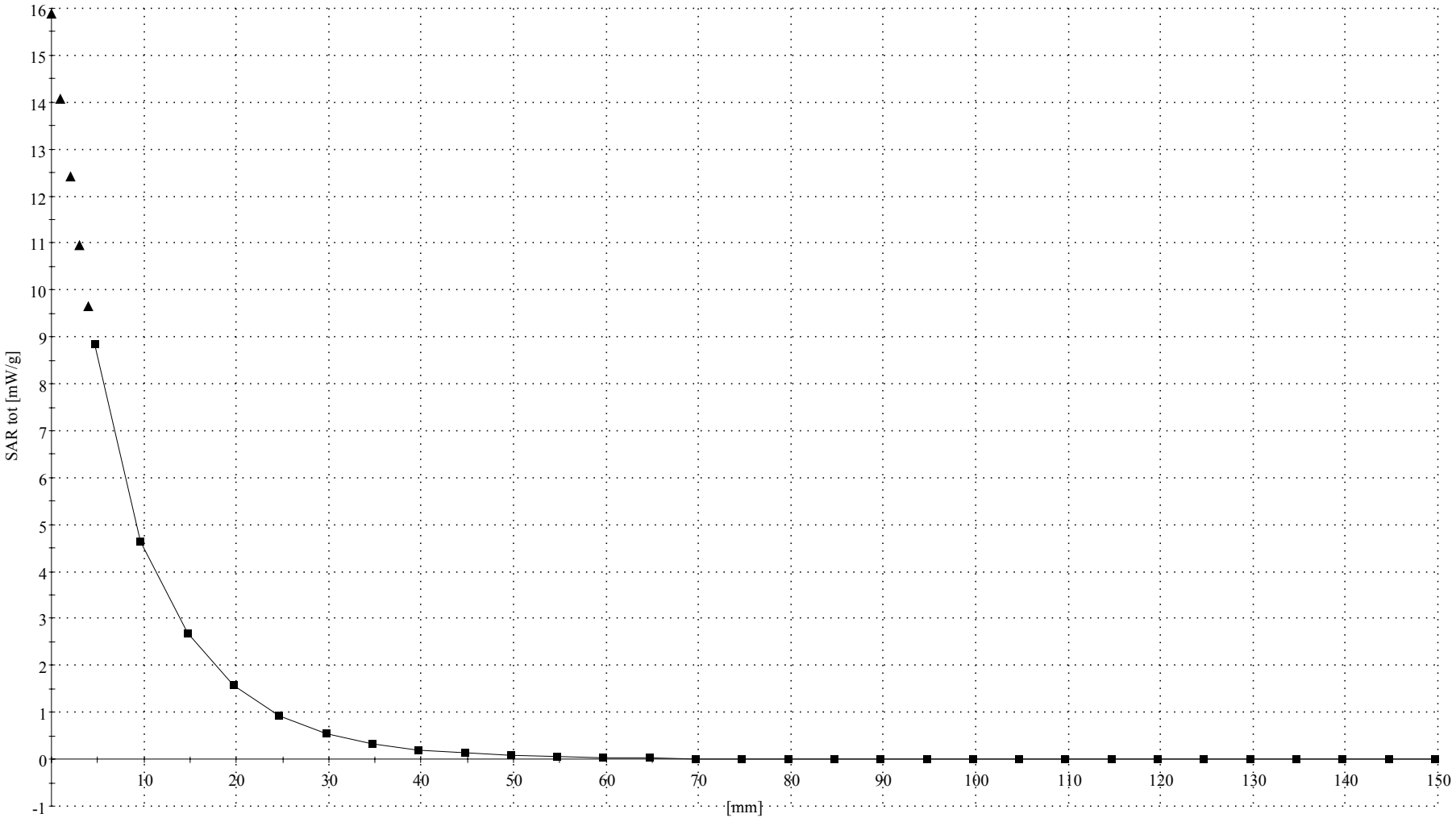
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

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



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 272tr / Forward Power = 252mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20.0*C. Simulant Temp at time of measurement =20.3*C

R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Flat Section; Position: (90°,90°); Frequency: 1800 MHz

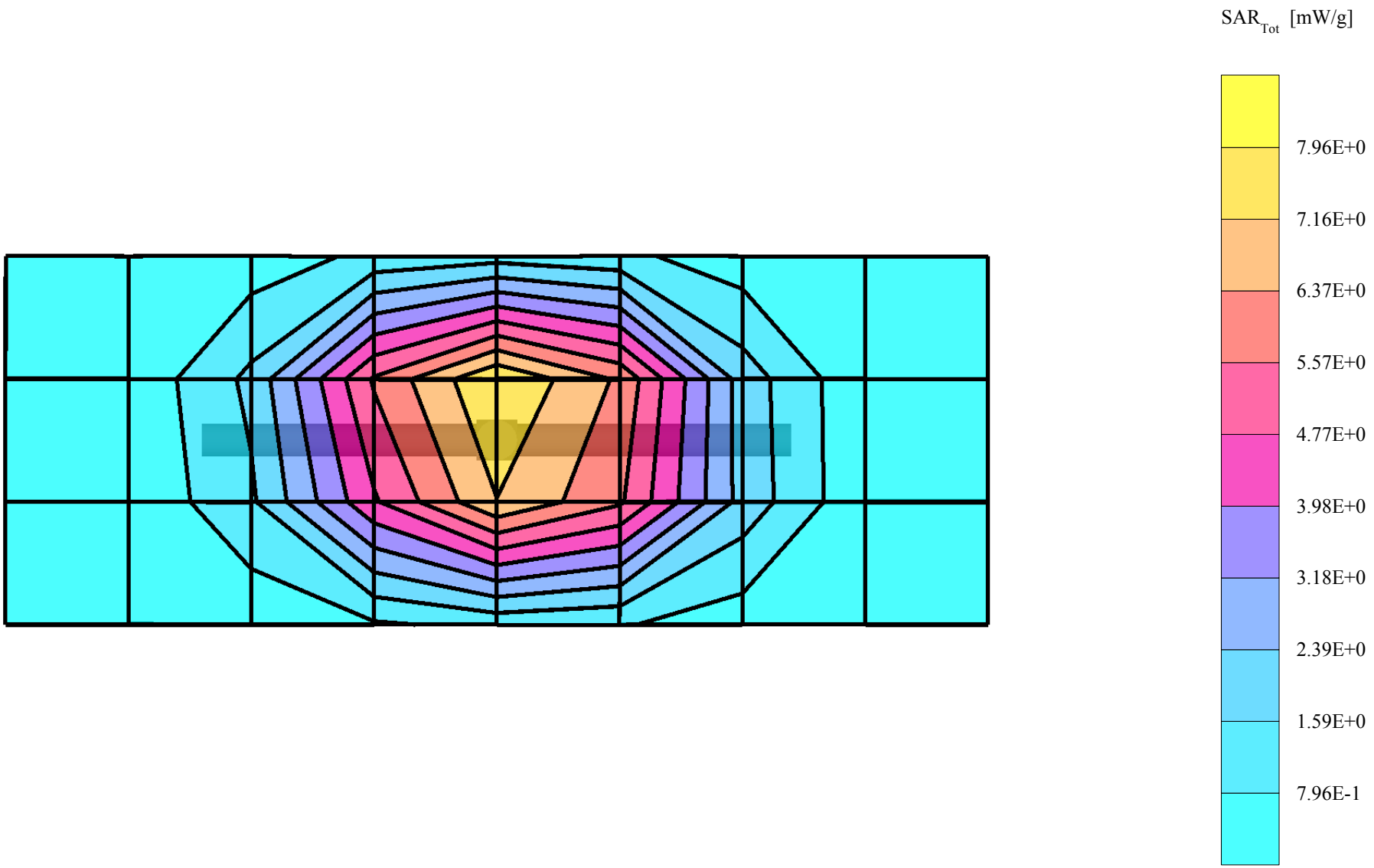
Probe: ET3DV6 - SN1502 - VALIDATION; ConvF(5.60,5.60,5.60); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.39 mho/m ε_r = 39.7 ρ = 1.00 g/cm^3

Cubes (2): SAR (1g): 9.70 mW/g ± 0.03 dB, SAR (10g): 5.09 mW/g ± 0.04 dB, (Worst-case extrapolation)

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

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

Powerdrift: 0.01 dB



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 272tr / Forward Power = 252mW / Acceptable Temp Range is 18-25°C Room Temp at time of measurement = 20.0*C. Simulant Temp at time of measurement =20.3*C

R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Section; Position: ; Frequency: 1800 MHz

Probe: ET3DV6 - SN1502 - VALIDATION; ConvF(5.60,5.60,5.60); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.39 mho/m ε_r = 39.7 ρ = 1.00 g/cm^3

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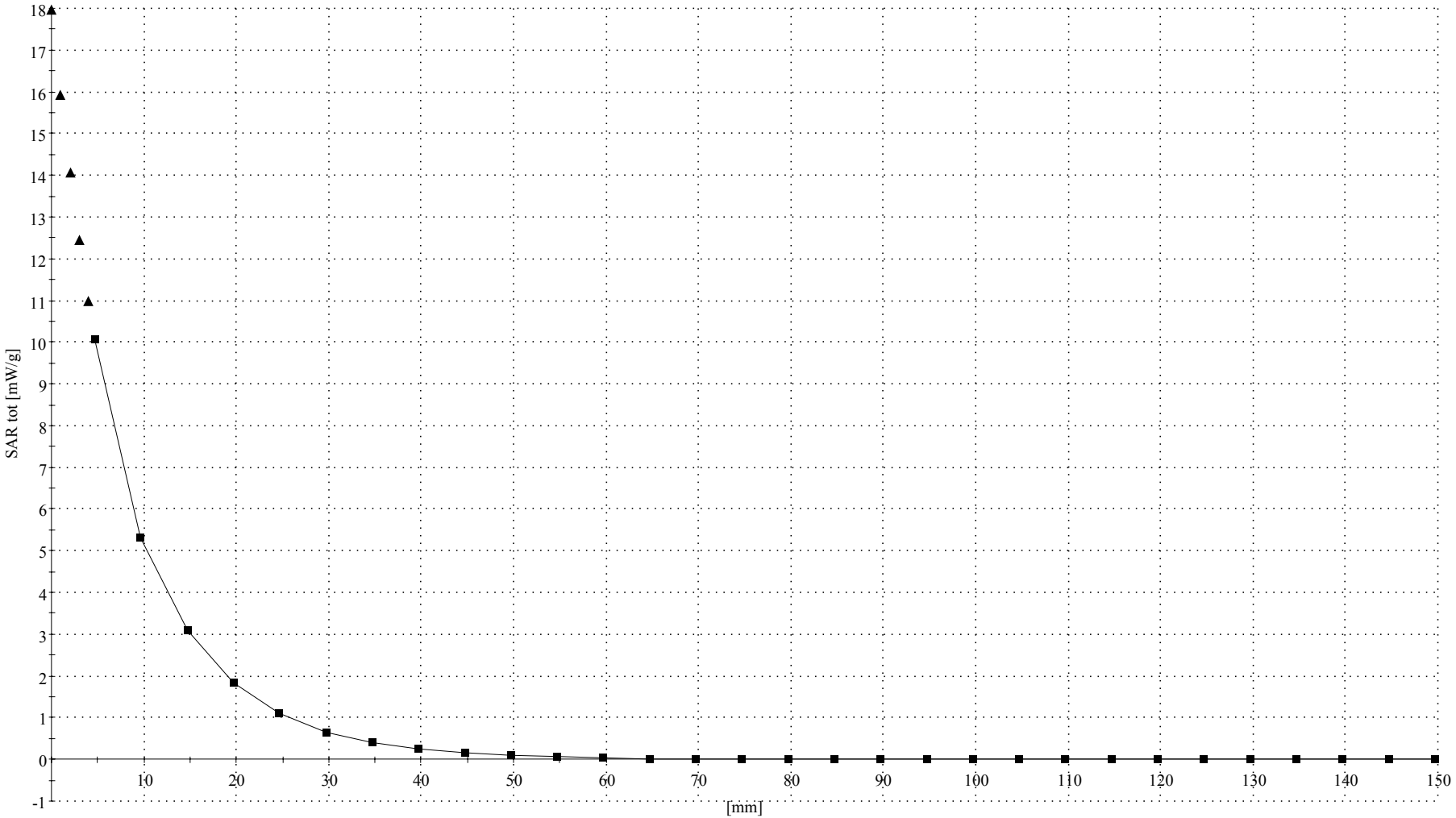
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

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



06/16/03

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 = 20.0*C. Simulant Temp at time of measurement = 20.2*C

R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Flat Section; Position: (90°,90°); Frequency: 1800 MHz

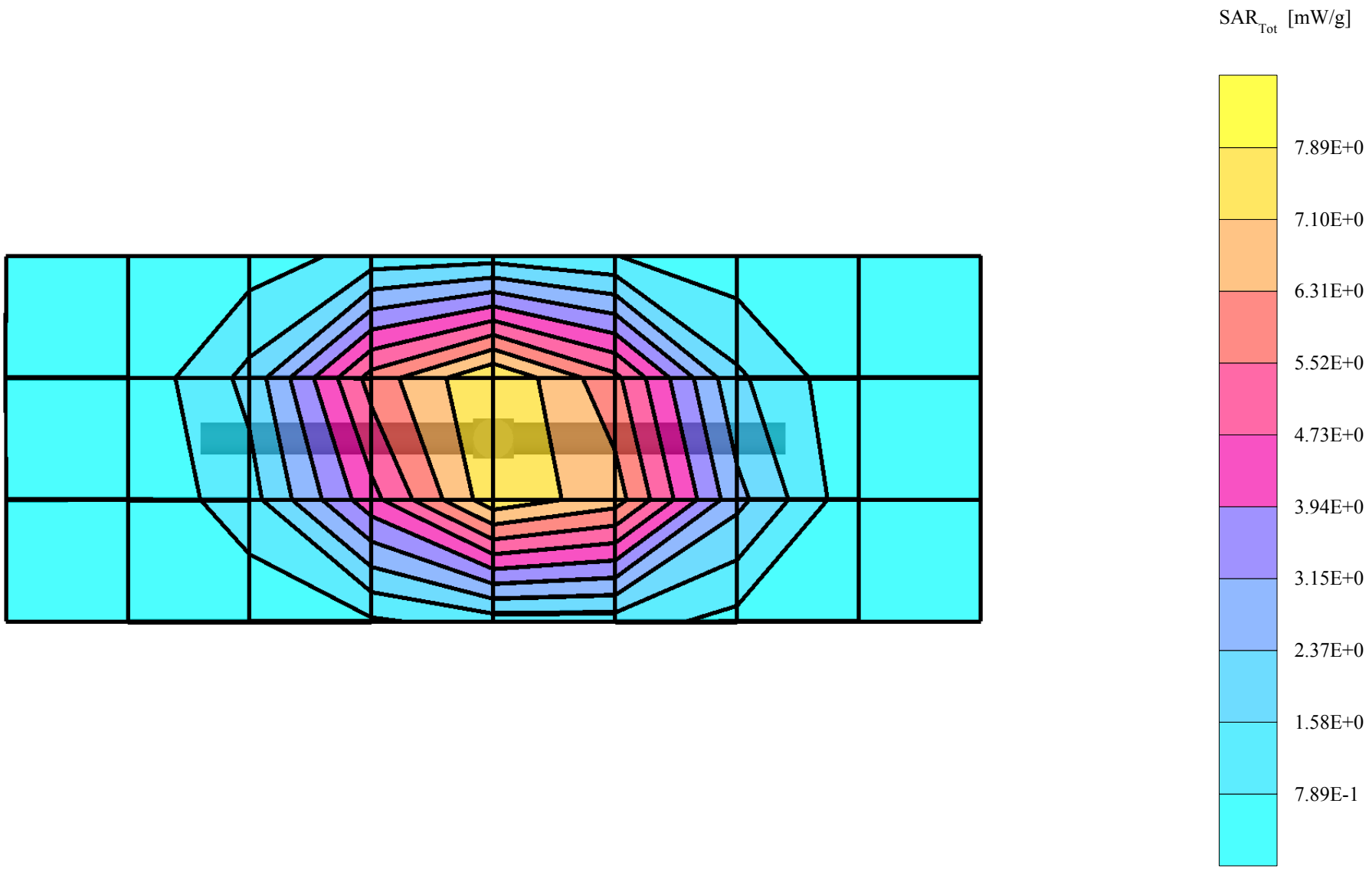
Probe: ET3DV6 - SN1502 - VALIDATION; ConvF(5.60,5.60,5.60); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.39 mho/m ε_r = 39.2 ρ = 1.00 g/cm^3

Cubes (2): SAR (1g): 9.88 mW/g ± 0.09 dB, SAR (10g): 5.17 mW/g ± 0.09 dB, (Worst-case extrapolation)

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

Penetration depth: 8.2 (7.9, 9.1) [mm]

Powerdrift: -0.00 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 = 20.0*C. Simulant Temp at time of measurement = 20.2*C

R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Section; Position: ; Frequency: 1800 MHz

Probe: ET3DV6 - SN1502 - VALIDATION; ConvF(5.60,5.60,5.60); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.39 mho/m ε_r = 39.2 ρ = 1.00 g/cm^3

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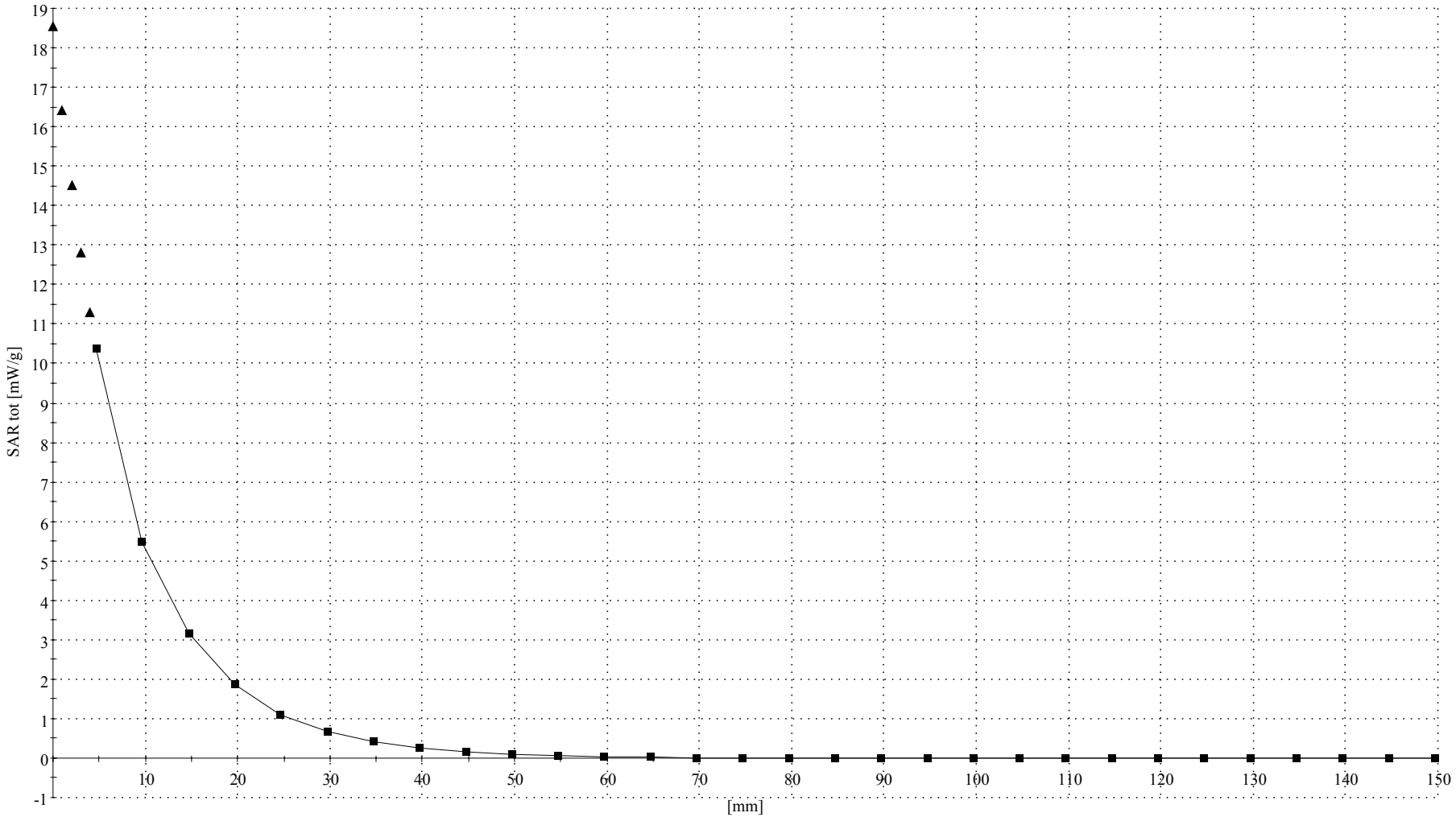
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

Penetration depth: 8.2 (7.9, 9.1) [mm]



