



Certificate Number: 1449-02



MOTOROLA

**ELECTROMAGNETIC EXPOSURE (EME)
TESTING LABORATORY**

8000 West Sunrise Blvd.
Fort-Lauderdale, Florida

**S.A.R. TEST REPORT
(APPENDIX A)
FCC ID: AZ489FT5804
H46UCH9PW7AN**

August 23, 2001 - Rev. O

Tested By:	Eric Trosper SAR Test Technician
Tested By:	Stephen Whalen Senior Engineer
Tested and Prepared By:	Jim Fortier Lead Engineer
Reviewed and Approved By:	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°);

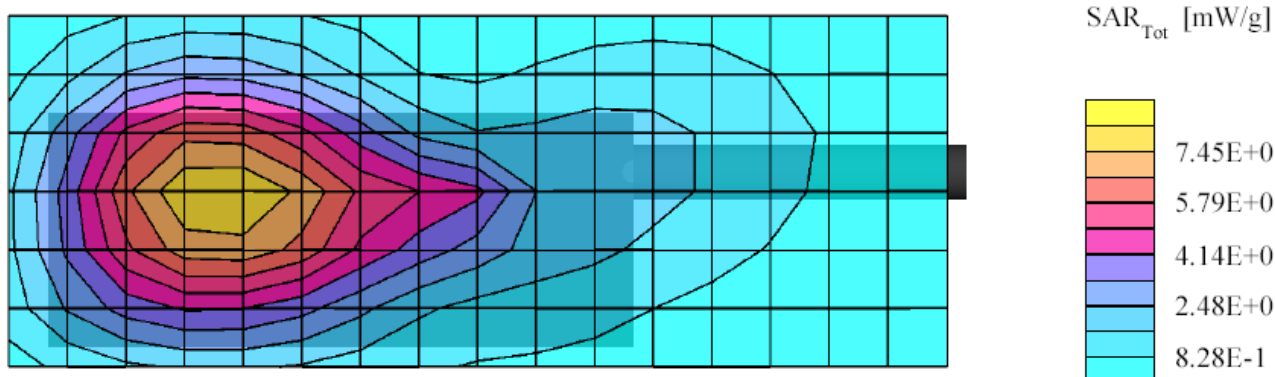
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle_809

MHz: $\sigma = 0.96$ mho/m $\epsilon_r = 55.6$ $\rho = 1.07$ g/cm³

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°);

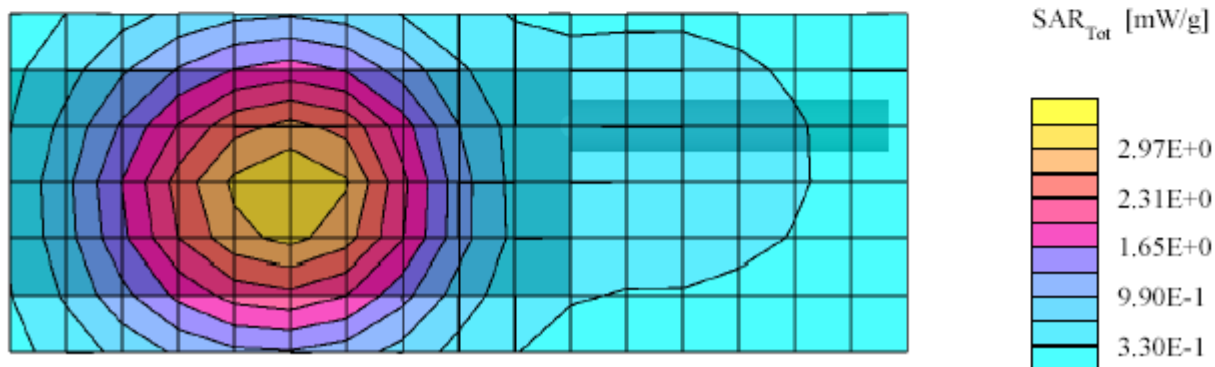
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle_809

MHz: $\sigma = 0.99$ mho/m $\epsilon_r = 57.4$ $\rho = 1.07$ g/cm³

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°);

