Certificate Number: 1449-02

MOTOROLA

ACCREDITED

CGISS EME Test Laboratory
8000 West Sunrise Blvd
Fort Lauderdale, FL. 33322

S.A.R. EME Compliance Test Report
Part 2 of 3

Attention:	FCC
Date of Report:	September 23, 2003
Report Revision:	Rev. B
Manufacturer:	Motorola
Product Description:	Portable 438-470 MHz 1-4W with and with out display and keypad
FCC ID:	**ABZ99FT4056**
Device Model:	AAH65RDC9AA1AN/ AAH65RDH9AA1AN

Test Period:	8/26/03-9/7/03
EME Tech:	Ed Church
EME Engineer:	Kim Uong Lead EME Engineer
Author:	Michael Sailsman 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 the national and international reference standards and guidelines listed in section 2.0 of this report.

Signature on file — 9/24/03

Ken Enger
Senior Resource Manager, Laboratory Director, CGISS EME Lab

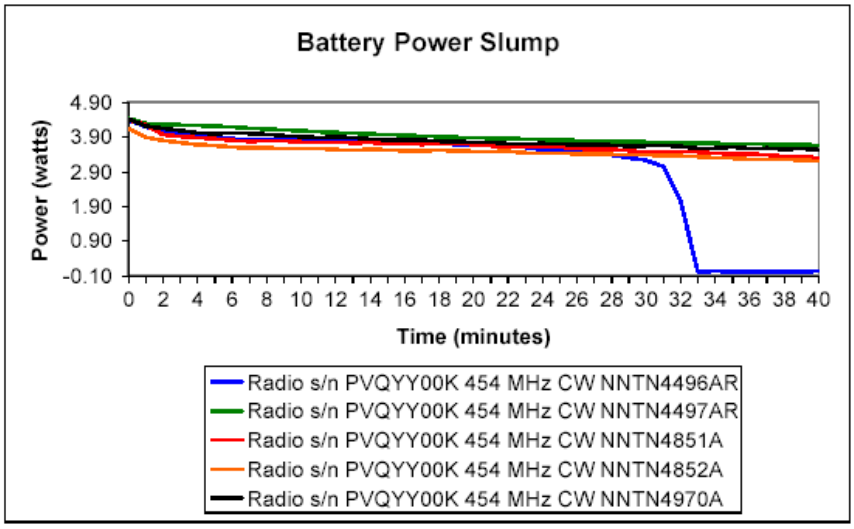
Date Approved

APPENDIX A

Power Slump Data/Shortened Scan

DUT Power versus time data

	Radio s/n	Radio s/n	Radio s/n	Radio s/n	Radio s/n
	PVQYY00K	PVQYY00K	PVQYY00K	PVQYY00K	PVQYY00K
Frequency	454 MHz	454 MHz	454 MHz	454 MHz	454 MHz
Mode	CW	CW	CW	CW	CW
Battery	NNTN4496AR	NNTN4497AR	NNTN4851A	NNTN4852A	NNTN4970A
Time(Minutes	Power (watts)	Power (watts)	Power (watts)	Power (watts)	Power (watts)
0	4.40	4.44	4.40	4.15	4.43
1	4.21	4.30	4.26	3.90	4.22
2	4.04	4.27	3.97	3.81	4.16
3	3.97	4.26	3.93	3.75	4.10
4	3.91	4.24	3.89	3.69	4.02
5	3.89	4.22	3.86	3.66	4.00
6	3.86	4.20	3.81	3.61	4.02
7	3.83	4.17	3.78	3.60	4.01
8	3.84	4.14	3.80	3.59	3.99
9	3.84	4.11	3.80	3.57	3.94
10	3.82	4.09	3.76	3.57	3.91
11	3.82	4.06	3.76	3.58	3.89
12	3.82	4.04	3.75	3.54	3.91
13	3.78	4.02	3.74	3.53	3.89
14	3.77	4.00	3.74	3.55	3.85
15	3.76	3.98	3.72	3.54	3.82
16	3.74	3.96	3.73	3.51	3.83
17	3.74	3.94	3.70	3.51	3.82
18	3.75	3.92	3.72	3.53	3.79
19	3.69	3.90	3.71	3.51	3.78
20	3.69	3.88	3.70	3.49	3.76
21	3.67	3.88	3.66	3.50	3.75
22	3.63	3.86	3.65	3.50	3.71
23	3.61	3.85	3.63	3.45	3.71
24	3.53	3.84	3.63	3.44	3.72
25	3.54	3.82	3.62	3.45	3.71
26	3.49	3.81	3.57	3.41	3.69
27	3.44	3.80	3.55	3.43	3.69
28	3.39	3.78	3.55	3.41	3.67
29	3.31	3.77	3.52	3.39	3.65
30	3.24	3.76	3.47	3.40	3.65
31	3.05	3.75	3.50	3.37	3.67
32	2.06	3.74	3.48	3.36	3.64
33	0.01	3.73	3.48	3.34	3.58
34	0.05	3.72	3.44	3.31	3.59
35	0.01	3.71	3.43	3.30	3.62
36	0.02	3.70	3.42	3.26	3.58
37	0.02	3.70	3.39	3.26	3.58
38	0.02	3.69	3.35	3.26	3.56
39	0.01	3.68	3.34	3.25	3.58
40	0.04	3.67	3.30	3.21	3.53



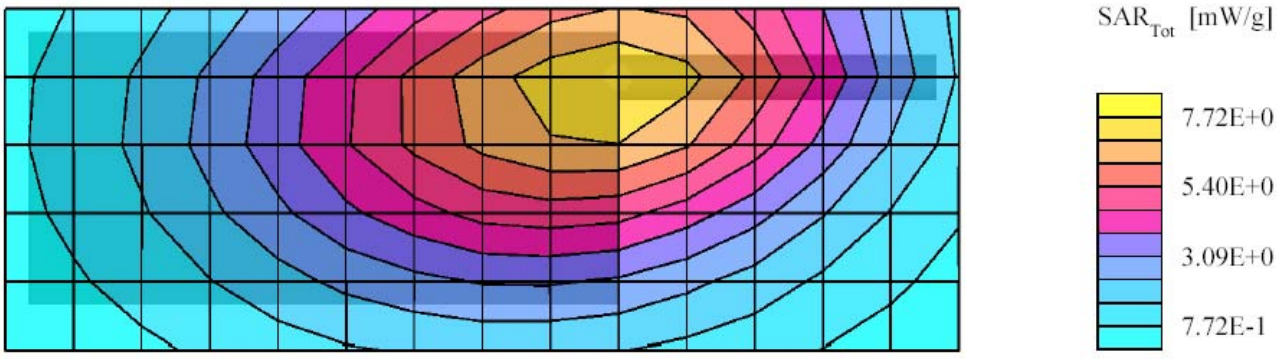
Shortened Scan Results

FCC ID: ABZ99FT4056; Test Date: 9/02/03
Motorola CGISS EME Laboratory
RUN #: EC-R2-030902-11
MODEL #: AAH65RDC9AA1AN S/N: PVQYY00K
Tx freq: 438
Simulated tissue temp: 20.0
Start power : 4.43 W

Antenna position: NAE6522A
Battery kit: NNTN4497AR
Carry Accessories: NONE
Audio/data accessories: NONE

Shortened scan reflect highest S.A.R. producing configuration at the face.
Run time 7 minutes
Representative "normal" scan run time was 25 minutes
"Shortened" scan; max calc. S.A.R. (drift adjusted) w/ 50% duty cycle = 4.14 mW/g
"Normal" scan; max. calc. S.A.R. (drift adjusted) w/ 50% duty cycle = 4.12mW/g
(see section 7.1 run # KU-R2-030902-02)

DUT front w/ 2.5cm separation distance
Note: this shortened scan represents the Highest results at the face
Flat Phantom; Flat Abdomen (2) Section; Position: (90°,90°);
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 454 MHz: σ = 0.88 mho/m ε_r = 45.1 ρ = 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cube 5x5x7: SAR (1g): 7.49 mW/g, SAR (10g): 5.45 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 16.5, 133.5, 4.7
Power drift: -0.27 dB

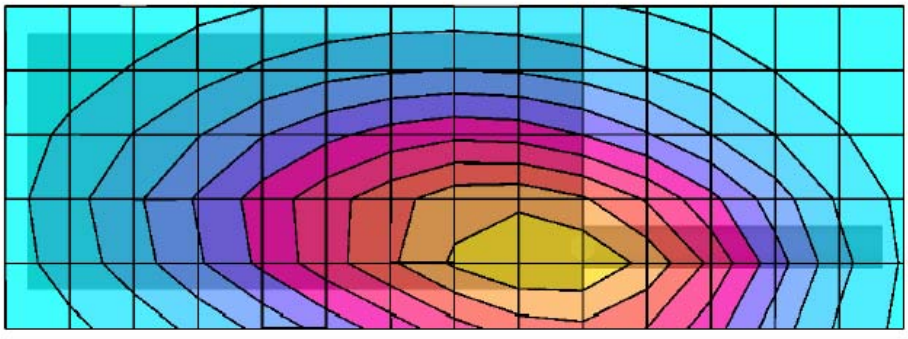


FCC ID: ABZ99FT4056; Test Date: 9/05/03
Motorola CGISS EME Laboratory
RUN #: EC-R2-030905-17
MODEL #: AAH65RDH9AA1AN S/N: PVSYY020
Tx freq: 438
Simulated tissue temp: 20.5
Start power: 4.61 W

Antenna position: NAE6522A
Battery kit: NNTN4970A
Carry Accessories: RLN4570A
Audio/data accessories: None

Shortened scan reflect highest S.A.R. producing configuration at the body.
Run time 6 minutes
Representative "normal" scan run time was 25 minutes
"Shortened" scan; max calc. S.A.R. (drift adjusted) w/ 50% duty cycle = 7.25 mW/g
"Normal" scan; max. calc. S.A.R. (drift adjusted) w/ 50% duty cycle = 7.35 mW/g
(see section 7.1 run # EC-R2-030905-15)

DUT w/ carry accessory against the phantom
Flat Phantom; Flat Abdomen (1) Section; Position: (90°,90°);
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 454: σ = 0.90 mho/m ε_r = 54.9 ρ = 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cube 5x5x7: SAR (1g): 13.2 mW/g, SAR (10g): 9.54 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 60.0, 126.0, 4.7
Power drift: -0.41 dB