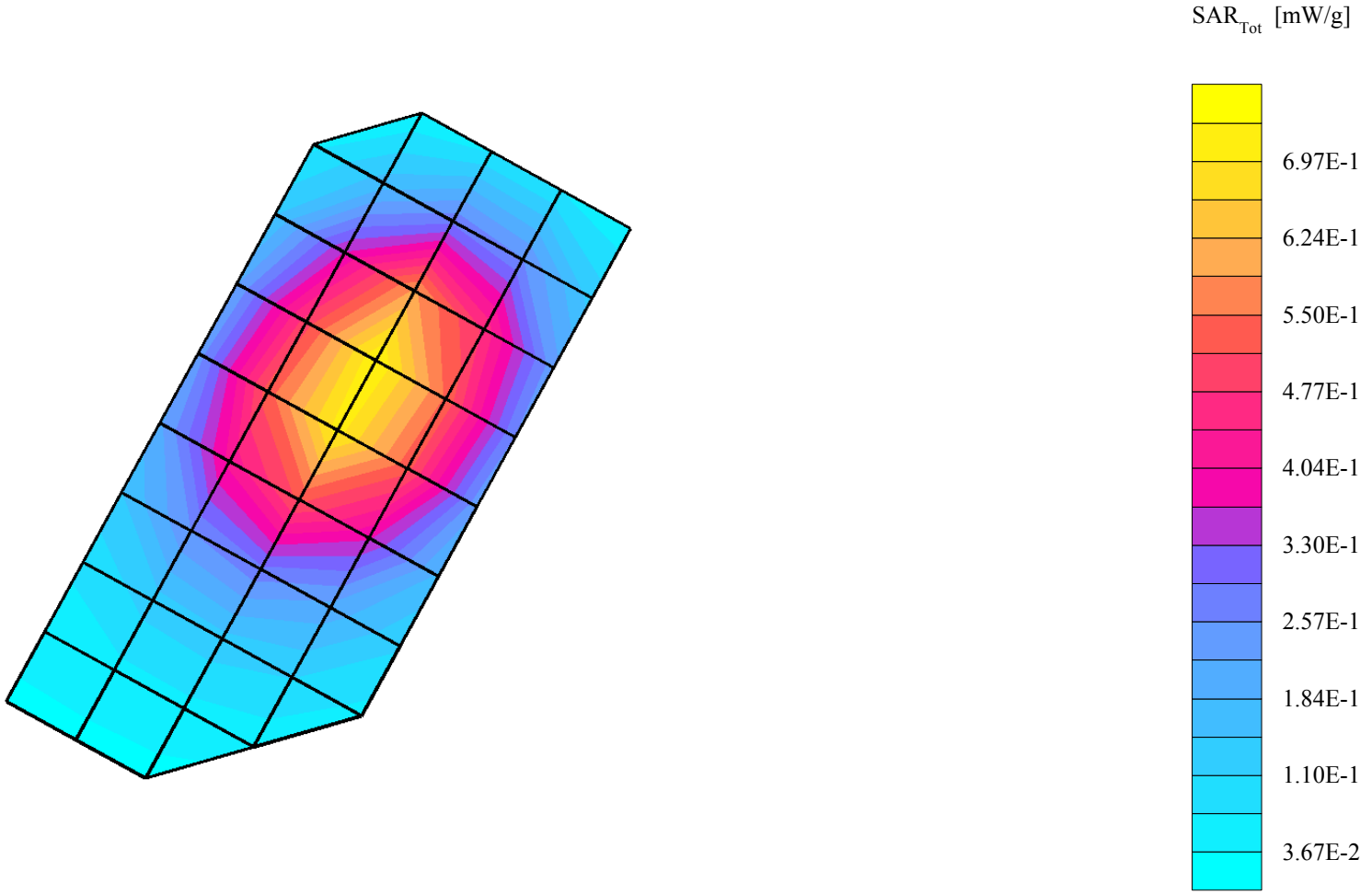
Appendix 2

SAR distribution plots for Phantom Head Adjacent Use

06/10/03

SN# L350150199

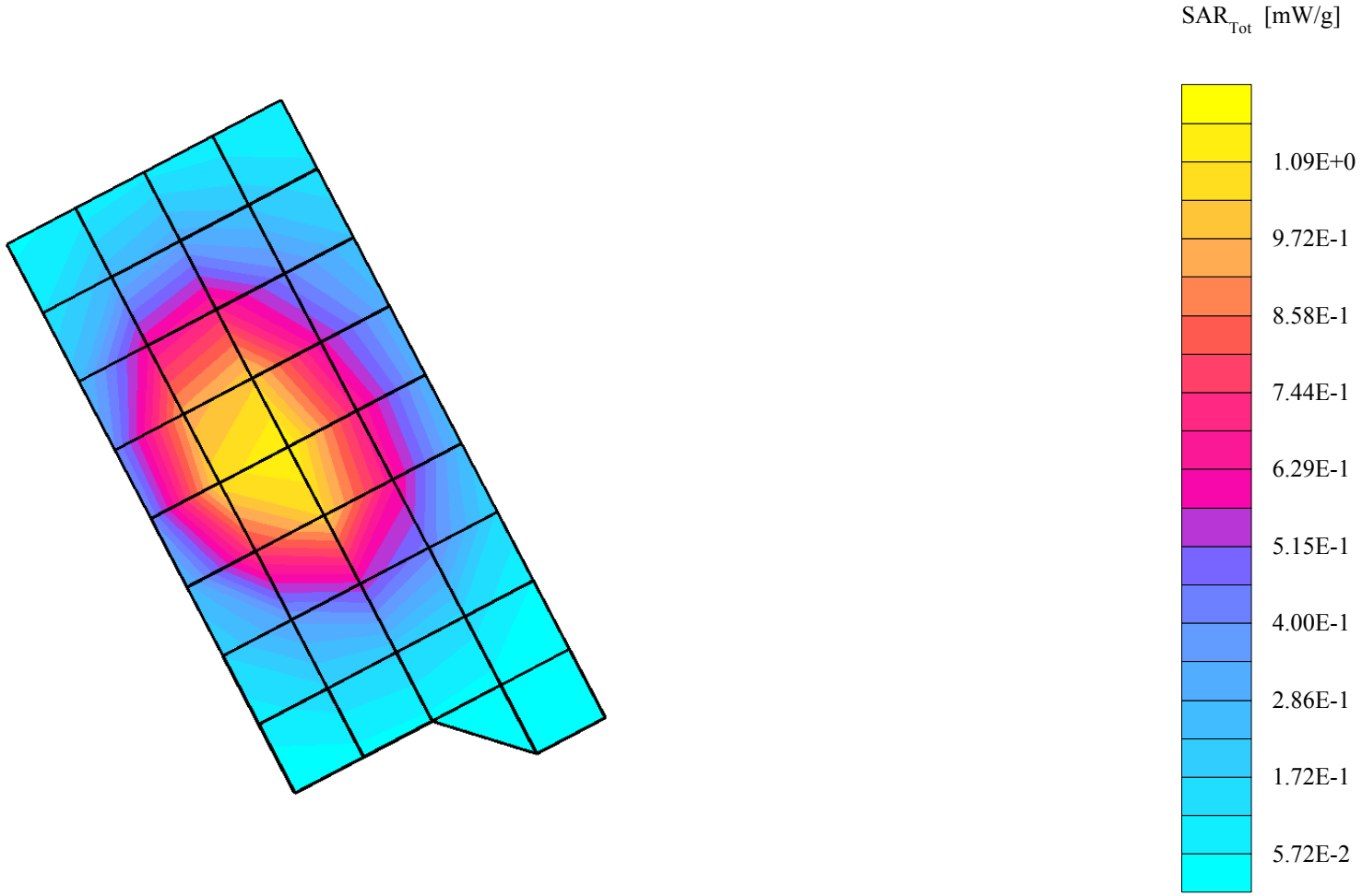
Ch# 190 / Pwr Step: 5 Antenna Position: Internal / Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): ROTATED / Accessory Model #: BUTTERFLY HOUSING
R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 836 MHz
Probe: ET3DV6 - SN1522 - IEEE Head; ConvF(4.70,4.70,4.70); Crest factor: 8.0; 835 MHz Head & Body: $\sigma = 0.89$ mho/m $\varepsilon_r = 40.6$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 0.743 mW/g, SAR (10g): 0.498 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 13.7 (12.6, 15.0) [mm]
Powerdrift: -0.17 dB



06/10/03

SN# L350150199

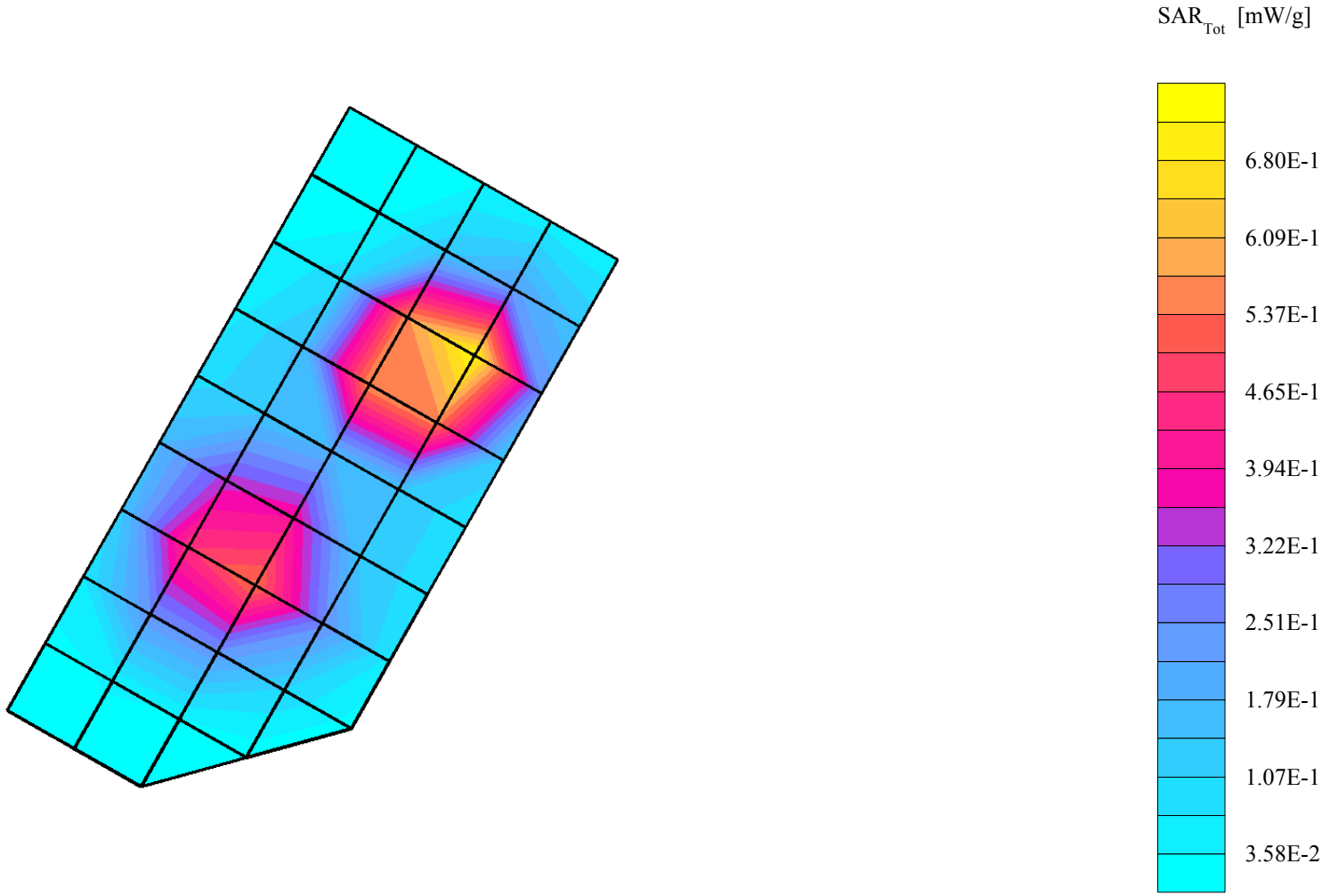
Ch# 128 / Pwr Step: 05 / Antenna Position: Internal / Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): Cheek / Accessory Model #: Butterfly Housing
R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Right Hand Section; Position: (90°,180°); Frequency: 824 MHz
Probe: ET3DV6 - SN1522 - IEEE Head; ConvF(4.70,4.70,4.70); Crest factor: 8.0; 835 MHz Head & Body: $\sigma = 0.89$ mho/m $\varepsilon_r = 40.6$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 1.19 mW/g, SAR (10g): 0.807 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 14.7 (14.1, 15.5) [mm]
Powerdrift: -0.17 dB



06/11/03

SN# L350150179

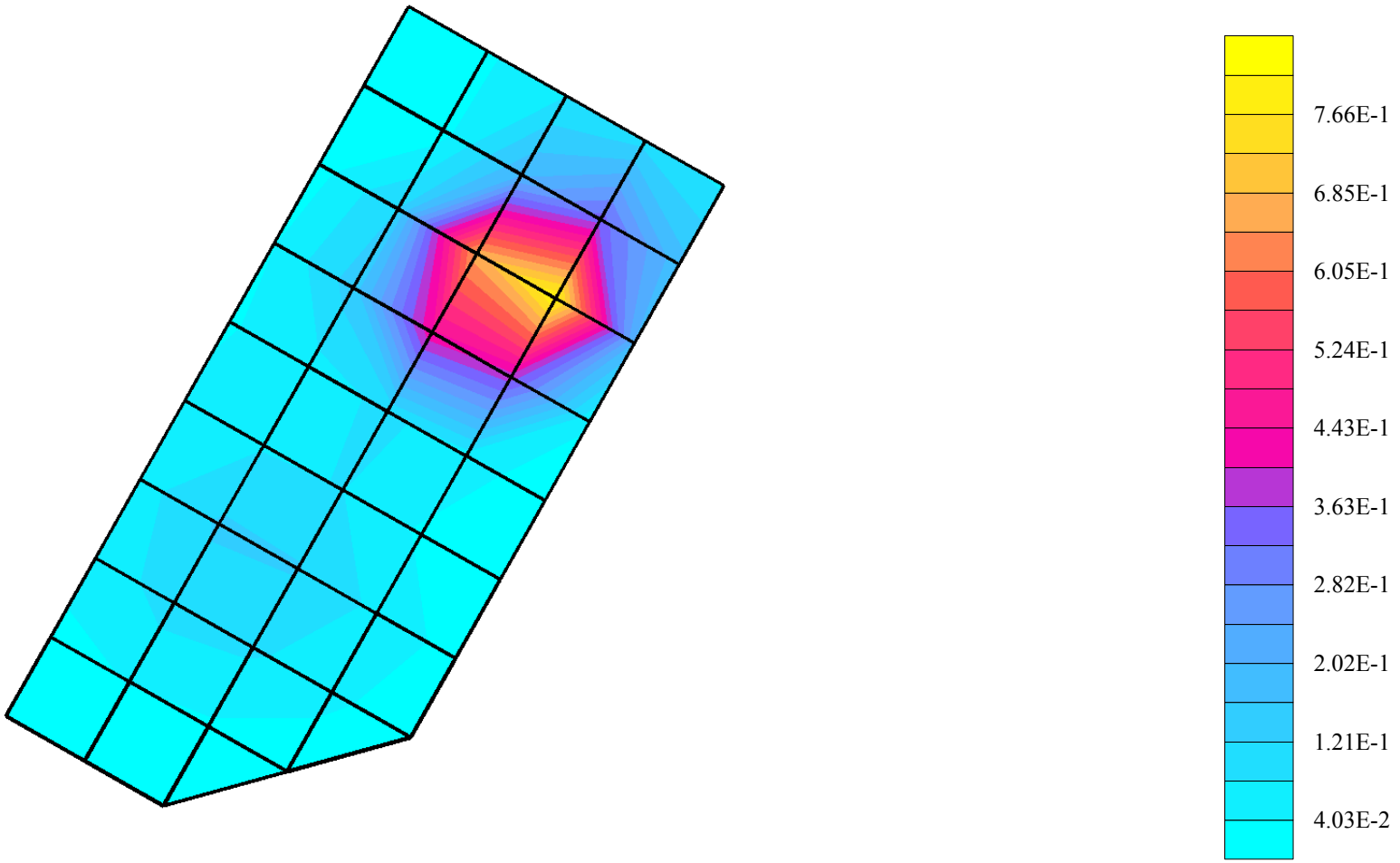
Ch# 512 Pwr Step:0 (OTA) / Antenna Position: INTERNAL / Battery Model #: ANN4204A / DEVICE POSITION: CHEEK / Accessory Model #: butterfly housing
R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1850 MHz
Probe: ET3DV6 - SN1502 - IEEE HEAD; ConvF(5.60,5.60,5.60); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.46 mho/m ε_r = 38.7 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.768 mW/g, SAR (10g): 0.411 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 8.9 (8.6, 9.5) [mm]
Powerdrift: -0.26 dB



06/11/03

SN# L350150179

Ch# 661 Pwr Step: 0 (OTA) / Antenna Position: INTERNAL / Battery Model #: ANN4204A / DEVICE POSITION:TILT / Accessory Model #:butterfly housing
R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1502 - IEEE HEAD; ConvF(5.60,5.60,5.60); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.46 mho/m ε_r = 38.7 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.840 mW/g, SAR (10g): 0.427 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 8.5 (8.2, 9.1) [mm]
Powerdrift: 0.38 dB



06/11/03

SN# L350150199

Ch# 190 / Pwr Step:05 / Antenna Position:Internal

Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): Cheek / Accessory Model #: Hourglass housing

R1 TP-1005 SAM Expanded Sugar (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 837 MHz

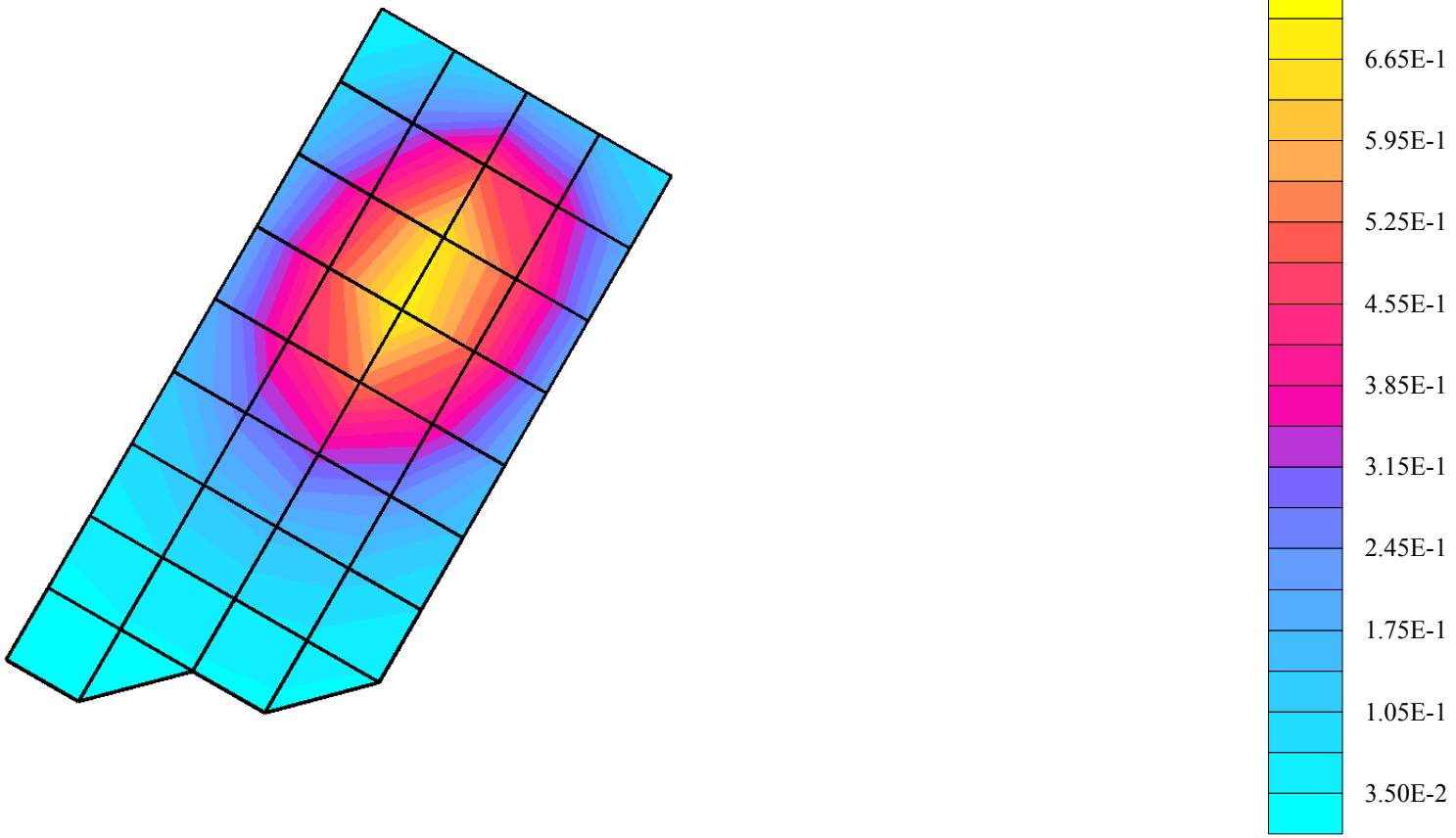
Probe: ET3DV6 - SN1523 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 8.0; 835 MHz Head & Body: $\sigma = 0.90$ mho/m $\varepsilon_r = 41.6$ $\rho = 1.00$ g/cm^3

Cube 7x7x7: SAR (1g): 0.701 mW/g, SAR (10g): 0.468 mW/g, (Worst-case extrapolation)

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

Penetration depth: 13.8 (12.8, 14.9) [mm]

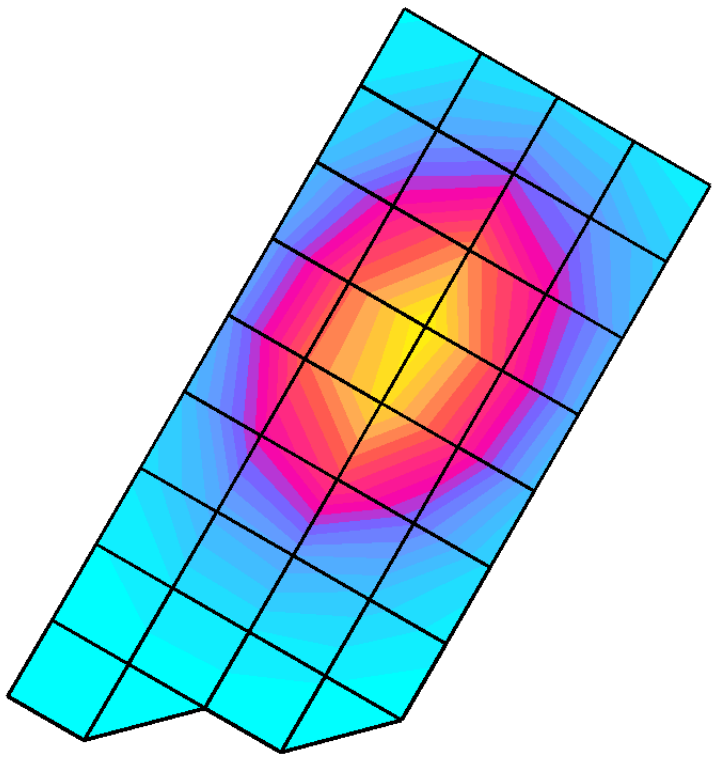
Powerdrift: 0.70 dB

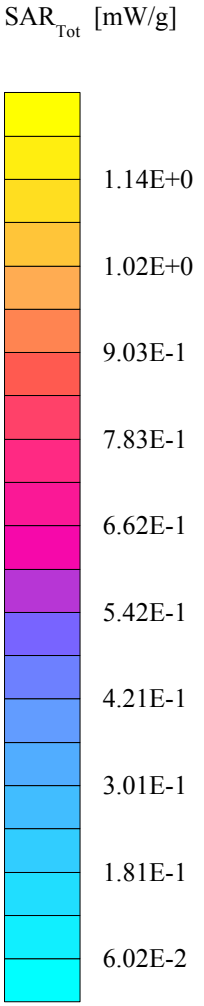


06/11/03

SN# L350150199

Ch# 128 / Pwr Step:05 Antenna Position:Internal / Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): Cheek / Accessory Model #: Hourglass housing
R1 TP-1005 SAM Expanded Sugar (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 824 MHz
Probe: ET3DV6 - SN1523 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 8.0; 835 MHz Head & Body: $\sigma = 0.90$ mho/m $\varepsilon_r = 41.6$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 1.21 mW/g, SAR (10g): 0.808 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 13.8 (12.9, 14.9) [mm]
Powerdrift: 0.05 dB

