



MOTOROLA

Exhibit 11: SAR Test Report IHDT56BJ2

Date of test: 03/29/2002 – 04/02/2002
Date of Report: 04/11/2002

Laboratory: Motorola Personal Communications Sector Product Safety & Compliance Laboratory
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Accreditation: This laboratory is accredited to ISO/IEC 17025-1999 to perform the following electromagnetic exposure tests:



System Validation & Interlaboratory Comparison
Simulated Tissue Specifications and Procedure
EME Cellular Phone Testing Procedure

On the following types of products:

Wireless Communications Devices (Examples): Two Way Radios; Portable Phones (including Cellular, Licensed Non-Broadcast and PCS); Low Frequency Readers; and Pagers

A2LA certificate #1651-01

Statement of Compliance: Motorola declares under its sole responsibility that portable cellular telephone FCC ID IHDT56BJ2 to which this declaration relates, is in conformity with the appropriate General Population/Uncontrolled RF exposure standards, recommendations and guidelines (FCC 47 CFR §2.1093). It also declares that the product was tested in accordance with the appropriate measurement standards, guidelines and recommended practices. Any deviations from these standards, guidelines and recommended practices are noted below:

(none)

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The results and statements contained herein relate only to the items tested. The names of individuals involved may be mentioned only in connection with the statements or results from this report.

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

Table of Contents

| | |
|--|---|
| 1) Introduction | 3 |
| 2) Description of the Device Under Test | 3 |
| Antenna description | 3 |
| Device description | 3 |
| 3) Test Equipment | 3 |
| 3.1 Dosimetric system | 3 |
| 3.2 Additional equipment used | 4 |
| 4) Electrical parameters of the tissue simulating liquid | 5 |
| 5) System Accuracy Verification | 5 |
| 6) Test Results | 7 |
| 6.1 Head Adjacent Test Results | 7 |
| 6.2 Body-Worn Test Results | 9 |

References:

| | |
|--|----|
| Appendix 1: SAR distribution comparison for the system accuracy verification | 11 |
| Appendix 2: SAR distribution plots for Phantom Head Adjacent Use | 12 |
| Appendix 3: SAR distribution plots for Body Worn Configuration | 15 |
| Appendix 4. Probe Calibration Certificate | 17 |
| Appendix 5: Photographs of the device under test | 18 |

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 IHDT56BJ2. The Specific Absorption Rate (SAR) of this product was measured. The portable cellular phone was tested in accordance with FCC OET Bulletin 65 Supplement C 01-01.

2. Description of the Device Under Test

Antenna description

| | | |
|----------------------|------------|-------|
| Type | Stub | |
| Location | Right Side | |
| Dimensions | Length | 25 mm |
| | Width | 5 mm |
| Configuration | Helix | |

Device description

| | | | |
|---|-----------------------------------|------------|--------------|
| FCC ID Number | IHDT56BJ2 | | |
| Serial number | A88BF79D & A88BF7C9 | | |
| Mode(s) of Operation | 800 AMPS | 800 CDMA | 1900 CDMA |
| Modulation Mode(s) | AMPS | CDMA | CDMA |
| Maximum Output Power Setting | 27.50 dBm | 25.00dBm | 25.00dBm |
| Duty Cycle | 1:1 | 1:1 | 1:1 |
| Transmitting Frequency Rang(s) | 824-849MHz | 824-849MHz | 1851-1909MHz |
| Production Unit or Identical Prototype (47 CFR §2.908) | Identical Prototype | | |
| Device Category | Portable | | |
| RF Exposure Limits | General Population / Uncontrolled | | |

3. Test Equipment Used

3.1 Dosimetric System

The Motorola Personal Communications Sector Product Safety & Compliance Laboratory utilizes a Dosimetric Assessment System (Dasy3™ v3.1d) manufactured by Schmid & Partner Engineering AG (SPEAG™), of Zurich Switzerland. The overall RSS uncertainty of the measurement system is ±12.0% (K=1) with an expanded uncertainty of ±24.0% (K=2). The list of calibrated equipment used for the measurements is shown below.

| Description | Serial Number | Cal Due Date |
|---------------------------------|---------------|--------------|
| DASY3 DAE V1 | SN398 | 9/26/2002 |
| DASY3 DAE V1 | SN375 | 11/15/2002 |
| E-Field Probe ETDV6 | SN1398 | 8/31/2002 |
| E-Field Probe ETDV6 | SN1391 | 10/25/2002 |
| Dipole Validation Kit, DV900V2 | SN94 | 1/3/2003 |
| Dipole Validation Kit, DV900V2 | SN92 | 1/3/2003 |
| SAM Phantom used for 800MHz | TP-1131 | |
| SAM Phantom used for 800MHz | TP-1132 | |
| Dipole Validation Kit, DV1900V2 | SN283TR | 1/5/2003 |
| Dipole Validation Kit, DV1900V2 | SN280TR | 1/4/2003 |
| SAM Phantom used for 1900MHz | TP-1105 | |

3.2 Additional Equipment

| Description | Serial Number | Cal Due Date |
|-------------------------------|---------------|--------------|
| Signal Generator #1 - HP8648C | 3847A04848 | 11/19/2003 |
| Signal Generator#2 - HP8648C | 3847A04844 | 11/19/2003 |
| Power Meter #1 - E4419B | GB39511090 | 11/28/2002 |
| Power Meter #2 - E4419B | GB39511086 | 09/27/2002 |
| Power Sensor #1 - 8481A | 50584 | 11/15/2002 |
| Power Sensor #2 - 8481A | 36904 | 09/27/2002 |
| Network Analyzer HP8753ES | US39172529 | 07/05/2002 |

4. Electrical parameters of the tissue simulating liquid

Prior to conducting SAR measurements, the relative permittivity, ϵ_r , and the conductivity, σ , of the tissue simulating liquids were measured with a HP85070 Dielectric Probe Kit. These values are shown in the table below. The recommended limits for maximum permittivity and minimum conductivity are also shown. These come from the Federal Communication Commission, OET Bulletin 65 Supplement C 01-01. It is seen that the measured parameters are satisfactory for compliance testing. The tissue stimulant depth was verified to be 15.0cm \pm 0.5cm at the center of the ear (ERP).

| f (MHz) | Tissue type | Limits / Measured | Dielectric Parameters | | |
|------------|-------------|----------------------|-----------------------|----------------|-----------|
| | | | ϵ_r | σ (S/m) | Temp (°C) |
| 835 | Head | Measured, 04/02/2002 | 42.1 | 0.91 | 21.1 |
| | | Recommended Limits | 41.5 | 0.9 | 20-25 |
| | | Measured, 04/02/2002 | 41.8 | 0.9 | 21.2 |
| | | Recommended Limits | 41.5 | 0.9 | 20-25 |
| | Body | Measured, 04/02/2002 | 53.5 | 0.97 | 21.4 |
| | | Recommended Limits | 55.2 | 0.97 | 20-25 |
| 1880 | Head | Measured, 04/01/2002 | 39.7 | 1.46 | 22.0 |
| | | Recommended Limits | 40 | 1.4 | 20-25 |
| | Body | Measured, 04/02/2002 | 51.9 | 1.53 | 21.7 |
| | | 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 for the 800MHz & 900MHz bands occurs within center section of the SAM phantom. The daily system accuracy verification for 1800MHz & 1900MHz occurs within a “flat” phantom. This “flat” phantom is made out of 1” thick natural High Density Polyethylene with a thickness at the bottom equal to 2.0mm. It measures 52.7cm(long) x 26.7cm(wide) x 21.2cm(tall). The measured dielectric constant of the material used is less than 2.3 and the loss tangent is less than 0.0046 all the way up to 2.184GHz. This allows us to minimize the amount of time that the DGBE is sitting inside a SAM phantom.

A SAR measurement was performed to see if the measured SAR was within +/- 8% from the target SAR indicated on the dipole certification sheet. The test was conducted on the same days as the measurement of the DUT. Recommended limits for maximum permittivity, minimum conductivity are shown in the table below. These come from the Federal Communication Commission, OET Bulletin 65 Supplement C 01-01. The obtained results from the system accuracy verification are displayed in the table below. The distributions of SAR compare well with those of the reference

measurements (see Appendix 1). The tissue stimulant depth was verified to be 15.0cm ±0.5cm. 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 0.0008 W/kg.

| f (MHz) | Description | SAR (W/kg), 1gram | Dielectric Parameters | | Ambient Temp (°C) | Tissue Temp (°C) |
|------------|----------------------|-------------------------|--------------------------|----------------|-------------------------|------------------------|
| | | | ϵ_r | σ (S/m) | | |
| 800 | Measured, 04/01/2002 | 11.96 | 0.97 | 41.4 | 22 | 21.1 |
| | Recommended Limits | 11.4 | 0.95 | 40.3 | N/A | N/A |
| | Measured, 04/02/2002 | 11.73 | 0.96 | 41.1 | 23 | 21.2 |
| | Recommended Limits | 11.4 | 0.95 | 40.3 | N/A | N/A |
| | Measured, 04/01/2002 | 11.55 | 0.96 | 40.9 | 22 | 21 |
| | Recommended Limits | 11.4 | 0.95 | 40.3 | N/A | N/A |
| | Measured, 04/02/2002 | 11.31 | 0.96 | 41 | 23 | 21.6 |
| | Recommended Limits | 11.4 | 0.95 | 40.3 | N/A | N/A |
| 1800 | Measured, 04/01/2002 | 39.4 | 1.38 | 40 | 22 | 22 |
| | Recommended Limits | 38.8 | 1.37 | 39.6 | N/A | N/A |
| | Measured, 04/02/2002 | 37.07 | 1.36 | 40 | 23 | 21.7 |
| | Recommended Limits | 38.8 | 1.37 | 39.6 | N/A | N/A |
| | Measured, 04/01/2002 | 37.3 | 1.38 | 39.3 | 22 | 19.3 |
| | Recommended Limits | 38.8 | 1.37 | 39.6 | N/A | N/A |
| | Measured, 04/02/2002 | 38.1 | 1.36 | 40 | 23 | 21.7 |
| | Recommended Limits | 38.8 | 1.37 | 39.6 | N/A | N/A |

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

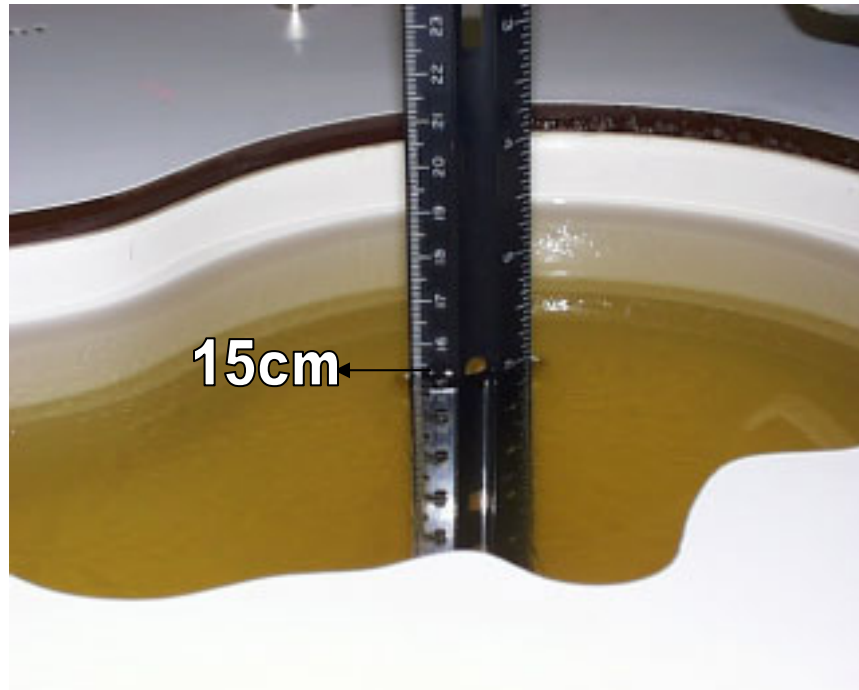


Figure 1. Location of Tissue Simulate Depth Measurement Location in Phantom Head

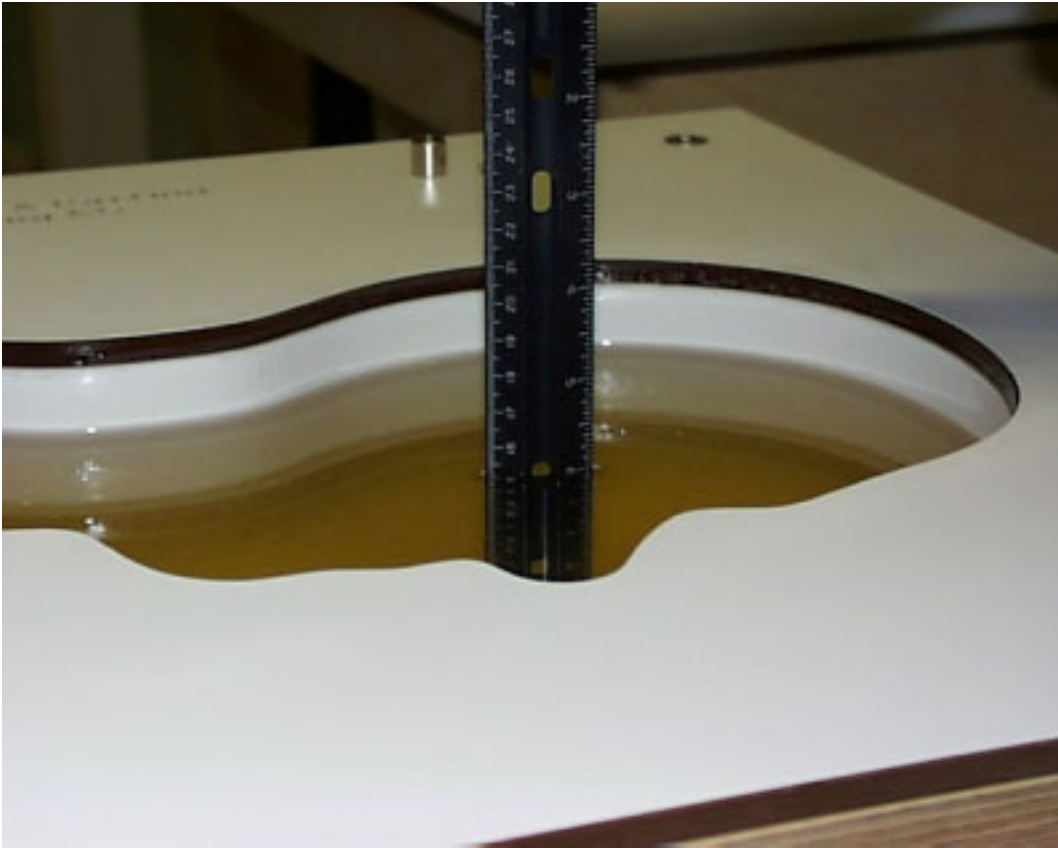


Figure 2. Location of Tissue Simulate Depth Measurement Location in Phantom Head

6. Test Results

The test sample was operated in a test mode that allows control of the transmitter without the need to place actual phone calls. For the purposes of this test the unit is commanded to test mode and manually set to the proper channel, transmitter power level and transmit mode of operation. The phone was then placed in the SAR measurement system with a fully charged battery. The phone was tested in the configurations stipulated in OET Bulletin 65 Supplement C 01-01. The phone was positioned into these configurations using the positioner supplied with the DASY 3.1d SAR measurement system. The measured dielectric constant of the material used is less than 3.3 and the loss tangent is less than 0.053 in the 800MHz cellular band. The Cellular Phone IHDT56BJ2 only has the following battery available:

SNN5570A – 3.6V Lithium Ion battery

This battery was used to do the SAR testing.

