



Certificate Number: 1449-02



**MOTOROLA**

ELECTROMAGNETIC EXPOSURE (EME)  
TESTING LABORATORY  
8000 West Sunrise Blvd.  
Fort-Lauderdale, Florida

Addendum S.A.R. TEST REPORT  
(APPENDIX A & B)  
FCC ID: AZ489FT5806  
H18UCH9PW7AN

November 13, 2001 - Rev. O

<b>Tested By:</b>	Andy Gessner, Pat Lomax / Kim Uong, Jim Fortier, Stephen Whalen SAR Test Technicians / Engineers
<b>Prepared By:</b>	Michael Sailsman REPR FCC regulatory Liaison
<b>Reviewed and Approved By:</b>	Ken Enger Sr. Resource Manager Product Safety and EME Lab Director

## **Appendix A: Data Results**

# XTS 5000 Test Date: 09/14/01

Product: XTS 5000

Run Number: 010913-10

Model: H18UCH9PW7AN Sn: 02444463

TX FREQ:794MHz ANTENNA Position: FIXED

Accessories: Antenna(NAF5080A), Battery(NTN9862A), Carry Case(NTN8266B) Audio (NMN6193C)

Antenna Distance from Phantom Surface: A(base)20mm B(center):30mm C(tip):40mm

START POWER:3.50W END POWER:3.23W

Room Temp:23.9 Liquid Temp:23.8

PROBE CAL DATE: 010316

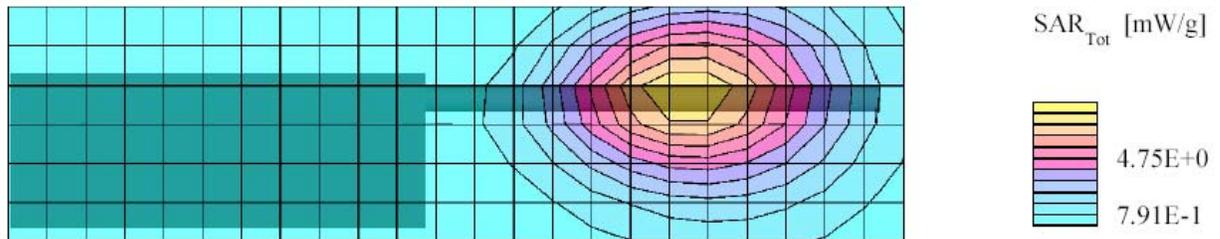
Small Flat Phantom Phantom; Radio Scan Area Section; Position: (90°,0°);

Probe: ET3DV6R - SN1417; ConvF(5.90,5.90,5.90); Probe cal date: 16/03/01; Crest factor: 1.0; 809 Body:  $\sigma = 0.98$

mho/m  $\epsilon_r = 53.3$   $\rho = 1.00$  g/cm<sup>3</sup>

Cube 5x5x7: SAR (1g): 7.68 mW/g, SAR (10g): 5.44 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 261.0, 57.0, 4.5



# XTS 5000 Test Date: 08/30/01

Product: XTS 5000

Run Number: 010830-02

Model: H18UCH9PW7AN Sn: 02444463

TX FREQ:794MHz ANTENNA Position: FIXED

Accessories: Antenna(NAF5080A), Battery(HTN9031A), Carry Case(NTN8266B) Audio (NMN6193C)

Antenna Distance from Phantom Surface: A(base)22mm B(center):30cm C(tip):35mm

START POWER:3.58W END POWER:3.31W

Room Temp:23 Liquid Temp:24

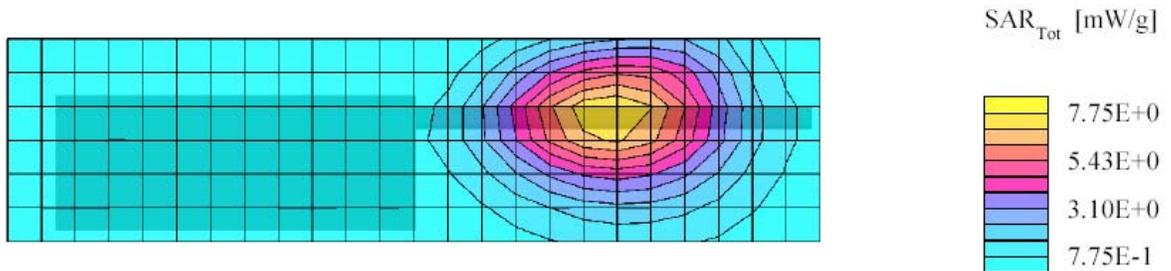
PROBE CAL DATE: 010316

Small Flat Phantom Phantom; Radio Scan Area Section; Position: (90°,0°);

