MOTOROLA

ACCREDITED

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

S.A.R. EME Compliance Test Report
Part 2 of 5

Date of Report:	June 14, 2004
Report Revision:	Rev. C
Manufacturer:	Motorola
Product Description:	CN620; Quad band GSM and Tri band WLAN (802.11a, b, and g)
FCC ID:	**AZ489FT5829**
Device Model:	H77UBH6JA5AA

Test Period:	2/19/04-3/24/04
EME Tech:	Ed Church
Responsible Eng:	Deanna Zakharia (Elect. Principle Staff Eng.)
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 — Ken Enger
Senior Resource Manager, Laboratory Director, CGISS EME Lab

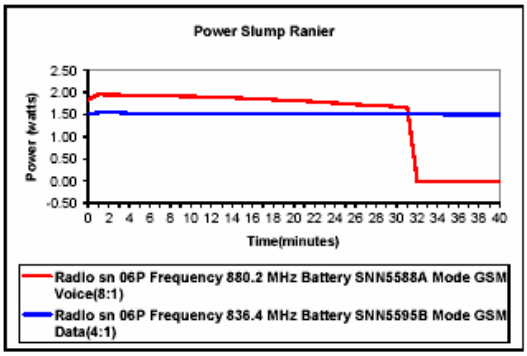
6/15/04 — Date Approved

APPENDIX A

Power Slump Data/Shortened Scan

DUT Power versus time data

Radio sn 06P Frequency 880.2 MHz Battery SNN5588A Mode GSM Voice(8:1)	Radio sn 06P Frequency 836.4 MHz Battery SNN5595B Mode GSM Data(4:1)
Power(watts)	Power(watts)
1.84	1.51
1.95	1.54
1.95	1.54
1.94	1.54
1.94	1.53
1.93	1.53
1.93	1.53
1.92	1.53
1.92	1.52
1.92	1.52
1.91	1.52
1.90	1.52
1.90	1.52
1.89	1.52
1.88	1.52
1.87	1.51
1.86	1.51
1.85	1.51
1.84	1.51
1.83	1.51
1.82	1.51
1.80	1.51
1.79	1.51
1.77	1.51
1.76	1.51
1.74	1.51
1.73	1.51
1.72	1.51
1.70	1.51
1.69	1.50
1.68	1.50
1.66	1.50
-0.01	1.50
-0.01	1.50
-0.01	1.50
-0.01	1.50
-0.01	1.50
-0.01	1.50
-0.01	1.50
-0.01	1.50
-0.01	1.50



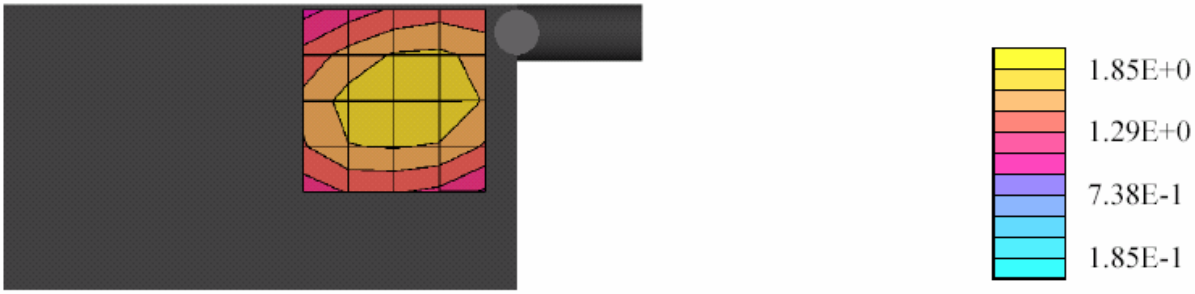
Shortened Scan Results

FCC ID: AZ489FT5829; Test Date: 3/14/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040314-17
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 836.4 MHz
Tissue Temp: 20.4 (Celsius)
Start Power: 1.82 W

Antenna: Fixed-STUBBY
Battery Kit: SNN5595B
Carry case: NNTN5444A
Audio/Data Acc.: NONE

Shortened scan reflect highest S.A.R. producing configuration; Run time 7 minutes.
Representative "normal" scan run time was 22 minutes
"Shortened" scan max calculated S.A.R. using S.A.R. drift: 1-g Avg. = 1.337 mW/g; 10-g Avg. = 0.937mW/g
"Normal" scan max calculated S.A.R. using S.A.R. drift: 1-g Avg. = 1.373 mW/g; 10-g Avg. = 0.967 mW/g
(see section 7.1 run # EC-Ab-R1-040313-04)

DUT with carry case against phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(6.50,6.50,6.50); Probe cal date: 15/05/03; Crest factor: 4.0; FCC Body 837 MHz: σ = 0.95 mho/m ε = 54.7 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 5x5x7: SAR (1g): 1.31 mW/g, SAR (10g): 0.918 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 24.0, 69.0, 4.7
Power Drift: -0.09 dB

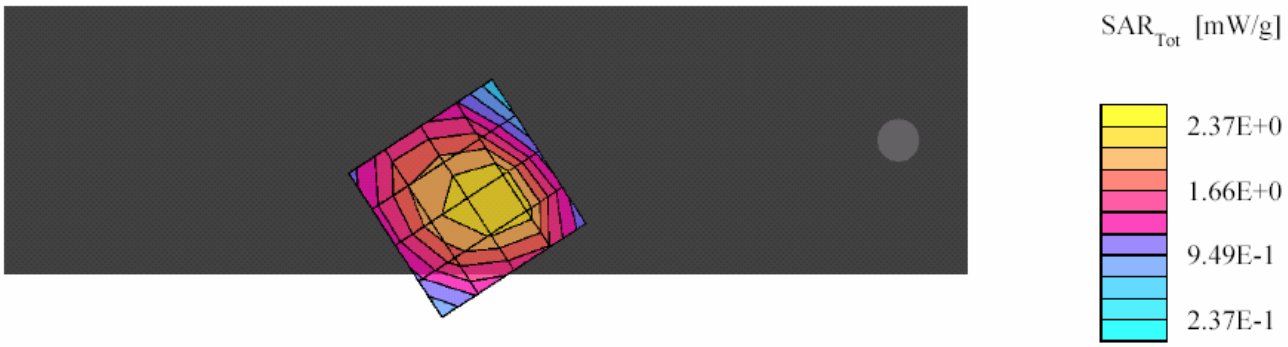


FCC ID: AZ489FT5829; Test Date: 3/22/04
Motorola CGISS EME Laboratory
Run #: EC-LEAR-R1-040322-10
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 880.2 MHz
Tissue Temp: 20.5 (Celsius)
Start Power: 2.09 W

Antenna: Fixed-STUBBY
Battery Kit: SNN5588A
Carry case: NONE
Audio/Data Acc.: NONE