6.1 Head Adjacent Test Results

The SAR results shown in tables 1 through 4 are maximum SAR values averaged over 1 gram of phantom tissue. Also shown are the measured conducted output powers, the temperature of the test facility during the test and the temperature of the simulate after the test. The SAR measurements were performed using the SAM phantoms listed in section 3.1. The tissue stimulant depth was verified to be 15.0cm \pm 0.5cm at the center of the ear.

The test conditions indicated as bold numbers in the following tables have the full data set output included as Appendix 2. All other test conditions measured lower SAR values than those included. Note that 800MHz digital mode SAR data was measured only for the test conditions that resulted in the highest analog SAR values. This is because the maximum power in the 800MHz digital mode is significantly lower than that of the analog mode, therefore the resulting SAR values are also lower and not listed.

| f (MHz) | Description | Conducted Output Power (dBm) | Left Head (Cheek / Touch Position) | | | | |
|--------------------|--------------|------------------------------------|------------------------------------|--------------|------------------------|-----------------------|-----------------------|
| | | | Ant Fixed | | | | |
| | | | Measured (W/kg) | Drift (dB) | Extrapolated (W/kg) | Ambient. Temp (°C) | Simulate Temp (°C) |
| Analog 800MHz | Channel 991 | 27.48 | 1.12 | -0.12 | 1.15 | 21.10 | 20.80 |
| | Channel 384 | 27.50 | 1.13 | -0.27 | 1.20 | 21.10 | 20.80 |
| | Channel 799 | 27.43 | 1.27 | 0.00 | 1.27 | 21.10 | 20.80 |
| Digital 800MHz | Channel 1013 | 25.05 | | | | | |
| | Channel 384 | 25.10 | | | | | |
| | Channel 777 | 24.99 | 1.14 | 0.04 | 1.14 | 21.60 | 21.00 |
| Digital 1900MHz | Channel 2 | 25.12 | | | | | |
| | Channel 1001 | 24.98 | 0.852 | -0.07 | 0.87 | 20.00 | 20.40 |
| | Channel 1998 | 24.96 | | | | | |

Table 1: SAR measurement results for the portable cellular telephone FCC ID IHDT56BJ2 at highest possible output power. Measured against the left head (Cheek Touch)

| f (MHz) | Description | Conducted Output Power (dBm) | Right Head (Cheek / Touch Position) | | | | |
|--------------------|--------------|------------------------------------|-------------------------------------|--------------|------------------------|-----------------------|-----------------------|
| | | | Ant Fixed | | | | |
| | | | Measured (W/kg) | Drift (dB) | Extrapolated (W/kg) | Ambient. Temp (°C) | Simulate Temp (°C) |
| Analog 800MHz | Channel 991 | 27.48 | 1.01 | -0.11 | 1.04 | 21.10 | 20.80 |
| | Channel 384 | 27.50 | 1.05 | -0.09 | 1.07 | 21.10 | 20.80 |
| | Channel 799 | 27.43 | 1.20 | -0.03 | 1.21 | 21.10 | 20.80 |
| Digital 800MHz | Channel 1013 | 25.05 | | | | | |
| | Channel 384 | 25.10 | | | | | |
| | Channel 777 | 24.99 | 1.00 | -0.2 | 1.05 | 21.60 | 21.50 |
| Digital 1900MHz | Channel 2 | 25.12 | | | | | |
| | Channel 1001 | 24.98 | 0.97 | 0.04 | 0.97 | 20.00 | 20.40 |
| | Channel 1998 | 24.96 | | | | | |

Table 2: SAR measurement results for the portable cellular telephone FCC ID IHDT56BJ2 at highest possible output power. Measured against the right head (Cheek Touch)

| f (MHz) | Description | Conducted Output Power (dBm) | Left Head (15° Tilt Position) | | | | |
|--------------------|--------------|------------------------------------|-------------------------------|--------------|------------------------|-----------------------|-----------------------|
| | | | Ant Fixed | | | | |
| | | | Measured (W/kg) | Drift (dB) | Extrapolated (W/kg) | Ambient. Temp (°C) | Simulate Temp (°C) |
| Analog 800MHz | Channel 991 | 27.48 | | | | | |
| | Channel 384 | 27.50 | 0.80 | 0.02 | 0.80 | 21.10 | 20.80 |
| | Channel 799 | 27.43 | | | | | |
| Digital 800MHz | Channel 1013 | 25.05 | | | | | |
| | Channel 384 | 25.10 | | | | | |
| | Channel 777 | 24.99 | | | | | |
| Digital 1900MHz | Channel 2 | 25.12 | | | | | |
| | Channel 1001 | 24.98 | 0.787 | -0.09 | 0.80 | 20.00 | 20.40 |
| | Channel 1998 | 24.96 | | | | | |

Table 3: SAR measurement results for the portable cellular telephone FCC ID IHDT56BJ2 at highest possible output power. Measured against the left head (15° Tilt Position)

| f (MHz) | Description | Conducted Output Power (dBm) | Right Head (15° Tilt Position) | | | | |
|--------------------|--------------|------------------------------------|--------------------------------|--------------|------------------------|-----------------------|-----------------------|
| | | | Ant Fixed | | | | |
| | | | Measured (W/kg) | Drift (dB) | Extrapolated (W/kg) | Ambient. Temp (°C) | Simulate Temp (°C) |
| Analog 800MHz | Channel 991 | 27.48 | | | | | |
| | Channel 384 | 27.50 | 0.721 | -0.06 | 0.73 | 21.10 | 20.80 |
| | Channel 799 | 27.43 | | | | | |
| Digital 800MHz | Channel 1013 | 25.05 | | | | | |
| | Channel 384 | 25.10 | | | | | |
| | Channel 777 | 24.99 | | | | | |
| Digital 1900MHz | Channel 2 | 25.12 | | | | | |
| | Channel 1001 | 24.98 | 0.792 | -0.09 | 0.81 | 20.00 | 20.40 |
| | Channel 1998 | 24.96 | | | | | |

Table 4: SAR measurement results for the portable cellular telephone FCC ID IHDT56BJ2 at highest possible output power. Measured against the right head (15° Tilt Position)

6.2 Body-Worn Test Results

The SAR results shown in table 5 are the maximum SAR values averaged over 1 gram of phantom tissue. Also shown are the measured conducted output powers, the temperature of the test facility during the test and the tissue simulate temperature after the test. The same “flat” phantom that was used for the system accuracy verification in section 5 was used for the body-worn tests. The tissue stimulant depth was verified to be 15.0cm ±0.5cm. The same device holder described in section 6.1 was used for positioning the phone. The usable functional accessories were divided into two categories, the ones with metal components and the ones with non-metal components. For non-metallic component accessories, testing was performed on the accessory that displayed the closest proximity to the flat phantom. Each metallic component accessory, if any, was checked for uniqueness of metal component so that each is tested with the device. If multiple accessories shared an identical metal component, only the accessory that dictates the closest spacing to the body was tested. The cellular phone was tested with a headset connected to the device for all body-worn SAR measurements.

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

A Plastic Holster and Belt Clip: Model SHH7175A

A Leather Pouch with Belt Clip: Models SYN9170A and SYN8631A/SYN8763A

The leather pouch causes closer proximity and was used for the SAR measurements.

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

| f (MHz) | Description | Conducted Output Power (dBm) | Leather Pouch with Wish Bone (Body Worn) | | | | |
|--------------------|--------------|------------------------------------|--|--------------|------------------------|-----------------------|-----------------------|
| | | | Ant Extended | | | | |
| | | | Measured (W/kg) | Drift (dB) | Extrapolated (W/kg) | Ambient. Temp (°C) | Simulate Temp (°C) |
| Analog 800MHz | Channel 991 | 27.48 | 0.771 | -0.09 | 0.79 | 21.40 | 21.75 |
| | Channel 384 | 27.50 | 0.725 | -0.01 | 0.73 | 21.40 | 21.75 |
| | Channel 799 | 27.43 | 0.826 | -0.02 | 0.83 | 21.40 | 21.60 |
| Digital 1900MHz | Channel 2 | 25.12 | 0.559 | 0.02 | 0.56 | 22.10 | 21.20 |
| | Channel 1001 | 24.98 | 0.286 | -0.16 | 0.30 | 22.10 | 21.20 |
| | Channel 1998 | 24.96 | 0.218 | -0.15 | 0.23 | 22.10 | 21.20 |

Table 5: SAR measurement results for the portable cellular telephone FCC ID IHDT56BJ2 at highest possible output power worn against the body.

Appendix 1

SAR distribution comparison for the system accuracy verification

Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 094 / Forward Power = 250 / Room Temp at time of measurement = 22C Simulant Temp at time of measurement = 21.1C

R5: TP-1132 SUGAR (rev.3) Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz

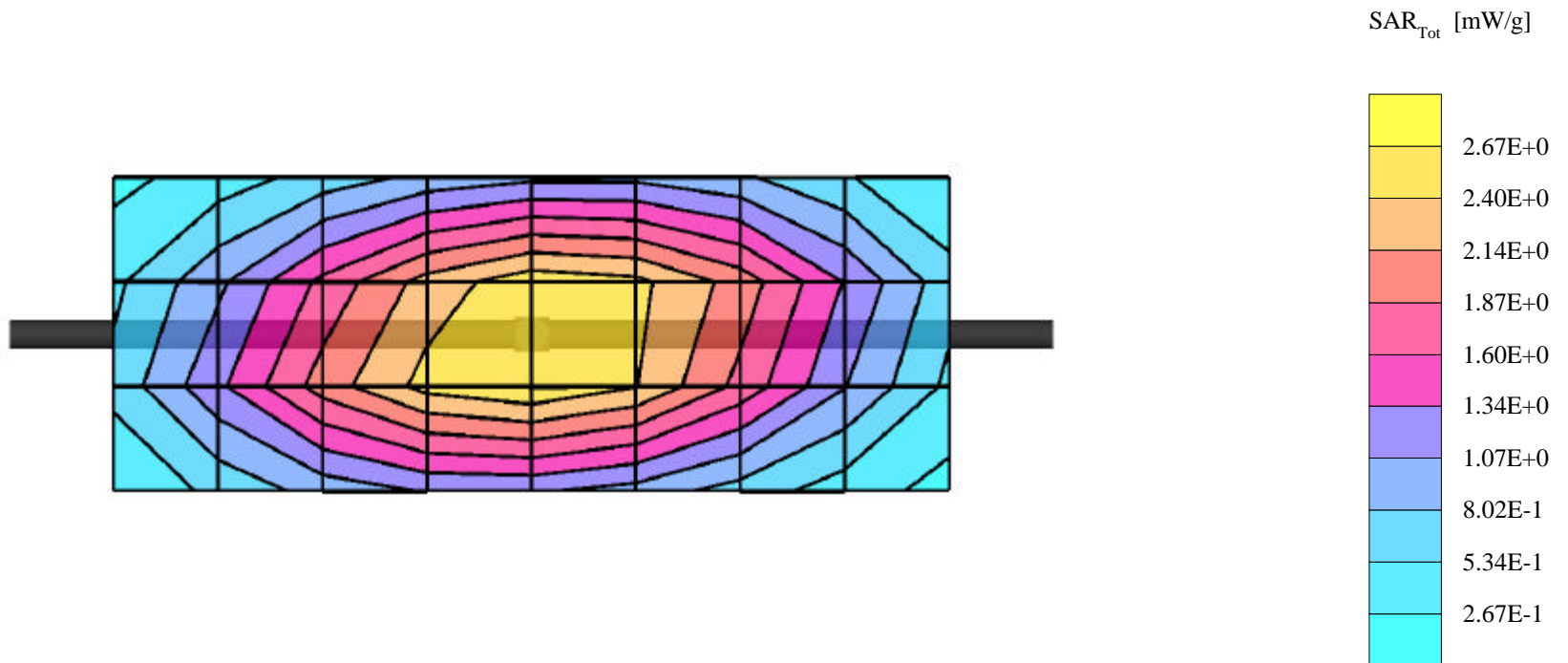
Probe: ET3DV6 - SN1391 - VALIDATION; ConvF(6.31,6.31,6.31); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.97$ mho/m $\epsilon_r = 41.4$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 2.99 mW/g ± 0.01 dB, SAR (10g): 1.88 mW/g ± 0.02 dB, (Worst-case extrapolation)

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

Penetration depth: 11.4 (10.7, 12.6) [mm]

Powerdrift: 0.05 dB



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 092 / Forward Power = 252 / Room Temp at time of measurement = 23°C Simulant Temp at time of measurement = 21.6°C

