



**MOTOROLA**



**CGISS EME Test Laboratory**

8000 West Sunrise Blvd  
Fort Lauderdale, FL. 33322

**S.A.R. EME Compliance Test Report**

**Part 2 of 3**

|                              |                                                              |
|------------------------------|--------------------------------------------------------------|
| <b>Date of Report:</b>       | November 24, 2003                                            |
| <b>Report Revision:</b>      | Rev. O                                                       |
| <b>Manufacturer:</b>         | Motorola                                                     |
| <b>Product Description:</b>  | Portable 435-480 MHz, 4W, 32 CH<br>w/ display/Limited Keypad |
| <b>FCC ID:</b>               | <b>ABZ99FT4065</b>                                           |
| <b>Device Model:</b>         | PMUE2138A                                                    |
|                              |                                                              |
| <b>Test Period:</b>          | 11/17/03 – 11/20/03                                          |
| <b>EME Technician:</b>       | Clint Miller                                                 |
| <b>Responsible Engineer:</b> | Kim Uong (Sr. EME Engineer)                                  |
| <b>Author:</b>               | Kim Uong (Sr. EME Engineer)                                  |
|                              |                                                              |
| <b>Review By:</b>            | Michael Sailsman<br>Global EME Regulatory Affairs Liaison    |

**Note: Based on the information and the testing results provided herein, the undersigned certifies that when used as stated in the operating instructions supplied, said product complies with all applicable national and international reference standards and guidelines.**

Deanna Zakharia Signature on File

11/24/03

\_\_\_\_\_  
Ken Enger  
Senior Resource Manager, Product Safety and EME Director, Phone: 954-723-6299

\_\_\_\_\_  
Date Approved

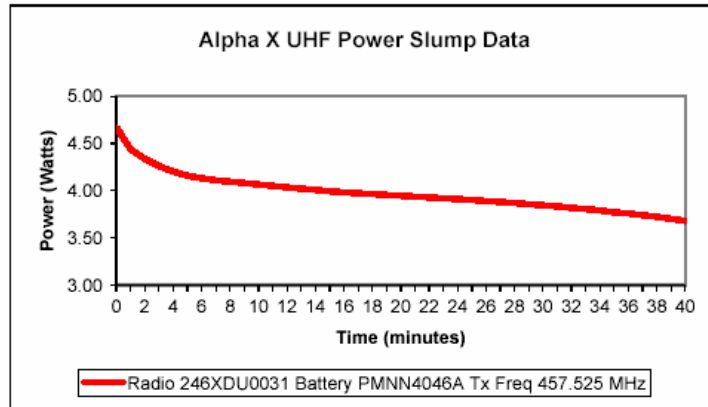
**Note: Consistent with the ISO/IEC 17025 recommendation this report shall not be reproduced in part without written approval from an officially designated representative of the Motorola EME Laboratory.**

## **APPENDIX A**

### **Power Slump Data/Shortened Scan**

## DUT Power versus time Data

|               |                     |
|---------------|---------------------|
|               | Radio               |
|               | 246XDU0031          |
|               | Battery PMNN4046A   |
|               | Tx Freq 457.525 MHz |
| Time(Minutes) | Power (watts)       |
| 0             | 4.67                |
| 1             | 4.44                |
| 2             | 4.34                |
| 3             | 4.26                |
| 4             | 4.20                |
| 5             | 4.16                |
| 6             | 4.13                |
| 7             | 4.11                |
| 8             | 4.09                |
| 9             | 4.08                |
| 10            | 4.07                |
| 11            | 4.05                |
| 12            | 4.04                |
| 13            | 4.02                |
| 14            | 4.01                |
| 15            | 4.00                |
| 16            | 3.98                |
| 17            | 3.97                |
| 18            | 3.96                |
| 19            | 3.96                |
| 20            | 3.95                |
| 21            | 3.94                |
| 22            | 3.93                |
| 23            | 3.92                |
| 24            | 3.91                |
| 25            | 3.90                |
| 26            | 3.89                |
| 27            | 3.88                |
| 28            | 3.87                |
| 29            | 3.86                |
| 30            | 3.85                |
| 31            | 3.83                |
| 32            | 3.82                |
| 33            | 3.81                |
| 34            | 3.79                |
| 35            | 3.77                |
| 36            | 3.76                |
| 37            | 3.74                |
| 38            | 3.72                |
| 39            | 3.70                |
| 40            | 3.68                |



## Shortened Scan Results

**FCC ID: ABZ99FT4065; Date: 11/20/03**

**Motorola CGISS EME Laboratory**

Run #: KU-R2-031120-05

Model #: PMUE2138A S/N: 246XDU0031

Tx freq: 469.525 MHz

Tissue temp: 20.3 C

Start power: 4.60 W

Antenna #: PMAE4003A

Battery kit: PMNN4046A

Carry Accessories: PMLN4468A

Audio/data accessories: HMN9030A

**Shortened scan reflect highest S.A.R producing configuration at the body.**

**Run time 7minutes**

**Representative “normal” scan run time was 27 minutes**

**“Shortened” scan; max. cal. S.A.R. (drift adjusted) w/ 50% duty cycle = 4.27 mW/g**

**“Normal” scan; max. cal. S.A.R. (drift adjusted) w/ 50% duty cycle = 4.27 mW/g**

**(See section 7.1 run # KU-R2-031118-09)**

### **DUT with carry holster against the phantom**

Flat (2) Phantom; Back of device Section;

Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003); ConvF(7.50,7.50,7.50); Probe cal date: 26/02/03;

Crest factor: 1.0;

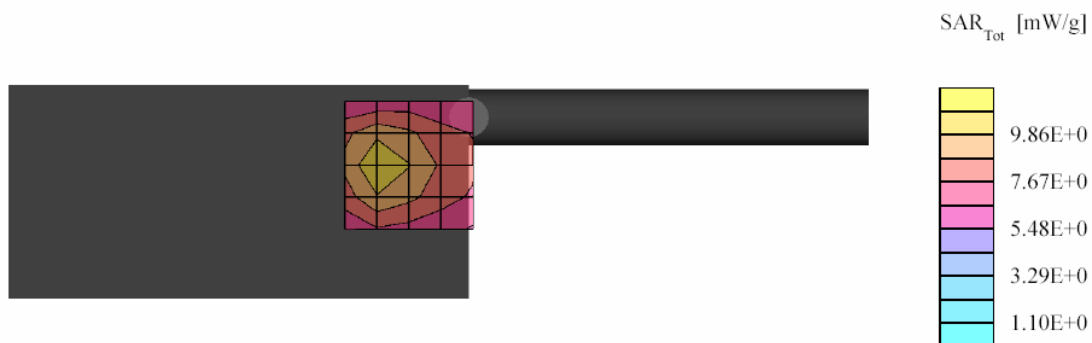
FCC Body 458:  $\sigma = 0.94$  mho/m  $\epsilon_r = 55.2$   $\rho = 1.00$  g/cm<sup>3</sup>; DAE: SN401 (08/21/03)

Cube 5x5x7: SAR (1g): 7.05 mW/g, SAR (10g): 4.74 mW/g \* Max outside, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0;

Power drift: -0.74 dB

Note: "Max outside" has been identified by SPEAG as an unresolved intermittent occurrence with the DASY3 application even when the entire peak area is captured.