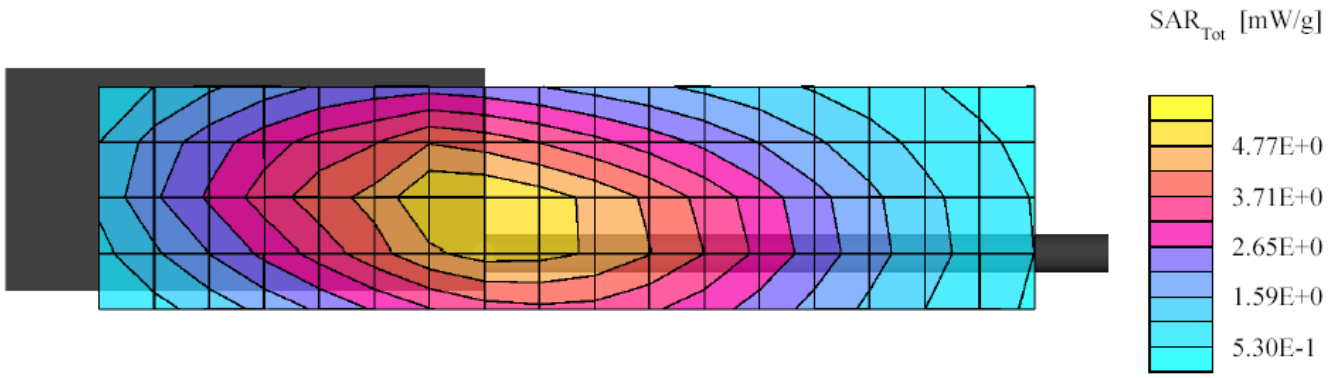


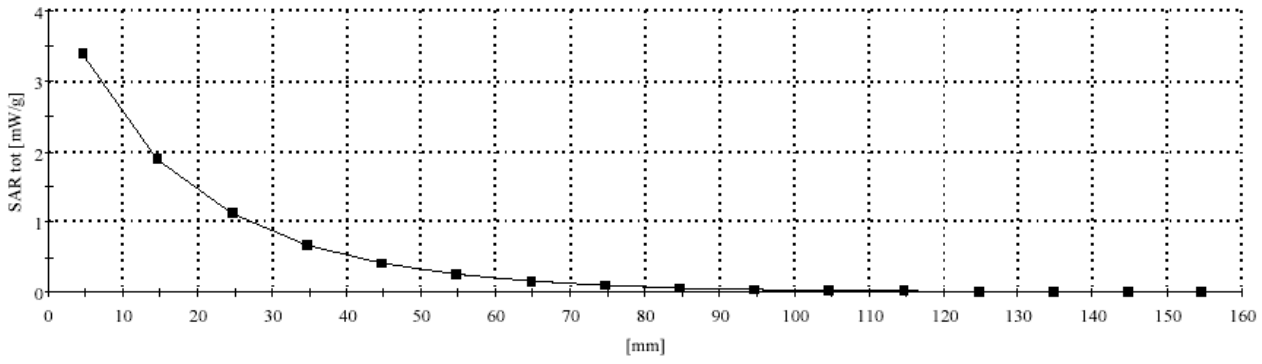
APPENDIX B
Data Results

FCC ID: ABZ99FT4056; Test Date: 8/28/03
Motorola CGISS EME Laboratory
RUN #: EC-R2-030828-8
MODEL #: AAH65RDC9AA1AN S/N: PVQYY00K
Tx freq: 438
Simulated tissue temp: 19.9
Start power : 4.46 W

Antenna position: NAE6483A
Battery kit: NNTN4970A
Carry Accessories: HLN8255B
Audio/data accessories: HMN9030A

DUT w/ belt clip against the flat phantom
Flat Phantom; Flat Abdomen (2) Section; Position: (90°,90°);
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 454: σ = 0.91 mho/m ε = 55.3 ρ = 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cube 5x5x7: SAR (1g): 5.08 mW/g, SAR (10g): 3.69 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 33.0, 97.5, 4.7
Power drift: -0.53dB

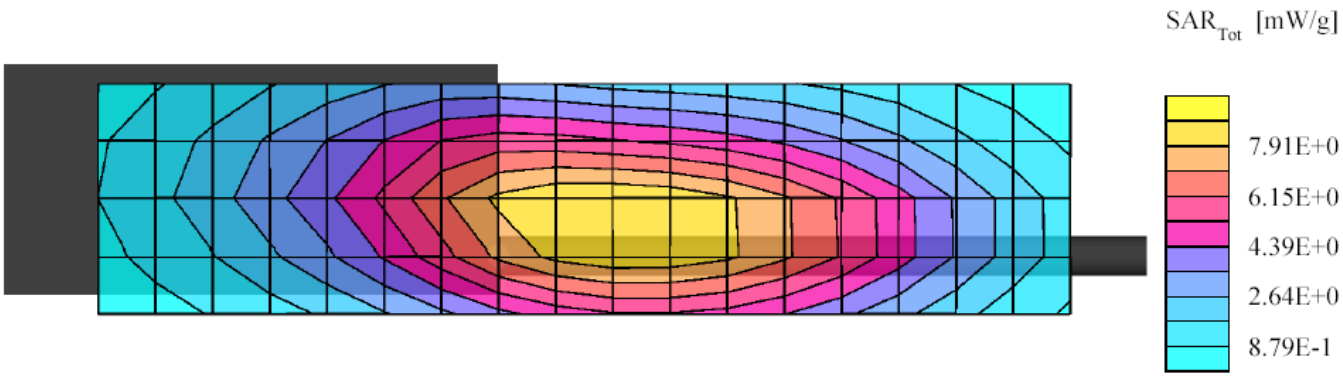


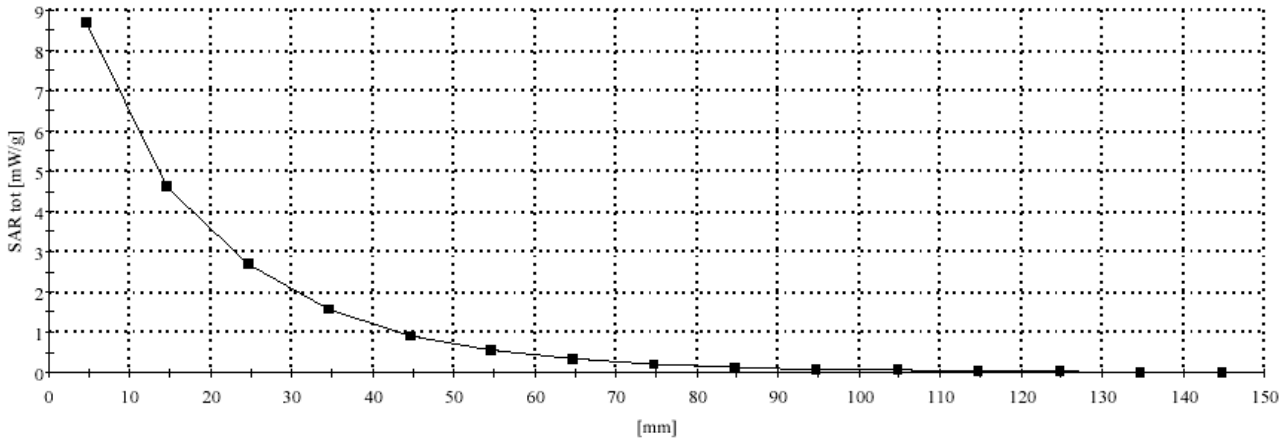


FCC ID: ABZ99FT4056; Test Date: 8/28/03
Motorola CGISS EME Laboratory
RUN #: EC-R2-030828-14
Model #: AAH65RDC9AA1AN S/N: PVQYY00K
Tx freq: 438
Simulated tissue temp: 19.6
Start power : 4.54 W

Antenna position: NAE6483A
Battery kit: NNTN4970A
Carry Accessories: RLN4570A
Audio/data accessories: HMN9030A

DUT w/ chest pack against the flat phantom
Flat Phantom; Flat Abdomen (2) Section; Position: (90°,90°);
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 454: σ = 0.91 mho/m ε_r = 55.3 ρ = 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cube 5x5x7: SAR (1g): 8.82 mW/g, SAR (10g): 6.26 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 36.0, 136.5, 4.7
Power drift: -0.65 dB

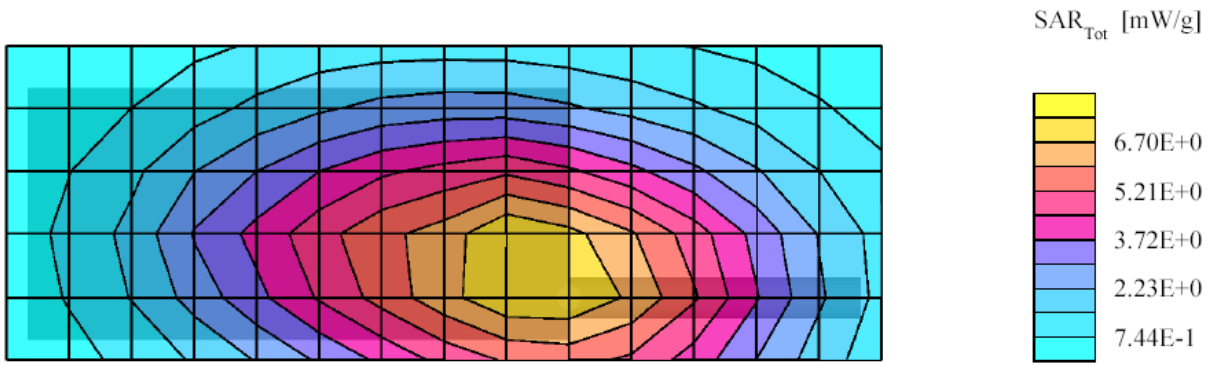


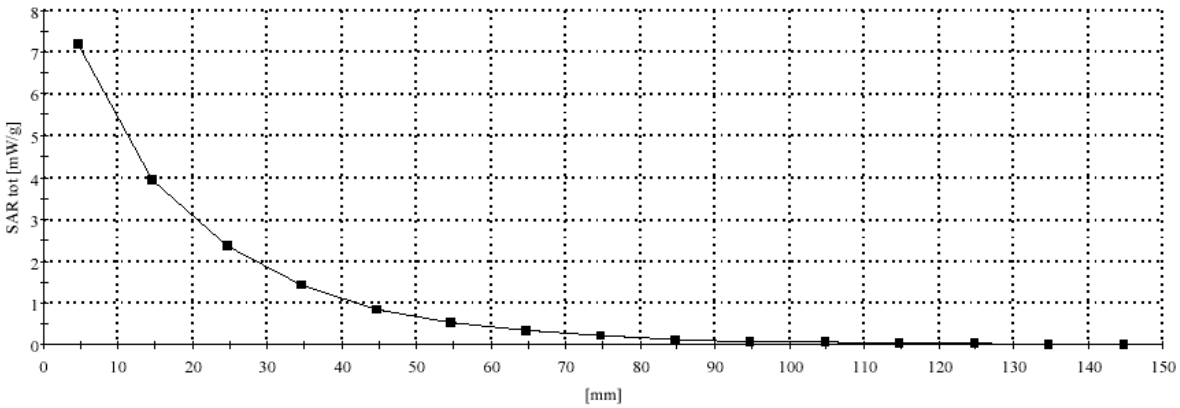


FCC ID: ABZ99FT4056; Test Date: 8/29/03
Motorola CGISS EME Laboratory
RUN #: KU-R2-030829-04
Model #: AAH65RDC9AA1AN S/N: PVQYY00K
Tx freq: 438
Simulated tissue temp: 20.3
Start power: 4.46 W

Antenna position: NAE6522A
Battery kit: NNTN4970A
Carry Accessories: HLN8255B
Audio/data accessories: HMN9030A

