



Certificate Number: 1449-02



ELECTROMAGNETIC EXPOSURE (EME)  
TESTING LABORATORY

8000 West Sunrise Blvd.  
Fort-Lauderdale, Florida

S.A.R. TEST REPORT  
(APPENDIX A)  
FCC ID: AZ489FT5816  
H46UCH9PW7AN

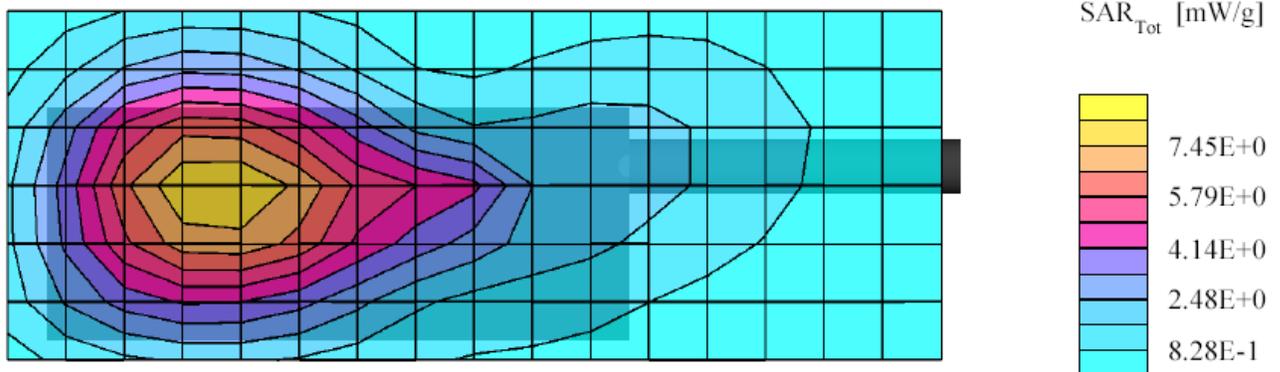
August 23, 2001 - Rev. O

<b>Tested By:</b>	Eric Trospen SAR Test Technician
<b>Tested By:</b>	Stephen Whalen Senior Engineer
<b>Tested and Prepared By:</b>	Jim Fortier Lead Engineer
<b>Reviewed and Approved By:</b>	Ken Enger Sr. Resource Manager Product Safety and EME Lab Director

## **Appendix A: Data Results**

# Stingray 85mm Ant.; Test Date: 08/15/01

Run # 01081502 Run Time 23 min. 20.c Sim Temp ET  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 815.00MHz Antenna NAF5042A 1/4 wave  
Battery NTN9816A HLN9844A clip NMN6193C RSM  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle\_809  
MHz:  $\sigma = 0.96$  mho/m  $\epsilon_r = 55.6$   $\rho = 1.07$  g/cm<sup>3</sup>  
Cube 5x5x7:SAR (1g): 8.51 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 54.0, 43.5, 4.3  
Powerdrift: -0.19 dB



# Stingray 85mm Ant.; Test Date: 08/07/01

Run # 01080712 Run Time 23 min. 20.1c Sim Temp

ET

Model # H46UCH9PW7AN SN C02865741/19

TX Freq. 815.00MHz Antenna NAF5042A 1/4 wave

Battery NTN9816A NTN8036B Leather Holster, RSM NMN6193C

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

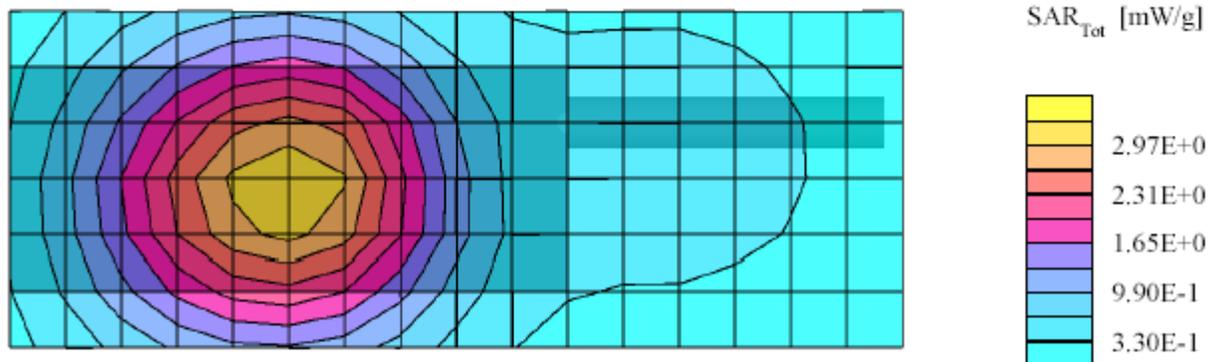
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle\_809

MHz:  $\sigma = 0.99$  mho/m  $\epsilon_r = 57.4$   $\rho = 1.07$  g/cm<sup>3</sup>

Cube 5x5x7:SAR (1g): 3.14 mW/g, (Worst-case extrapolation)