Probe: ET3DV6R - SN1417; ConvF(5.90,5.90,5.90); Probe cal date: 16/03/01; Crest factor: 1.0; 809 Body:  $\sigma = 0.96$  mho/m  $\epsilon_r = 52.7$   $\rho = 1.00$  g/cm<sup>3</sup>

Cube 5x5x7: SAR (1g): 7.20 mW/g, SAR (10g): 5.08 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 267.0, 55.5, 4.5



# XTS 5000 Test Date: 09/12/01

Product: XTS 5000

Run Number: 010912-08

Model: H18UCH9PW7AN Sn: 02444463

TX FREQ:809MHz ANTENNA Position: FIXED

Accessories: Antenna(NAF5042A), Battery(NTN9862A), Carry Case(NTN8266B) Audio (NMN6193C)

Antenna Distance from Phantom Surface: A(base):20mm B(center):25mm C(tip):28mm

START POWER:3.55W END POWER:3.34W

Room Temp:24.0 Liquid Temp:24.2

PROBE CAL DATE: 010316

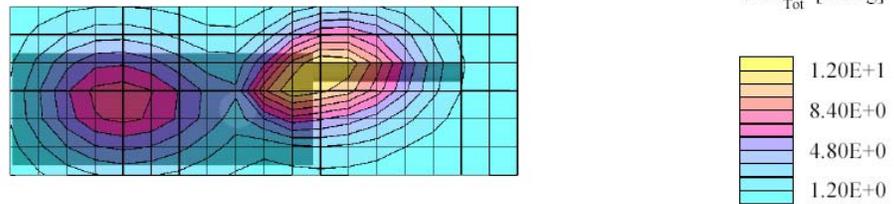
Small Flat Phantom Phantom; Radio Scan Area Section; Position: (90°,0°);

Probe: ET3DV6R - SN1417; ConvF(5.90,5.90,5.90); Probe cal date: 16/03/01; Crest factor: 1.0; 809 Body:  $\sigma = 0.95$

mho/m  $\epsilon_r = 53.3$   $\rho = 1.00$  g/cm<sup>3</sup>

Cube 5x5x7; SAR (1g): 11.9 mW/g, SAR (10g): 8.21 mW/g, (Worst-case extrapolation)

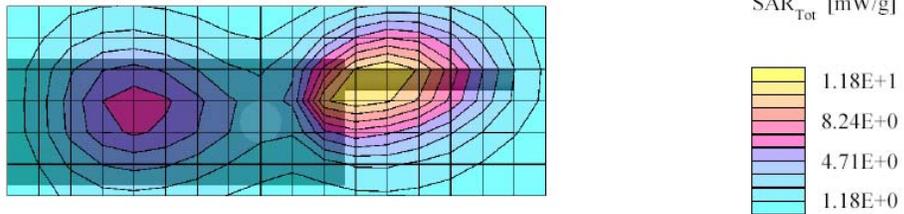
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 168.0, 55.5, 4.5



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# XTS 5000 Test Date: 08/28/01