DUT w/ belt clip against the flat phantom
Flat Phantom; Flat Abdomen (2) Section; Position: (90°,90°);
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 454: σ = 0.91 mho/m ε_r = 55.6 ρ = 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cube 7x7x7: SAR (1g): 7.34 mW/g, SAR (10g): 5.27 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 52.5, 124.5, 4.7
Power drift: -0.77 dB

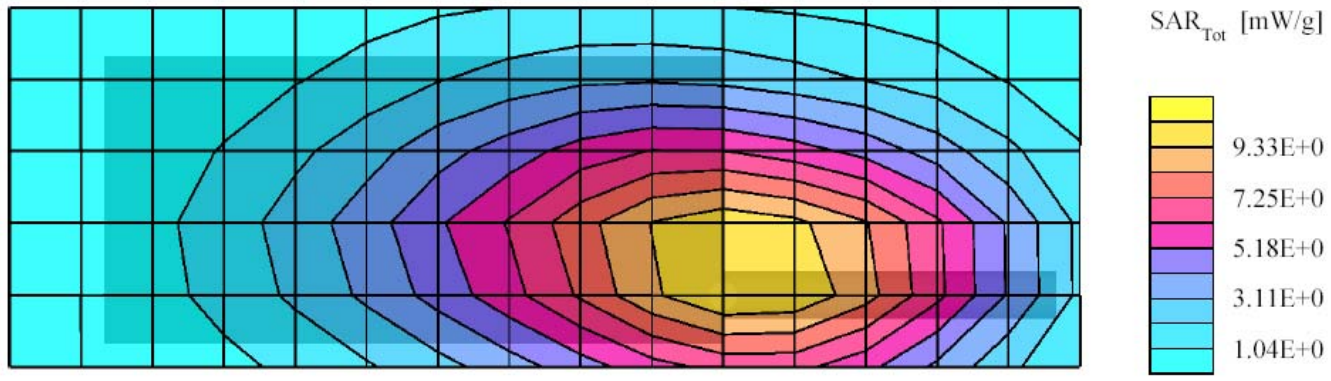


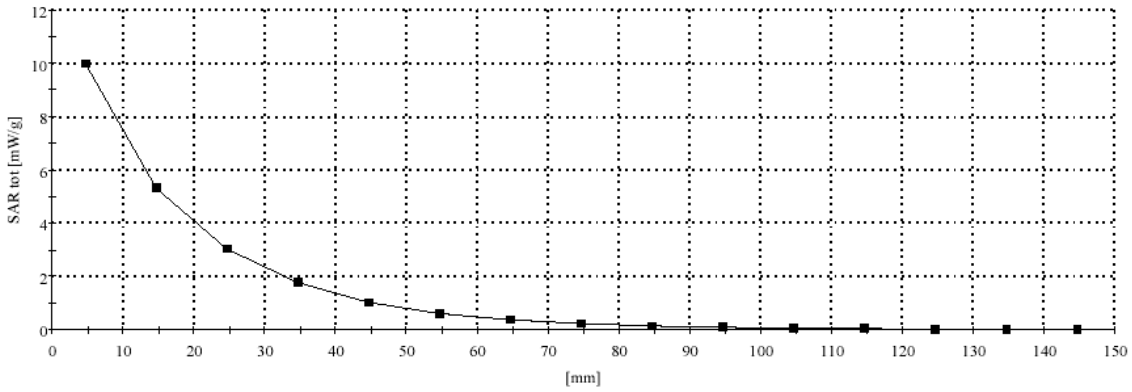


FCC ID: ABZ99FT4056; Test Date: 8/29/03
Motorola CGISS EME Laboratory
RUN #: EC-R2-030829-13
Model #: AAH65RDC9AA1AN S/N: PVQYY00K
Tx freq: 438
Simulated tissue temp: 19.6
Start power : 4.55 W

Antenna position: NAE6522A,
Battery kit: NNTN4970A
Carry Accessories: RLN4570A
Audio/data accessories: HMN9030A

DUT w/ chest pack against the flat phantom
Flat Phantom; Flat Abdomen (2) Section; Position: (90°,90°);
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 454: σ = 0.91 mho/m ε_r = 55.6 ρ = 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cube 7x7x7: SAR (1g): 10.3 mW/g, SAR (10g): 7.26 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 54.0, 154.5, 4.7
Power drift: -0.86 dB

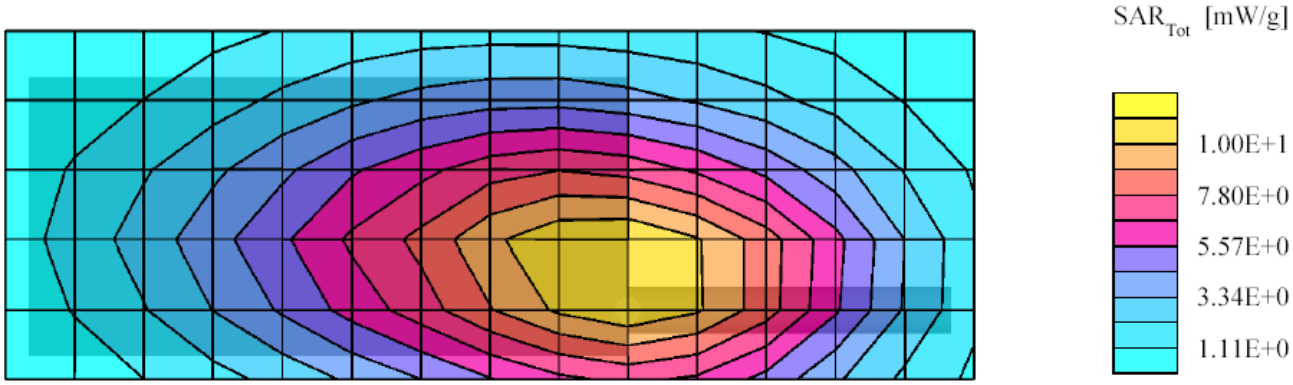


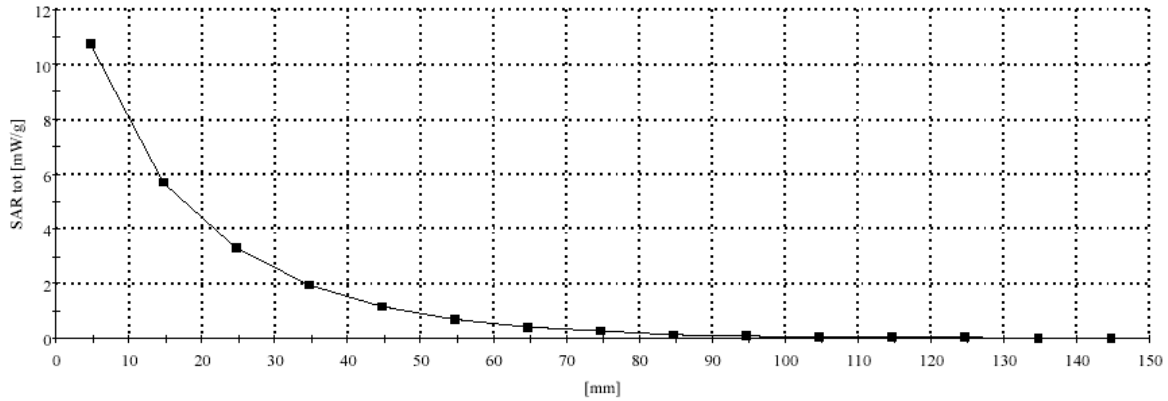


FCC ID: ABZ99FT4056; Test Date: 9/03/03
Motorola CGISS EME Laboratory
RUN #: KU-R2-030903-04
Model #: AAH65RDC9AA1AN S/N: PVQYY00K
Tx freq: 438
Simulated tissue temp: 20.8
Start power : 4.38

Antenna position: NAE6522A
Battery kit: NNTN4970A
Carry Accessories: RLN4570A
Audio/data accessories: BDN6706B, 0180358B38

DUT w/ chest pack against the flat phantom
Flat Phantom; Flat Abdomen (2) Section; Position: (90°,90°);
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 454: σ = 0.92 mho/m ε_r = 55.0 ρ = 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cube 7x7x7: SAR (1g): 11.1 mW/g, SAR (10g): 7.86 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 51.0, 133.5, 4.7
Power drift: -0.79 dB

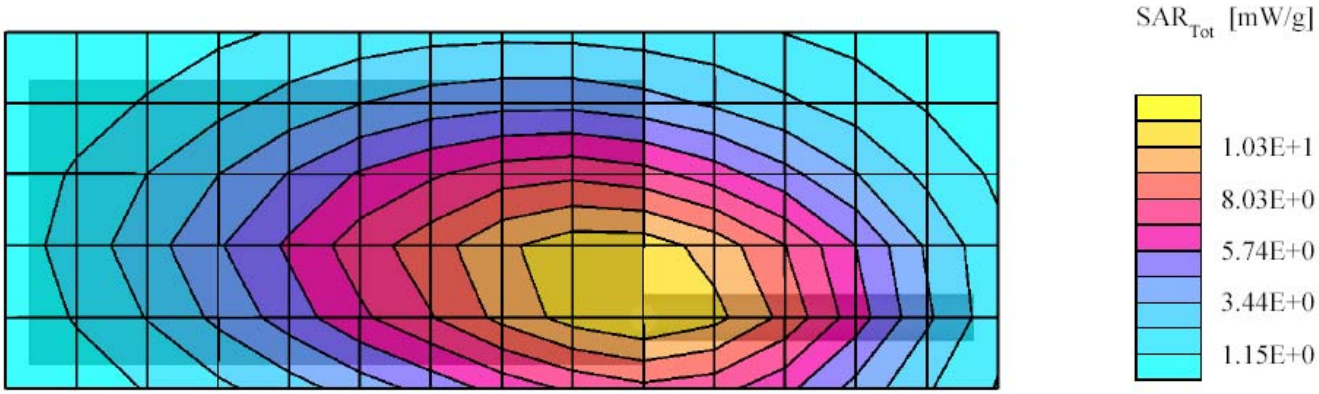


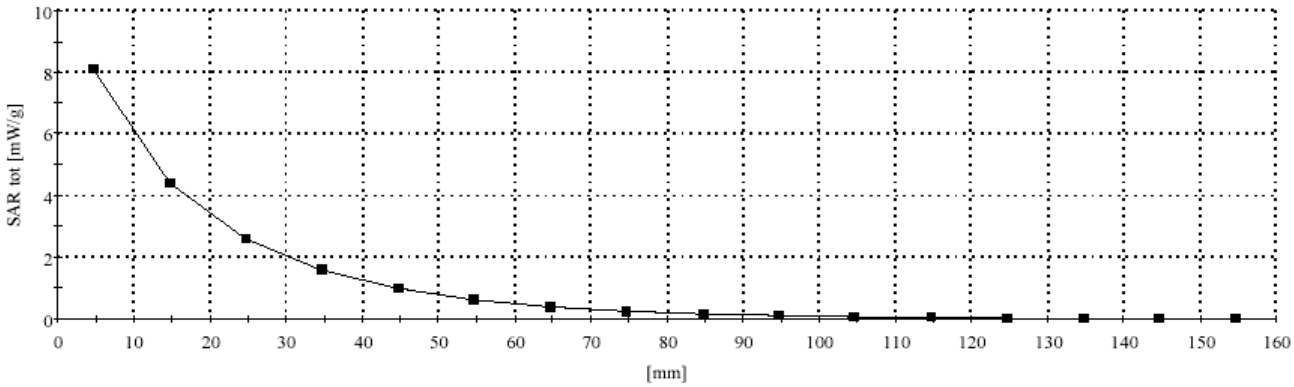


FCC ID: ABZ99FT4056; Test Date: 9/03/03
Motorola CGISS EME Laboratory
RUN #: KU-R2-030903-05
Model #: AAH65RDC9AA1AN S/N: PVQYY00K
Tx freq: 438
Simulated tissue temp: 20.5
Start power : 4.44 W

