



Certificate Number: 1449-02



MOTOROLA

**ELECTROMAGNETIC EXPOSURE (EME)
TESTING LABORATORY**

8000 West Sunrise Blvd.
Fort-Lauderdale, Florida

**S.A.R. TEST REPORT
(APPENDIX A & B)
FCC ID: AZ489FT5817
H18UCH9PW7AN**

August 17, 2001 - Rev. O

Tested By:	Andy Gessner, Pat Lomax SAR Test Technicians
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

XTS 5000; Test Date: 08/06/01

Product: XTS5000 Start Time:10:32 End Time:10:58

Run Number: 010806-02 Start Power:3.53 End Power:3.39

Model: H18UCH9PW7 Sn: 02444463

TX FREQ: 806.0000MHz ANTENNA Position: FIXED

Accessories: Antenna(NAF5042A), Battery(NTN8294B), Beltclip(NTN8266B), RSM(NMN6193C)

Antenna Distance from Phantom Surface: A(base)22mm B(center):26mm C(tip):21mm

Room Temp:25 Liquid Temp:22.1

PROBE CAL DATE: 010316

PatrickL

Flat Phantom No Boundary Phantom; Radio Section; Position: (90°,90°);

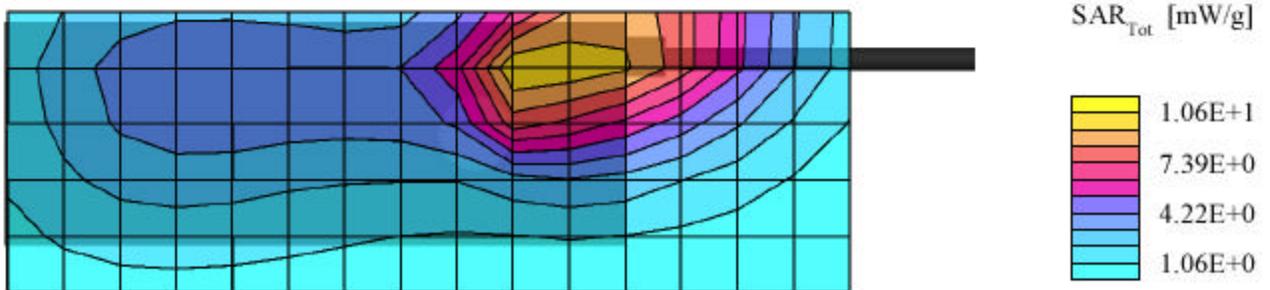
Probe: ET3DV6R - SN1417; ConvF(5.90,5.90,5.90); Probe cal date: 16/03/01; Crest factor: 1.0; 835Body: $\sigma = 0.98$

mho/m $\epsilon_r = 55.9$ $\rho = 1.00$ g/cm³

Cube 5x5x7; SAR (1g): 10.5 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 15.0, 139.5, 4.5

Powerdrift: -0.07 dB



XTS 5000; Test Date: 08/10/01

Product: XTS5000

Date: 010810

Run Number: 010810-15

Run Time: (18 min)

Model: H18UCH9PW7

Sn: 02444463

TX FREQ:806MHz

ANTENNA Position: FIXED

Accessories: Antenna(NAF5042A), Battery(NTN8294B),CarryCaseip(NTN8381B) Audio (NMN6193C)

Antenna Distance from Phantom Surface: A(base)65mm B(center):74mm C(tip):80mm

START POWER:3.55W END POWER:3.40W

Room Temp:23.5 Liquid Temp:23.5

PROBE CAL DATE: 010316

PatrickL

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

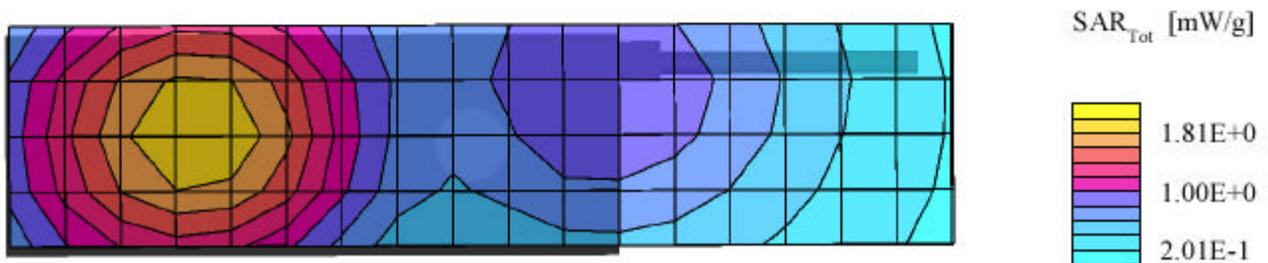
Probe: ET3DV6R - SN1417; ConvF(5.90,5.90,5.90); Probe cal date: 16/03/01; Crest factor: 1.0; 809Body: $\sigma = 0.97$

mho/m $\epsilon_r = 56.3$ $\rho = 1.00$ g/cm³

Cube 5x5x7; SAR (1g): 2.03 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 51.0, 31.5, 4.5

Powerdrift: -0.45 dB



XTS 5000 17.5cm Ant-Body; Test Date: 08/07/01

Product: XTS5000

Date: 010807

Run Number: 010807-07

Run Time: 15min

Model: H18UCH9PW7

Sn: 02444463

TX FREQ: 809.0000Hz

ANTENNA Position: FIXED

Accessories: Antenna(NAF5080A), Battery(NTN8294B), Beltclip(NTN8266B), RSM(NMN6193C)

