



MOTOROLA

February 2, 2004

Supplement to SAR Test Report for Motorola portable cellular phone (FCC ID IHDT56DH1)

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Summary of FCC request for additional information

There was a request for additional information regarding Motorola's SAR Test Report for Motorola portable cellular phone (FCC ID IHDT56DH1). The requested information is addressed below in the same numbering sequence received.

2. There is confusion between the SAR values in the data plots and in the tables for left head touch, antenna extended PCS and left head tilt, antenna extended PCS- please clarify.

Response: In both cases the SAR and drift values in the tables match that in the data plots. The confusion arises with some of the wording in the headers of the data plots.

Concerning the left head touch, antenna extended PCS information, the device position in the data plot header states cheek while a later reference in the data plot header is made to LH Front Tilt 20 Section. While this is indeed a cheek or head touch position data plot, the LH Front Tilt 20 Section reference means that the probe, rather than the phone, was tilted. The probe was tilted so that it is perpendicular to the phantom for a more accurate measurement.

Concerning the left head tilt, antenna extended PCS information, the device position in the data plot header states cheek. This is a typo and should actually state tilt or rotated. The data plot in question is indeed a data plot with the phone in the tilted position.

3. Please provide the following SAR plots:

- (a) left touch ant. ext. cellular CDMA
- (b) left touch ant. ext. AMPS
- (c) left touch ant. ret. cellular CDMA
- (d) left touch ant. ret. AMPS
- (e) right touch ant. ext. PCS
- (f) right touch ant. ret. PCS
- (g) left tilt ant. ext. cellular CDMA
- (h) right tilt ant. ext. AMPS
- (i) right tilt ant. ret. AMPS
- (j) right tilt ant. ret. cellular CDMA
- (k) right tilt ant. ext. PCS
- (l) right tilt ant. ret. PCS

Response: See Appendix 1

Appendix 1
Requested SAR Plots

s/n: 3d50acfc

Ch# 384 / Pwr Step: Always Up(OTA)

Type of Modulation:CDMA 800

DEVICE POSITION (cheek or rotated): tilted

Accessory Model #: N/A

R9_SUGAR TP-1129 SAM Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 837 MHz

Probe: ET3DV6 - SN1502 - IEEE Head.2; ConvF(6.70,6.70,6.70); 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): 0.253 mW/g, SAR (10g): 0.192 mW/g * Max outside, (Worst-case extrapolation)

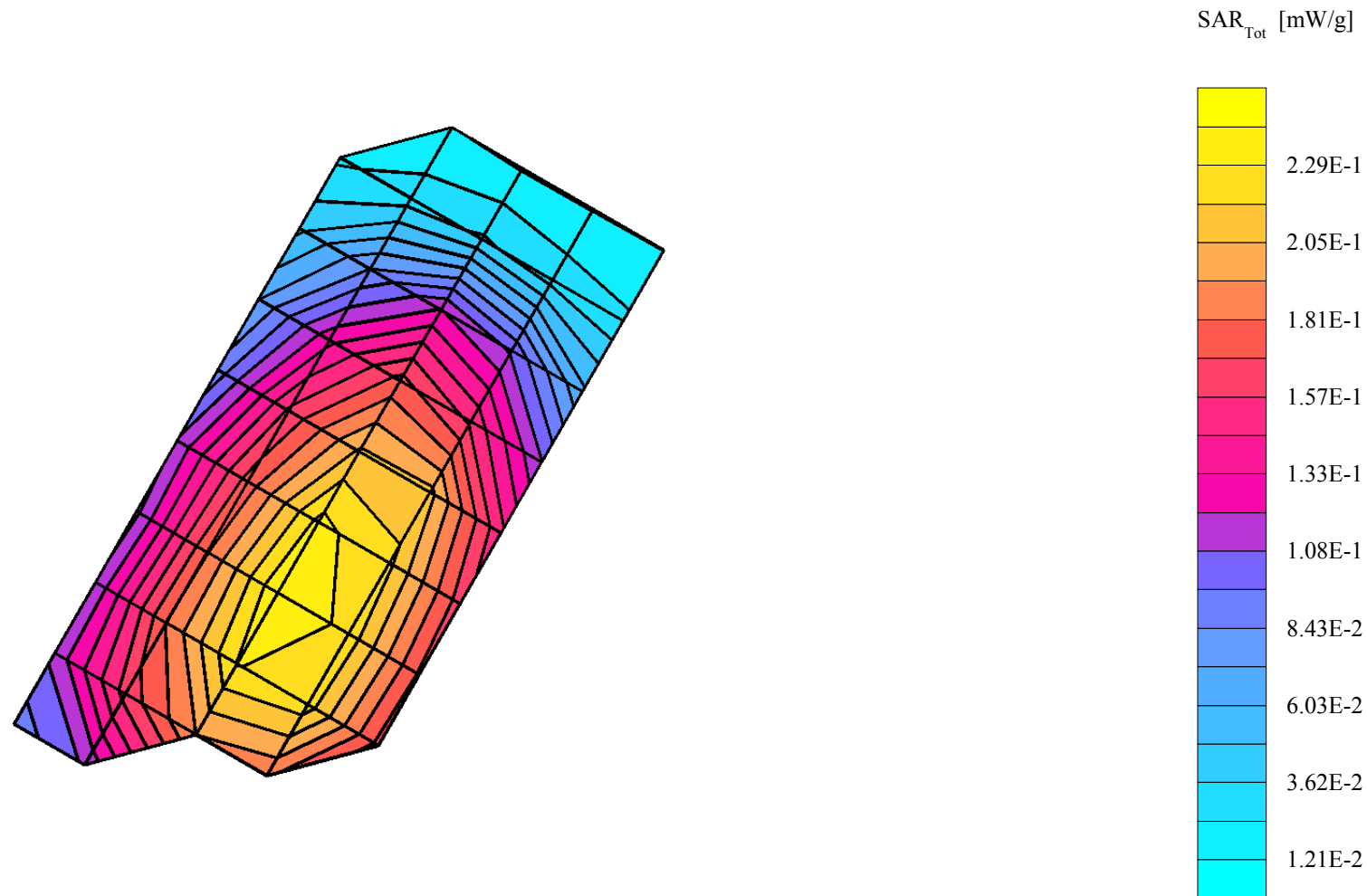
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0