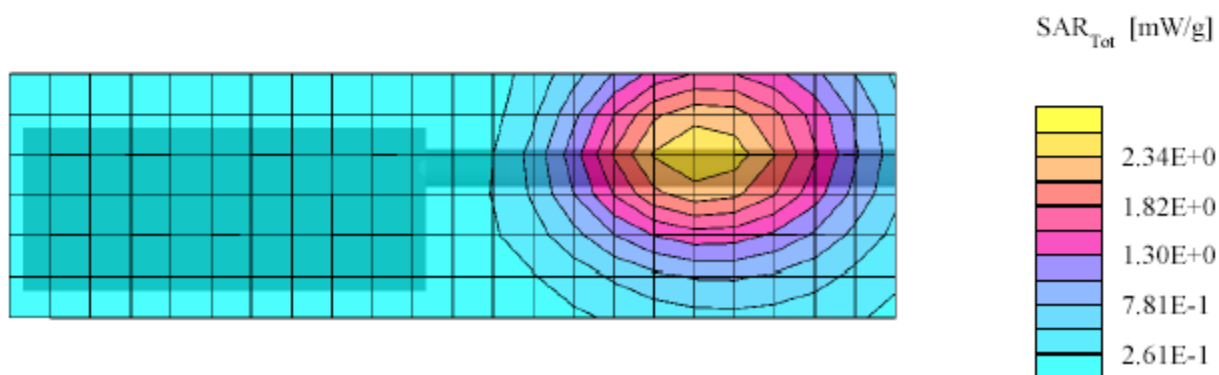
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle_809

MHz: $\sigma = 0.99$ mho/m $\epsilon_r = 57.4$ $\rho = 1.07$ g/cm³

Cube 5x5x7; SAR (1g): 2.44 mW/g, (Worst-case extrapolation)

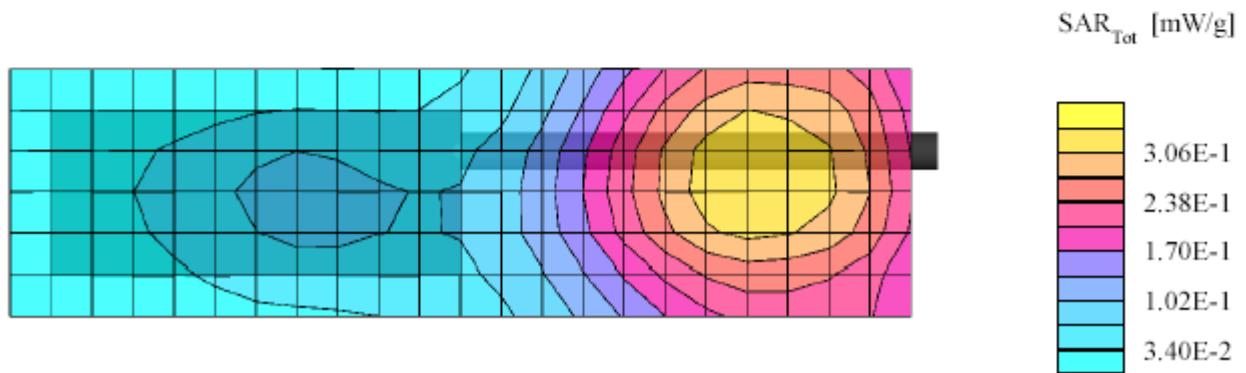
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 73.5, 30.0, 4.3

Powerdrift: 0.53 dB



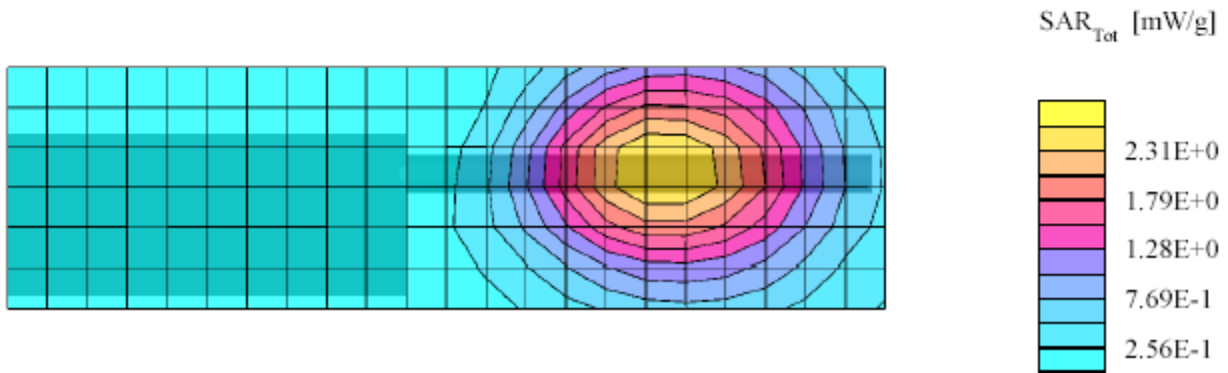
Stingray 180mm Ant.; Test Date: 08/09/01