Antenna Distance from Phantom Surface: A(base)21mm B(center):31mm C(tip):37mm

START POWER:3.58W END POWER:3.46W

Room Temp:23.9 Liquid Temp:22.6

PROBE CAL DATE: 010316

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

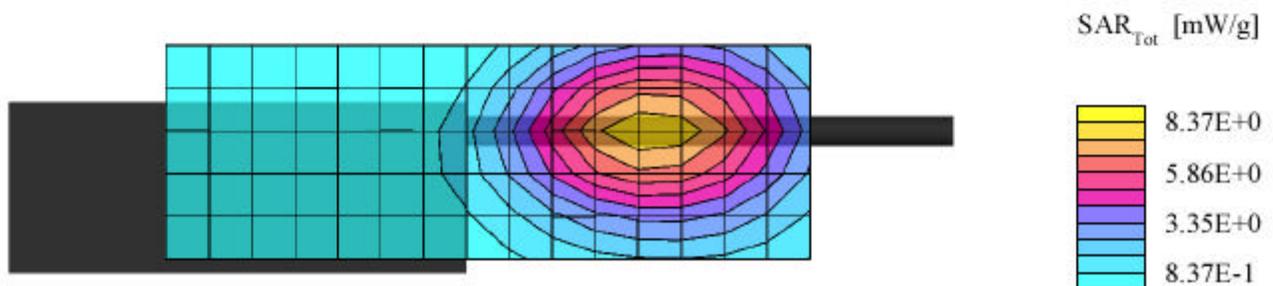
Probe: ET3DV6R - SN1417; ConvF(5.90,5.90,5.90); Probe cal date: 16/03/01; Crest factor: 1.0; 860Body: $\sigma = 0.97$

$\text{mho/m } \epsilon_r = 55.2 \rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 7.60 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 169.5, 45.0, 4.5

Powerdrift: -0.79 dB



XTS 5000; Test Date: 08/09/01

Product: XTS5000

Date: 010810

Run Number: 010810-09

Run Time: (18 min)

Model: H18UCH9PW7

Sn: 02444463

TX FREQ: 815MHz

ANTENNA Position: FIXED

Accessories: Antenna(NAF5080A), Battery(NTN8294B), CarryCaseip(NTN8381B) Audio (NMN6193C)

Antenna Distance from Phantom Surface: A(base)73mm B(center):99mm C(tip):120mm

START POWER:3.52W END POWER:3.37W

Room Temp:23.5 Liquid Temp:23.5

PROBE CAL DATE: 010316

PatrickL

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

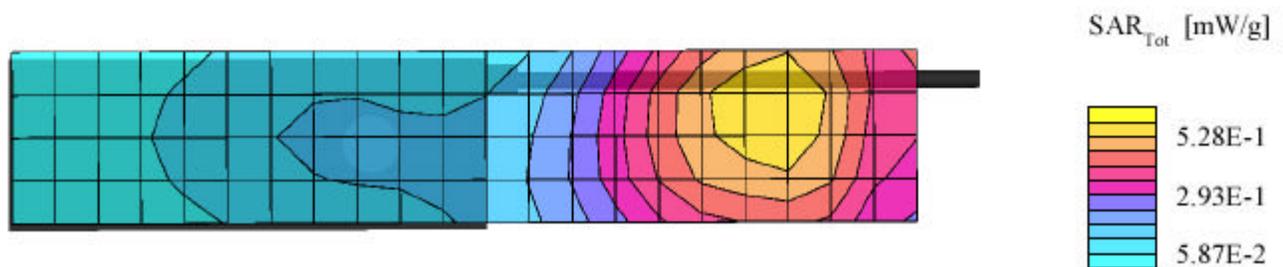
Probe: ET3DV6R - SN1417; ConvF(5.90,5.90,5.90); Probe cal date: 16/03/01; Crest factor: 1.0; 809Body: $\sigma = 0.97$

mho/m $\epsilon_r = 55.9$ $\rho = 1.00$ g/cm³

Cube 5x5x7:SAR (1g): 0.564 mW/g, (Worst-case extrapolation)

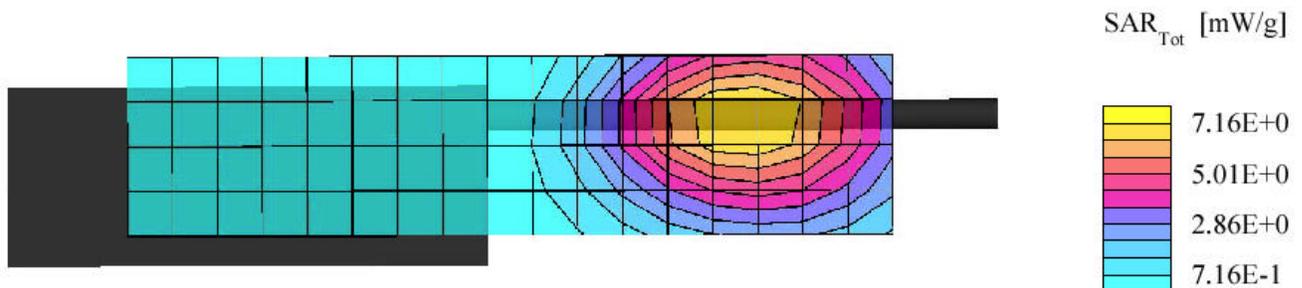
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 267.0, 42.0, 4.5