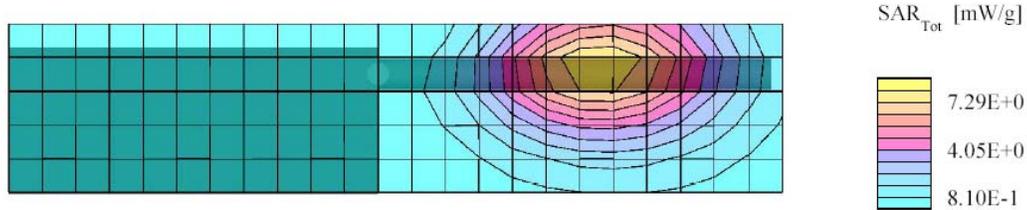
Product: XTS 5000  
Run Number: 010827-08  
Model: H18UCH9PW7AN Sn: 02444463  
TX FREQ:809MHz ANTENNA Position: FIXED  
Accessories: Antenna(NAF5042A), Battery(HTN9031A), Carry Case(NTN8266B) Audio (NMN6193C)  
Antenna Distance from Phantom Surface: A(base) 22mm B(center):25mm C(tip):30mm  
START POWER:3.51W END POWER:3.36W  
Room Temp:23.6 Liquid Temp:23.6  
PROBE CAL DATE: 010316  
Small Flat Phantom Phantom; Radio Scan Area Section; Position: (90°,0°);  
Probe: ET3DV6R - SN1417; ConvF(5.90,5.90,5.90); Probe cal date: 16/03/01; Crest factor: 1.0; 809 Body:  $\sigma = 0.96$   
 $\text{mho/m } \epsilon_r = 53.4 \rho = 1.00 \text{ g/cm}^3$   
Cube 5x5x7; SAR (1g): 11.8 mW/g, SAR (10g): 8.14 mW/g. (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 177.0, 55.5, 4.5



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**XTS5000 Test Date: 11/02/01**

Run: 01110201                      Tissue Temp: 21.3C  
Model#: H18UCH9PW7AN            SN: C0290826  
Start power: 3.58W                      End Power: 3.35W  
Ant: NAF5037A                      Tx Freq: 809 MHz  
Battery:HTN6846AR  
Belt clip:NTN8266B, RSM:NMN6193C  
Flat Phantom; Flat\_abdomen Section; Position: (90°,90°);  
Probe: ET3DV6 - SN1545; ConvF(6.20,6.20,6.20); Probe cal date: 9/24/01; Crest factor: 1.0; FCC Body 809:  $\sigma = 0.97$   
mho/m  $\epsilon_r = 54.5$   $\rho = 1.00$  g/cm<sup>3</sup>  
Cube 5x5x7: SAR (1g): 7.79 mW/g, SAR (10g): 5.56 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 19.5, 264.0, 3.9



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# XTS 5000 Test Date: 11/06/01

Run: 011106-05

Tissue Temp: 20.0C

Model # H18UCH9PW7AN; SN C0290826

TX Freq. 809MHz; Start Power: 3.49W End power: 3.30W

Antenna NAF5037A 1/2 wave Battery: NTN9533A

Belt clip: NTN8266B RSM: NMN6193C

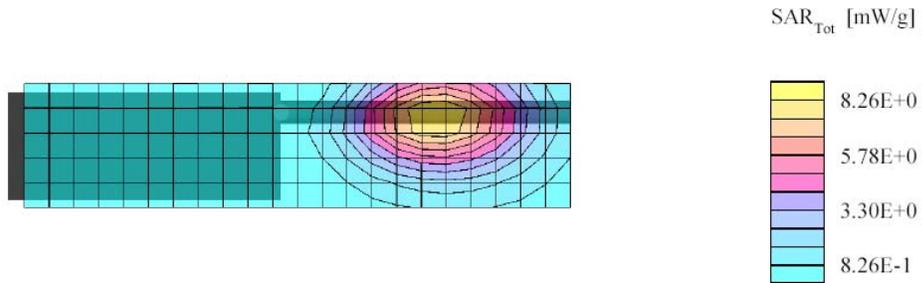
Flat Phantom; Flat\_abdomen Section; Position: (90°,90°);

Probe: ET3DV6 - SN1545; ConvF(6.20,6.20,6.20); Probe cal date: 9/24/01; Crest factor: 1.0; FCC Body 809:  $\sigma = 0.96$

mho/m  $\epsilon_r = 53.9$   $\rho = 1.00$  g/cm<sup>3</sup>

Cube 5x5x7; SAR (1g): 8.02 mW/g, SAR (10g): 5.70 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 21.0, 249.0, 3.9



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XTS 5000 Test Date: 10/01/01