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/cm³
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



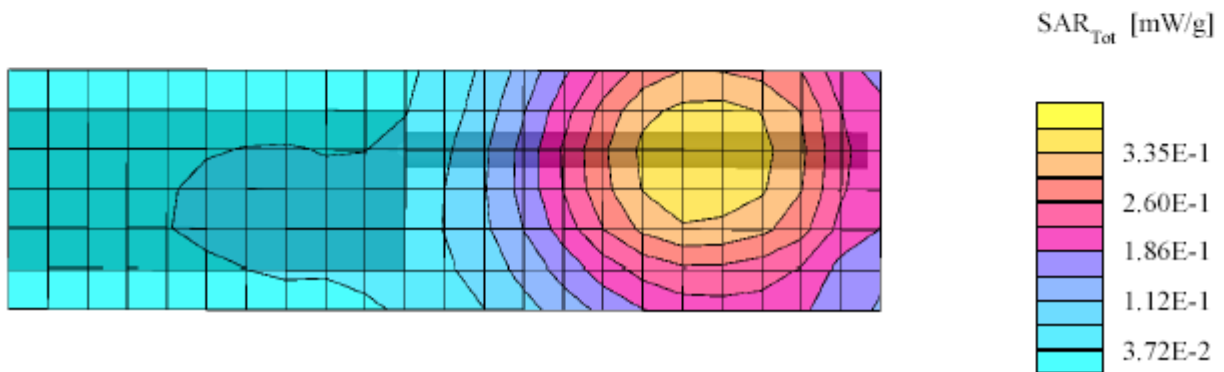
Stingray 180mm Ant.; Test Date: 08/14/01

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/cm³
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



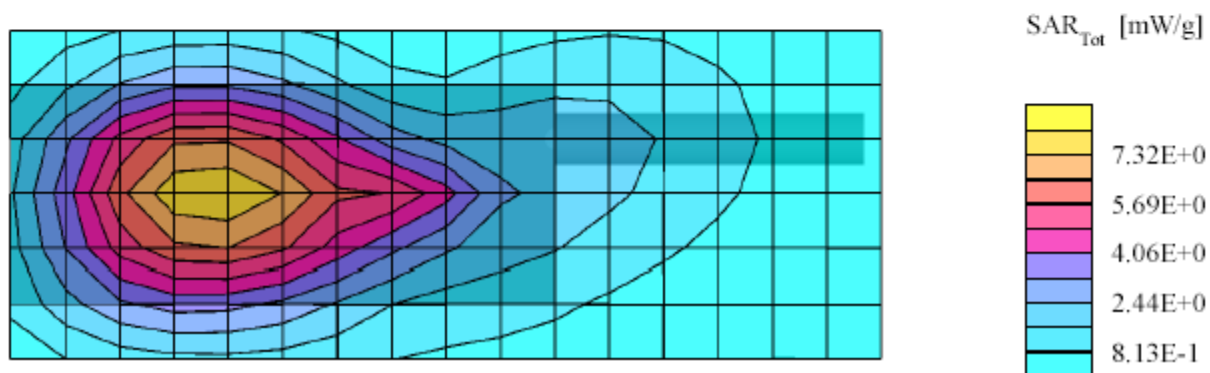
Stingray 180mm Ant.; Test Date: 08/11/01

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/cm³
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



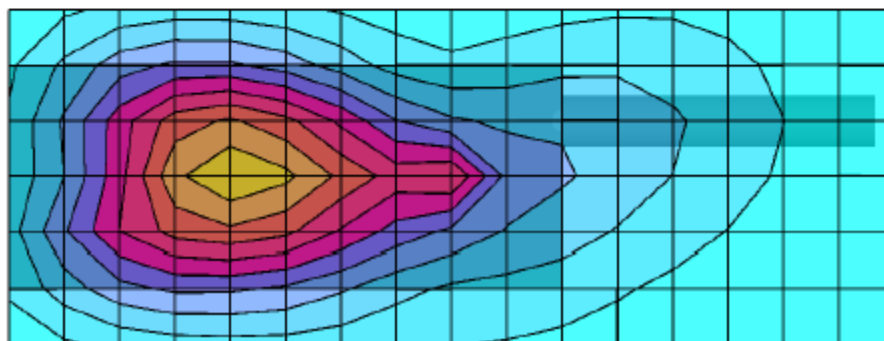
Stingray 85mm Ant.; Test Date: 08/08/01

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/cm³
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