Antenna position: NAE6522A
Battery kit: NNTN4970A
Carry Accessories: RLN4570A
Audio/data accessories: None

DUT w/ carry case against the flat phantom
Flat Phantom; Flat Abdomen (2) Section; Position: (90°,90°);
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 454: σ = 0.92 mho/m ε_r = 55.0 ρ = 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cube 7x7x7: SAR (1g): 11.0 mW/g, SAR (10g): 7.84 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 54.0, 132.0, 4.7
Power Drift: -0.96dB

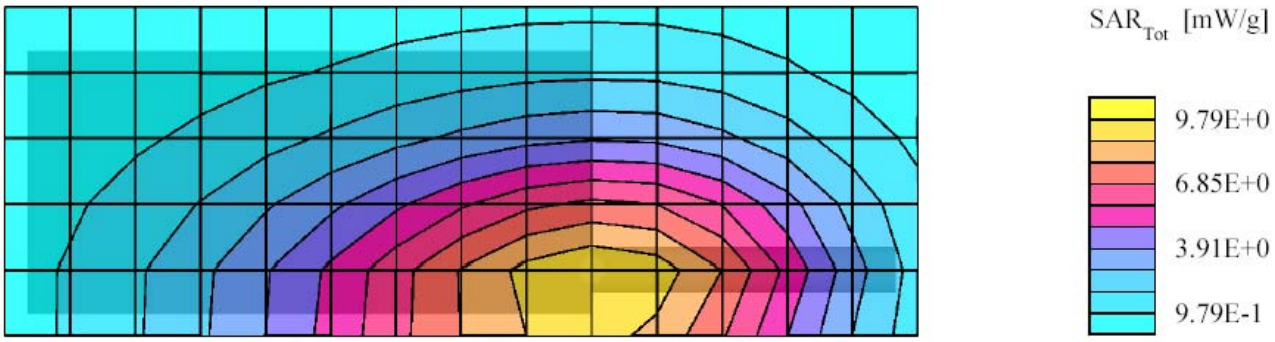


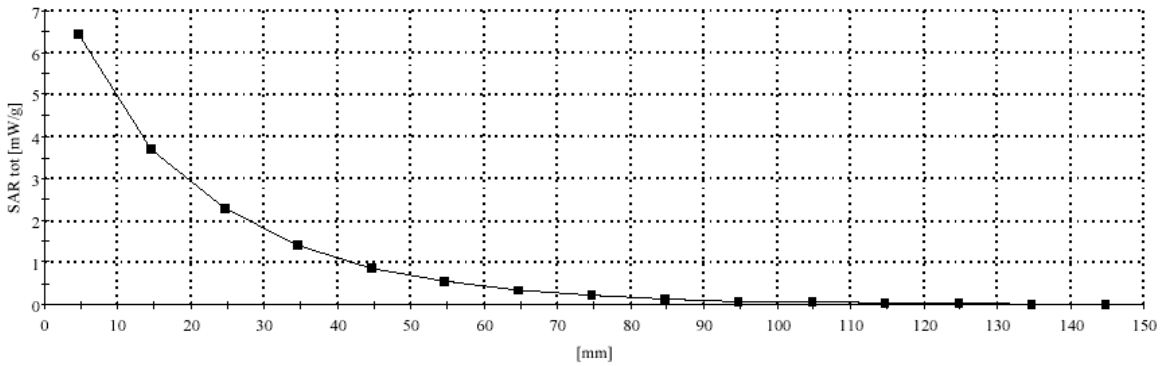


FCC ID: ABZ99FT4056; Test Date: 9/04/03
Motorola CGISS EME Laboratory
RUN #: EC-R2-030904-25
Model #: AAH65RDC9AA1AN S/N: PVQYY00K
Tx freq: 438
Simulated tissue temp: 20.4
Start power : 4.44 W

Antenna position: NAE6522A
Battery kit: NNTN4970A
Carry Accessories: None
Audio/data accessories: BDN6706B. PTT Switch #: 0180358B38

DUT front towards phantom w/ 2.5 cm separation.
Flat Phantom; Flat Abdomen (2) Section; Position: (90°,90°);
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 454: σ = 0.91 mho/m ε = 55.8 ρ = 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cube 7x7x7: SAR (1g): 9.49 mW/g, SAR (10g): 6.87 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 66.0, 136.5, 4.7
Power drift: -0.76 dB

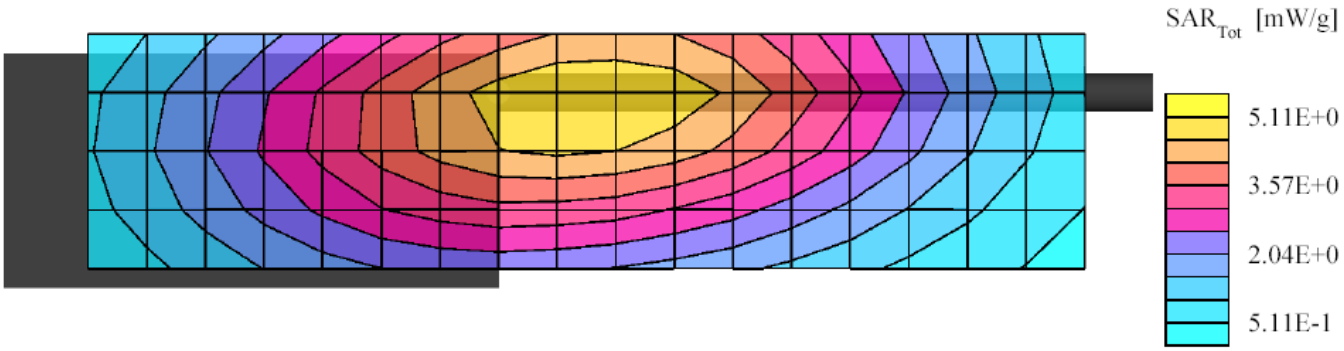


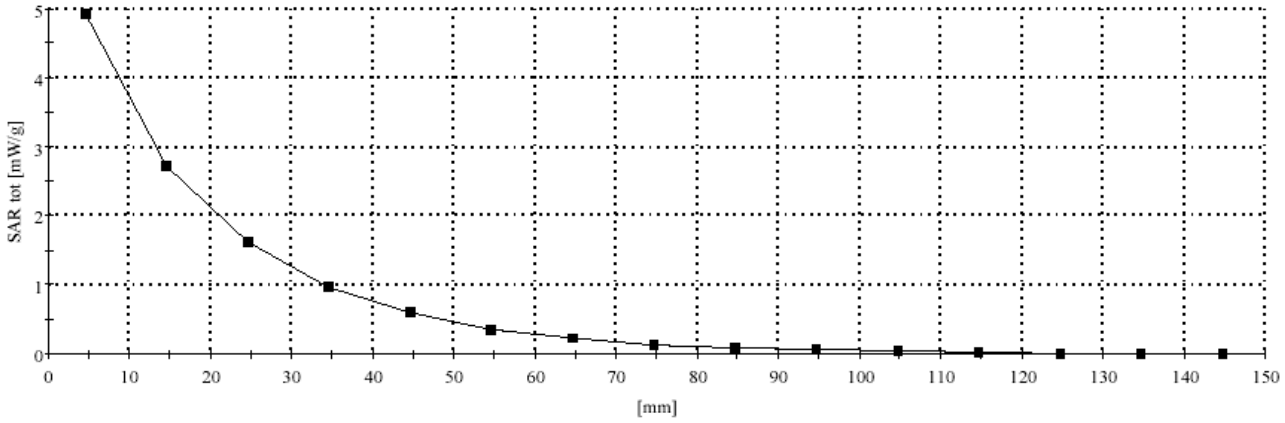


FCC ID: ABZ99FT4056; Test Date: 8/30/03
Motorola CGISS EME Laboratory
RUN #: EC-R2-030830-09
Model #: AAH65RDC9AA1AN S/N: PVQYY00K
Tx freq: 438
Simulated tissue temp: 19.7
Start power : 4.45 W

Antenna position: NAE6483A
Battery kit: NNTN4970A
Antenna Adapter #: 5886627Z01
Carry Accessories: NONE
Audio/data accessories: NONE

DUT front towards phantom w/ 2.5 cm separation
Flat Phantom; Flat Abdomen (2) Section; Position: (90°,90°);
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 454 MHz: σ = 0.89 mho/m ε = 45.4 ρ = 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cube 5x5x7: SAR (1g): 4.94 mW/g, SAR (10g): 3.61 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 16.5, 126.0, 4.7
Power Drift: -0.47 dB

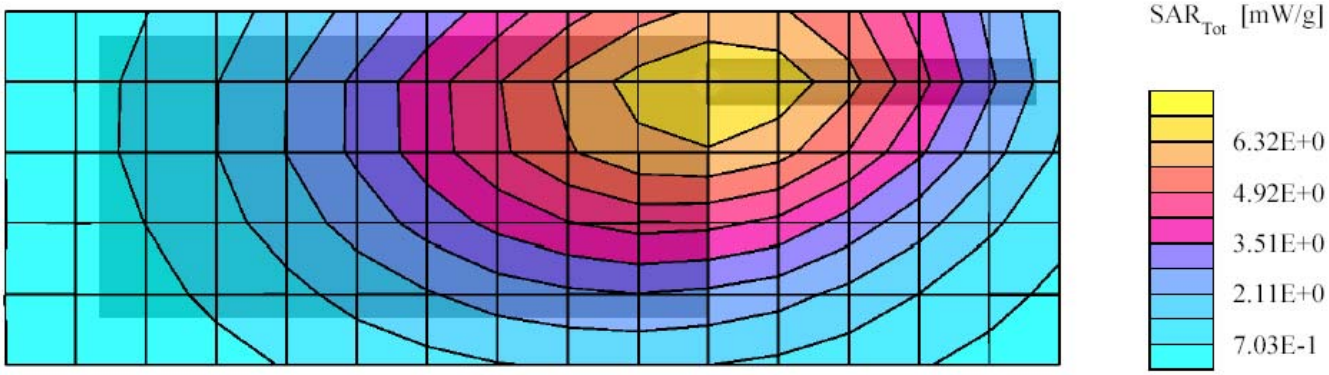


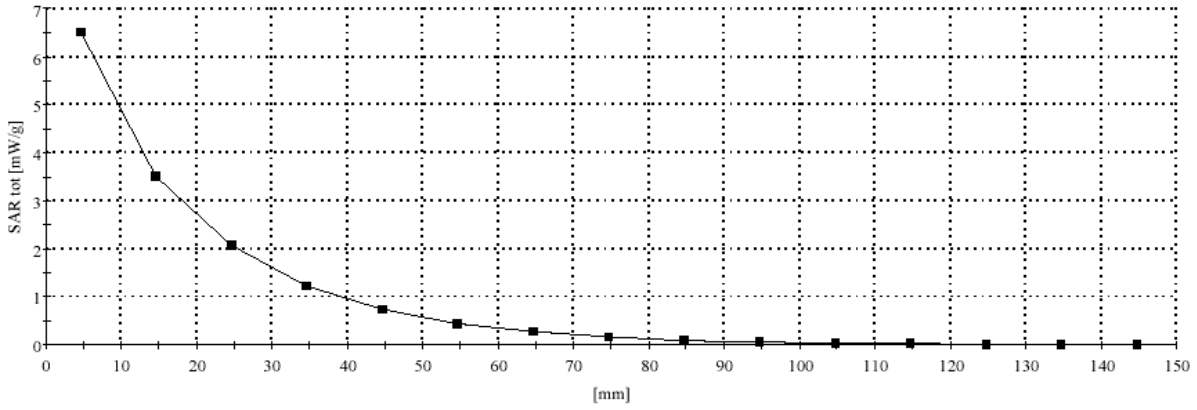


FCC ID: ABZ99FT4056; Test Date: 9/02/03
Motorola CGISS EME Laboratory
RUN #: KU-R2-030902-02
Model #: AAH65RDC9AA1AN S/N: PVQYY00K
Tx freq: 438
Simulated tissue temp: 21.0
Start power : 4.45 W