Run: 01100114

Tissue Temp: 20.0 C

Model # H18UCH9PW7AN; SN C0290826

TX Freq. 794MHz; Start Power: 3.52 W End power: 3.16 W

Antenna NAF5080A 1/2 wave Battery: NTN9862A

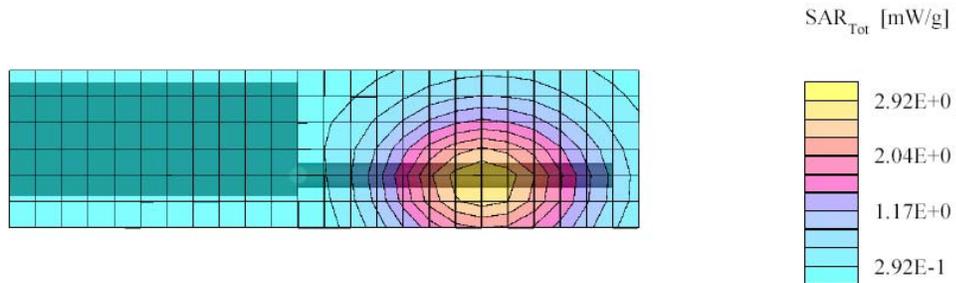
Flat Phantom; Face Section; Position: (90°,90°);

Probe: ET3DV6 - SN1384; ConvF(6.57,6.57,6.57); Probe cal date: 05/23/01; Crest factor: 1.0; IEEE HEAD

809MHz;  $\sigma = 0.89$  mho/m  $\epsilon_r = 43.2$   $\rho = 1.00$  g/cm<sup>3</sup>

Cube 5x5x7; SAR (1g): 2.86 mW/g, SAR (10g): 2.10 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 64.5, 270.0, 4.7



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# XTS 5000 Test Date: 09/29/01

Run: 01092904

Tissue Temp: 20.7 C

Model # H18UCH9PW7AN; SN C0290826

TX Freq. 809MHz; Start Power: 3.58 W End power: 3.32 W

Antenna NAF5042A 1/4 wave Battery: NTN9862A

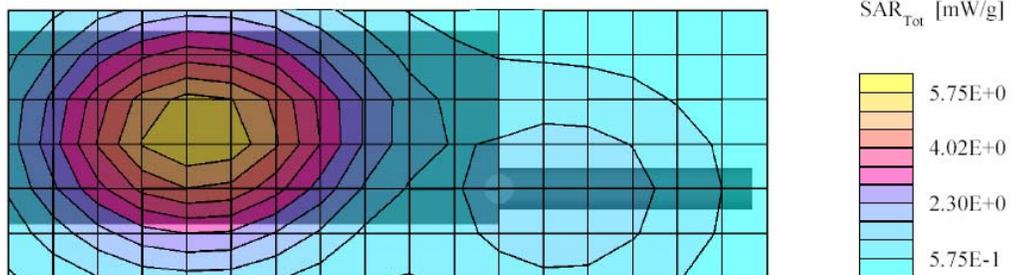
Flat Phantom; Face Section; Position: (90°,90°);

Probe: ET3DV6 - SN1384; ConvF(6.57,6.57,6.57); Probe cal date: 05/23/01; Crest factor: 1.0; IEEE HEAD

809MHz:  $\sigma = 0.89$  mho/m  $\epsilon_r = 43.3$   $\rho = 1.00$  g/cm<sup>3</sup>

Cube 5x5x7; SAR (1g): 5.46 mW/g, SAR (10g): 4.03 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 40.5, 64.5, 4.7



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# XTS 5000 Test Date: 10/01/01

Run: 01100101

Tissue Temp: 20.8 C

Model # H18UCH9PW7AN; SN C0290826

TX Freq. 809MHz; Start Power: 3.59 W End power: 3.33 W

Antenna NAF5037A 1/2 wave Battery: NTN9862A

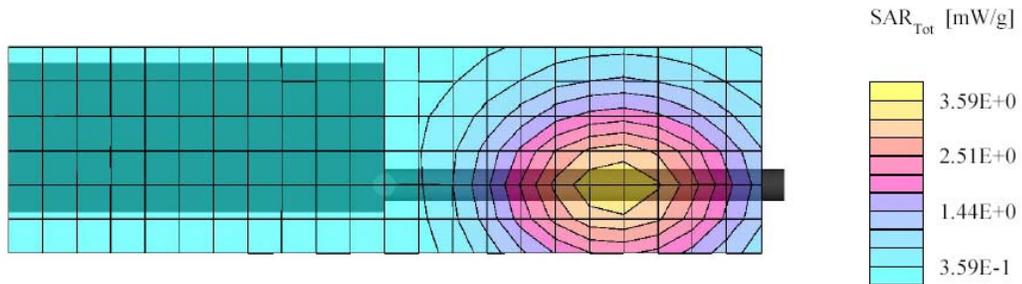
Flat Phantom; Face Section; Position: (90°,90°);