Shortened scan reflect highest S.A.R. producing configuration; Run time 7 minutes.
Representative "normal" scan run time was 26 minutes
"Shortened" scan max calculated S.A.R. using S.A.R. drift: 1-g Avg. = 1.48 mW/g; 10-g Avg. = 0.918 mW/g
"Normal" scan max calculated S.A.R. using S.A.R. drift: 1-g Avg. = 1.49 mW/g; 10-g Avg. = 0.913 mW/g
(see section 7.1 run # EC-Ab-R1-040221-11)

DUT at the left ear in cheek touch position
SAM Phantom; Left ear Section; Position: (90°,59°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(6.60,6.60,6.60); Probe cal date: 15/05/03; Crest factor: 8.0; IEEE
Head 898 MHz: σ = 1.00 mho/m ε = 40.4 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 5x5x7: SAR (1g): 1.46 mW/g, SAR (10g): 0.905 mW/g, (Worst-case extrapolation)
Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0; SAR (1g): 1.46 mW/g, SAR (10g): 0.905 mW/g
Power Drift: -0.06 dB



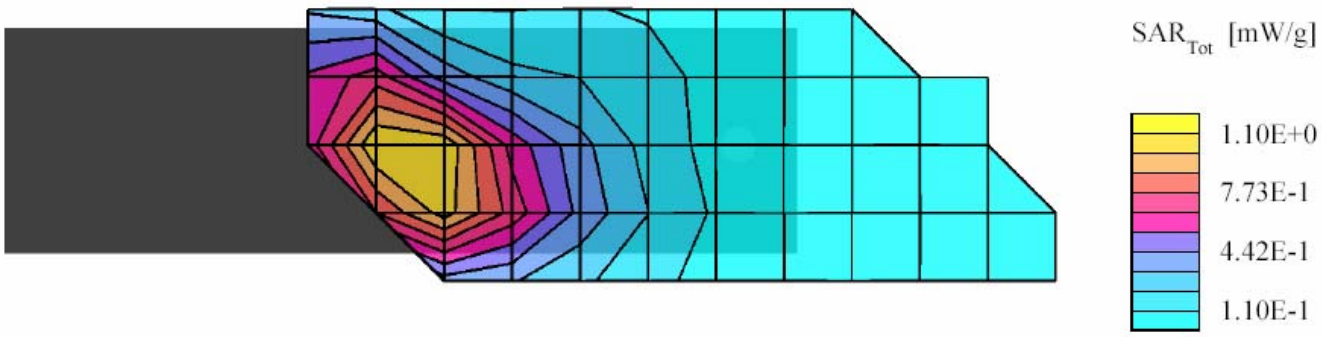
APPENDIX B
Data Results

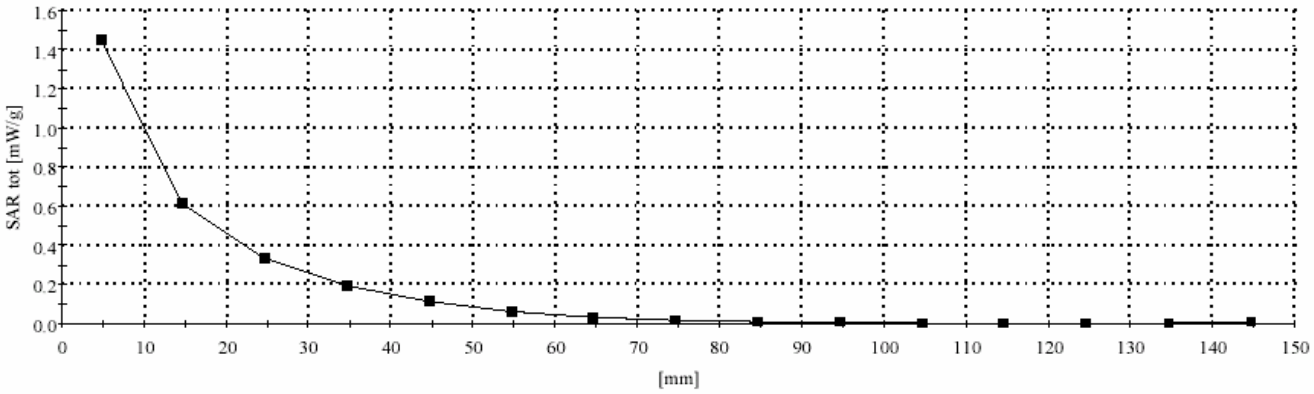
Note that the abnormalities observed in the presented DASY output scans and their associated Z-Axis plots for the 2450MHz and 5200MHz measurements are a function of the noise level S.A.R results and the amplification of the noise by the measurement system.

FCC ID: AZ489FT5829; Test Date: 2/19/04
Motorola CGISS EME Laboratory
Run #: EC-LEAR-R1-040219-04
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 836.4 MHz
Tissue Temp: 20.1 (Celsius)
Start Power: 1.81 W

Antenna: Fixed-STUBBY
Battery Kit: SNN5588A
Carry case: NONE
Audio/Data Acc.: NONE

DUT at left ear in cheek touch position (Flip opened)
SAM Phantom; Left head section; Position: (90°,59°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(6.60,6.60,6.60); Probe cal date: 15/05/03; Crest factor: 8.0; IEEE
Head 837 MHz: σ = 0.94 mho/m ε = 41.3 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 1.45 mW/g, SAR (10g): 0.882 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 40.5, 22.5, 4.7
Power Drift: -0.03 dB