Powerdrift: -0.28 dB



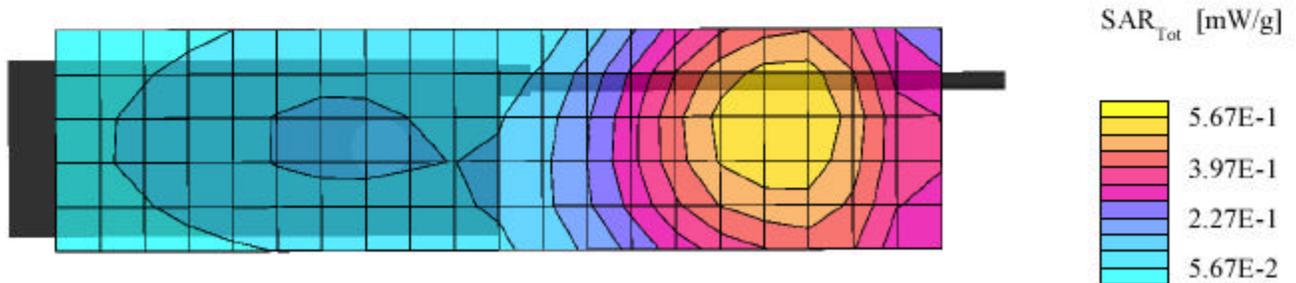
XTS 5000 17.5cm Ant-Body; Test Date: 08/10/01

Product: XTS5000 Date: 010810
Run Number: 010810-08a Run Time: (16 min)
Model: H18UCH9PW7 Sn: 02444463
TX FREQ:823.9875MHz ANTENNA Position: FIXED
Accessories: Antenna(NAF5037A), Battery(NTN8294B),CarryCaseip(NTN8266B) Audio (NMN6193C)
Antenna Distance from Phantom Surface: A(base)22mm B(center):32mm C(tip):45mm
START POWER:3.44W END POWER:3.21W
Room Temp:23.7 Liquid Temp:22.6
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; 809Body: $\sigma = 0.97$
mho/m $\epsilon_r = 55.9$ $\rho = 1.00$ g/cm³
Cube 5x5x7;SAR (1g): 7.26 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 205.5, 39.0, 4.5
Powerdrift: -0.17 dB



XTS 5000; Test Date: 08/10/01

Product: XTS5000 Date: 010810
Run Number: 010810-15 Run Time: (19 min)
Model: H18UCH9PW7 Sn: 02444463
TX FREQ:824MHz ANTENNA Position: FIXED
Accessories: Antenna(NAF5037A), Battery(NTN8294B),CarryCase(NTN8381B) Audio (NMN6193C)
Antenna Distance from Phantom Surface: A(base):47mm B(center):52mm C(tip):60mm
START POWER:3.57W END POWER:3.45W
Room Temp:23.7 Liquid Temp:22.6
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; 809Body: $\sigma = 0.97$
mho/m $\epsilon_r = 55.2$ $\rho = 1.00$ g/cm³
Cube 5x5x7:SAR (1g): 0.548 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 249.0, 43.5, 4.5
Powerdrift: -0.19 dB



XTS 5000; Test Date: 08/11/01

Product: XTS5000

Date: 010810

Run Number: 010810-20

Run Time: (18 min)

Model: H18UCH9PW7

Sn: 02444463

TX FREQ:806MHz

ANTENNA Position: FIXED

Accessories: Antenna(NAF5042A), Battery(NTN8294B), CarryCase(NTN8266B) Audio (NMN6259A)

Antenna Distance from Phantom Surface: A(base)22mm B(center):26mm C(tip):23mm

START POWER:3.55W END POWER:3.42W

Room Temp:23.7 Liquid Temp:22.6

PROBE CAL DATE: 010316

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

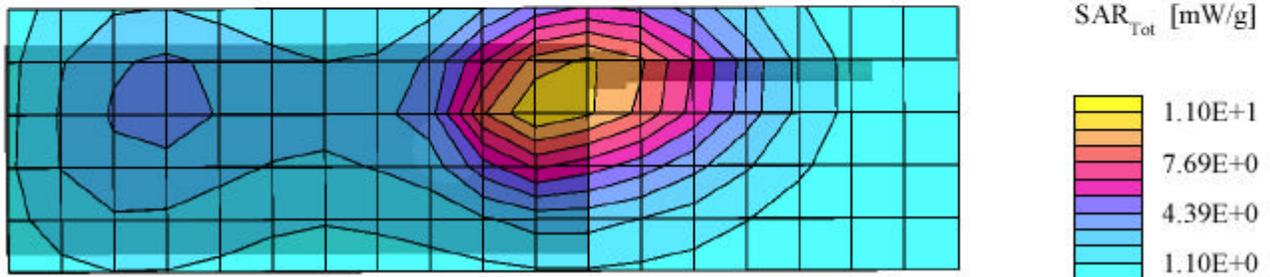
Probe: ET3DV6R - SN1417; ConvF(5.90,5.90,5.90); Probe cal date: 16/03/01; Crest factor: 1.0; 809Body: $\sigma = 0.97$

$\text{mho/m } \epsilon_r = 55.2 \rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7:SAR (1g): 10.9 mW/g, (Worst-case extrapolation)