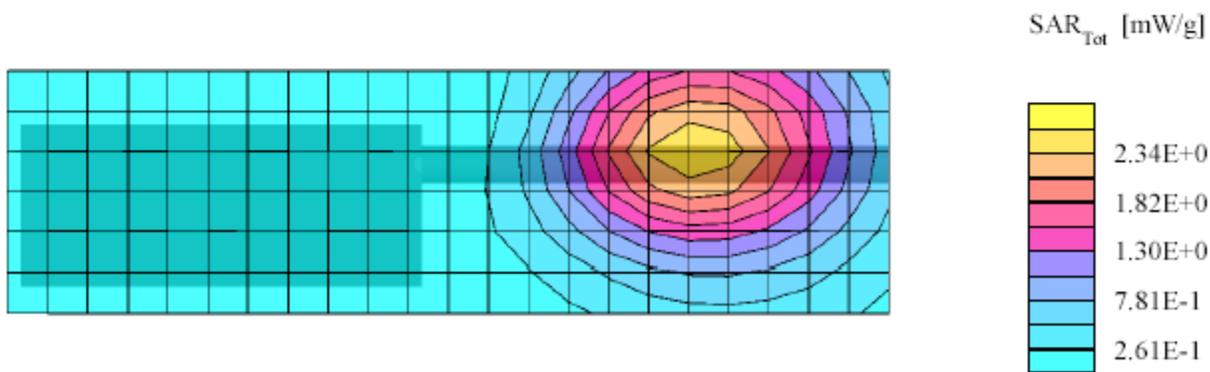
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 75.0, 42.0, 4.3

Powerdrift: 0.10 dB



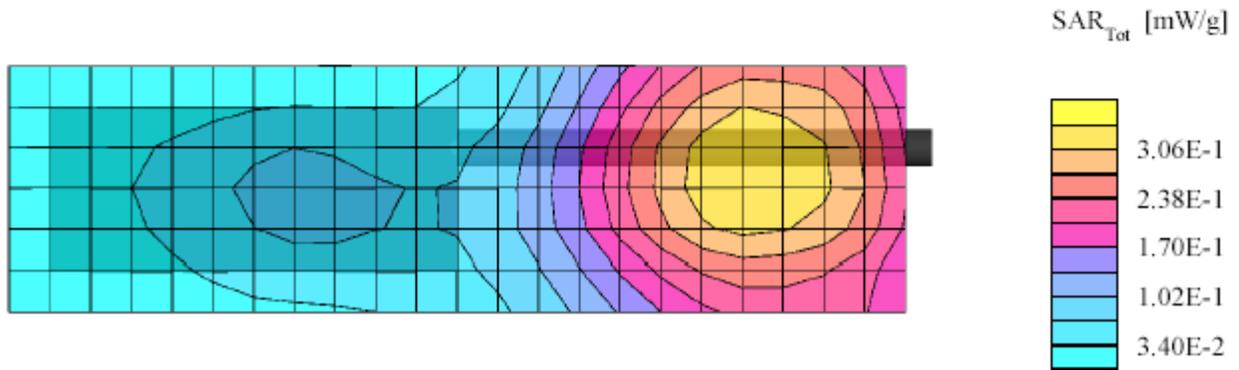
# Stingray 180mm Ant.; Test Date: 08/07/01

Run # 01080702 Run Time 27 min. 20.1c Sim Temp SW  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 806.00MHz Antenna NAF5080A 1/2 wave  
Battery NTN9816A Belt Clip HLN9844A, RSM NMN6193C  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle\_809  
MHz:  $\sigma = 0.99$  mho/m  $\epsilon_r = 57.4$   $\rho = 1.07$  g/cm<sup>3</sup>  
Cube 5x5x7:SAR (1g): 2.44 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 73.5, 30.0, 4.3  
Powerdrift: 0.53 dB



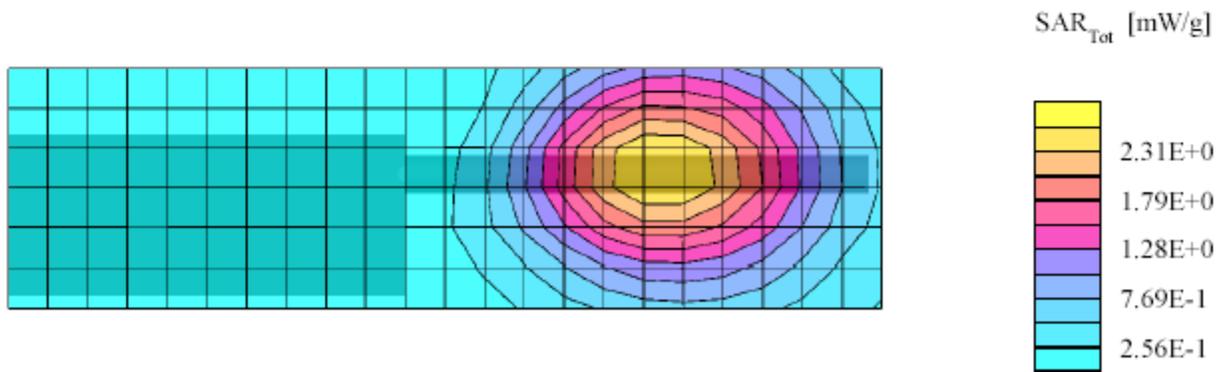
# Stingray 180mm Ant.; Test Date: 08/09/01

Run # 01080902 Run Time 27min. 20c Sim Temp SW  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 860.00MHz Antenna NAF5080A 1/2 wave  
Battery NTN9816A Hard Leather w/swivel NTN8036B NMN6193C RSM  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle\_860  
MHz:  $\sigma = 1.00$  mho/m  $\epsilon_r = 54.9$   $\rho = 1.07$  g/cm<sup>3</sup>  
Cube 5x5x7:SAR (1g): 0.330 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 60.0, 40.5, 4.3  
Powerdrift: -0.12 dB