Penetration depth: 19.3 (17.4, 21.3) [mm]

Powerdrift: 0.20 dB

Antenna Position: Ext

Battery Model #: SNN5588A(Batt#5)



s/n: 3D50ACFC

Ch# 600 / Pwr Step: AlwaysUp(OTA)

Type of Modulation: CDMA 1900

DEVICE POSITION (cheek or rotated): Cheek

Accessory Model #: N/A

R9_GLYCOL TP-1134_SAM Expanded (Rev. 2)-9Jan03 Phantom; RH Front Tilt 20 Section; Position: (80°,180°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1398 - IEEE Head; ConvF(5.10,5.10,5.10); Crest factor: 1.0; 1880 MHz Head & Body: $\sigma = 1.43$ mho/m $\epsilon_r = 38.5$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 0.308 mW/g, SAR (10g): 0.189 mW/g * Max outside, (Worst-case extrapolation)

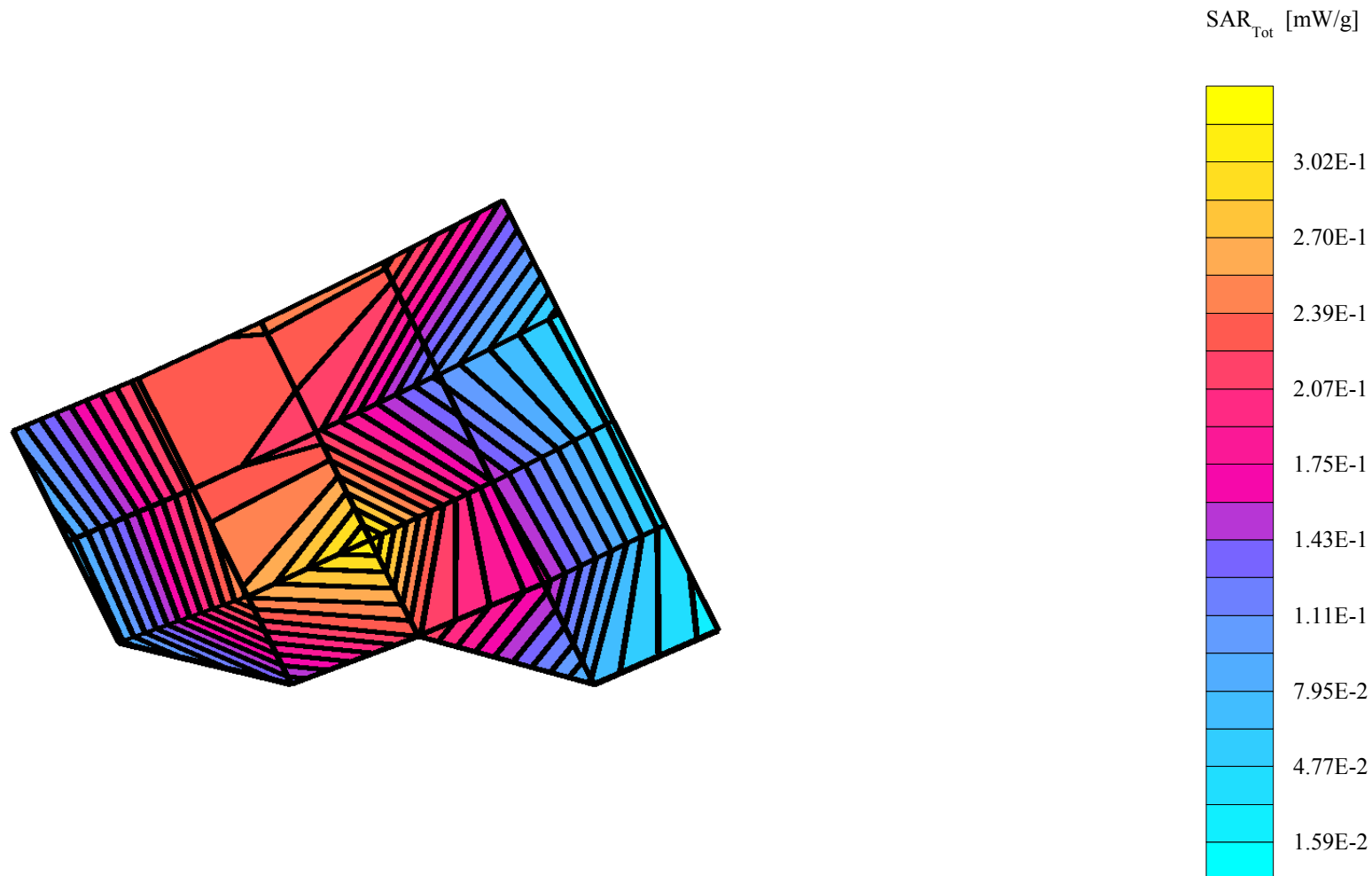
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0

Penetration depth: 12.5 (12.2, 12.7) [mm]

Powerdrift: 0.26 dB

Antenna Position: Ext

Battery Model #: SNN5588A(Batt#2)



s/n: 3D50ACFC

Ch# 600 / Pwr Step: AlwaysUp(OTA)

Type of Modulation: CDMA 1900

DEVICE POSITION (cheek or rotated): Rotated

Accessory Model #: N/A

R9_GLYCOL TP-1134_SAM Expanded (Rev. 2)-9Jan03 Phantom; Right Hand Section; Position: (90°,180°); Frequency: 1880 MHz