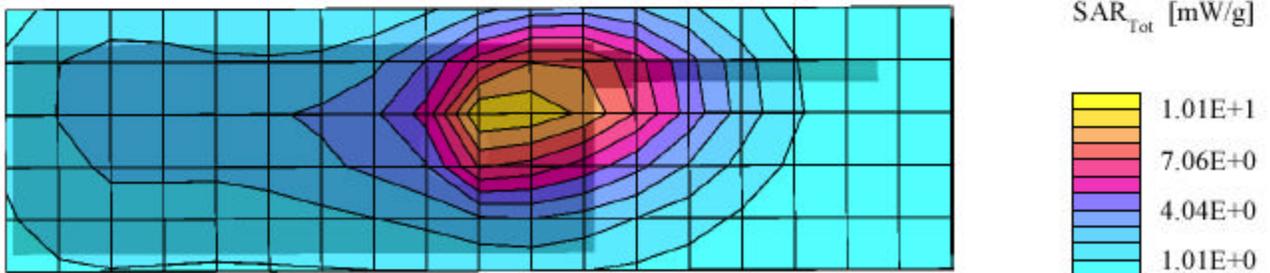
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 153.0, 48.0, 4.5

Powerdrift: -0.11 dB



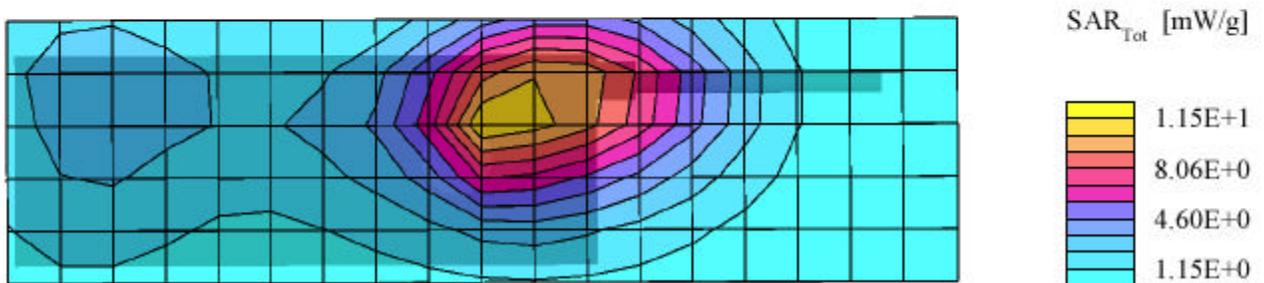
XTS 5000; Test Date: 08/11/01

Product: XTS5000 Date: 010810
Run Number: 010810-21 Run Time: (18 min)
Model: H18UCH9PW7 Sn: 02444463
TX FREQ:806MHz ANTENNA Position: FIXED
Accessories: Antenna(NAF5042A), Battery(NTN8294B),CarryCase(NTN8266B) Audio (BDN6668A)
Antenna Distance from Phantom Surface: A(base)22mm B(center):26mm C(tip):23mm
START POWER:3.56W END POWER:3.43W
Room Temp:23.7 Liquid Temp:22.6
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; 809Body: $\sigma = 0.97$
mho/m $\epsilon_r = 55.2$ $\rho = 1.00$ g/cm³
Cube 5x5x7:SAR (1g): 9.80 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 141.0, 45.0, 4.5
Powerdrift: -0.19 dB



XTS 5000; Test Date: 08/11/01

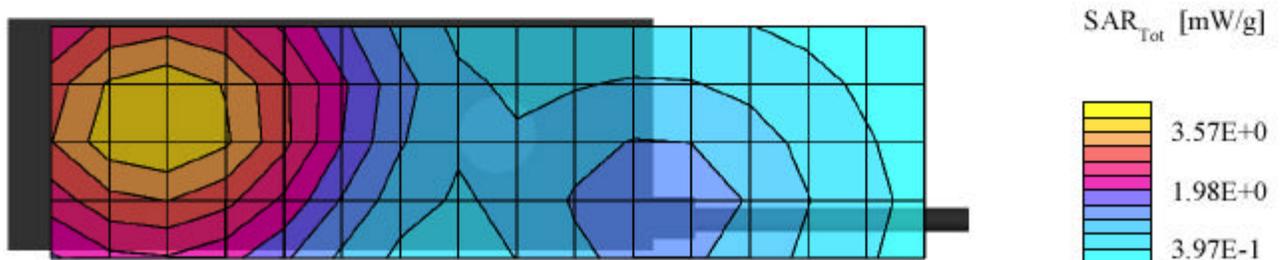
Product: XTS5000 Date: 010810
Run Number: 010810-22 Run Time: (18 min)
Model: H18UCH9PW7 Sn: 02444463
TX FREQ:806MHz ANTENNA Position: FIXED
Accessories: Antenna(NAF5042A), Battery(NTN8294B),CarryCase(NTN8266B) Audio (NMN1624A)
Antenna Distance from Phantom Surface: A(base)22mm B(center):26mm C(tip):23mm
START POWER:3.62W END POWER:3.51W
Room Temp:23.7 Liquid Temp:22.6
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; 809Body: $\sigma = 0.97$
mho/m $\epsilon_r = 55.2$ $\rho = 1.00$ g/cm³
Cube 5x5x7:SAR (1g): 11.0 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 139.5, 46.5, 4.5
Powerdrift: -0.34 dB