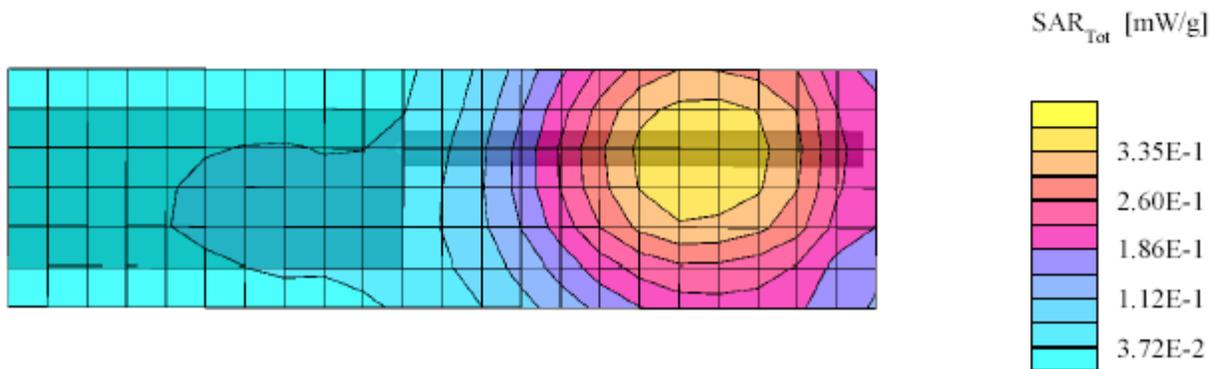
# Stingray 180mm Ant.; Test Date: 08/14/01

Run # 01081409 Run Time 27 min. 20.c Sim Temp ET  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 809.00MHz Antenna NAF5037A 1/2 wave  
Battery NTN9816A HLN9844A clip NMN6193C RSM  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle\_809  
MHz:  $\sigma = 0.96$  mho/m  $\epsilon_r = 56.2$   $\rho = 1.07$  g/cm<sup>3</sup>  
Cube 5x5x7; SAR (1g): 2.53 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 82.5, 37.5, 4.3  
Powerdrift: 1.05 dB



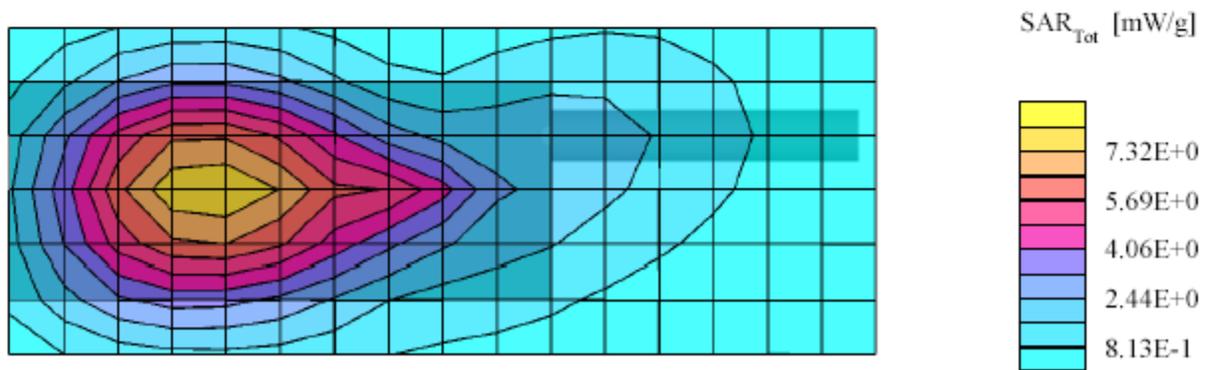
# Stingray 180mm Ant.; Test Date: 08/11/01

Run # 01081109 Run Time 27 min. 20.3.c Sim Temp JF  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 823.9875 MHz Antenna NAF5037A 1/2 wave  
Battery NTN9816A NTN8036B Holster Leather Swivel, Audio Acc RSM NMN6193C  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle\_809  
MHz:  $\sigma = 0.96$  mho/m  $\epsilon_r = 56.9$   $\rho = 1.07$  g/cm<sup>3</sup>  
Cube 5x5x7:SAR (1g): 0.359 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 72.0, 33.0, 4.3  
Powerdrift: 0.68 dB



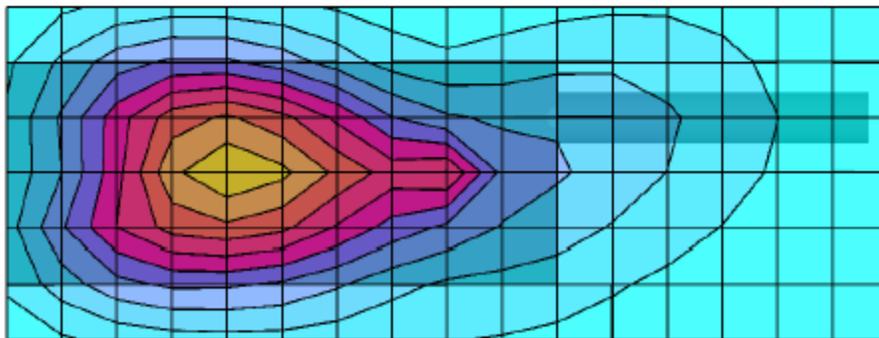
# Stingray 85mm Ant.; Test Date: 08/08/01

Run # 01080810 Run Time 23 min. 21c Sim Temp ET  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 815.00MHz Antenna NAF5042A 1/4 wave  
Battery NTN9816A NTN9844A clip NMN6259A HEADSET  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle\_809  
MHz:  $\sigma = 0.95$  mho/m  $\epsilon_r = 56.1$   $\rho = 1.07$  g/cm<sup>3</sup>  
Cube 5x5x7:SAR (1g): 7.53 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 55.5, 45.0, 4.3  
Powerdrift: -0.42 dB