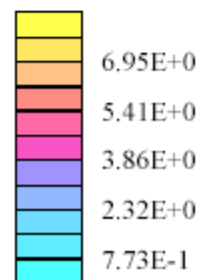


Stingray 85mm Ant.; Test Date: 08/14/01

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/cm³
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

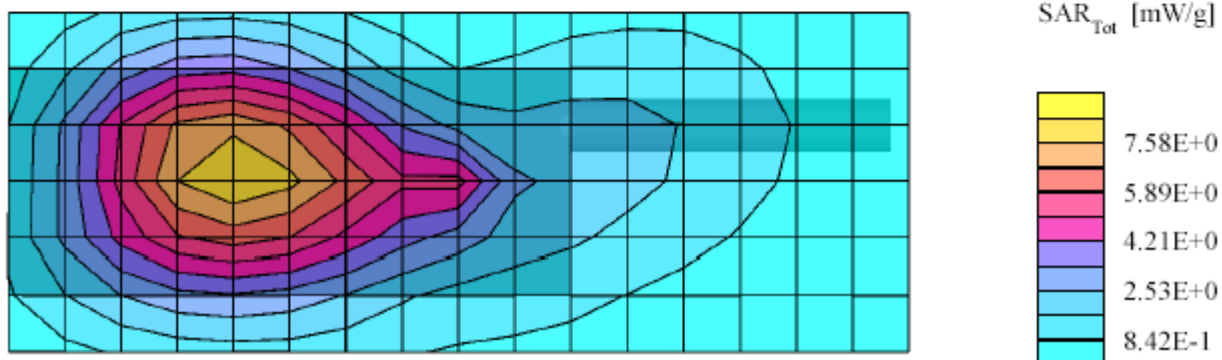


SAR_{Tot} [mW/g]



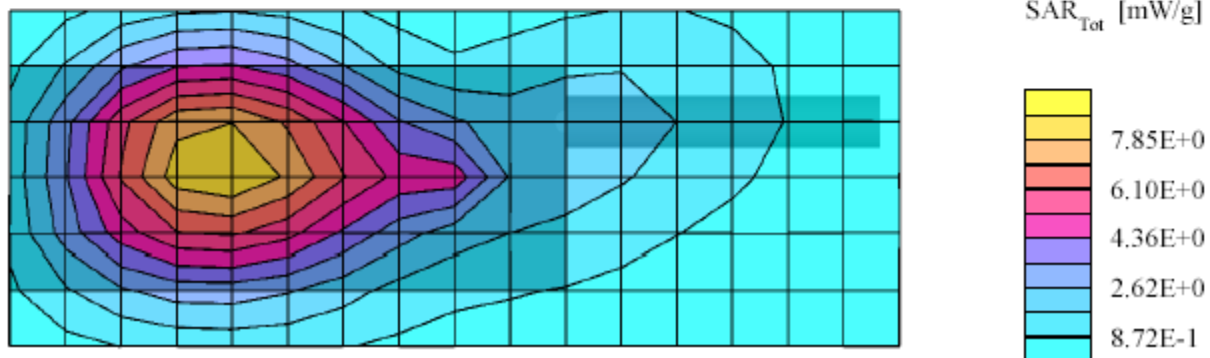
Stingray 85mm Ant.; Test Date: 08/14/01

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/cm³
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



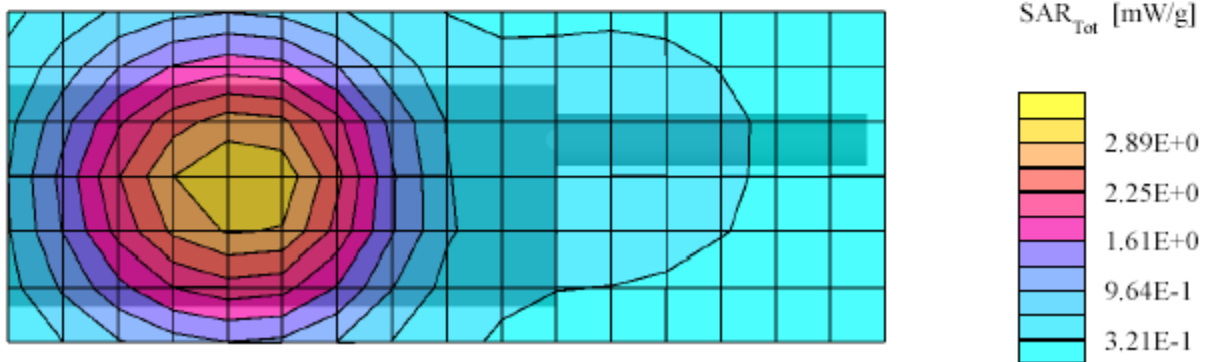
Stingray 85mm Ant.; Test Date: 08/14/01

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/cm³
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