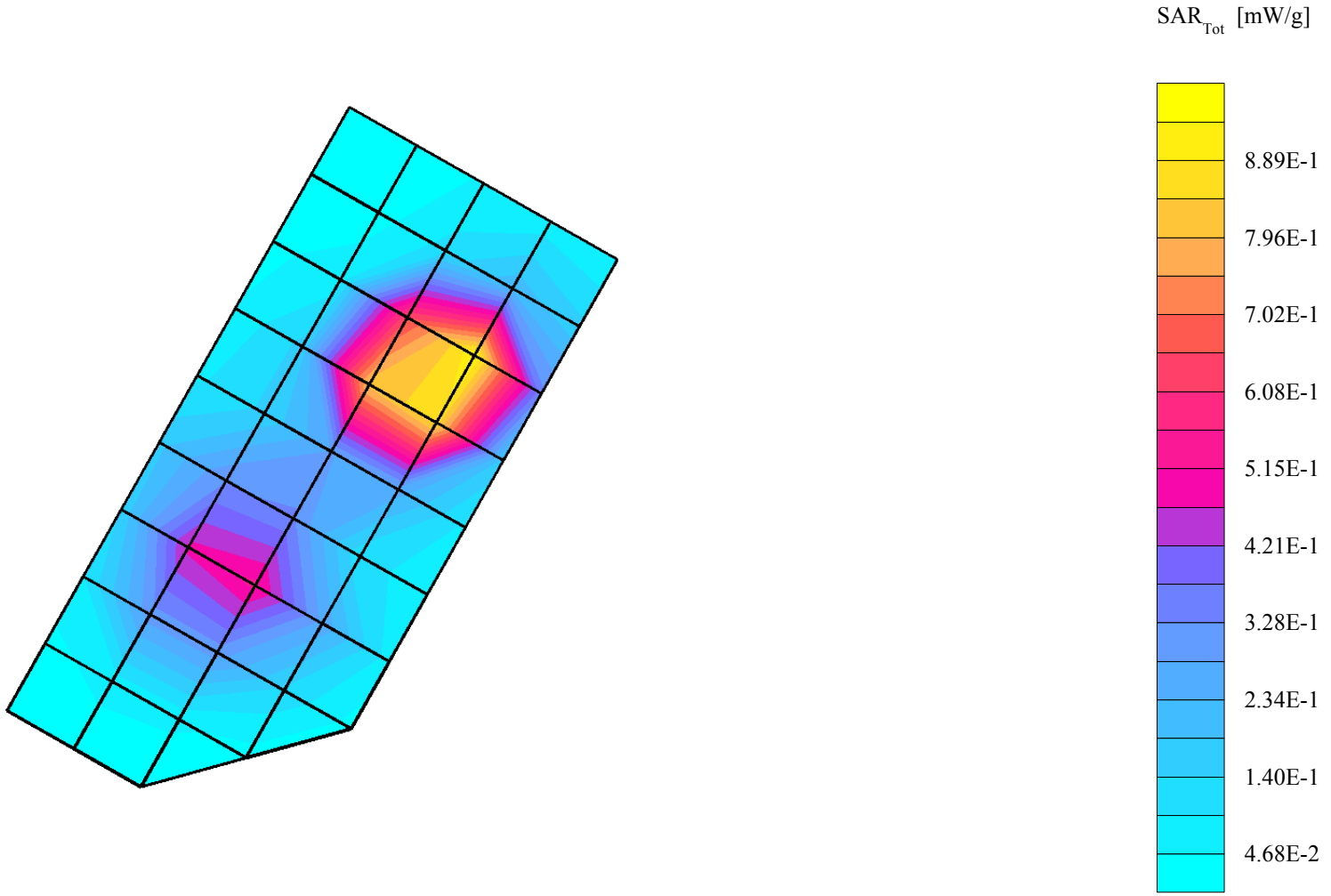




06/12/03

SN# L350150179

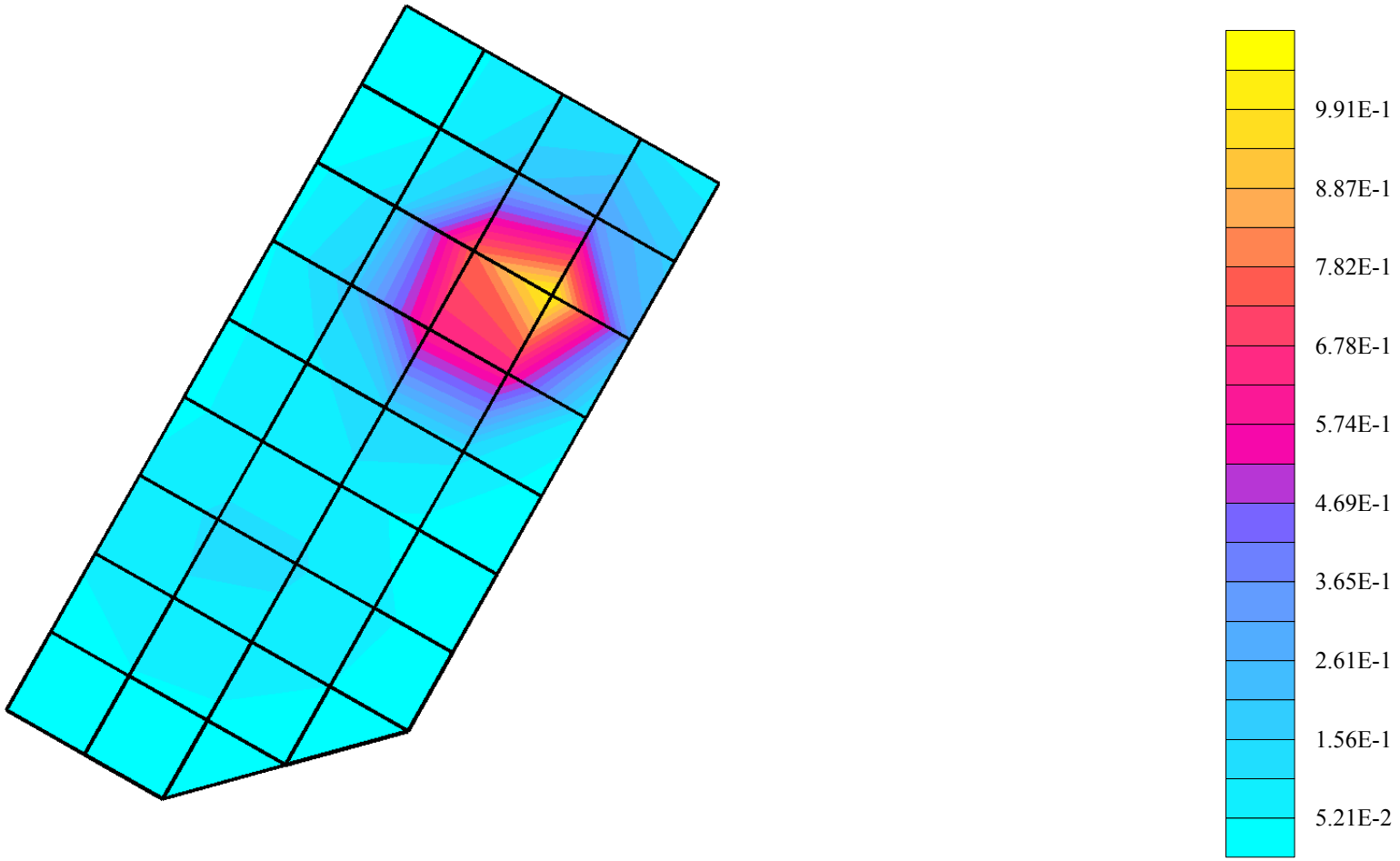
Ch# 661 / Pwr Step: 0 / Antenna Position: Internal / Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): Cheek / Hourglass Housing
R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1502 - IEEE HEAD; ConvF(5.60,5.60,5.60); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.47 mho/m ε_r = 38.1 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 1.08 mW/g, SAR (10g): 0.558 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 8.5 (8.3, 9.0) [mm]
Powerdrift: -0.16 dB



06/12/03

SN# L350150179

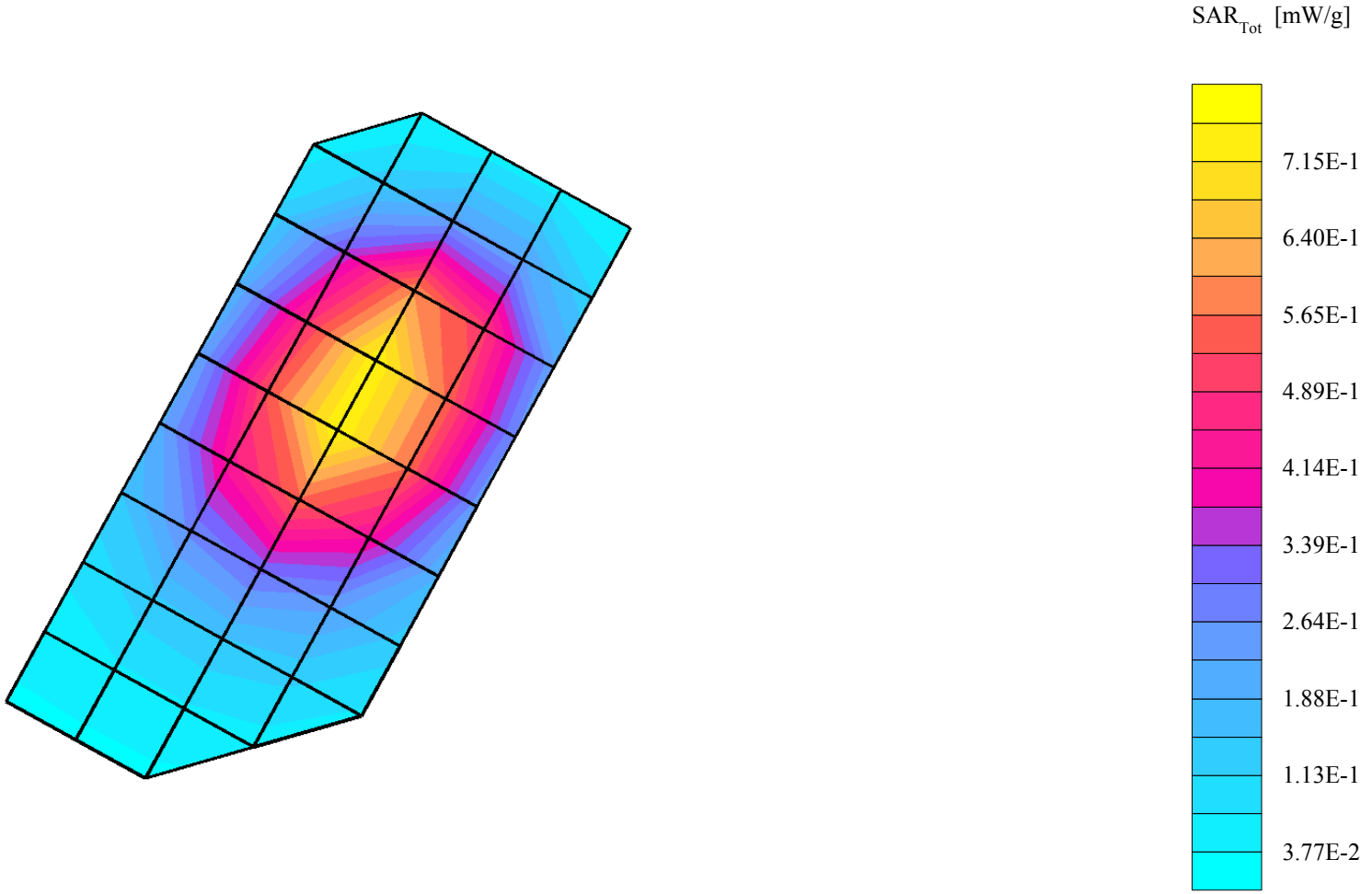
Ch# 661 / Pwr Step: 0 / Antenna Position: Internal / Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): Rotated / Hourglass Housing
R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1502 - IEEE HEAD; ConvF(5.60,5.60,5.60); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.47 mho/m ε_r = 38.1 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 1.05 mW/g, SAR (10g): 0.519 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 7.9 (7.6, 8.6) [mm]
Powerdrift: -0.52 dB



06/12/03

SN# L350150199

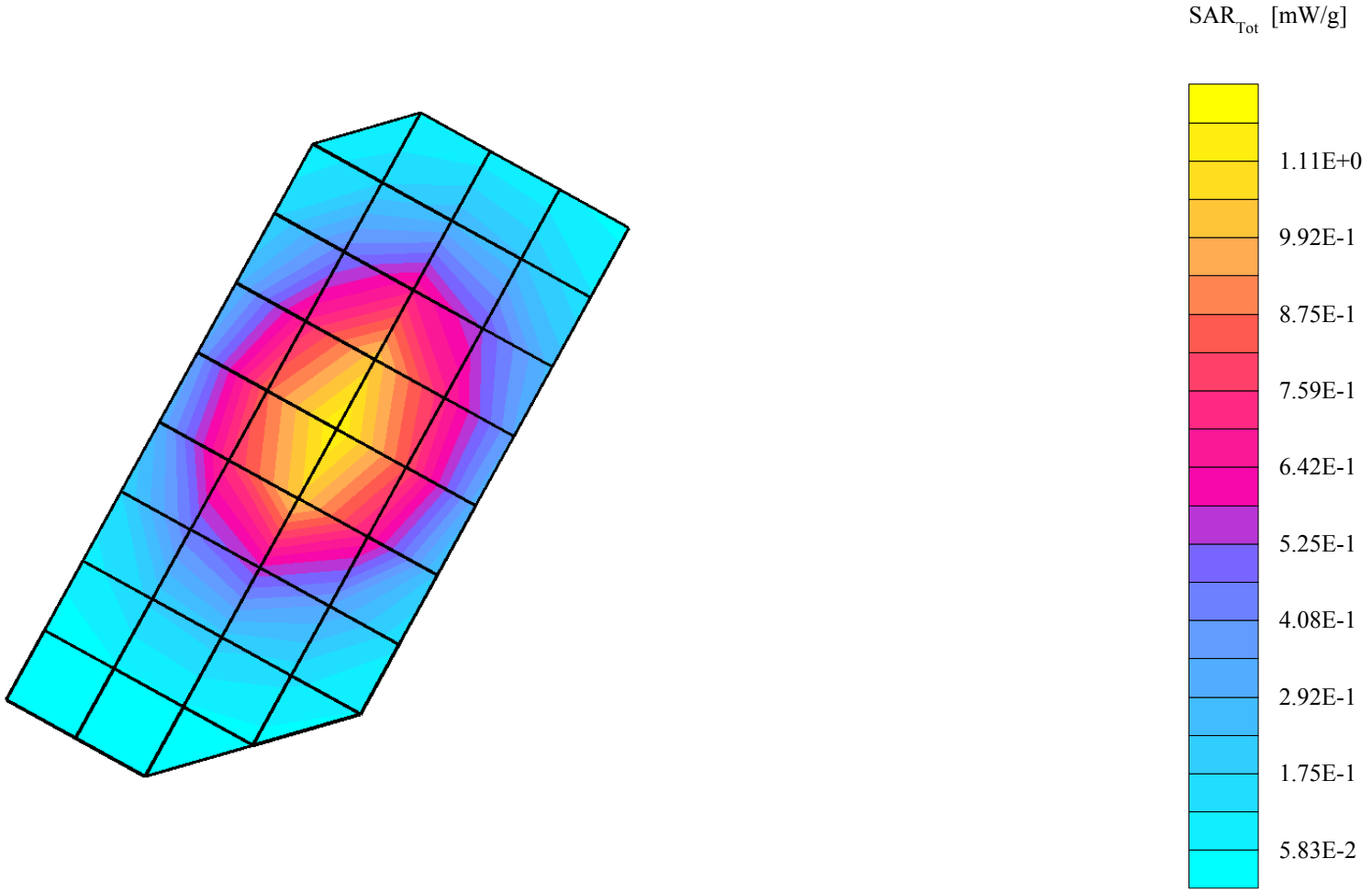
Ch# 128 / Pwr Step: 5 Antenna Position: Internal / Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): ROTATED Accessory Model #: METAL BOX HOUSING
R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 824 MHz
Probe: ET3DV6 - SN1522 - IEEE Head; ConvF(4.70,4.70,4.70); Crest factor: 8.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\varepsilon_r = 42.1$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 0.750 mW/g, SAR (10g): 0.494 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 13.4 (12.0, 15.0) [mm]
Powerdrift: -0.39 dB



06/12/03

SN# L350150199

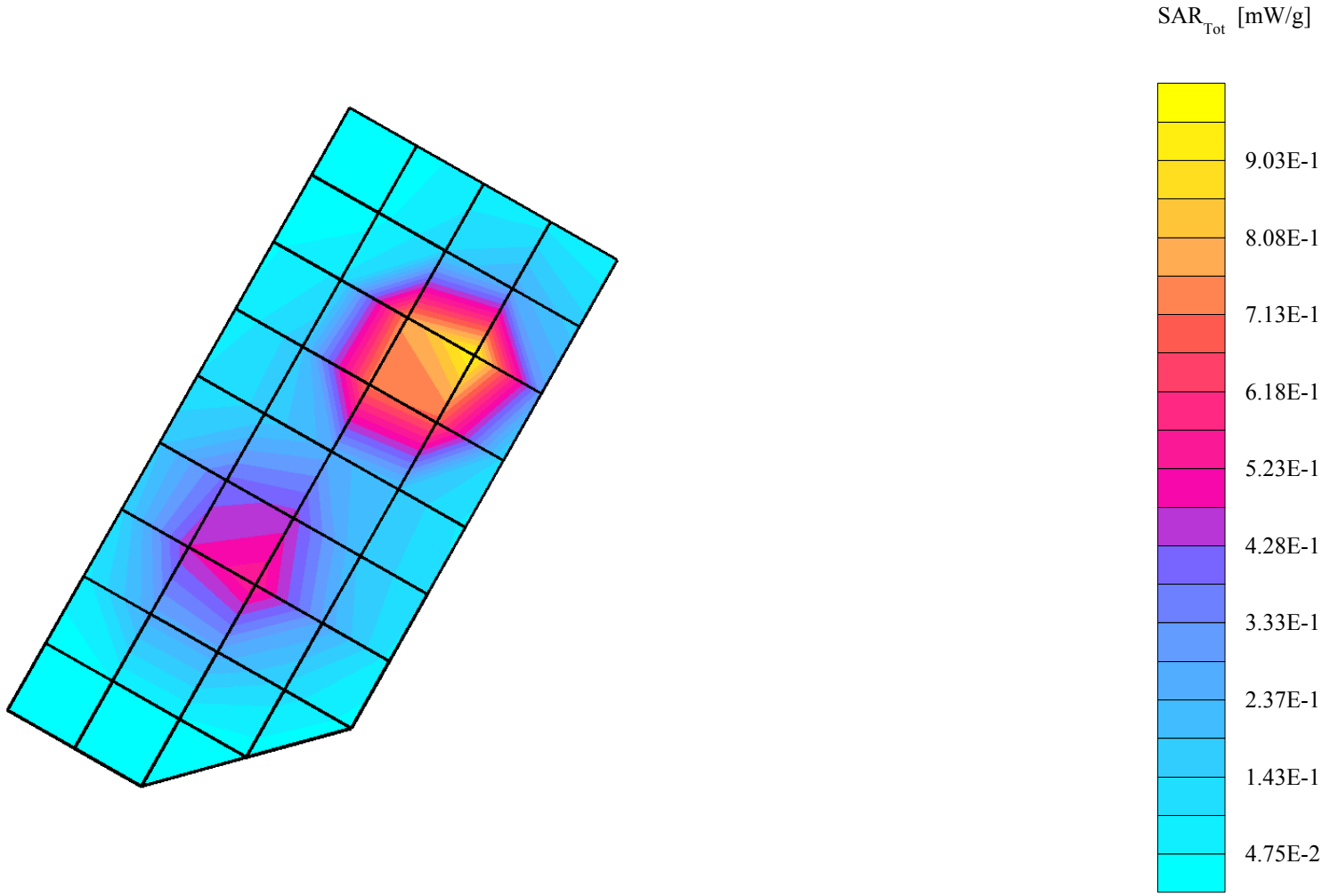
Ch#190 / Pwr Step: 05 / Antenna Position:INTERNAL / Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): CHEEK / Accessory Model #: Metal Box Housing
R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 837 MHz
Probe: ET3DV6 - SN1522 - IEEE Head; ConvF(4.70,4.70,4.70); Crest factor: 8.0; 835 MHz Head & Body: σ = 0.91 mho/m ε_r = 42.1 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 1.17 mW/g, SAR (10g): 0.785 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 14.2 (12.9, 15.6) [mm]
Powerdrift: -0.13 dB