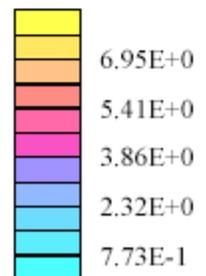


# Stingray 85mm Ant.; Test Date: 08/14/01

Run # 01081412 Run Time 23 min. 20.c Sim Temp ET  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 815.00MHz Antenna NAF5042A 1/4 wave  
Battery NTN9816A HLN9844A clip BDN6668A SPKR/MIC BDN6676D ADAPTER  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle\_809  
MHz:  $\sigma = 0.96$  mho/m  $\epsilon_r = 56.2$   $\rho = 1.07$  g/cm<sup>3</sup>  
Cube 5x5x7:SAR (1g): 6.71 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 60.0, 46.5, 4.3  
Powerdrift: -0.47 dB

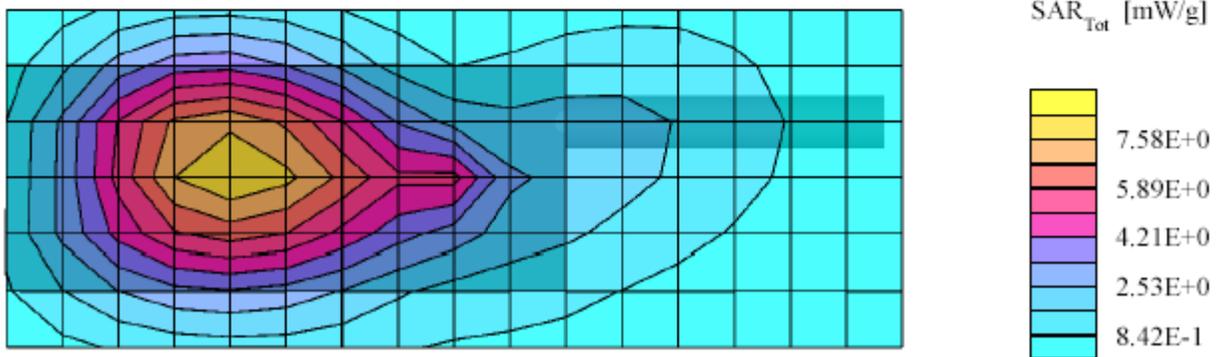


SAR<sub>Tot</sub> [mW/g]



# Stingray 85mm Ant.; Test Date: 08/14/01

Run # 01081411 Run Time 23 min. 20.c Sim Temp ET  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 815.00MHz Antenna NAF5042A 1/4 wave  
Battery NTN9816A HLN9844A clip NTN1624A BDN6676D ADAPTER  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle\_809  
MHz:  $\sigma = 0.96$  mho/m  $\epsilon_r = 56.2$   $\rho = 1.07$  g/cm<sup>3</sup>  
Cube 5x5x7:SAR (1g): 7.40 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 60.0, 48.0, 4.3  
Powerdrift: -0.62 dB



# Stingray 85mm Ant.; Test Date: 08/14/01

Run # 01081413 Run Time 23 min. 20.c Sim Temp ET

Model # H46UCH9PW7AN SN C02865741/19

TX Freq. 815.00MHz Antenna NAF5042A 1/4 wave

Battery NTN9857A HLN9844A clip NMN6193C RSM

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

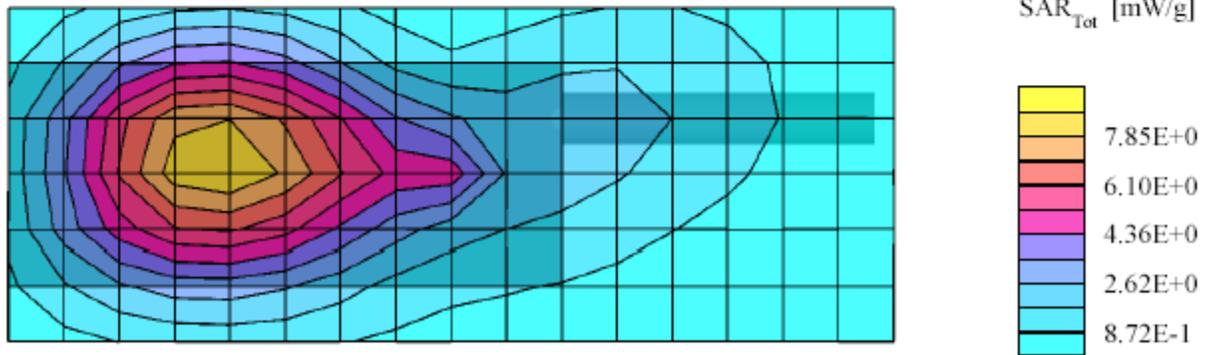
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle\_809

MHz:  $\sigma = 0.96$  mho/m  $\epsilon_r = 56.2$   $\rho = 1.07$  g/cm<sup>3</sup>

Cube 5x5x7:SAR (1g): 8.36 mW/g, (Worst-case extrapolation)

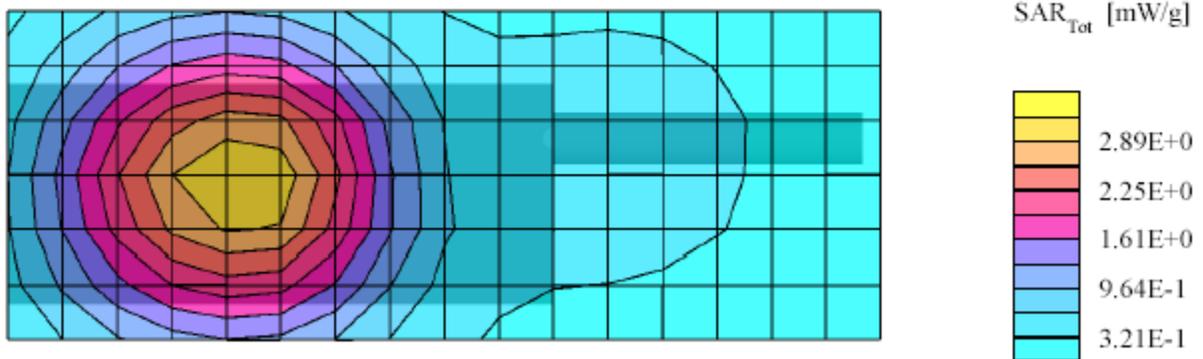
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 55.5, 49.5, 4.3