XTS 5000; Test Date: 08/08/01

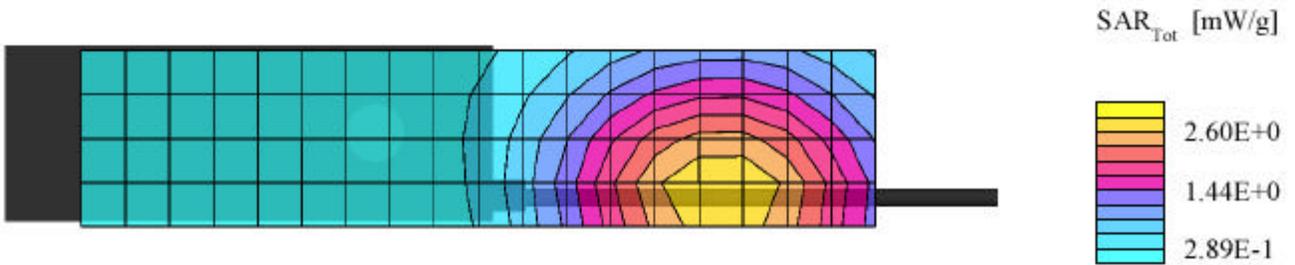
Product: XTS5000 Date: 010808
Run Number: 010808-13 Run Time: (16 min)
Model: H18UCH9PW7 Sn: 02444463
TX FREQ: 806.0000Hz ANTENNA Position: FIXED
Accessories: Antenna(NAF5042A), Battery(NTN8294B)
Antenna Distance from Phantom Surface: A(base)47mm B(center):51mm C(tip):53mm
START POWER:3.55W END POWER:3.43W
Room Temp:24.0 Liquid Temp:23.7
PROBE CAL DATE: 010316
PatrickL

Small Flat Phantom Phantom; Radio Scan Area Section; Position: (90°,0°);
Probe: ET3DV6R - SN1417; ConvF(5.97,5.97,5.97); Probe cal date: 16/03/01; Crest factor: 1.0; 809 MHz HEAD: $\sigma = 0.88$ mho/m $\epsilon_r = 42.7$ $\rho = 1.07$ g/cm³
Cube 5x5x7:SAR (1g): 3.66 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 27.0, 34.5, 4.5
Powerdrift: -1.26 dB



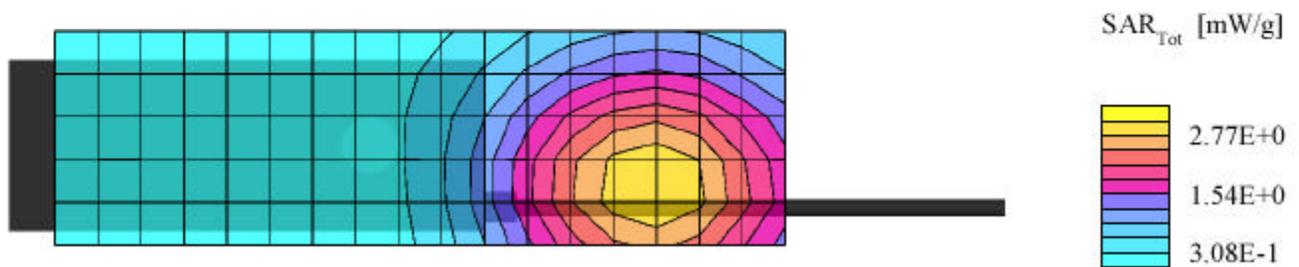
XTS 5000; Test Date: 08/08/01

Product: XTS5000 Date: 010808
Run Number: 010808-07 Run Time: (16 min)
Model: H18UCH9PW7 Sn: 02444463
TX FREQ: 809.0000Hz ANTENNA Position: FIXED
Accessories: Antenna(NAF5080A), Battery(NTN8294B)
Antenna Distance from Phantom Surface: A(base)47mm B(center):52mm C(tip):60mm
START POWER:3.57W END POWER:3.35W
Room Temp:23.9 Liquid Temp:23.7
PROBE CAL DATE: 010316
PatrickL
Small Flat Phantom Phantom; Radio Scan Area Section; Position: (90°,0°);
Probe: ET3DV6R - SN1417; ConvF(5.97,5.97,5.97); Probe cal date: 16/03/01; Crest factor: 1.0; 809 MHz HEAD: $\sigma = 0.88 \text{ mho/m}$ $\epsilon_r = 42.7$ $\rho = 1.07 \text{ g/cm}^3$
Cube 5x5x7:SAR (1g): 2.73 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 217.5, 10.5, 4.5
Powerdrift: -0.71 dB



XTS 5000; Test Date: 08/09/01

Product: XTS5000 Date: 010809
Run Number: 010809-10 Run Time: (16 min)
Model: H18UCH9PW7 Sn: 02444463
TX FREQ: 806.0000MHz ANTENNA Position: FIXED
Accessories: Antenna(NAF5037A), Battery(NTN8294B), Beltclip(NTN8266B)
Antenna Distance from Phantom Surface: A(base)49mm B(center):53mm C(tip):57mm
START POWER:3.56W END POWER:3.24W
Room Temp:23.0 Liquid Temp:23.5
PROBE CAL DATE: 010316
PatrickL
Small Flat Phantom Phantom; Radio Scan Area Section; Position: (90°,0°);
Probe: ET3DV6R - SN1417; ConvF(5.97,5.97,5.97); Probe cal date: 16/03/01; Crest factor: 1.0; 809 MHz HEAD: $\sigma = 0.88$ mho/m $\epsilon_r = 42.7$ $\rho = 1.07$ g/cm³
Cube 5x5x7:SAR (1g): 2.76 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 208.5, 21.0, 4.5
Powerdrift: -0.90 dB



