MOTOROLA

ACCREDITED

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

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

Attention:	FCC
Date of Report:	November 22, 2002
Report Revision:	Rev. A
Manufacturer:	Motorola
Product Description:	Portable 380-470 MHz 1-5W; 3x6 keypad, 6 line display Digital 512 Channel
FCC ID:	**AZ489FT4855**
Device Model:	**H18QDH9PW7AN**

Test Period:	9/26/02,10/7/02-11/4/02
Test Engineer:	Stephen Whalen Sr. Test engineer
Author:	Michael Sailsman EME Regulatory Affairs

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 — 11/22/02

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

Date Approved

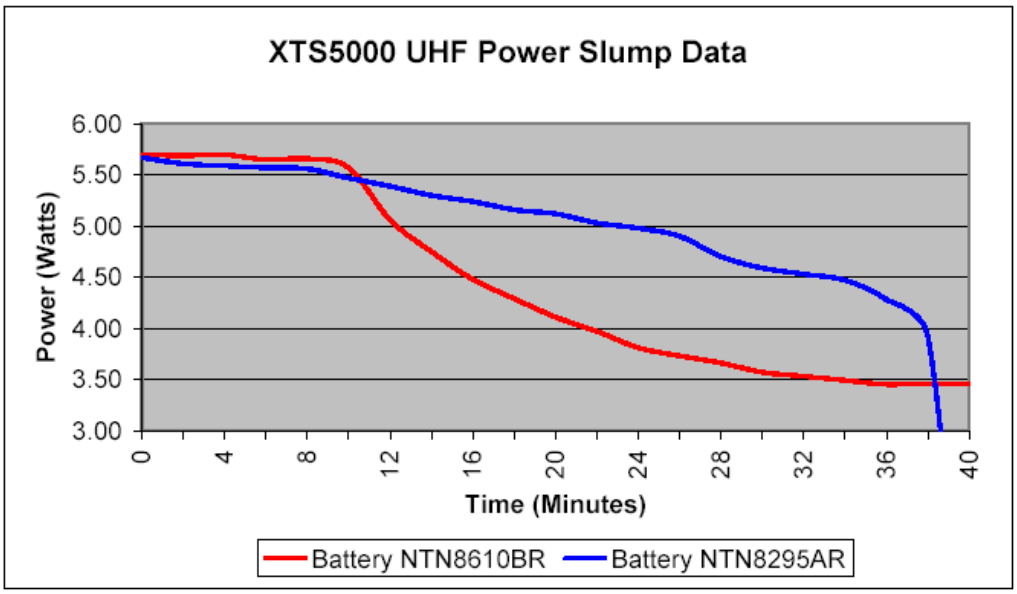
APPENDIX A

Power Slump Data/Shortened Scan

DUT Power versus time data

Start Date and Time:11/7/2002 9:23:39 AM
Stop Date and Time: 11/7/2002 10:03:42 AM

Radio	XTS5000 UHF		
Battery Type	MINUTES	NTN8610BR	NTN8295AR
9:23:41 AM	0	5.70	5.67
9:25:41 AM	2	5.69	5.61
9:27:41 AM	4	5.70	5.59
9:29:41 AM	6	5.65	5.57
9:31:41 AM	8	5.66	5.56
9:33:41 AM	10	5.57	5.47
9:35:41 AM	12	5.06	5.39
9:37:41 AM	14	4.75	5.30
9:39:42 AM	16	4.48	5.24
9:41:42 AM	18	4.29	5.16
9:43:42 AM	20	4.11	5.12
9:45:42 AM	22	3.97	5.03
9:47:42 AM	24	3.81	4.98
9:49:42 AM	26	3.73	4.90
9:51:42 AM	28	3.66	4.70
9:53:42 AM	30	3.57	4.59
9:55:42 AM	32	3.53	4.53
9:57:42 AM	34	3.49	4.47
9:59:42 AM	36	3.45	4.28
10:01:42 AM	38	3.46	3.92
10:03:42 AM	40	3.45	0.07



Shortened Scan Results

FCC ID: AZ489FT4855; Test Date: 11/04/02
Motorola CGISS EME Laboratory
Run #: Face-R1-021104-06
Model #: H18QDH9PW7AN SN:B212C0011
TX Freq: 425 MHz

- Accessories -
Antenna: NAE6549
Battery Kit: NTN8610B
Carry: none Audio Acc. none

Shortened scan reflect highest S.A.R. producing configuration at the face
Run time 6 minutes
Representative "normal" scan run time was 22 minutes
"Shortened" scan measured S.A.R. w/ 50% duty cycle = 3.565 mW/g
"Normal" scan max. calc. S.A.R. w/ 50% duty cycle = 3.68 mW/g (see section 7.1 run # Face-R1-021029-04)

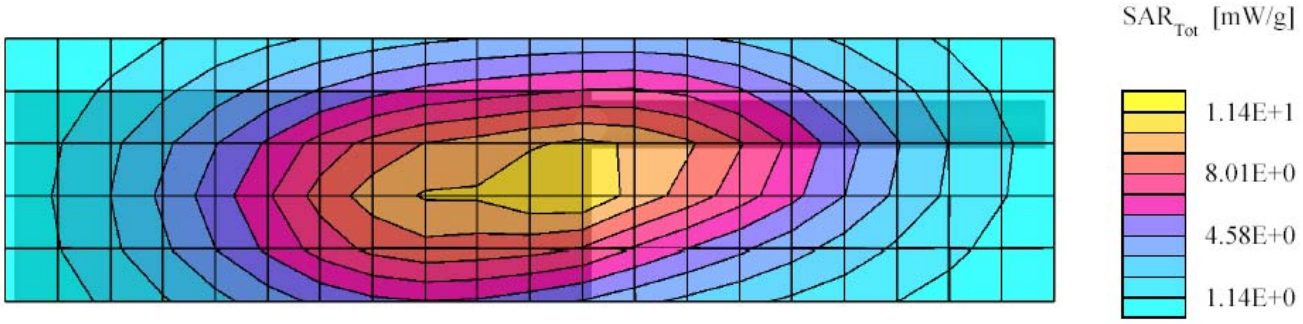
DUT microphone @ 2.5cm from phantom
Flat Phantom Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6R(cal date 5-21-02) - SN1545; ConvF(7.00,7.00,7.00); Probe cal date: 21/05/02; Crest factor: 1.0; IEEE Head_425MHz: σ = 0.85 mho/m ε = 43.3 ρ = 1.00 g/cm3; DAE Cal Date: 5/23/02
Cube 5x5x7: SAR (1g): 7.13 mW/g, SAR (10g): 5.31 mW/g, (Worst-case extrapolation)
Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0; SAR (1g): 7.13 mW/g, SAR (10g): 5.31 mW/g

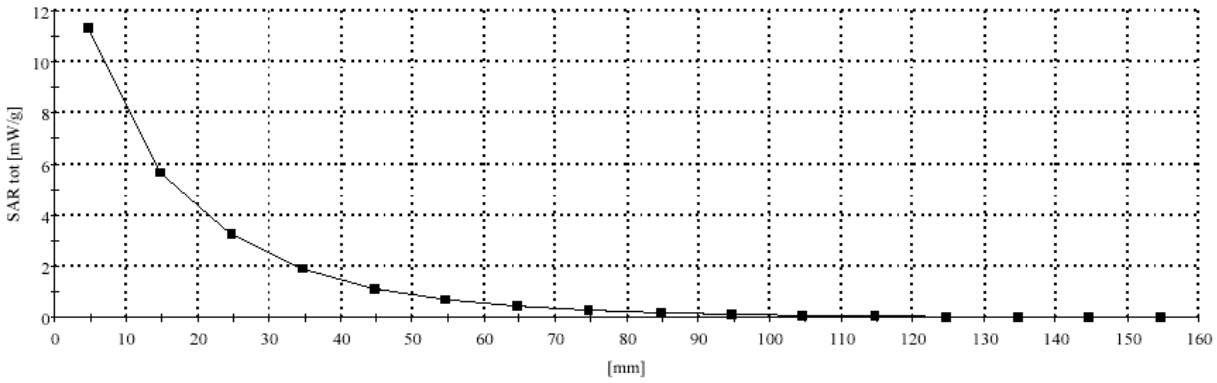
APPENDIX B
Data Results

FCC ID: AZ489FT4855; Test Date: 9/26/02
Motorola CGISS EME Laboratory
Run #: Ab-R1-020926-03
Model #: H18QDH9PW7AN SN:B212C0011
TX Freq: 425 MHz

- Accessories -
Antenna: NAE6549
Battery Kit: RNN4006A
Carry: belt clip NTN8266B
Audio Acc. NMN6191C

DUT against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6R(cal date 5-21-02) - SN1545; ConvF(7.10,7.10,7.10); Probe cal date: 21/05/02; Crest factor: 1.0; FCC Body_425MHz: σ = 0.90 mho/m ε = 55.3 ρ = 1.00 g/cm3; DAE3: 363-V1 DAE Cal Date: 5/23/02
Cube 7x7x7: SAR (1g): 11.7 mW/g, SAR (10g): 8.04 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 42.0, 160.5, 4.7

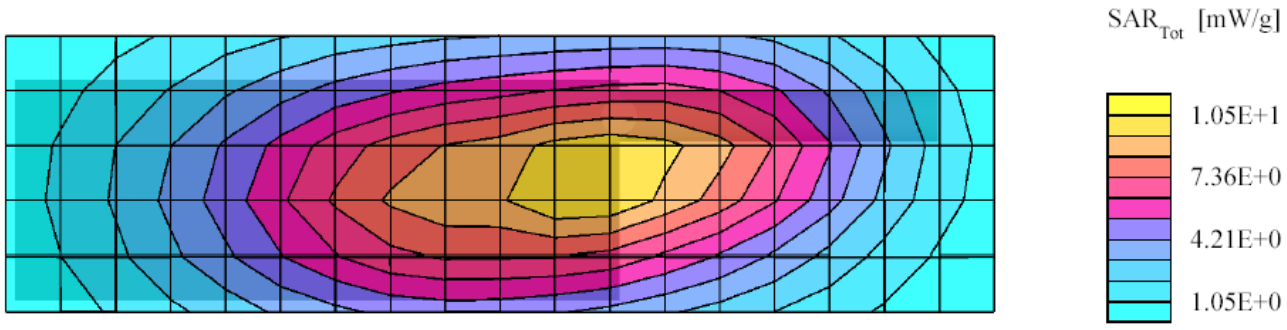


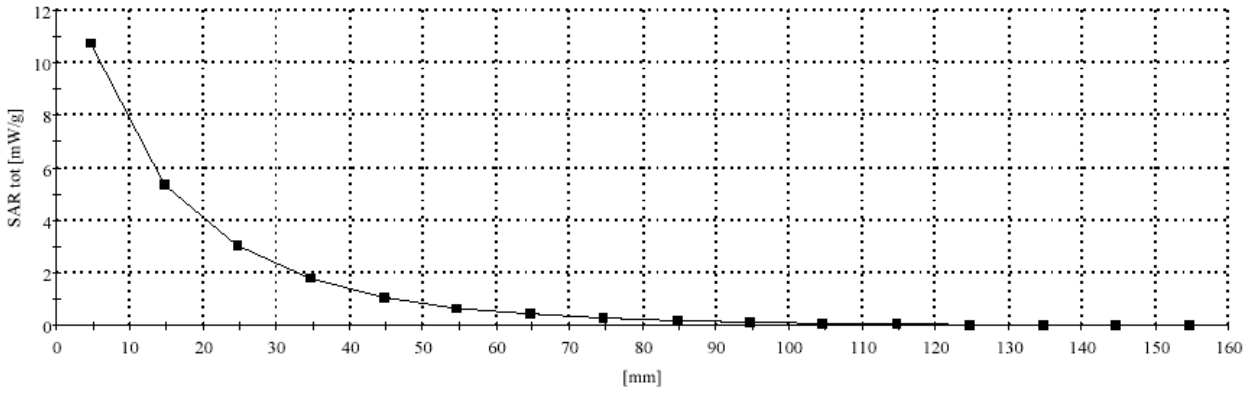


FCC ID: AZ489FT4855; Test Date: 10/10/02
Motorola CGISS EME Laboratory
Run #: Ab-R1-021010-04
Model #: H18QDH9PW7AN SN:B212C0011
TX Freq: 407 MHz

- Accessories -
Antenna:NAE6546 Battery Kit: NTN8295A
Carry: belt clip NTN8266B Audio Acc. NMN6191C

DUT against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6R(cal date 5-21-02) - SN1545; ConvF(7.10,7.10,7.10); Probe cal date: 21/05/02; Crest factor: 1.0; FCC Body_425MHz: σ = 0.91 mho/m ε = 55.7 ρ= 1.00 g/cm3; DAE3: 363-V1 DAE Cal Date: 5/23/02
Cube 5x5x7: SAR (1g): 10.9 mW/g, SAR (10g): 7.48 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 40.5, 157.5, 4.7

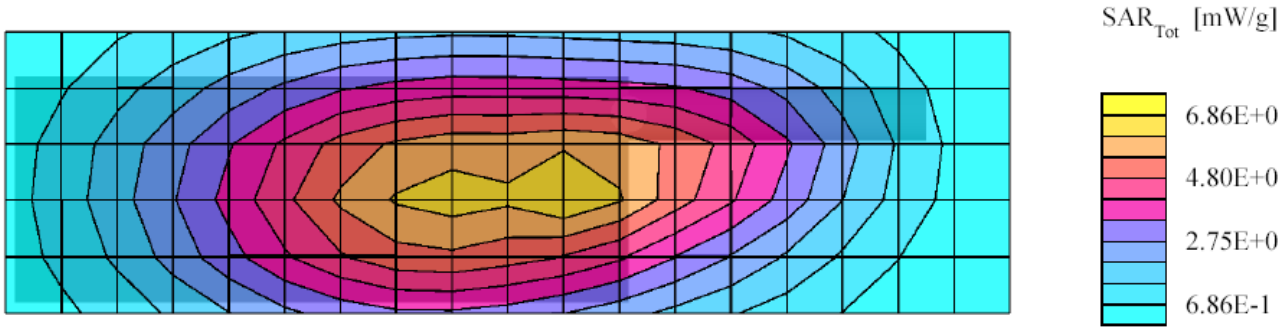


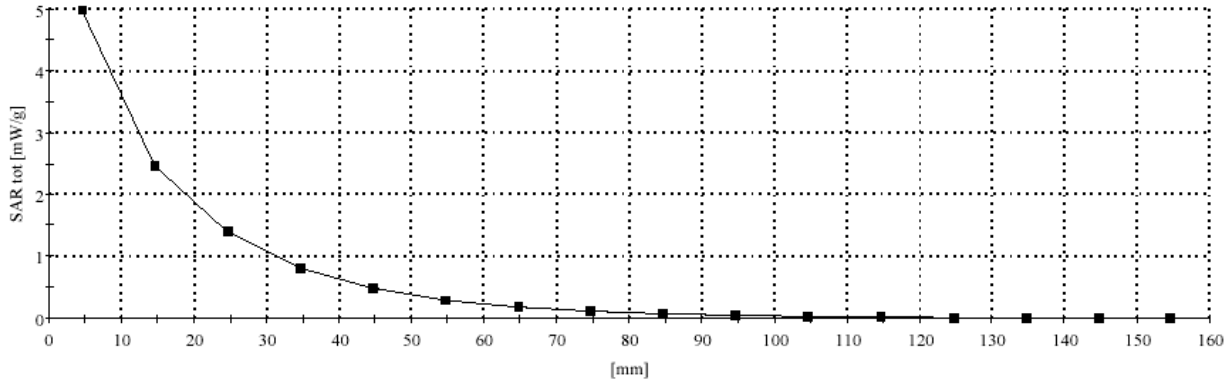


FCC ID: AZ489FT4855; Test Date: 10/14/02
Motorola CGISS EME Laboratory
Run #: Ab-R1-021014-06
Model #: H18QDH9PW7AN SN:B212C0011
TX Freq: 452 MHz

- Accessories -
Antenna: NAE6547
Battery Kit: NTN8297A
Carry: belt clip NTN8266B
Audio Acc. NMN6191C