R6: TP-1131 SUGAR (rev.3) Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz

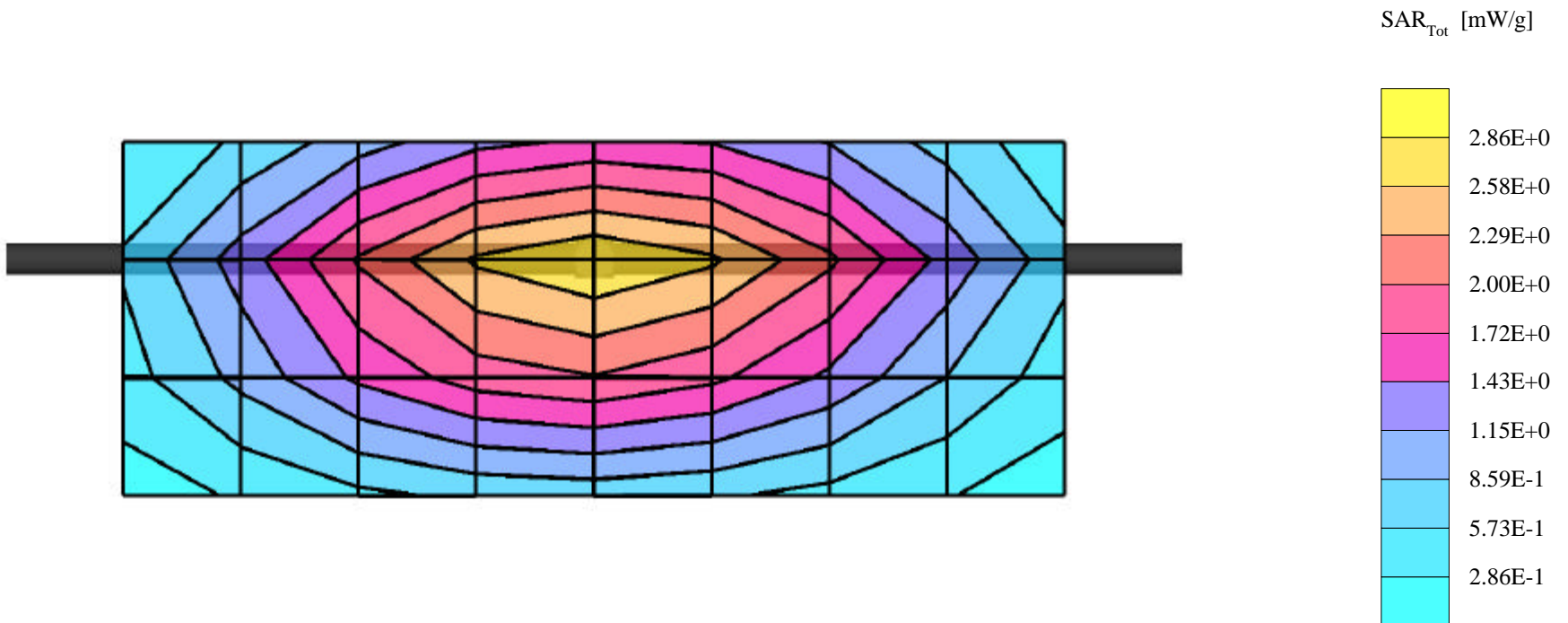
Probe: ET3DV6 - SN1398 - Validation; ConvF(6.43,6.43,6.43); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.96$ mho/m $\epsilon_r = 41.0$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 2.89 mW/g ± 0.06 dB, SAR (10g): 1.83 mW/g ± 0.05 dB, (Worst-case extrapolation)

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

Penetration depth: 11.7 (11.0, 12.7) [mm]

Powerdrift: 0.14 dB



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 283TR / Forward Power = 248 / Room Temp at time of measurement = 23C Simulant Temp at time of measurement = 21.7C

R5 Amy Twin Phantom 2.3 Phantom; Section 1 Section; Position: (90°,180°); Frequency: 1800 MHz

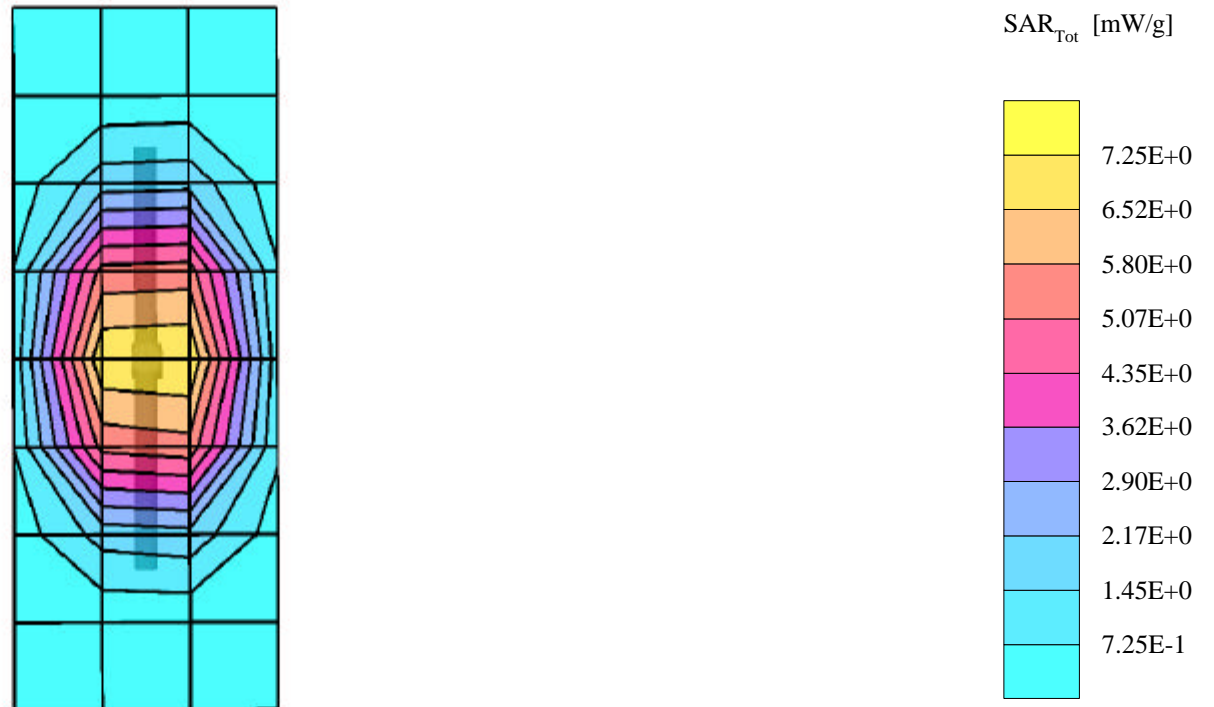
Probe: ET3DV6 - SN1391 - VALIDATION; ConvF(5.43,5.43,5.43); Crest factor: 1.0; 1800 MHz VALIDATION: $\sigma = 1.36$ mho/m $\epsilon_r = 40.0$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 9.43 mW/g ± 0.02 dB, SAR (10g): 4.96 mW/g ± 0.03 dB, (Worst-case extrapolation)

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

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

Powerdrift: 0.01 dB



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 094 / Forward Power = 248 / Room Temp at time of measurement = 23C Simulant Temp at time of measurement = 21.2C

R5: TP-1132 SUGAR (rev.3) Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz

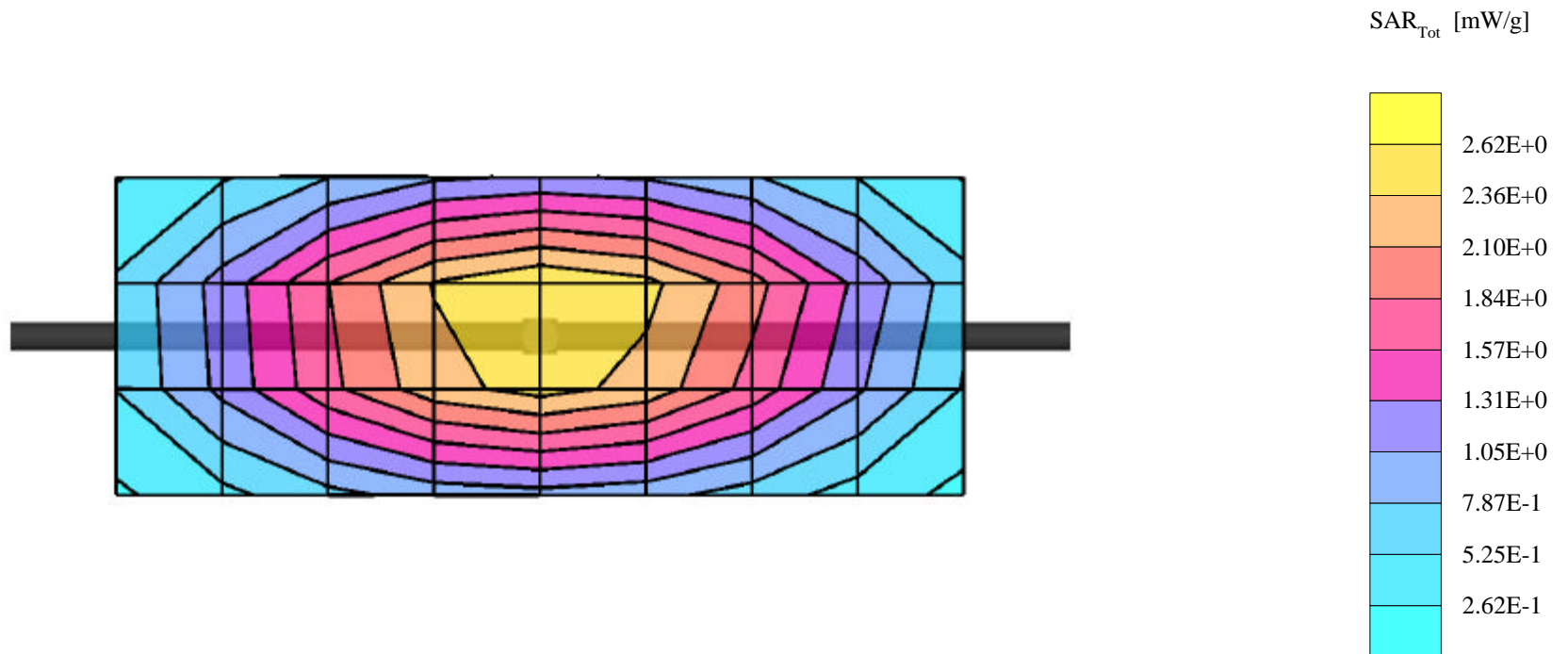
Probe: ET3DV6 - SN1391 - VALIDATION; ConvF(6.31,6.31,6.31); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.96$ mho/m $\epsilon_r = 41.1$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 2.95 mW/g ± 0.06 dB, SAR (10g): 1.85 mW/g ± 0.06 dB, (Worst-case extrapolation)

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

Penetration depth: 11.4 (10.6, 12.6) [mm]

Powerdrift: 0.01 dB



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# TR280 / Forward Power = 251 / Room Temp at time of measurement = 22°C Simulant Temp at time of measurement = 19.3°C

R6: TP-1105 GLYCOL (rev.3) Phantom; Flat Section; Position: (90°,90°); Frequency: 1800 MHz

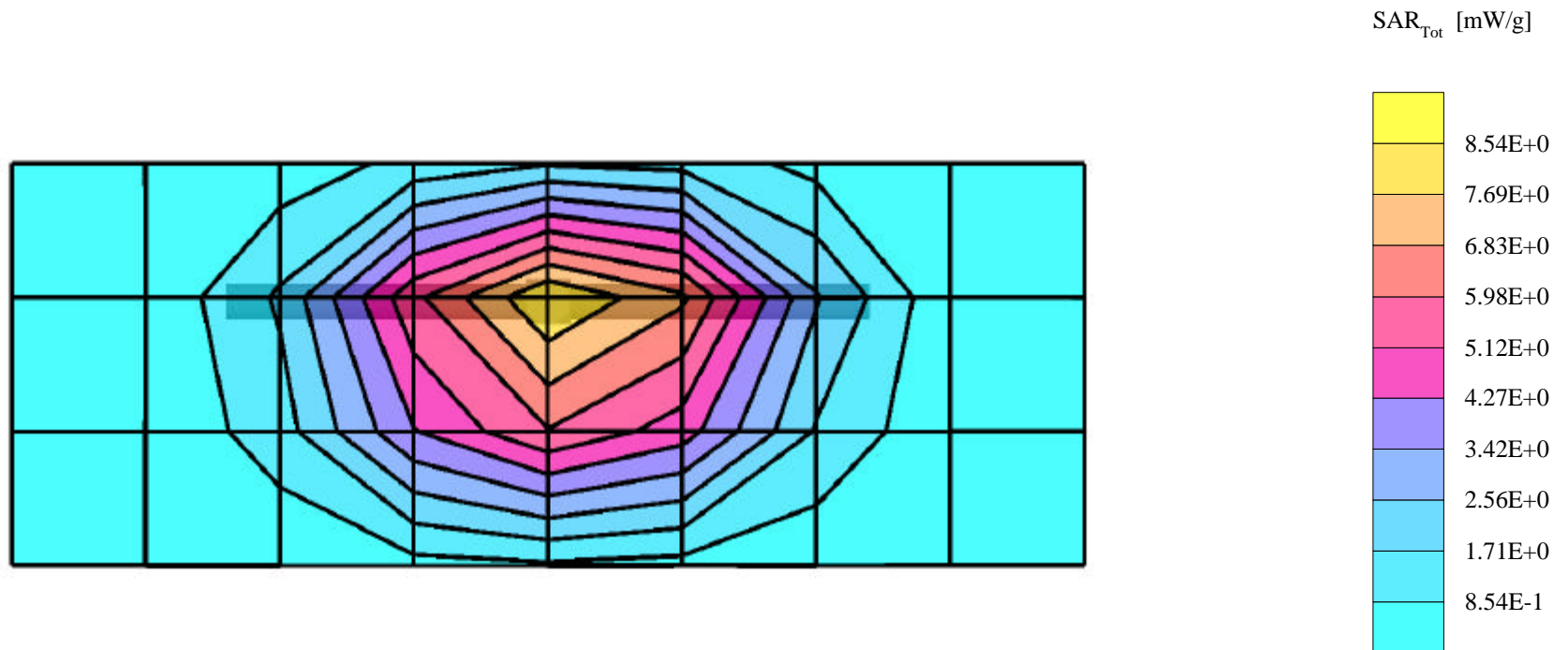
Probe: ET3DV6 - SN1398 - Validation; ConvF(5.39,5.39,5.39); Crest factor: 1.0; 1800 MHz VALIDATION: $\sigma = 1.38$ mho/m $\epsilon_r = 39.3$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 9.47 mW/g ± 0.05 dB, SAR (10g): 5.02 mW/g ± 0.02 dB, (Worst-case extrapolation)