Appendix B: Dipole System Performance Check Results

Dipole 835MHz

Date: 010806

TX FREQ: 835.0000MHz ANTENNA: Dipole

Dipole Distance Phantom Surface: 14mm

START POWER: 0.250W

Room Temp: 24 Liquid Temp: 23.4

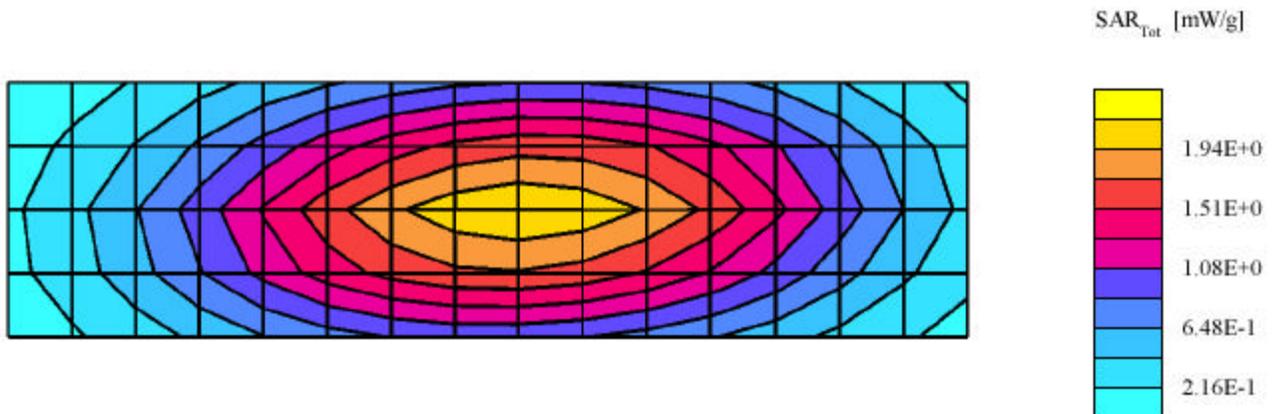
PROBE CAL DATE: 010316

small flat phantom; Probe: ET3DV6R - SN1417; ConvF(5.90,5.90,5.90); Crest factor: 1.0; 835Body: $\sigma = 1.00$ mho/m $\epsilon_r = 55.6$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 3.21 mW/g ± 0.03 dB, SAR (1g): 2.10 mW/g ± 0.03 dB, SAR (10g): 1.37 mW/g ± 0.04 dB, (Worst-case extrapolation)

Penetration depth: 12.6 (11.8, 13.8) [mm]

Powerdrift: 0.01 dB



Dipole MHz

Date: 010807

TX FREQ: 835.0000MHz ANTENNA: Dipole

Dipole Distance Phantom Surface: 14mm

START POWER: 0.250W

Room Temp: 24.6 Liquid Temp: 23.4

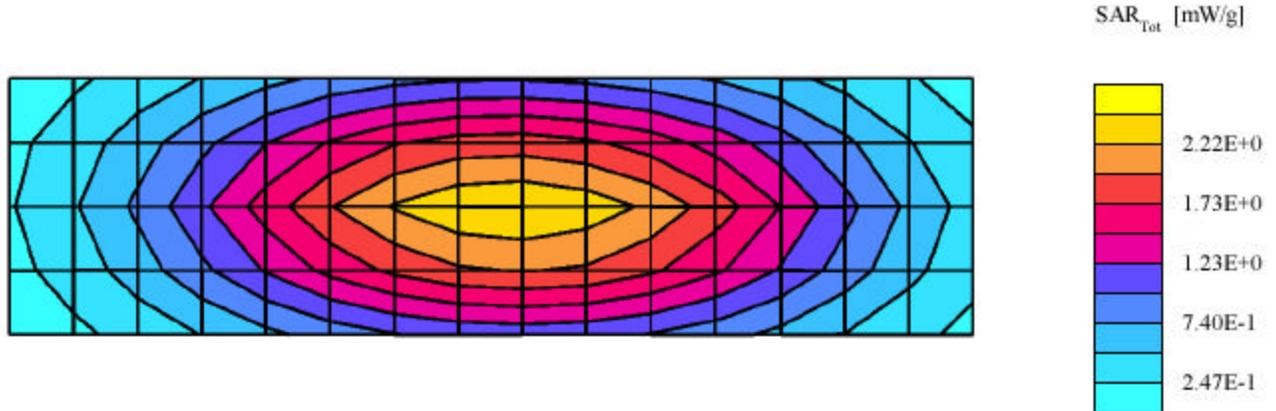
PROBE CAL DATE: 010316 Power input 250mW

Small Flat Phantom; Probe: ET3DV6R - SN1417; ConvF(5.90,5.90,5.90); Crest factor: 1.0; 860Body: $\sigma = 0.99$ mho/m $\epsilon_r = 54.9$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 3.67 mW/g ± 0.01 dB, SAR (1g): 2.39 mW/g ± 0.02 dB, SAR (10g): 1.55 mW/g ± 0.02 dB, (Worst-case extrapolation)

Penetration depth: 12.5 (11.6, 13.6) [mm]