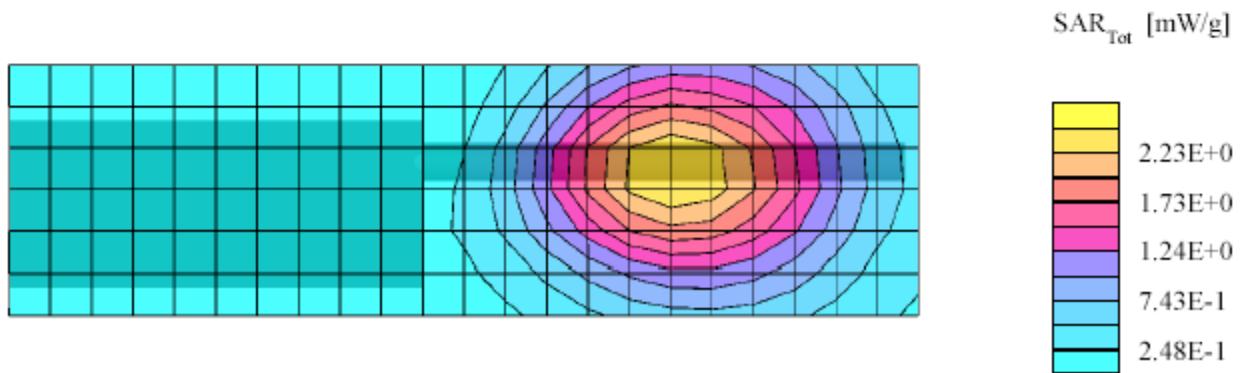
Stingray 85mm Ant.; Test Date: 08/17/01

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/cm³
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



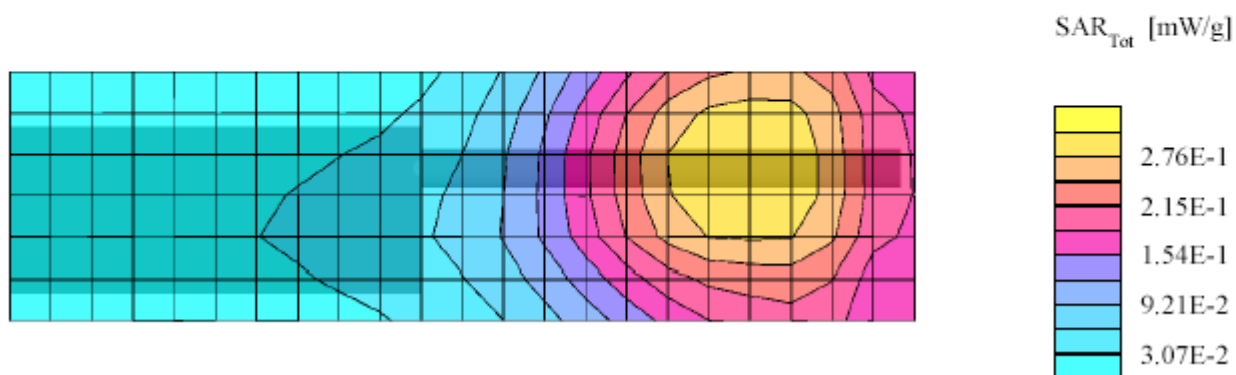
Stingray 180mm Ant.; Test Date: 08/16/01

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/cm³
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