FCC ID: ABZ99FT4065; Date: 11/19/03  
Motorola CGISS EME Laboratory

Run #: CM-R2-031119-13  
Model #: PMUE2138A S/N: 246XDU0031  
Tx freq: 469.525 MHz  
Tissue temp: 20.9 C  
Start power : 4.55 W

Antenna #: PMAE4003A  
Battery kit: PMNN4046A  
Carry Accessories: None  
Audio/data accessories: None

Shortened scan reflect highest S.A.R producing configuration at the face.  
Run time 7minutes

Representative “normal” scan run time was 27 minutes

“Shortened” scan; max. cal. S.A.R. (drift adjusted) w/ 50% duty cycle = 3.74 mW/g

“Normal” scan; max. cal. S.A.R. (drift adjusted) w/ 50% duty cycle = 3.68 mW/g

(See section 7.1 run # KU-R2-031119-05)

Flat Phantom; Flat Abdomen (1) Section;

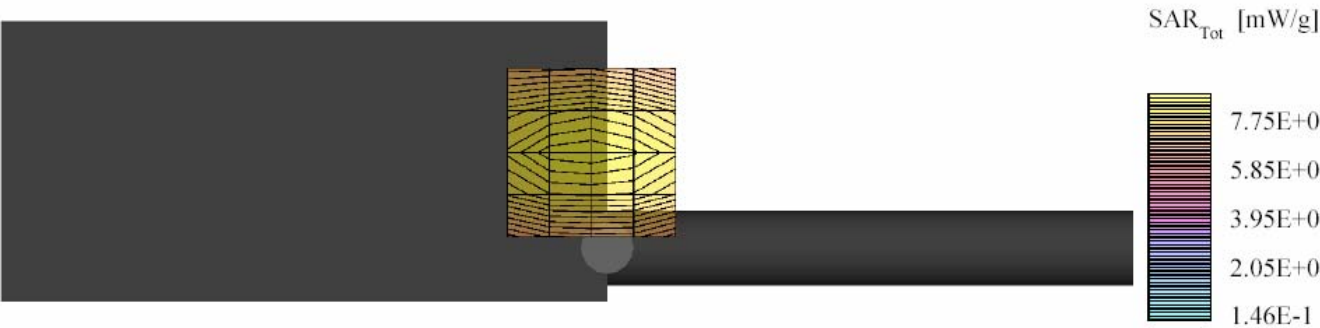
Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003); ConvF(7.50,7.50,7.50); Probe cal date: 26/02/03;Crest factor: 1.0;

IEEE Head 458 MHz:  $\sigma = 0.89$  mho/m  $\epsilon_r = 43.9$   $\rho = 1.00$  g/cm<sup>3</sup>; DAE: SN401 (08/21/03)

Cube 5x5x7: SAR (1g): 6.03 mW/g, SAR (10g): 4.31 mW/g, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0;

Powerdrift: -0.79 dB



## **APPENDIX B**

### **Data Results**

**FCC ID: ABZ99FT4065; Date: 11/17/03**  
**Motorola CGISS EME Laboratory**

Run #: CM-R2-031117-08  
Model # PMUE2138A S/N: 246XDU0031  
Tx freq: 449.525 MHz  
Tissue temp: 20.5 C  
Start power : 4.50 W

Antenna #: PMAE4003A  
Battery kit: PMNN4046A  
Carry Accessories: HLN9844A  
Audio/data accessories: HMN9030A

**DUT w/ Belt clip against the phantom**

Flat (2) Phantom; Back of device Section;

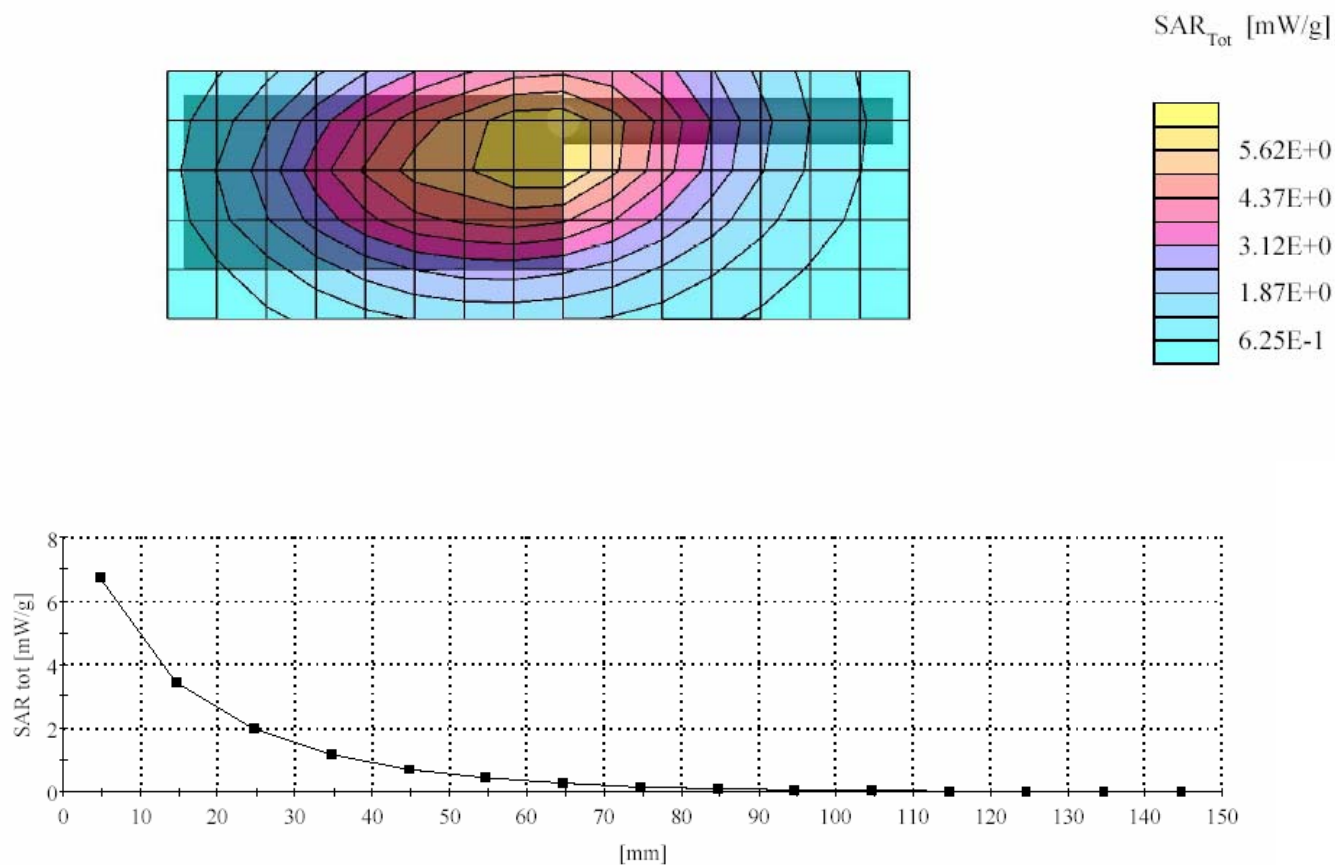
Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003); ConvF(7.50,7.50,7.50); Probe cal date: 26/02/03; Crest factor: 1.0;