Probe: ET3DV6 - SN1384; ConvF(6.57,6.57,6.57); Probe cal date: 05/23/01; Crest factor: 1.0; IEEE HEAD

809MHz:  $\sigma = 0.88$  mho/m  $\epsilon_r = 42.8$   $\rho = 1.00$  g/cm<sup>3</sup>

Cube 5x5x7; SAR (1g): 3.55 mW/g, SAR (10g): 2.60 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 61.5, 267.0, 4.7



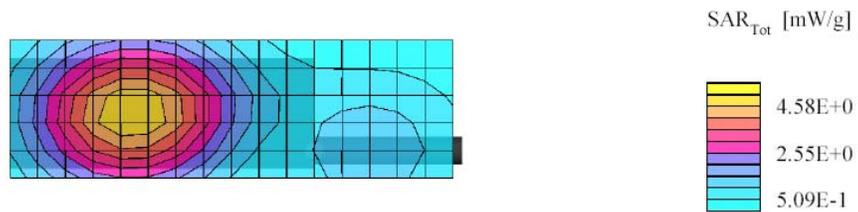
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# XTS 5000 Test Date: 10/23/01

Sim Temp: 20.3C  
Run # 01102304  
Start Power: 3.61W  
Model #: H18UCH9PW7AN  
TX Freq: 809MHz  
Acc. : Batt NTN9533AR  
Audio: None

Run time:  
End Power: 3.39W  
SN:C0290826  
Antenna Kit: NAF5042A  
Carry Acc: None, Mic @ 2.5cm

Flat Phantom Phantom; Radio Section; Position: (90°,90°);  
Probe: ET3DV6 - SN1383; ConvF(6.53,6.53,6.53); Probe cal date: 05/23/01; Crest factor: 1.0; IEEE Head\_809  
MHz:  $\sigma = 0.89$  mho/m  $\epsilon_r = 42.8$   $\rho = 1.00$  g/cm<sup>3</sup>  
Cube 5x5x7; SAR (1g): 4.80 mW/g, SAR (10g): 3.52 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 39.0, 66.0, 4.7



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## **Appendix B: Dipole System Performance Check Results**

**Dipole 835MHz; SN835-001; Test date:09/13/01**

Run: 010913-01

835 Mhz @ 500mW

Target = 9.4mW/g

Room Temp = 23.8 Simulant temp = 23.8

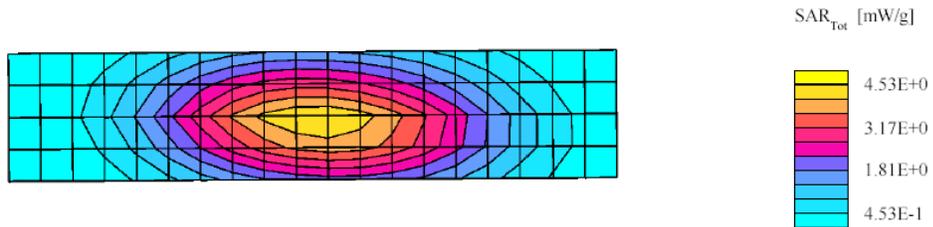
Small Flat Phantom; Probe: ET3DV6R - SN1417; ConvF(5.90,5.90,5.90);

Crest factor: 1.0; 835 Body:  $\rho = 0.98$  mho/m  $\rho_r = 53.0$   $\rho = 1.00$  g/cm<sup>3</sup>

Cube 5x5x7: Peak: 7.15 mW/g, SAR (1g): 4.47 mW/g, SAR (10g): 2.81 mW/g, (Worst-case extrapolation)

Penetration depth: 11.6 (10.6, 13.1) [mm]

Powerdrift: -0.00 dB



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**Dipole 835MHz ; Test date:08/30/01**