06/10/03

SN# L350150179

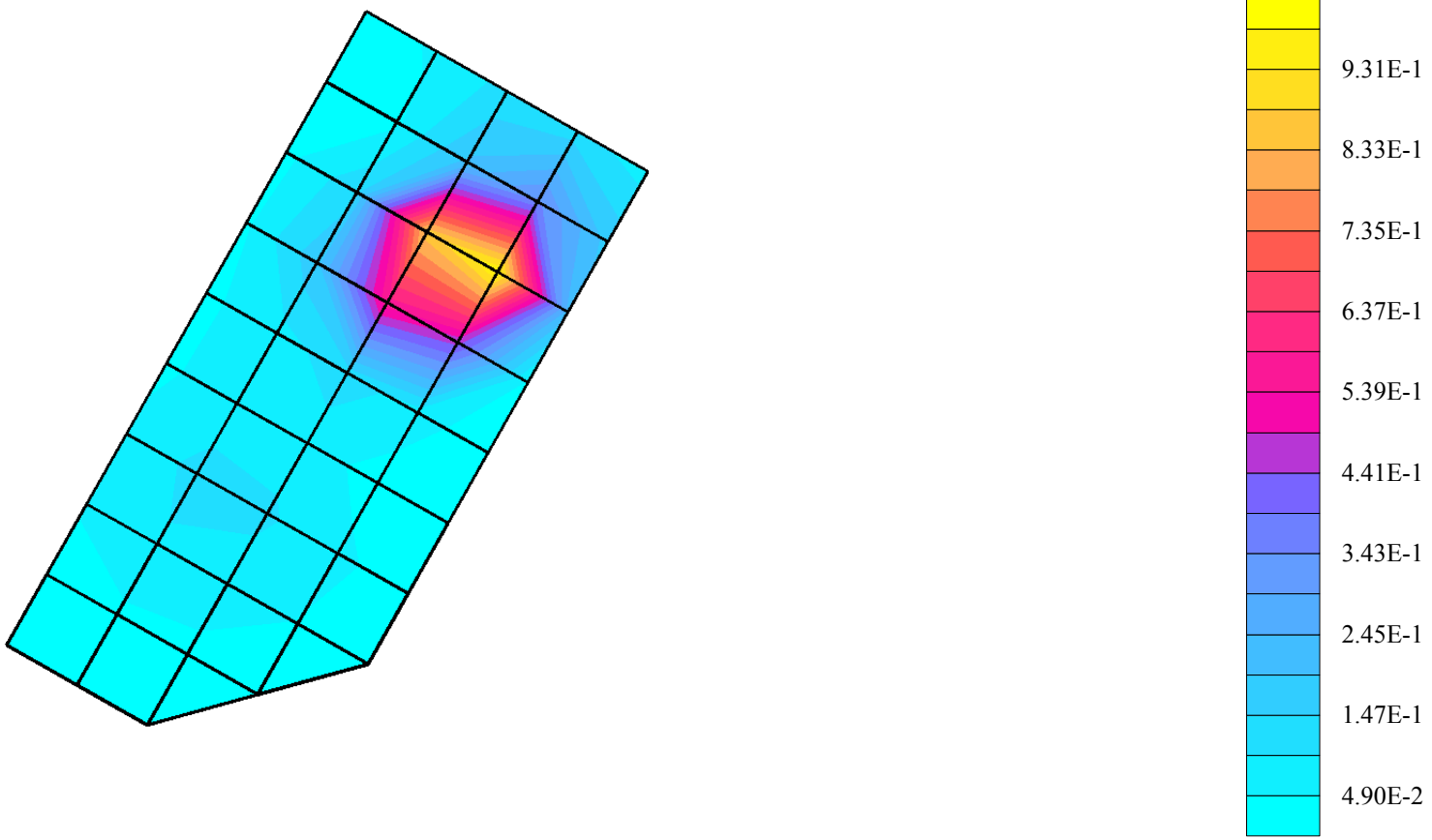
Ch# 661 / Pwr Step: 0 / Antenna Position: Internal / Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): Cheek / Accessory Model : Metal Box Housing
R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1502 - IEEE HEAD; ConvF(5.60,5.60,5.60); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.46 mho/m ε_r = 38.9 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 1.05 mW/g, SAR (10g): 0.541 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 8.5 (8.3, 9.1) [mm]
Powerdrift: -0.13 dB



06/10/03

SN# L350150179

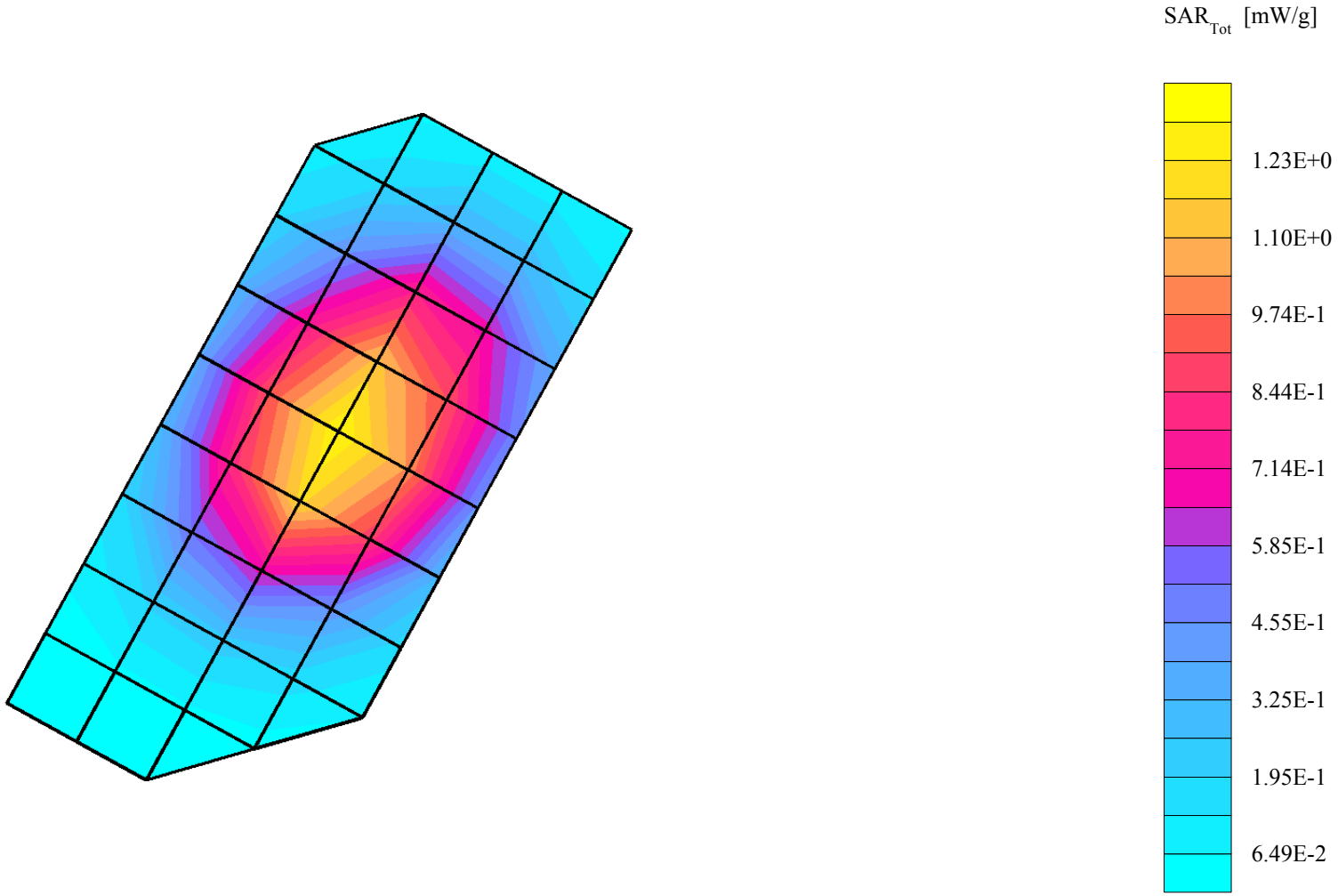
Ch# 661 / Pwr Step: 0 / Antenna Position: Internal Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): Rotated / Accessory Model #:Metal Box Housing
R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1502 - IEEE HEAD; ConvF(5.60,5.60,5.60); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.46 mho/m ε_r = 38.9 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 1.05 mW/g, SAR (10g): 0.520 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 8.3 (8.0, 8.8) [mm]
Powerdrift: 0.19 dB



06/07/03

SN# L350150199

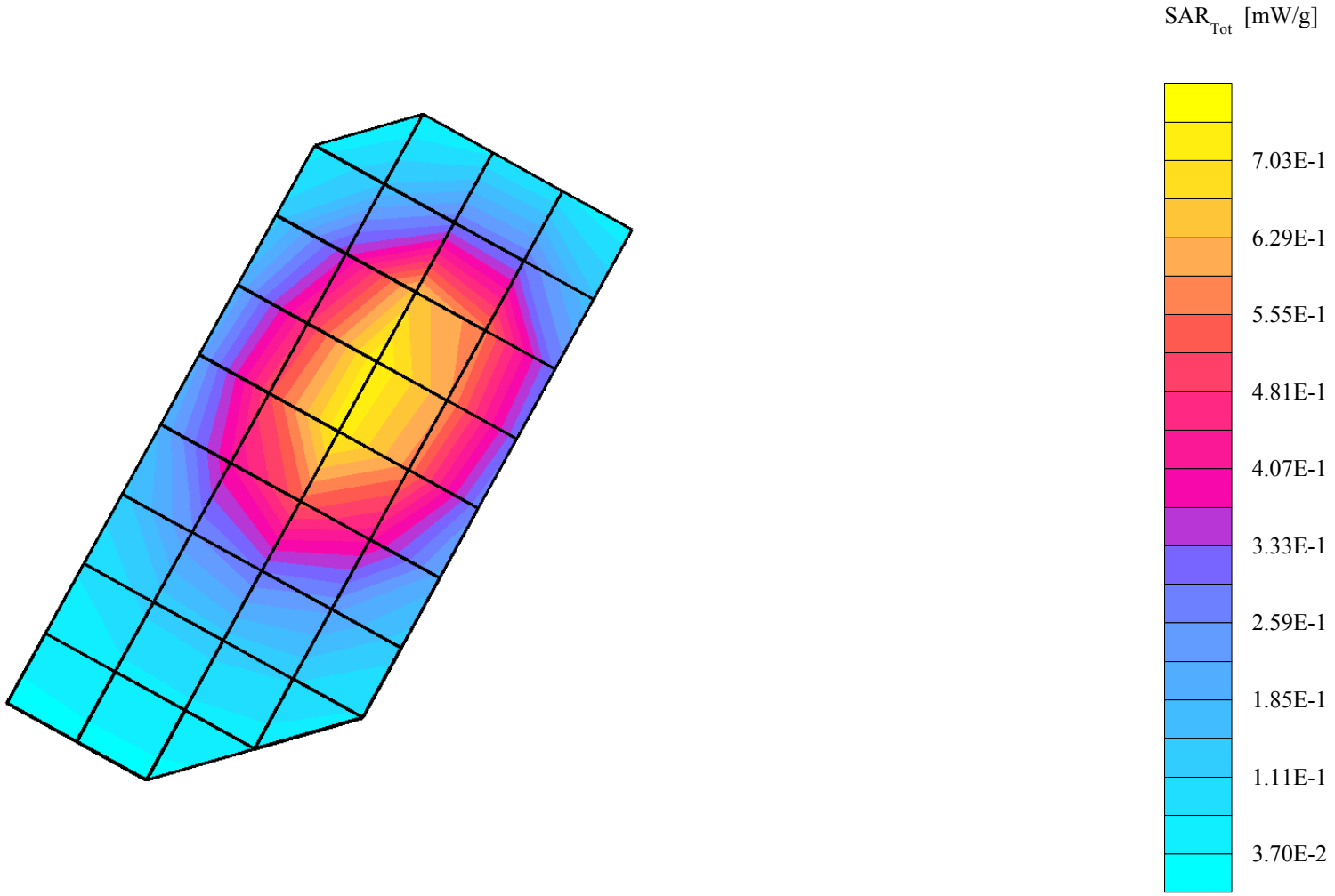
Ch# 128 / Pwr Step: 5 / Antenna Position: Internal / Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): Cheek / Accessory Model #:Mini Housing
R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 824 MHz
Probe: ET3DV6 - SN1522 - IEEE Head; ConvF(4.70,4.70,4.70); Crest factor: 8.0; 835 MHz Head & Body: $\sigma = 0.89$ mho/m $\varepsilon_r = 40.7$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 1.27 mW/g, SAR (10g): 0.863 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 14.9 (14.2, 15.7) [mm]
Powerdrift: -0.36 dB



06/07/03

SN# L350150199

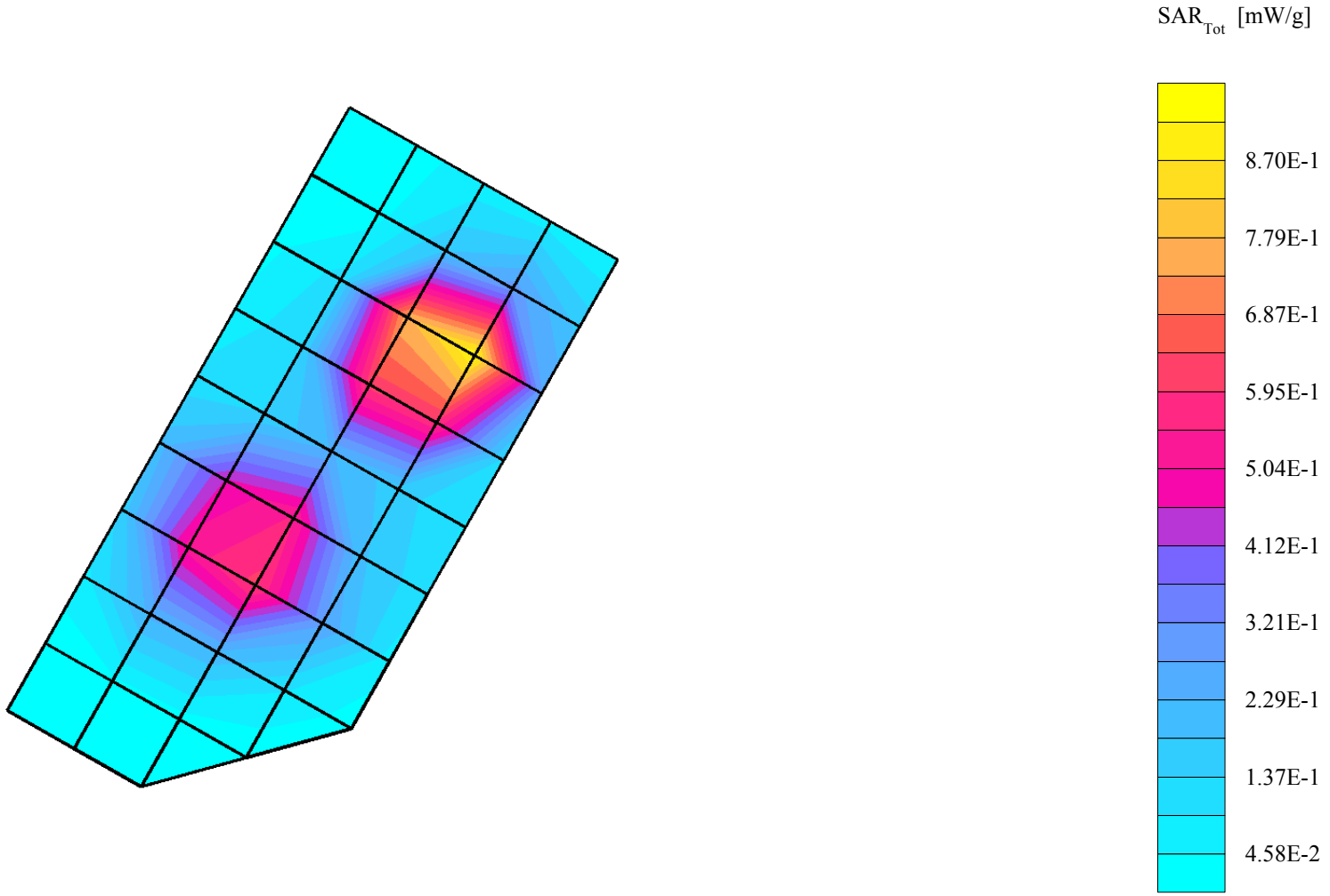
Ch# 190 / Pwr Step: 5 / Antenna Position: Internal / Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): Rotated / Accessory Model #: Mini Housing
R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 837 MHz
Probe: ET3DV6 - SN1522 - IEEE Head; ConvF(4.70,4.70,4.70); Crest factor: 8.0; 835 MHz Head & Body: $\sigma = 0.89$ mho/m $\varepsilon_r = 40.7$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 0.756 mW/g, SAR (10g): 0.512 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 14.0 (13.0, 15.2) [mm]
Powerdrift: -0.01 dB



06/10/03

SN# L350150179

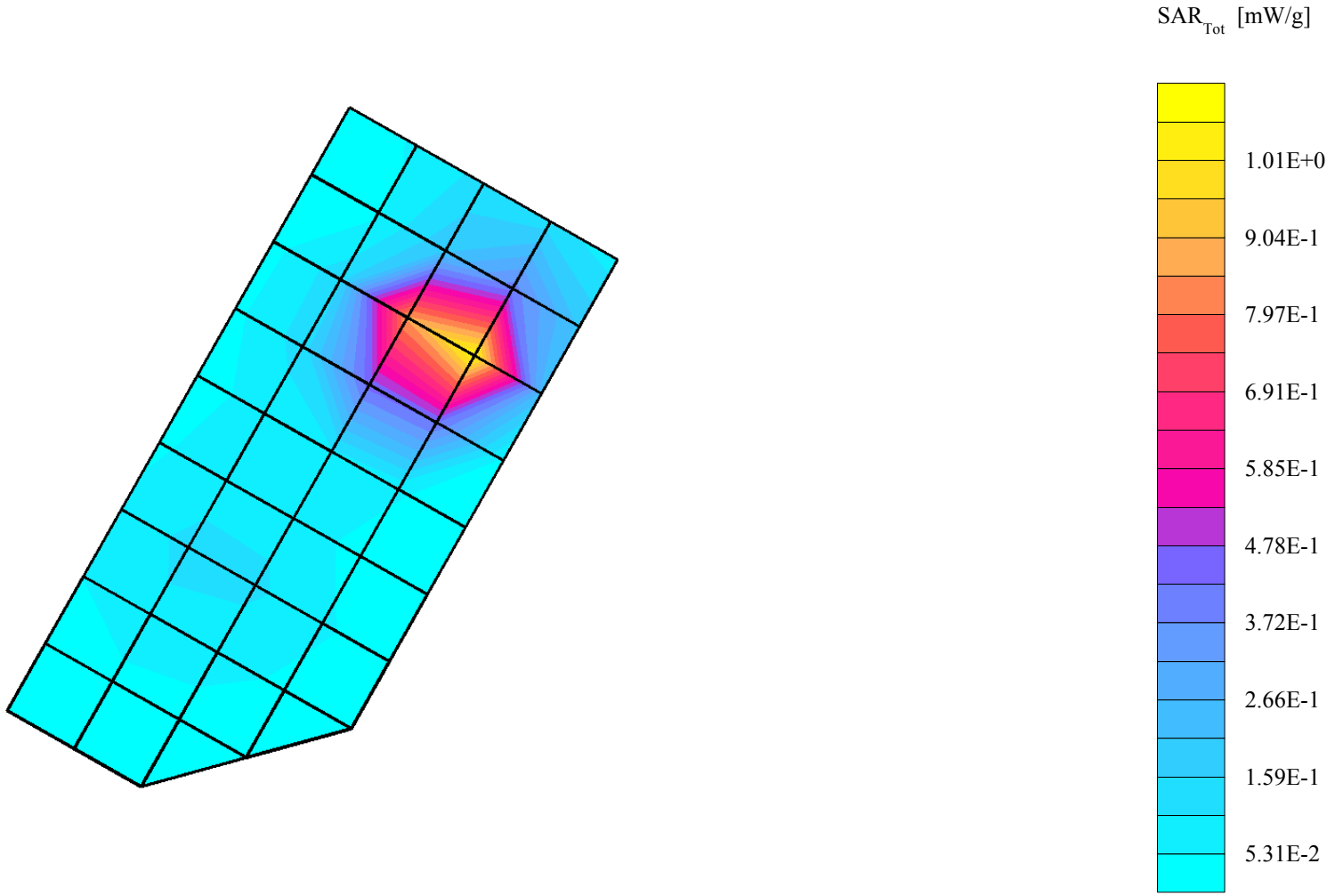
Ch# 512 Pwr Step: 0 (OTA) / Antenna Position: INTERNAL / Battery Model #: ANN4204A / DEVICE POSITION: CHEEK / Accessory Model #: mini hous
R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1850 MHz
Probe: ET3DV6 - SN1502 - IEEE HEAD; ConvF(5.60,5.60,5.60); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.46 mho/m ε_r = 38.9 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 1.01 mW/g, SAR (10g): 0.521 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 8.6 (8.4, 9.2) [mm]
Powerdrift: 0.44 dB



06/10/03

L350150179

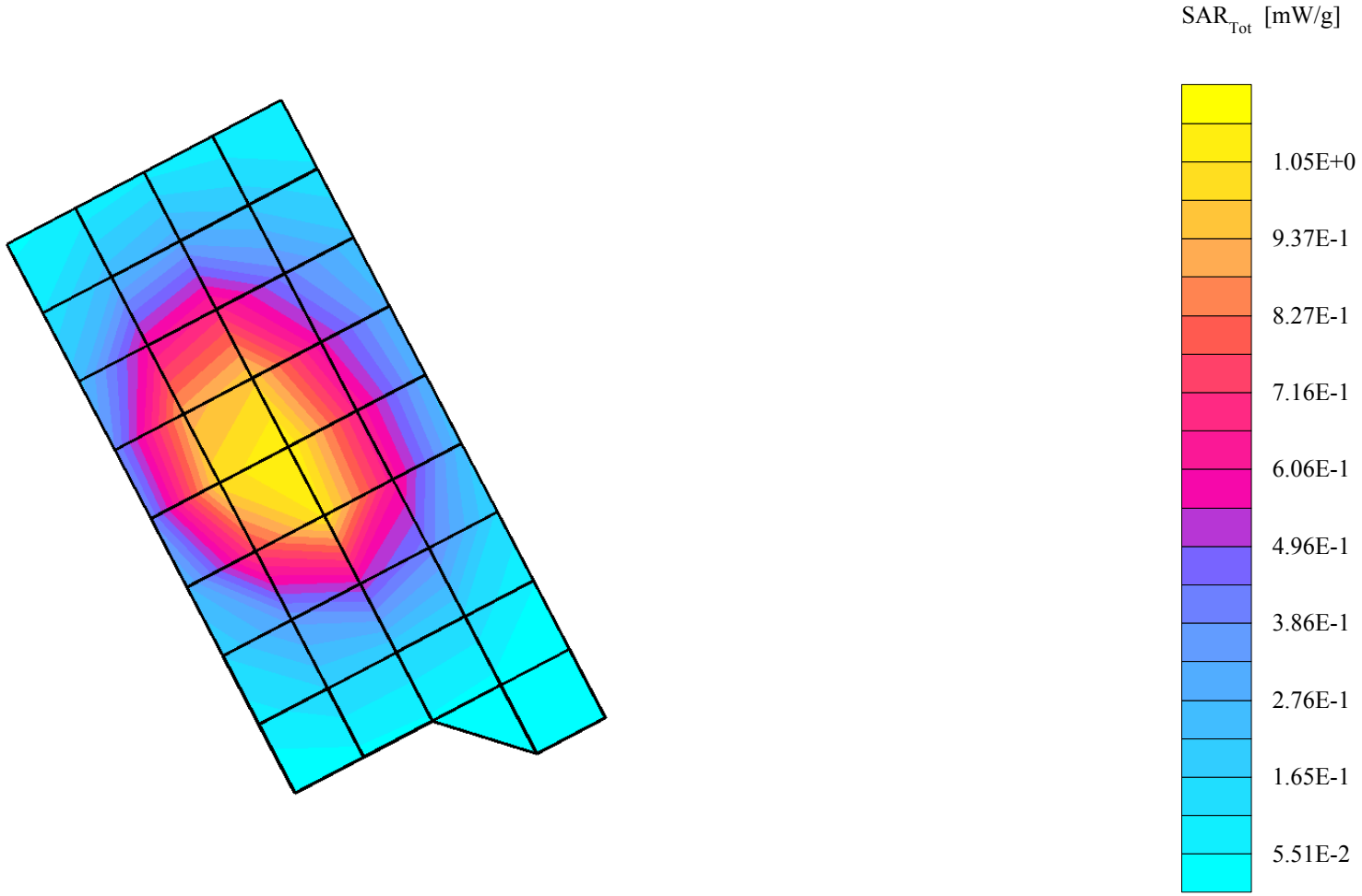
Ch# 661 Pwr Step: 0 (OTA) / Antenna Position: INTERNAL / Battery Model #: ANN4204A / DEVICE POSITION: TILT / Accessory Model #: mini housing
R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1502 - IEEE HEAD; ConvF(5.60,5.60,5.60); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.46 mho/m ε_r = 38.9 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 1.08 mW/g, SAR (10g): 0.525 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 8.2 (8.0, 8.7) [mm]
Powerdrift: 0.09 dB