FCC Body 458:  $\sigma = 0.94$  mho/m  $\epsilon_r = 54.8$   $\rho = 1.00$  g/cm<sup>3</sup> DAE: SN401 (08/21/03)

Cube 7x7x7: SAR (1g): 6.74 mW/g, SAR (10g): 4.68 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 24.0, 114.0, 4.7

Power drift: -0.03 dB



**FCC ID: ABZ99FT4065; Date: 11/17/03**  
**Motorola CGISS EME Laboratory**

Run #: CM-R2-031117-12  
Model #: PMUE2138A S/N: 246XDU0031  
Tx freq: 449.525 MHz  
Tissue temp: 20.4 C  
Start power: 4.55 W

Antenna #: PMAE4003A  
Battery kit: PMNN4046A  
Carry Accessories: PMLN4468A  
Audio/data accessories: HMN9030A

**DUT w/ carry holster against the phantom**

Flat (2) Phantom; Back of device Section;

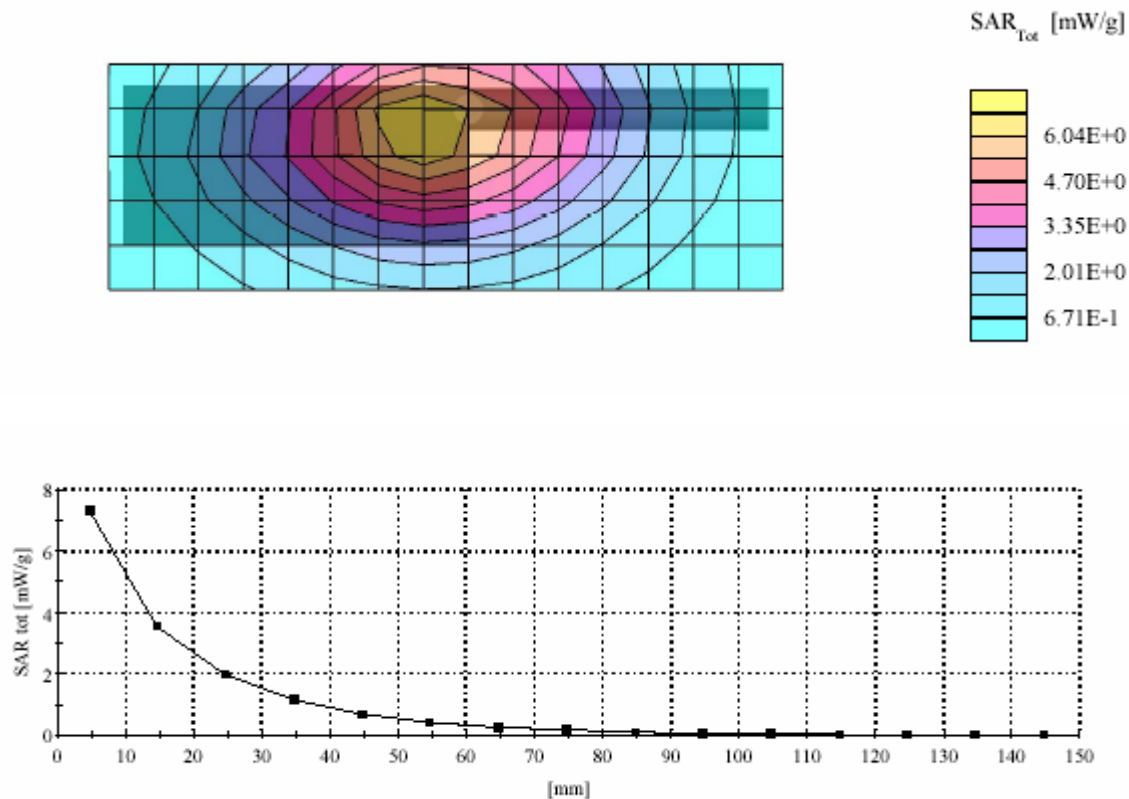
Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003); ConvF(7.50,7.50,7.50); Probe cal date: 26/02/03; Crest factor: 1.0;

FCC Body 458:  $\sigma = 0.94$  mho/m  $\epsilon_r = 54.8$   $\rho = 1.00$  g/cm<sup>3</sup> DAE: SN401 (08/21/03)

Cube 7x7x7: SAR (1g): 7.24 mW/g, SAR (10g): 4.90 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 21.0, 103.5, 4.7

Power drift: -0.05 dB



**FCC ID: ABZ99FT4065; Date: 11/18/03**  
**Motorola CGISS EME Laboratory**

Run #: KU-R2-031118-07  
Model # PMUE2138A S/N: 246XDU0031  
Tx freq: 449.525 MHz  
Tissue temp: 20.6 C  
Start power: 4.50 W

Antenna #: PMAE4003A  
Battery kit: PMNN4046A  
Carry Accessories: PMLN4468A  
Audio/data accessories: PMLN4425A

**DUT w/ carry holster against the phantom**

Flat (2) Phantom; Back of device Section;