DUT against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6R(cal date 5-21-02) - SN1545; ConvF(7.10,7.10,7.10); Probe cal date: 21/05/02; Crest factor: 1.0; FCC Body_425MHz: σ = 0.91 mho/m ε= 55.4 ρ = 1.00 g/cm3; DAE3: 363-V1 DAE Cal Date: 5/23/02
Cube 5x5x7: SAR (1g): 5.48 mW/g, SAR (10g): 3.85 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 42.0, 151.5, 4.7



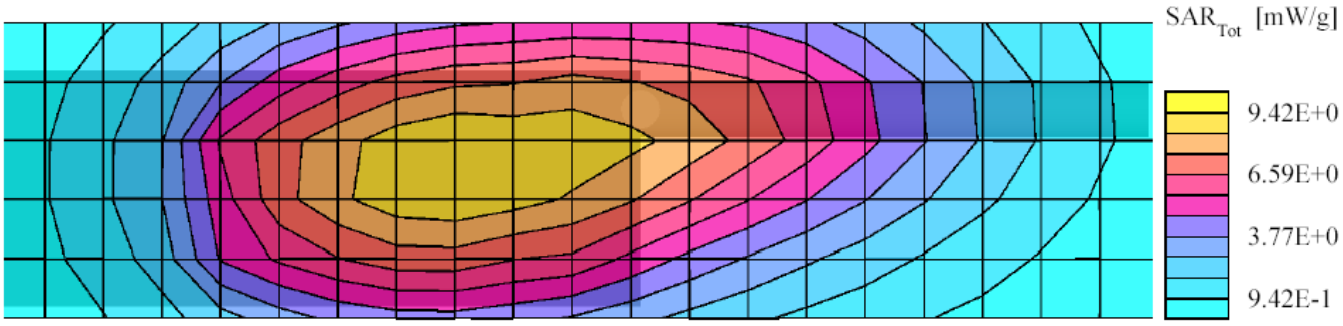


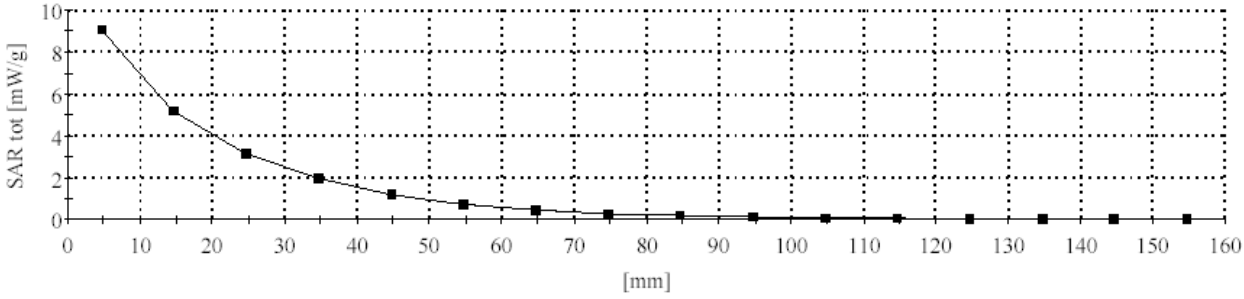
FCC ID: AZ489FT4855; Test Date: 10/14/02
Motorola CGISS EME Laboratory
Run #: Ab-R1-021014-11
Model #: H18QDH9PW7AN SN: B212C0011
TX Freq: 425 MHz

- Accessories -
Antenna: NAE6549
Battery Kit: RNN4006A
Carry: Carry case NTN8725A
Audio Acc. NMN6191C

DUT against the phantom

Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6R(cal date 5-21-02) - SN1545; ConvF (7.10,7.10,7.10); Probe cal date: 21/05/02; Crest factor: 1.0; FCC Body_425MHz: σ = 0.91 mho/m ε = 55.4 ρ = 1.00 g/cm3; DAE3: 363-V1 DAE Cal Date: 5/23/02
Cube 5x5x7: SAR (1g): 9.07 mW/g, SAR (10g): 6.77 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 36.0, 118.5, 4.7

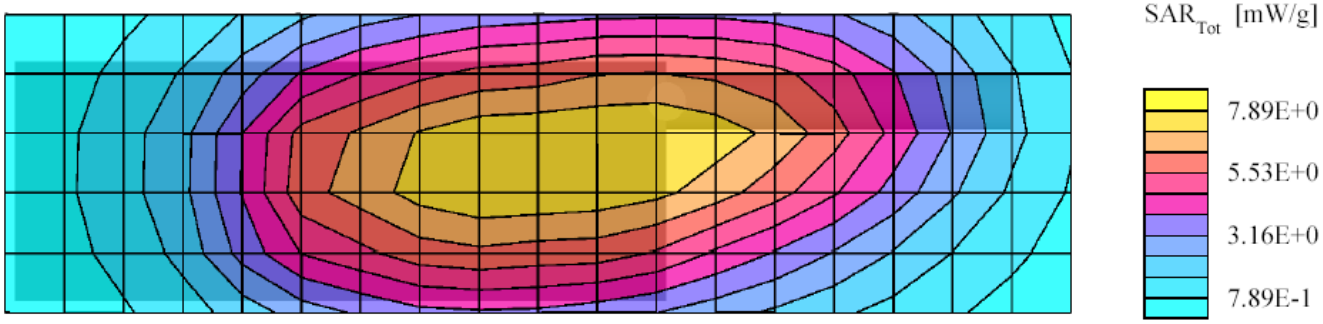


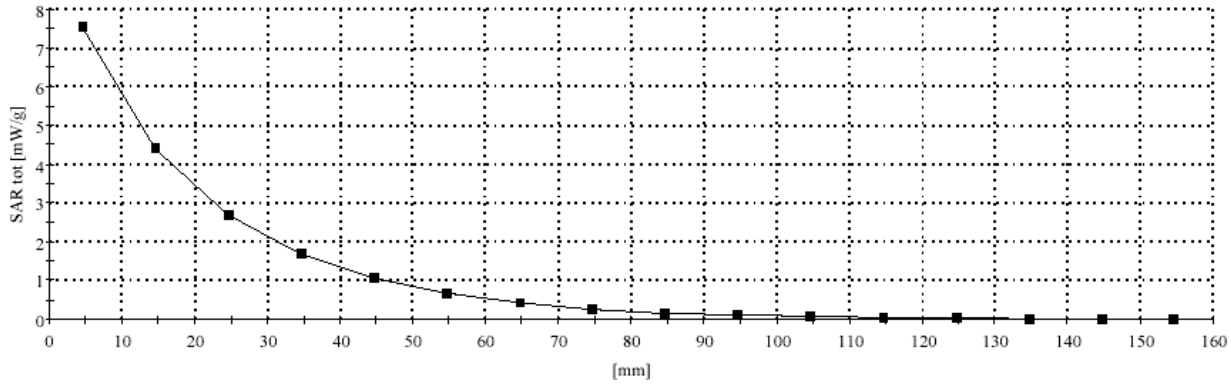


FCC ID: AZ489FT4855; Test Date: 10/16/02
Motorola CGISS EME Laboratory
Run #: Ab-R1-021016-07
Model #: H18QDH9PW7AN SN:B212C0011
TX Freq: 407 MHz)

- Accessories -
Antenna:NAE6546
Battery Kit: NTN8295A
Carry: Carry case NTN8725A
Audio Acc. NMN6191C

DUT against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6R(cal date 5-21-02) - SN1545; ConvF(7.10,7.10,7.10); Probe cal date: 21/05/02; Crest factor: 1.0; FCC Body_425MHz: σ = 0.90 mho/m ε = 54.9 ρ = 1.00 g/cm3; DAE3: 363-V1 DAE Cal Date: 5/23/02
Cube 5x5x7: SAR (1g): 7.62 mW/g, SAR (10g): 5.70 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 39.0, 127.5, 4.7

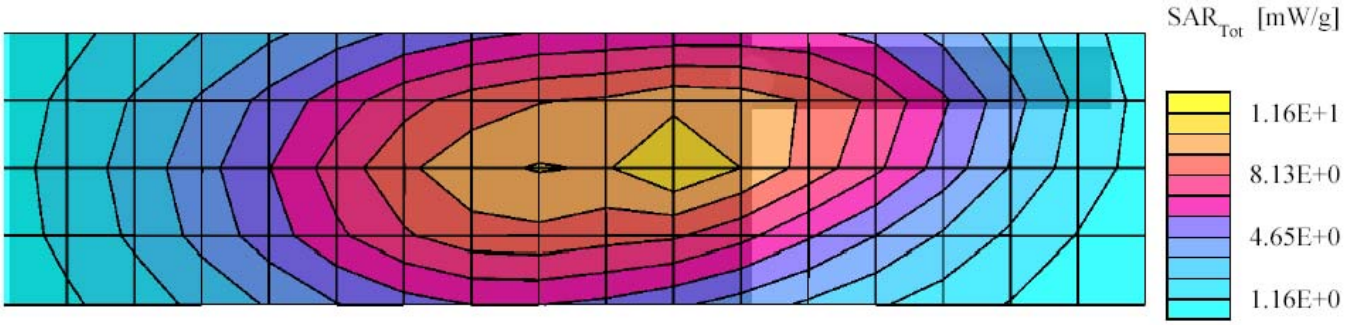


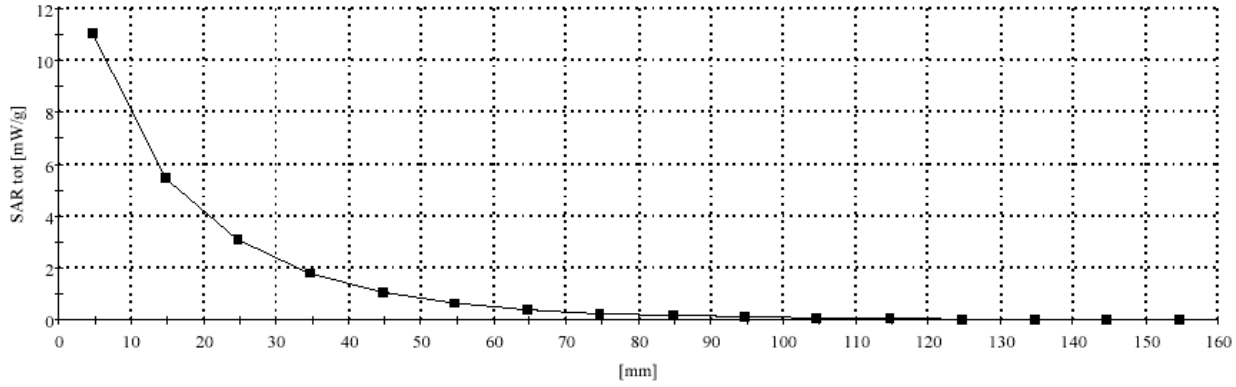


FCC ID: AZ489FT4855; Test Date: 10/21/02
Motorola CGISS EME Laboratory
Run #: Ab-R1-021021-05
Model #: H18QDH9PW7AN SN:B212C0011
TX Freq: 435 MHz

- Accessories -
Antenna:NAE6547
Battery Kit: NTN8297A
Carry: belt clip NTN8266B
Audio Acc. NMN6191C

DUT against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6R(cal date 5-21-02) - SN1545; ConvF(7.10,7.10,7.10); Probe cal date: 21/05/02; Crest factor: 1.0; FCC Body_425MHz: σ = 0.91 mho/m ε = 55.6 ρ = 1.00 g/cm3; DAE3: 363-V1 DAE Cal Date: 5/23/02
Cube 5x5x7: SAR (1g): 11.3 mW/g, SAR (10g): 7.77 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 27.0, 151.5, 4.7

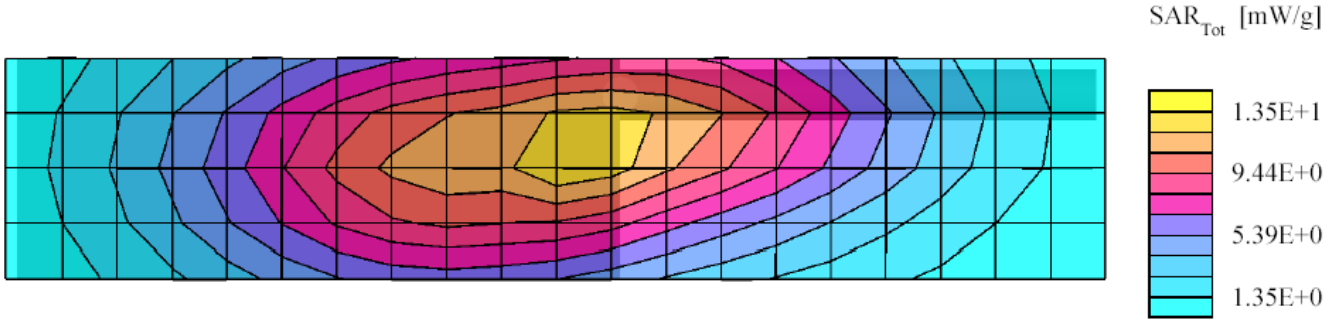


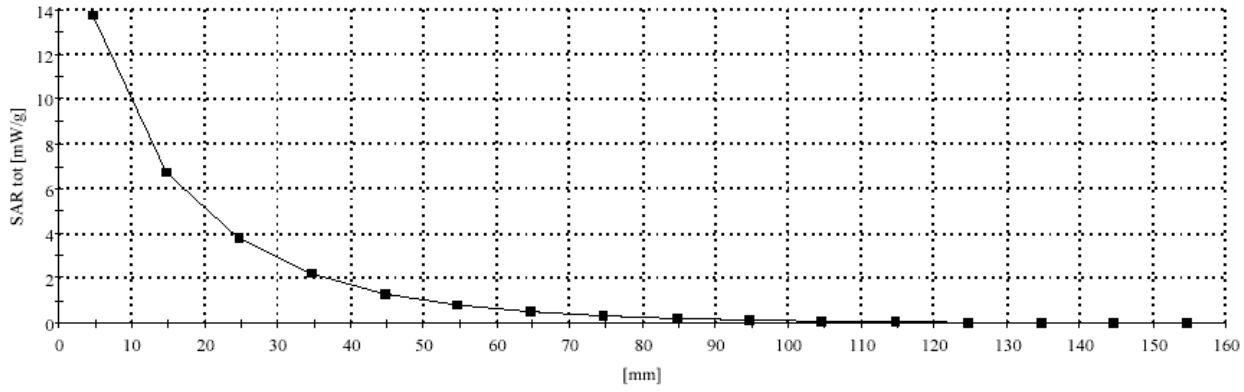


FCC ID: AZ489FT4855; Test Date: 10/24/02
Motorola CGISS EME Laboratory
Run #: Ab-R1-021024-02
Model #: H18QDH9PW7AN SN:B212C0011
TX Freq: 425 MHz

- Accessories -
Antenna:NAE6549
Battery Kit: RNN4006A
Carry: belt clip NTN8266B
Audio Acc. BDN6671B & BDN6678A

DUT against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6R(cal date 5-21-02) - SN1545; ConvF(7.10,7.10,7.10); Probe cal date: 21/05/02; Crest factor: 1.0; FCC Body_425MHz: σ = 0.91 mho/m ε = 55.8 ρ = 1.00 g/cm3; DAE3: 363-V1 DAE Cal Date: 5/23/02
Cube 5x5x7: SAR (1g): 14.0 mW/g, SAR (10g): 9.55 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 25.5, 154.5, 4.7