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

Penetration depth: 8.5 (8.2, 9.2) [mm]

Powerdrift: 0.05 dB



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 092 / Forward Power = 252 / Room Temp at time of measurement = 22°C Simulant Temp at time of measurement = 21.0°C

R6: TP-1131 SUGAR (rev.3) Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz

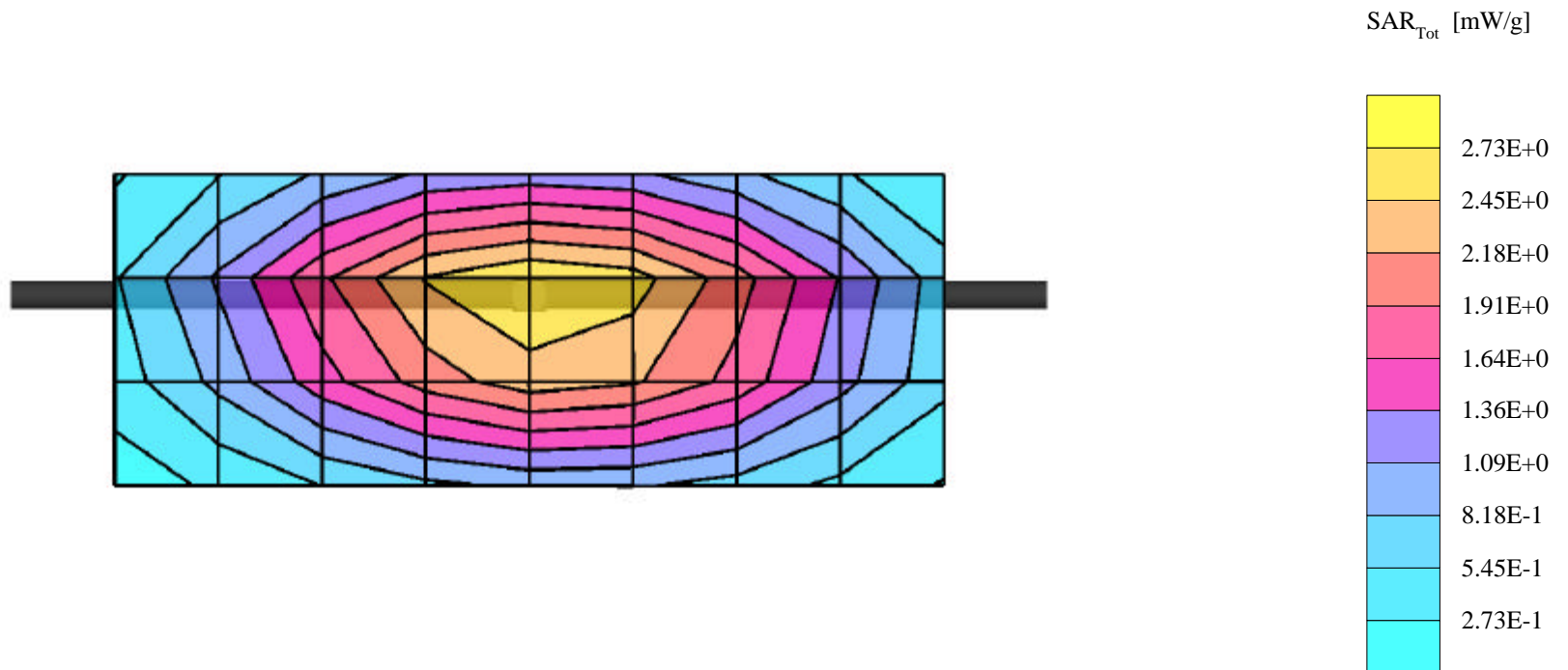
Probe: ET3DV6 - SN1398 - Validation; ConvF(6.43,6.43,6.43); Crest factor: 1.0; 900 MHz VALIDATION: $\sigma = 0.96$ mho/m $\epsilon_r = 40.9$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 2.94 mW/g ± 0.04 dB, SAR (10g): 1.86 mW/g ± 0.05 dB, (Worst-case extrapolation)

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

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

Powerdrift: 0.04 dB



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 283TR / Forward Power = 253 / Room Temp at time of measurement = 22C Simulant Temp at time of measurement = 2

R5 Amy Twin Phantom 2.3 Phantom; Section 1 Section; Position: (90°,180°); Frequency: 1800 MHz

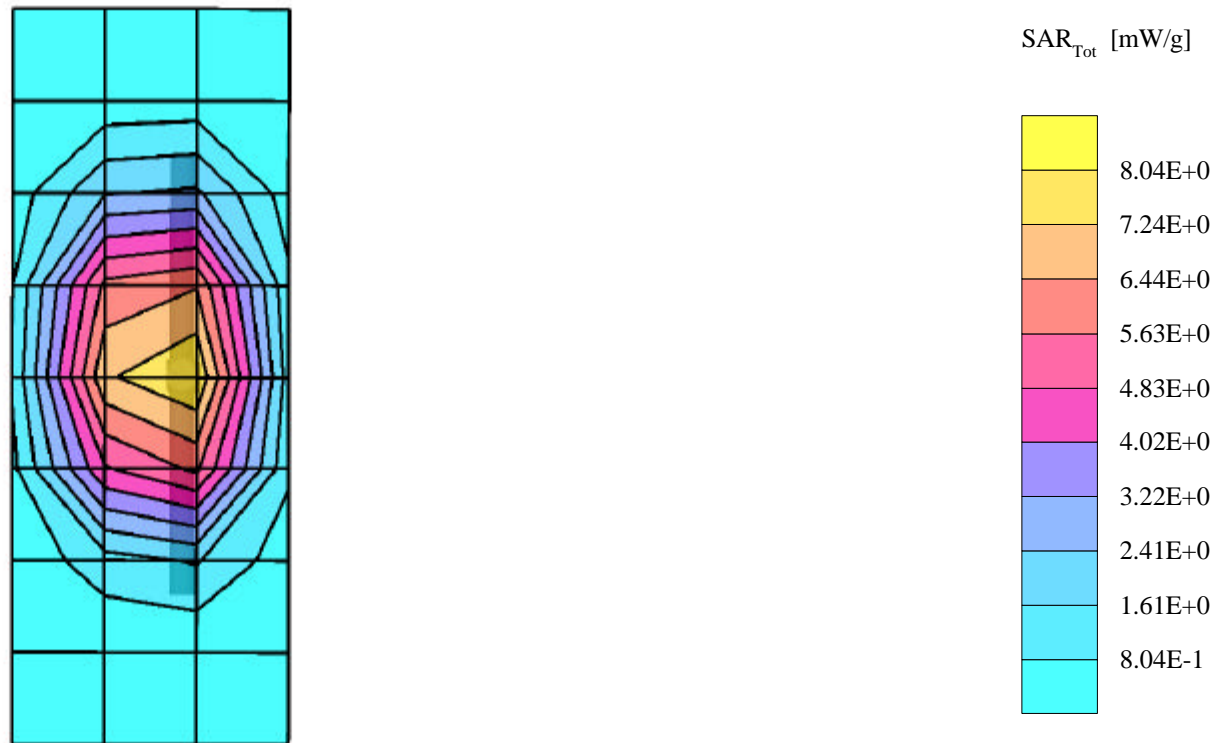
Probe: ET3DV6 - SN1391 - VALIDATION; ConvF(5.43,5.43,5.43); Crest factor: 1.0; 1800 MHz VALIDATION: $\sigma = 1.38$ mho/m $\epsilon_r = 40.0$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 9.82 mW/g ± 0.07 dB, SAR (10g): 5.16 mW/g ± 0.07 dB, (Worst-case extrapolation)

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

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

Powerdrift: 0.01 dB



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# TR280 / Forward Power = 251 / Room Temp at time of measurement = 23°C Simulant Temp at time of measurement = 21.7°C

R6 Amy Twin Phantom 2.3 Phantom; Section 1 Section; Position: (90°,180°); Frequency: 1800 MHz

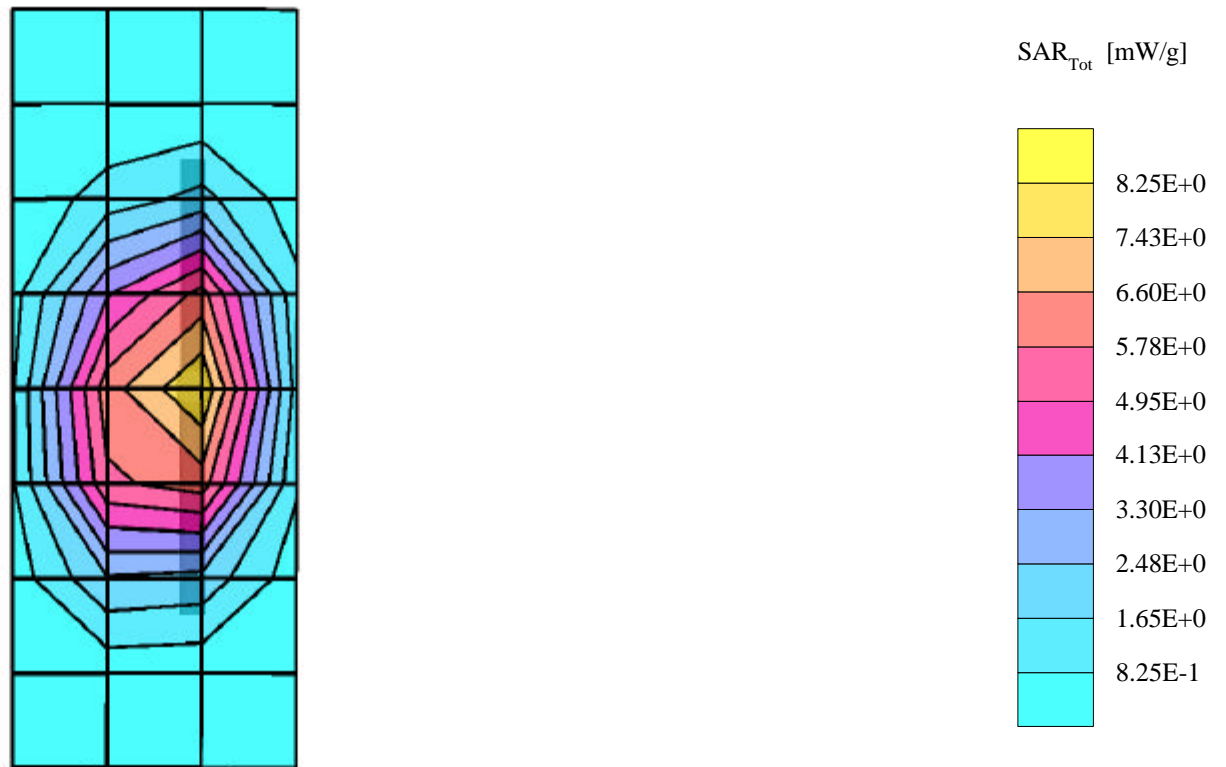
Probe: ET3DV6 - SN1398 - Validation; ConvF(5.39,5.39,5.39); Crest factor: 1.0; 1800 MHz VALIDATION: $\sigma = 1.36$ mho/m $\epsilon_r = 40.0$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 9.52 mW/g ± 0.02 dB, SAR (10g): 5.04 mW/g ± 0.03 dB, (Worst-case extrapolation)

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

Penetration depth: 8.5 (8.2, 9.4) [mm]

Powerdrift: 0.00 dB



Appendix 2

SAR distribution plots for Phantom Head Adjacent Use

SN# A88BF79D

Ch# 799 / Pwr Step: Always Up / Antenna Position: Fixed / Type of Modulation: 800 Analog / Battery Model #: SNN5570AA / DEVICE POSITION: Cheek Touch / After Test = 20.8 °C

R5: TP-1132 SUGAR (rev.3) Phantom; R5 Gilligan Left Hand Section; Position: (90°,180°); Frequency: 849 MHz

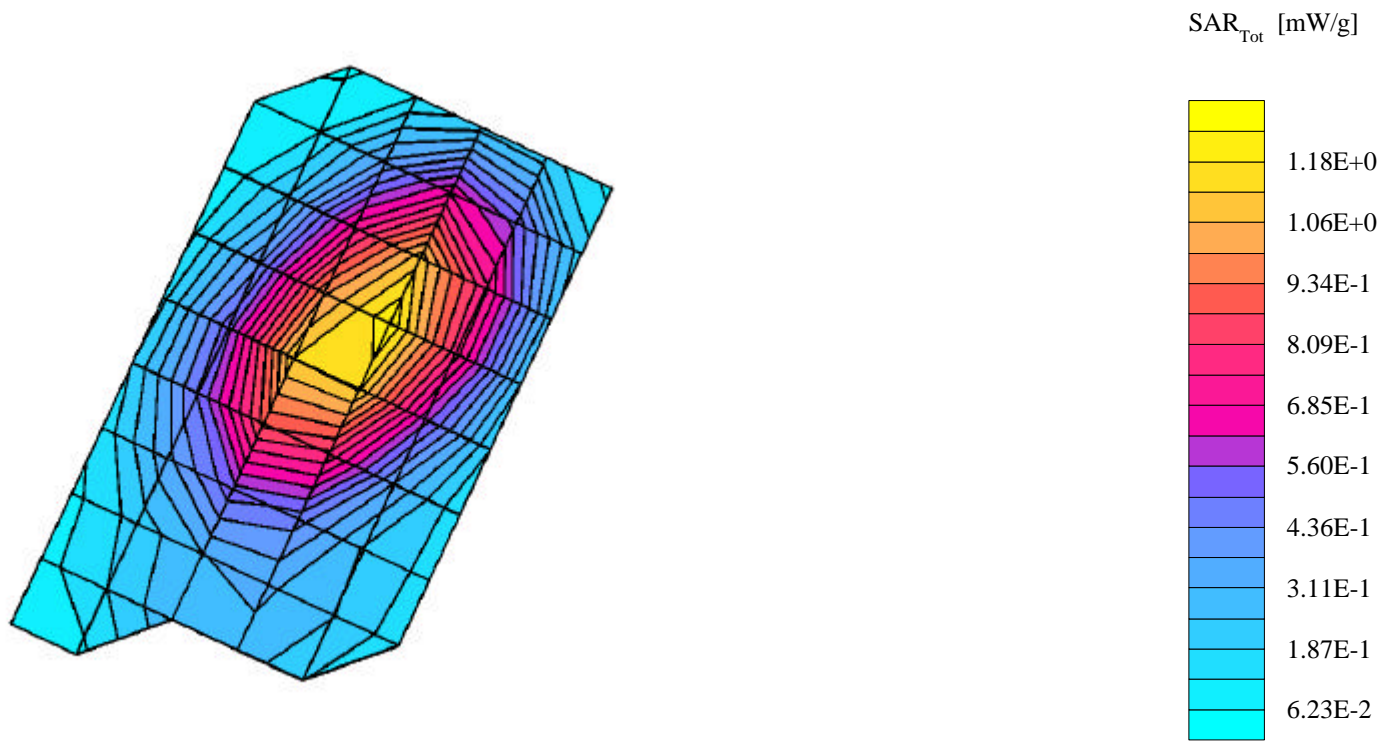
Probe: ET3DV6 - SN1391 - IEEE Head; ConvF(6.40,6.40,6.40); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\epsilon_r = 42.1$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 1.27 mW/g, SAR (10g): 0.884 mW/g, (Worst-case extrapolation)