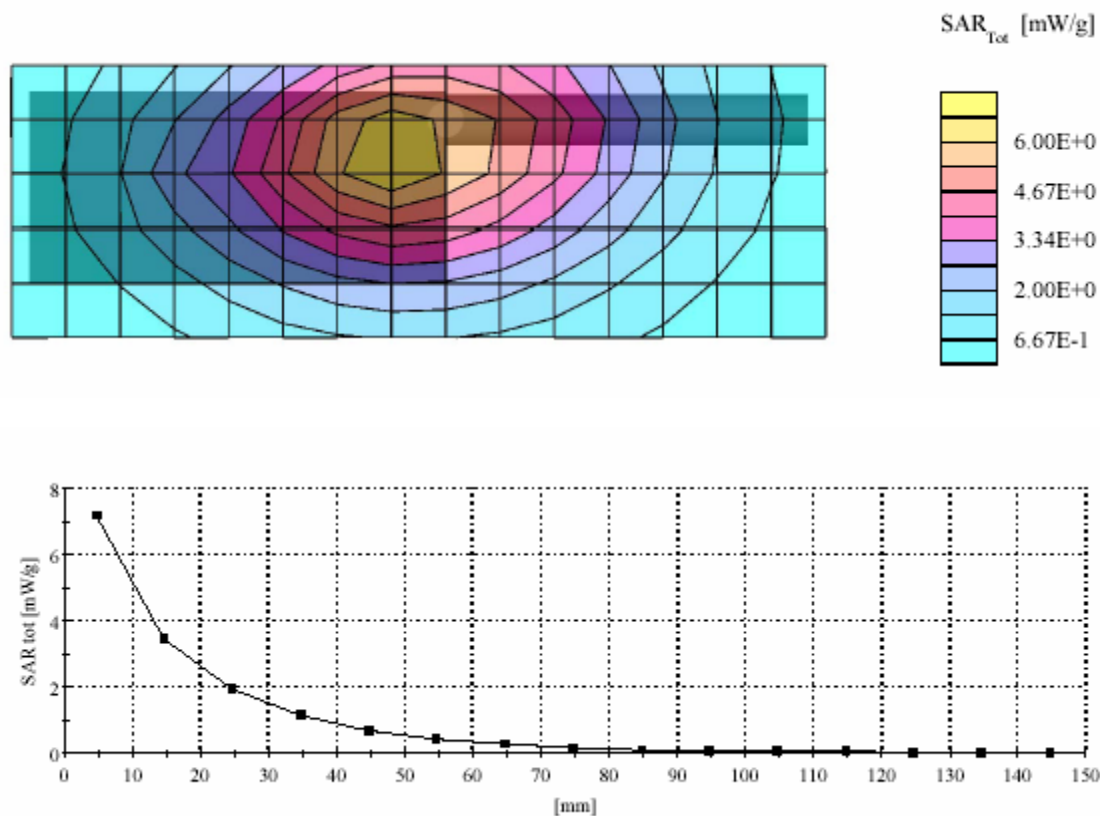
Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003); ConvF(7.50,7.50,7.50); Probe cal date: 26/02/03; Crest factor: 1.0;

FCC Body 458:  $\sigma = 0.94$  mho/m  $\epsilon_r = 54.9$   $\rho = 1.00$  g/cm<sup>3</sup> DAE: SN401 (08/21/03)

Cube 7x7x7: SAR (1g): 7.09 mW/g, SAR (10g): 4.79 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 24.0, 105.0, 4.7

Power drift: -0.08 dB



**FCC ID: ABZ99FT4065; Date: 11/18/03**  
**Motorola CGISS EME Laboratory**

Run #: KU-R2-031118-09  
Model # PMUE2138A S/N: 246XDU0031  
Tx freq: 469.525 MHz  
Tissue temp: 20.5 C  
Start power : 4.80 W

Antenna #: PMAE4003A  
Battery kit: PMNN4046A  
Carry Accessories: PMLN4468A  
Audio/data accessories: HMN9030A

**DUT w/ carry holster against the phantom**

Flat (2) Phantom; Back of device Section;

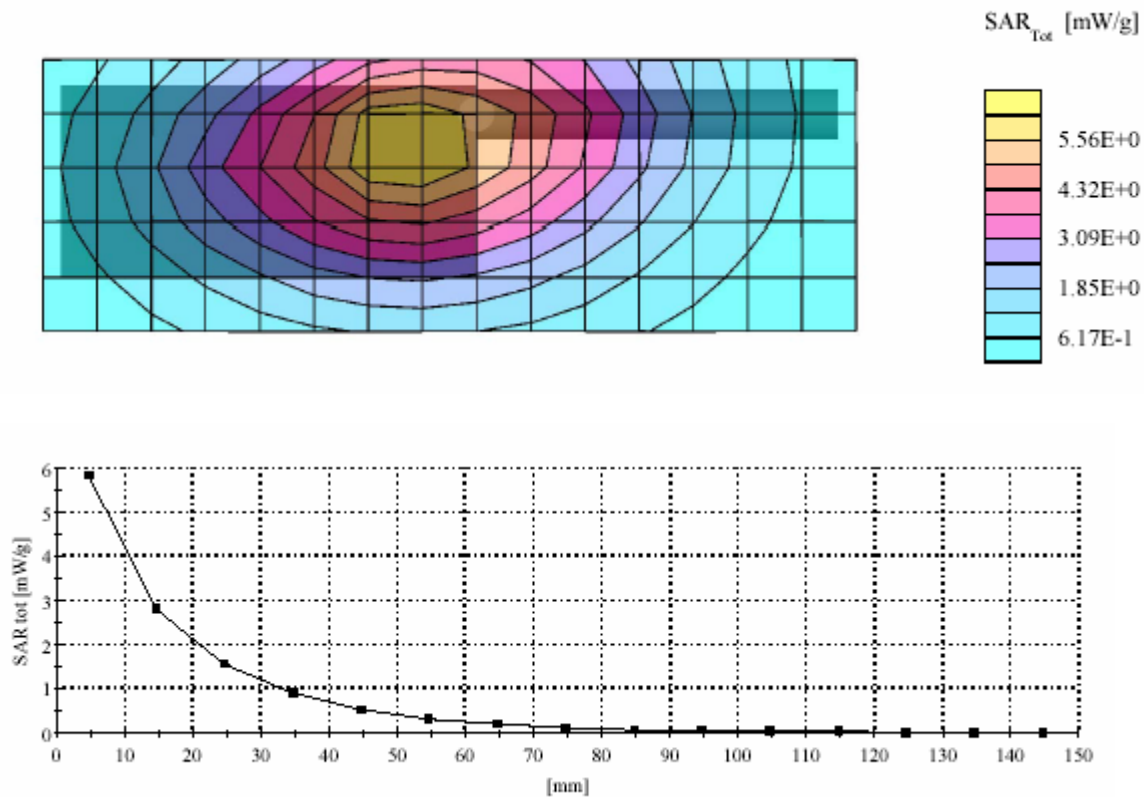
Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003); ConvF(7.50,7.50,7.50); Probe cal date: 26/02/03; Crest factor: 1.0;

FCC Body 458:  $\sigma = 0.94$  mho/m  $\epsilon_r = 54.9$   $\rho = 1.00$  g/cm<sup>3</sup> DAE: SN401 (08/21/03)

Cube 7x7x7: SAR (1g): 6.26 mW/g, SAR (10g): 4.19 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 24.0, 99.0, 4.7

Power drift: -1.35 dB



**FCC ID: ABZ99FT4065; Date: 11/18/03**  
**Motorola CGISS EME Laboratory**

Run #: CM-R2-031118-18  
Model # PMUE2138A S/N: 246XDU0031  
Tx freq: 469.525 MHz  
Tissue temp: 20.7 C  
Start power: 4.65 W

Antenna #: PMAE4003A  
Battery kit: PMNN4046A  
Carry Accessories: NONE  
Audio/data accessories: HMN9030A

**DUT w/ front separated 2.5cm from phantom**

Flat (2) Phantom; Back of device Section;