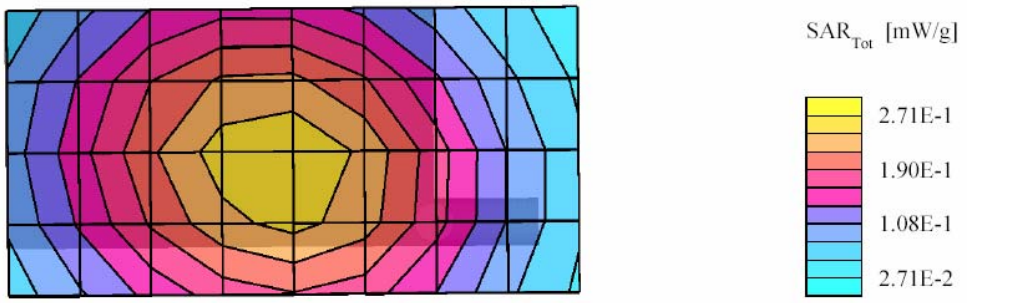


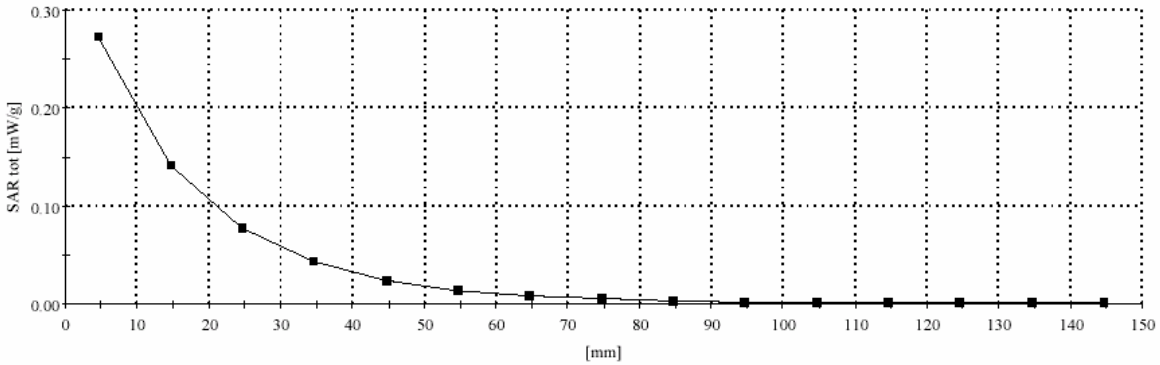


FCC ID: AZ489FT5829; Test Date: 2/20/04
Motorola CGISS EME Laboratory
Run #: EC-FACE-R1-040220-06
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 824.4 MHz
Tissue Temp: 20.6 (Celsius)
Start Power: 1.77 W

Antenna: Fixed-STUBBY
Battery Kit: SNN5588A
Carry case: NONE
Audio/Data Acc.: NONE

DUT front towards phantom w/ 2.5 cm separation (Flip closed)
SAM Phantom; Flat Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(6.60,6.60,6.60); Probe cal date: 15/05/03; Crest factor: 8.0; IEEE
Head 837 MHz: σ = 0.94 mho/m ε = 42.1 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.274 mW/g, SAR (10g): 0.194 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 33.0, 57.0, 4.7
Power drift: -0.02 dB

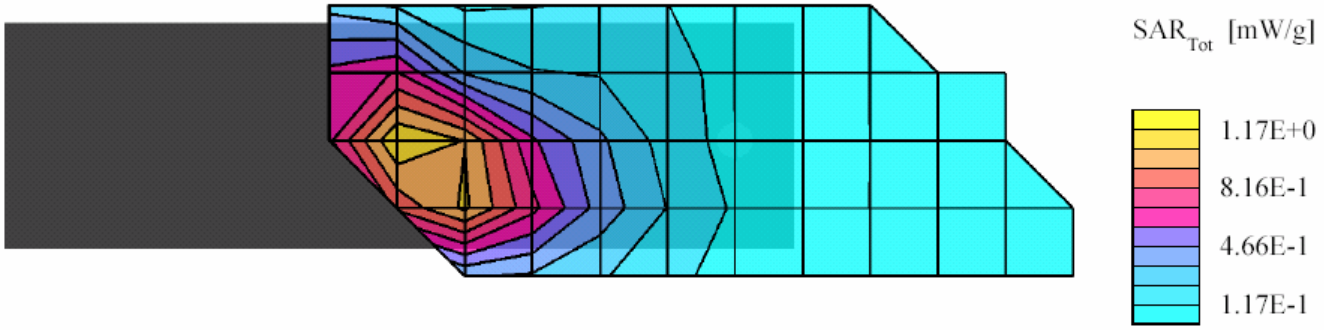


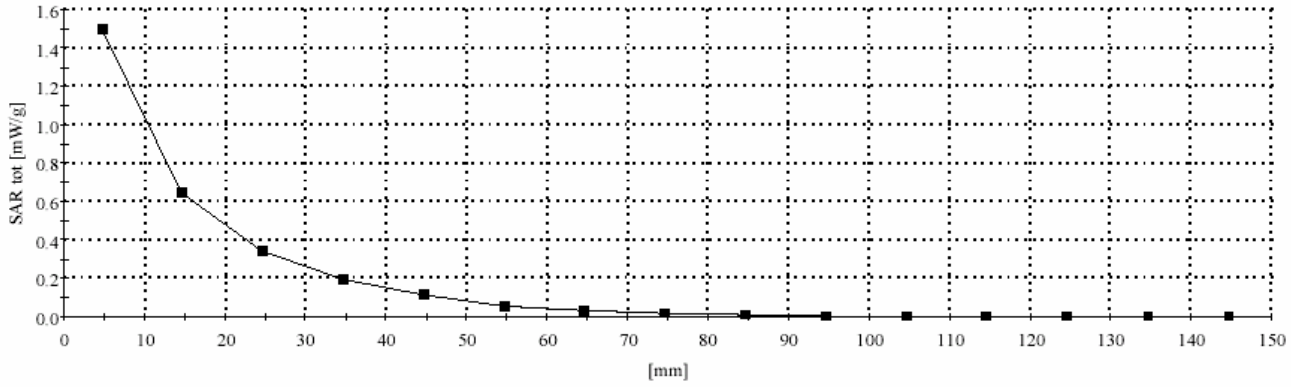


FCC ID: AZ489FT5829; Test Date: 2/21/04
Motorola CGISS EME Laboratory
Run #: EC-Lear-R1-040221-11
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 880.2 MHz
Tissue Temp: 20.7 (Celsius)
Start Power: 2.10 W

Antenna: Fixed- STUBBY
Battery Kit: SNN5588A
Carry case: NONE
Audio/Data Acc.: NONE

DUT at left ear in Cheek Touch position (Flip open)
SAM Phantom; Left head Section; Position: (90°,59°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(6.60,6.60,6.60); Probe cal date: 15/05/03; Crest factor: 8.0; IEEE Head 898 MHz: σ = 1.00 mho/m ε = 41.1 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 1.49 mW/g, SAR (10g): 0.913 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 39.0, 22.5, 4.7
Power drift: 0.05 dB