Run: 010830-01

835 Mhz @ 500mW

9.4 mW/g = target

Room Temp = 23.7 Simulant temp = 23.6

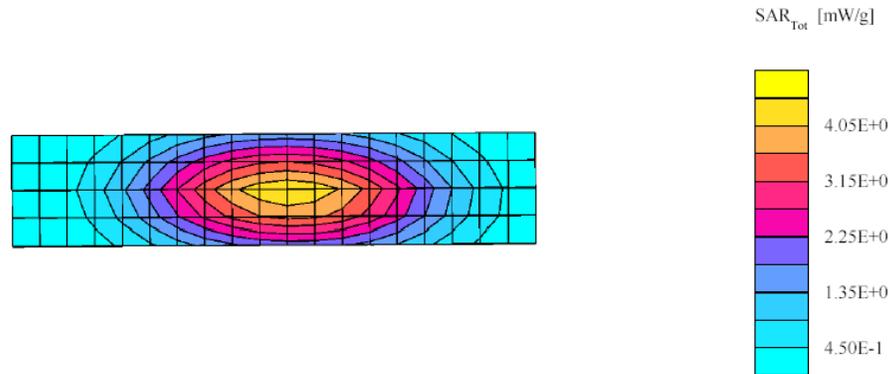
Small Flat Phantom; Probe: ET3DV6R - SN1417; ConvF(5.90,5.90,5.90)

Crest factor: 1.0; 835 Body:  $\rho = 0.98$  mho/m  $\rho_r = 52.5$   $\rho = 1.00$  g/cm<sup>3</sup>

Cube 5x5x7: Peak: 6.84 mW/g, SAR (1g): 4.37 mW/g, SAR (10g): 2.80 mW/g, (Worst-case extrapolation)

Penetration depth: 12.3 (11.2, 13.7) [mm]

Powerdrift: -0.01 dB



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**Dipole 835MHz; SN835-001; Test date:09/12/01**

Run: 010912-01

835 Mhz @ 500mW

Target = 9.4 mW/g

Room Temp = 24 Simulant temp = 24.2

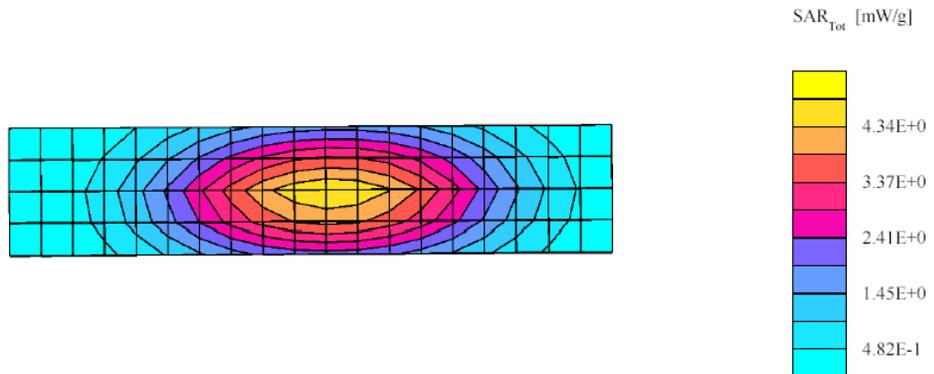
Small Flat Phantom; Probe: ET3DV6R - SN1417; ConvF (5.90,5.90,5.90);

Crest factor: 1.0; 835 Body:  $\sigma = 0.98$  mho/m  $\rho_r = 53.0$  g/cm<sup>3</sup>

Cube 5x5x7: Peak: 7.32 mW/g, SAR (1g): 4.70 mW/g, SAR (10g): 3.02 mW/g, (Worst-case extrapolation)

Penetration depth: 12.2 (11.2, 13.6) [mm]

Powerdrift: -0.03 dB



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**Dipole 835MHz; SN 835-001; Test Date: 08/27/01**

Run: 010827-01

835 Mhz @ 500mW

Target = 9.4 mW/g

Room Temp = 23.6 Simulant temp = 23.6

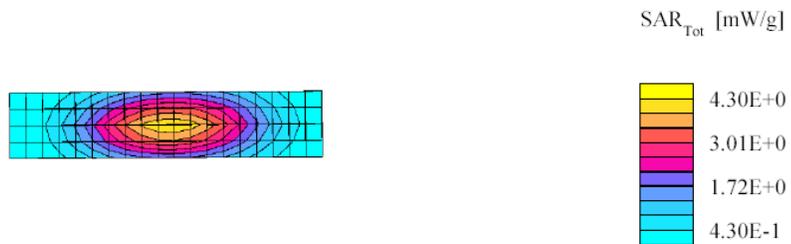
Small Flat Phantom; Probe: ET3DV6R - SN1417; ConvF(5.90,5.90,5.90)