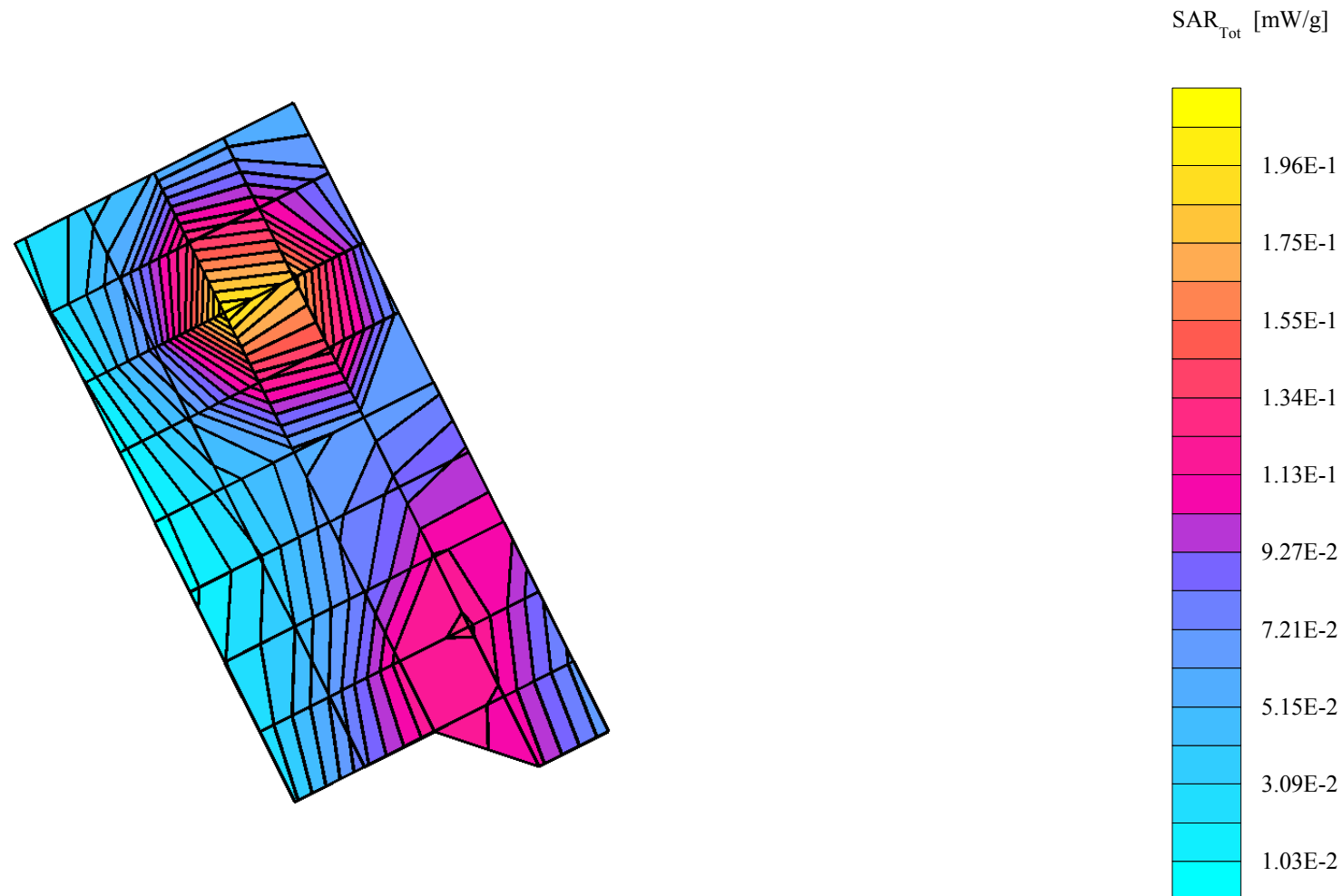
Probe: ET3DV6 - SN1398 - IEEE Head; ConvF(5.10,5.10,5.10); Crest factor: 1.0; 1880 MHz Head & Body: $\sigma = 1.43$ mho/m $\epsilon_r = 38.5$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 0.218 mW/g, SAR (10g): 0.123 mW/g, (Worst-case extrapolation)

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

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

Powerdrift: -0.04 dB

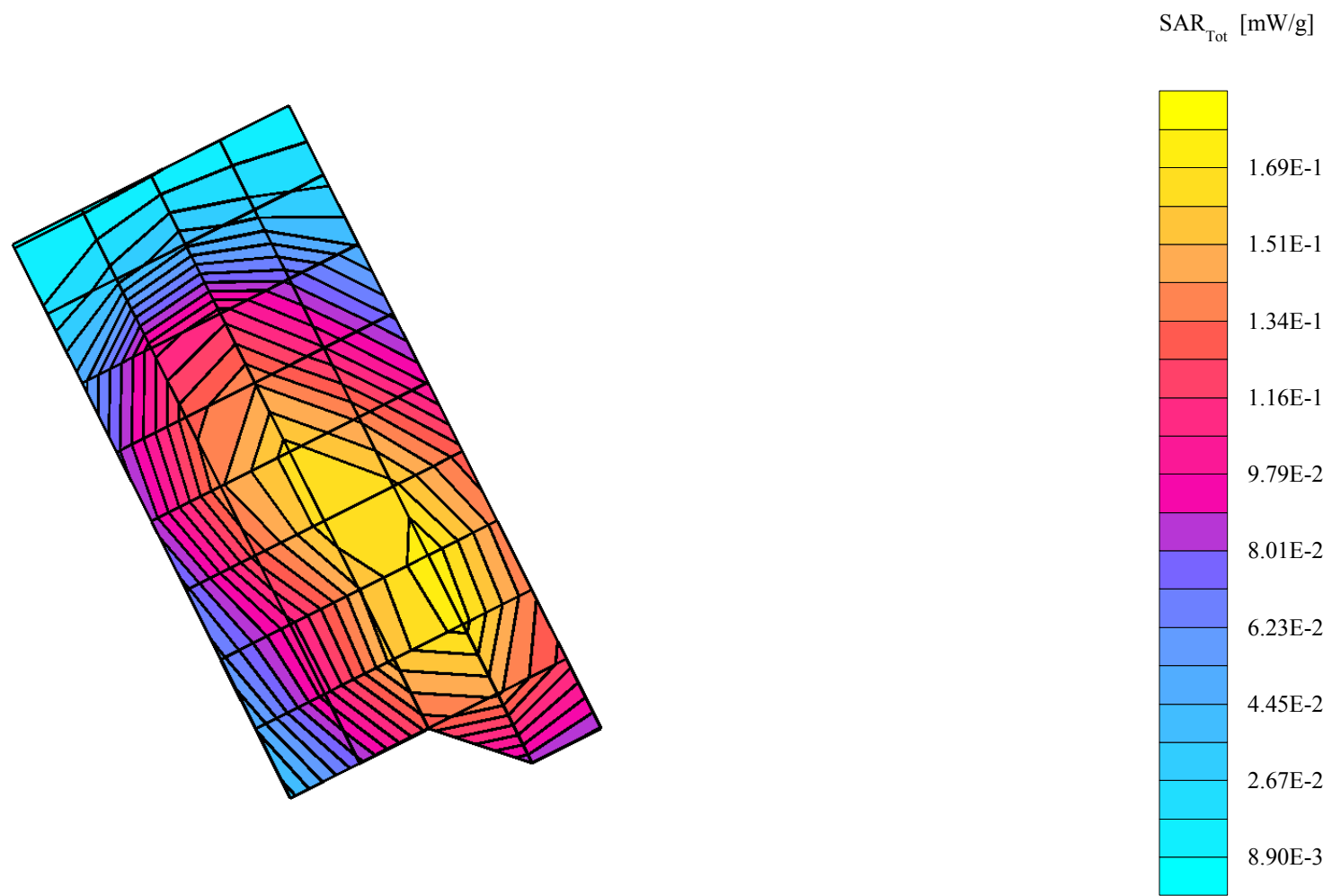
Antenna Position: Ret
Battery Model #: SNN5588A(Batt#1)