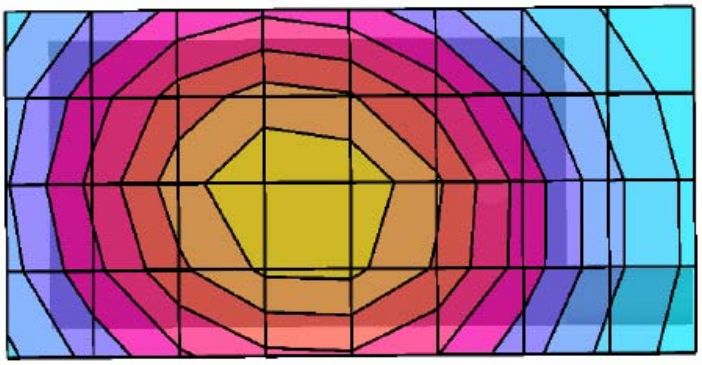


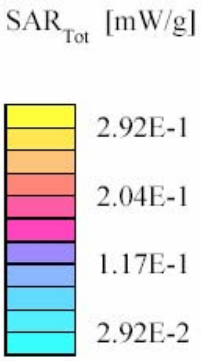


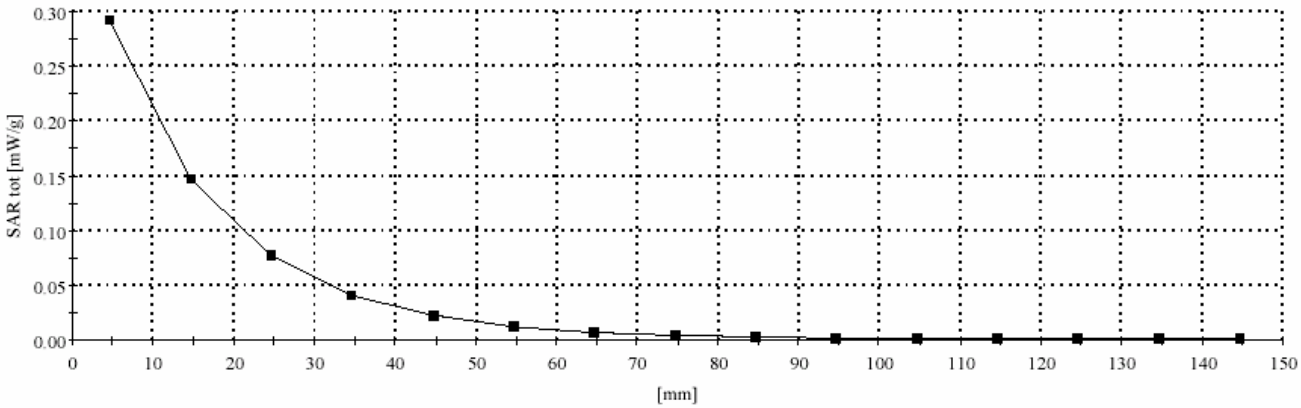
FCC ID: AZ489FT5829; Test Date: 2/21/04
Motorola CGISS EME Laboratory
Run #: EC-Face-R1-040221-17
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 897.4 MHz
Tissue Temp: 20.7 (Celsius)
Start Power: 2.14 W

Antenna: Fixed-STUBBY
Battery Kit: SNN5588A
Carry case: NONE
Audio/Data Acc.: NONE

DUT front towards phantom w/ 2.5 cm separation distance (Flip closed)
SAM Phantom; Flat Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(6.60,6.60,6.60); Probe cal date: 15/05/03; Crest factor: 8.0; IEEE
Head 898 MHz: σ = 1.00 mho/m ε = 41.1 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.292 mW/g, SAR (10g): 0.204 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 33.0, 51.0, 4.7
Power Drift: -0.13 dB



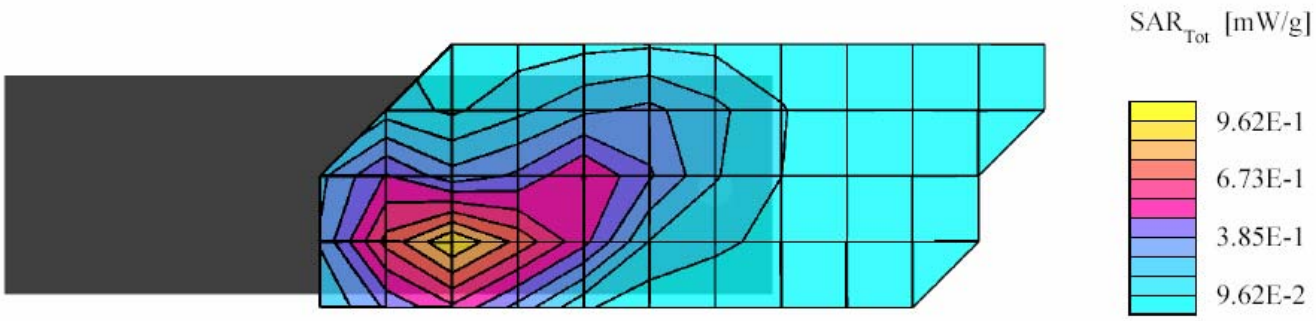


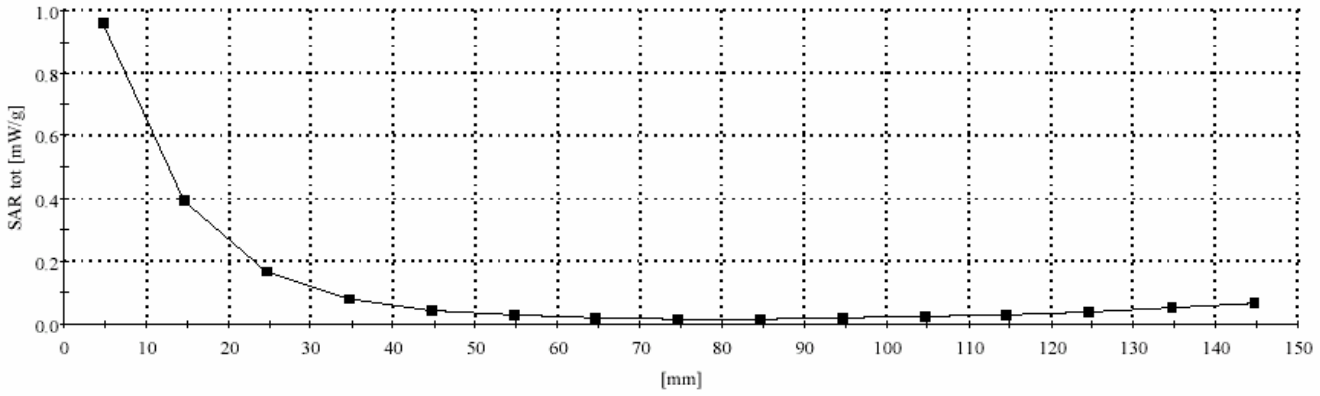


FCC ID: AZ489FT5829; Test Date: 2/25/04
Motorola CGISS EME Laboratory
Run #: EC-REAR-R1-040225-09
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 1850.2 MHz
Tissue Temp: 20.6 (Celsius)
Start Power: 1.08 W

Antenna: Fixed- STUBBY
Battery Kit: SNN5595B
Carry case: NONE
Audio/Data Acc.: NONE

DUT at the right ear in cheek touch position (Flip opened)
SAM Phantom; Right Head Section; Position: (90°,301°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(5.40,5.40,5.40); Probe cal date: 15/05/03; Crest factor: 8.0; IEEE Head 1880 MHz: σ = 1.45 mho/m ε = 40.0 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.946 mW/g, SAR (10g): 0.558 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 30.0, 10.5, 4.7
Power drift: -0.12 dB