Crest factor: 1.0; 835 Body:  $\rho = 0.99$  mho/m  $\rho_r = 53.2$   $\rho = 1.00$  g/cm<sup>3</sup>

Cube 5x5x7: SAR (1g): 4.48 mW/g, SAR (10g): 2.82 mW/g, (Worst-case extrapolation)

Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0; Max at 98.0, 19.0, 4.5

Power drift: 0.02dB



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**Dipole 835MHz; SN835-002; Test date:11/02/01**

Run: 011102

Target = 9.5mW/g @ 1Watt input

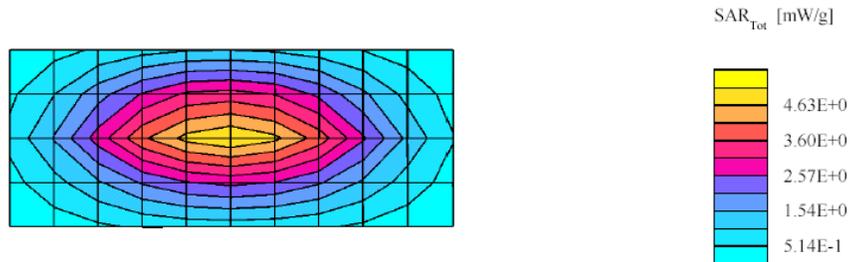
Flat; Probe: ET3DV6 - SN1545; ConvF(6.20,6.20,6.20); Crest factor: 1.0;

FCC Body 835:  $\sigma = 1.00$  mho/m  $\rho_r = 54.2$   $\rho = 1.00$  g/cm<sup>3</sup>

Cube 5x5x7: Peak: 7.40 mW/g, SAR (1g): 4.75 mW/g, SAR (10g): 3.10 mW/g, (Worst-case extrapolation)

Penetration depth: 12.9 (11.4, 14.8) [mm]

Powerdrift: -0.02 dB



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**Dipole 835 MHz; SN:835-002; Test date:11/06/01**

Run: 011106-05

835 MHz Body Validation

Target 9.5 mW/g (without power drift) @ 1 Watt

Power input was 500 mW, Tissue Temp: 20.3C

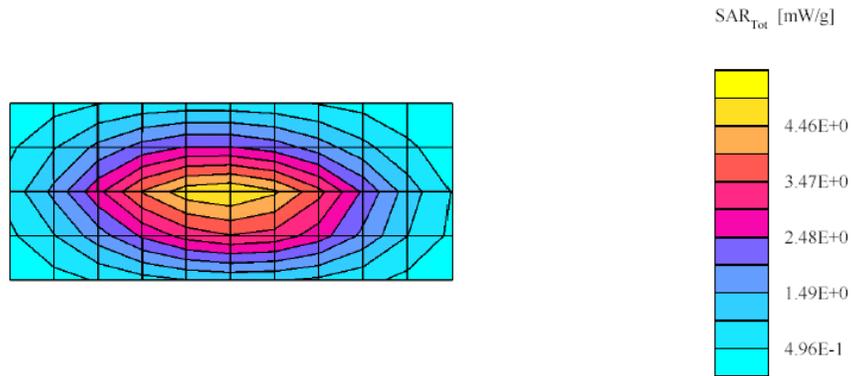
Flat; Probe: ET3DV6 - SN1545; ConvF(6.20,6.20,6.20)

Crest factor: 1.0; FCC Body 835:  $\sigma = 0.99$  mho/m  $\rho_r = 53.6$   $\rho = 1.00$  g/cm<sup>3</sup>

Cube 5x5x7: Peak: 7.18 mW/g, SAR (1g): 4.62 mW/g, SAR (10g): 3.03 mW/g, (Worst-case extrapolation)

Penetration depth: 13.0 (11.4, 15.0) [mm]

Powerdrift: -0.04 dB



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**Dipole 835 MHz SN 835-002; Test date:10/01/01;**