Powerdrift: -0.39 dB



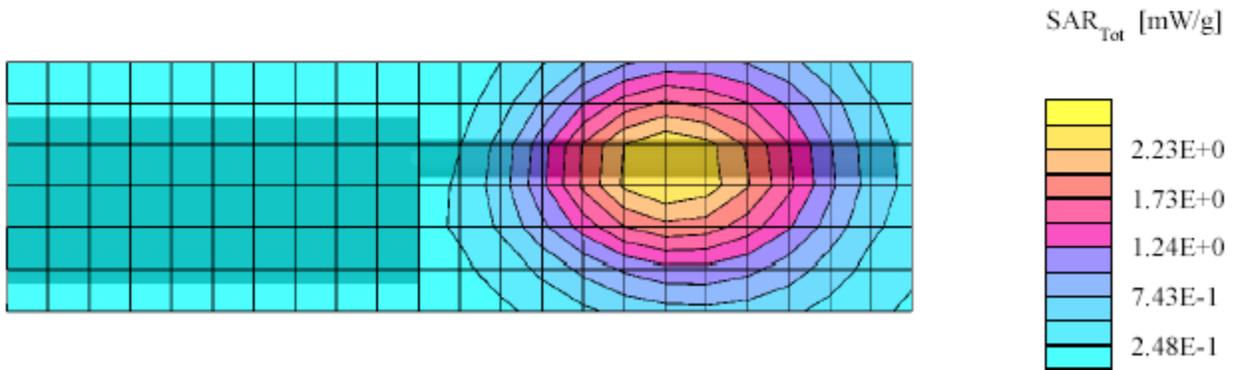
# Stingray 85mm Ant.; Test Date: 08/17/01

Run # 01081711 Run Time 23 min. 20.0c Sim Temp SW  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 815.00MHz Antenna NAF5042A 1/4 wave  
Battery NTN9857A NTN8036B leather holster NMN6193C RSM  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle\_809  
MHz:  $\sigma = 0.95$  mho/m  $\epsilon_r = 54.6$   $\rho = 1.07$  g/cm<sup>3</sup>  
Cube 5x5x7:SAR (1g): 3.25 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 66.0, 43.5, 4.3  
Powerdrift: 0.12 dB



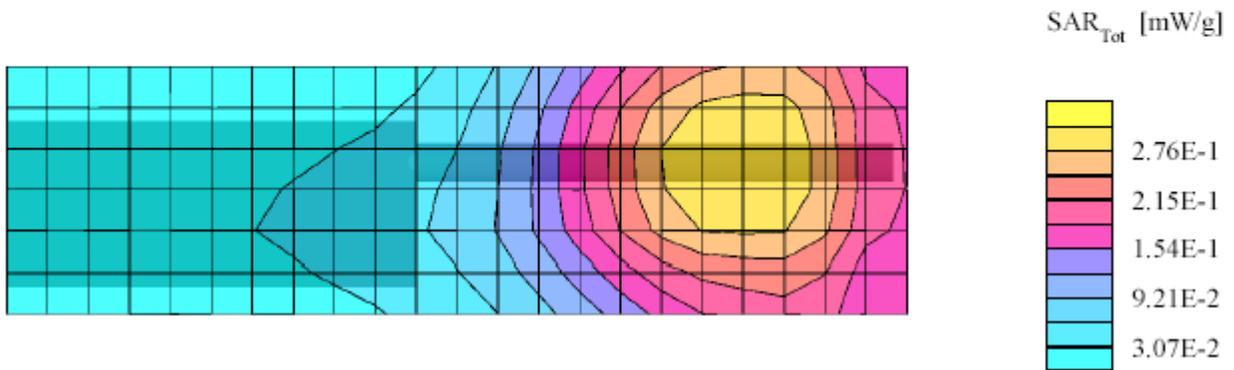
# Stingray 180mm Ant.; Test Date: 08/16/01

Run # 01081606 Run Time 27 min. 20.0c Sim Temp SW  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 806.00MHz Antenna NAF5080A 1/2 wave  
Battery NTN9857A NLN9844A Belt Clip NMN6193C RSM  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle\_809  
MHz:  $\sigma = 0.96$  mho/m  $\epsilon_r = 55.3$   $\rho = 1.07$  g/cm<sup>3</sup>  
Cube 5x5x7; SAR (1g): 2.42 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 88.5, 39.0, 4.3  
Powerdrift: 0.13 dB



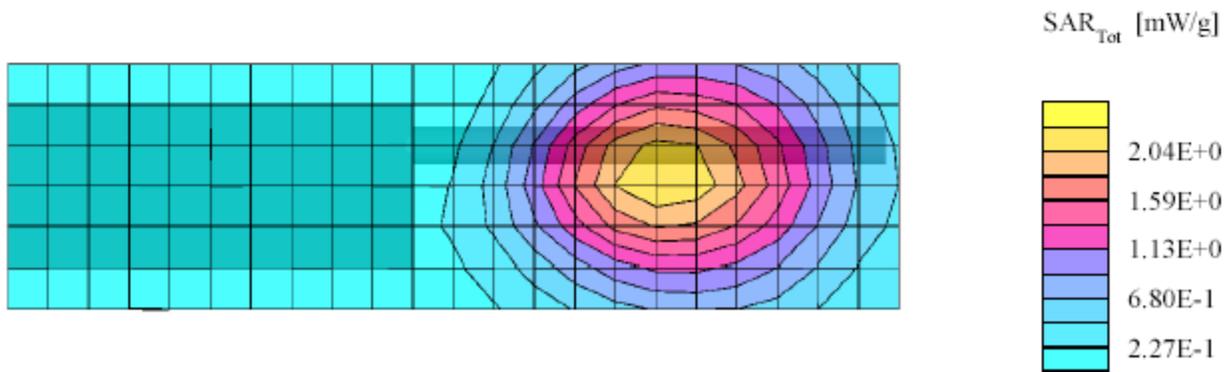
# Stingray 180mm Ant.; Test Date: 08/16/01