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

Penetration depth: 15.7 (15.3, 16.2) [mm]

Powerdrift: 0.00 dB



SN# A88BF79D

Ch# 384 / Pwr Step: Always UpAntenna Position: Fixed / Type of Modulation: 800 Analog / Battery Model #: SNN5570A / DEVICE POSITION: Tilt Position / After Test = 20.8 °C

R5: TP-1132 SUGAR (rev.3) Phantom; R5 Gilligan Left Hand Section; Position: (90°,180°); Frequency: 837 MHz

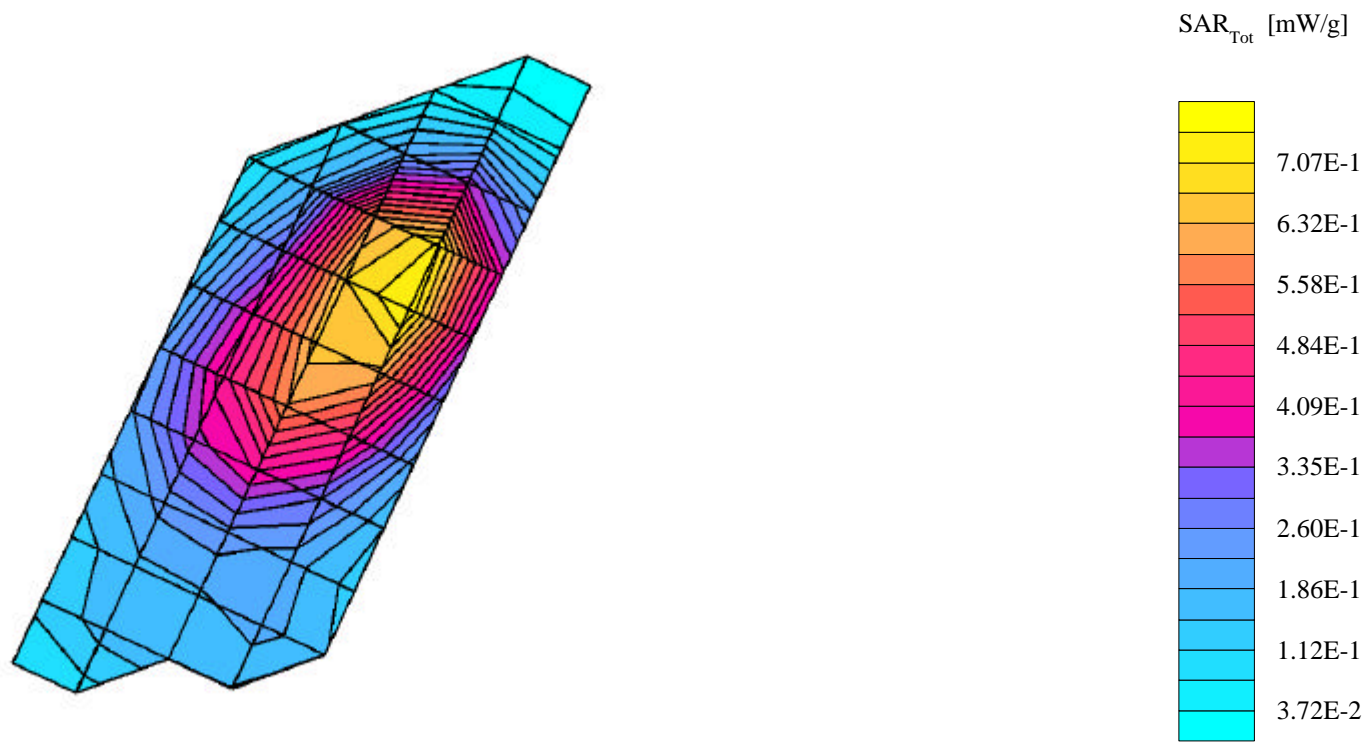
Probe: ET3DV6 - SN1391 - IEEE Head; ConvF(6.40,6.40,6.40); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\epsilon_r = 42.1$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 0.804 mW/g, SAR (10g): 0.533 mW/g * Max outside, (Worst-case extrapolation)

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

Penetration depth: 13.2 (12.8, 13.7) [mm]

Powerdrift: 0.02 dB



SN# A88BF79D

Ch# 799 / Pwr Step: Always Up / Antenna Position: Fixed / Type of Modulation: 800 Analog / Battery Model #: SNN5570A / DEVICE POSITION: Cheek Touch / After Test = 20.8 °C

R5: TP-1132 SUGAR (rev.3) Phantom; R5 MaryAnn Right Hand Section; Position: (90°,180°); Frequency: 849 MHz

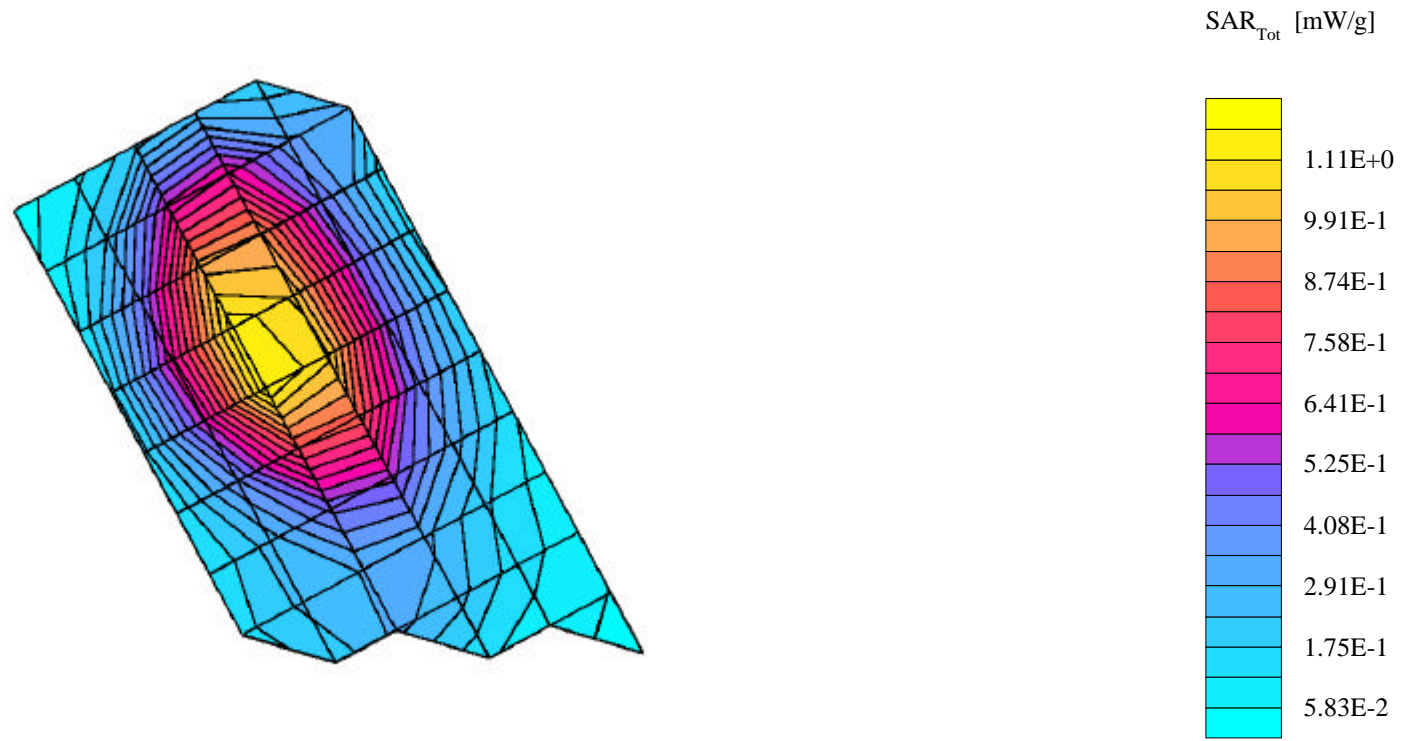
Probe: ET3DV6 - SN1391 - IEEE Head; ConvF(6.40,6.40,6.40); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\epsilon_r = 42.1$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 1.20 mW/g, SAR (10g): 0.847 mW/g, (Worst-case extrapolation)

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

Penetration depth: 17.1 (16.5, 17.5) [mm]

Powerdrift: -0.03 dB



SN# A88BF79D

Ch# 384 / Pwr Step: Always Up / Antenna Position: Fixed / Type of Modulation: 800 Analog / Battery Model #: SNN5570A / DEVICE POSITION: Tilt Position / After Test = 20.8 °C

R5: TP-1132 SUGAR (rev.3) Phantom; R5 MaryAnn Right Hand Section; Position: (90°,180°); Frequency: 837 MHz

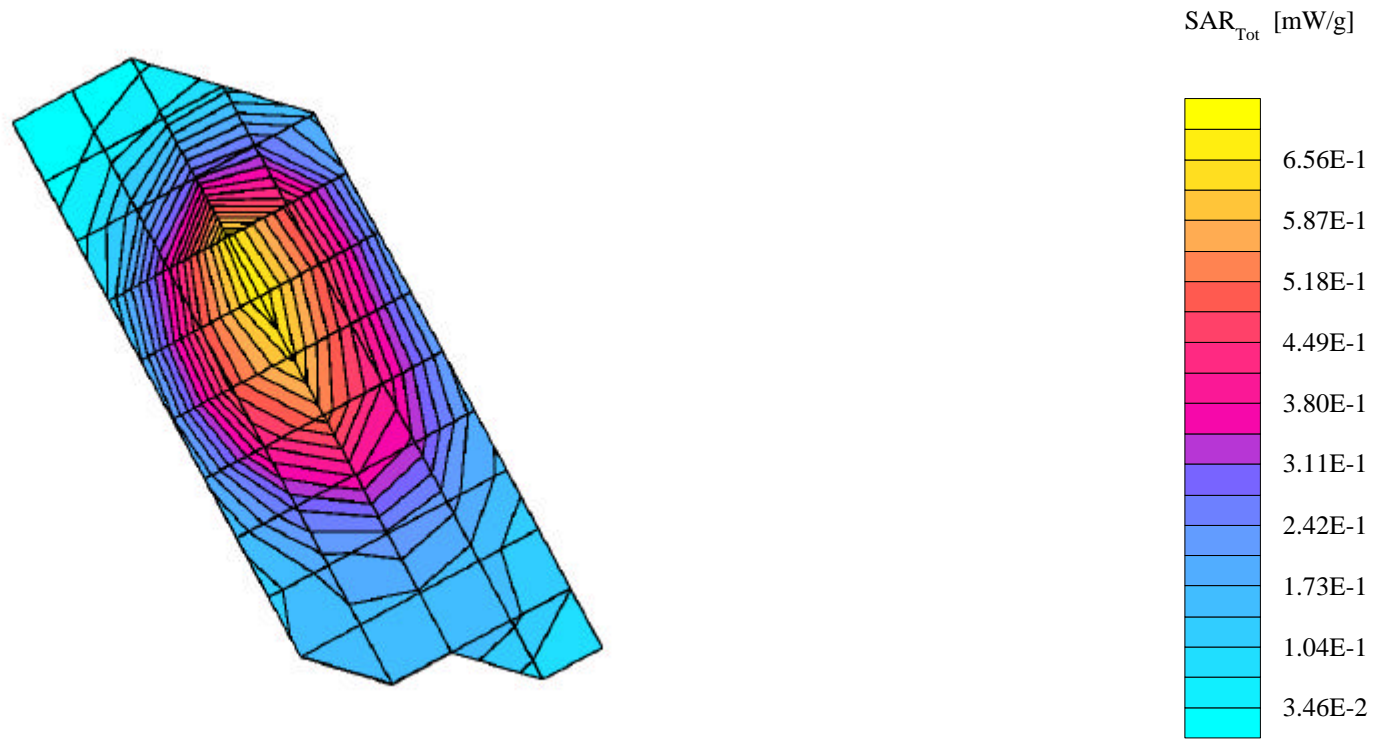
Probe: ET3DV6 - SN1391 - IEEE Head; ConvF(6.40,6.40,6.40); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\epsilon_r = 42.1$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 0.721 mW/g, SAR (10g): 0.474 mW/g, (Worst-case extrapolation)

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

Penetration depth: 12.8 (12.2, 13.5) [mm]

Powerdrift: -0.06 dB



sn# A88BF7C9

Ch#: 777 ALWAYS UP (OTA) / Antenna Position: FIXED / Type of Modulation: 800 CDMA / Battery Model #: SNN5570AA / DEVICE POSITION: CHEEK TOUCH / After Test: 21.0°C

R6: TP-1131 SUGAR (rev.3) Phantom; Left Hand Section; Position: (90°,180°); Frequency: 848 MHz