s/n: 3d50acfc

Ch# 384 / Pwr Step: Always Up(OTA)
Type of Modulation:CDMA 800
DEVICE POSITION (cheek or rotated): tilted
Accessory Model #: N/A

Antenna Position: Ret
Battery Model #: SNN5588A(Batt#6)
TESTER INITIALS: JY Sohn

R9_SUGAR TP-1129 SAM Expanded (Rev. 2)-9Jan03 Phantom; Right Hand Section; Position: (90°,180°); Frequency: 837 MHz
Probe: ET3DV6 - SN1502 - IEEE Head.2; ConvF(6.70,6.70,6.70); 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): 0.176 mW/g, SAR (10g): 0.132 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 19.7 (17.5, 21.6) [mm]
Powerdrift: 0.28 dB



s/n: 3D50ACFC

Ch# 384 / Pwr Step: 02(OTA)

Type of Modulation: Analog 800

DEVICE POSITION (cheek or rotated): Rotated

Accessory Model #: N/A

R9_SUGAR TP-1129 SAM Expanded (Rev. 2)-9Jan03 Phantom; Right Hand Section; Position: (90°,180°); Frequency: 837 MHz

Probe: ET3DV6 - SN1398 - IEEE Head; ConvF(6.40,6.40,6.40); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.93$ mho/m $\epsilon_r = 41.6$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 0.217 mW/g, SAR (10g): 0.158 mW/g * Max outside, (Worst-case extrapolation)

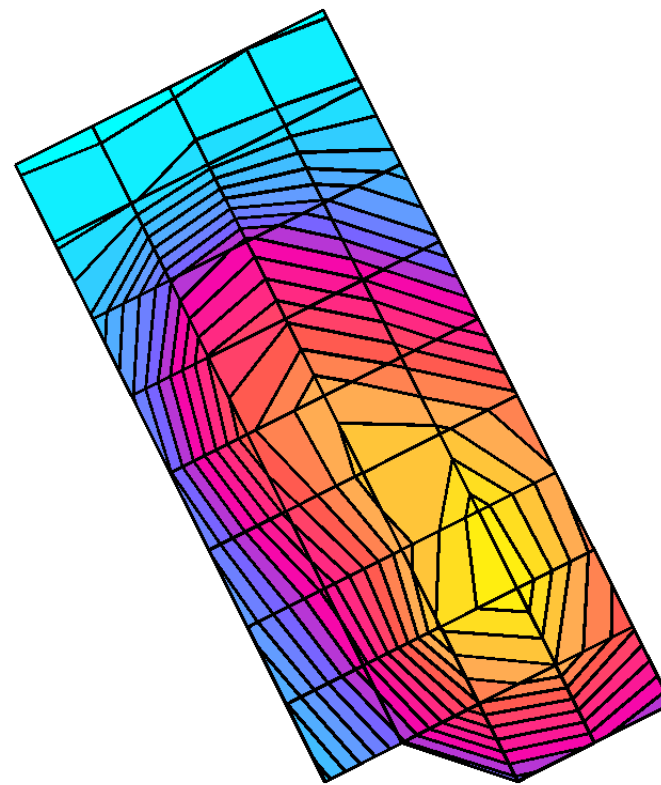
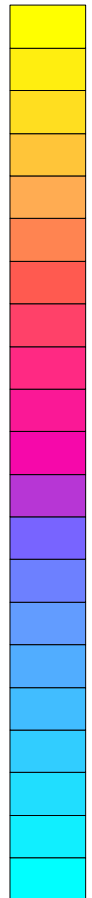
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0

Penetration depth: 17.1 (15.2, 19.3) [mm]

Powerdrift: -0.04 dB

Antenna Position: Ret

Battery Model #: SNN5588A(Batt#4)

SAR_{Tot} [mW/g]

2.01E-1

1.80E-1

1.59E-1

1.38E-1

1.17E-1

9.54E-2

7.42E-2

5.30E-2

3.18E-2

1.06E-2

s/n: 3D50ACFC

Ch# 600 / Pwr Step: AlwaysUp(OTA)

Type of Modulation: CDMA 1900

DEVICE POSITION (cheek or rotated): Rotated

Accessory Model #: N/A

R9_GLYCOL TP-1134_SAM Expanded (Rev. 2)-9Jan03 Phantom; Right Hand Section; Position: (90°,180°); Frequency: 1880 MHz