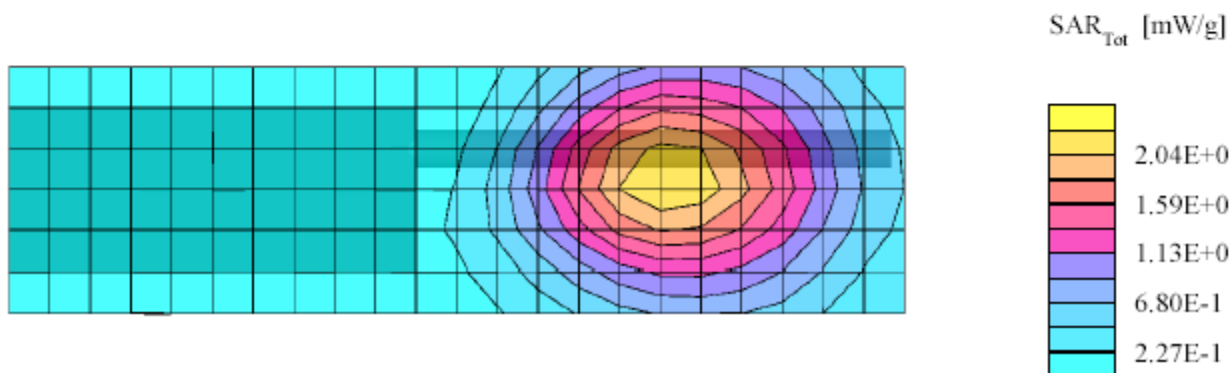
Stingray 180mm Ant.; Test Date: 08/16/01

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/cm³
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



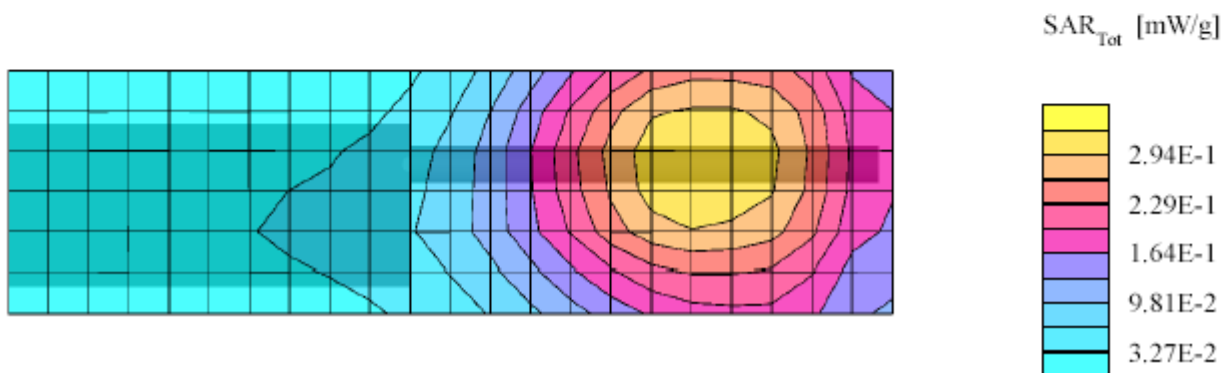
Stingray 180mm Ant.; Test Date: 08/17/01

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/cm³
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/cm³
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°);

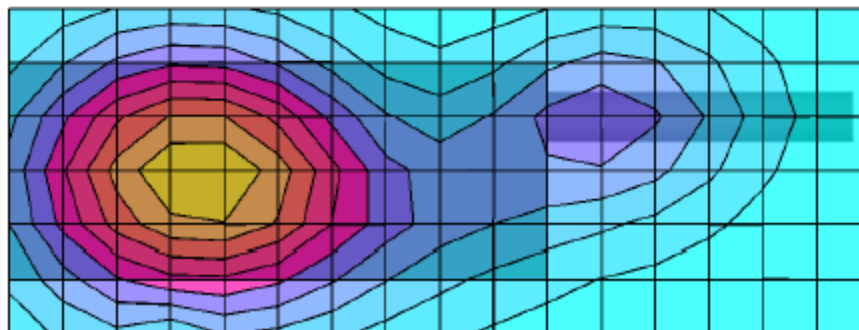
Probe: ET3DV6 - SN1383; ConvF(6.30,6.30,6.30); Probe cal date: 05/23/01; Crest factor: 1.0; FCC Muscle_860

MHz: $\sigma = 1.00$ mho/m $\epsilon_r = 53.9$ $\rho = 1.07$ g/cm³

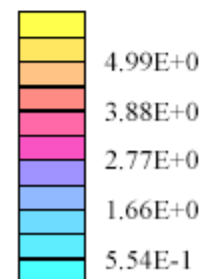
Cube 5x5x7; SAR (1g): 5.18 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 54.0, 43.5, 4.3

Powerdrift: -2.62 dB



SAR_{Tot} [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°);