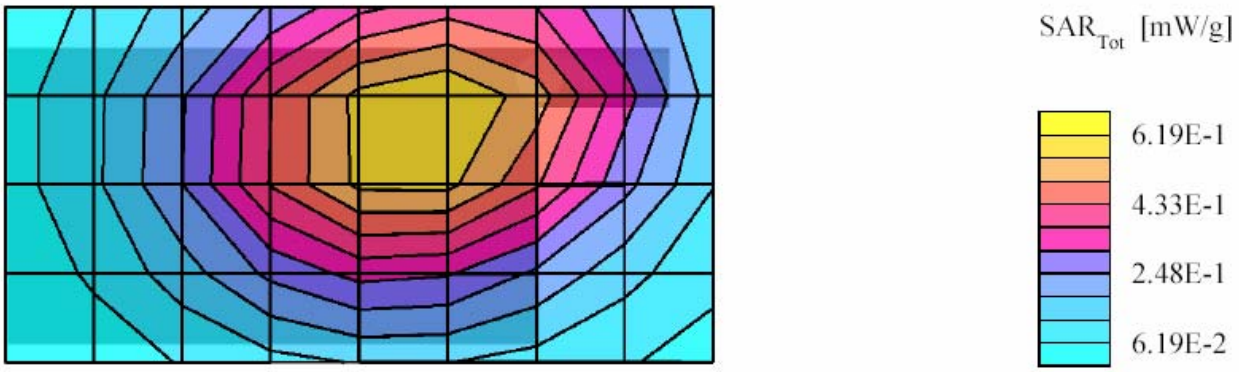


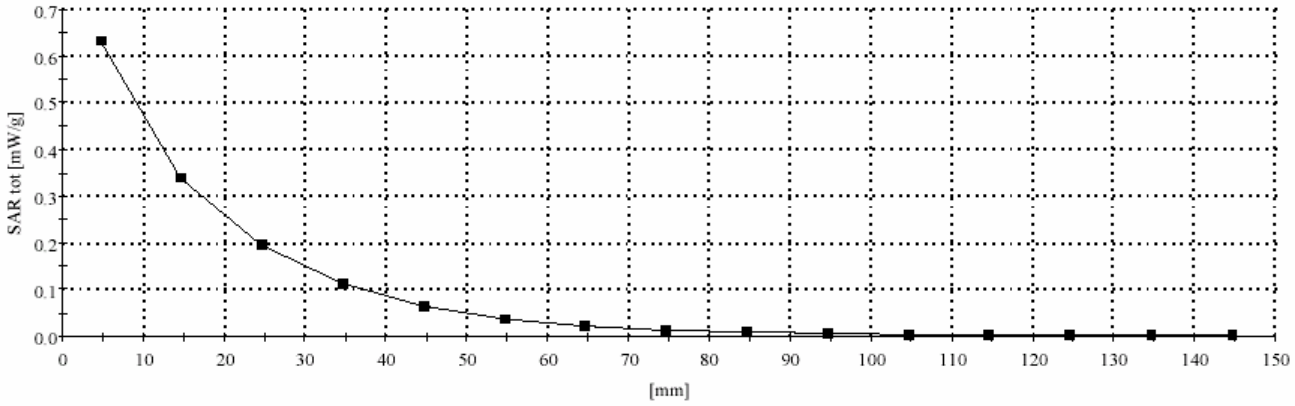


FCC ID: AZ489FT5829; Test Date: 3/13/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040313-09
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 836.4 MHz
Tissue Temp: 20.5 (Celsius)
Start Power: 1.81 W

Antenna: Fixed- STUBBY
Battery Kit: SNN5595B
Carry case: NNTN5444A
Audio/Data Acc.: NNTN4620A

DUT w/ belt clip against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(6.50,6.50,6.50); Probe cal date: 15/05/03; Crest factor: 8.0; FCC Body 837 MHz: σ = 0.95 mho/m ε = 54.7 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.636 mW/g, SAR (10g): 0.447 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 21.0, 70.5, 4.7
Power Drift: -0.17 dB

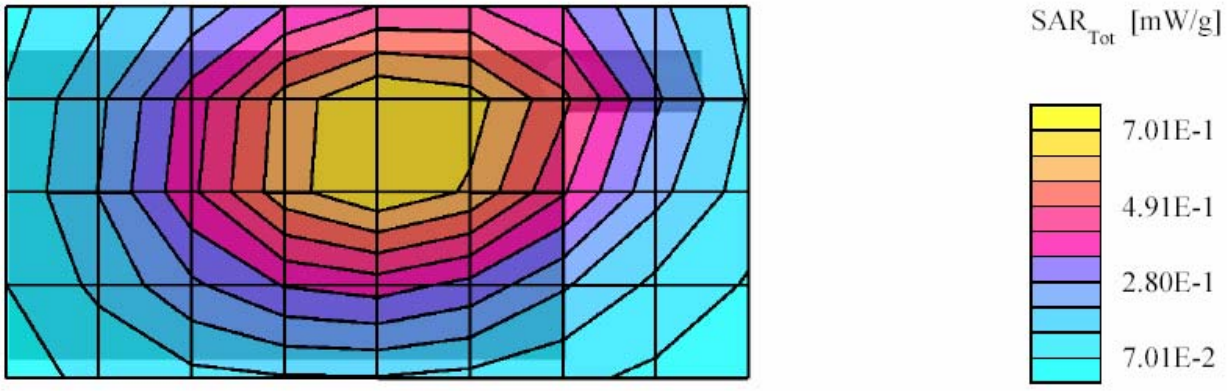


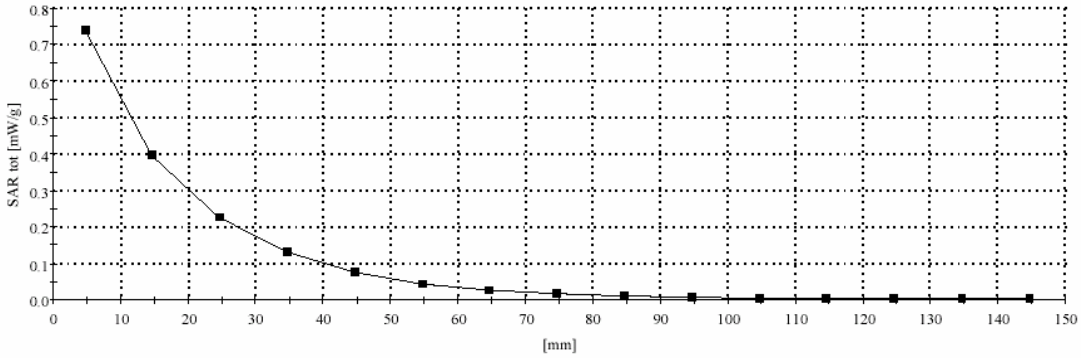


FCC ID: AZ489FT5829; Test Date: 3/13/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040313-11
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 836.4 MHz
Tissue Temp: 20.5 (Celsius)
Start Power: 1.80 W