Antenna position: NAE6522A
Battery kit: NNTN4497AR
Carry Accessories: NONE
Audio/data accessories: NONE

DUT front towards phantom w/ 2.5 cm separation
Flat Phantom; Flat Abdomen (2) Section; Position: (90°,90°);
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 454 MHz: σ = 0.88 mho/m ε_r = 45.1 ρ = 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cube 7x7x7: SAR (1g): 6.72 mW/g, SAR (10g): 4.85 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 15.0, 153.0, 4.7
Power Drift: -0.74 dB

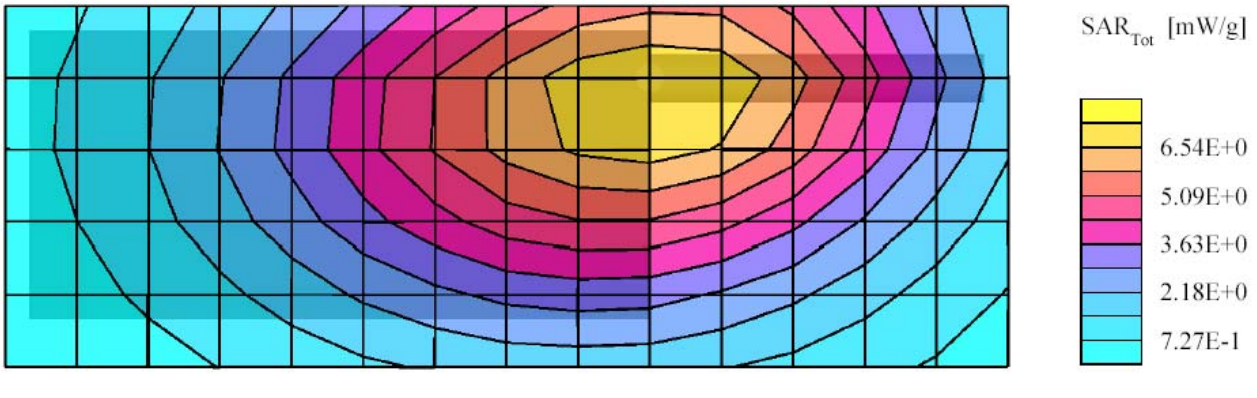


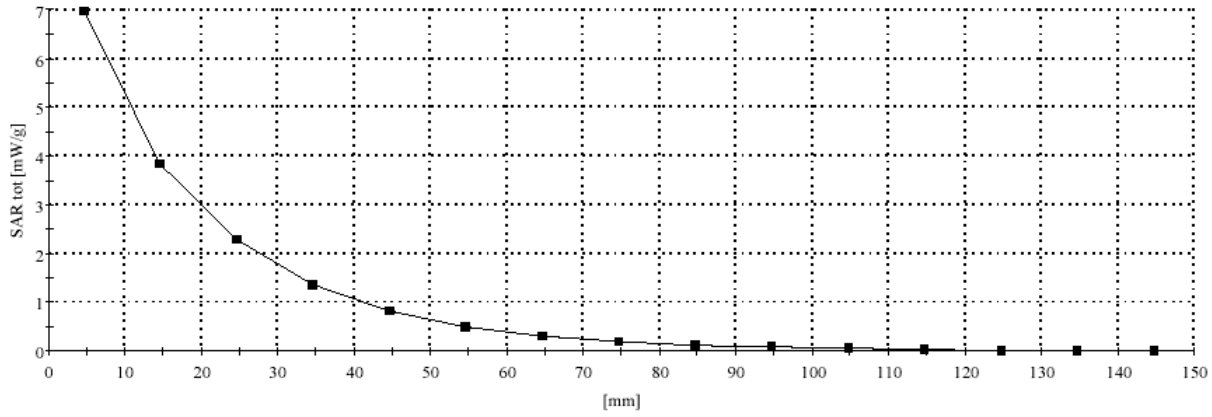


FCC ID: ABZ99FT4056; Test Date: 9/02/03
Motorola CGISS EME Laboratory
RUN #: EC-R2-030902-09
Model #: AAH65RDC9AA1AN S/N: PVQYY00K
Tx freq: 438
Simulated tissue temp: 20.0
Start power : 4.45 W

Antenna position: NAE6522A
Battery kit: NNTN4497AR
Carry Accessories: NONE
Audio/data accessories: RMN4055A

DUT front towards phantom w/ 2.5 cm separation
Flat Phantom; Flat Abdomen (2) Section; Position: (90°,90°);
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 454 MHz: σ = 0.88 mho/m ε_r = 45.1 ρ = 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cube 7x7x7: SAR (1g): 7.10 mW/g, SAR (10g): 5.17 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 19.5, 136.5, 4.7
Power Drift: -0.49 dB

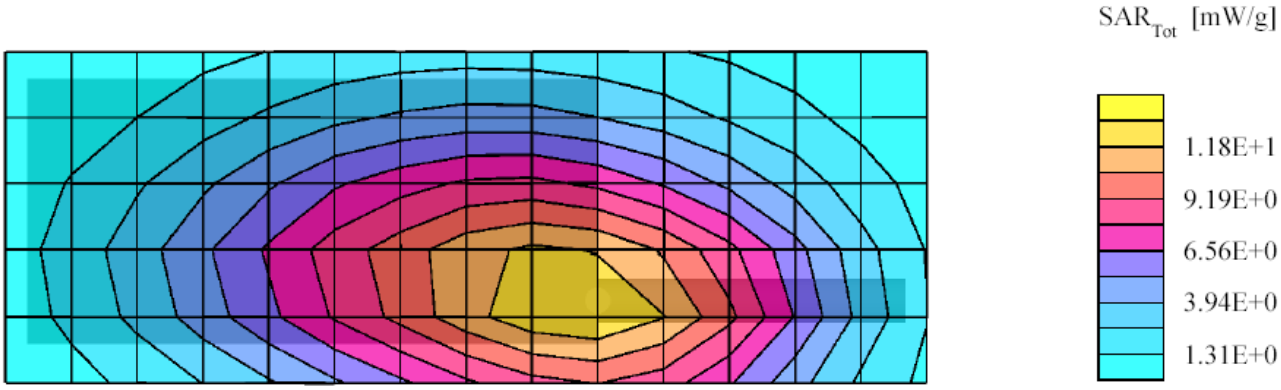


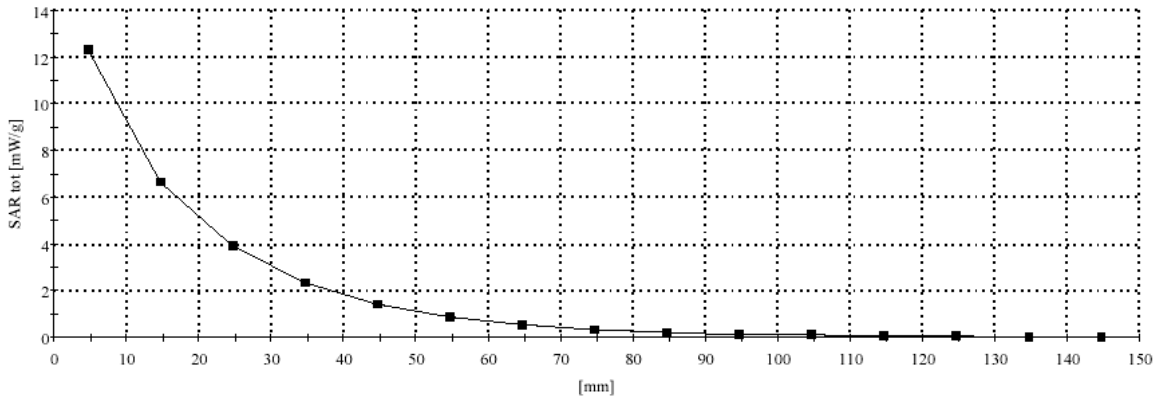


FCC ID: ABZ99FT4056; Test Date: 9/05/03
Motorola CGISS EME Laboratory
RUN #: EC-R2-030905-15
Model #: AAH65RDH9AA1AN S/N: PVSYY020
Tx freq: 438
Simulated tissue temp: 20.5
Start power : 4.59 W

Antenna position: NAE6522A
Battery kit: NNTN4970A
Carry Accessories: RLN4570A
Audio/data accessories: None

DUT w/ carry case against the phantom
Flat Phantom; Flat Abdomen (1) Section; Position: (90°,90°);
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 454: σ = 0.90 mho/m ε_r = 54.9 ρ = 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cube 7x7x7: SAR (1g): 12.6 mW/g, SAR (10g): 9.03 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 57.0, 130.5, 4.7
Power Drift: -0.66 dB