06/12/03

SN# L350150199

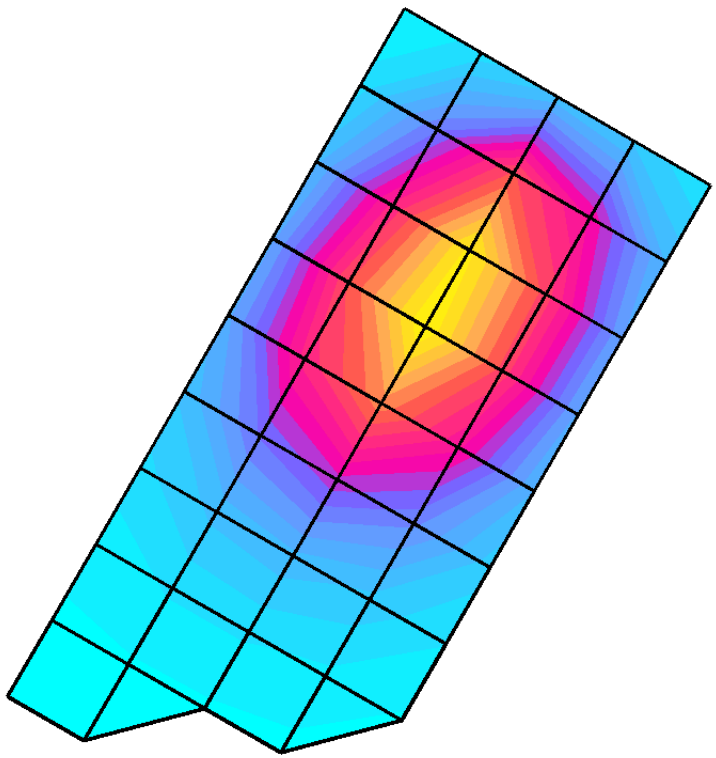
Ch#128 / Pwr Step: 05 / Antenna Position: INTERNAL / Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): CHEEK / Accessory Model #: PNUT HOUSING
R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Right Hand Section; Position: (90°,180°); Frequency: 824 MHz
Probe: ET3DV6 - SN1522 - IEEE Head; ConvF(4.70,4.70,4.70); Crest factor: 8.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\varepsilon_r = 42.1$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 1.13 mW/g, SAR (10g): 0.773 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 15.1 (14.3, 16.0) [mm]
Powerdrift: -0.33 dB

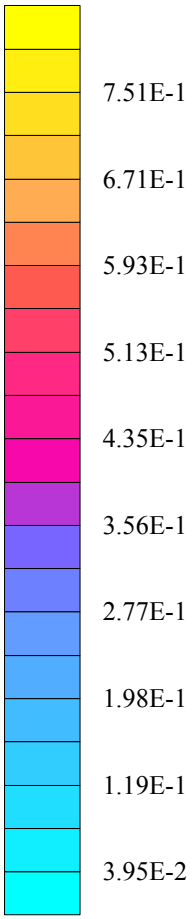


06/11/03

SN# L350150199

Ch# 190 / Pwr Step:05 / Antenna Position:Internal / Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated):Tilted / Accessory Model #: PNUT Housing
R1 TP-1005 SAM Expanded Sugar (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 837 MHz
Probe: ET3DV6 - SN1523 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 8.0; 835 MHz Head & Body: $\sigma = 0.90$ mho/m $\varepsilon_r = 41.6$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 0.785 mW/g, SAR (10g): 0.522 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 13.7 (12.8, 14.7) [mm]
Powerdrift: 0.02 dB

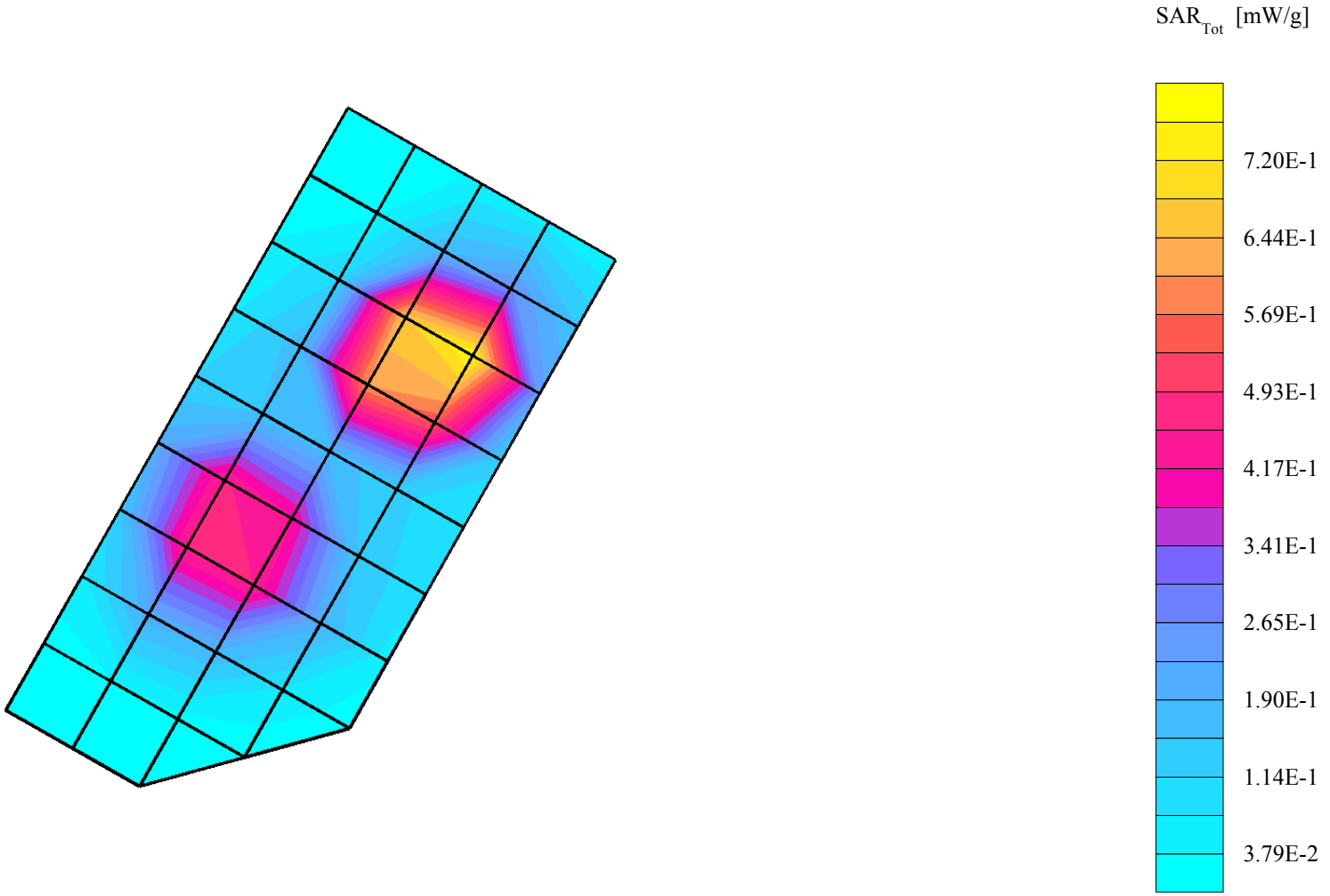




06/10/03

SN# L350150179

Ch# 512 / Pwr Step: 0 / Antenna Position: Internal / Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): Cheek / Accessory Model #: PNUT Housing
R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1850 MHz
Probe: ET3DV6 - SN1502 - IEEE HEAD; ConvF(5.60,5.60,5.60); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.46 mho/m ε_r = 38.9 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.830 mW/g, SAR (10g): 0.444 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 9.1 (8.8, 9.7) [mm]
Powerdrift: -0.43 dB



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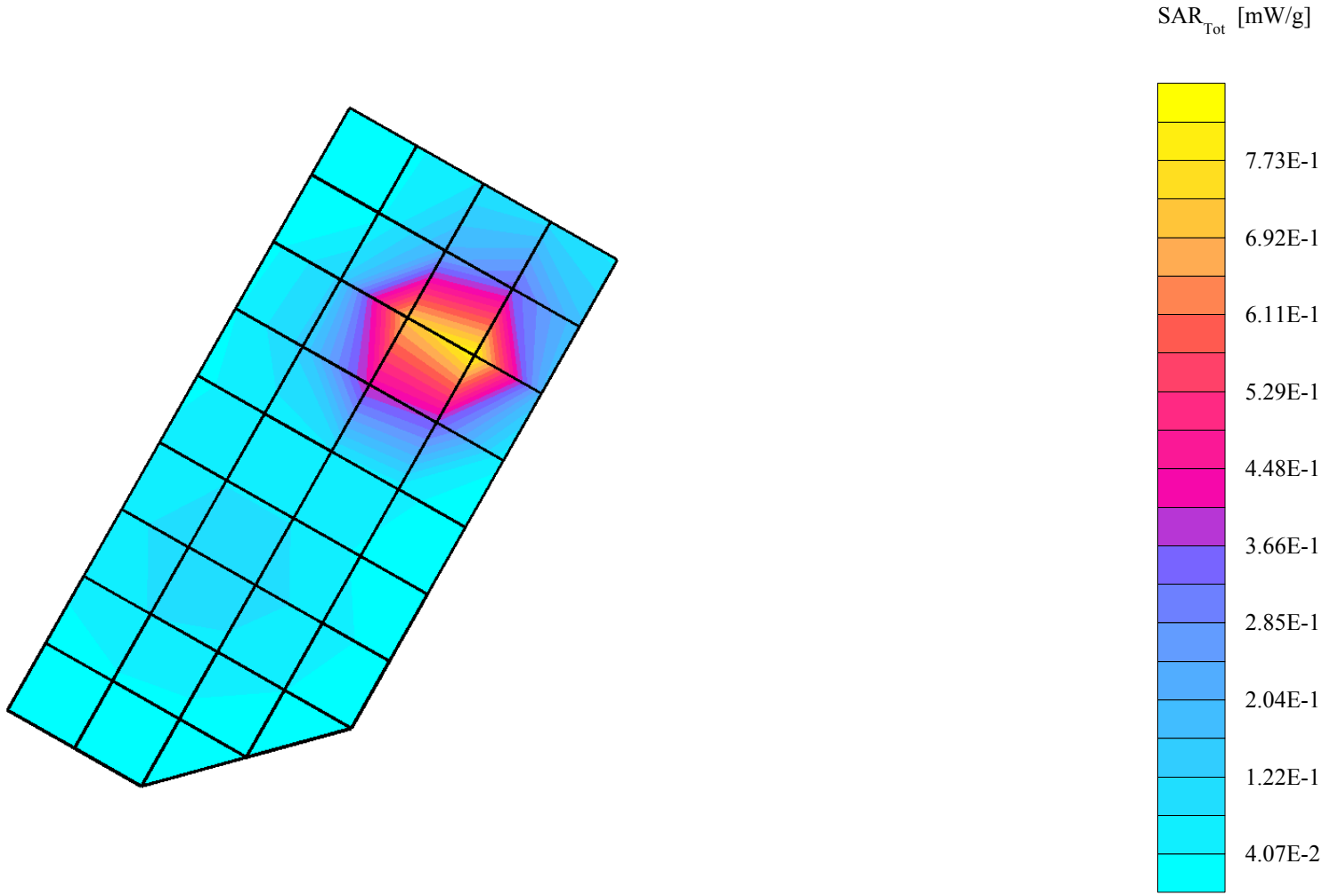
SN# L350150179

Ch# 661 / Pwr Step: 0 / Antenna Position: Internal / Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): Rotated / Accessory Model #: PNUT Housing
R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1502 - IEEE HEAD; ConvF(5.60,5.60,5.60); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.46 mho/m ε_r = 38.9 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.860 mW/g, SAR (10g): 0.436 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 8.5 (8.3, 9.0) [mm]
Powerdrift: 0.08 dB



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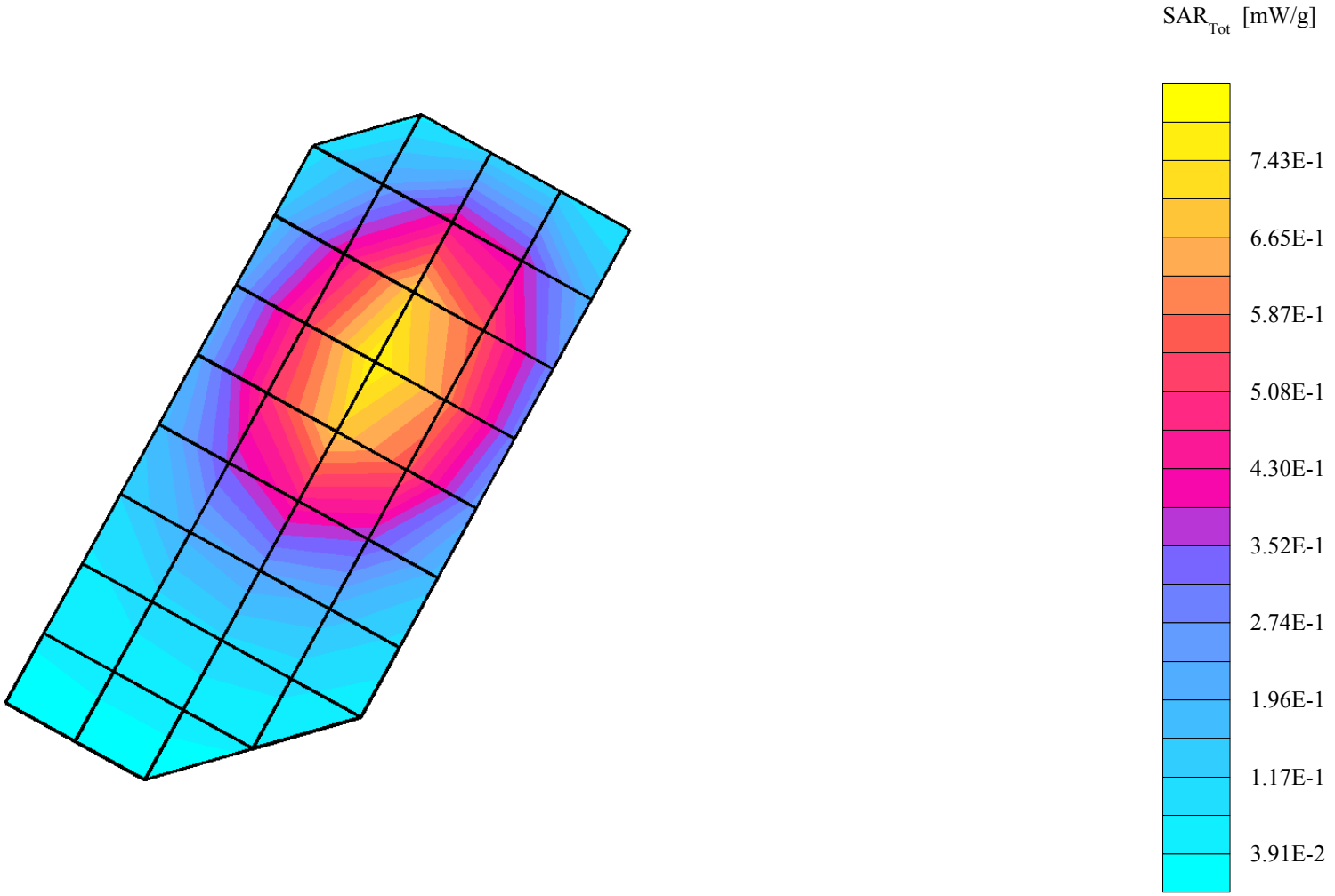
SN# L350150199

Ch# 190 / Pwr Step: 05 / Antenna Position: Internal / Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): Tilted / Accessory Model #: Premium Housing
R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 837 MHz
Probe: ET3DV6 - SN1522 - IEEE Head; ConvF(4.70,4.70,4.70); Crest factor: 8.0; 835 MHz Head & Body: $\sigma = 0.89$ mho/m $\varepsilon_r = 40.6$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 0.778 mW/g, SAR (10g): 0.525 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 13.9 (12.8, 15.1) [mm]
Powerdrift: 0.03 dB



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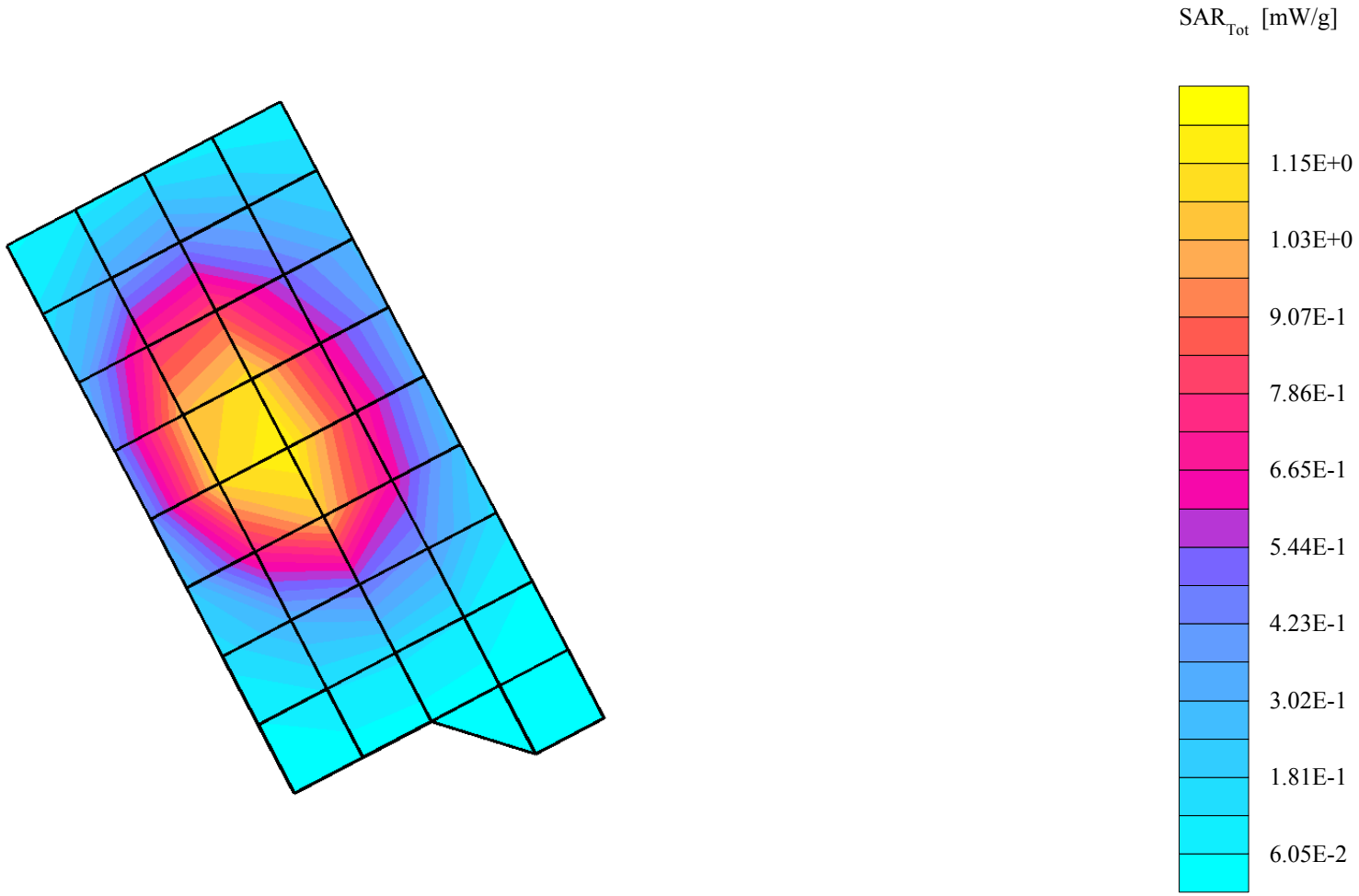
SN# L350150199

Ch# 190 / Pwr Step: 05 / Antenna Position: Internal / Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): Cheek / Accessory Model #: Premium Housing
R# 2 TP-1106 SUGAR SAM Expanded (Rev. 2)-9Jan03 Phantom; Right Hand Section; Position: (90°,180°); Frequency: 837 MHz
Probe: ET3DV6 - SN1522 - IEEE Head; ConvF(4.70,4.70,4.70); Crest factor: 8.0; 835 MHz Head & Body: $\sigma = 0.89$ mho/m $\varepsilon_r = 40.6$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 1.23 mW/g, SAR (10g): 0.845 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 14.9 (14.1, 15.8) [mm]
Powerdrift: -0.06 dB