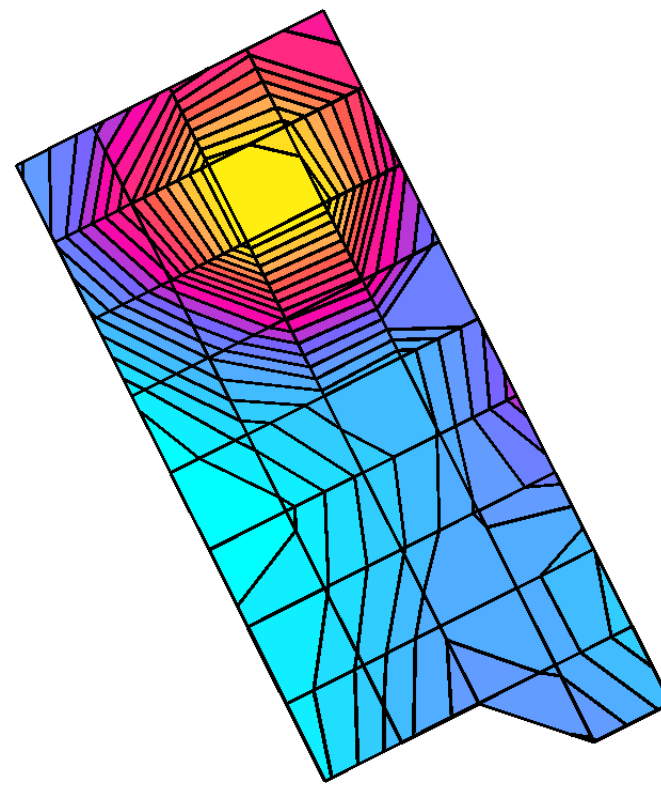
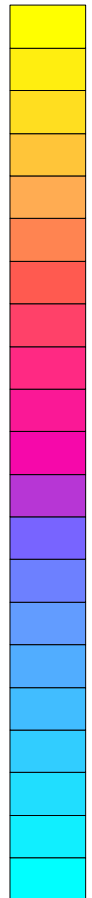
Probe: ET3DV6 - SN1398 - IEEE Head; ConvF(5.10,5.10,5.10); Crest factor: 1.0; 1880 MHz Head & Body: $\sigma = 1.46$ mho/m $\epsilon_r = 38.2$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 0.139 mW/g, SAR (10g): 0.0809 mW/g, (Worst-case extrapolation)

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

Penetration depth: 9.5 (9.1, 10.1) [mm]

Powerdrift: -0.02 dB

Antenna Position:Ext
Battery Model #: SNN5588A(Batt#6)SAR_{Tot} [mW/g]

1.12E-1

1.00E-1

8.85E-2

7.67E-2

6.49E-2

5.31E-2

4.13E-2

2.95E-2

1.77E-2

5.90E-3

3D50ACFC

Ch# 384 / Pwr Step: 02(OTA)

Type of Modulation: Analog 800

DEVICE POSITION (cheek or rotated): Rotated

Accessory Model #: N/A

R9_SUGAR TP-1129 SAM Expanded (Rev. 2)-9Jan03 Phantom; Right Hand Section; Position: (90°,180°); Frequency: 837 MHz

Probe: ET3DV6 - SN1398 - IEEE Head; ConvF(6.40,6.40,6.40); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.93$ mho/m $\epsilon_r = 41.6$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 0.285 mW/g, SAR (10g): 0.207 mW/g * Max outside, (Worst-case extrapolation)

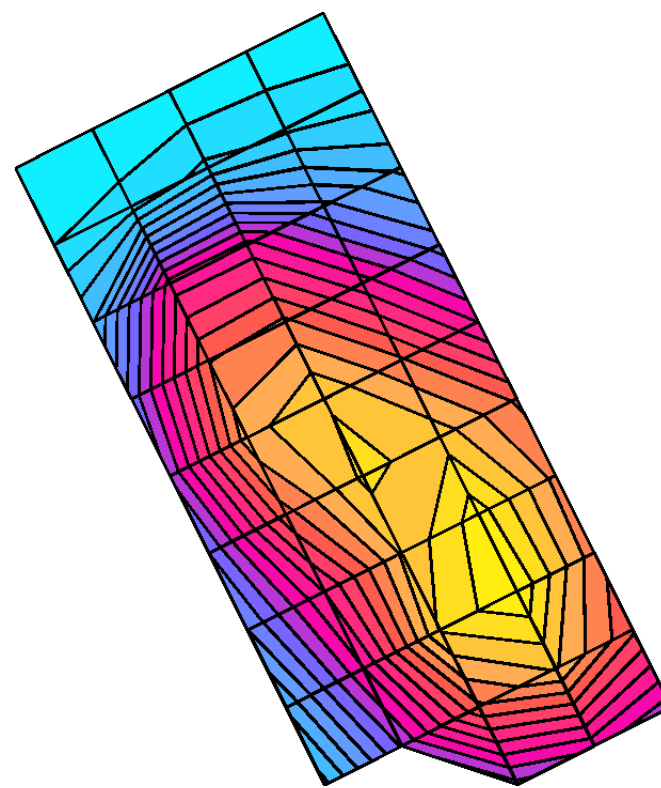
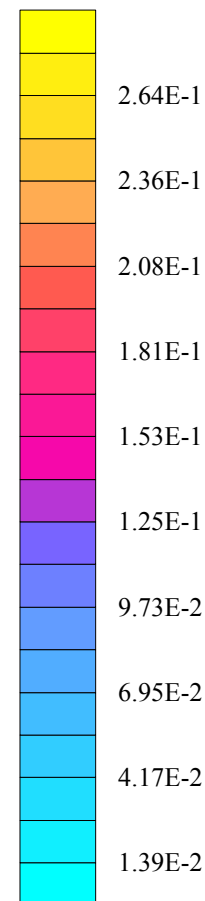
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0