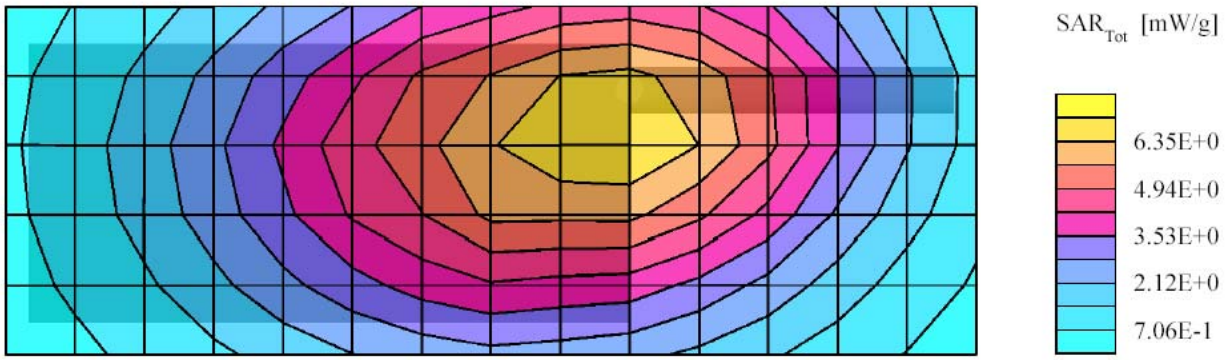


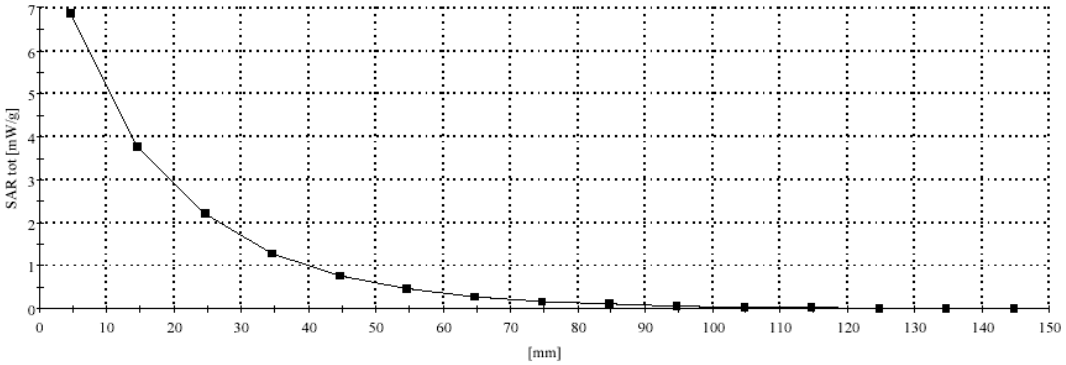


FCC ID: ABZ99FT4056; Test Date: 9/07/03
Motorola CGISS EME Laboratory
RUN #: EC-R2-030907-02
Model #: AAH65RDH9AA1AN S/N: PVSYY020
Tx freq: 438
Simulated tissue temp: 21.4
Start power : 4.60 W

Antenna position: NAE6522A
Battery kit: NNTN4497AR
Carry Accessories: NONE
Audio/data accessories: None

DUT front towards the phantom separated 2.5cm
Flat Phantom; Flat Abdomen (1) Section; Position: (90°,90°);
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 454 MHz: σ = 0.91 mho/m εr = 45.0 ρ = 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cube 7x7x7: SAR (1g): 6.88 mW/g, SAR (10g): 4.99 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 27.0, 129.0, 4.7
Power Drift: -0.51 dB





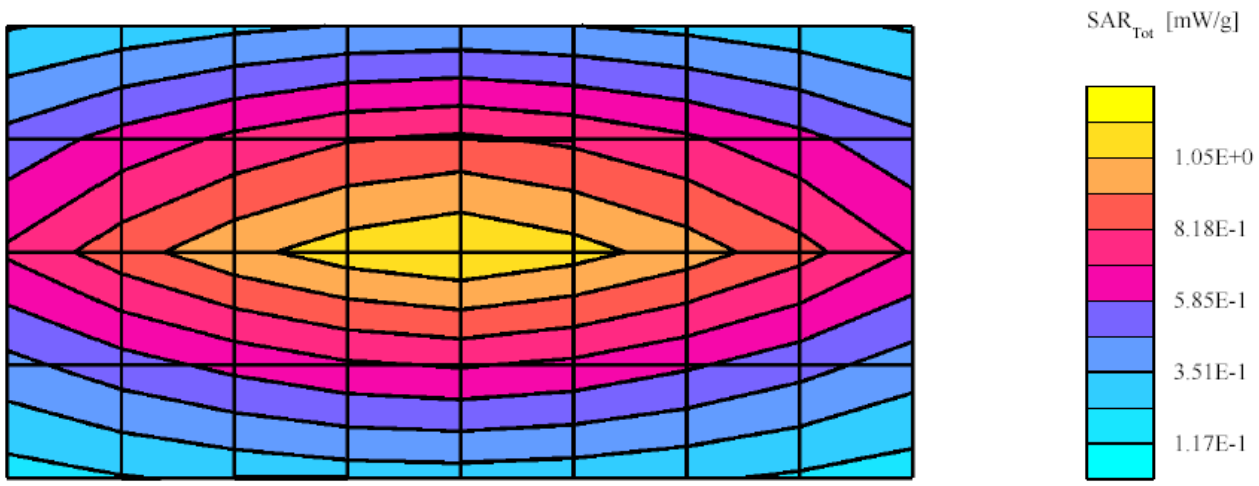
APPENDIX C
Dipole System Performance Check Results

Dipole validations at the head from SPEAG are provided herein. The CGISS EME lab validated the dipole to the applicable IEEE system performance targets. Within the same day system validation was performed using FCC body tissue parameters to generate the system performance target values for body at the applicable frequency. The results of the CGISS EME system performance validation are provided in this appendix.

SPEAG 450 MHz Dipole D450V2; SN-1002; Test Date: 8/27/03
Motorola CGISS EME Lab
Run #: SYS Perf R2-030827-01
TX Freq: 450 MHz
Sim Tissue Temp: 21.0 (Celsius)
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 4.66mW/g percent from target (including drift) is 3.19%
SAR Calculated 10g is 3.09mW/g Percent from target (including drift) is 3.36 %

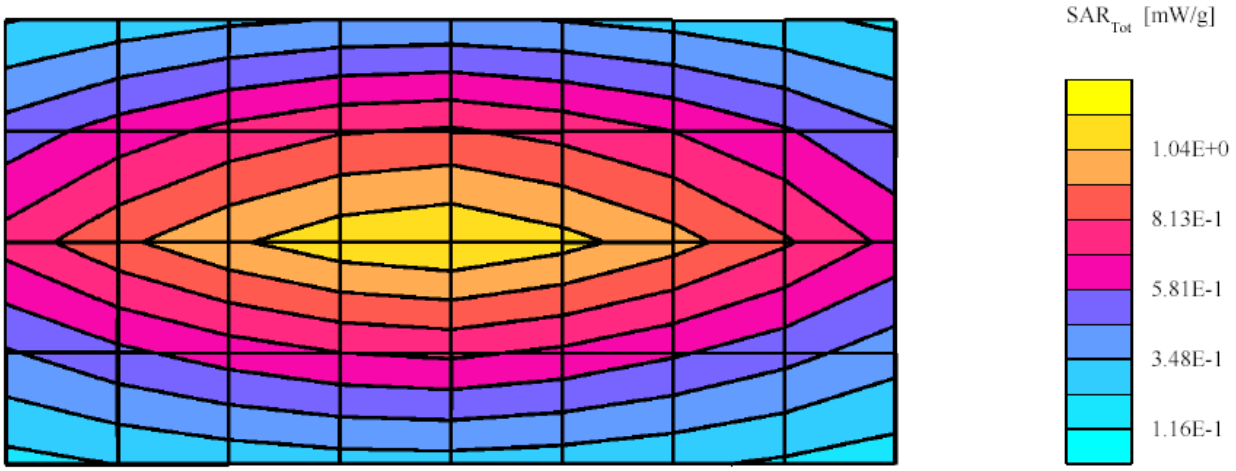
Flat; Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003);Probe Cal Date: 26/02/03ConvF(7.50,7.50,7.50); Crest factor: 1.0; FCC Body 450: σ= 0.91 mho/m ε_r = 55.4 ρ= 1.00 g/cm3; DAE: DAE3V1SN406 (11/11/02)
Cubes (2): Peak: 1.77 mW/g ± 0.05 dB, SAR (1g): 1.15 mW/g ± 0.03 dB, SAR (10g): 0.762 mW/g ± 0.03 dB, (Worst-case extrapolation) Penetration depth: 12.8 (11.4, 14.6) [mm]
Power drift: -0.06 dB



SPEAG 450 MHz Dipole D450V2; SN-1002; Test Date: 8/28/03
Motorola CGISS EME Lab
Run #: SYS Perf R2-030828-01
TX Freq:450 MHz
Tx Freq: 450MHz
Simulated 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 4.61mW/g percent from target (including drift) is 2.00 %
SAR Calculated 10g is 3.06mW/g Percent from target (including drift) is 2.44 %

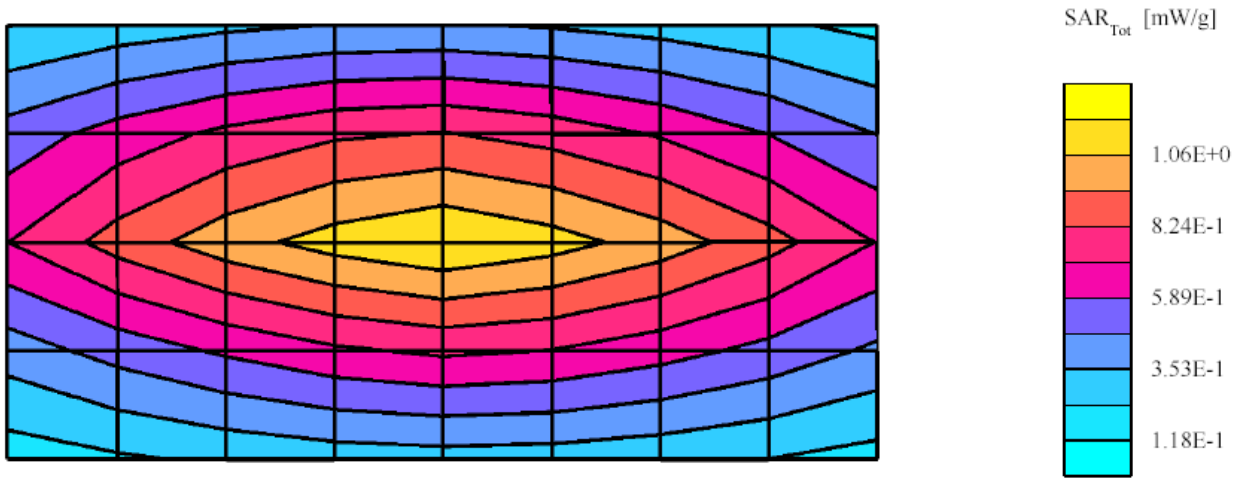
Flat; Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003);Probe Cal Date: 26/02/03ConvF(7.50,7.50,7.50); Crest factor: 1.0; FCC Body 450: σ= 0.91 mho/m ε_r = 55.3 ρ= 1.00 g/cm3; DAE: DAE3V1SN406 (11/11/02)
Cubes (2): Peak: 1.78 mW/g ± 0.01 dB, SAR (1g): 1.15 mW/g ± 0.01 dB, SAR (10g): 0.764 mW/g ± 0.01 dB, (Worst-case extrapolation) Penetration depth: 12.9 (11.4, 14.8) [mm]
Power drift: -0.01 dB



SPEAG 450 MHz Dipole D450V2; SN-1002; Test Date: 8/29/03
Motorola CGISS EME Lab
Run #: Sys Perf R2-030829-01
Tx Freq: 450MHz
Simulated tissue temp: 20.6 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 4.67 mW/g percent from target (including drift) is 3.37 %
SAR Calculated 10g is 3.11 mW/g Percent from target (including drift) is 3.86 %