Antenna: Fixed- STUBBY
Battery Kit: SNN5595B
Carry case: NNTN5444A
Audio/Data Acc.: NTN8496A

DUT with carry case against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(6.50,6.50,6.50); Probe cal date: 15/05/03; Crest factor: 8.0; FCC Body 837 MHz: $\sigma = 0.95$ mho/m $\varepsilon = 54.7$ $\rho = 1.00$ g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.736 mW/g, SAR (10g): 0.517 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 22.5, 61.5, 4.7
Power drift: -0.15 dB

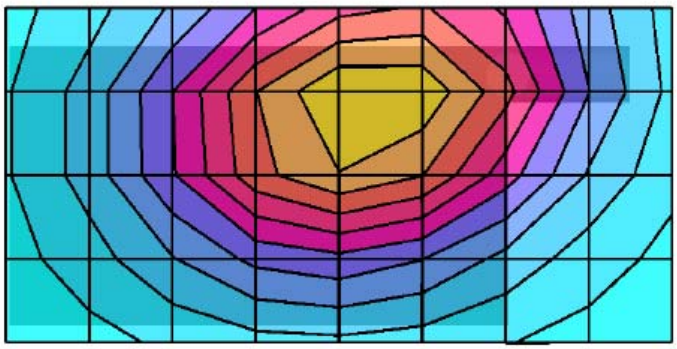


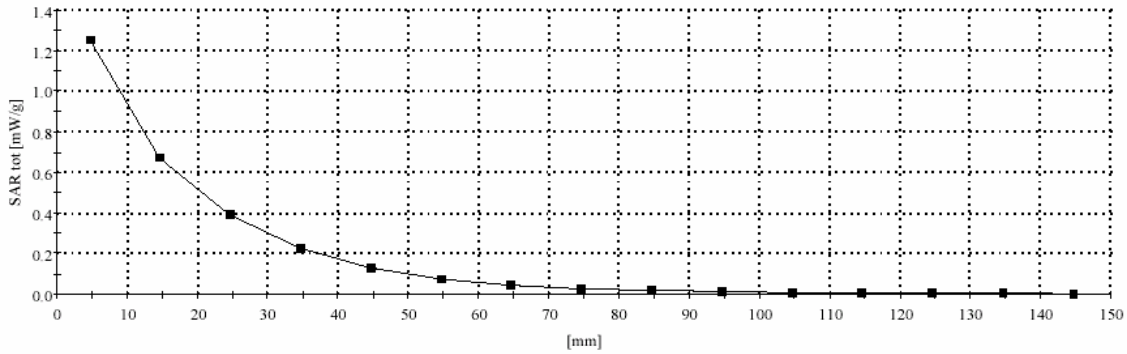


FCC ID: AZ489FT5829; Test Date: 3/13/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040313-04
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 836.4 MHz
Tissue Temp: 20.7 (Celsius)
Start Power: 1.82 W

Antenna: Fixed- STUBBY
Battery Kit: SNN5595B
Carry case: NNTN5444A
Audio/Data Acc.: NONE

DUT with carry case against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(6.50,6.50,6.50); Probe cal date: 15/05/03; Crest factor: 4.0; FCC Body 837 MHz: σ = 0.95 mho/m ε = 54.7 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 1.27 mW/g, SAR (10g): 0.894 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 18.0, 66.0, 4.7
Power drift: -0.34 dB

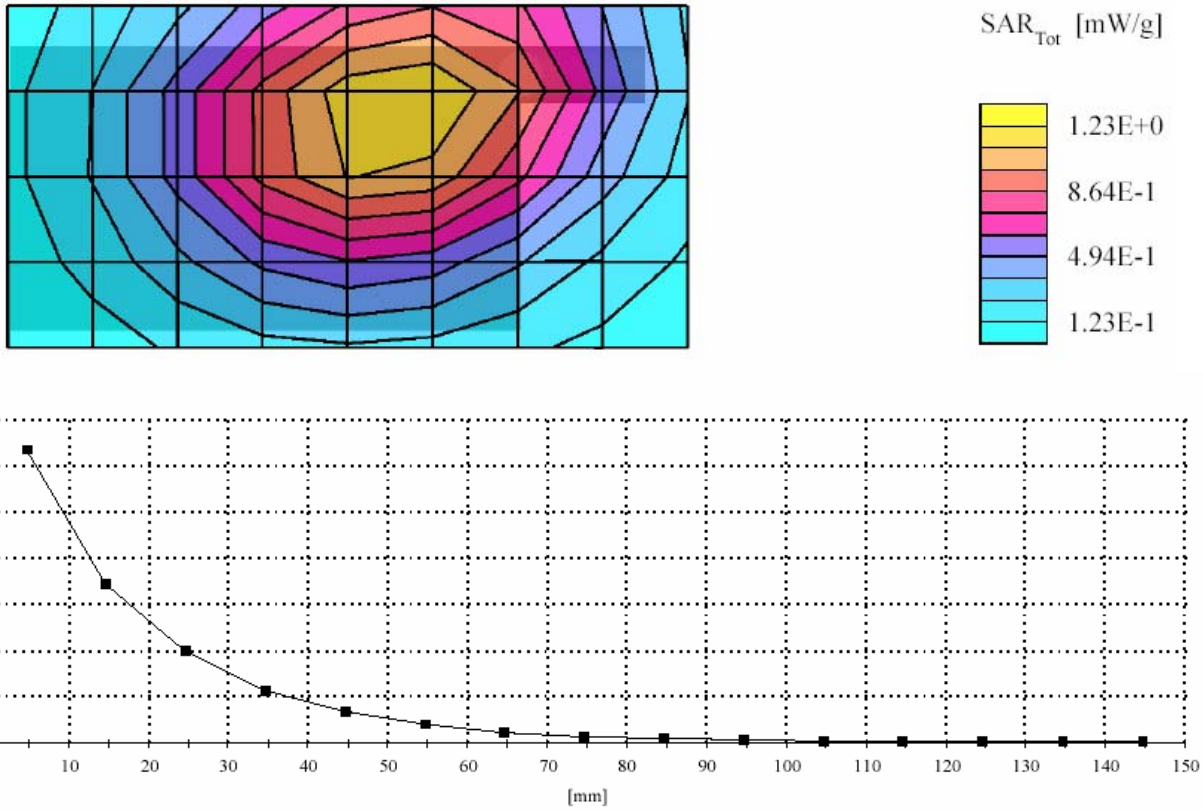




FCC ID: AZ489FT5829; Test Date: 3/13/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040313-07
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 824.2 MHz
Tissue Temp: 20.6 (Celsius)
Start Power: 1.82 W

Antenna: Fixed-STUBBY
Battery Kit: SNN5595B
Carry case: NNTN5444A
Audio/Data Acc.: None