Penetration depth: 17.2 (15.3, 19.4) [mm]

Powerdrift: -0.04 dB

Antenna Position: Ext

Battery Model #: SNN5588A(Batt#4)

SAR_{Tot} [mW/g]

s/n: 3d50acfc

Ch# 384 / Pwr Step: Always Up(OTA)

Type of Modulation:CDMA 800

DEVICE POSITION (cheek or rotated): cheek

Accessory Model #: N/A

R9_SUGAR TP-1129 SAM Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 837 MHz

Probe: ET3DV6 - SN1502 - IEEE Head.2; ConvF(6.70,6.70,6.70); 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): 0.920 mW/g, SAR (10g): 0.621 mW/g, (Worst-case extrapolation)

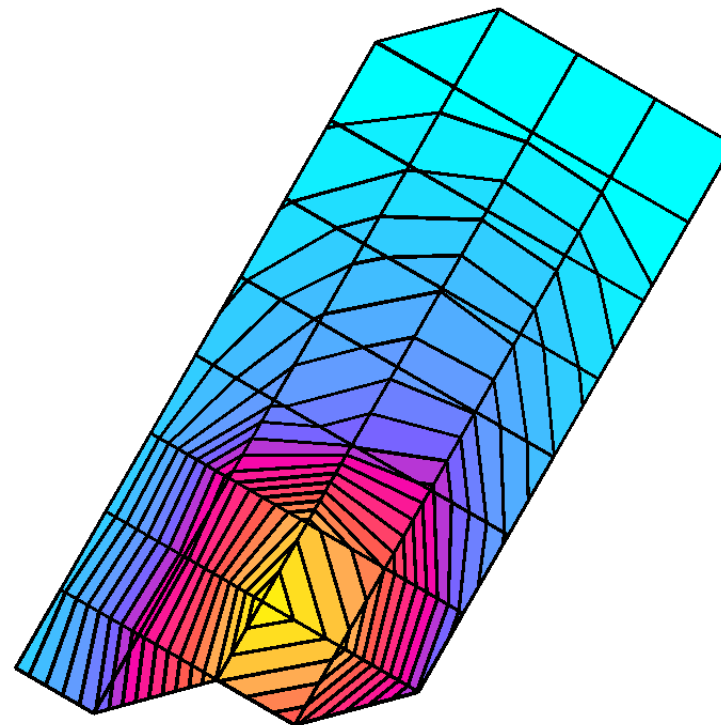
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0

Penetration depth: 14.5 (12.3, 17.1) [mm]

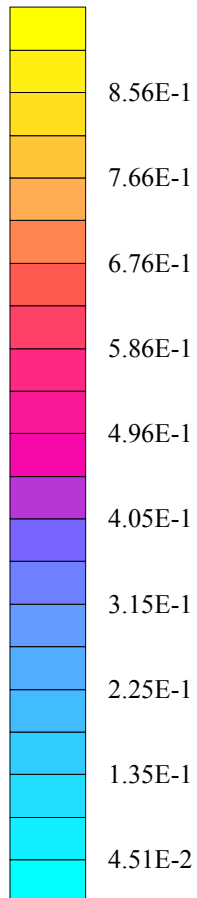
Powerdrift: -0.27 dB

Antenna Position: Ret

Battery Model #: SNN5588A(Batt#3)



SAR_{Tot} [mW/g]



s/n: 3d50acfc

Ch# 384 / Pwr Step:PL02 (OTA)

Antenna Position: Ret

Type of Modulation:AMPS 800

Battery Model #: SNN5588A(Batt#1)

DEVICE POSITION (cheek or rotated): Cheek

Accessory Model #: N/A

R9_SUGAR TP-1129 SAM Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 837 MHz

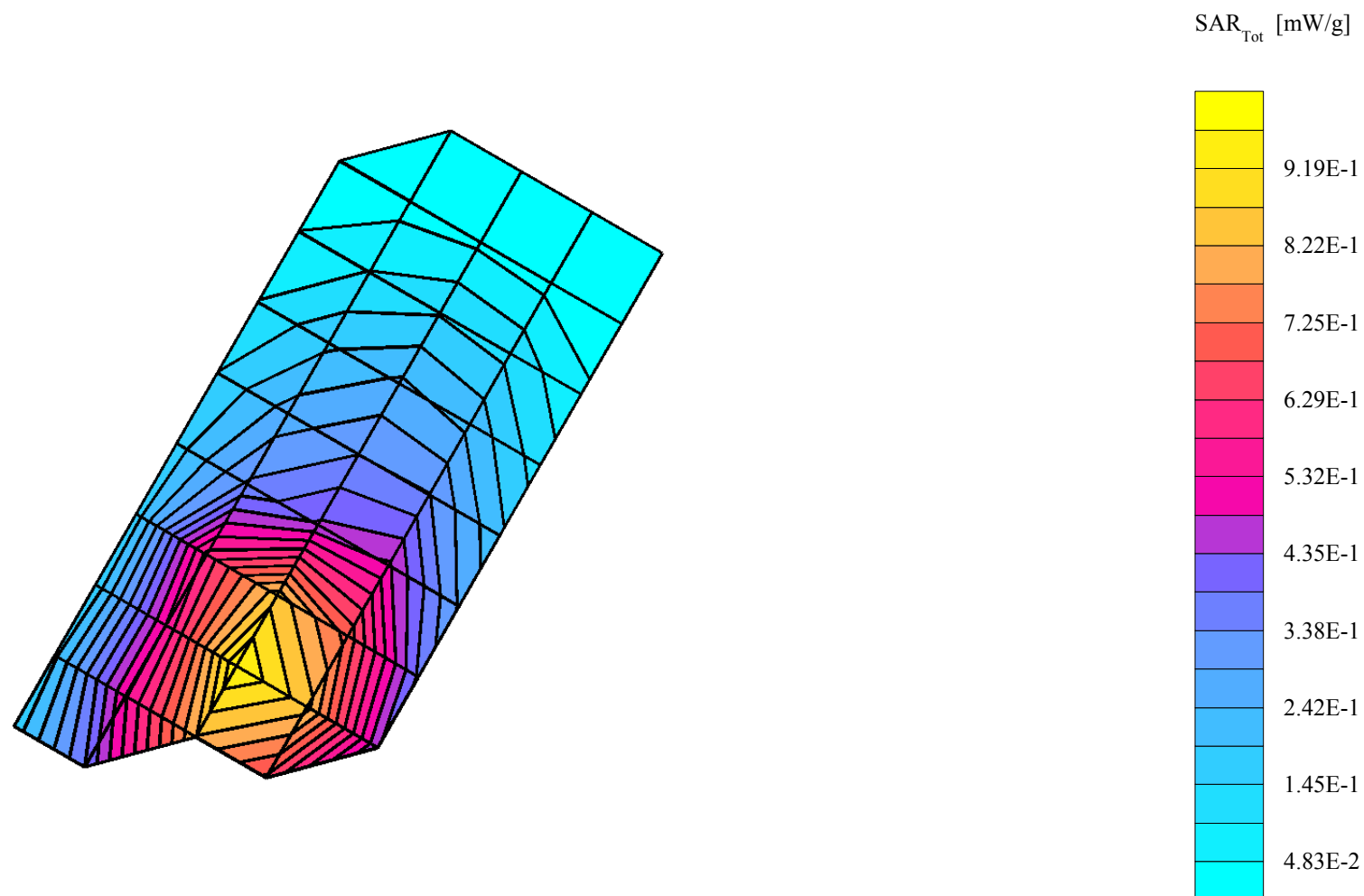
Probe: ET3DV6 - SN1502 - IEEE Head.2; ConvF(6.70,6.70,6.70); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\epsilon_r = 42.1$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 1.02 mW/g, SAR (10g): 0.689 mW/g, (Worst-case extrapolation)