Powerdrift: -0.19 dB



Dipole MHz

Date: 010809

TX FREQ: 835.0000MHz ANTENNA: Dipole

Dipole Distance Phantom Surface: 14mm

START POWER: 0.500W

Room Temp: 24 Liquid Temp: 23.5

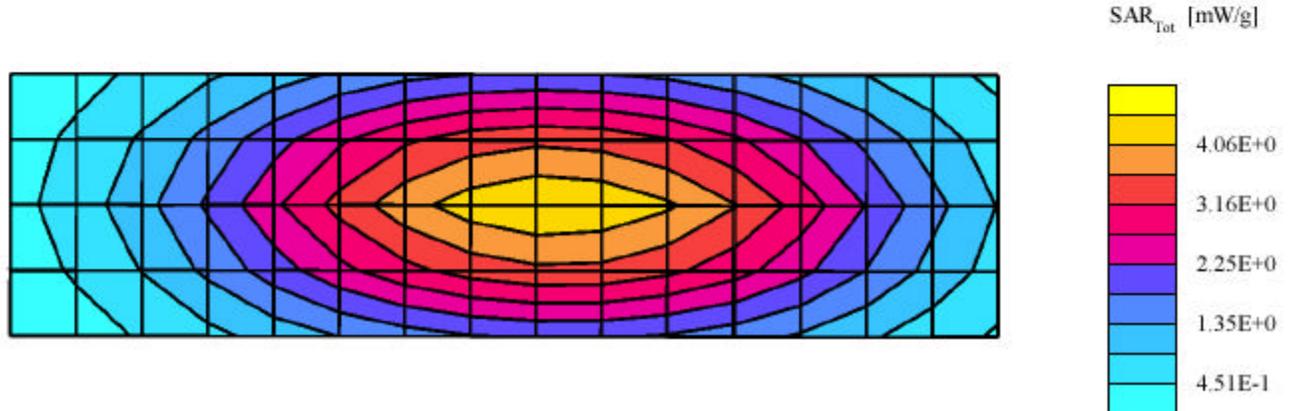
PROBE CAL DATE: 010316

Small Flat Phantom; Probe: ET3DV6R - SN1417; ConvF(5.90,5.90,5.90); Crest factor: 1.0; 860Body: $\sigma = 1.00$ mho/m $\epsilon_r = 55.6$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 6.71 mW/g ± 0.00 dB, SAR (1g): 4.35 mW/g ± 0.01 dB, SAR (10g): 2.83 mW/g ± 0.01 dB, (Worst-case extrapolation)

Penetration depth: 12.7 (11.5, 14.1) [mm]

Powerdrift: -0.02 dB



Dipole MHz

Date: 010810

TX FREQ: 835.0000MHz ANTENNA: Dipole

Dipole Distance Phantom Surface: 14mm

START POWER: 0.252W

Room Temp: 24 Liquid Temp: 23.5

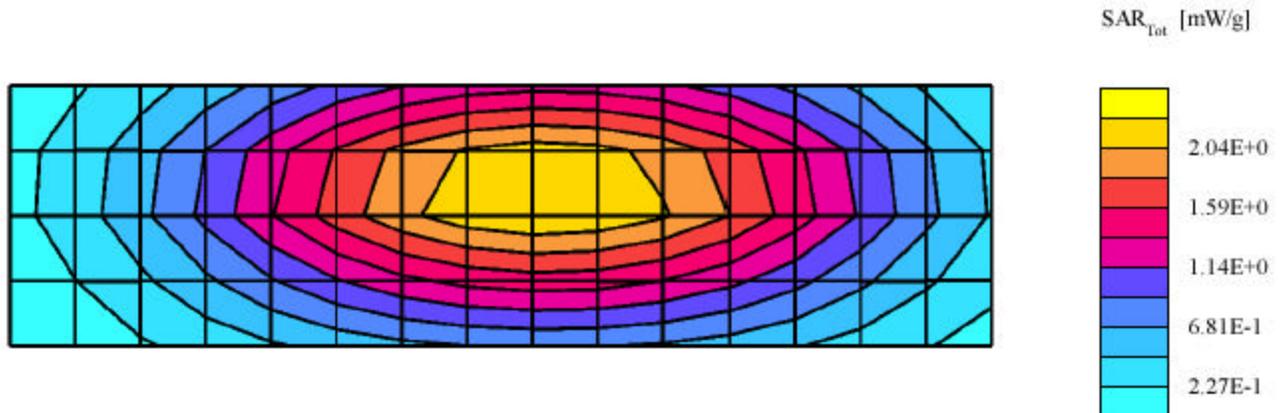
PROBE CAL DATE: 010316

Small Flat Phantom; Probe: ET3DV6R - SN1417; ConvF(5.90,5.90,5.90); Crest factor: 1.0; 835Body: $\sigma = 0.99$ mho/m $\epsilon_r = 54.9$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 3.52 mW/g ± 0.01 dB, SAR (1g): 2.29 mW/g ± 0.00 dB, SAR (10g): 1.49 mW/g ± 0.01 dB, (Worst-case extrapolation)

Penetration depth: 12.6 (11.6, 13.9) [mm]