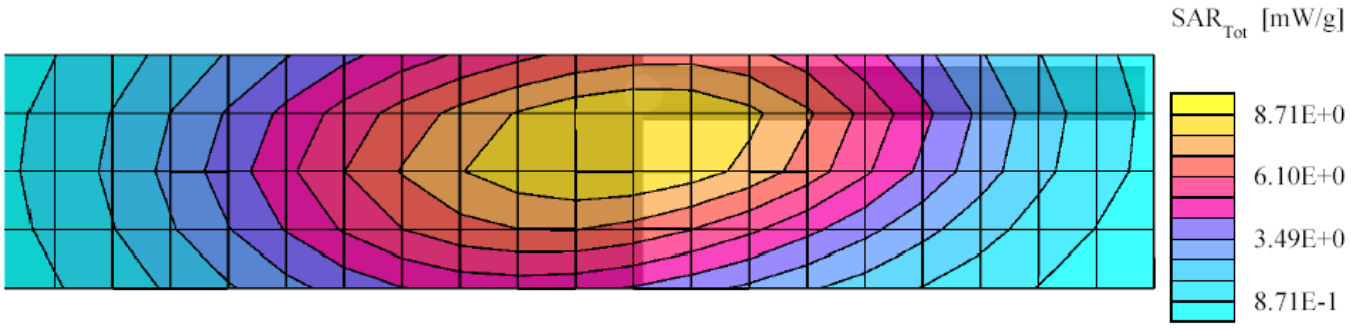


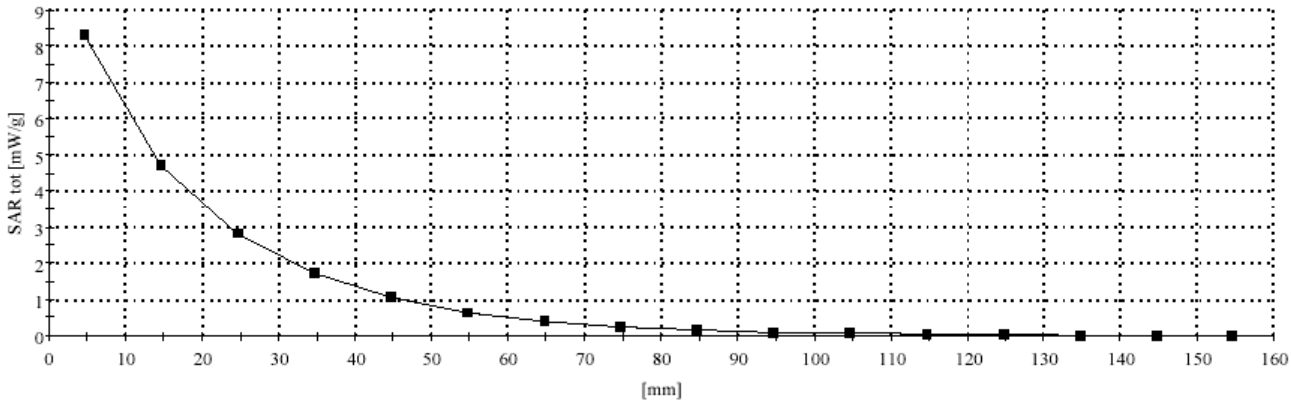


FCC ID: AZ489FT4855; Test Date: 10/25/02
Motorola CGISS EME Laboratory
Run #: Ab-R1-021025-02
Model #: H18QDH9PW7AN SN: B212C0011
TX Freq: 425 MHz

- Accessories -
Antenna: NAE6549
Battery Kit: RNN4006A
Carry: none
Audio Acc. BDN6671B & BDN6678A

DUT (Back) @ 2.5cm separation
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6R(cal date 5-21-02) - SN1545; ConvF (7.10,7.10,7.10); Probe cal date: 21/05/02; Crest factor: 1.0; FCC Body_425MHz: σ = 0.92 mho/m ε = 55.9 ρ = 1.00 g/cm3; DAE3: 363-V1 DAE Cal Date: 5/23/02
Cube 5x5x7: SAR (1g): 8.58 mW/g, SAR (10g): 6.34 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 22.5, 163.5, 4.7

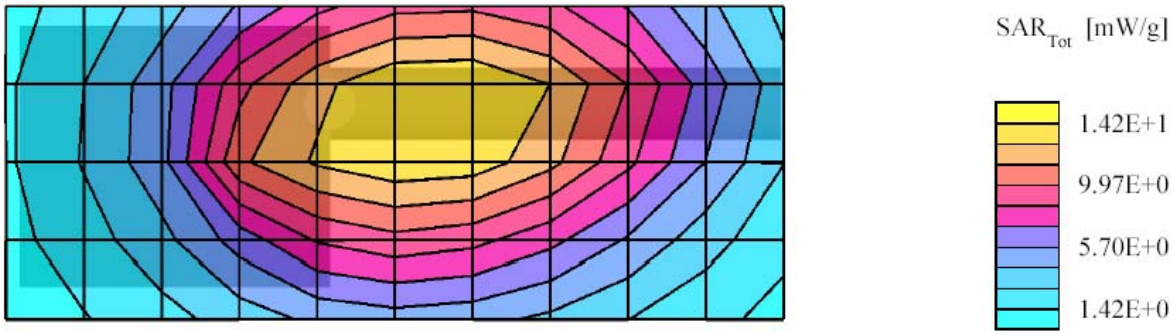


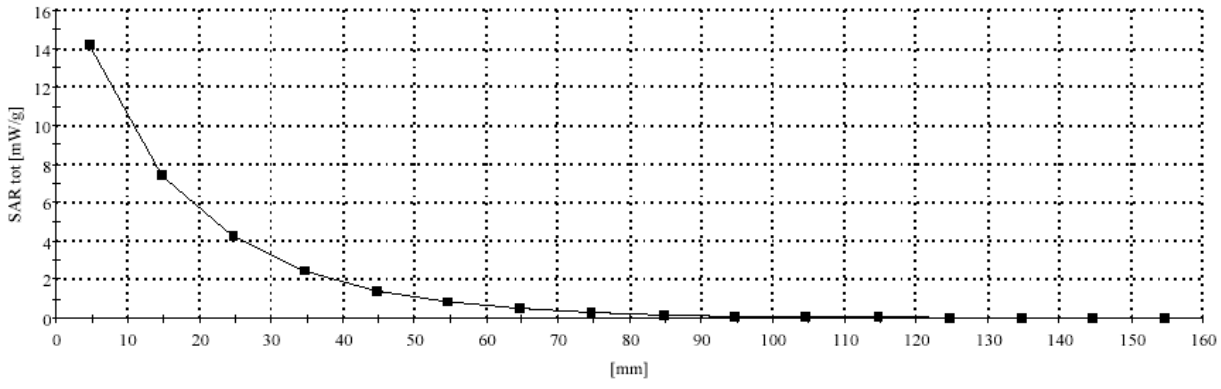


FCC ID: AZ489FT4855; Test Date: 10/28/02
Motorola CGISS EME Laboratory
Run #: Ab-R1-021028-03
Model #: H18QDH9PW7AN SN:B212C0011
TX Freq: 407 MHz

- Accessories -
Antenna: NAE6546
Battery Kit: NTN8295A
Carry: PSM belt clip
Audio Acc. NMN6251A & NTN8327A

DUT against the phantom
Flat Phantom Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6R(cal date 5-21-02) - SN1545; ConvF(7.10,7.10,7.10); Probe cal date: 21/05/02; Crest factor: 1.0; FCC Body_425MHz: σ = 0.92 mho/m ε = 55.8 ρ = 1.00 g/cm3; DAE3: 363-V1 DAE Cal Date: 5/23/02
Cube 5x5x7: SAR (1g): 14.4 mW/g, SAR (10g): 10.2 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 82.5, 39.0, 4.7

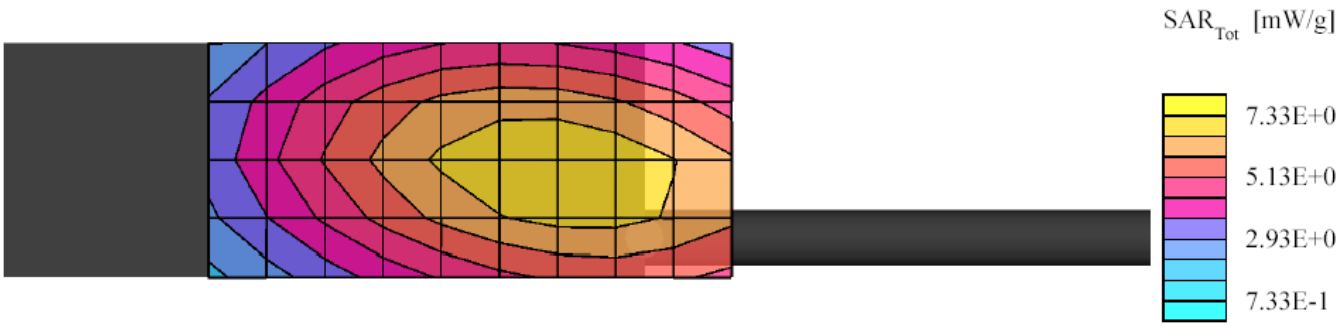


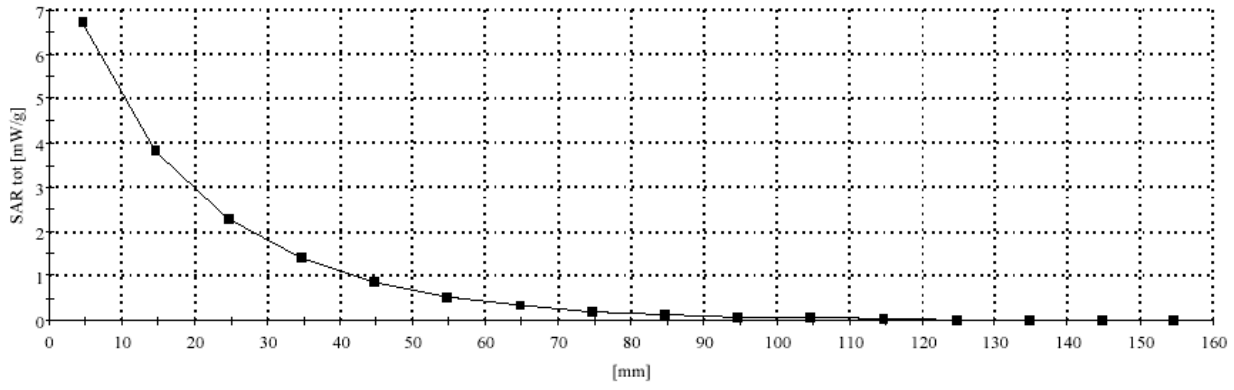


FCC ID: AZ489FT4855; Test Date: 10/29/02
Motorola CGISS EME Laboratory
Run #: Face-R1-021029-04
Model #: H18QDH9PW7AN SN:B212C0011
TX Freq: 425 MHz

- Accessories -
Antenna:NAE6549
Battery Kit: NTN8610B
Carry: none
Audio Acc. none

DUT @ 2.5cm from phantom
Flat Phantom Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6R(cal date 5-21-02) - SN1545; ConvF(7.00,7.00,7.00); Probe cal date: 21/05/02; Crest factor: 1.0; IEEE Head_425MHz: ρ = 0.87 mho/m ε = 43.9 ρ = 1.00 g/cm3; DAE3: 363-V1 DAE Cal Date: 5/23/02
Cube 5x5x7: SAR (1g): 7.33 mW/g, SAR (10g): 5.44 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 33.0, 91.5, 4.7

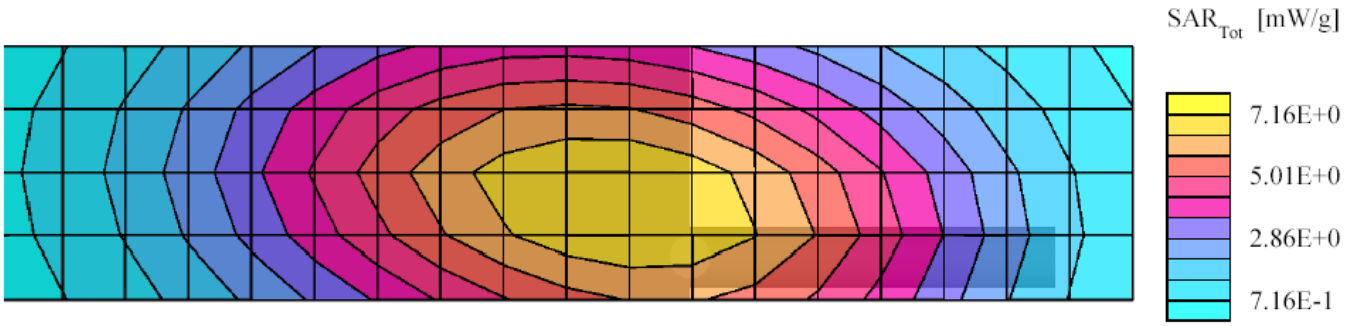


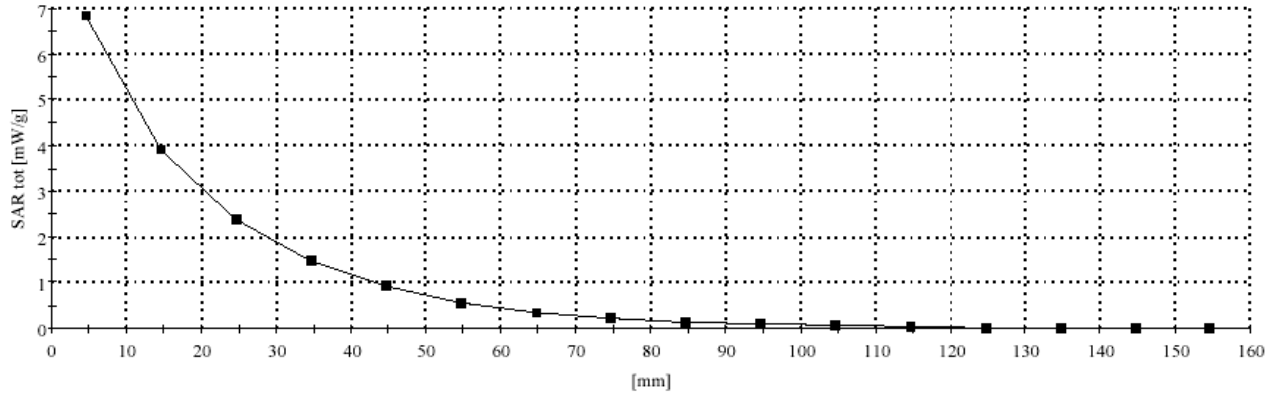


FCC ID: AZ489FT4855; Test Date: 10/29/02
Motorola CGISS EME Laboratory
Run #: Face-R1-021029-08
Model #: H18QDH9PW7AN SN:B212C0011
TX Freq: 407 MHz

- Accessories -
Antenna:NAE6546
Battery Kit: NTN8610B
Carry: none
Audio Acc. none

DUT microphone @ 2.5cm from phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6R (cal date 5-21-02) - SN1545; ConvF(7.00,7.00,7.00); Probe cal date: 21/05/02; Crest factor: 1.0; IEEE Head_425MHz: σ = 0.87 mho/m ε = 43.9 ρ = 1.00 g/cm3; DAE3: 363-V1 DAE Cal Date: 5/23/02
Cube 5x5x7: SAR (1g): 7.13 mW/g, SAR (10g): 5.31 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 36.0, 148.5, 4.7