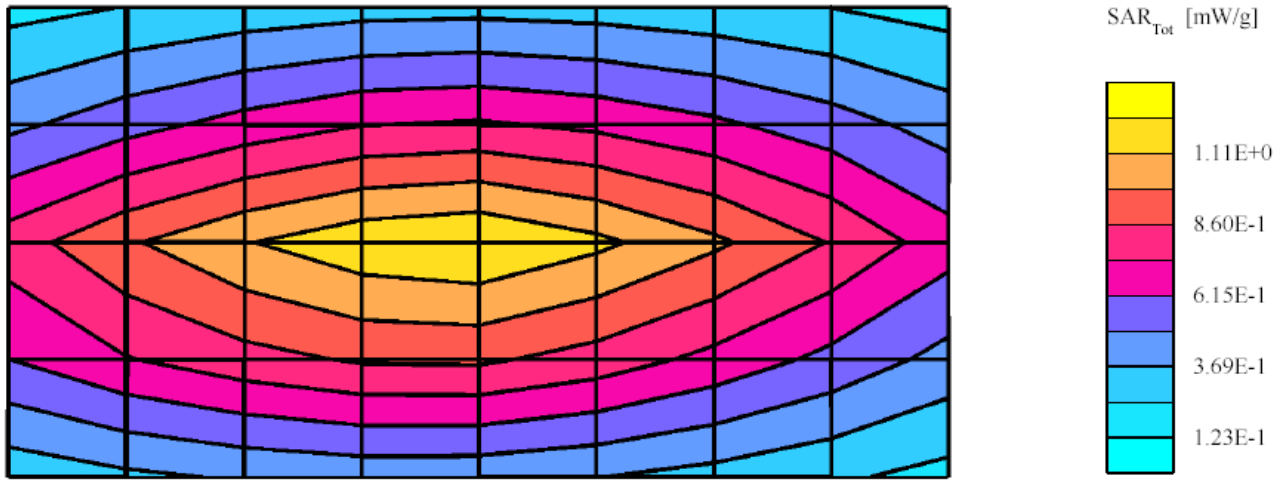
Flat; Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003);Probe Cal Date: 26/02/03ConvF(7.50,7.50,7.50); Crest factor: 1.0; FCC Body 450: σ= 0.91mho/m ε_r = 55.7 ρ= 1.00 g/cm3; DAE: DAE3V1SN406 (11/11/02)
Cubes (2): Peak: 1.79 mW/g ± 0.02 dB, SAR (1g): 1.16 mW/g ± 0.02 dB, SAR (10g): 0.771 mW/g ± 0.01 dB, (Worst-case extrapolation) Penetration depth: 12.9 (11.5, 14.8) [mm]
Power drift: -0.03 dB



SPEAG 450 MHz Dipole D450V2; SN-1002; Test Date: 8/30/03
Motorola CGISS EME Lab
Run #: Sys Perf R2-030830-01
Tx Freq: 450MHz
Simulated tissue temp: 19.7 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 4.95 mW/g percent from target (including drift) is 5.41 %
SAR Calculated 10g is 3.24 mW/g Percent from target (including drift) is 4.25 %

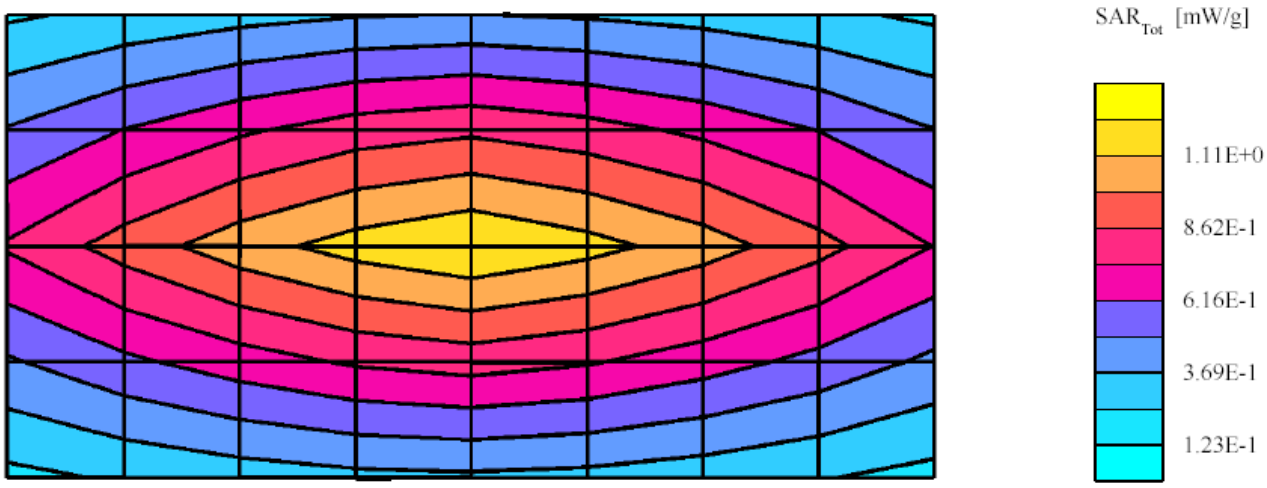
Flat; Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003);Probe Cal Date: 26/02/03ConvF(7.50,7.50,7.50); Crest factor: 1.0; IEEE Head 450 MHz: σ= 0.89 mho/m ε_r = 45.4 ρ= 1.00 g/cm3; DAE: DAE3V1SN406 (11/11/02
Cubes (2): Peak: 1.91 mW/g ± 0.02 dB, SAR (1g): 1.23 mW/g ± 0.00 dB, SAR (10g): 0.805 mW/g ± 0.01 dB, (Worst-case extrapolation) Penetration depth: 12.4 (11.1, 14.2) [mm]
Power drift: -0.03 dB



SPEAG 450 MHz Dipole D450V2; SN-1002; Test Date: 9/02/03
Motorola CGISS EME Lab
Run #: Sys Perf R2-030902-01
Tx Freq: 450MHz
Simulated tissue temp: 21.0 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 4.91 mW/g percent from target (including drift) is 4.41 %
SAR Calculated 10g is 3.20 mW/g Percent from target (including drift) is 3.02 %

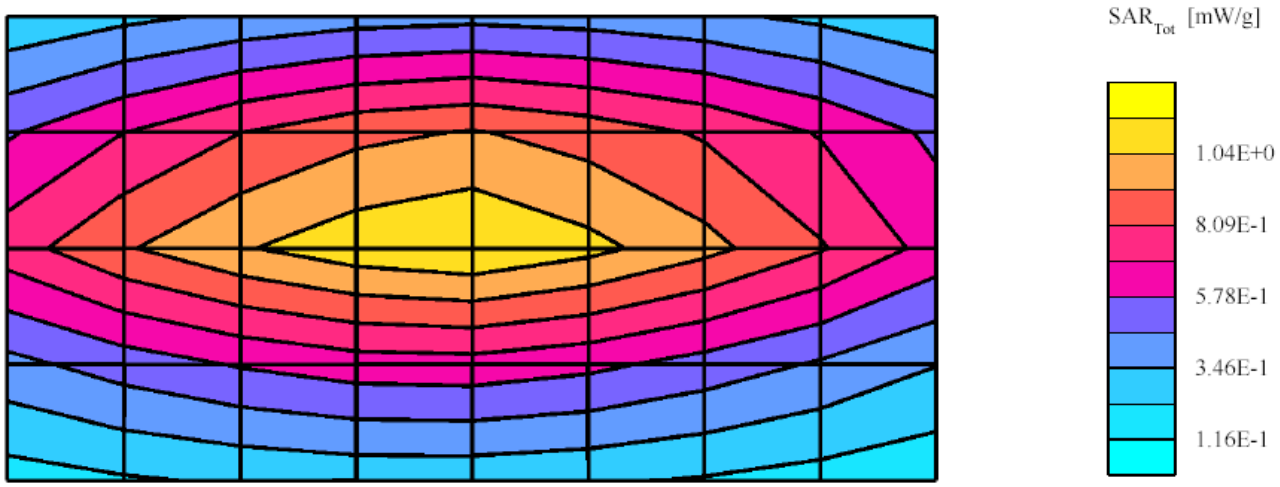
Flat; Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003);Probe Cal Date: 26/02/03ConvF(7.50,7.50,7.50); Crest factor: 1.0; IEEE Head 450 MHz: σ= 0.88 mho/m ε_r = 45.2 ρ= 1.00 g/cm3; DAE: DAE3V1SN406 (11/11/02
Cubes (2): Peak: 1.90 mW/g ± 0.01 dB, SAR (1g): 1.21 mW/g ± 0.01 dB, SAR (10g): 0.790 mW/g ± 0.01 dB, (Worst-case extrapolation) Penetration depth: 12.3 (11.0, 14.0) [mm]
Power drift: -0.06 dB



SPEAG 450 MHz Dipole D450V2; SN-1002; Test Date: 9/03/03
Motorola CGISS EME Lab
Run #: SYS Perf R2-030903-01
Tx Freq: 450MHz
Simulated tissue temp: 21.3C
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 4.79 mW/g percent from target (including drift) is 5.95 %
SAR Calculated 10g is 3.15 mW/g Percent from target (including drift) is 5.41 %

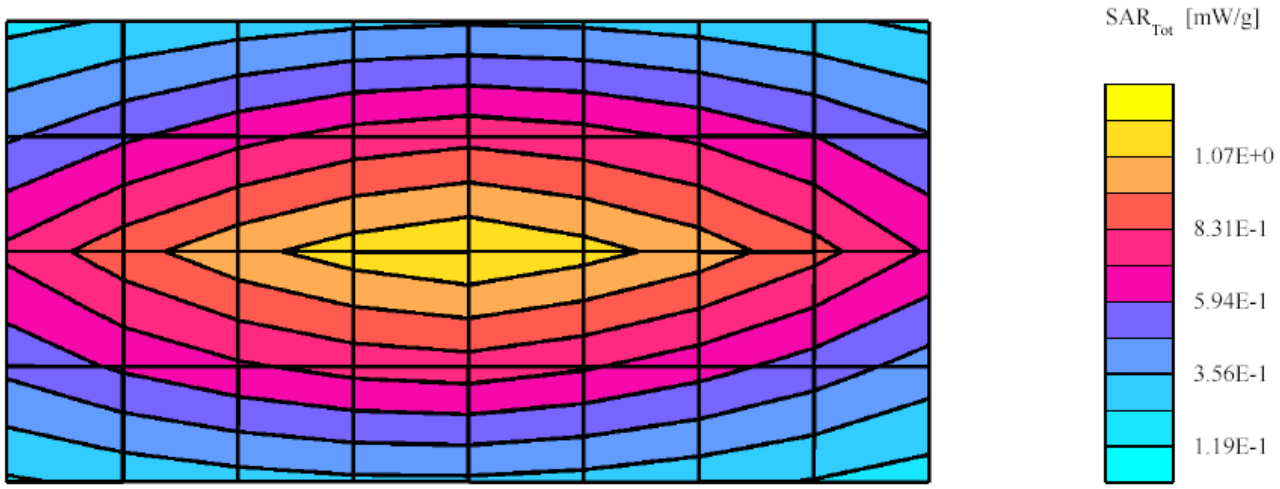
Flat; Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003);Probe Cal Date: 26/02/03ConvF(7.50,7.50,7.50); Crest factor: 1.0; FCC Body 450: σ= 0.92 mho/m ε_r = 55.0 ρ= 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cubes (2): Peak: 1.81 mW/g ± 0.02 dB, SAR (1g): 1.17 mW/g ± 0.02 dB, SAR (10g): 0.775 mW/g ± 0.02 dB, (Worst-case extrapolation) Penetration depth: 12.9 (11.4, 14.7) [mm]
Power drift: -0.10 dB