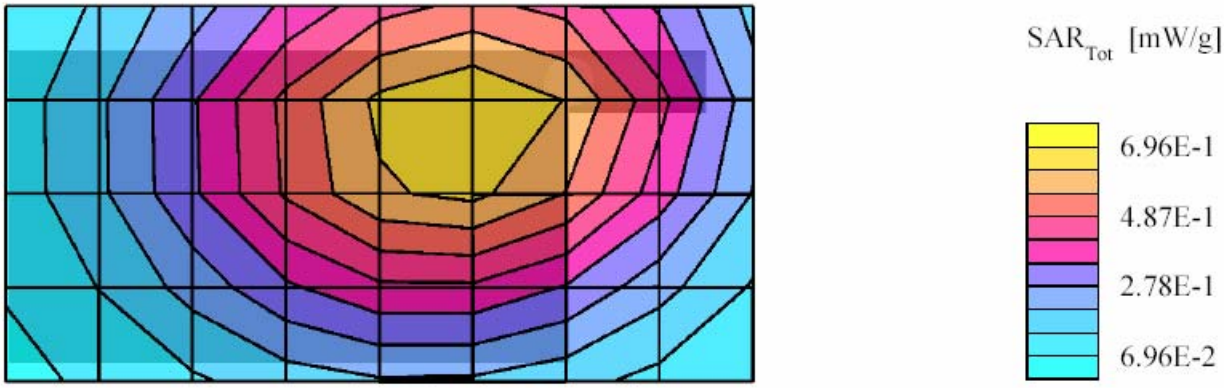
DUT with carry case against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(6.50,6.50,6.50); Probe cal date: 15/05/03; Crest factor: 4.0; FCC Body 837 MHz: σ = 0.95 mho/m ε = 54.7 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 1.26 mW/g, SAR (10g): 0.890 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 19.5, 69.0, 4.7
Power drift: -0.13dB

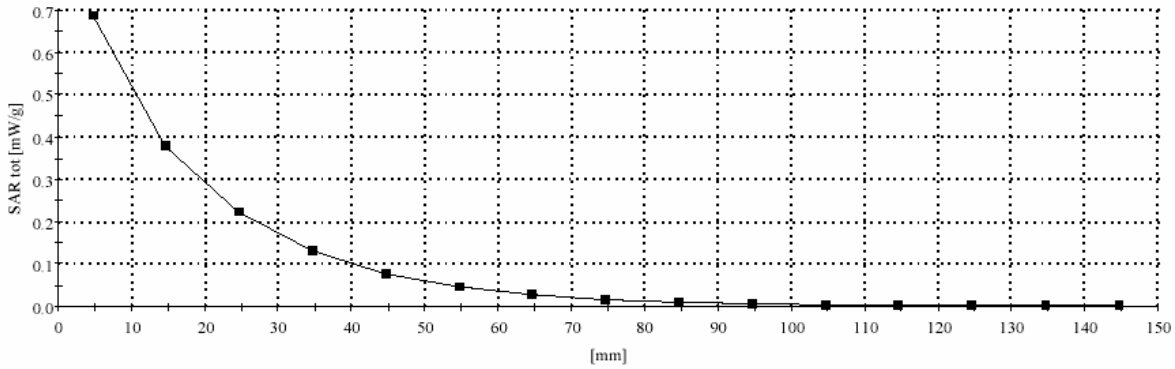


FCC ID: AZ489FT5829; Test Date: 3/14/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040314-05
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 836.4 MHz
Tissue Temp: 20.7 (Celsius)
Start Power: 1.82 W

Antenna: Fixed- STUBBY
Battery Kit: SNN5595B
Carry case: None
Audio/Data Acc.: None

DUT back separated 2.5cm from the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(6.50,6.50,6.50); Probe cal date: 15/05/03; Crest factor: 4.0; FCC Body 837 MHz: σ = 0.95 mho/m ε = 54.7 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.691 mW/g, SAR (10g): 0.498 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 19.5, 73.5, 4.7
Power drift: -0.20dB

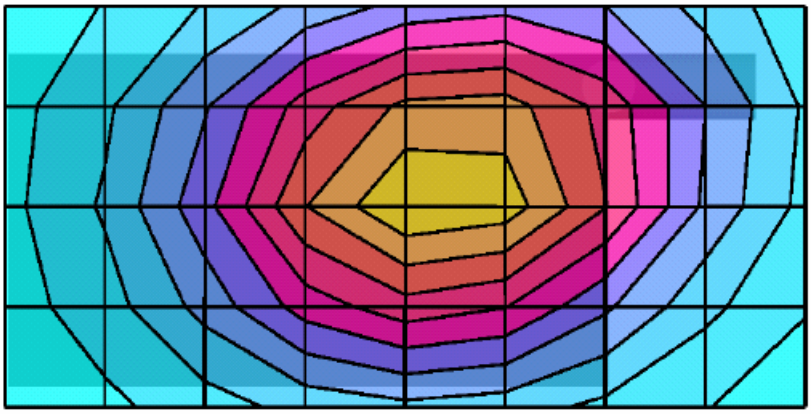


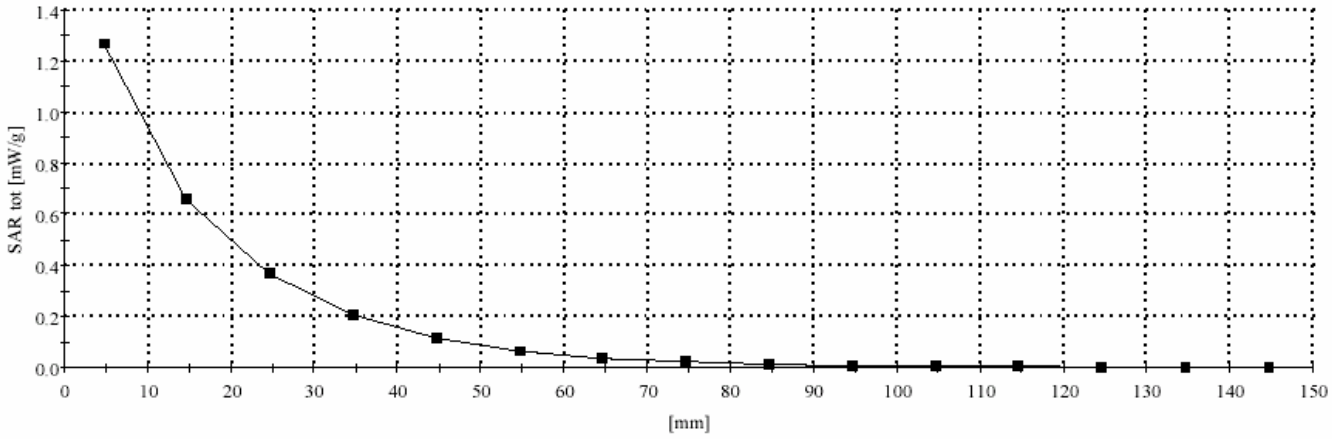


FCC ID: AZ489FT5829; Test Date: 3/14/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040314-09
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 914.8 MHz
Tissue Temp: 20.6 (Celsius)
Start Power: 2.19 W