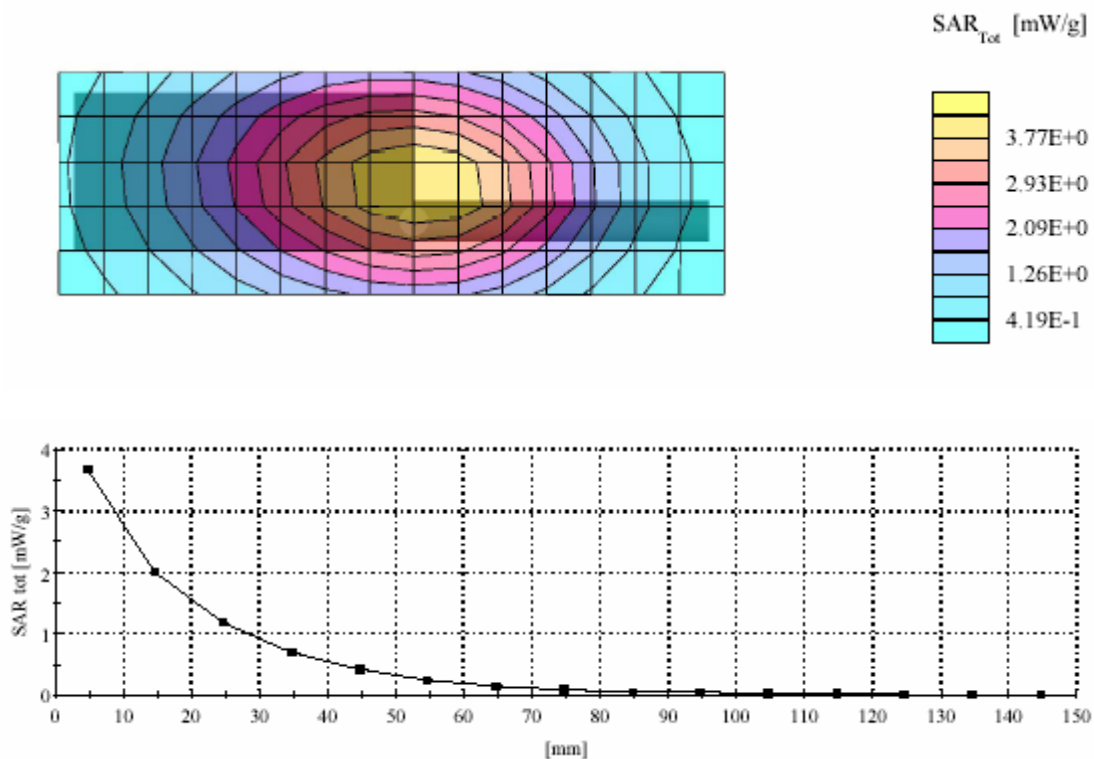
Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003); ConvF(7.50,7.50,7.50); Probe cal date: 26/02/03; Crest factor: 1.0;

FCC Body 458:  $\sigma = 0.94$  mho/m  $\epsilon_r = 54.9$   $\rho = 1.00$  g/cm<sup>3</sup> DAE: SN401 (08/21/03)

Cube 7x7x7: SAR (1g): 4.03 mW/g, SAR (10g): 2.91 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 37.5, 123.0, 4.7

Power drift: -0.83 dB



**FCC ID: ABZ99FT4065; Date: 11/19/03**  
**Motorola CGISS EME Laboratory**

Run #: KU-R2-031119-05  
Model # PMUE2138A S/N: 246XDU0031  
Tx freq: 469.525 MHz  
Tissue temp: 20.6C  
Start power: 4.80 W

Antenna #: PMAE4003A  
Battery kit: PMNN4046A  
Carry Accessories: None  
Audio/data accessories: None

**DUT w/ front separated 2.5cm from phantom**

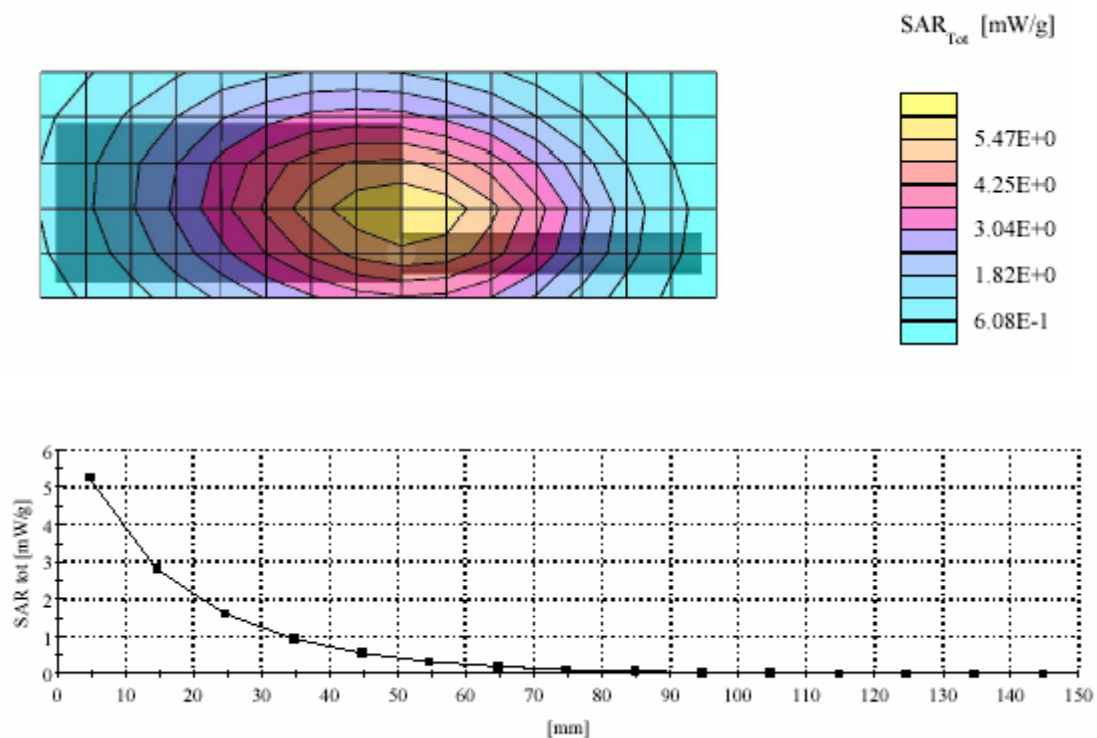
Flat Phantom; Flat Abdomen (1) Section;

Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003); ConvF(7.50,7.50,7.50); Probe cal date: 26/02/03; Crest factor: 1.0;  
IEEE Head 458 MHz:  $\sigma = 0.89$  mho/m  $\epsilon_r = 43.9$   $\rho = 1.00$  g/cm<sup>3</sup> DAE: SN401 (08/21/03)

Cube 7x7x7: SAR (1g): 5.69 mW/g, SAR (10g): 4.08 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 46.5, 121.5, 4.7

Power drift: -1.12 dB



## **APPENDIX C**

### **Dipole System Performance Check Results**

**SPEAG 450MHz Dipole; D450V2, SN1002; Test date:11/17/03**

Run #: Sys Perf-R2-031117-01

TX Freq: 450 MHz

Sim. Tissue Temp: 20.7 C

Start Power: 250mW

Target: 4.52 mW/g for 1g SAR, 2.99 mW/g for 10g SAR +/- 10% from system performance target 1/16/03.