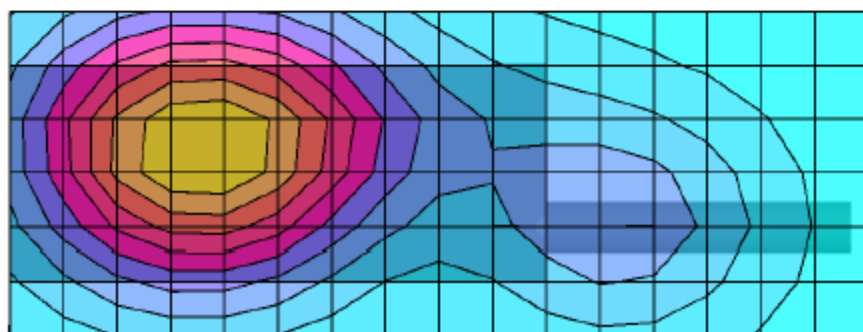
Probe: ET3DV6 - SN1383; ConvF(6.53,6.53,6.53); Probe cal date: 05/23/01; Crest factor: 1.0; IEEE Head_860

MHz: $\sigma = 0.94$ mho/m $\epsilon_r = 42.1$ $\rho = 1.04$ g/cm³

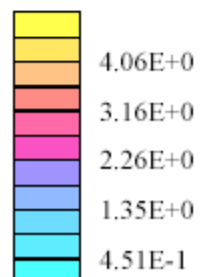
Cube 5x5x7:SAR (1g): 4.64 mW/g, (Worst-case extrapolation)

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

Powerdrift: -0.02 dB



SAR_{Tot} [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°);

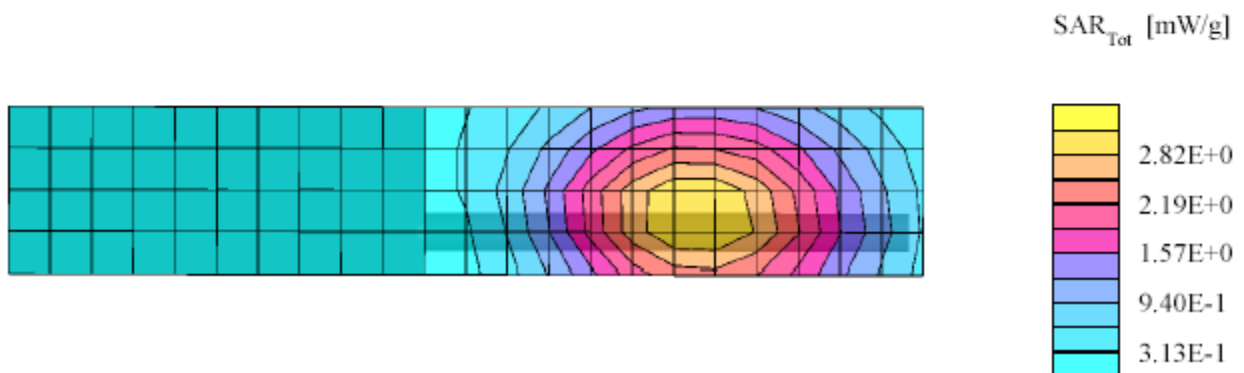
Probe: ET3DV6 - SN1383; ConvF(6.53,6.53,6.53); Probe cal date: 05/23/01; Crest factor: 1.0; IEEE HEAD 809

MHz: $\sigma = 0.90$ mho/m $\epsilon_r = 42.7$ $\rho = 1.04$ g/cm³

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°);

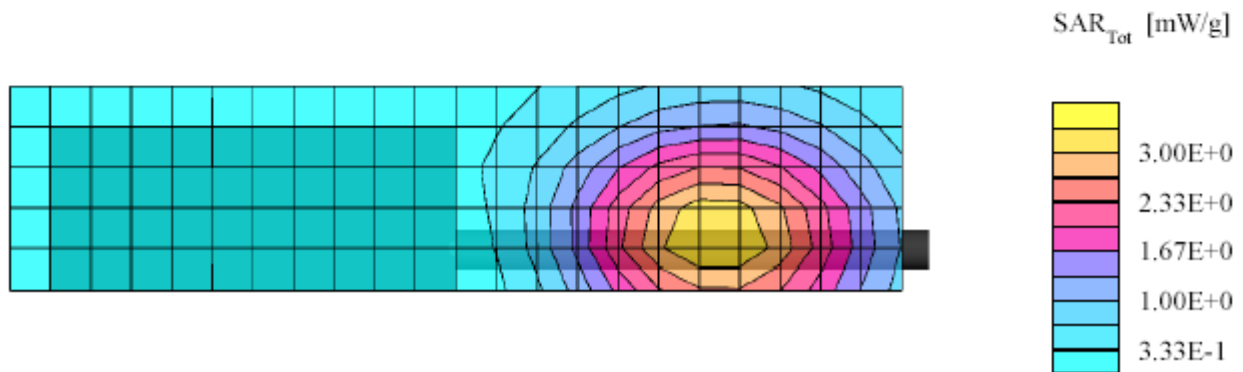
Probe: ET3DV6 - SN1383; ConvF(6.53,6.53,6.53); Probe cal date: 05/23/01; Crest factor: 1.0; IEEE Head_809