Run # 01081618 Run Time 27 min. 20.0c Sim Temp ET  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 815.00MHz Antenna NAF5080A 1/2 wave  
Battery NTN9857A NTN8036B leather holster NMN6193C RSM  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle\_809  
MHz:  $\sigma = 0.96$  mho/m  $\epsilon_r = 55.3$   $\rho = 1.07$  g/cm<sup>3</sup>  
Cube 5x5x7; SAR (1g): 0.302 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 66.0, 34.5, 4.3  
Powerdrift: -0.24 dB



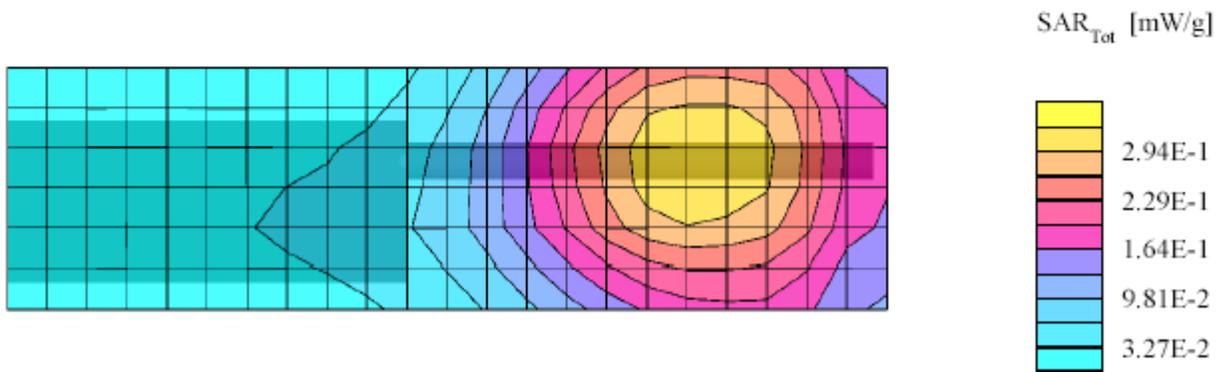
# Stingray 180mm Ant.; Test Date: 08/17/01

Run # 01081722 Run Time 26 min. 20.0c Sim Temp ET  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 806.00MHz Antenna NAF5037A 1/2 wave  
Battery NTN9857A HLN9844A beltclip NMN6193C RSM  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle\_809  
MHz:  $\sigma = 0.95$  mho/m  $\epsilon_r = 54.6$   $\rho = 1.07$  g/cm<sup>3</sup>  
Cube 5x5x7:SAR (1g): 2.18 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 87.0, 42.0, 4.3  
Powerdrift: 0.20 dB



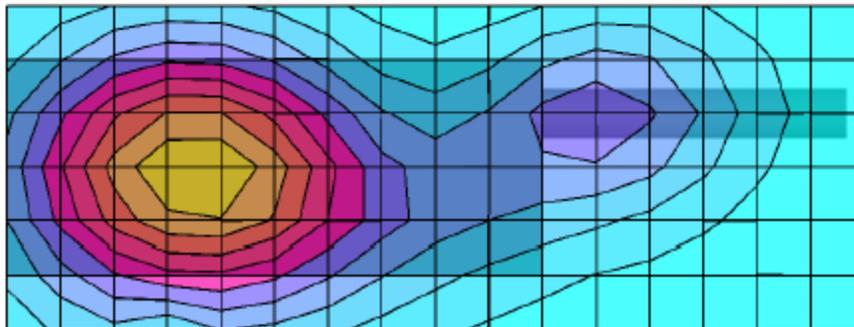
# Stingray 180mm Ant.; Test Date: 08/17/01

Run # 01081703 Run Time 27 min. 20.0c Sim Temp SW  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 809.00MHz Antenna NAF5037A 1/2 wave  
Battery NTN9857A NTN8036B leather holster NMN6193C RSM  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle\_809  
MHz:  $\sigma = 0.95$  mho/m  $\epsilon_r = 54.6$   $\rho = 1.07$  g/cm<sup>3</sup>  
Cube 5x5x7:SAR (1g): 0.314 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 75.0, 34.5, 4.3  
Powerdrift: 0.01 dB

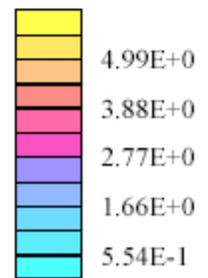


# Stingray 85mm Ant.; Test Date: 08/18/01

Run # 01081805 Run Time 23 min. 20.6c Sim Temp SW  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 815.00MHz Antenna NAF5042A 1/4 wave  
Battery NTN9816A NMN6193C RSM  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle\_860  
MHz:  $\sigma = 1.00$  mho/m  $\epsilon_r = 53.9$   $\rho = 1.07$  g/cm<sup>3</sup>  
Cube 5x5x7:SAR (1g): 5.18 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 54.0, 43.5, 4.3  
Powerdrift: -2.62 dB



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



# Stingray 85mm Ant.; Test Date: 08/09/01

Run # 01080906 Run Time 22min. 21c Sim Temp ET

Model # H46UCH9PW7AN SN C02865741/19

TX Freq. 869.00MHz Antenna NAF5042A 1/4 wave

Battery NTN9816A Mic @ 2.5mm from phantom.