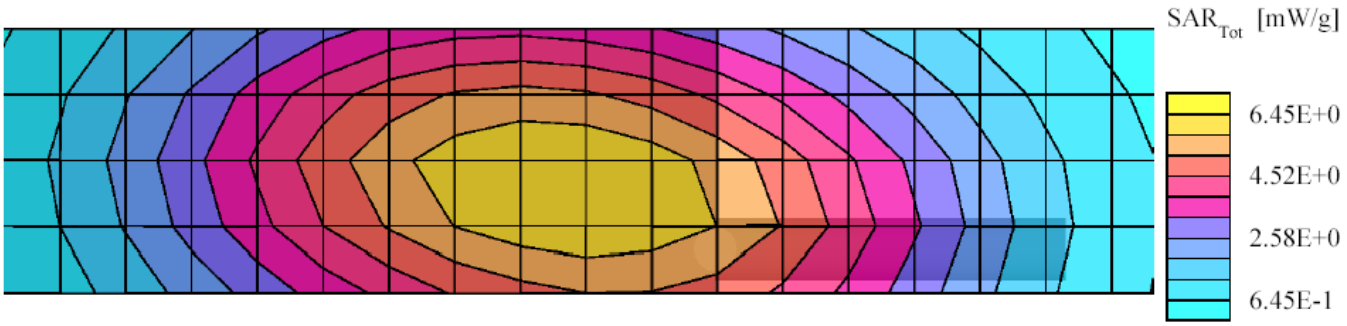


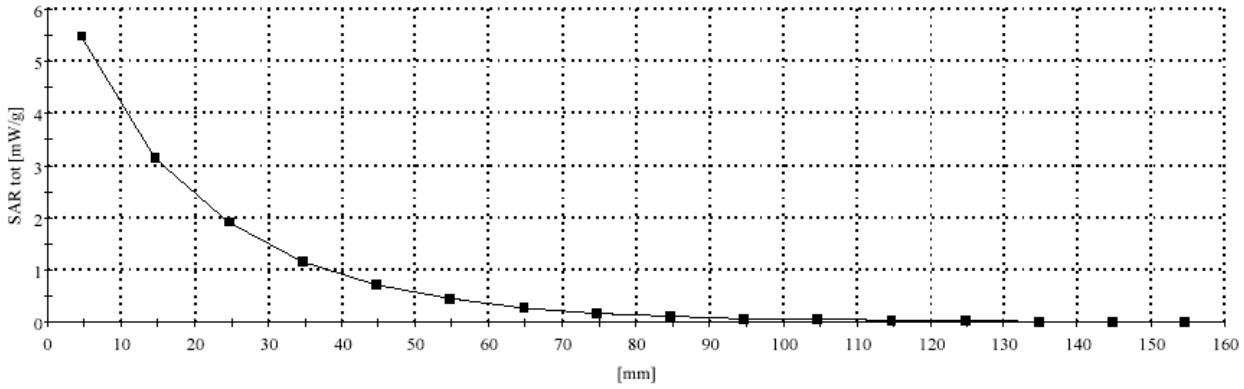


FCC ID: AZ489FT4855; Test Date: 11/04/02
Motorola CGISS EME Laboratory
Run #: Face-R1-021104-03
Model #: H18QDH9PW7AN SN:B212C0011
TX Freq: 435 MHz

- Accessories -
Antenna:NAE6547
Battery Kit: NTN8297A
Carry: none
Audio Acc. none

DUT @ 2.5cm from phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6R(cal date 5-21-02) - SN1545; ConvF(7.00,7.00,7.00); Probe cal date: 21/05/02; Crest factor: 1.0; IEEE Head_425MHz: ó = 0.85 mho/m år = 43.3 ñ = 1.00 g/cm3; DAE3: 363-V1 DAE Cal Date: 5/23/02
Cube 5x5x7: SAR (1g): 6.31 mW/g, SAR (10g): 4.66 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 36.0, 132.0, 4.7





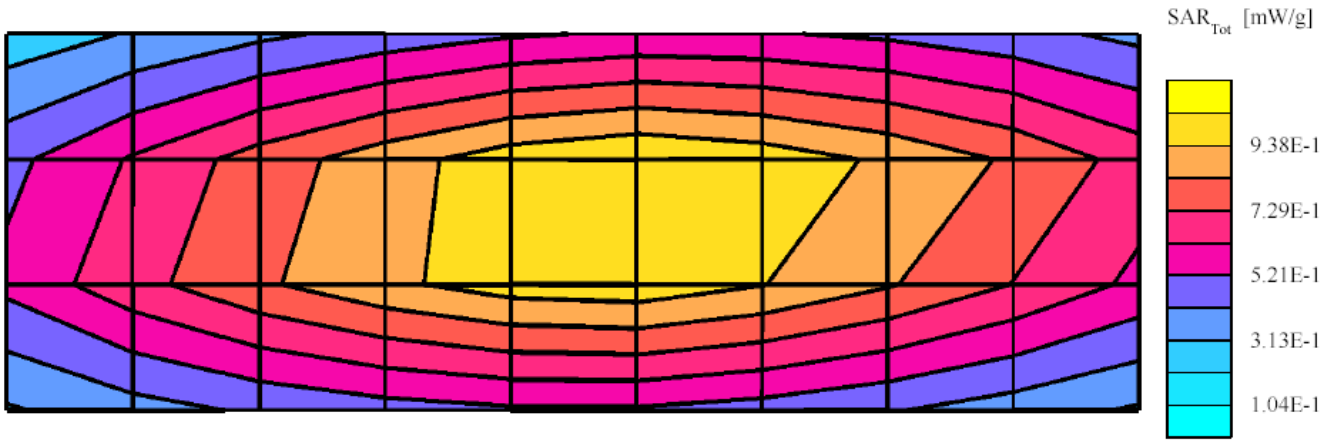
APPENDIX C

Dipole System Performance Check Results

CGISS 450 MHz Dipole; SN-002; Test Date:09/26/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-020926-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 4.65 mW/g, Percent from target (including drift) for 1g is 3.5%

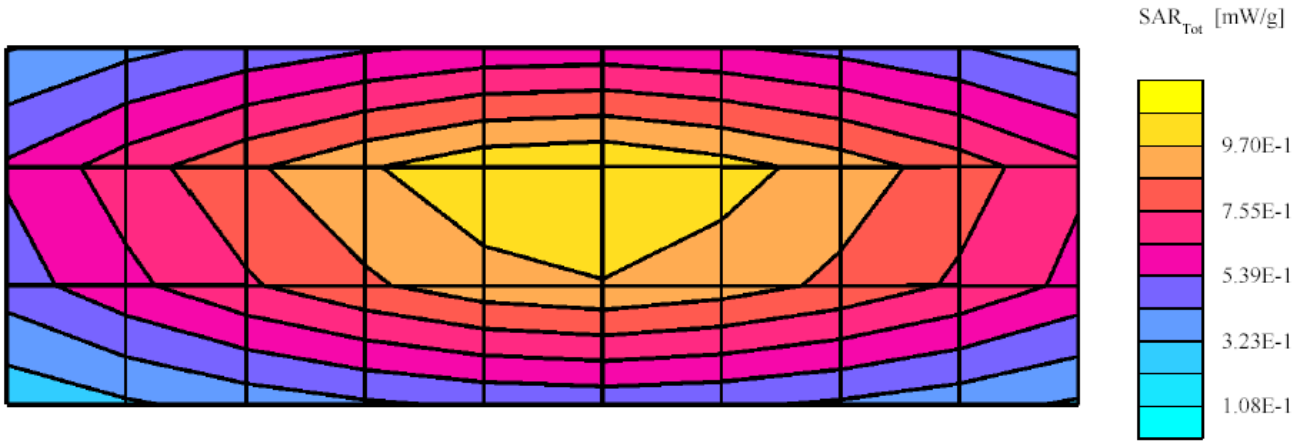
Flat Phantom; Probe: ET3DV6R (cal date 5-21-02) - SN1545;Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ = 0.91mho/m ε = 54.9 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.79 mW/g ± 0.06 dB, SAR (1g): 1.16 mW/g ± 0.06 dB, SAR (10g): 0.766 mW/g ± 0.07 dB, (Worst-case extrapolation) Penetration depth: 12.8 (11.4, 14.7) [mm]
Power drift: -0.01 dB



CGISS 450 MHz Dipole; SN-002; Test Date: 10/07/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021007-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 4.66 mW/g, Percent from target (including drift) for 1g is 3.3%

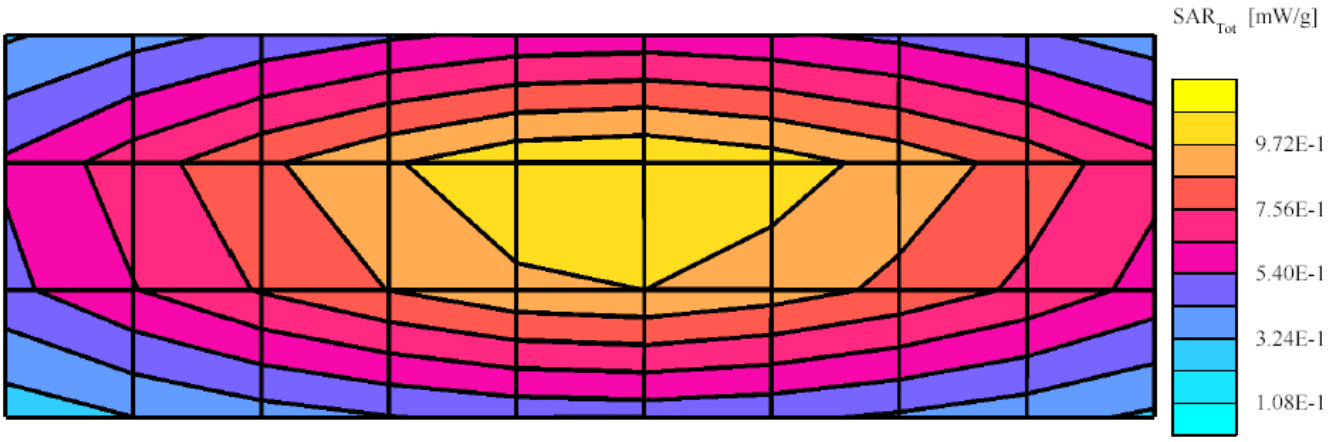
Flat Phantom; Probe: ET3DV6R (cal date 5-21-02) - SN1545; Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ = 0.91 mho/m ε= 54.7 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.79 mW/g ± 0.05 dB, SAR (1g): 1.16 mW/g ± 0.06 dB, SAR (10g): 0.763 mW/g ± 0.06 dB, (Worst-case extrapolation) Penetration depth: 12.8 (11.4, 14.6) [mm]
Power drift: -0.02 dB



CGISS 450MHz Dipole; SN-002; Test Date: 10/08/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021008-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 4.65 mW/g, Percent from target (including drift) for 1g is 3.5%

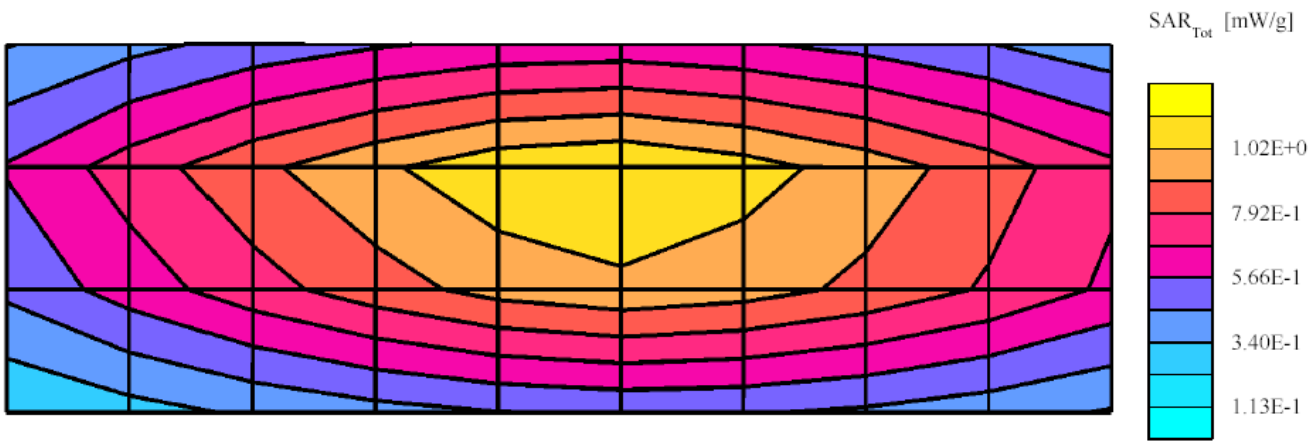
Flat Phantom; Probe: ET3DV6R (cal date 5-21-02) - SN1545; Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ = 0.92 mho/m ε= 55.0 ρ = 1.00 g/cm3 ; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.80 mW/g ± 0.07 dB, SAR (1g): 1.16 mW/g ± 0.07 dB, SAR (10g): 0.770 mW/g ± 0.06 dB, (Worst-case extrapolation) Penetration depth: 12.8 (11.5, 14.6) [mm]
Power drift: -0.01 dB



CGISS 450MHz Dipole; SN-002; Test Date: 10/9/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021009-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 4.81 mW/g, Percent from target (including drift) for 1g is 0.1%

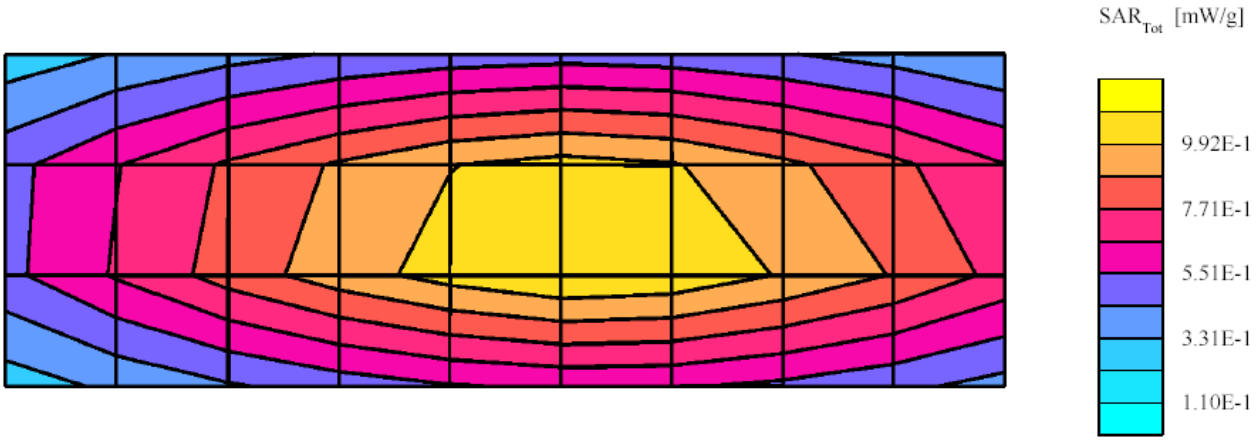
Flat Phantom; Probe: ET3DV6R (cal date 5-21-02) - SN1545;Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ = 0.94 mho/m ε= 55.2 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.86 mW/g ± 0.07 dB, SAR (1g): 1.20 mW/g ± 0.07 dB, SAR (10g): 0.792 mW/g ± 0.06 dB, (Worst-case extrapolation) Penetration depth: 12.7 (11.4, 14.4) [mm]
Power drift: -0.01 dB



CGISS 450 MHz Dipole; SN-002; Test Date: 10/10/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021010-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 4.85 mW/g, Percent from target (including drift) for 1g is 0.6%

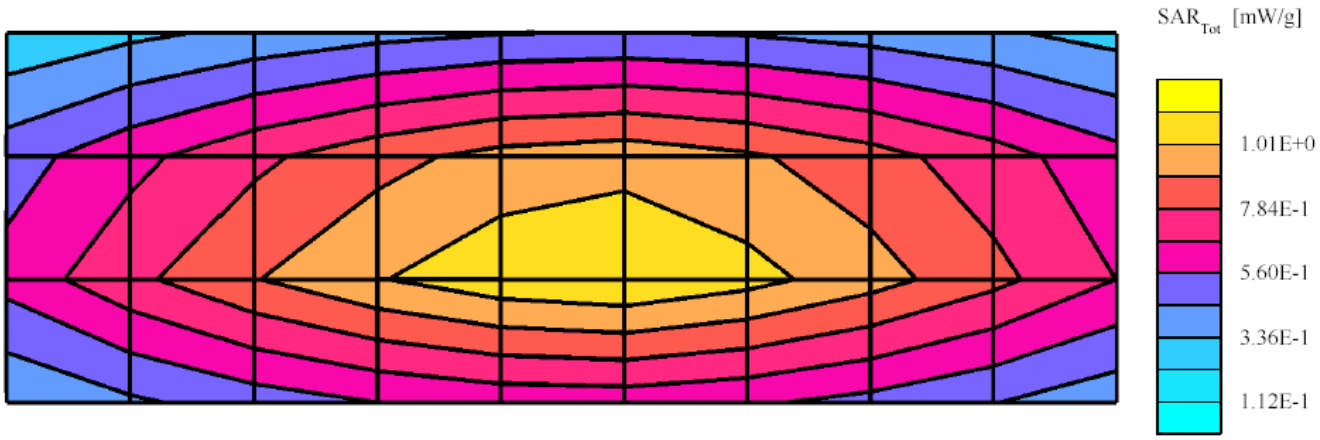
Flat Phantom; Probe: ET3DV6R (cal date 5-21-02) - SN1545;Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ = 0.93mho/m ε= 55.4 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.88 mW/g ± 0.04 dB, SAR (1g): 1.21 mW/g ± 0.05 dB, SAR (10g): 0.797 mW/g ± 0.06 dB, (Worst-case extrapolation) Penetration depth: 12.6 (11.2, 14.4) [mm]
Power drift: -0.01 dB