SAR calculated 1g is 4.66 mW/g percent from target (including drift) is 3.13 %

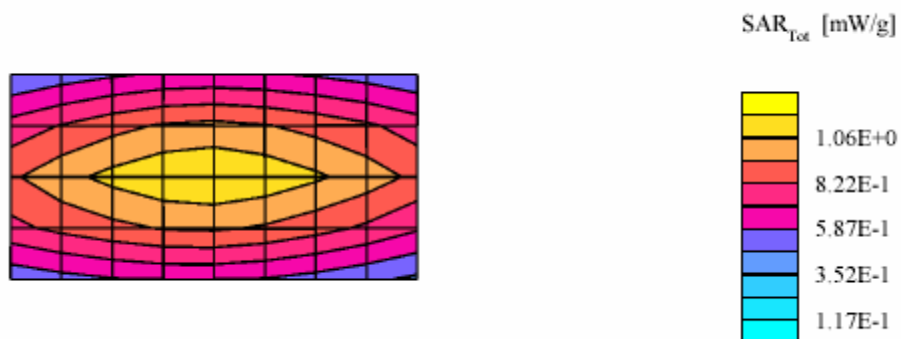
SAR Calculated 10g is 3.08 mW/g Percent from target (including drift) is 3.08 %

Flat (2); Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003); ConvF(7.50,7.50,7.50); Crest factor: 1.0; FCC Body 450:

$\sigma = 0.93$  mho/m  $\epsilon_r = 54.9$   $\rho = 1.00$  g/cm3 DAE: SN401 (08/21/03)

Cubes (2): Peak: 1.80 mW/g  $\pm 0.03$  dB, SAR (1g): 1.16 mW/g  $\pm 0.02$  dB, SAR (10g): 0.767 mW/g  $\pm 0.02$  dB, (Worst case extrapolation) Penetration depth: 12.7 (11.4, 14.4) [mm]

Power drift: -0.02 dB



**SPEAG 450MHz Dipole; D450V2, SN1002; Test date:11/18/03**

Run #: Sys Perf-R2-031118-01

TX Freq: 450 MHz

Sim Tissue Temp: 20.7 C

Start Power: 250mW

Target: 4.52 mW/g for 1g SAR, 2.99 mW/g for 10g SAR +/- 10% from system performance target 1/16/03.

SAR calculated 1g is 4.63 mW/g percent from target (including drift) is 2.42 %

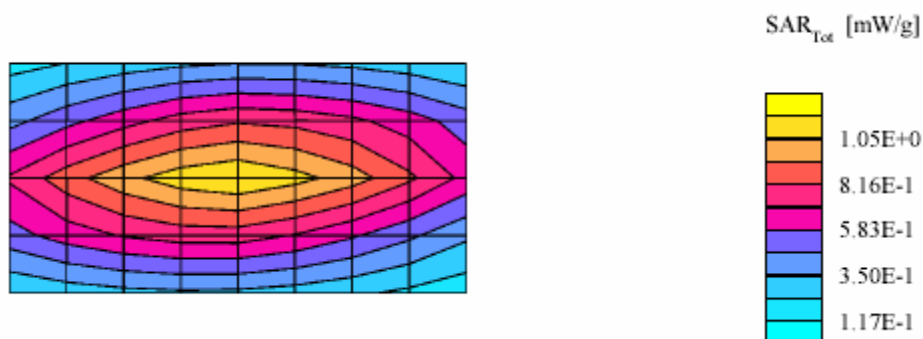
SAR Calculated 10g is 3.03 mW/g Percent from target (including drift) is 1.30 %

Flat (2); Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003); ConvF(7.50,7.50,7.50); Crest factor: 1.0; FCC Body 450:

$\sigma = 0.93$  mho/m  $\epsilon_r = 55.1$   $\rho = 1.00$  g/cm<sup>3</sup> DAE: SN401 (08/21/03)

Cubes (2): Peak: 1.80 mW/g  $\pm 0.01$  dB, SAR (1g): 1.16 mW/g  $\pm 0.01$  dB, SAR (10g): 0.759 mW/g  $\pm 0.01$  dB, (Worst case extrapolation) Penetration depth: 12.5 (11.2, 14.2) [mm]

Power drift: 0.01 dB



**SPEAG 450MHz Dipole; D450V2, SN1002; Test date:11/19/03**

Run #: Sys Perf-R2-031119-02

TX Freq: 450 MHz

Sim Tissue Temp: 20.5 C

Start Power: 250mW

Target: 4.52 mW/g for 1g SAR, 2.99 mW/g for 10g SAR +/- 10% from system performance target 1/16/03.

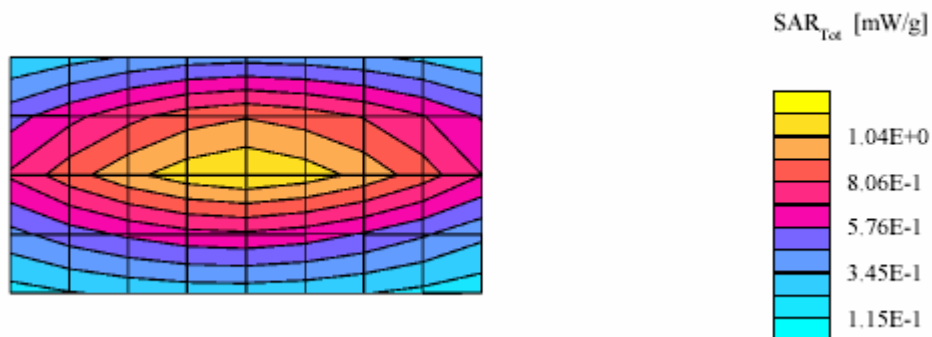
SAR calculated 1g is 4.71 mW/g percent from target (including drift) is 4.18 %

SAR Calculated 10g is 3.09mW/g Percent from target (including drift) is 3.44 %

Flat (2); Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003); ConvF(7.50,7.50,7.50); Crest factor: 1.0; FCC Body 450:  
 $\sigma = 0.94$  mho/m  $\epsilon_r = 55.2$   $\rho = 1.00$  g/cm<sup>3</sup> DAE3: SN401( 08/21/03)

Cubes (2): Peak: 1.83 mW/g  $\pm 0.03$  dB, SAR (1g): 1.18 mW/g  $\pm 0.03$  dB, SAR (10g): 0.775 mW/g  $\pm 0.03$  dB, (Worst case extrapolation) Penetration depth: 12.6 (11.2, 14.3) [mm]

Power drift: 0.01 dB



**SPEAG 450MHz Dipole; D450V2, SN1002; Test date:11/19/03**

Run #: Sys Perf-R2-031119-01

TX Freq: 450 MHz

Sim Tissue Temp: 20.5 C

Start Power: 250mW

Target:4.70 mW/g for 1g SAR, 3.11 mW/g for 10g SAR +/- 10% from system performance target 1/16/03.