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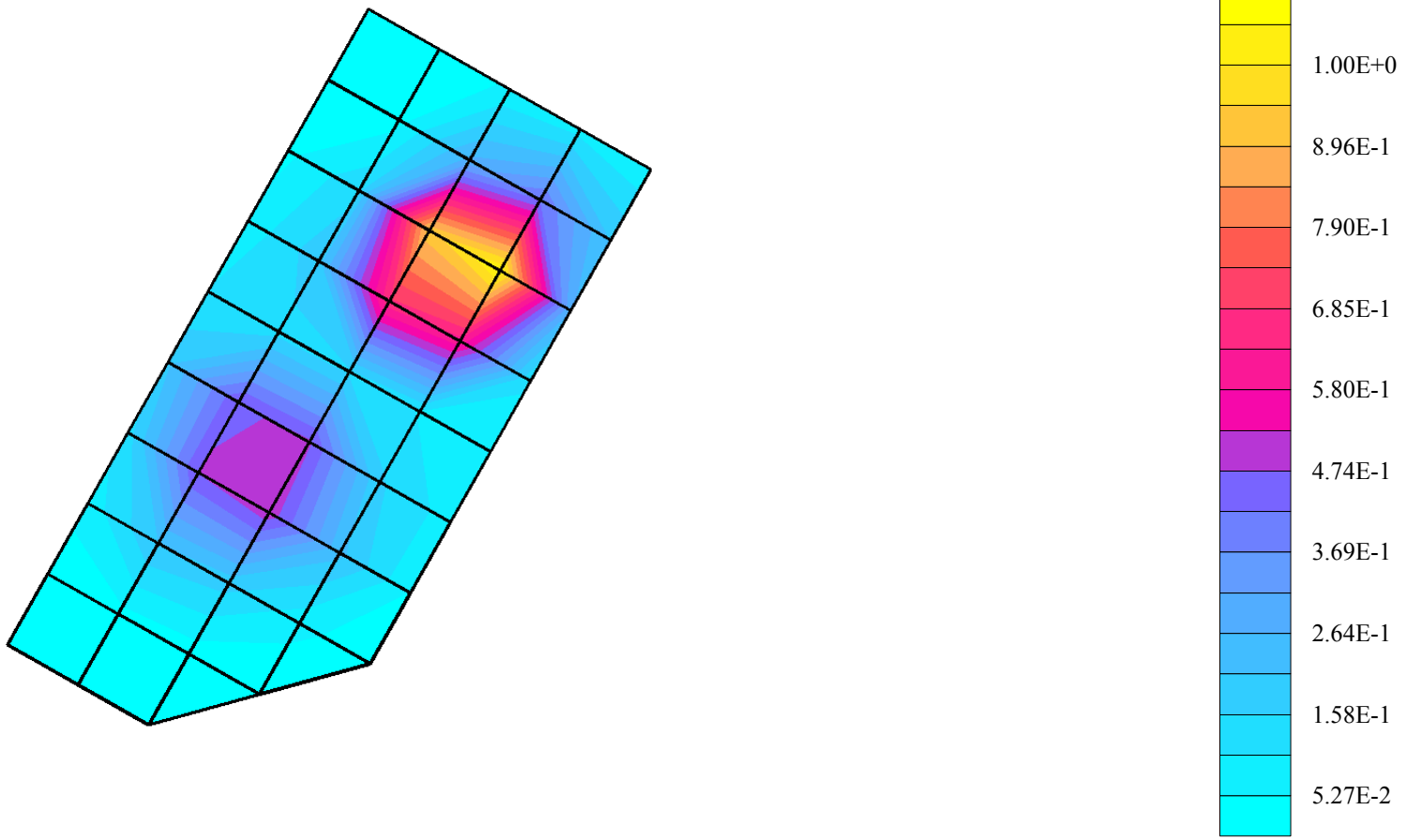
SN# L350150179

Ch# 661 Pwr Step: 0 (OTA) Antenna Position: INTERNAL / Battery Model #: ANN4204A / DEVICE POSITION: CHEEK / Accessory Model #: premium housing
R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1502 - IEEE HEAD; ConvF(5.60,5.60,5.60); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.46 mho/m ε_r = 39.0 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 1.14 mW/g, SAR (10g): 0.588 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 8.7 (8.5, 9.2) [mm]
Powerdrift: 0.14 dB



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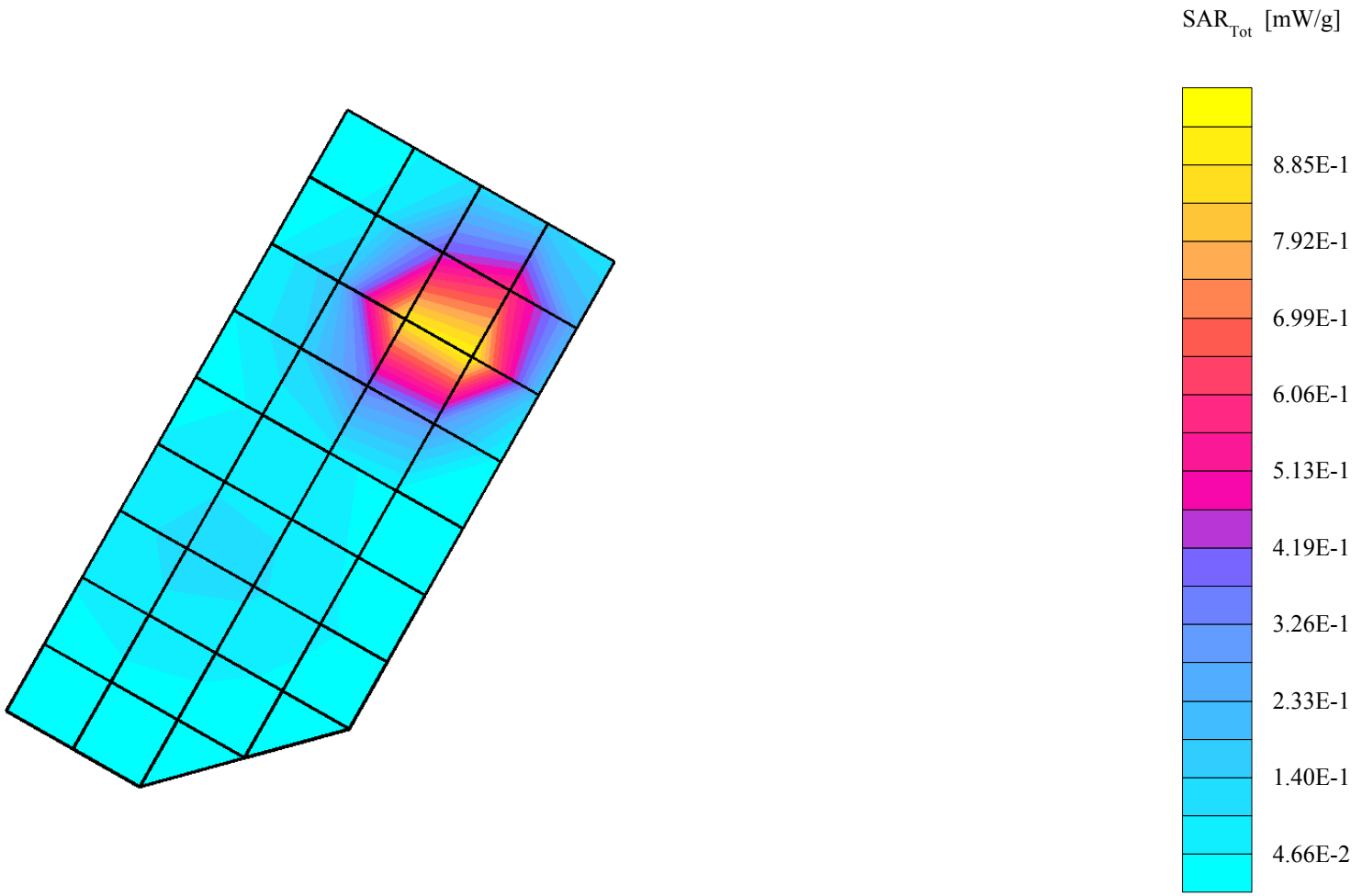
SN# L350150179

Ch# 661 / Pwr Step: 0 / Antenna Position: Internal / Battery Model #: AANN4204A / DEVICE POSITION (cheek or rotated): Rotated / Accessory Model #: Premium Housing
R4 TP-1250 GLYCOL sam expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1502 - IEEE HEAD; ConvF(5.60,5.60,5.60); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.45 mho/m ε_r = 39.3 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 1.03 mW/g, SAR (10g): 0.525 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 9.0 (8.8, 9.4) [mm]
Powerdrift: -0.20 dB



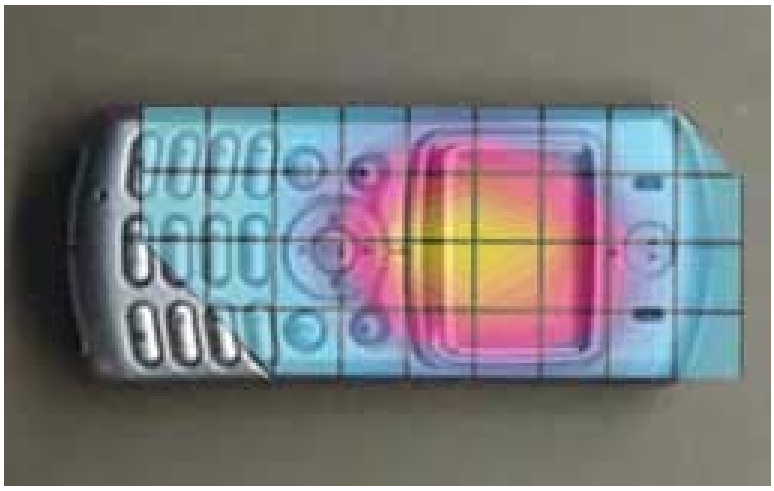


Figure 1.Typical 800MHz Head Adjacent Contour Overlaid on Phone (Cheek Touch)

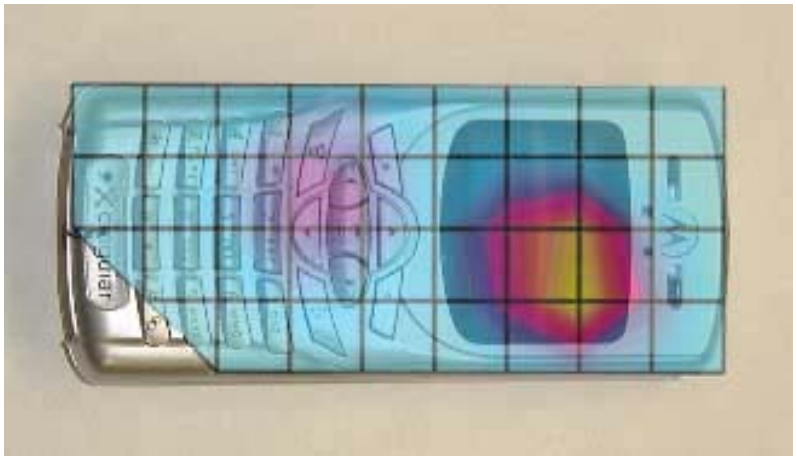


Figure 2.Typical 1900MHz Head Adjacent Contour Overlaid on Phone (Cheek Touch)

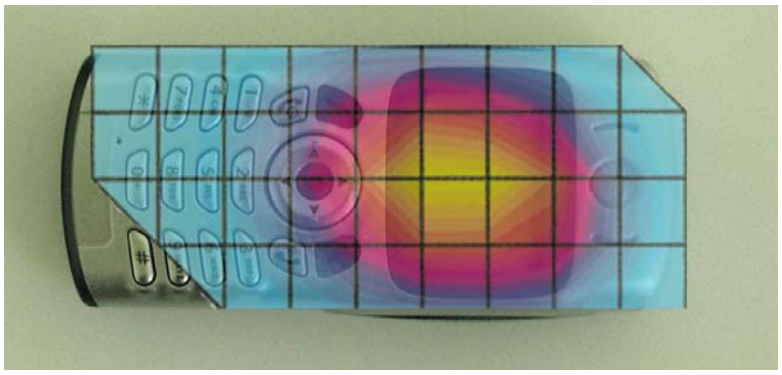


Figure 3.Typical 800MHz Adjacent Contour Overlaid on Phone (15 ˚ Tilt)

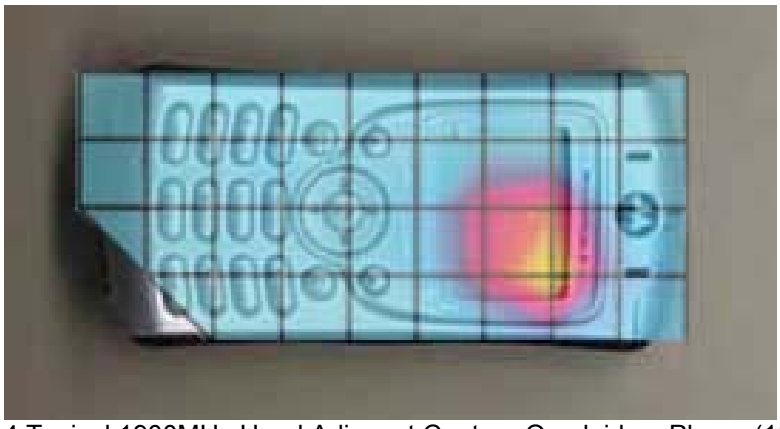


Figure 4.Typical 1900MHz Head Adjacent Contour Overlaid on Phone (15 ˚ Tilt)

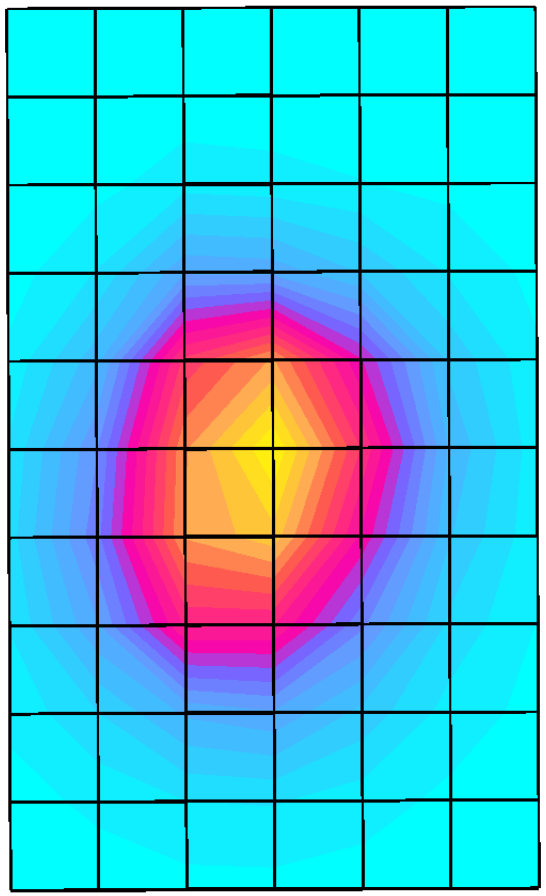
Appendix 3

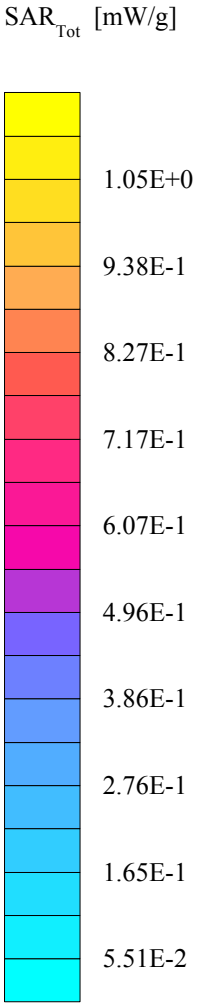
SAR distribution plots for Body Worn Configuration

06/13/03

SN# L350150199

Ch#128 Pwr Step: 05 / Antenna Position: internal / Battery Model #: AANN4204A / Accessory Model #: Black Leather Case ATM-005-BLK-1 Butterfly Housing
R2 Amy Twin Phantom Rev.3 Phantom; section 2 Section; Position: (0°,0°); Frequency: 824 MHz
Probe: ET3DV6 - SN1522 - FCC Body; ConvF(4.40,4.40,4.40); Crest factor: 8.0; 835 MHz Head & Body: $\sigma = 0.97$ mho/m $\varepsilon_r = 54.4$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 1.10 mW/g, SAR (10g): 0.756 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 15.3 (14.5, 16.0) [mm]
Powerdrift: -0.02 dB

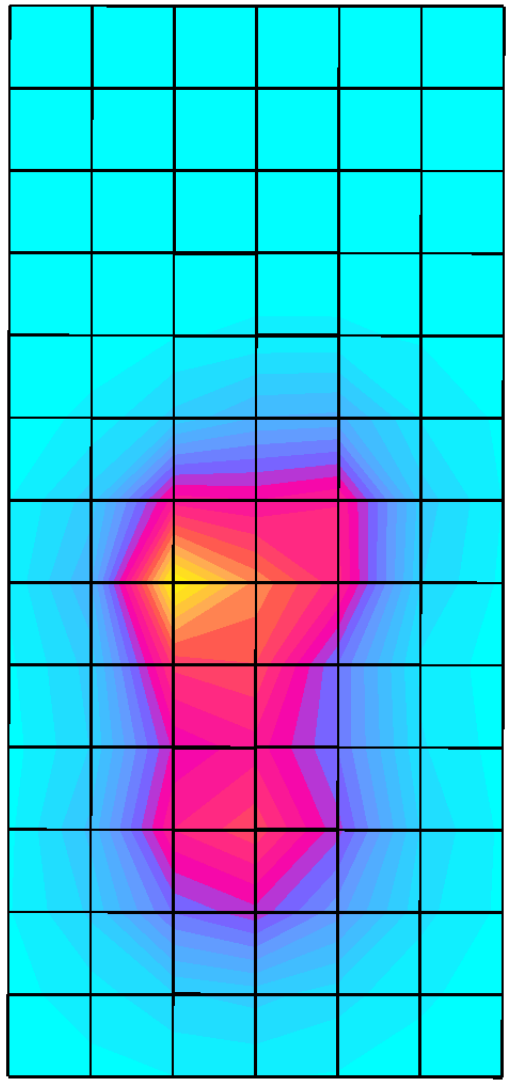


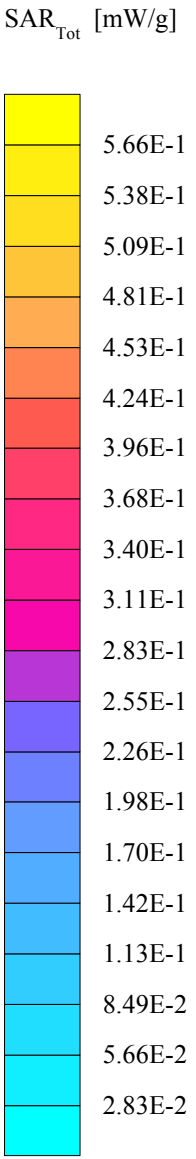


06/15/03

SN# L350150179

Ch# 661 / Pwr Step: 0 OTA / Antenna Position: INTERNAL / Battery Model #: AANN4204A / Accessory Model #: BUTTERFLY HOUSING LEATHER CASE ATM-005-BLK-1
R4 1-005 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 2 Section; Position: (0°,0°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1502 - FCC Body; ConvF(5.30,5.30,5.30); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.58 mho/m ε_r = 51.4 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.557 mW/g, SAR (10g): 0.305 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 7.7 (7.3, 8.8) [mm]
Powerdrift: -0.11 dB