Run: 01100101

835 Head Validation, 2.0 mm bottom section; 500mW input;

Target 9.0mW/g @ 1W input

Tissue Temp: 20.8 C

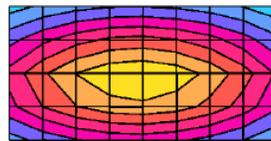
Flat; Probe: ET3DV6 - SN1384; ConvF(6.57,6.57,6.57); Crest factor: 1.0; IEEE HEAD 835MHz:  $\epsilon = 0.90$   
 $\rho = 42.5$   $\rho = 1.00$

g/cm<sup>3</sup>

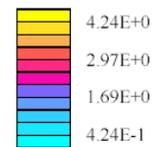
Cube 5x5x7: Peak: 6.46 mW/g, SAR (1g): 4.21 mW/g, SAR (10g): 2.75 mW/g, (Worst-case extrapolation)

Penetration depth: 12.7 (11.7, 14.0) [mm]

Powerdrift: -0.04 dB



SAR<sub>Tot</sub> [mW/g]



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**Dipole 835 MHz; Test date:09/29/01**

Run: 01092902

835 Head Validation, 2.0 mm bottom section

500mW input; Target 9.0 mW/g @ 1 W input

Tissue Temp: 20.9 C

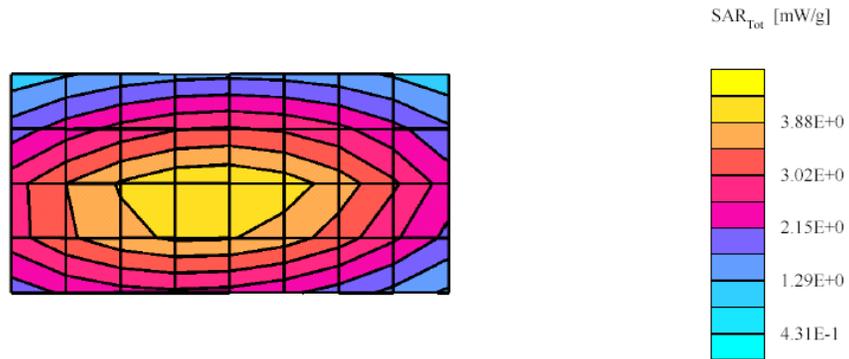
Flat; Probe: ET3DV6 - SN1384; ConvF(6.57,6.57,6.57)

Crest factor: 1.0; IEEE HEAD 835MHz:  $\rho = 0.91$  mho/m  $\rho_r = 43.0$   $\rho = 1.00$  g/cm<sup>3</sup>

Cube 5x5x7: Peak: 6.62 mW/g, SAR (1g): 4.33 mW/g, SAR (10g): 2.83 mW/g, (Worst-case extrapolation)

Penetration depth: 12.8 (11.8, 14.1) [mm]

Powerdrift: -0.02 dB



Motorola CGISS EME Lab

**Dipole 835MHz SN 835-002; Test Date:10/23/01**

Run: 01102301

Tagret value = 9.0 @ 1W

Measured value normalized to 1W is 8.92

Flat Phantom; Flat\_H

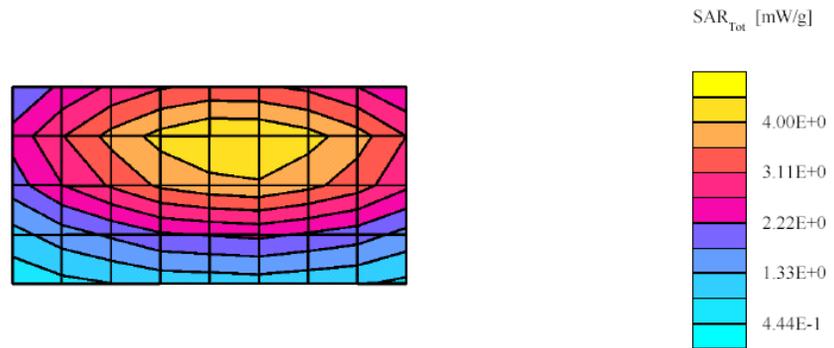
Probe: ET3DV6 - SN1383; ConvF(6.53,6.53,6.53); Crest factor: 1.0; IEEE Head\_835 MHz: \_ = 0.91

mho/m\_r = 42.6 \_ = 1.00 g/cm3

Cube 5x5x7: Peak: 6.85 mW/g, SAR (1g): 4.44 mW/g, SAR (10g): 2.88 mW/g, (Worst-case extrapolation)

Penetration depth: 12.5 (11.5, 13.8) [mm]

Powerdrift: -0.02 dB



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