SAR calculated 1g is 5.01 mW/g percent from target (including drift) is 6.63%

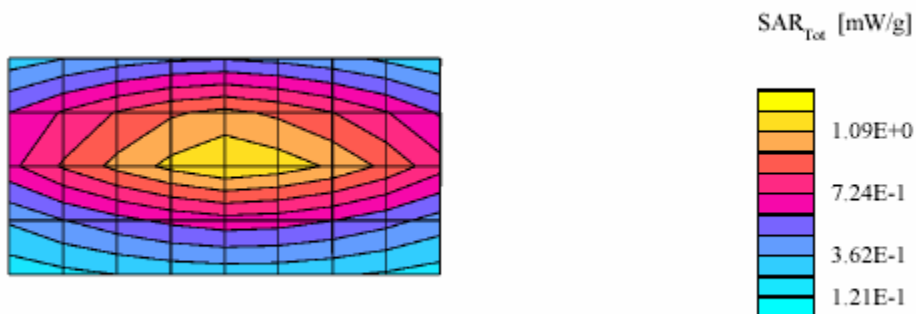
SAR Calculated 10g is 3.26 mW/g Percent from target (including drift) is 4.81%

Flat; Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003); ConvF(7.50,7.50,7.50); Crest factor: 1.0; IEEE Head 450

MHz:  $\sigma = 0.89$  mho/m  $\epsilon_r = 44.1$   $\rho = 1.00$  g/cm<sup>3</sup> DAE3: SN401( 08/21/03)

Cubes (2): Peak: 1.96 mW/g  $\pm 0.02$  dB, SAR (1g): 1.25 mW/g  $\pm 0.03$  dB, SAR (10g): 0.813 mW/g  $\pm 0.03$  dB, (Worst case extrapolation) Penetration depth: 12.2 (10.9, 14.0) [mm]

Power drift: -0.01 dB



**SPEAG 450MHz Dipole; D450V2, SN1002; Test date:11/20/03**

Run #: Sys Perf-R2-031120-01

TX Freq: 450 MHz

Sim Tissue Temp: 20.7 C

Start Power: 250mW

Target:4.52 mW/g for 1g SAR, 2.99 mW/g for 10g SAR +/- 10% from system performance target 1/16/03.

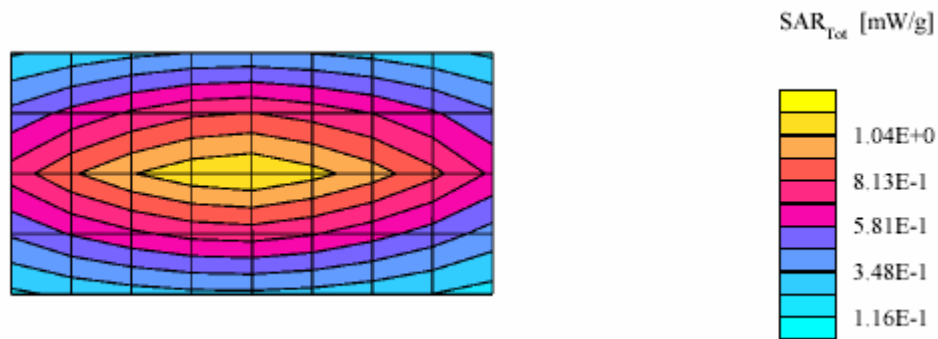
SAR calculated 1g is 4.65 mW/g percent from target (including drift) is 2.89%

SAR Calculated 10g is 3.06mW/g Percent from target (including drift) is 2.41 %

Flat (2); Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003); ConvF(7.50,7.50,7.50); Crest factor: 1.0; FCC Body 450:  
 $\sigma = 0.93$  mho/m  $\epsilon_r = 55.3$   $\rho = 1.00$  g/cm<sup>3</sup> DAE3: SN401( 08/21/03)

Cubes (2): Peak: 1.80 mW/g  $\pm 0.02$  dB, SAR (1g): 1.16 mW/g  $\pm 0.02$  dB, SAR (10g): 0.764 mW/g  $\pm 0.01$  dB, (Worst case extrapolation) Penetration depth: 12.6 (11.3, 14.3) [mm]

Power drift: -0.01 dB



## SYSTEM VALIDATION

|                 |                    |                    |                             |
|-----------------|--------------------|--------------------|-----------------------------|
| Date:           | <u>1/16/2003</u>   | Frequency (MHz):   | <u>450</u>                  |
| Lab Location:   | <u>CGISS</u>       | Mixture Type:      | <u>IEEE Head</u>            |
| Robot System:   | <u>CGISS 3</u>     | Ambient Temp.(°C): | <u>22.6, (Humid: 46.4%)</u> |
| Probe Serial #: | <u>ET3DV6-1393</u> | Tissue Temp.(°C):  | <u>21.2</u>                 |
| DAE Serial #:   | <u>406</u>         |                    |                             |

### Tissue Characteristics

|               |             |                  |                               |
|---------------|-------------|------------------|-------------------------------|
| Permittivity: | <u>43.3</u> | Phantom Type/SN: | <u>80302002B/S6</u>           |
| Conductivity: | <u>0.87</u> | Distance (mm):   | <u>15 (tissue/dipole cnt)</u> |

|                   |               |          |
|-------------------|---------------|----------|
| Reference Source: | <u>D450V2</u> | (Dipole) |
| Reference SN:     | <u>1002</u>   |          |

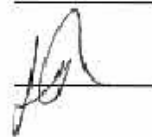
Power to Dipole: 250 mW  
Power Output (radio):          mW

Target SAR Value: 4.9 mW/g, 3.3 mW/g (10g avg.)  
(normalized to 1.0 W)

Measured SAR Value: 1.17 mW/g, 0.774 mW/g (10g avg.)  
Power Drift: -0.02 dB

Measured SAR Value: 4.70 mW/g, 3.11 mW/g (10g avg.)  
(normalized to 1.0 W, including drift)

Percent Difference From Target (MUST be within System Uncertainty): 4.05 % (1g ave)  
5.75 % (10g ave)

Test performed by: J. Fortier Initial: 

### SYSTEM PERFORMANCE CHECK TARGET SAR

|                 |                    |                    |                             |
|-----------------|--------------------|--------------------|-----------------------------|
| Date:           | <u>1/16/2003</u>   | Frequency (MHz):   | <u>450</u>                  |
| Lab Location:   | <u>CGISS</u>       | Mixture Type:      | <u>IEEE Head</u>            |
| Robot System:   | <u>CGISS 3</u>     | Ambient Temp.(°C): | <u>22.6, (Humid: 46.4%)</u> |
| Probe Serial #: | <u>ET3DV6-1393</u> | Tissue Temp.(°C):  | <u>21.2</u>                 |
| DAE Serial #:   | <u>406</u>         |                    |                             |