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

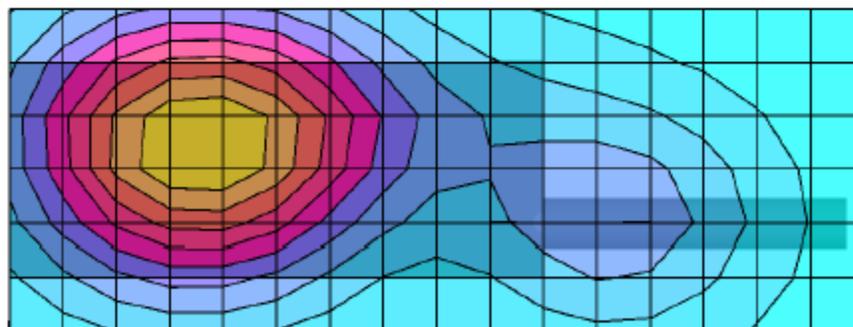
Probe: ET3DV6 - SN1383; ConvF(6.53,6.53,6.53); Probe cal date: 05/23/01; Crest factor: 1.0; IEEE Head\_860

MHz:  $\sigma = 0.94$  mho/m  $\epsilon_r = 42.1$   $\rho = 1.04$  g/cm<sup>3</sup>

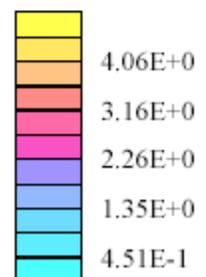
Cube 5x5x7:SAR (1g): 4.64 mW/g. (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 54.0, 51.0, 4.3

Powerdrift: -0.02 dB

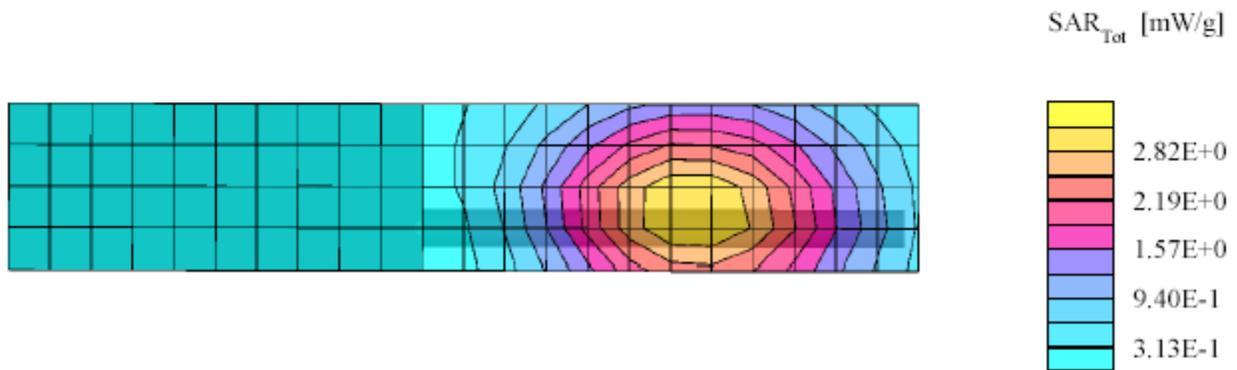


SAR<sub>Tot</sub> [mW/g]



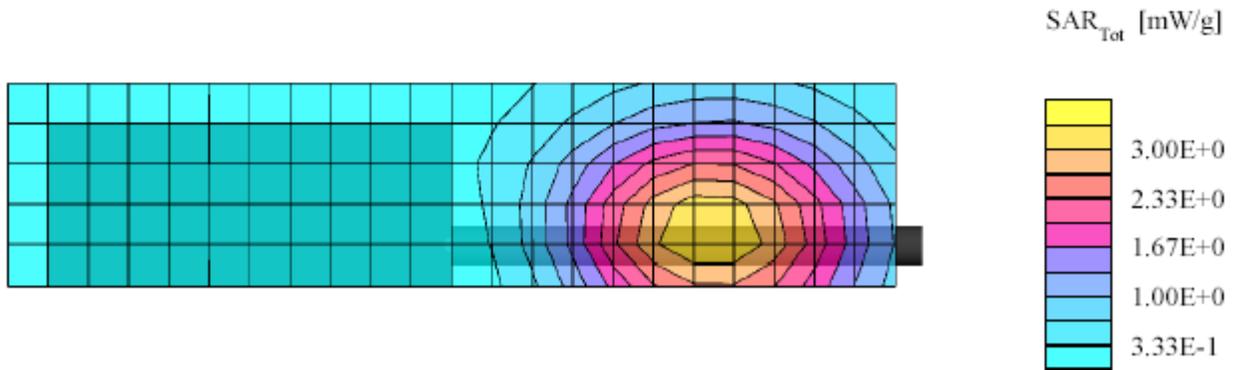
# Stingray 180mm Ant.; Test Date: 08/13/01

Run # 01081306 Run Time 26 min. 20.c Sim Temp ET  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 809.00MHz Antenna NAF5080A 1/2 wave  
Battery NTN9816A @2.5cm from mic to phantom  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
Probe: ET3DV6 - SN1383; ConvF(6.53,6.53,6.53); Probe cal date: 05/23/01; Crest factor: 1.0; IEEE HEAD 809  
MHz:  $\sigma = 0.90$  mho/m  $\epsilon_r = 42.7$   $\rho = 1.04$  g/cm<sup>3</sup>  
Cube 5x5x7:SAR (1g): 3.15 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 81.0, 37.5, 4.3  
Powerdrift: 0.23 dB