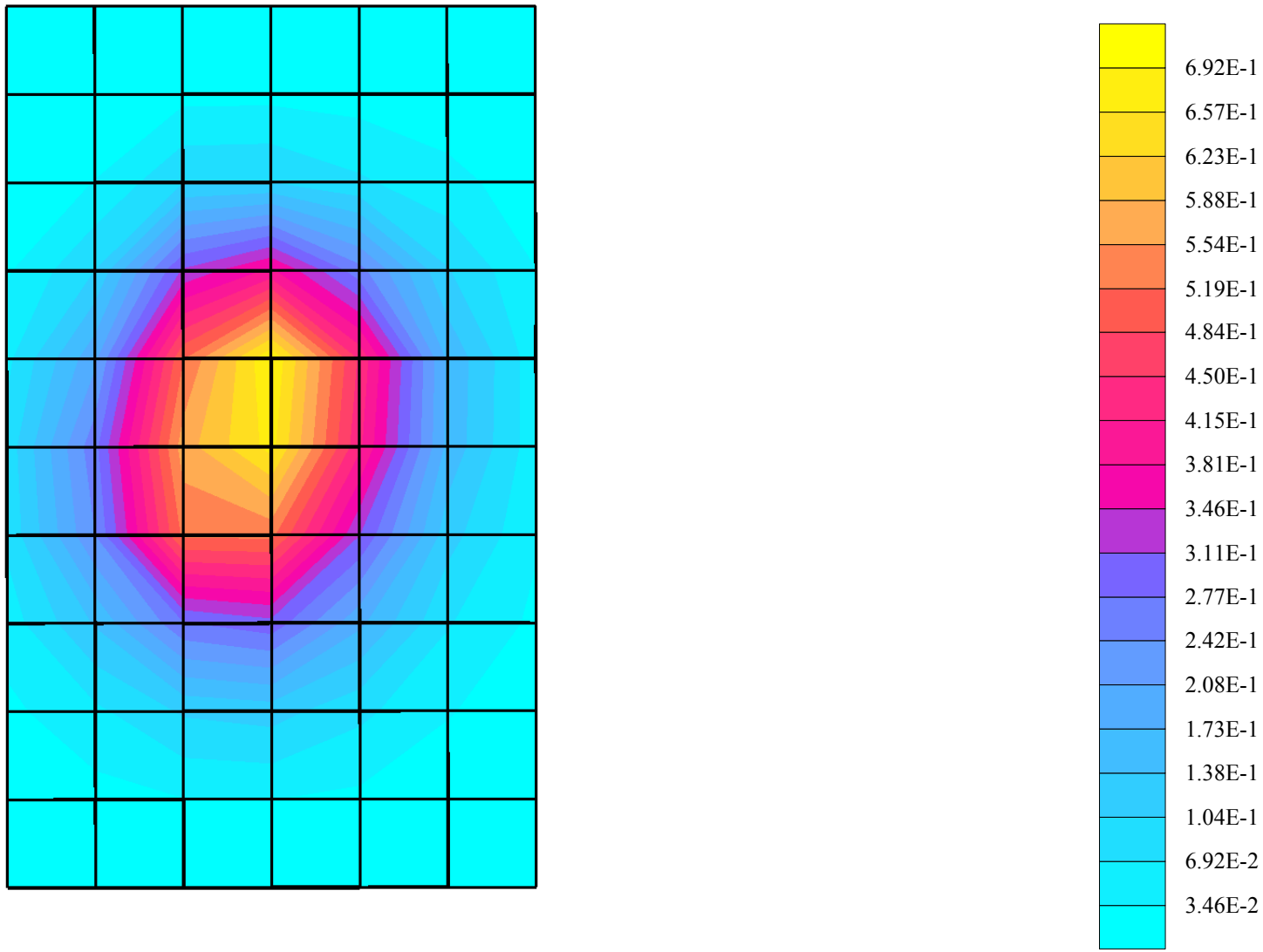




06/13/03

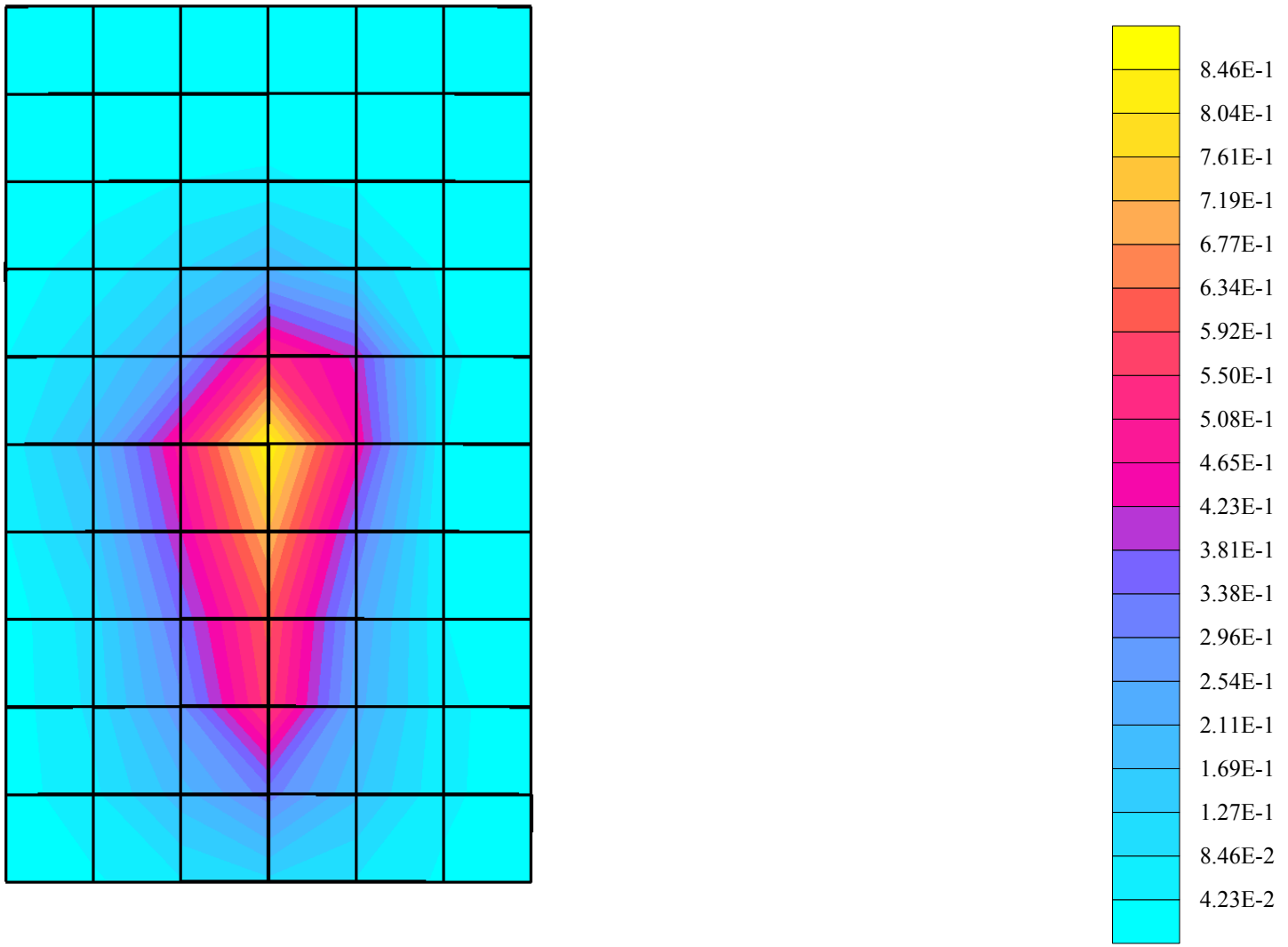
SN# L350150199

Ch#190 / Pwr Step: 05 / Antenna Position: internal / Battery Model #: AANN4204A / Accessory Model #: Black Leather Case ATM-005-BLK-1 Hourglass Housing
R2 Amy Twin Phantom Rev.3 Phantom; section 2 Section; Position: (0°,0°); Frequency: 837 MHz
Probe: ET3DV6 - SN1522 - FCC Body; ConvF(4.40,4.40,4.40); Crest factor: 8.0; 835 MHz Head & Body: $\sigma = 0.97$ mho/m $\varepsilon_r = 54.4$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 0.679 mW/g, SAR (10g): 0.469 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 15.1 (14.2, 16.1) [mm]
Powerdrift: -0.16 dB



SN# L350150199

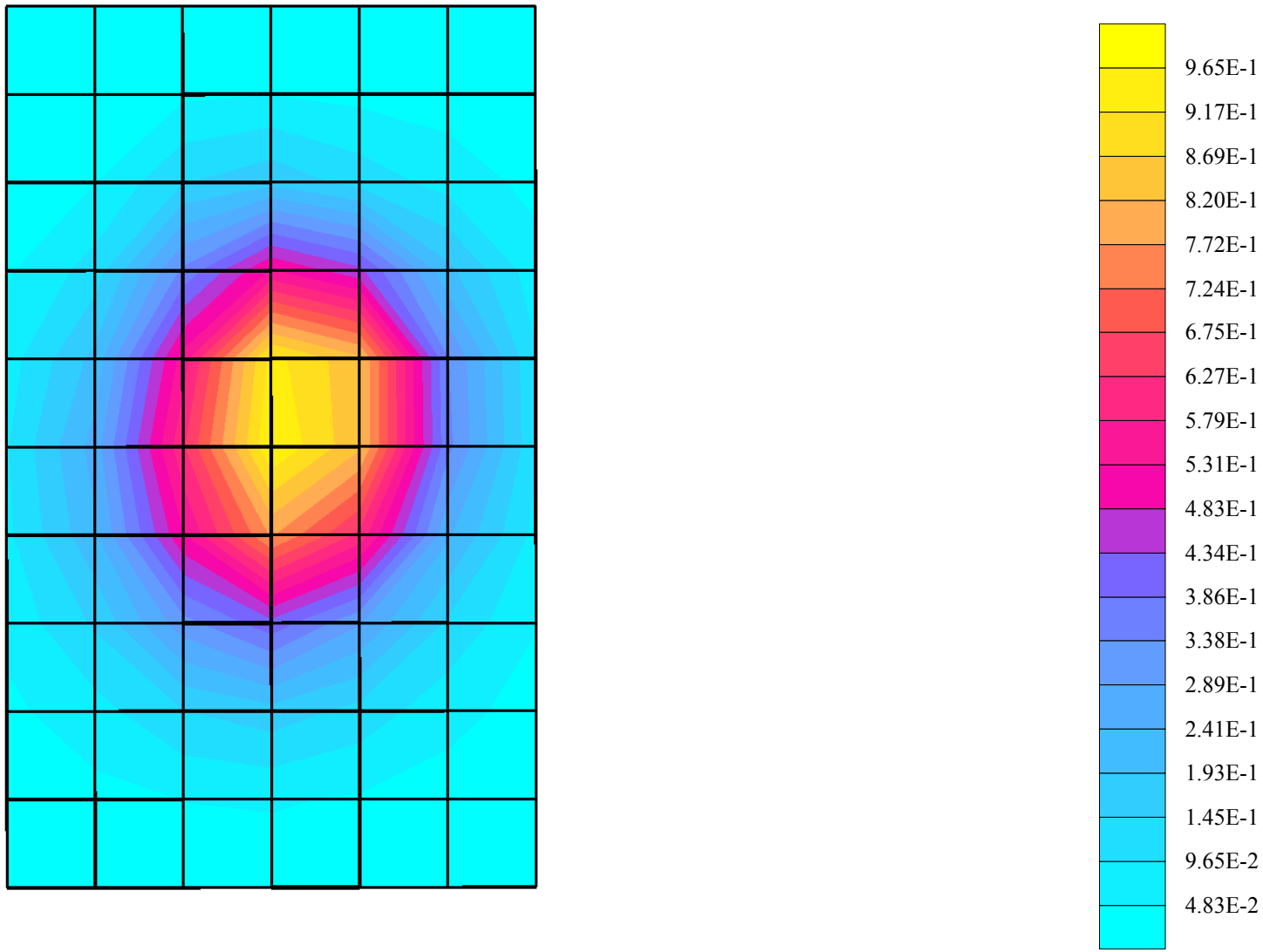
Ch# 512 Pwr Step: 0 (OTA) / Antenna Position: INTERNAL / Battery Model #: AANN4204A / DEVICE POSITION: CHEEK / Accessory Model #: hour glass housing black leather case (ATM-005-BLK-1)
R4 1-005 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 2 Section; Position: (0°,0°); Frequency: 1850 MHz
Probe: ET3DV6 - SN1502 - FCC Body; ConvF(5.30,5.30,5.30); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.59 mho/m ε_r = 51.4 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.959 mW/g, SAR (10g): 0.490 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 8.5 (8.1, 9.3) [mm]
Powerdrift: -0.11 dB



06/13/03

SN# L350150199

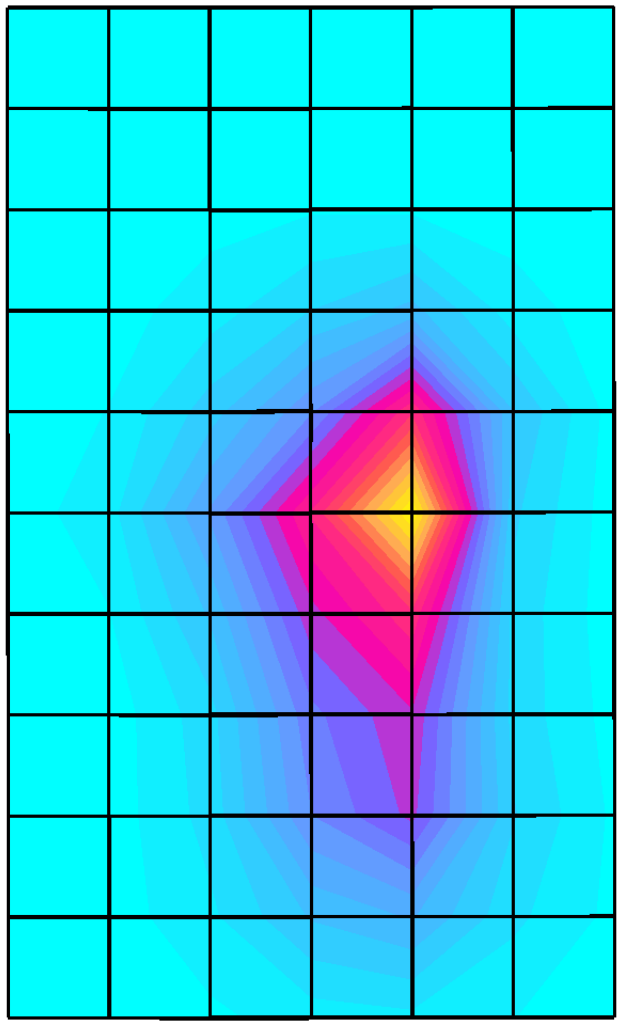
Ch# 128 Pwr Step: 05 / Antenna Position: internal / Battery Model #: AANN4204A / Accessory Model #: Black Leather Case ATM-005-BLK-1 Metal Box Housing
R2 Amy Twin Phantom Rev.3 Phantom; section 2 Section; Position: (0°,0°); Frequency: 824 MHz
Probe: ET3DV6 - SN1522 - FCC Body; ConvF(4.40,4.40,4.40); Crest factor: 8.0; 835 MHz Head & Body: $\sigma = 0.97$ mho/m $\varepsilon_r = 54.4$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 0.987 mW/g, SAR (10g): 0.682 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 15.3 (15.0, 15.7) [mm]
Powerdrift: -0.00 dB

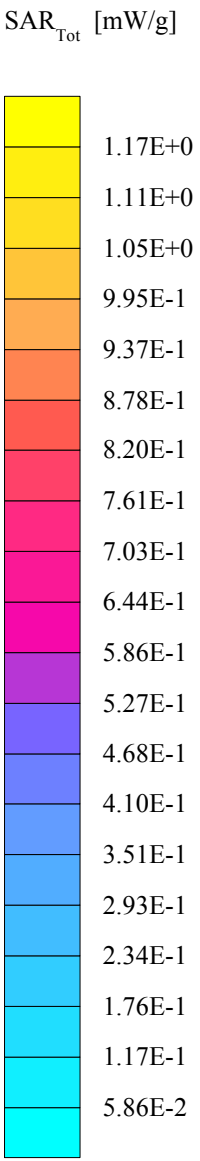


06/15/03

SN# L350150199

Ch# 512 Pwr Step: 0 (OTA) / Antenna Position: INTERNAL / Battery Model #: AANN4204A / Accessory Model #: metal box housing black leather case (ATM-005-BLK-1)
R4 1-005 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 2 Section; Position: (0°,0°); Frequency: 1850 MHz
Probe: ET3DV6 - SN1502 - FCC Body; ConvF(5.30,5.30,5.30); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.59 mho/m ε_r = 51.4 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 1.12 mW/g, SAR (10g): 0.554 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 7.1 (6.6, 8.2) [mm]
Powerdrift: -0.42 dB

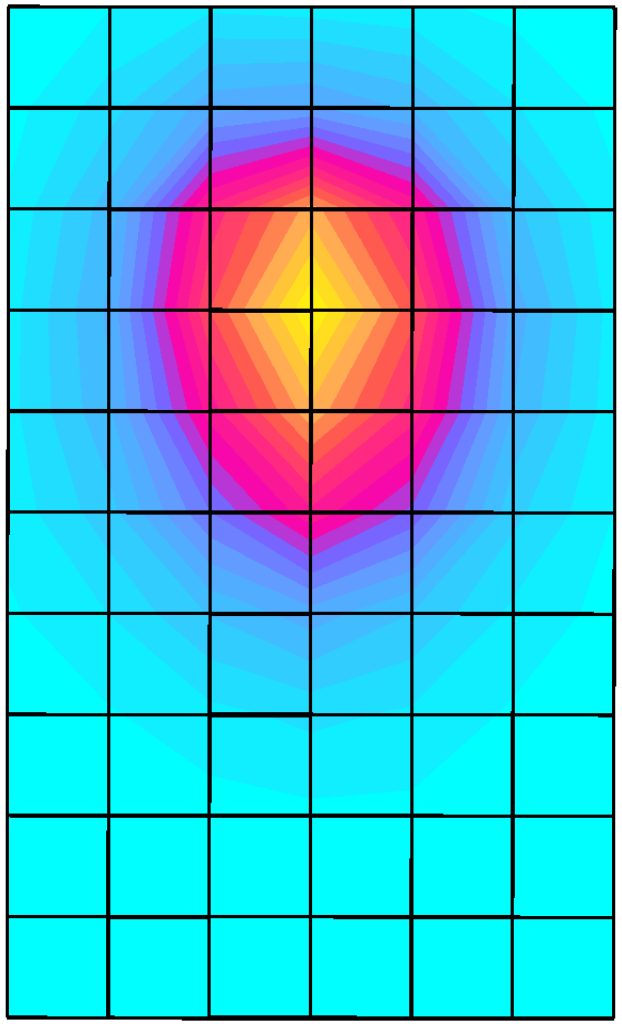


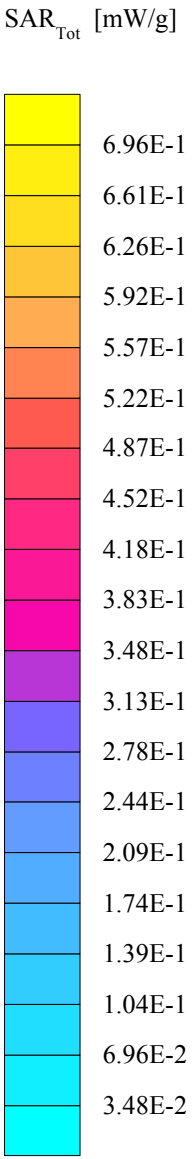


06/10/03

SN# L350150199

Ch# 190 / Pwr Step: 5 / Antenna Position: Internal / Battery Model #: AANN4204A / Accessory Model #: ATM-005-BLK-1 with Mini Housing
R2 Amy Twin Phantom Rev.3 Phantom; section 2 Section; Position: (0°,0°); Frequency: 837 MHz
Probe: ET3DV6 - SN1522 - FCC Body; ConvF(4.40,4.40,4.40); Crest factor: 8.0; 835 MHz Head & Body: $\sigma = 0.98$ mho/m $\varepsilon_r = 55.1$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 0.692 mW/g, SAR (10g): 0.461 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 14.2 (13.5, 14.9) [mm]
Powerdrift: -0.05 dB





06/16/03

SN# L350150179

Ch# 512 Pwr Step: 0 (OTA) / Antenna Position: INTERNAL / Battery Model #: AANN4204A / DEVICE POSITION: CHEEK / Accessory Model #: mini housing black leather case (ATM-005-BLK-1)

R4 1-005 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 2 Section; Position: (0°,0°); Frequency: 1850 MHz

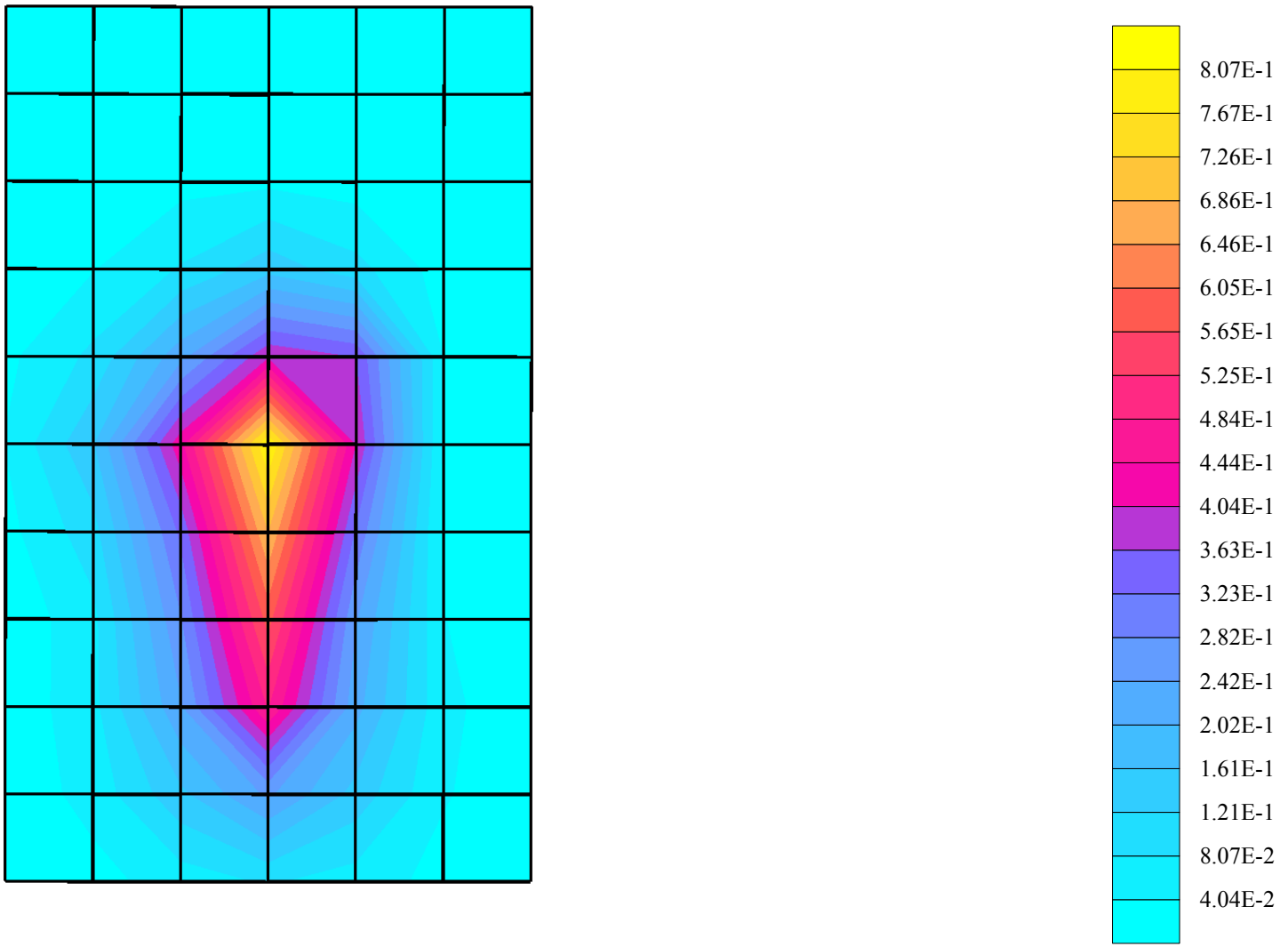
Probe: ET3DV6 - SN1502 - FCC Body; ConvF(5.30,5.30,5.30); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.59 mho/m ε_r = 51.3 ρ = 1.00 g/cm^3

Cube 7x7x7: SAR (1g): 0.945 mW/g, SAR (10g): 0.461 mW/g, (Worst-case extrapolation)

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

Penetration depth: 8.2 (7.8, 8.9) [mm]