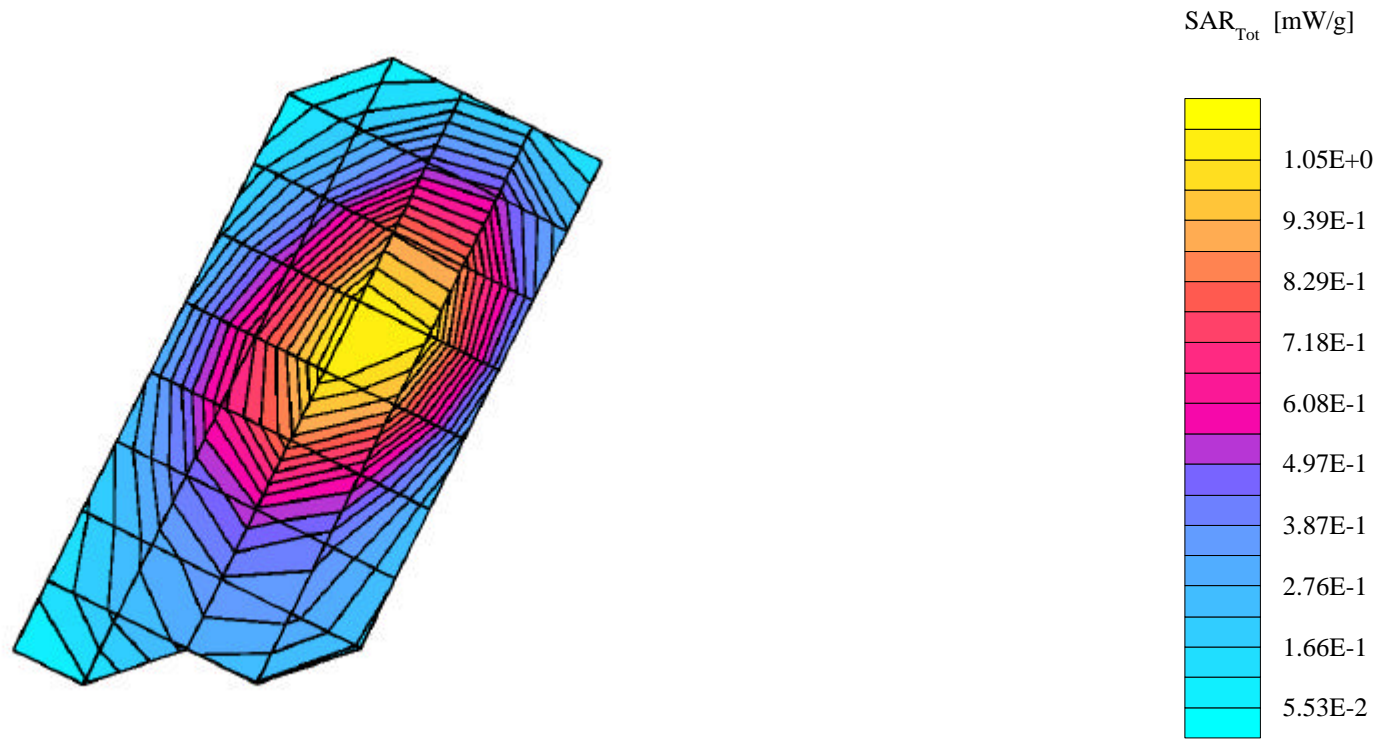
Probe: ET3DV6 - SN1398 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.90$ mho/m $\epsilon_r = 41.8$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 1.14 mW/g, SAR (10g): 0.770 mW/g, (Worst-case extrapolation)

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

Penetration depth: 14.1 (13.4, 15.0) [mm]

Powerdrift: 0.04 dB



04/02/02

sn# A88BF7C9

Ch#: 777 ALWAYS UP (OTA) Antenna Position: FIXED / Type of Modulation: 800 CDMA / Battery Model #: SNN5570AA / DEVICE POSITION: CHEEK TOUCH / After Test: 21.5°C

R6: TP-1131 SUGAR (rev.3) Phantom; Right Hand Section; Position: (90°,180°); Frequency: 848 MHz

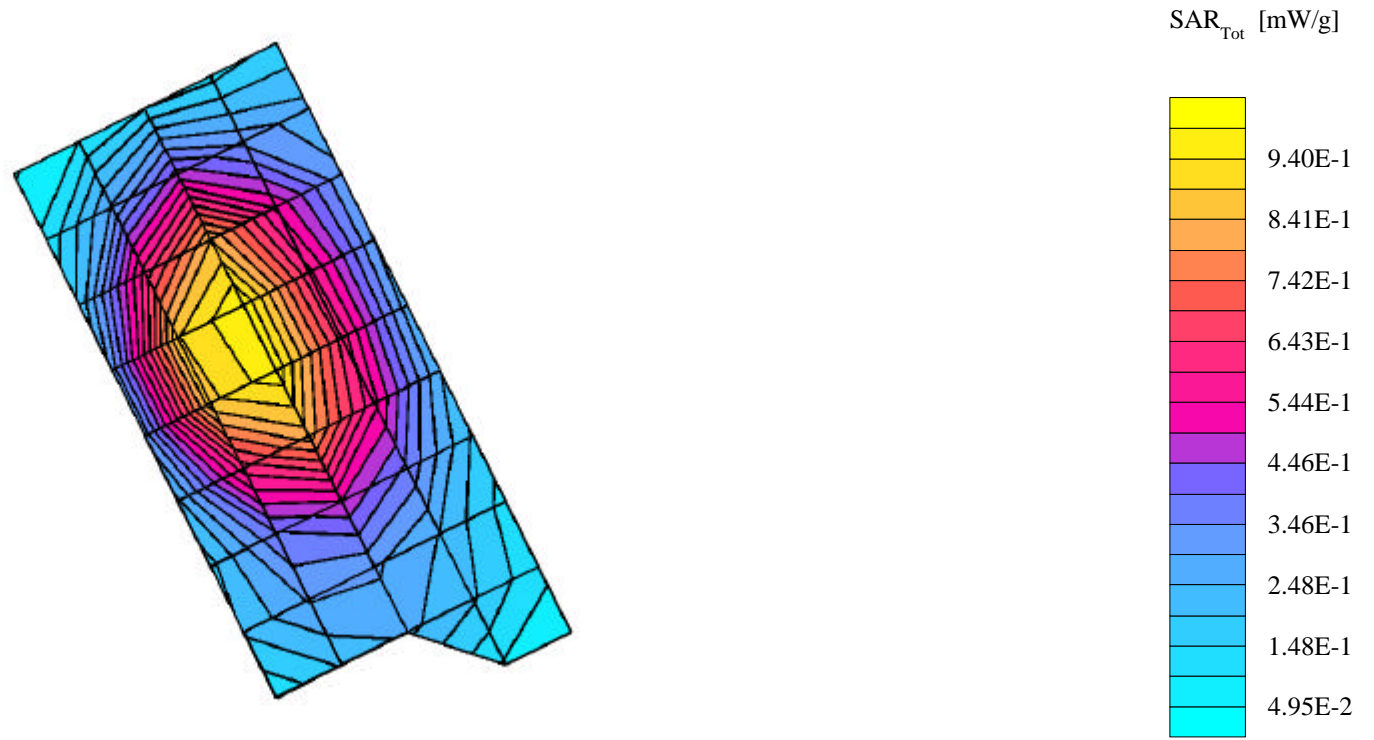
Probe: ET3DV6 - SN1398 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.90$ mho/m $\epsilon_r = 41.8$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 1.00 mW/g, SAR (10g): 0.705 mW/g, (Worst-case extrapolation)

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

Penetration depth: 15.8 (15.4, 16.3) [mm]

Powerdrift: -0.20 dB



SN# A88BF79D

Ch# 600 / Pwr Step: Always Up / Antenna Position: Fixed / Type of Modulation: 1900 CDMA / Battery Model #: SNN5570A / DEVICE POSITION: Cheek Touch / After Test = 20.4 °C

R5: TP-1133 GLYCOL (rev. 3) Phantom; R5 Skipper Left Hand Section; Position: (90°,180°); Frequency: 1880 MHz

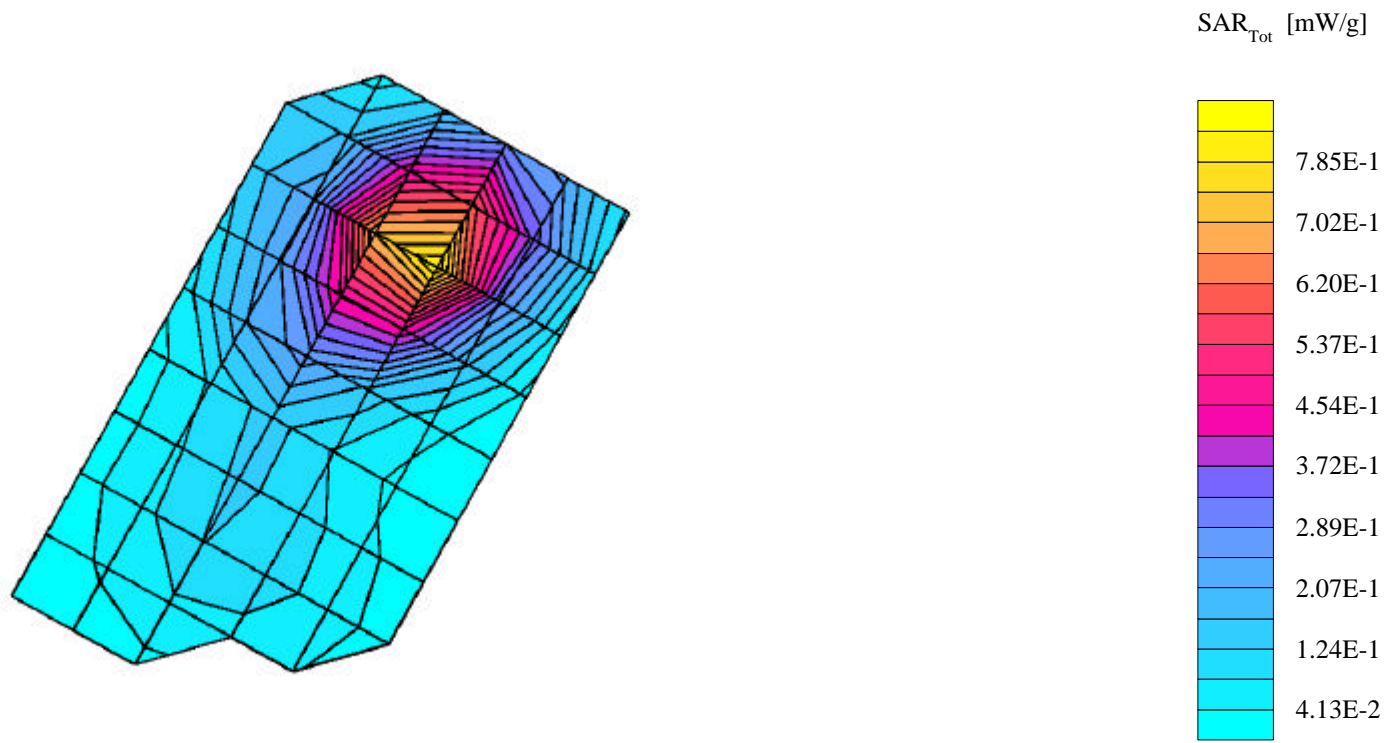
Probe: ET3DV6 - SN1391 - IEEE Head; ConvF(5.43,5.43,5.43); Crest factor: 1.0; 1880 MHz Head & Body: $\sigma = 1.46$ mho/m $\epsilon_r = 39.7$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 0.852 mW/g, SAR (10g): 0.487 mW/g, (Worst-case extrapolation)

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

Penetration depth: 10.4 (10.1, 10.9) [mm]

Powerdrift: -0.07 dB



SN# A88BF79D

Ch# 600 / Pwr Step: Always Up / Antenna Position: Fixed / Type of Modulation: 1900 CDMA / Battery Model #: SNN5570AA / DEVICE POSITION:Tilt Position / After Test = 20.4 °C

R5: TP-1133 GLYCOL (rev. 3) Phantom; R5 Skipper Left Hand Section; Position: (90°,180°); Frequency: 1880 MHz

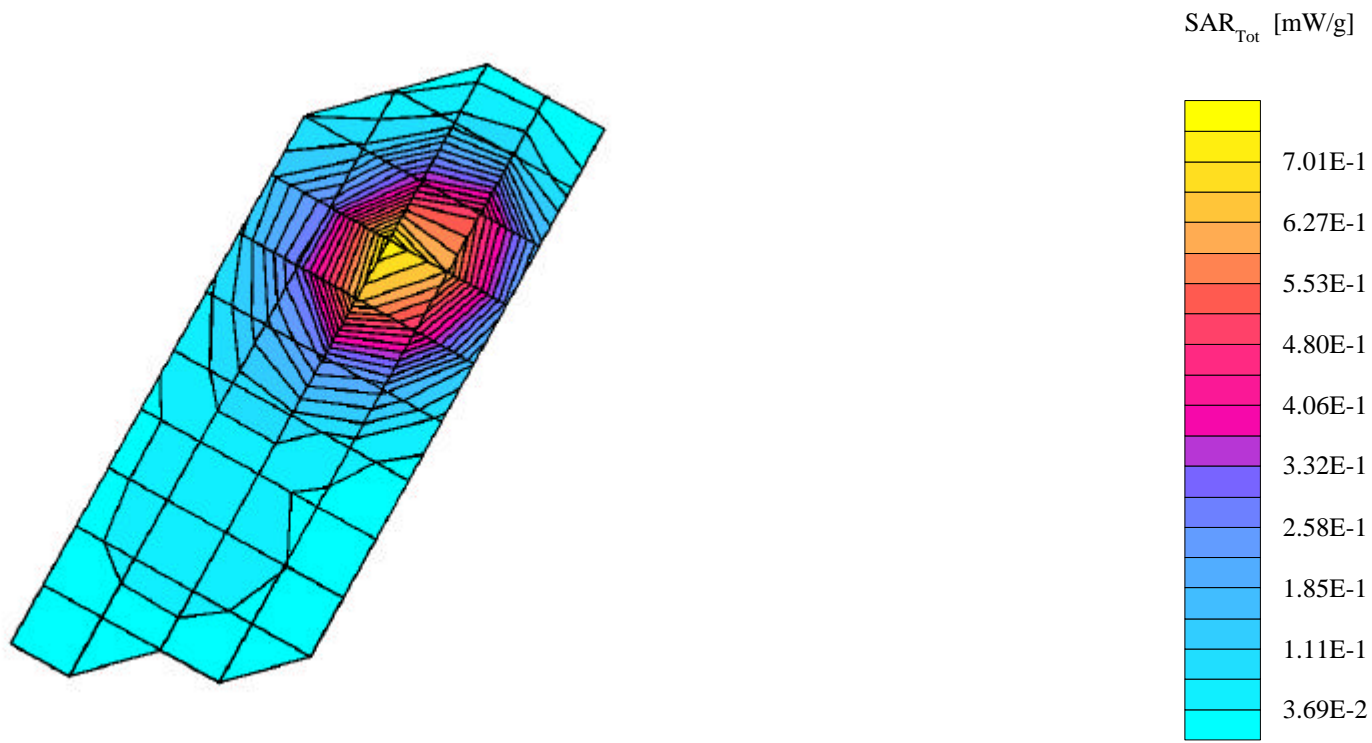
Probe: ET3DV6 - SN1391 - IEEE Head; ConvF(5.43,5.43,5.43); Crest factor: 1.0; 1880 MHz Head & Body: $\sigma = 1.46$ mho/m $\epsilon_r = 39.7$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 0.787 mW/g, SAR (10g): 0.456 mW/g, (Worst-case extrapolation)