CGISS 450 MHz Dipole; SN-002; Test Date: 10/11/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021011-01
Model #: 450 SN: 002
TX Freq: 450 MHz)
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 4.74 mW/g, Percent from target (including drift) for 1g is 1.6%

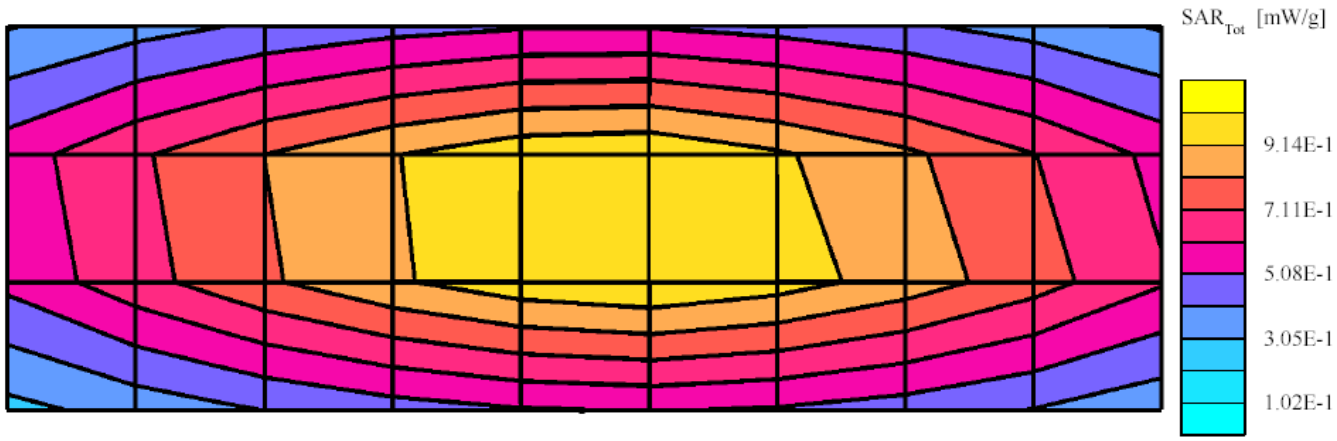
Flat Phantom; Probe: ET3DV6R(cal date 5-21-02) - SN1545;Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ = 0.92 mho/m ε= 55.1 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.83 mW/g ± 0.06 dB, SAR (1g): 1.18 mW/g ± 0.06 dB, SAR (10g): 0.778 mW/g ± 0.06 dB, (Worst-case extrapolation) Penetration depth: 12.7 (11.3, 14.5) [mm]
Power drift: -0.02 dB



CGISS 450 MHz Dipole; SN-002; Test Date: 10/14/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021014-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 4.58 mW/g, Percent from target (including drift) for 1g is 4.9%

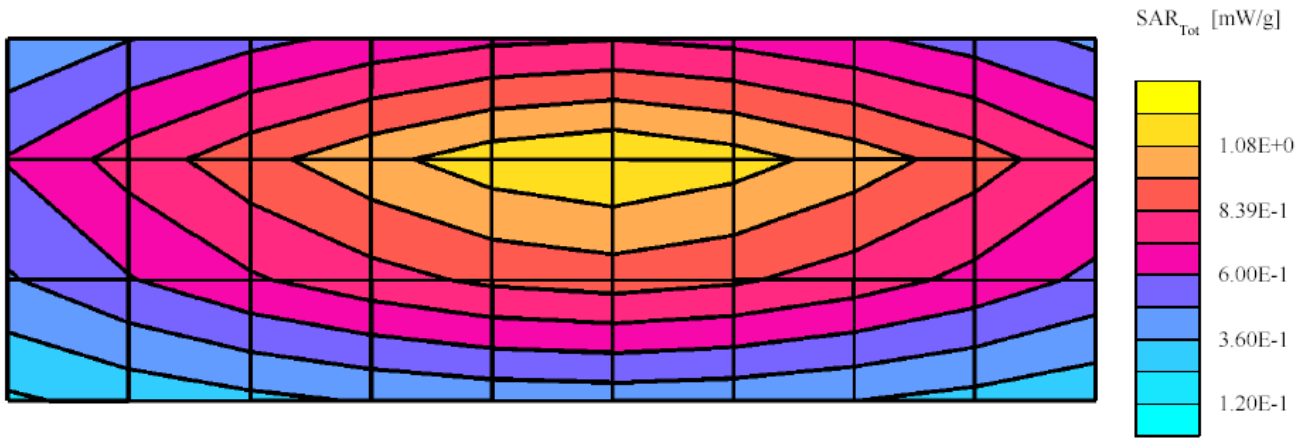
Flat Phantom; Probe: ET3DV6R(cal date 5-21-02) - SN1545;Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ = 0.93 mho/m ε= 55.0 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.75 mW/g ± 0.06 dB, SAR (1g): 1.13 mW/g ± 0.05 dB, SAR (10g): 0.746 mW/g ± 0.05 dB, (Worst-case extrapolation) Penetration depth: 12.7 (11.4, 14.4) [mm]
Power drift: -0.06 dB



CGISS 450 MHz Dipole; SN-002; Test Date: 10/15/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021015-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 4.85 mW/g, Percent from target (including drift) for 1g is 0.6%

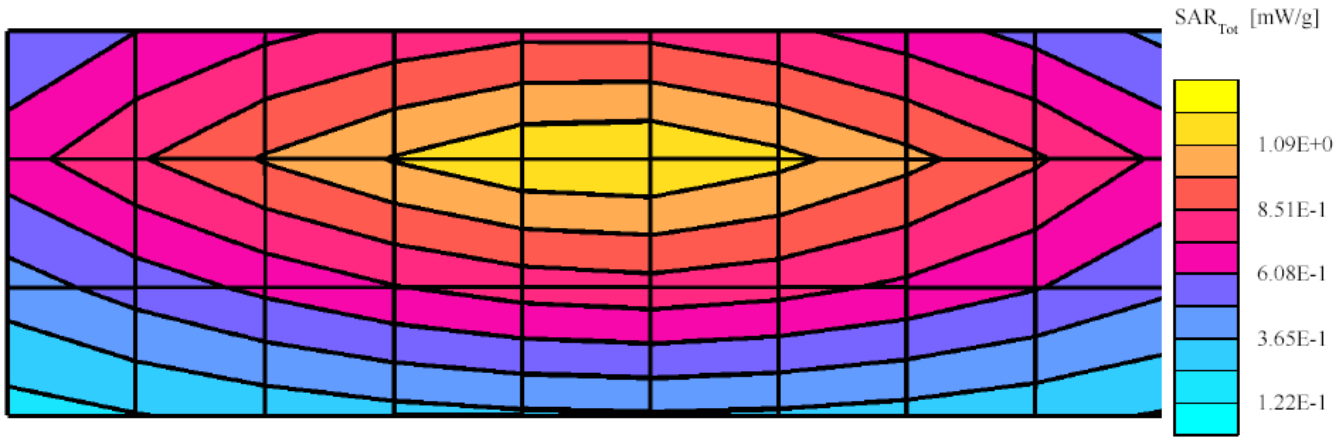
Flat Phantom; Probe: ET3DV6R(cal date 5-21-02) - SN1545;Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ = 0.92 mho/m ε= 54.8 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.87 mW/g ± 0.06 dB, SAR (1g): 1.21 mW/g ± 0.06 dB, SAR (10g): 0.801 mW/g ± 0.06 dB, (Worst-case extrapolation) Penetration depth: 12.8 (11.3, 14.7) [mm]
Power drift: -0.01 dB



CGISS 450 MHz Dipole; SN-002; Test Date: 10/16/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021016-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 4.93 mW/g, Percent from target (including drift) for 1g is 2.3%

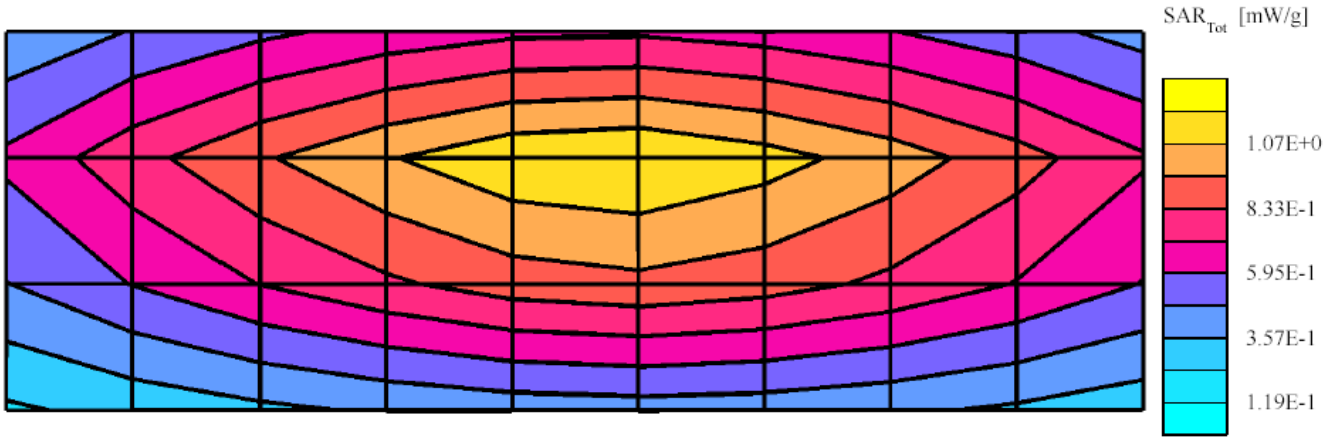
Flat Phantom; Probe: ET3DV6R(cal date 5-21-02) - SN1545;Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ = 0.92 mho/m ε= 54.6 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.91 mW/g ± 0.08 dB, SAR (1g): 1.23 mW/g ± 0.07 dB, SAR (10g): 0.815 mW/g ± 0.07 dB, (Worst-case extrapolation) Penetration depth: 12.8 (11.4, 14.6) [mm]
Power drift: -0.01 dB



CGISS 450 MHz Dipole; SN-002; Test Date: 10/17/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021017-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 4.94 mW/g, Percent from target (including drift) for 1g is 2.5%

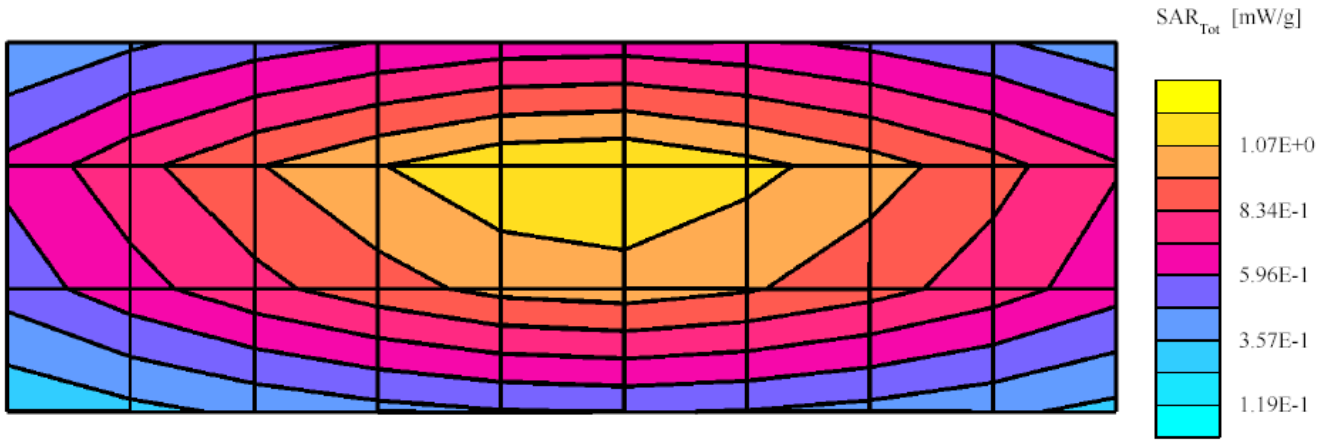
Flat Phantom; Probe: ET3DV6R (cal date 5-21-02) - SN1545;Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ = 0.92 mho/m ε= 55.0 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.90 mW/g ± 0.07 dB, SAR (1g): 1.23 mW/g ± 0.07 dB, SAR (10g): 0.809 mW/g ± 0.06 dB, (Worst-case extrapolation) Penetration depth: 12.8 (11.3, 14.7) [mm]
Power drift: -0.02 dB



CGISS 450 MHz Dipole; SN-002; Test Date: 10/18/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021018-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 5.00 mW/g, Percent from target (including drift) for 1g is 3.7%

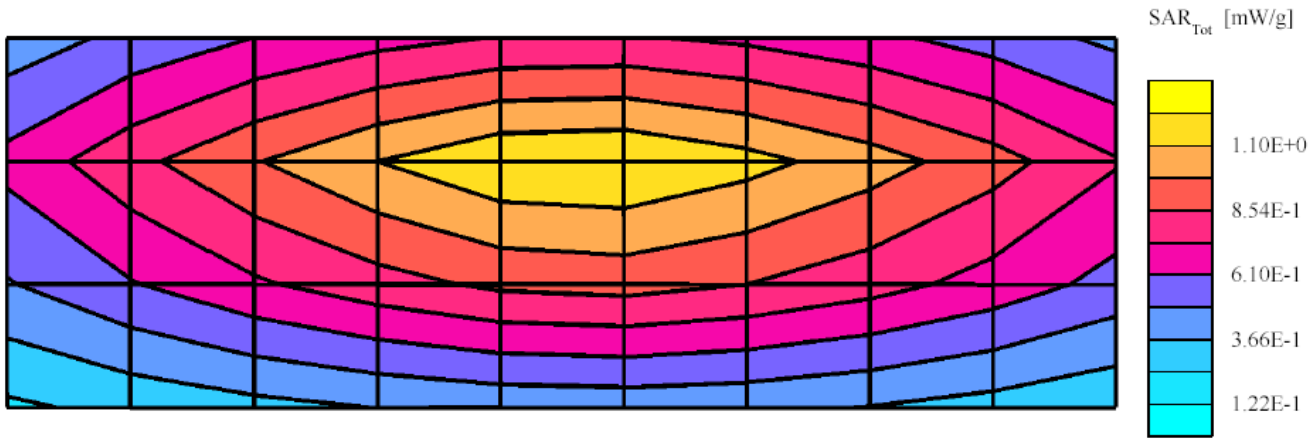
Flat Phantom; Probe: ET3DV6R (cal date 5-21-02) - SN1545;Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ = 0.95 mho/m ε= 56.1 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.93 mW/g ± 0.06 dB, SAR (1g): 1.25 mW/g ± 0.07 dB, SAR (10g): 0.832 mW/g ± 0.07 dB, (Worst-case extrapolation) Penetration depth: 12.9 (11.5, 14.8) [mm]
Power drift: 0.00 dB



CGISS 450 MHz Dipole; SN-002; Test Date: 10/21/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021021-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 4.96 mW/g, Percent from target (including drift) for 1g is 2.9%