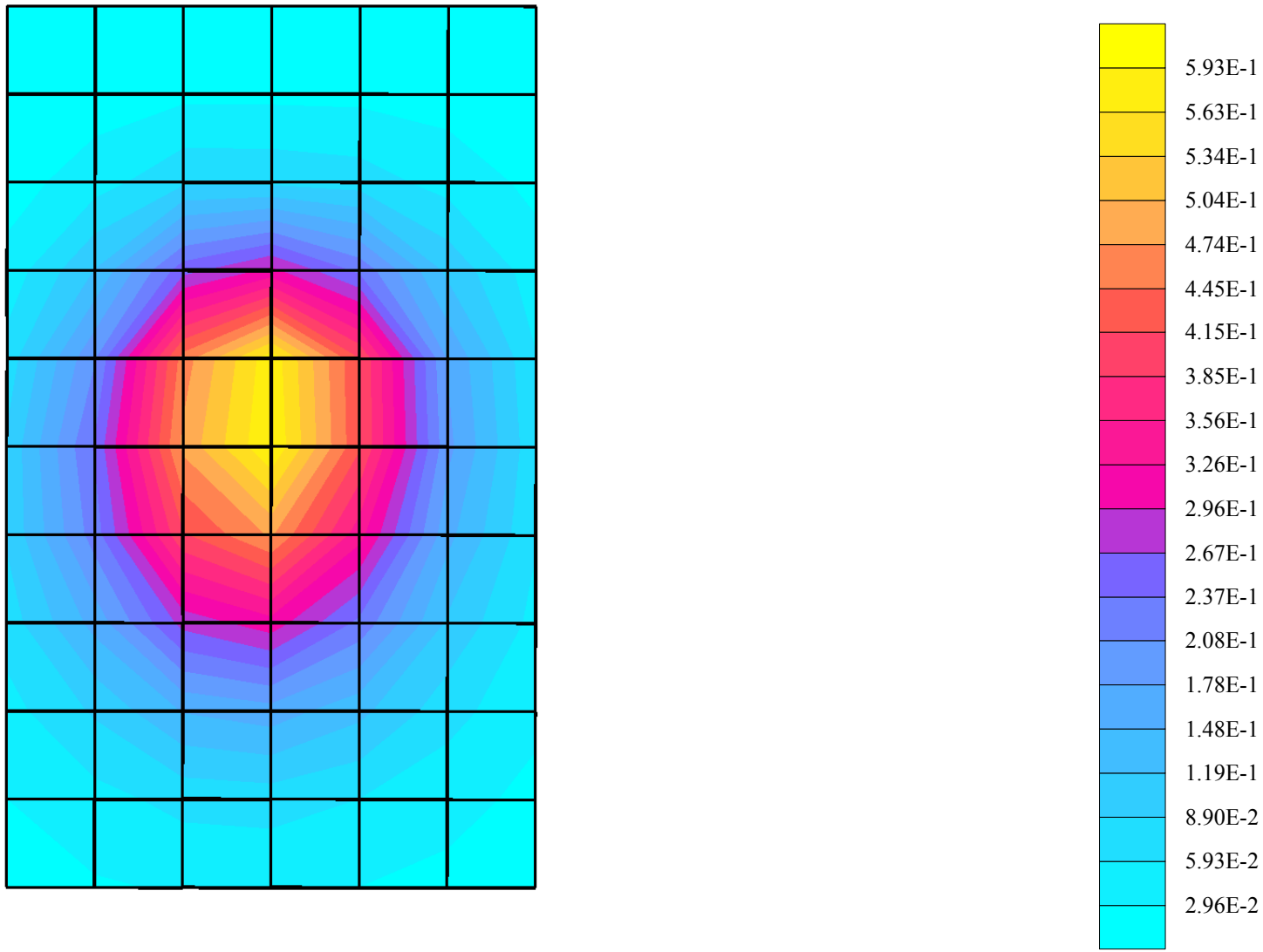
Powerdrift: -0.12 dB



06/13/03

SN# L350150199

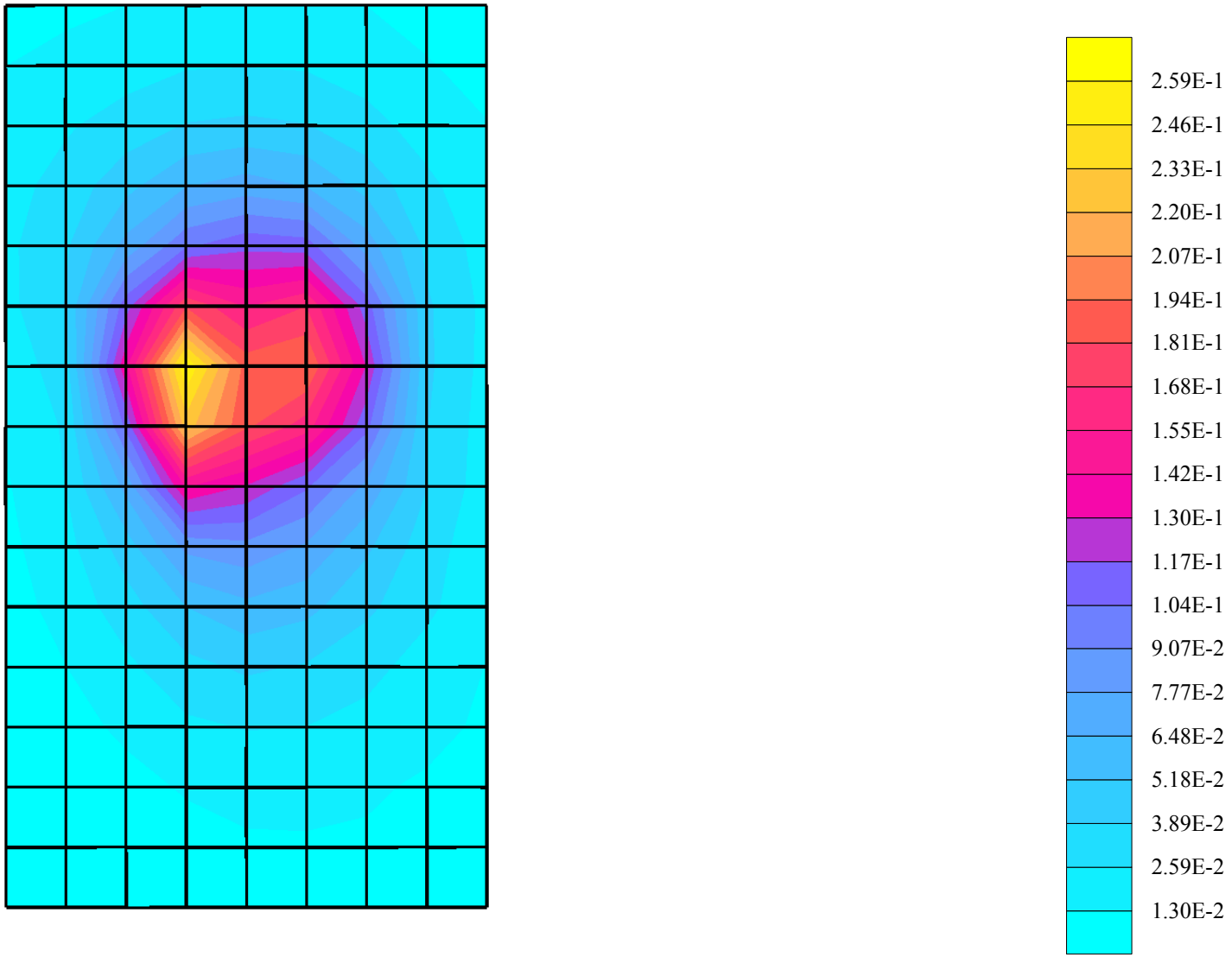
Ch#190 / Pwr Step: 05 / Antenna Position: internal / Battery Model #: AANN4204A / Accessory Model #: Mini Case MN33301 with wishbone Pnut Housing
R2 Amy Twin Phantom Rev.3 Phantom; section 2 Section; Position: (0°,0°); Frequency: 837 MHz
Probe: ET3DV6 - SN1522 - FCC Body; ConvF(4.40,4.40,4.40); Crest factor: 8.0; 835 MHz Head & Body: $\sigma = 0.97$ mho/m $\varepsilon_r = 54.4$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 0.615 mW/g, SAR (10g): 0.421 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 14.8 (13.7, 16.0) [mm]
Powerdrift: -0.02 dB



06/15/03

SN# L350150179

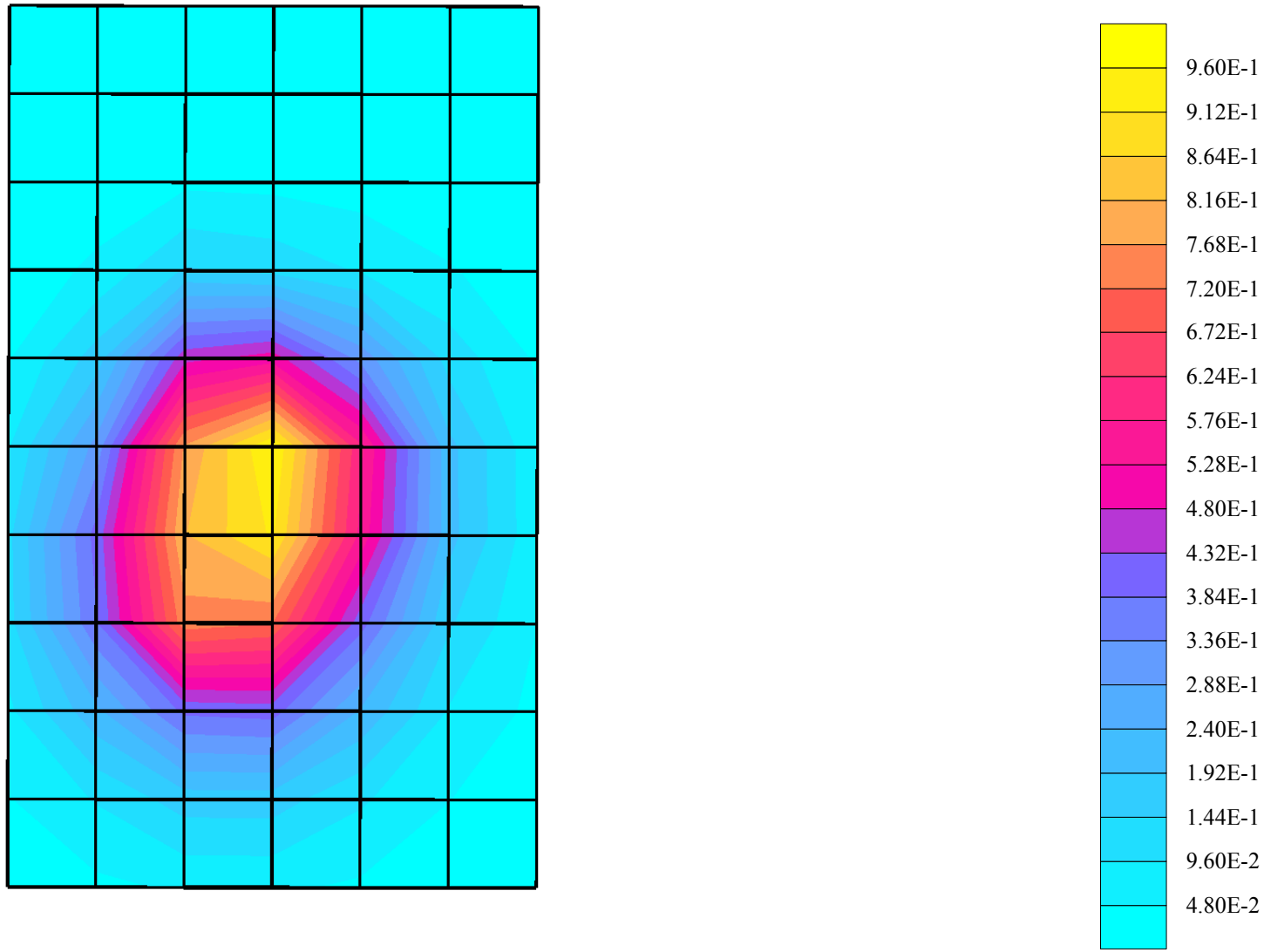
Ch# 661 / Pwr Step: 0 (OTA) / Antenna Position: Internal / Battery Model #: AANN4204A / Accessory Model # = Mini Case (MN33301) and Peanut Housing and Universal Belt Clip
R2 Amy Twin Phantom Rev.3 Phantom; section 1 Section; Position: (0°,0°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1522 - FCC Body; ConvF(3.10,3.10,3.10); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.59 mho/m ε_r = 51.4 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.249 mW/g, SAR (10g): 0.130 mW/g, (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Penetration depth: 8.1 (7.7, 8.9) [mm]
Powerdrift: -0.12 dB



06/13/03

SN# L350150199

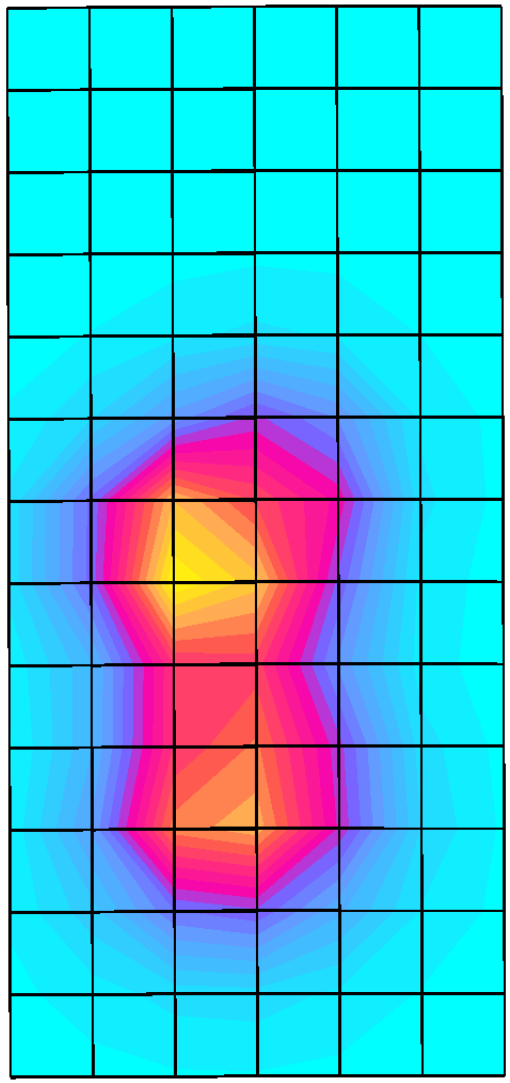
Ch#128 / Pwr Step: 05 / Antenna Position: internal / Battery Model #: AANN4204A / Accessory Model #: Black Leather Case ATM-005-BLK-1 Premium Housing
R2 Amy Twin Phantom Rev.3 Phantom; section 2 Section; Position: (0°,0°); Frequency: 824 MHz
Probe: ET3DV6 - SN1522 - FCC Body; ConvF(4.40,4.40,4.40); Crest factor: 8.0; 835 MHz Head & Body: $\sigma = 0.97$ mho/m $\varepsilon_r = 54.4$ $\rho = 1.00$ g/cm^3
Cube 7x7x7: SAR (1g): 0.969 mW/g, SAR (10g): 0.663 mW/g * Max outside, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 14.3 (13.6, 15.3) [mm]
Powerdrift: -0.03 dB

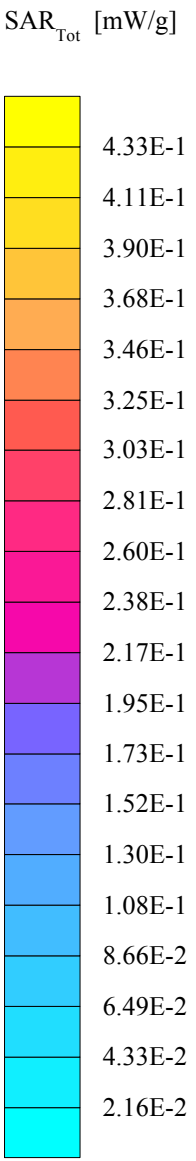


06/14/03

SN# L350150179

Ch# 661 / Pwr Step: O OTA / Antenna Position: INTERNAL / Battery Model #: AANN4204A / Accessory Model #: PREMIUM HOUSING LEATHER CASE ATM-005-BLK-1
R4 1-005 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 2 Section; Position: (0°,0°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1502 - FCC Body; ConvF(5.30,5.30,5.30); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.58 mho/m ε_r = 51.4 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.433 mW/g, SAR (10g): 0.245 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 8.6 (8.1, 9.6) [mm]
Powerdrift: -0.26 dB





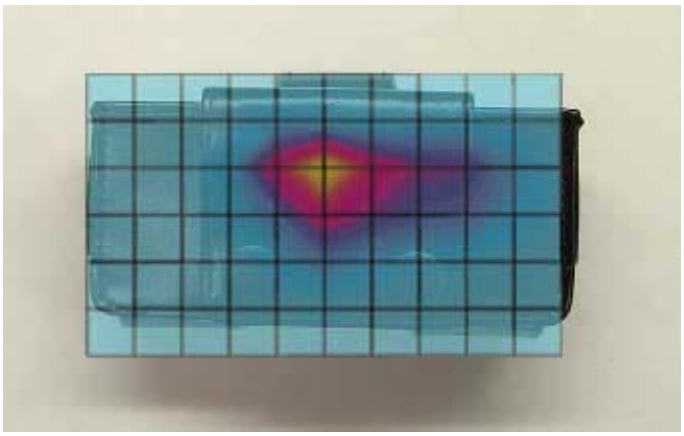


Figure 5.Typical 800 MHz Body-Worn Contour Overlaid on Phone

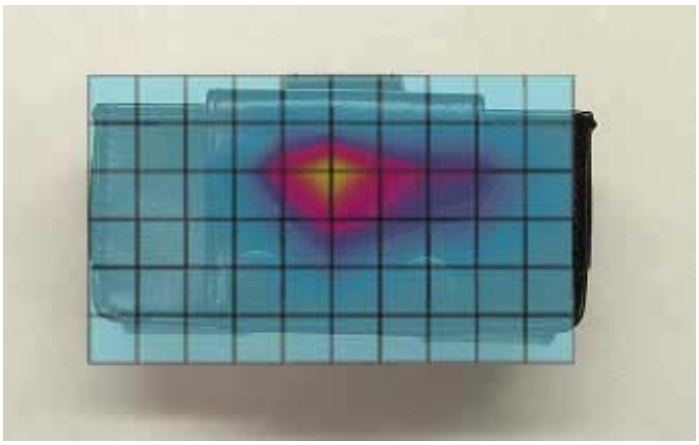


Figure 6. Typical 1900 MHz Body-Worn Contour Overlaid on Phone

Appendix 4

Probe Calibration Certificate (Please see attachment)

Appendix 5

Dipole Characterization Certificate (Please see attachment)

Appendix 6

Measurement Uncertainty Budget

Uncertainty Budget for Device Under Test

a	*b*	*c*	*d*	*e = f(d,k)*	*f*	*g*	*h = c x f / e*	*i = c x g / e*	*k*
Uncertainty Component	**Sec.**	**Tol. (± %)**	**Prob. Dist.**	**Div.**	**c_i (1 g)**	**c_i (10 g)**	**1 g u_i (±%)**	**10 g u_i (±%)**	**v_i**
Measurement System									
Probe Calibration	E.2.1	9.5	N	2.00	1	1	4.8	4.8	∞
Axial Isotropy	E.2.2	4.7	R	1.73	0.707	0.707	1.9	1.9	∞
Spherical Isotropy	E.2.2	9.6	R	1.73	0.707	0.707	3.9	3.9	∞
Boundary Effect	E.2.3	5.8	R	1.73	1	1	3.3	3.3	∞
Linearity	E.2.4	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1.0	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	1.0	N	1.00	1	1	1.0	1.0	∞
Response Time	E.2.7	0.8	R	1.73	1	1	0.5	0.5	∞
Integration Time	E.2.8	1.3	R	1.73	1	1	0.8	0.8	∞
RF Ambient Conditions	E.6.1	3.0	R	1.73	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.3	R	1.73	1	1	0.2	0.2	∞
Probe Positioning with respect to Phantom Shell	E.6.3	1.1	R	1.73	1	1	0.6	0.6	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E.5	3.9	R	1.73	1	1	2.3	2.3	∞
Test sample Related									
Test Sample Positioning	E.4.2	3.6	N	1.00	1	1	3.6	3.6	29
Device Holder Uncertainty	E.4.1	2.8	N	1.00	1	1	2.8	2.8	8
Output Power Variation - SAR drift measurement	6.6.2	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 7

Photographs of the device under test

Front of Phone with Premium Housing

Back of Phone with Premium Housing

Front of Phone "Hour Glass Housing"

Back of Phone "Hour Glass Housing"

Front of Phone "Peanut Shaped Housing"

Back of Phone "Peanut Shaped Housing"

Front of Phone "Mini Housing"

Back of Phone "Mini Housing"

Front of Phone with “Metal” Box Housing

Back of Phone with “Metal” Box Housing

Front of Phone "Butterfly" Housing

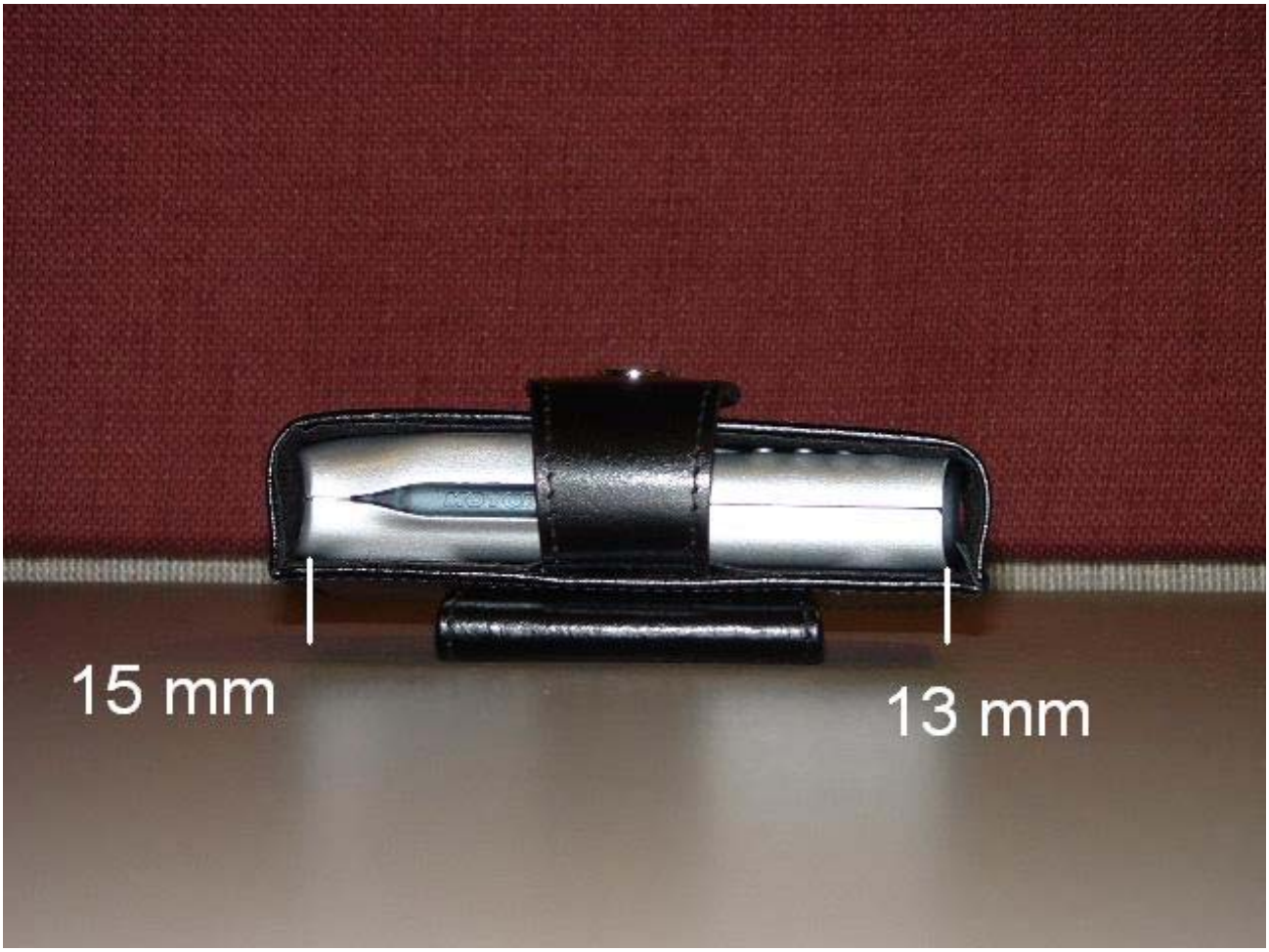
Back of Phone "Butterfly" Housing

Phone Placed Against Phantom Head in Check Touch Position

Phone Placed Against Phantom Head in Check Touch Position

Phone Placed Against Phantom Head in 15 Degree Tilt Position

Phone Placed Against Phantom Head in 15 Degree Tilt Position



Separation Distance from phone to the base of flat surface

Phone in leather case against the flat phantom