SPEAG 450 MHz Dipole D450V2; SN-1002; Test Date: 9/04/03
Motorola CGISS EME Lab
Run #: Sys Perf R2-030904-01
Tx Freq: 450MHz
Simulated 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 4.68 mW/g percent from target (including drift) is 3.54%
SAR Calculated 10g is 3.08 mW/g Percent from target (including drift) is 3.01%

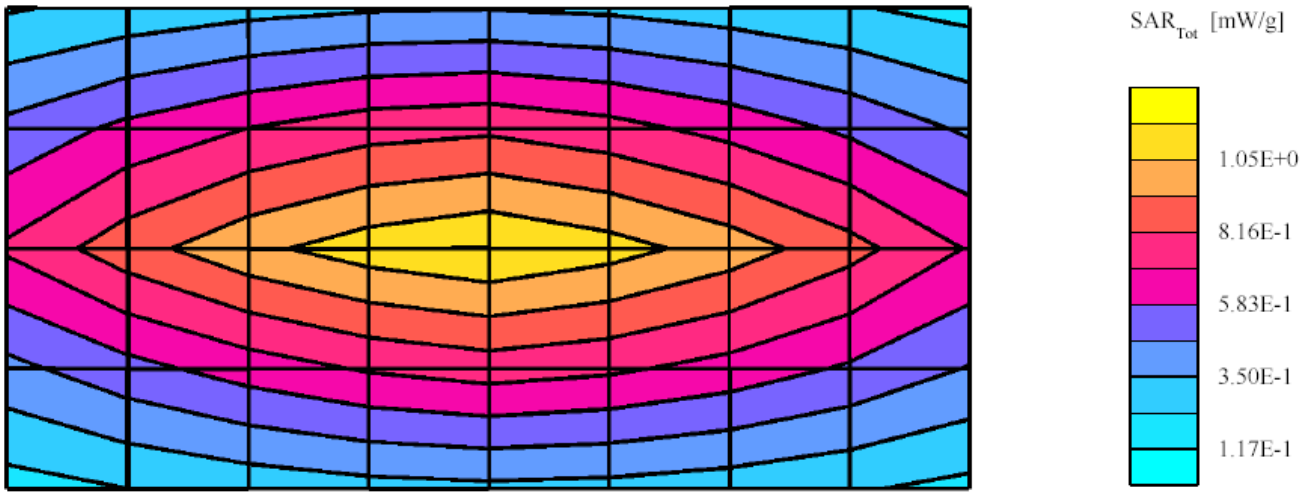
Flat; Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003);Probe Cal Date: 26/02/03ConvF(7.50,7.50,7.50); Crest factor: 1.0; FCC Body 450: σ= 0.91mho/m ε_r = 55.8 ρ= 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cubes (2): Peak: 1.80 mW/g ± 0.01 dB, SAR (1g): 1.17 mW/g ± 0.01 dB, SAR (10g): 0.772 mW/g ± 0.02 dB, (Worst-case extrapolation) Penetration depth: 12.9 (11.5, 14.6) [mm]
Power drift: 0.00 dB



SPEAG 450 MHz Dipole D450V2; SN-1002; Test Date: 9/05/03
Motorola CGISS EME Lab
Run #: Sys Perf R2-030905-01
Tx Freq: 450MHz
Simulated 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 4.62 mW/g percent from target (including drift) is 2.24%
SAR Calculated 10g is 3.05 mW/g Percent from target (including drift) is 2.14%

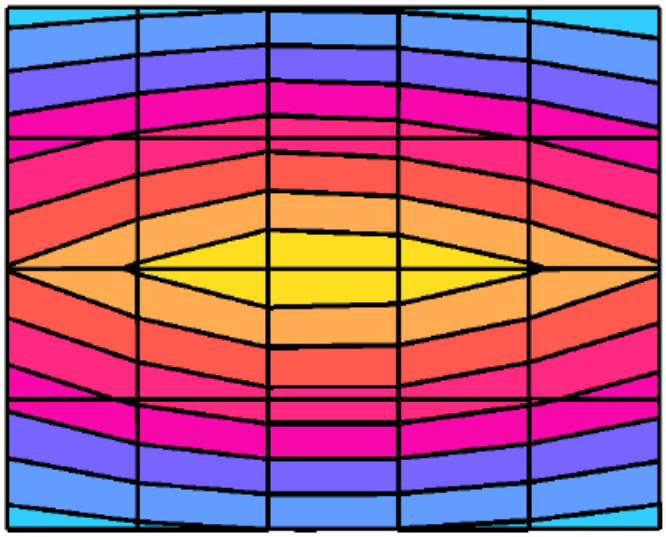
Flat; Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003);Probe Cal Date: 26/02/03ConvF(7.50,7.50,7.50); Crest factor: 1.0; FCC Body 450: σ= 0.90 mho/m ε_r = 54.9 ρ= 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cubes (2): Peak: 1.77 mW/g ± 0.02 dB, SAR (1g): 1.15 mW/g ± 0.02 dB, SAR (10g): 0.760 mW/g ± 0.02 dB, (Worst-case extrapolation) Penetration depth: 12.9 (11.5, 14.8) [mm]
Power drift: -0.02 dB

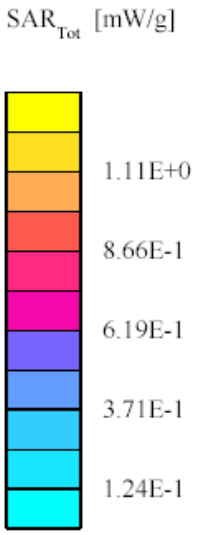


SPEAG 450 MHz Dipole D450V2; SN-1002; Test Date: 9/07/03
Motorola CGISS EME Lab
Run #: Sys Perf R2-030907-01
Tx Freq: 450MHz
Simulated tissue temp: 21.4 C
Start power: 250mW

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 4.97 mW/g percent from target (including drift) is + 5.65 %
SAR Calculated 10g is 3.23 mW/g Percent from target (including drift) is + 3.98 %

Flat; Probe: ET3DV6 - SN1383 (Cal Date 26 February 2003);Probe Cal Date: 26/02/03ConvF(7.50,7.50,7.50); Crest factor: 1.0; IEEE Head 450 MHz: σ= 0.90 mho/m ε_r = 45.0 ρ= 1.00 g/cm3; DAE3V1SN406 (11/11/02)
Cubes (2): Peak: 1.92 mW/g ± 0.01 dB, SAR (1g): 1.23 mW/g ± 0.01 dB, SAR (10g): 0.801 mW/g ± 0.02 dB, (Worst-case extrapolation) Penetration depth: 12.2 (11.0, 13.9) [mm]
Power drift: -0.04 dB





SYSTEM PERFORMANCE CHECK TARGET SAR

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

Tissue Characteristics

Permitivity:	55.4	Phantom Type/SN:	80302002C/S7
Conductivity:	0.92	Distance (mm):	15 (tissue/dipole cnt)

Reference Source: D450V2 (Dipole)
Reference SN: 1002

Power to Dipole: 250 mW

Measured SAR Value: 1.13 mW/g, 0.748 mW/g (10g avg.)
Power Drift: 0 dB

New Target/Measured SAR Value: 4.52 mW/g, 2.99 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

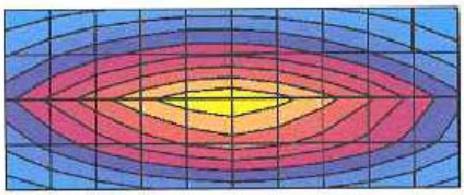
Run #: Sys Val_R3_030116-07
Model #: D450V2
Robot: CGISS-3
TX Freq: 450 MHz
Start Power: 250mW
DAE3: SN:406

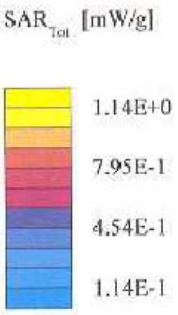
Phantom #:80302002C/S7
SN: 1002
Tester: J. Fortier
Sim Tissue Temp: 21.5 (Celsius)

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: σ = 0.92 mho/m ε_r = 55.4 ρ = 1.00 g/cm^3
Cubes (2): Peak: 1.74 mW/g ± 0.06 dB, SAR (1g): 1.13 mW/g ± 0.06 dB, SAR (10g): 0.748 mW/g ± 0.06 dB, (Worst-case extrapolation)
Penetration depth: 13.1 (11.6, 14.9) [mm]
Powerdrift: -0.00 dB





Motorola CGISS EME Lab

SYSTEM VALIDATION

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

Tissue Characteristics

Permitivity:	43.3	Phantom Type/SN:	80302002B/S6
Conductivity:	0.87	Distance (mm):	15 (tissue/dipole cnt)

Reference Source: D450V2 (Dipole)
Reference SN: 1002

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

Tissue Characteristics			
Permitivity:	43.3	Phantom Type/SN:	80302002B/S6
Conductivity:	0.87	Distance (mm):	15 (tissue/dipole cnt)

Reference Source:	D450V2 (Dipole)
Reference SN:	1002

Power to Dipole: 250 mW

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

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

Test performed by: J. Fortier Initial: 

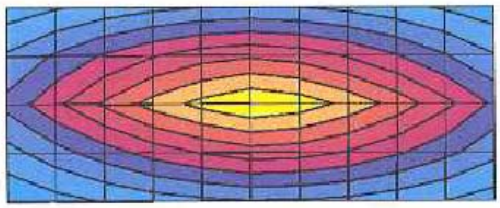
Dipole D450V2 SN1002; Test date:01/16/03

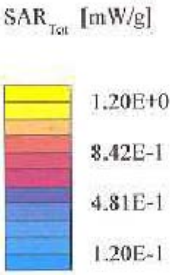
Run #: Sys Val_R3_030116-04 Phantom #:80302002B/S6
Model #: D450V2 SN: 1002
Robot: CGISS-3 Tester: J. Fortier
TX Freq: 450 MHz Sim Tissue Temp: 21.2 (Celsius)
Start Power: 250mW
DAE3: SN:406 DAE Cal Date: 11/11/02

- 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: σ = 0.87 mho/m ε_r = 43.3 ρ = 1.00 g/cm^3
Cubes (2): Peak: 1.81 mW/g ± 0.05 dB, SAR (1g): 1.17 mW/g ± 0.05 dB, SAR (10g): 0.774 mW/g ± 0.06 dB, (Worst-case extrapolation)
Penetration depth: 12.8 (11.4, 14.5) [mm]
Powerdrift: -0.02 dB





Motorola CGISS EME Lab