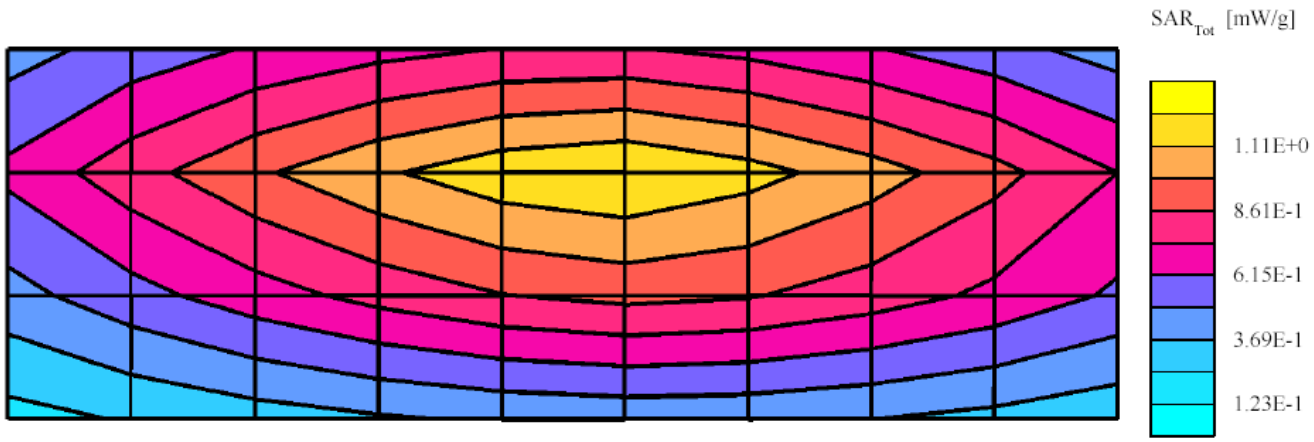
Flat Phantom; Probe: ET3DV6R (cal date 5-21-02) - SN1545;Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ = 0.94 mho/m ε = 55.2 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.91 mW/g ± 0.04 dB, SAR (1g): 1.24 mW/g ± 0.06 dB, SAR (10g): 0.824 mW/g ± 0.06 dB, (Worst-case extrapolation) Penetration depth: 12.8 (11.3, 14.7) [mm]
Power drift: 0.00 dB



CGISS 450 MHz Dipole; SN-002; Test Date: 10/22/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021022-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 4.96 mW/g, Percent from target (including drift) for 1g is 2.9%

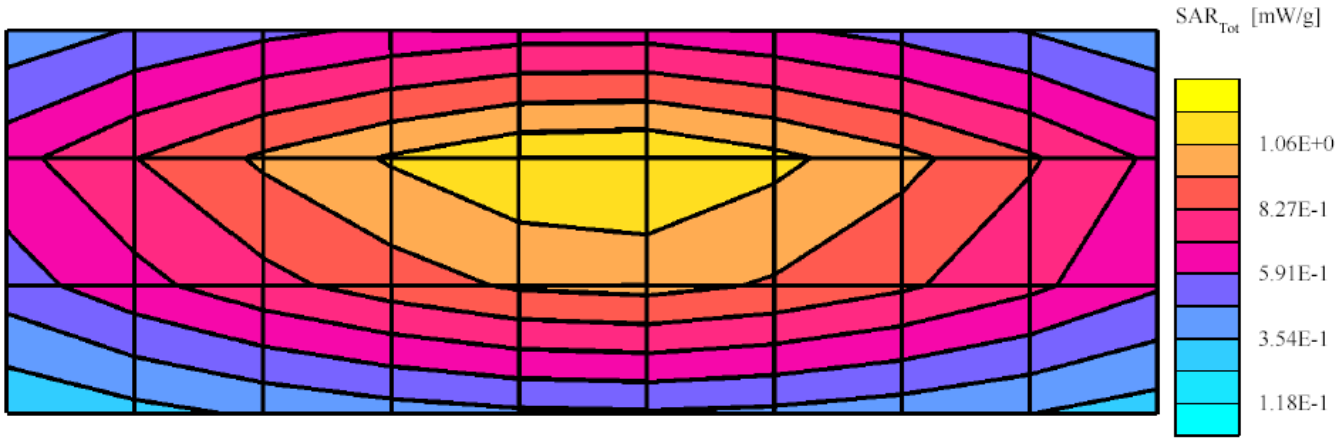
Flat Phantom; Probe: ET3DV6R (cal date 5-21-02) - SN1545;Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ = 0.94 mho/m ε = 55.6 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.92 mW/g ± 0.07 dB, SAR (1g): 1.24 mW/g ± 0.07 dB, SAR (10g): 0.823 mW/g ± 0.06 dB, (Worst-case extrapolation) Penetration depth: 12.8 (11.4, 14.6) [mm]
Power drift: 0.00 dB



CGISS 450 MHz Dipole; SN-002; Test Date: 10/23/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021023-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 4.96 mW/g, Percent from target (including drift) for 1g is 2.9%

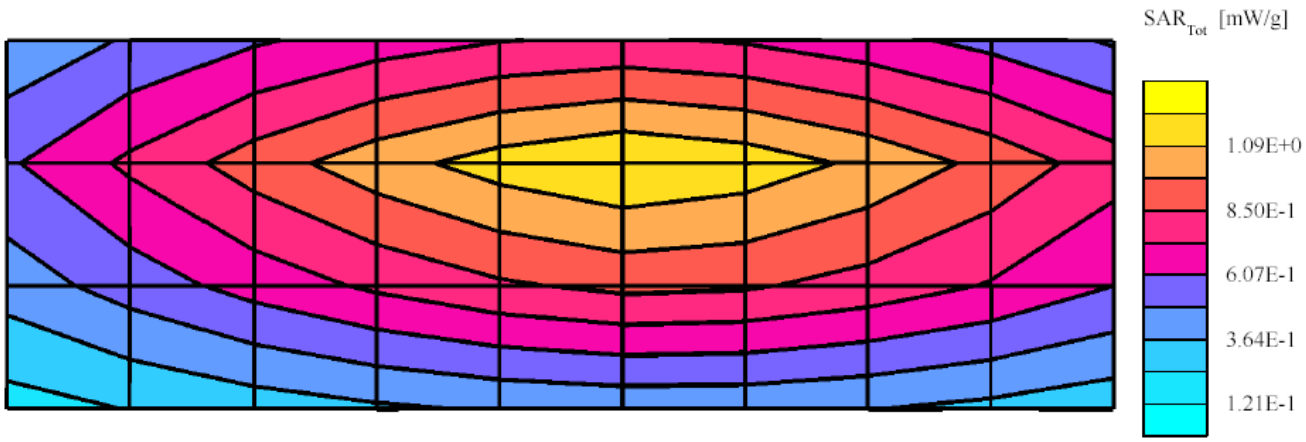
Flat Phantom; Probe: ET3DV6R (cal date 5-21-02) - SN1545; Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ= 0.93 mho/m ε= 55.2 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.93 mW/g ± 0.06 dB, SAR (1g): 1.24 mW/g ± 0.06 dB, SAR (10g): 0.820 mW/g ± 0.06 dB, (Worst-case extrapolation) Penetration depth: 12.7 (11.3, 14.6) [mm]
Power drift: 0.00 dB



CGISS 450 MHz Dipole; SN-002; Test Date: 10/24/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021024-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 4.91 mW/g, Percent from target (including drift) for 1g is 1.8%

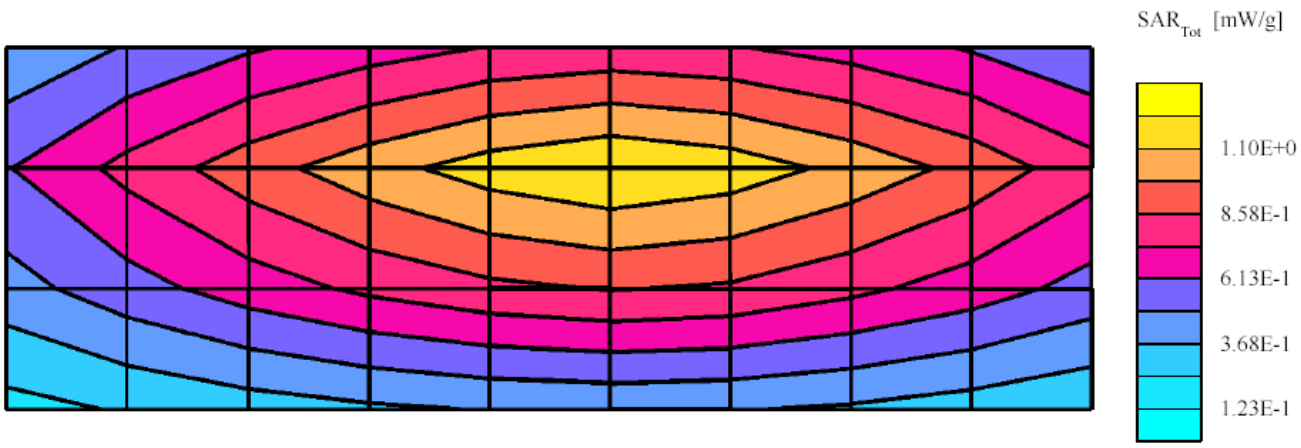
Flat Phantom; Probe: ET3DV6R (cal date 5-21-02) - SN1545;Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ = 0.93 mho/m ε= 55.4 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.90 mW/g ± 0.06 dB, SAR (1g): 1.23 mW/g ± 0.06 dB, SAR (10g): 0.813 mW/g ± 0.07 dB, (Worst-case extrapolation) Penetration depth: 12.8 (11.3, 14.6) [mm]
Power drift: 0.01 dB



CGISS 450 MHz Dipole; SN-002; Test Date: 10/25/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021025-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 4.92 mW/g, Percent from target (including drift) for 1g is 2.1%

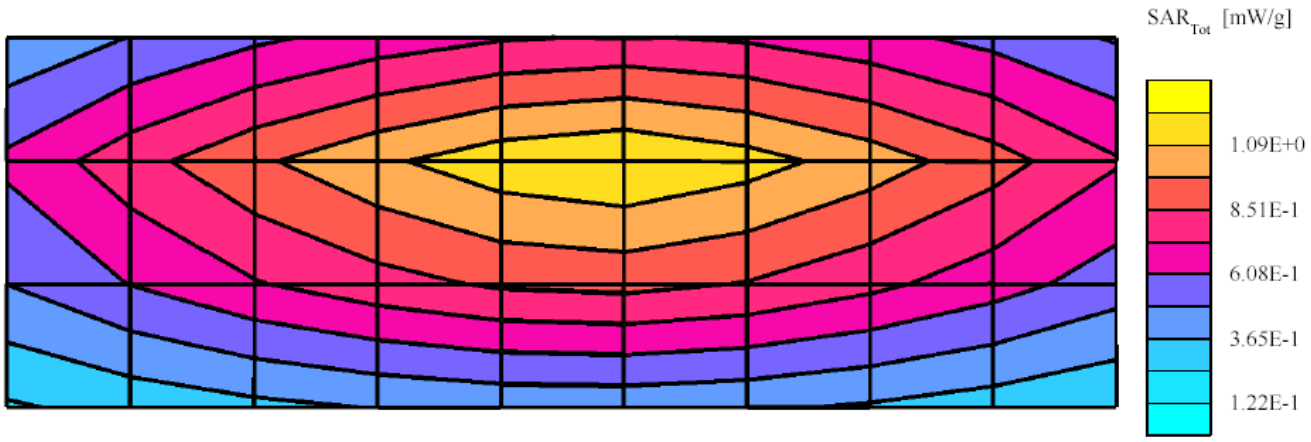
Flat Phantom; Probe: ET3DV6R (cal date 5-21-02) - SN1545;Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ = 0.94 mho/m ε = 55.5 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.91 mW/g ± 0.08 dB, SAR (1g): 1.23 mW/g ± 0.07 dB, SAR (10g): 0.816 mW/g ± 0.06 dB, (Worst-case extrapolation) Penetration depth: 12.8 (11.4, 14.5) [mm]
Power drift: 0.00 dB



CGISS 450 MHz Dipole; SN-002; Test Date: 10/28/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021028-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 4.94 mW/g, Percent from target (including drift) for 1g is 2.6%

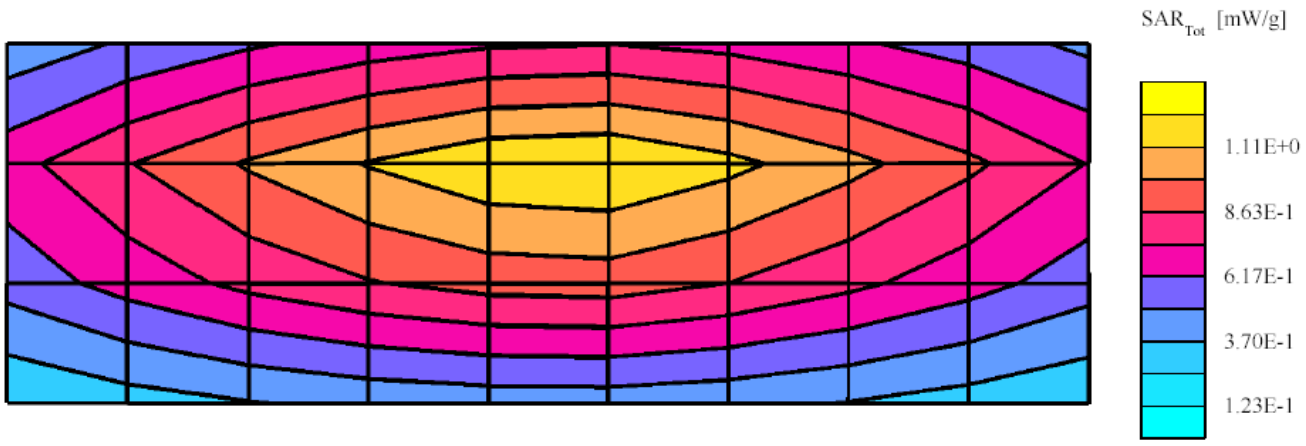
Flat Phantom; Probe: ET3DV6R (cal date 5-21-02) - SN1545;Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ = 0.94 mho/m ε= 55.5 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.90 mW/g ± 0.08 dB, SAR (1g): 1.23 mW/g ± 0.07 dB, SAR (10g): 0.811 mW/g ± 0.06 dB, (Worst-case extrapolation) Penetration depth: 12.7 (11.3, 14.5) [mm]
Power drift: -0.02 dB



CGISS 450 MHz Dipole; SN-002; Test Date: 10/29/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021029-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.79 mW/g (including drift) (1g)
SAR calculated is 5.04 mW/g, Percent from target (including drift) for 1g is 5.2%

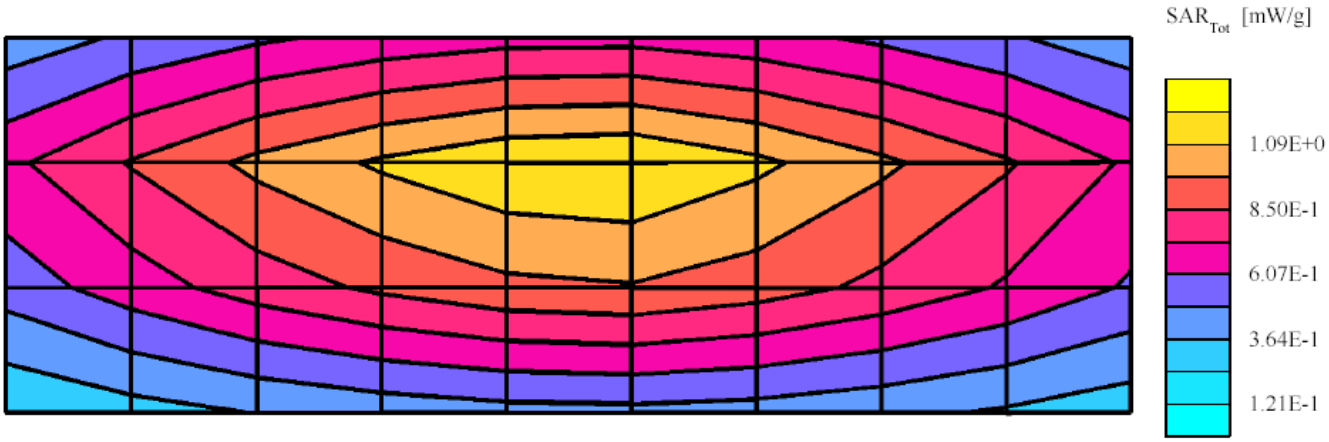
Flat Phantom; Probe: ET3DV6R (cal date 5-21-02) - SN1545;Probe Cal Date: 21/05/02ConvF(7.00,7.00,7.00); Crest factor: 1.0; IEEE Head_450MHz: $\sigma = 0.90$ mho/m $\varepsilon = 43.4$ $\rho = 1.00$ g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.97 mW/g ± 0.07 dB, SAR (1g): 1.26 mW/g ± 0.07 dB, SAR (10g): 0.825 mW/g ± 0.06 dB, (Worst-case extrapolation) Penetration depth: 12.4 (11.2, 14.0) [mm]
Power drift: 0.00 dB