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

Penetration depth: 14.8 (12.5, 17.5) [mm]

Powerdrift: -0.20 dB



s/n: 333A0056

Ch# 384 / Pwr Step: AlwaysUp(OTA)

Type of Modulation: CDMA800

DEVICE POSITION (cheek or rotated): Cheek

R8 Sugar TP-1168 SAM Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°, 180°); Frequency: 837 MHz

Probe: ET3DV6 - SN1390 - IEEE HEAD; ConvF(6.90, 6.90, 6.90); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\epsilon_r = 41.5$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 1.31 mW/g, SAR (10g): 0.874 mW/g, (Worst-case extrapolation)

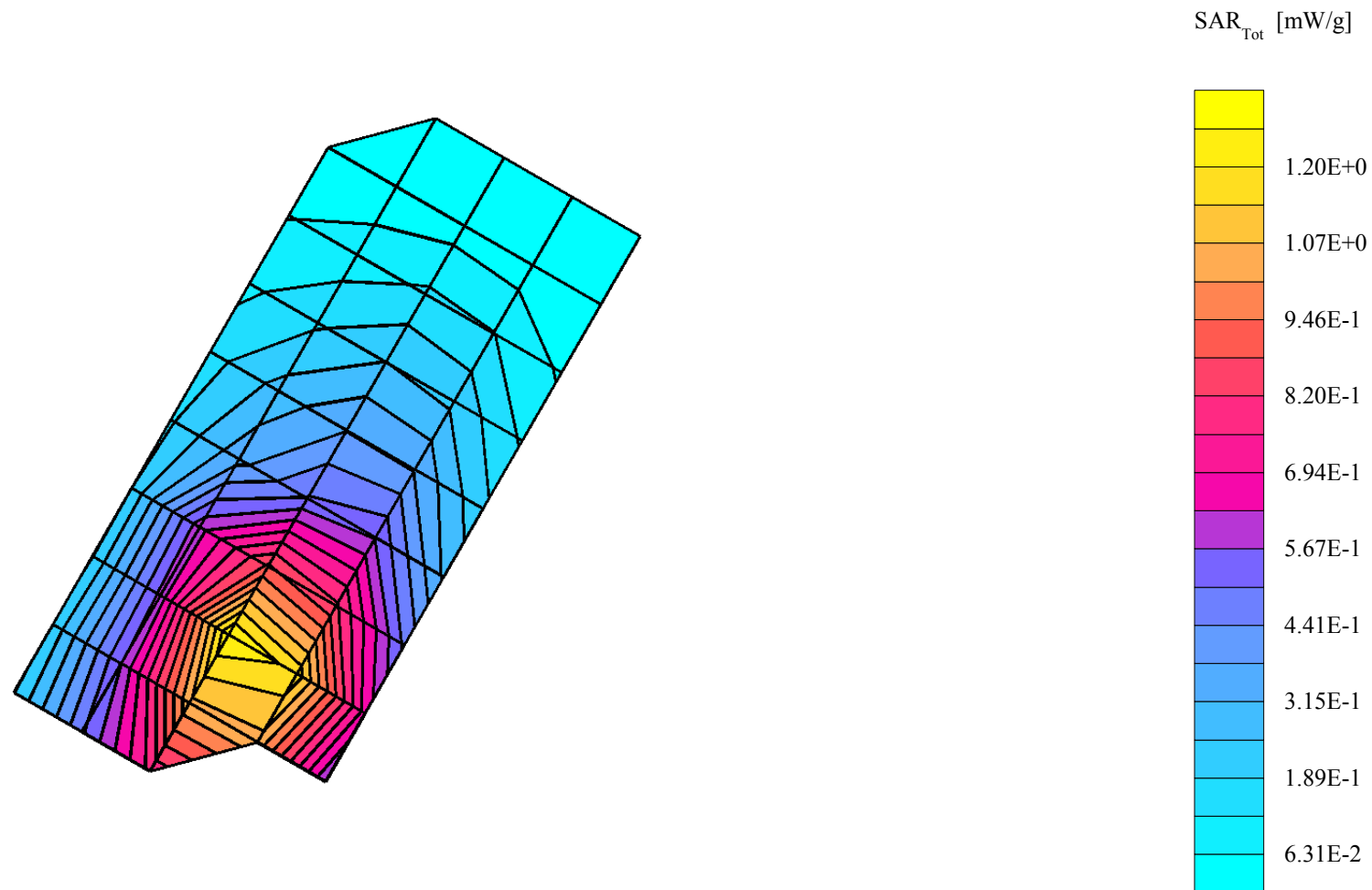
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0