MHz: $\sigma = 0.88$ mho/m $\epsilon_r = 41.9$ $\rho = 1.04$ g/cm³

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°);

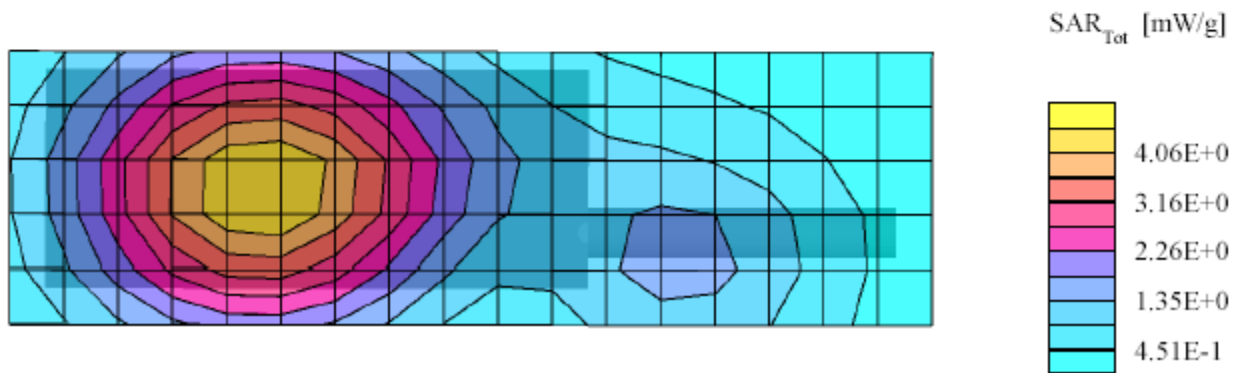
Probe: ET3DV6 - SN1383; ConvF(6.53,6.53,6.53); Probe cal date: 05/23/01; Crest factor: 1.0; IEEE Head_860

MHz: $\sigma = 0.94$ mho/m $\epsilon_r = 41.6$ $\rho = 1.04$ g/cm³

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°);

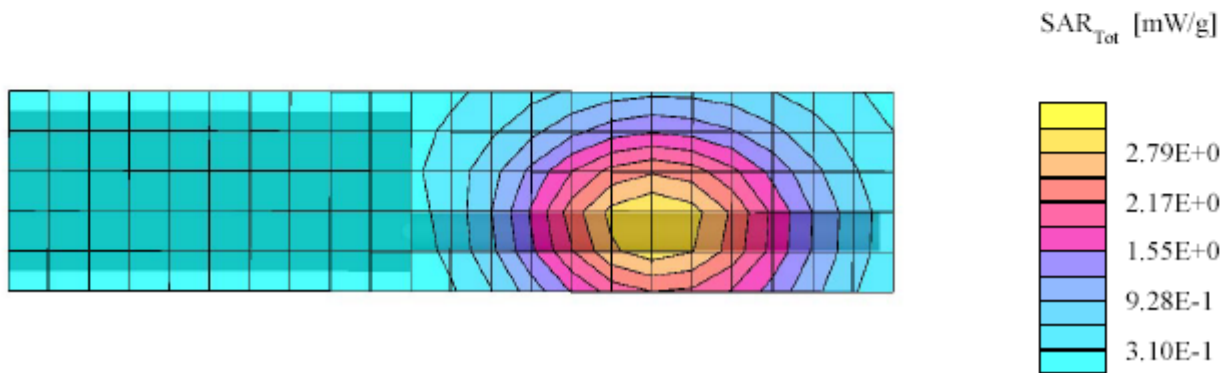
Probe: ET3DV6 - SN1383; ConvF(6.53,6.53,6.53); Probe cal date: 05/23/01; Crest factor: 1.0; IEEE Head_809

MHz: $\sigma = 0.89$ mho/m $\epsilon_r = 42.2$ $\rho = 1.04$ g/cm³

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/cm³

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