CGISS 450 MHz Dipole; SN-002; Test Date: 10/30/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021030-01
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.79 mW/g (including drift) (1g)
SAR calculated is 5.07 mW/g, Percent from target (including drift) for 1g is 6.0%

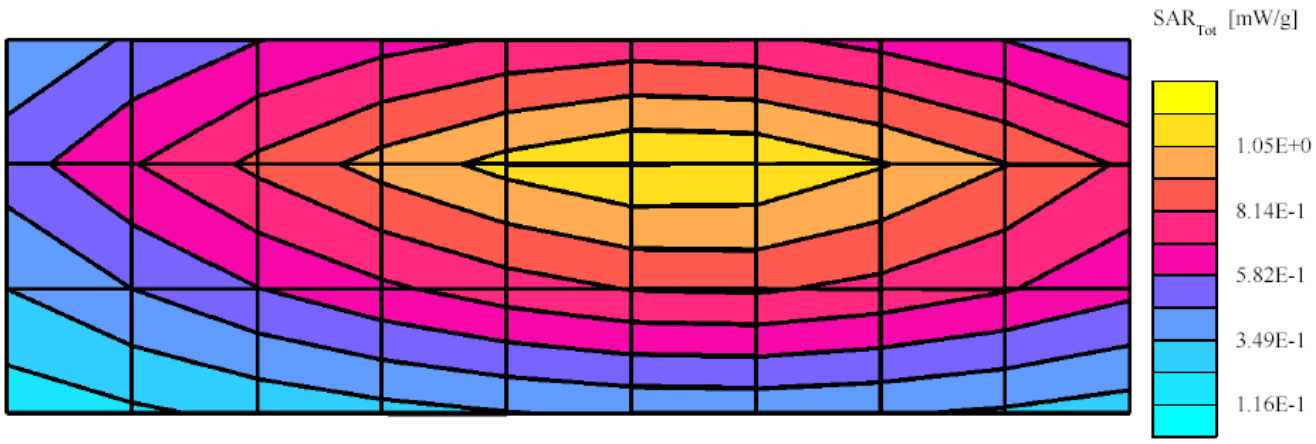
Flat Phantom; Probe: ET3DV6R (cal date 5-21-02) - SN1545;Probe Cal Date: 21/05/02ConvF(7.00,7.00,7.00); Crest factor: 1.0; IEEE Head_450MHz: σ = 0.88 mho/m ε = 43.0 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.96 mW/g ± 0.07 dB, SAR (1g): 1.26 mW/g ± 0.06 dB, SAR (10g): 0.821 mW/g ± 0.06 dB, (Worst-case extrapolation) Penetration depth: 12.3 (11.1, 14.0) [mm]
Power drift: -0.03 dB



CGISS 450 MHz Dipole; SN-002; Test Date: 11/4/02
Motorola CGISS EME Lab
Run #: Sys Perf-R1-021104-07
Model #: 450 SN: 002
TX Freq: 450 MHz
Start Power; 250mW

- Comments-
Target at 1W is 4.82 mW/g (including drift) (1g)
SAR calculated is 4.71 mW/g, Percent from target (including drift) for 1g is 2.3%

Flat Phantom; Probe: ET3DV6R (cal date 5-21-02) - SN1545;Probe Cal Date: 21/05/02ConvF(7.10,7.10,7.10); Crest factor: 1.0; FCC Body_450 MHz: σ = 0.93 mho/m ε = 55.2 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/23/02
Cubes (2): Peak: 1.82 mW/g ± 0.10 dB, SAR (1g): 1.18 mW/g ± 0.08 dB, SAR (10g): 0.783 mW/g ± 0.07 dB, (Worst-case extrapolation) Penetration depth: 13.0 (11.6, 14.7) [mm]
Power drift: 0.01 dB



SYSTEM PERFORMANCE CHECK TARGET SAR

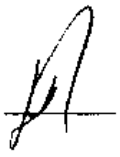
Date:	3/11/02	Frequency (MHz):	450
Lab Location:	CGISS	Mixture Type:	Body
Robot System:	Robot #3	Ambient Temp.(°C):	21
Probe Serial #:	1384	Tissue Temp.(°C):	21.4
DAE Serial #:	406		

Tissue Characteristics		Phantom Type/SN:	80602002C
Permitivity:	56.7	Distance (mm):	15
Conductivity:	0.93		

Reference Source: MFRL Dipole (Dipole)
Reference SN: 450-002

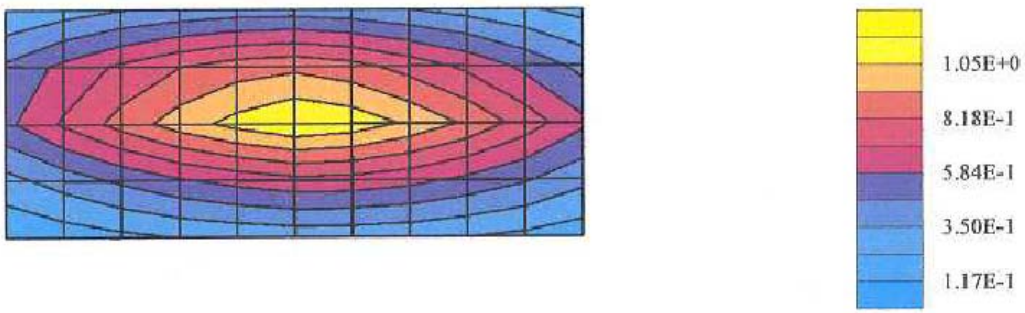
Power to Dipole: 250 mW

Measured SAR Value:	1.18 mW/g,	0.771 mW/g (10g avg.)
Power Drift:	-0.09 dB	
New Target/Measured SAR Value: (normalized to 1.0 W, with drift compensation)	4.82 mW/g,	3.15 mW/g (10g avg.)

Test performed by: Jim Fortier Initial: 

Dipole 450MHz SN002; Test date:03/11/02

Run #: R3-02031103 Phantom #: 80602002C
Model Dipole MFRL SN:450-002
Robot #: CGISS-3 Tester: Jim Fortier
Tx Freq: 450 MHz Simulated Tissue Temp: 21.4C Ambient:21C
Start Power: 250 mW System Performance Target (1W): 4.82 mW/g
Flat; Probe: ET3DV6 - SN1384; ConvF(7.45,7.45,7.45); Crest factor: 1.0; FCC Body 450: σ = 0.93 mho/m ε_r = 56.7 ρ = 1.00 g/cm^3
Cube 7x7x7: Peak: 1.85 mW/g, SAR (1g): 1.18 mW/g, SAR (10g): 0.771 mW/g, (Worst-case extrapolation)
Penetration depth: 12.5 (11.1, 14.4) [mm]
Powerdrift: -0.09 dB



Motorola CGISS EME Lab

SYSTEM PERFORMANCE CHECK TARGET SAR

Date:	3/11/02	Frequency (MHz):	450
Lab Location:	CGISS	Mixture Type:	Head
Robot System:	Robot #3	Ambient Temp.(°C):	21
Probe Serial #:	1384	Tissue Temp.(°C):	20.9
DAE Serial #:	406		

Tissue Characteristics		Phantom Type/SN:	ACL40232002B
Permitivity:	43.1	Distance (mm):	15
Conductivity:	0.85		

Reference Source: MFRL Dipole (Dipole)
Reference SN: 450-002

Power to Dipole: 250 mW

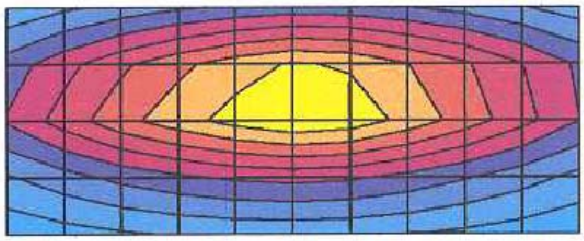
Measured SAR Value: 1.17 mW/g, 0.764 mW/g (10g avg.)
Power Drift: -0.1 dB

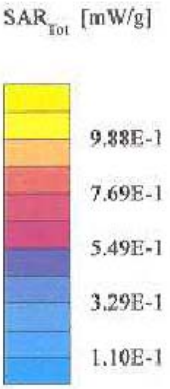
New Target/Measured SAR Value: (normalized to 1.0 W, with drift compensation) 4.79 mW/g, 3.13 mW/g (10g avg.)

Test performed by: Jim Fortier Initial: 

Dipole 450MHz SN002; Test date:03/11/02

Run #: R3-02031102 Phantom #: ACL40232002B
Model Dipole MFRL SN:450-002
Robot #: CGISS-3 Tester: Jim Fortier
Tx Freq: 450 MHz Simulated Tissue Temp: 20.9C Ambient:21C
Start Power: 250 mW System Performance Target (1W): 4.79 mW/g
Flat; Probe: ET3DV6 - SN1384; ConvF(7.57,7.57,7.57); Crest factor: 1.0; IEEE Head 450 MHz: σ = 0.85 mho/m ε_r = 43.1 ρ = 1.00 g/cm^3
Cube 7x7x7: Peak: 1.84 mW/g, SAR (1g): 1.17 mW/g, SAR (10g): 0.764 mW/g, (Worst-case extrapolation)
Penetration depth: 12.3 (10.9, 14.1) [mm]
Powerdrift: -0.10 dB





Motorola CGISS EME Lab

SYSTEM VALIDATION

Date:	3/11/02	Frequency (MHz):	835
Lab Location:	CGISS	Mixture Type:	Head
Robot System:	Robot #3	Ambient Temp.(°C):	21
Probe Serial #:	1384	Tissue Temp.(°C):	21.3
DAE Serial #:	406		

Tissue Characteristics		Phantom Type/SN:	SAMTP1022
Permitivity:	40.3	Distance (mm):	15
Conductivity:	0.90		

Reference Source: D835 V2 (Dipole)
Reference SN: 436

Power to Dipole: 250 mW
Power Output (radio): N/A mW

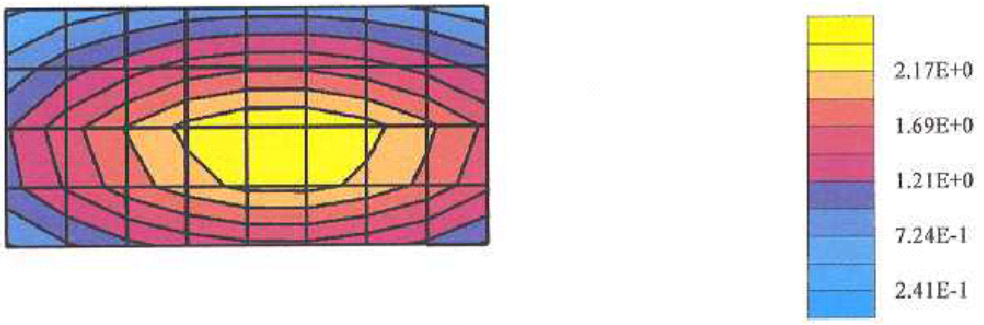
Target SAR Value: (normalized to 1.0 W)	10.2 mW/g,	6.56 mW/g (10g avg.)
Measured SAR Value:	2.47 mW/g,	1.58 mW/g (10g avg.)
Power Drift:	-0.02 dB	
Measured SAR Value: (normalized to 1.0 W, with drift compensation)	9.93 mW/g,	6.35 mW/g (10g avg.)

Percent Difference From Target (must be within System Uncertainty): 2.6 % (1g avg)
3.2 % (10g avg)

Test performed by: ___Jim Fortier_____ Initial: 

Dipole D835V2 SN426; Test date:03/11/02

Run #: R3-02031101 Phantom #: SAMTP1022
Model SPEAG Dipole D835V2 SN426
Robot #: CGISS-3 Tester: Jim Fortier
Tx Freq: 835 MHz Simulated Tissue Temp: 21.3C Ambient:21C
Start Power: 250 mW SPEAG Validation Target (1W): 10.2 mW/g
Flat; Probe: ET3DV6 - SN1384; ConvF(6.57,6.57,6.57); Crest factor: 1.0; IEEE HEAD 835MHz: σ = 0.90 mho/m ε_r = 40.3 ρ = 1.00 g/cm^3
Cube 7x7x7: Peak: 3.87 mW/g, SAR (1g): 2.47 mW/g, SAR (10g): 1.58 mW/g, (Worst-case extrapolation)
Penetration depth: 11.9 (11.0, 13.2) [mm]
Powerdrift: -0.02 dB



Motorola CGISS EME Lab

APPENDIX D

Calibration Certificates

Schmid & Partner
Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

Calibration Certificate

Dosimetric E-Field Probe

Type:	ET3DV6R
Serial Number:	1545
Place of Calibration:	Zurich
Date of Calibration:	May 21, 2002
Calibration Interval:	12 months

Schmid & Partner Engineering AG hereby certifies, that this device has been calibrated on the date indicated above. The calibration was performed in accordance with specifications and procedures of Schmid & Partner Engineering AG.

Wherever applicable, the standards used in the calibration process are traceable to international standards. In all other cases the standards of the Laboratory for EMF and Microwave Electronics at the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland have been applied.

Calibrated by:	
Approved by:	

DASY3 - Parameters of Probe: ET3DV6R SN:1545

Sensitivity in Free Space

Diode Compression

NormX	2.04 $\mu V/(V/m)^2$		DCP X	95	mV
NormY	2.11 $\mu V/(V/m)^2$		DCP Y	95	mV
NormZ	1.79 $\mu V/(V/m)^2$		DCP Z	95	mV

Sensitivity in Tissue Simulating Liquid

Head	**900 MHz**	ε_r = **41.5 ± 5%**	σ = **0.97 ± 5% mho/m**
Head	**835 MHz**	ε_r = **41.5 ± 5%**	σ = **0.90 ± 5% mho/m**

ConvF X	**6.1** ± 9.5% (k=2)	Boundary effect:	
ConvF Y	**6.1** ± 9.5% (k=2)	Alpha	**0.40**
ConvF Z	**6.1** ± 9.5% (k=2)	Depth	**2.47**

Head	**1800 MHz**	ε_r = **40.0 ± 5%**	σ = **1.40 ± 5% mho/m**
Head	**1900 MHz**	ε_r = **40.0 ± 5%**	σ = **1.40 ± 5% mho/m**

ConvF X	**5.0** ± 9.5% (k=2)	Boundary effect:	
ConvF Y	**5.0** ± 9.5% (k=2)	Alpha	**0.57**
ConvF Z	**5.0** ± 9.5% (k=2)	Depth	**2.25**

Boundary Effect

Head **900 MHz** **Typical SAR gradient: 5 % per mm**

Probe Tip to Boundary		1 mm	2 mm
SAR_{be} [%]	Without Correction Algorithm	10.3	5.8
SAR_{be} [%]	With Correction Algorithm	0.4	0.5

Head **1800 MHz** **Typical SAR gradient: 10 % per mm**

Probe Tip to Boundary		1 mm	2 mm
SAR_{be} [%]	Without Correction Algorithm	12.3	7.9
SAR_{be} [%]	With Correction Algorithm	0.2	0.2

Sensor Offset

Probe Tip to Sensor Center	**2.7**	mm

Schmid & Partner
Engineering AG

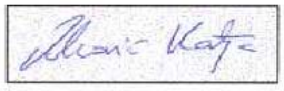
Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

Additional Conversion Factors

for Dosimetric E-Field Probe

Type:	**ET3DV6R**
Serial Number:	**1545**
Place of Assessment:	**Zurich**
Date of Assessment:	**May 23, 2002**
Probe Calibration Date:	**May 21, 2002**

Schmid & Partner Engineering AG hereby certifies that conversion factor(s) of this probe have been evaluated on the date indicated above. The assessment was performed using the FDTD numerical code SEMCAD of Schmid & Partner Engineering AG. Since the evaluation is coupled with measured conversion factors, it has to be recalculated yearly, i.e., following the re-calibration schedule of the probe. The uncertainty of the numerical assessment is based on the extrapolation from measured value at 900 MHz or at 1800 MHz.