#### Tissue Characteristics

|               |             |                  |                               |
|---------------|-------------|------------------|-------------------------------|
| Permittivity: | <u>43.3</u> | Phantom Type/SN: | <u>80302002B/S6</u>           |
| Conductivity: | <u>0.87</u> | Distance (mm):   | <u>15 (tissue/dipole cnt)</u> |

|                   |               |          |
|-------------------|---------------|----------|
| Reference Source: | <u>D450V2</u> | (Dipole) |
| Reference SN:     | <u>1002</u>   |          |

Power to Dipole: 250 mW

|                     |                   |                              |
|---------------------|-------------------|------------------------------|
| Measured SAR Value: | <u>1.17</u> mW/g, | <u>0.774</u> mW/g (10g avg.) |
| Power Drift:        | <u>-0.02</u> dB   |                              |

#### New Target/Measured

|                                        |                   |                             |
|----------------------------------------|-------------------|-----------------------------|
| SAR Value:                             | <u>4.70</u> mW/g, | <u>3.11</u> mW/g (10g avg.) |
| (normalized to 1.0 W, including drift) |                   |                             |

Test performed by: J. Fortier Initial: 

Dipole D450V2 SN1002; Test date:01/16/03

Run #: Sys Val R3\_030116-04 Phantom #:80302002B/S6  
Model #: D450V2 SN: 1002  
Robot: CGISS-3 Tester: J. Fortier  
TX Freq: 450 MHz Sim Tissue Temp: 21.2 (Celsius)  
Start Power: 250mW  
DAE3: SN:406 DAE Cal Date: 11/11/02

- Comments-

Target at 1W is 4.9 mW/g (1g)

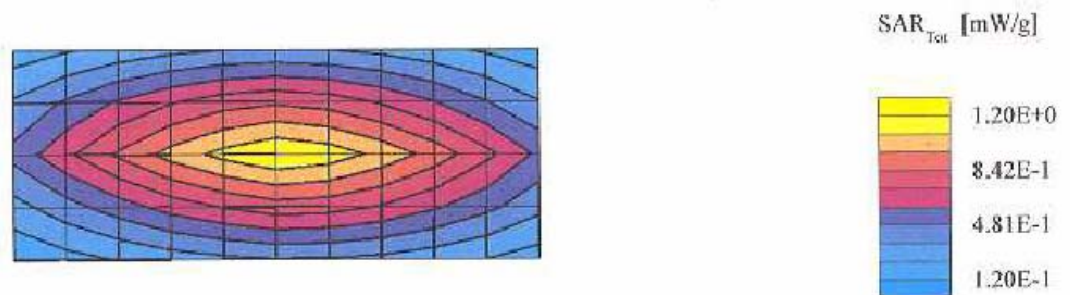
SAR calculated is 4.7 mW/g. Percent from IEEE-1528 target (including drift) for 1g is 4.0%

Flat; Probe: ET3DV6 - SN1393 SPEAG; ConvF(8.00,8.00,8.00); Crest factor: 1.0; IEEE Head 450 MHz:  $\sigma = 0.87 \text{ mho/m}$   $\epsilon_r = 43.3$   $\rho = 1.00 \text{ g/cm}^3$

Cubes (2): Peak: 1.81 mW/g  $\pm 0.05 \text{ dB}$ , SAR (1g): 1.17 mW/g  $\pm 0.05 \text{ dB}$ , SAR (10g): 0.774 mW/g  $\pm 0.06 \text{ dB}$ , (Worst-case extrapolation)

Penetration depth: 12.8 (11.4, 14.5) [mm]

Powerdrift: -0.02 dB



### SYSTEM PERFORMANCE CHECK TARGET SAR

|                 |                    |                    |                           |
|-----------------|--------------------|--------------------|---------------------------|
| Date:           | <u>1/16/2003</u>   | Frequency (MHz):   | <u>450</u>                |
| Lab Location:   | <u>CGISS</u>       | Mixture Type:      | <u>FCC Body</u>           |
| Robot System:   | <u>CGISS 3</u>     | Ambient Temp.(°C): | <u>22.6, (Humid: 45%)</u> |
| Probe Serial #: | <u>ET3DV6-1393</u> | Tissue Temp.(°C):  | <u>21.5</u>               |
| DAE Serial #:   | <u>406</u>         |                    |                           |

#### Tissue Characteristics

|               |             |                  |                               |
|---------------|-------------|------------------|-------------------------------|
| Permittivity: | <u>55.4</u> | Phantom Type/SN: | <u>80302002C/S7</u>           |
| Conductivity: | <u>0.92</u> | Distance (mm):   | <u>15 (tissue/dipole cnt)</u> |

|                   |               |          |
|-------------------|---------------|----------|
| Reference Source: | <u>D450V2</u> | (Dipole) |
| Reference SN:     | <u>1002</u>   |          |

Power to Dipole: 250 mW

|                     |                   |                              |
|---------------------|-------------------|------------------------------|
| Measured SAR Value: | <u>1.13</u> mW/g, | <u>0.748</u> mW/g (10g avg.) |
| Power Drift:        | <u>0</u> dB       |                              |

#### New Target/Measured

|                                        |                   |                             |
|----------------------------------------|-------------------|-----------------------------|
| SAR Value:                             | <u>4.52</u> mW/g, | <u>2.99</u> mW/g (10g avg.) |
| (normalized to 1.0 W, including drift) |                   |                             |

Test performed by: J. Fortier Initial: 

Dipole D450V2 SN1002; Test date:01/16/03

Run #: Sys Val\_R3\_030116-07 Phantom #:80302002C/S7  
Model #: D450V2 SN: 1002  
Robot: CGISS-3 Tester: J. Fortier  
TX Freq: 450 MHz Sim Tissue Temp: 21.5 (Celsius)  
Start Power: 250mW  
DAE3: SN:406 DAE Cal Date: 11/11/02

- Comments-

Target at 1W is 4.52 mW/g (1g), 2.99 mW/g (10g)  
Flat; Probe: ET3DV6 - SN1393 SPEAG; ConvF(8.20,8.20,8.20); Crest factor: 1.0; FCC Body 450:  $\sigma = 0.92$  mho/m  $\epsilon_r = 55.4$   $\rho = 1.00$  g/cm<sup>3</sup>  
Cubes (2): Peak: 1.74 mW/g  $\pm 0.06$  dB, SAR (1g): 1.13 mW/g  $\pm 0.06$  dB, SAR (10g): 0.748 mW/g  $\pm 0.06$  dB, (Worst-case extrapolation)  
Penetration depth: 13.1 (11.6, 14.9) [mm]  
Powerdrift: -0.00 dB