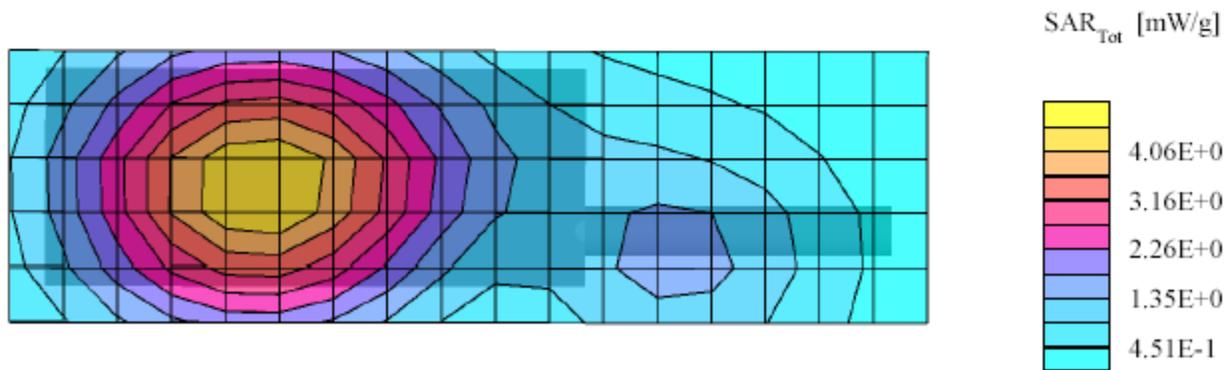
# Stingray 180mm Ant.; Test Date: 08/10/01

Run # 01081005 Run Time 23min. 21c Sim Temp SW  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 815.00MHz Antenna NAF5037A 1/2 wave  
Battery NTN9816A Mic @ 2.5mm from phantom.  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
Probe: ET3DV6 - SN1383; ConvF(6.53,6.53,6.53); Probe cal date: 05/23/01; Crest factor: 1.0; IEEE Head\_809  
MHz:  $\sigma = 0.88$  mho/m  $\epsilon_r = 41.9$   $\rho = 1.04$  g/cm<sup>3</sup>  
Cube 5x5x7:SAR (1g): 3.31 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 69.0, 55.5, 4.3  
Powerdrift: 0.16 dB



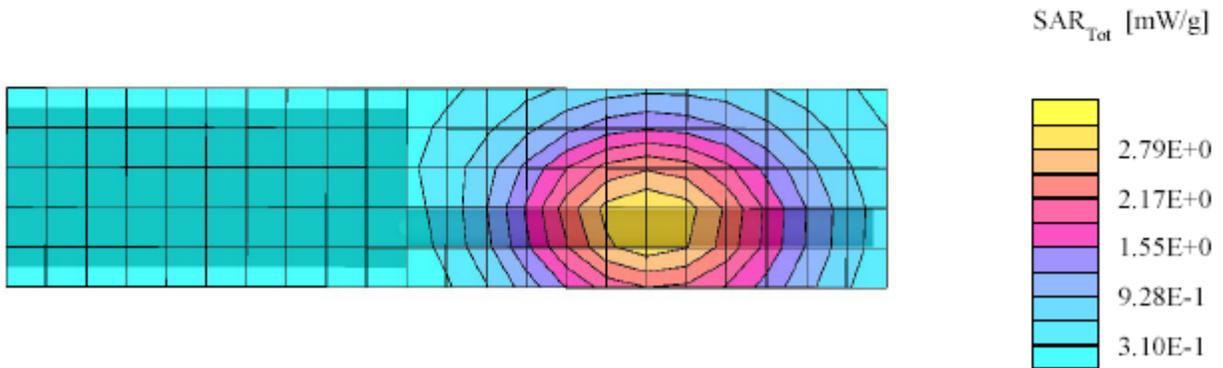
# Stingray 85mm Ant.; Test Date: 08/20/01

Run # 01082007 Run Time 23 min. 21.c Sim Temp SW  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 860.00MHz Antenna NAF5042A 1/4 wave  
Battery NTN9857A @2.5cm from mic to phantom  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
Probe: ET3DV6 - SN1383; ConvF(6.53,6.53,6.53); Probe cal date: 05/23/01; Crest factor: 1.0; IEEE Head\_860  
MHz:  $\sigma = 0.94$  mho/m  $\epsilon_r = 41.6$   $\rho = 1.04$  g/cm<sup>3</sup>  
Cube 5x5x7: SAR (1g): 4.60 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 184.5, 39.0, 4.3  
Powerdrift: 0.14 dB



# Stingray 180mm Ant.; Test Date: 08/20/01

Run # 01082016 Run Time 26 min. 21.c Sim Temp ET  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq. 824.00MHz Antenna NAF5080A 1/2 wave  
Battery NTN9857A @2.5cm from mic to phantom  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
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  $\epsilon_r = 42.2$   $\rho = 1.04$  g/cm<sup>3</sup>  
Cube 5x5x7:SAR (1g): 3.07 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 90.0, 49.5, 4.3  
Powerdrift: 0.17 dB



# Stingray 180mm Ant.; Test Date: 08/21/01

Run # 01082025 Run Time 26 min. 21.c Sim Temp ET  
Model # H46UCH9PW7AN SN C02865741/19  
TX Freq.809.00MHz Antenna NAF5037A 1/2 wave  
Battery NTN9857A @2.5cm from mic to phantom  
Flat Phantom Phantom; Radio Section; Position: (90°,0°);  
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  $\epsilon_r = 42.2$   $\rho = 1.04$  g/cm<sup>3</sup>  
Cube 5x5x7:SAR (1g): 3.43 mW/g, (Worst-case extrapolation)  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 82.5, 49.5, 4.3  
Powerdrift: 0.25 dB