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

Penetration depth: 10.4 (10.3, 10.7) [mm]

Powerdrift: -0.09 dB



SN# A88BF79D

Ch# 600 / Pwr Step: Always Up / Antenna Position: Fixed / Type of Modulation: 1900 CDMA / Battery Model #: SNN5570A / DEVICE POSITION: Cheek Touch / After Test = 20.4 °C

R5: TP-1133 GLYCOL (rev. 3) Phantom; R5 Ginger Right Hand Section; Position: (90°,180°); Frequency: 1880 MHz

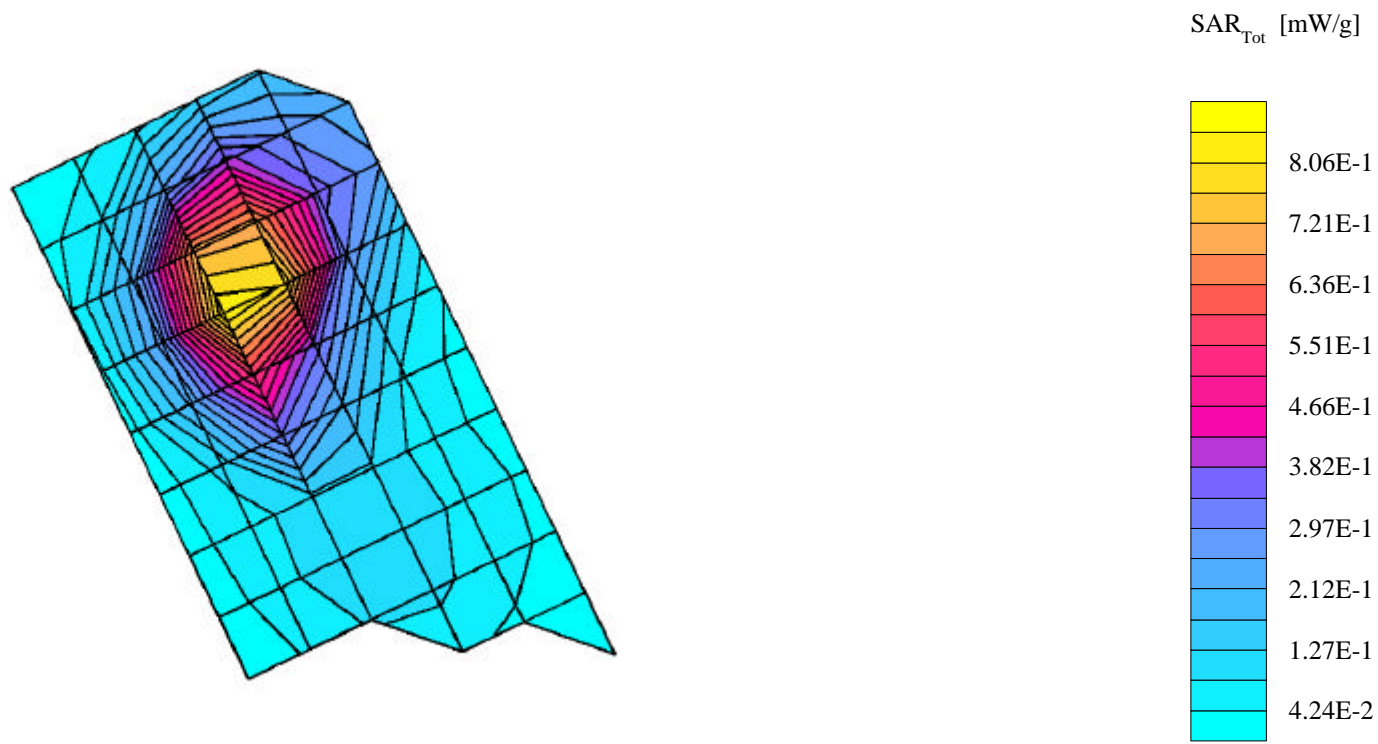
Probe: ET3DV6 - SN1391 - IEEE Head; ConvF(5.43,5.43,5.43); Crest factor: 1.0; 1880 MHz Head & Body: $\sigma = 1.46$ mho/m $\epsilon_r = 39.7$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 0.970 mW/g, SAR (10g): 0.561 mW/g, (Worst-case extrapolation)

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

Penetration depth: 10.9 (10.6, 11.2) [mm]

Powerdrift: 0.04 dB



SN# A88BF79D

Ch# 600 / Pwr Step: Always Up / Antenna Position: Fixed / Type of Modulation: 1900 CDMA / Battery Model #: SNN5570AA / DEVICE POSITION:Tilt Position / After Test = 20.4 °C

R5: TP-1133 GLYCOL (rev. 3) Phantom; R5 Ginger Right Hand Section; Position: (90°,180°); Frequency: 1880 MHz

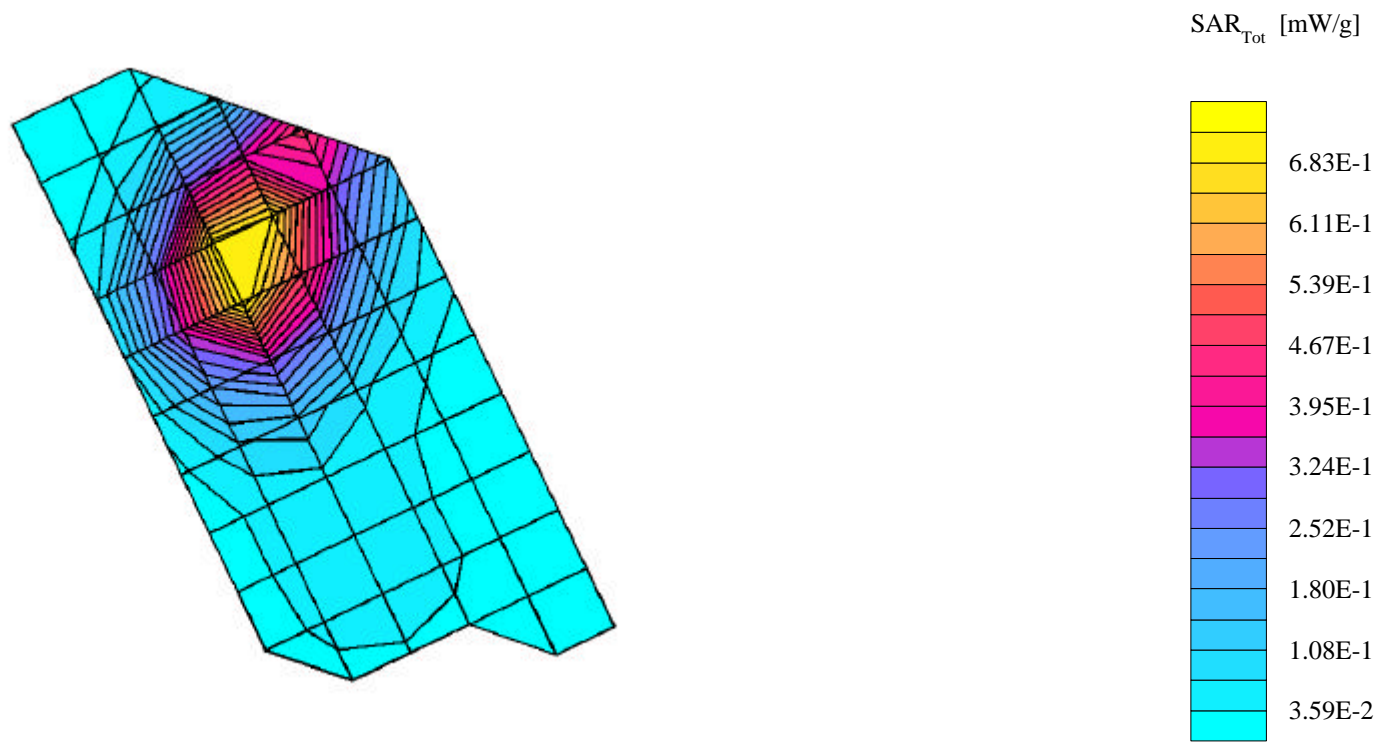
Probe: ET3DV6 - SN1391 - IEEE Head; ConvF(5.43,5.43,5.43); Crest factor: 1.0; 1880 MHz Head & Body: $\sigma = 1.46$ mho/m $\epsilon_r = 39.7$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 0.792 mW/g, SAR (10g): 0.465 mW/g, (Worst-case extrapolation)

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

Penetration depth: 10.0 (9.7, 10.5) [mm]

Powerdrift: -0.07 dB



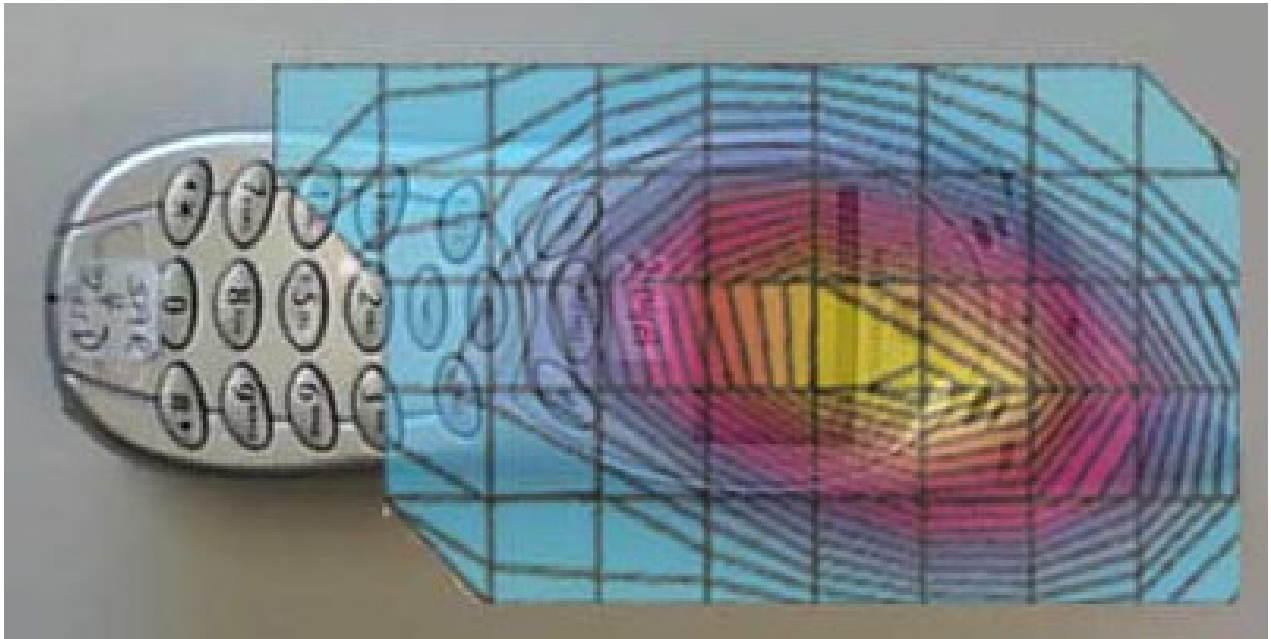


Figure 3. Typical 800MHz Left Head Adjacent Contour Overlaid on Phone with Antenna Fixed (Cheek Touch)

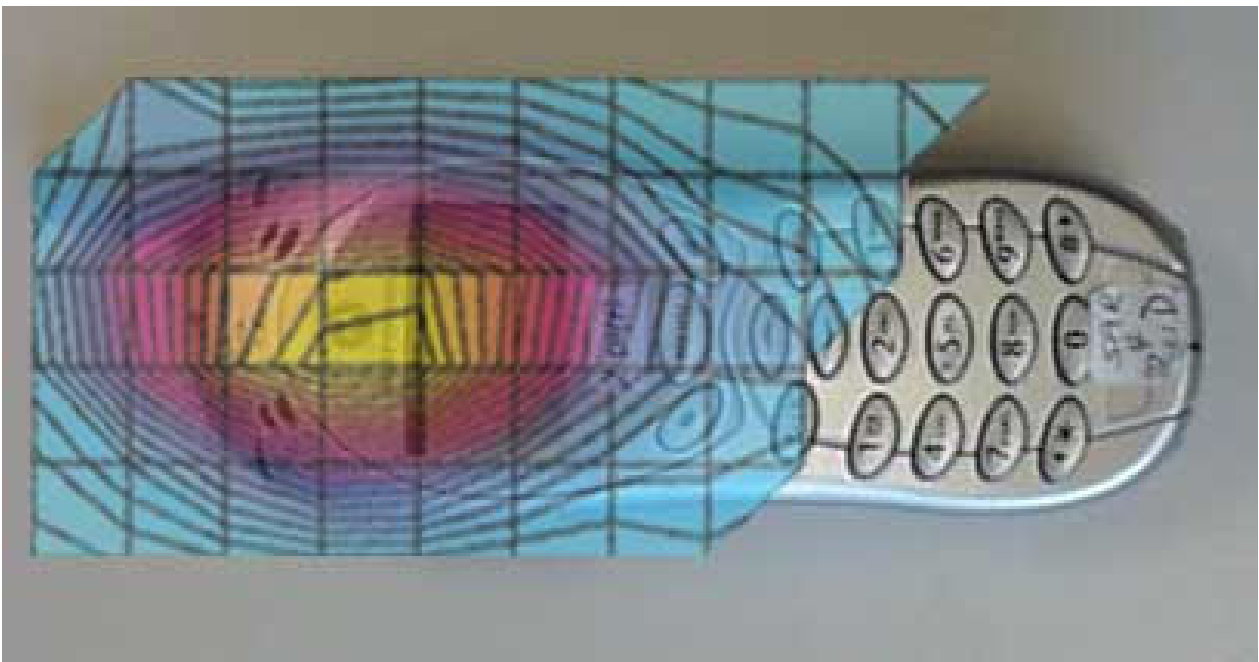


Figure 4. Typical 800MHz Right Head Adjacent Contour Overlaid on Phone with Antenna Fixed (Cheek Touch)