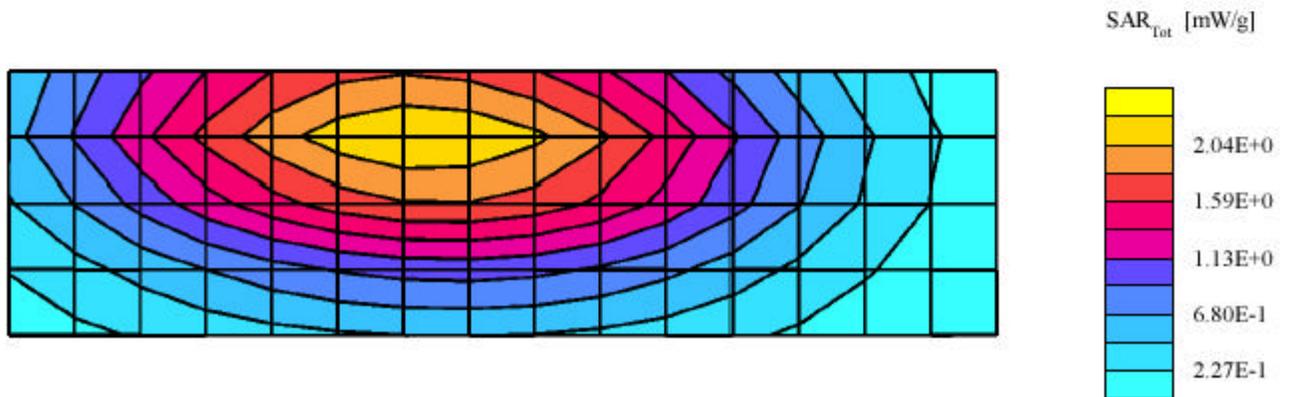
Powerdrift: -0.00 dB



Dipole MHz

Date: 010808
TX FREQ: 835.0000MHz ANTENNA: Dipole
Dipole Distance Phantom Surface: 14mm
START POWER: 0.250W
Room Temp: 23.6 Liquid Temp: 22.6
PROBE CAL DATE: 010316 Input power: 250mW

Small Flat Phantom; Probe: ET3DV6R - SN1417; ConvF(5.97,5.97,5.97); Crest factor: 1.0; 900 MHz HEAD: $\sigma = 0.91$ mho/m $\epsilon_r = 42.4$ $\rho = 1.07$ g/cm³
Cubes (2): Peak: 3.47 mW/g ± 0.04 dB, SAR (1g): 2.24 mW/g ± 0.04 dB, SAR (10g): 1.46 mW/g ± 0.03 dB, (Worst-case extrapolation)
Penetration depth: 12.3 (11.2, 13.8) [mm]
Powerdrift: -0.01 dB



Dipole MHz

Date: 010811

TX FREQ: 835.0000MHz ANTENNA: Dipole

Dipole Distance Phantom Surface: 14mm

START POWER: 0.250W

Room Temp: 23.6 Liquid Temp: 23.2

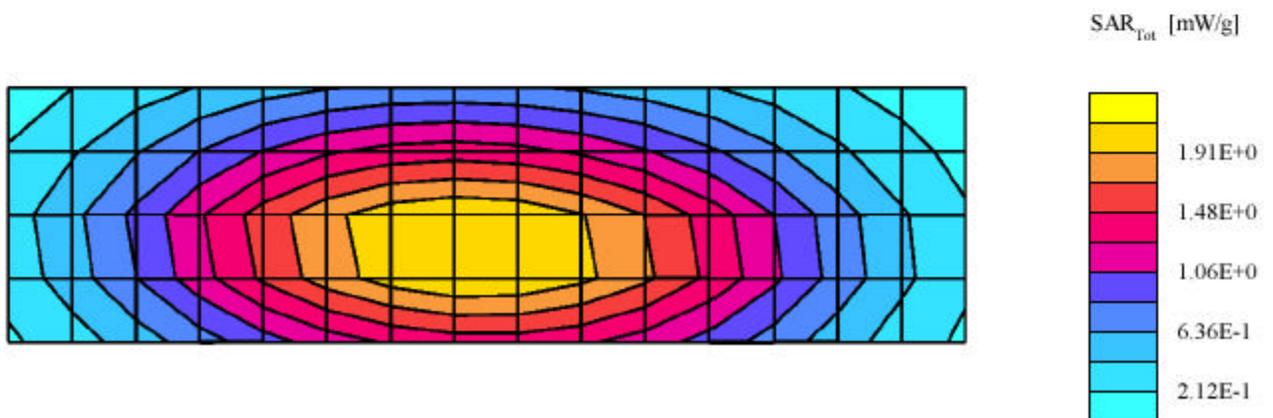
PROBE CAL DATE: 010316

Small Flat Phantom; Probe: ET3DV6R - SN1417; ConvF(5.97,5.97,5.97); Crest factor: 1.0; 809 MHz HEAD: $\sigma = 0.91$ mho/m $\epsilon_r = 42.5$ $\rho = 1.07$ g/cm³

Cubes (2): Peak: 3.38 mW/g ± 0.02 dB, SAR (1g): 2.20 mW/g ± 0.01 dB, SAR (10g): 1.44 mW/g ± 0.01 dB, (Worst-case extrapolation)

Penetration depth: 12.3 (11.3, 13.7) [mm]

Powerdrift: 0.00 dB



Dipole 835MHz

500mW input power

Target=9mW/g (+/- 10%)

Room Temp:23.2 Liquid Temp:23

Small Flat Phantom; Probe: ET3DV6R - SN1417; ConvF(5.90,5.90,5.90); Crest factor: 1.0; 835 Body: $\sigma = 1.00$ mho/m $\epsilon_r = 54.8$ $\rho = 1.00$ g/cm³

Cube 5x5x7: Peak: 6.57 mW/g, SAR (1g): 4.26 mW/g, SAR (10g): 2.77 mW/g, (Worst-case extrapolation)

Penetration depth: 12.5 (11.5, 13.9) [mm]

Powerdrift: -0.00 dB