Assessed by: 

Dosimetric E-Field Probe ET3DV6R SN:1545

Conversion factor (± standard deviation)

150 MHz	ConvF	**7.8 ± 8%**	ε_r = **61.9** ±5% σ = **0.80** ±5% mho/m (body tissue)
236 MHz	ConvF	**7.6 ± 8%**	ε_r = **59.8** ±5% σ = **0.87** ±5% mho/m (body tissue)
300 MHz	ConvF	**7.5 ± 8%**	ε_r = **58.2** ±5% σ = **0.92** ±5% mho/m (body tissue)
350 MHz	ConvF	**7.3 ± 8%**	ε_r = **57.7** ±5% σ = **0.93** ±5% mho/m (body tissue)
450 MHz	ConvF	**7.1 ± 8%**	ε_r = **56.7** ±5% σ = **0.94** ±5% mho/m (body tissue)
784 MHz	ConvF	**6.1 ± 8%**	ε_r = **55.4** ±5% σ = **0.97** ±5% mho/m (body tissue)
835 MHz	ConvF	**6.0 ± 8%**	ε_r = **55.2** ±5% σ = **0.97** ±5% mho/m (body tissue)
925 MHz	ConvF	**5.9 ± 8%**	ε_r = **55.0** ±5% σ = **1.06** ±5% mho/m (body tissue)
1450 MHz	ConvF	**5.1 ± 8%**	ε_r = **54.0** ±5% σ = **1.30** ±5% mho/m (body tissue)
1900 MHz	ConvF	**4.4 ± 8%**	ε_r = **53.3** ±5% σ = **1.52** ±5% mho/m (body tissue)
2450 MHz	ConvF	**3.7 ± 8%**	ε_r = **52.7** ±5% σ = **1.95** ±5% mho/m (body tissue)

Dosimetric E-Field Probe ET3DV6R SN:1545

Conversion factor (± standard deviation)

150 MHz	ConvF	**8.5 ± 8%**	ε_r = 52.3 ±5% σ = 0.76 ±5% mho/m (head tissue)
236 MHz	ConvF	**7.7 ± 8%**	ε_r = 48.3 ±5% σ = 0.82 ±5% mho/m (head tissue)
300 MHz	ConvF	**7.3 ± 8%**	ε_r = 45.3 ±5% σ = 0.87 ±5% mho/m (head tissue)
350 MHz	ConvF	**7.2 ± 8%**	ε_r = 44.7 ±5% σ = 0.87 ±5% mho/m (head tissue)
400 MHz	ConvF	**7.1 ± 8%**	ε_r = 44.4 ±5% σ = 0.87 ±5% mho/m (head tissue - CENELEC)
450 MHz	ConvF	**7.0 ± 8%**	ε_r = 43.5 ±5% σ = 0.87 ±5% mho/m (head tissue)
784 MHz	ConvF	**6.3 ± 8%**	ε_r = 41.8 ±5% σ = 0.90 ±5% mho/m (head tissue)
835 MHz	ConvF	**6.2 ± 8%**	ε_r = 41.5 ±5% σ = 0.90 ±5% mho/m (head tissue)
835 MHz	ConvF	**6.2 ± 8%**	ε_r = 42.5 ±5% σ = 0.98 ±5% mho/m (head tissue - CENELEC)
925 MHz	ConvF	**6.1 ± 8%**	ε_r = 41.5 ±5% σ = 0.98 ±5% mho/m (head tissue)
900 MHz	ConvF	**6.1 ± 8%**	ε_r = 42.3 ±5% σ = 0.99 ±5% mho/m (head tissue - CENELEC)

Dosimetric E-Field Probe ET3DV6R SN:1545

Conversion factor (± standard deviation)

1500 MHz	ConvF	**5.4 ± 8%**	ε_r = 40.4 σ = 1.23 mho/m (head tissue)
1900 MHz	ConvF	**4.8 ± 8%**	ε_r = 40.0 ±5% σ = 1.40 ±5% mho/m (head tissue)
2450 MHz	ConvF	**4.1 ± 8%**	ε_r = 39.2 ±5% σ = 1.80 ±5% mho/m (head tissue)

MOTOROLA

DIPOLE SAR VALIDATION CERTIFICATE

Frequency:	*450*	***MHz***
Dipole Serial Number:	*450-002*	
Simulated Tissue:	*body*	
Date of Validation:	*August 9, 2001*	
Validation Interval:	*24 months*	

Motorola Florida Research Laboratory hereby certifies, that the System Validation was performed on the date indicated above. The System Validation was performed in accordance with specifications and procedures of Motorola Florida Research Laboratory.

Calibrated by:

J. Patrick Oliver

Approved by:

Mark Douglas

Motorola Florida Research Laboratory - 8000 West Sunrise Blvd. Ft. Lauderdale, Florida 33322

Purpose:

To provide a method to check the validity of the SAR measurement system prior to testing

Tissue Simulate:

Name:	*Body 450*	
Targets for tissue characteristics:		
Dielectric Constant:	*56.7*	+/- 5%
Conductivity:	*0.94 S/m*	+/- 5%
Measurement values:		
Dielectric Constant:	*57.9*	
Conductivity:	*0.94*	

Validation setup:

Set up for the validation using constant forward power as shown in Figure 1. The total distance from the simulated tissue to the top of the dipole elements is 16 mm.

Use 1.0 for the density of the simulated tissue.

Target for SAR validation:

The target is specified in terms of peak SAR averaged over 1 cm^3 (1 gram) of tissue.

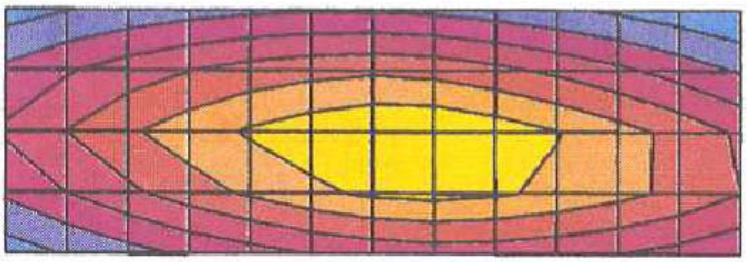
The target is normalized to 1 watt based on a constant forward input power of 500 mW.

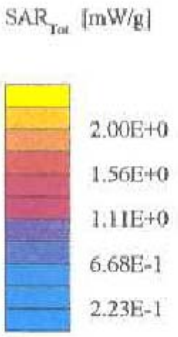
Peak SAR, at 1 watt, averaged over 1 cm^3 (1 gram) of tissue:

4.4 mW/g	+/- 10%

dipole 450; Test Date:08/10/01

dipole 450-002, body, 500 mW constant forward power
9x16 inch flat Phantom; Section; Position: ;
Probe: - SN1418; ConvF(6.74,6.74,6.74); Crest factor: 1.0; Muscle 450 MHz: σ = 0.94 mho/m ε_r = 57.9 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 2.22 mW/g ± 0.01 dB, SAR (10g): 1.49 mW/g ± 0.01 dB, (Worst-case extrapolation), Peak: 3.38 mW/g ± 0.01 dB,Max at 67.0, 17.0, 4.5
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Powerdrift: -0.07 dB





Motorola Florida Research Lab

MOTOROLA

DIPOLE SAR VALIDATION CERTIFICATE

Frequency:	*450*	***MHz***
Dipole Serial Number:	*450-002*	
Simulated Tissue:	*head*	
Date of Validation:	*August 11, 2001*	
Validation Interval:	*24 months*	

Motorola Florida Research Laboratory hereby certifies, that the System Validation was performed on the date indicated above. The System Validation was performed in accordance with specifications and procedures of Motorola Florida Research Laboratory.

Calibrated by: J. Patrick Oliver

Approved by: Mark Douglas

Motorola Florida Research Laboratory - 8000 West Sunrise Blvd. Ft. Lauderdale, Florida 33322

Purpose:

To provide a method to check the validity of the SAR measurement system prior to testing

Tissue Simulate:

Name:	*Head 450*	
Targets for tissue characteristics:		
Dielectric Constant:	*43.5*	+/- 5%
Conductivity:	*0.87 S/m*	+/- 5%
Measurement values:		
Dielectric Constant:	*43.5*	
Conductivity:	*0.87*	

Validation setup:

Set up for the validation using constant forward power as shown in Figure 1. The total distance from the mixture to the top of the dipole tips is 16 mm.

Use 1.0 for the density of the simulated tissue.

Target for SAR validation:

The target is specified in terms of peak SAR averaged over 1 cm^3 (1 gram) of tissue.

The target is normalized to 1 watt based on a constant forward input power of 500 mW.

Peak SAR, at 1 watt, averaged over 1 cm^3 (1 gram) of tissue:

4.4 mW/g	+/- 10%

dipole 450; Test Date:08/13/01

dipole 450-002, head. forward power = 500 mW

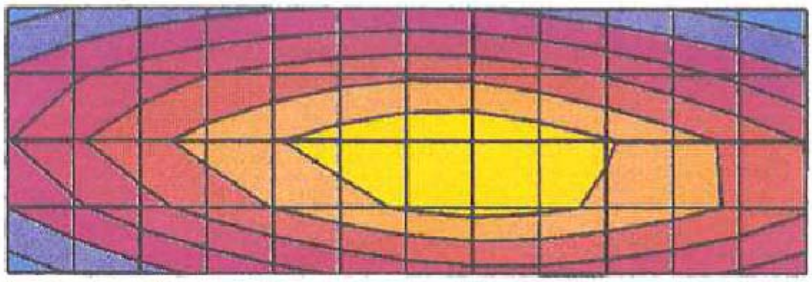
9x16 inch flat Phantom; Section; Position: ;

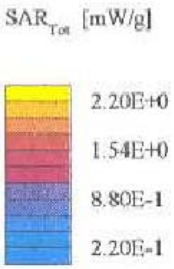
Probe: - SN1418; ConvF(6.81,6.81,6.81); Crest factor: 1.0; head450: σ = 0.88 mho/m ε_r = 43.2 ρ = 1.00 g/cm^3

Cubes (2): SAR (1g): 2.22 mW/g ± 0.08 dB, SAR (10g): 1.47 mW/g ± 0.09 dB, (Worst-case extrapolation), Peak: 3.44 mW/g ± 0.07 dB,Max at 69.0, 17.0, 4.5

Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0

Powerdrift: 44.57 dB





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APPENDIX E
Illustration of Body-Worn Accessories

The purpose of this appendix is to illustrate the body-worn carry accessories for FCC ID: AZ489FT4855. The sample that was used in the following photos represents the product used to obtain the results presented herein and was used in section to demonstrate the different body-worn accessories.

Photo 1.
Model HLN6875A
Back View

Photo 2.
Model HLN6875A
Side View

Photo 3.
Model HLN8266B
Back View

Photo 4.
Model HLN8266B
Side View

Photo 5.
Model NTN9179A
Back View

Photo 6.
Model NTN9179A
Side View

Photo 7.
Model NTN8380B
Back View

Photo 8.
Model NTN8380B
Front View

Photo 9.
Model NTN8380B
Side View

Photo 10.
Model NTN8387A
Back View

Photo 11.
Model NTN8387A
Front View

Photo 12.
Model NTN8387A
Side View

Photo 13.
Model NTN8725A
Back View

Photo 14.
Model NTN8725A
Front View

Photo 15.
Model NTN8725A
Side View

Photo 16.
Model NTN9184A
Back View

Photo 17.
Model NTN9184A
Front View

Photo 18.
Model NTN9184A
Side View

Photo 19.
Model NTN5243A Shoulder strap
Used with NTN8387A & NTN9184A

Appendix F
Accessories and options test status and separation distances

The following table summarizes the test status and body spacing distances provided by each of the offered accessories:

Carry Case Model	Tested ?	Separation distance between base of DUT antenna and phantom surface. (mm)	Comments
NTN8266B	Yes	20	NA
NTN8725A	Yes	28	NA
NTN9179A	Yes	48	NA
NTN9184A	Yes	58	NA
NTN8387A	Yes	57	NA
NTN8380B	Yes	67	Includes NTN8383A
HLN6875A	Yes	39	NA
NTN5243A	Yes	NA	Tested with NTN9184A, NTN8387A
NTN9212A	Yes	NA	Swivel D clip tested with NTN9179A
NTN9213A	Yes	NA	3” swivel D clip tested with NTN9179A
NTN8383A	Yes	NA	Part of NTN8386B
NTN8382B	No	NA	Similar to NTN8387A, extra piece of leather attached to the holster cavity
NTN8384A	No	NA	Similar to NTN8383A
NTN8039B	No	NA	Similar to NTN8380B
NTN8386B	No	NA	Similar to NTN8380B & NTN8039B
NTN8385B	No	NA	Similar to NTN8380B & NTN8039B
NTN8381C	No	NA	Similar to NTN8380B
NTN8040B	No	NA	NTN8380 belt loop is same and smaller separation distance.

Audio Acc. Model	Tested ?	Separation distance between base of DUT antenna and phantom surface. (mm)	Comments
Audio			
BDN6676D	Yes	NA	Included with ear pieces & headsets
NTN7660B	Yes	NA	NA
0180300E83	Yes	NA	Tested with interface module BDN6708B
NTN8613A	Yes	NA	Tested with ZMN6031A
PSM			
NMN6250A	Yes	NA	Includes NTN8327A
NMN6251A	Yes	NA	Includes NTN8327A
NMN6247A	Yes	NA	Includes NTN8327A
NTN8327A	Yes	NA	Includes NTN8327A
RSM			
NMN6191C	Yes	NA	NA
NMN6193C	Yes	NA	NA
NMN6193BSPO3	No	NA	Similar to NMN6193C
NMN6193BSPO4	Yes	NA	NA
Headset			
NMN6258A	Yes	NA	NA
RMN4049A	Yes	NA	NA
NMN6246B	Yes	NA	Tested with BDN6676D
BDN6645A	Yes	NA	Tested with BDN6673B
BDN6673B	Yes	NA	Tested with BDN6635B
BDN6635B	Yes	NA	Tested with BDN6673B
BDN6636B	Yes	NA	Tested with BDN6673B
NMN6245A	Yes	NA	NA
NMN6259A	Yes	NA	NA
NMN1020A	Yes	NA	Tested with BDN6676D
Ear piece			
ZMN6031A	Yes	NA	Tested with NTN8613A adapter
ZMN6032A	Yes	NA	Tested with NTN8613A adapter
BDN6780A	Yes	NA	Tested with BDN6676 adapter
BDN6726A	Yes	NA	Receive only, Test with BDN6676 adapter
BDN6728A	Yes	NA	Tested with BDN6676 adapter
BDN6729A	Yes	NA	Tested with BDN6676 adapter
BDN6730A	Yes	NA	Tested with BDN6676 adapter
ZMN6038A	No	NA	Similar to ZMN6032A
ZMN6039A	No	NA	Similar to ZMN6031A
BDN6665A	No	NA	Similar to BDN6726A

BDN6666A	No	NA	Similar to BDN6728A
BDN6667A	No	NA	Similar to BDN6729A
BDN6668A	No	NA	Similar to BDN6730A
BDN6664A	No	NA	Similar to BDN6726A
BDN6727A	No	NA	Similar to BDN6726A
BDN6669A	No	NA	Similar to BDN6729A
BDN6731A	No	NA	Similar to BDN6729A
BDN6670A	No	NA	Similar to BDN6730A
BDN6781A	No	NA	Similar to BDN6726A
BDN6732A	No	NA	Similar to BDN6730A
Comport			
NTN1625A	Yes	NA	Tested with BDN6676D adapter
NTN1663A	Yes	NA	Tested with BDN6676D adapter
NTN1736A	Yes	NA	Tested with BDN6676D adapter
NTN1624A	Yes	NA	Tested with BDN6676D adapter
Interface module			
BDN6671B	Yes	NA	NA
BDN6708B	Yes	NA	Tested with body PTT 0180300E83
BDN6678A	Yes	NA	Tested with BDN6671B
BDN6677B	No	NA	Similar to BDN6678A (Beige)
BDN6641A	No	NA	Similar to BDN6677B