Penetration depth: 14.4 (14.1, 15.2) [mm]

Powerdrift: 0.13 dB

Antenna Position: Ext

Battery Model #: SNN5725A_6



s/n: 333A0056

Ch# 384 / Pwr Step: 02(OTA)
Type of Modulation: AMPS800

Antenna Position: Ext
Battery Model #: SNN5725A_1

DEVICE POSITION (cheek or rotated): Cheek

R8 Sugar TP-1168 SAM Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 837 MHz

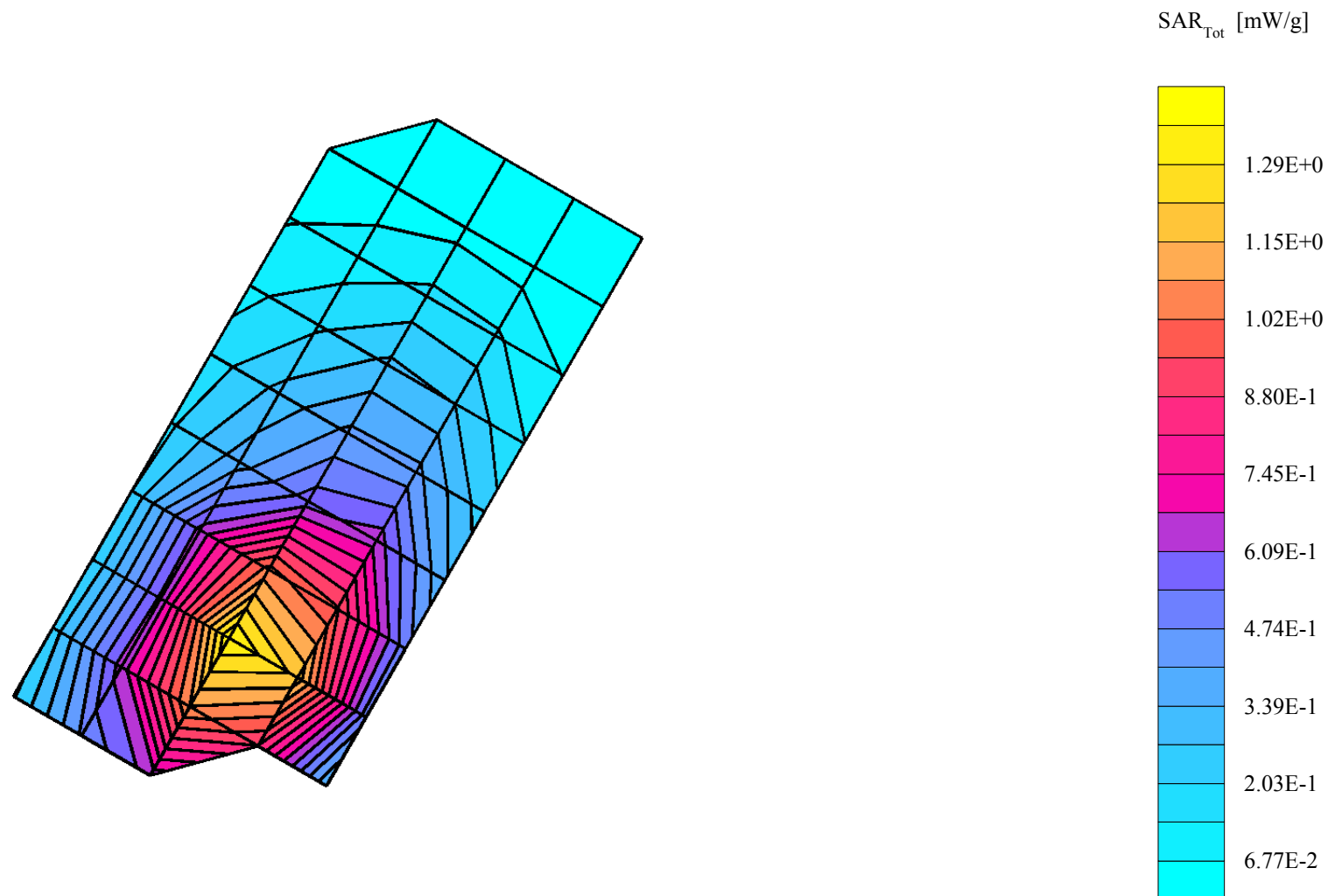
Probe: ET3DV6 - SN1390 - IEEE HEAD; ConvF(6.90,6.90,6.90); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\epsilon_r = 41.8$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 1.42 mW/g, SAR (10g): 0.931 mW/g, (Worst-case extrapolation)

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

Penetration depth: 13.9 (12.0, 16.3) [mm]

Powerdrift: 0.01 dB



s/n: 3d50acfc

Ch# 1175 / Pwr Step: AlwaysUp(OTA)
Type of Modulation: CDMA 1900
DEVICE POSITION (cheek or rotated): Cheek
Accessory Model #: N/A

Antenna Position: Ret
Battery Model #: SNN5588A(Batt#2)

R9_GLYCOL TP-1134_SAM Expanded (Rev. 2)-9Jan03 Phantom; RH Front Tilt 20 Section; Position: (80°,180°); Frequency: 1909 MHz
Probe: ET3DV6 - SN1502 - IEEE Head.2; ConvF(5.30,5.30,5.30); Crest factor: 1.0; 1880 MHz Head & Body: $\sigma = 1.47$ mho/m $\epsilon_r = 38.7$ $\rho = 1.00$ g/cm³
Cube 7x7x7: SAR (1g): 1.01 mW/g, SAR (10g): 0.617 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 12.4 (12.0, 12.8) [mm]
Powerdrift: -0.16 dB