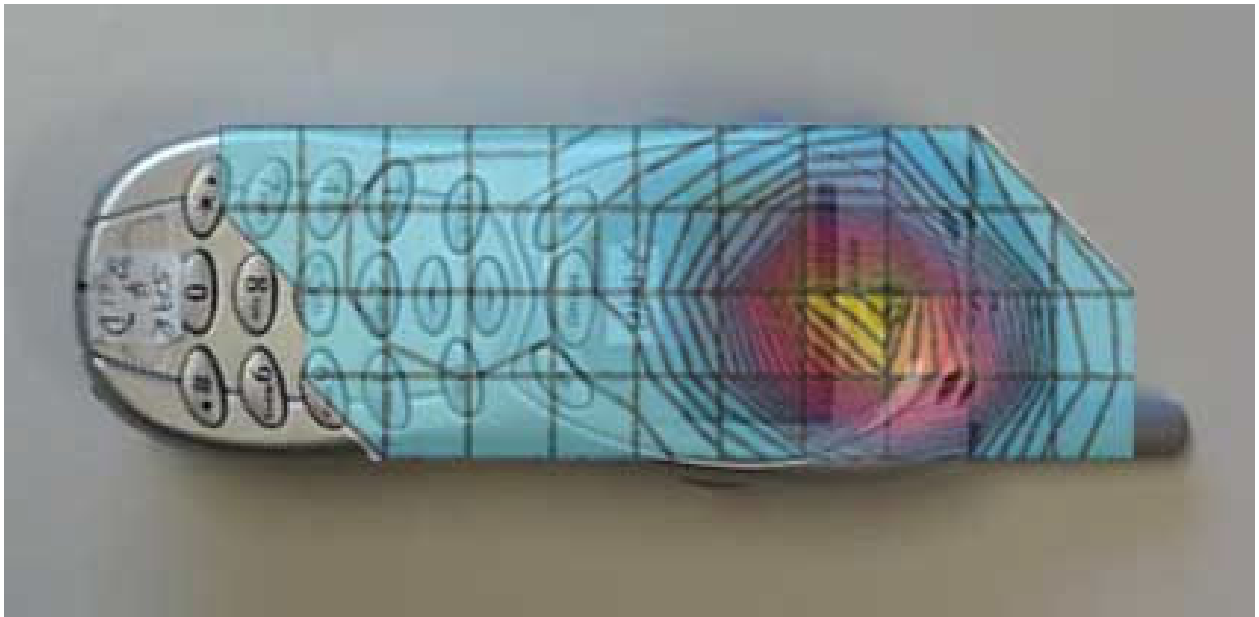


Figure 5. Typical 1900MHz Left Head Adjacent Contour Overlaid on Phone with Antenna Fixed (15° Tilt)

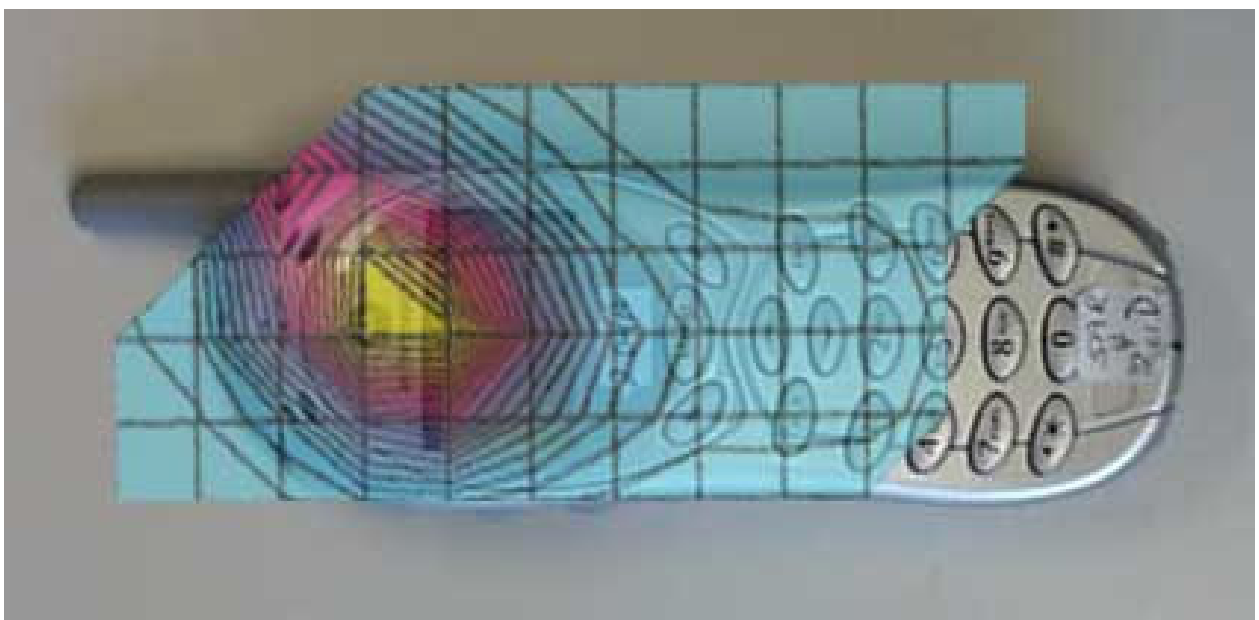


Figure 6. Typical 1900MHz Right Head Adjacent Contour Overlaid on Phone with Antenna Fixed (15° Tilt)

Appendix 3

SAR distribution plots for Body Worn Configuration

SN# A88BF7C9

Ch# 799 / Pwr Step: 2(OTA) / Antenna Position: Fixed / Type of Modulation: 800 Analog / Battery Model #: SNN5570A

R6 Amy Twin Phantom 2.3 Phantom; Section2 Section; Position: (0°,0°); Frequency: 849 MHz

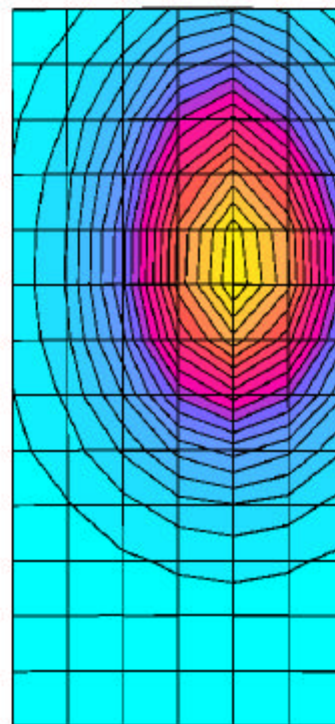
Probe: ET3DV6 - SN1398 - FCC Body; ConvF(6.30,6.30,6.30); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.97$ mho/m $\epsilon_r = 53.5$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 0.826 mW/g, SAR (10g): 0.589 mW/g, (Worst-case extrapolation)

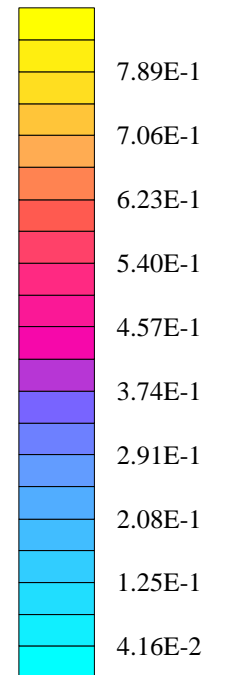
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Penetration depth: 16.3 (15.3, 17.5) [mm]

Powerdrift: -0.02 dB



SAR_{Tot} [mW/g]



SN# A88BF79D

Ch#25 / Pwr Step: Always UP (OTA) / Antenna Position: Fixed / Type of Modulation: 1900 CDMA / Battery Model #: SNN5570AA / Leather Pouch with Universal Belt

Clip: SYN9170A SYN8763A / Temp. After Test: 21.2 C

R5 Amy Twin Phantom 2.3 Phantom; Section2 Section; Position: (0°,0°); Frequency: 1851 MHz

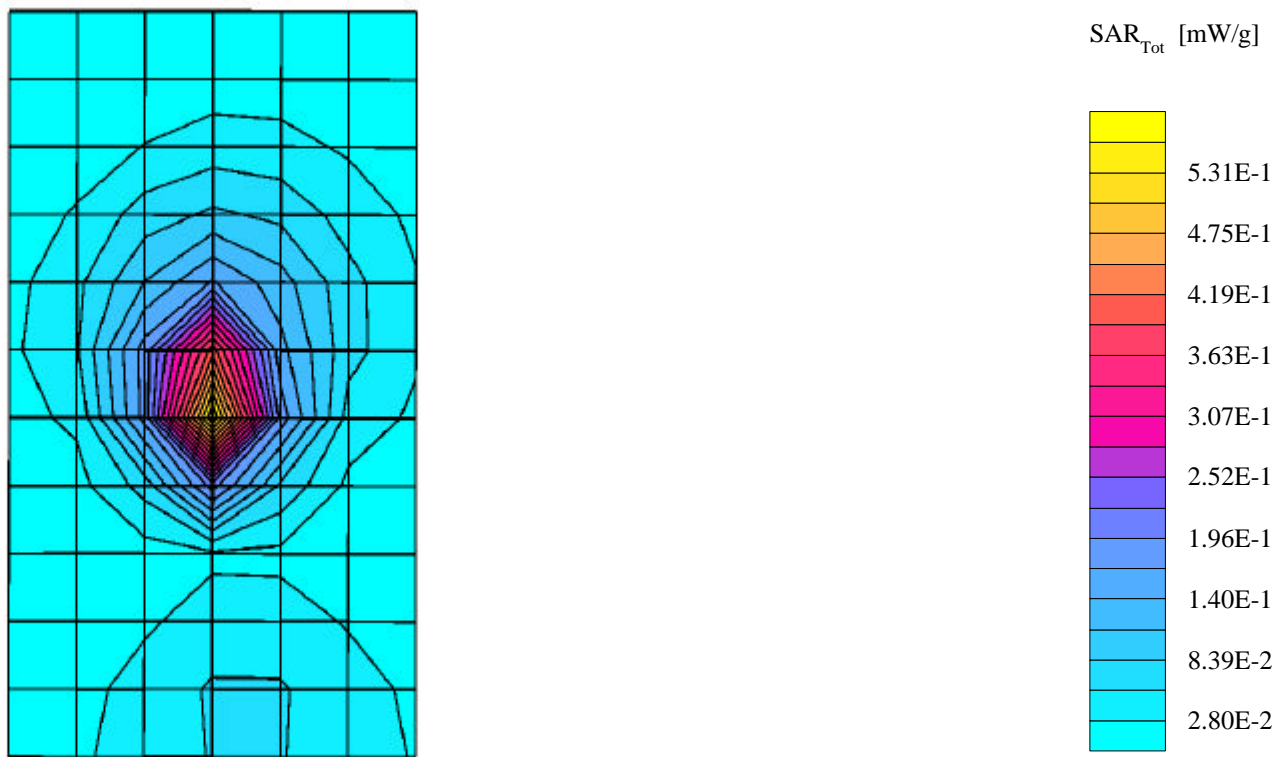
Probe: ET3DV6 - SN1391 - FCC Body; ConvF(5.00,5.00,5.00); Crest factor: 1.0; 1880 MHz Head & Body: $\sigma = 1.53$ mho/m $\epsilon_r = 51.9$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 0.559 mW/g, SAR (10g): 0.285 mW/g, (Worst-case extrapolation)

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

Penetration depth: 8.4 (8.0, 9.4) [mm]

Powerdrift: 0.02 dB



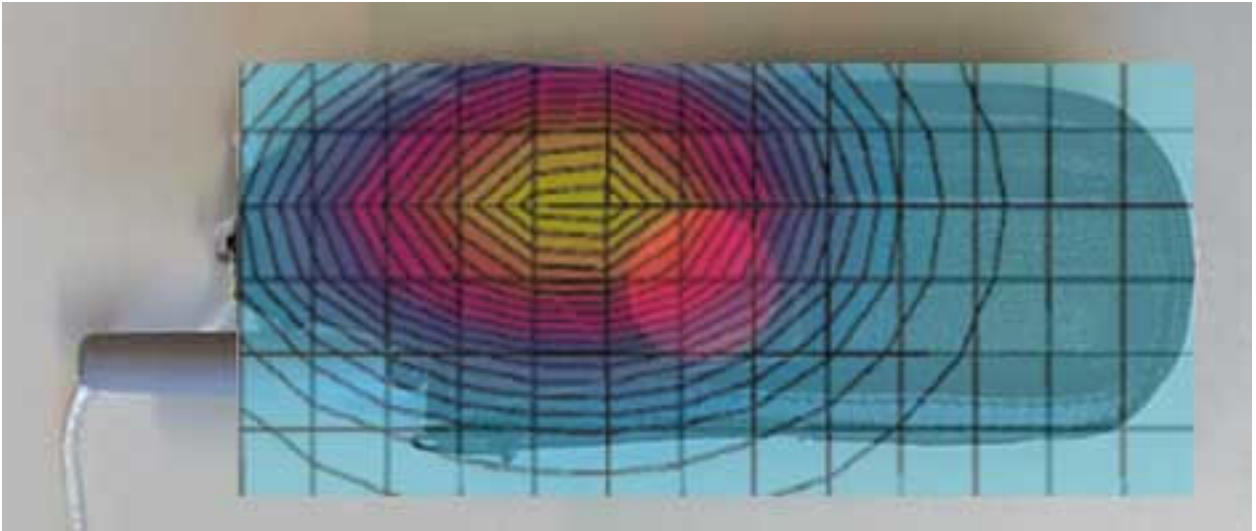


Figure 7. Typical 800 MHz Body-Worn Contour Overlaid on Phone with Antenna Fixed