Antenna: Fixed- STUBBY
Battery Kit: SNN5595B
Carry case: NNTN5444A
Audio/Data Acc.: None

DUT with carry case against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(6.50,6.50,6.50); Probe cal date: 15/05/03; Crest factor: 4.0; FCC Body 898 MHz: σ = 1.01 mho/m ε = 54.2 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 1.27 mW/g, SAR (10g): 0.876 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 27.0, 66.0, 4.7
Power drift: -0.32dB

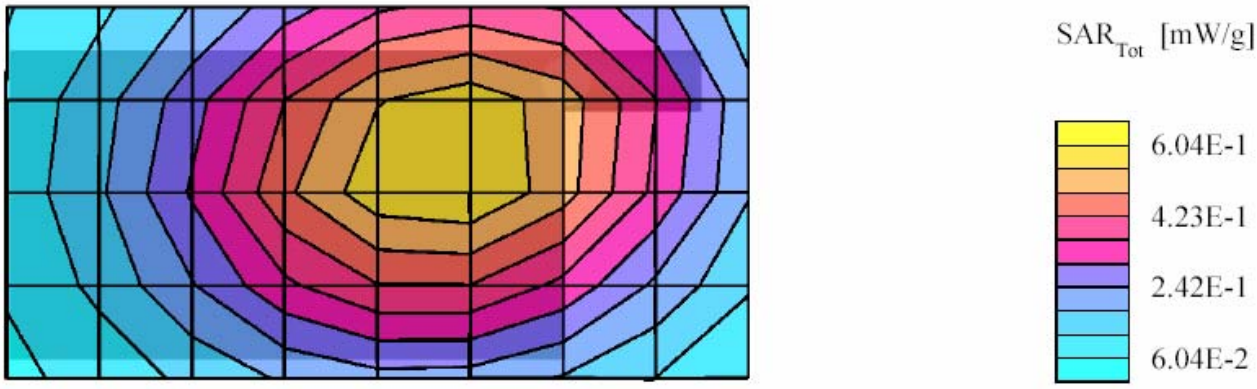


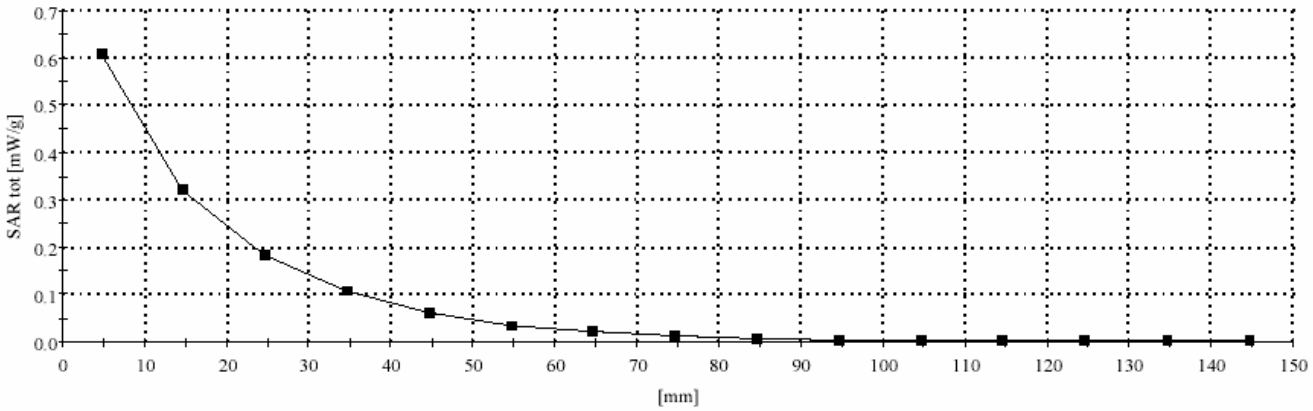


FCC ID: AZ489FT5829; Test Date: 3/14/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040314-11
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 914.8 MHz
Tissue Temp: 20.5 (Celsius)
Start Power: 2.19 W

Antenna: Fixed- STUBBY
Battery Kit: SNN5595B
Carry case: None
Audio/Data Acc.: None

DUT back separated 2.5cm from phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(6.50,6.50,6.50); Probe cal date: 15/05/03; Crest factor: 4.0; FCC Body 898 MHz: σ = 1.01 mho/m ε = 54.2 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.611 mW/g, SAR (10g): 0.433 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 25.5, 70.5, 4.7
Power drift: -0.20dB

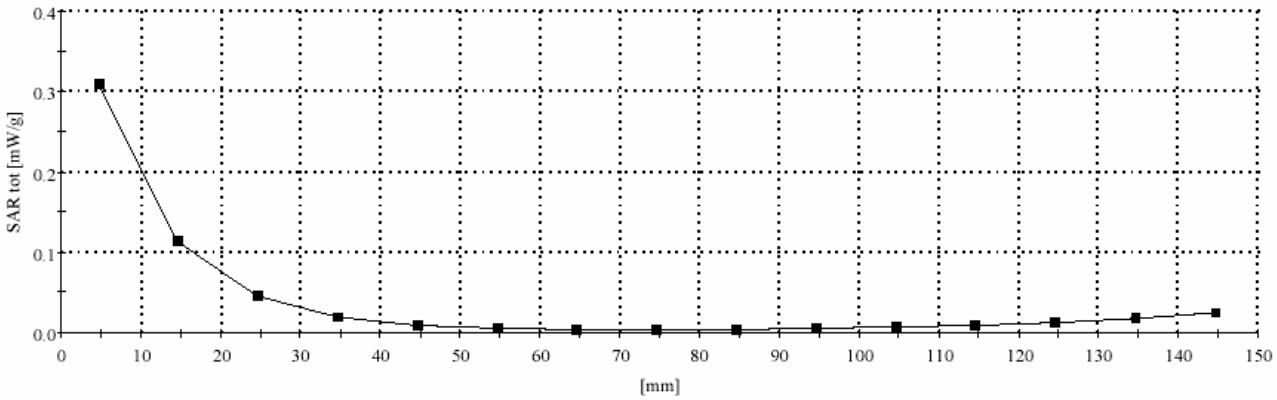




FCC ID: AZ489FT5829; Test Date: 3/16/04
Motorola CGISS EME Laboratory
Run #: EC- Ab-R1-040316-11
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 1880.2 MHz
Tissue Temp: 20.1 (Celsius)
Start Power: 1.01 W

Antenna: Fixed- STUBBY
Battery Kit: SNN5595B
Carry case: NNTN5444A
Audio/Data Acc.: NNTN4620A

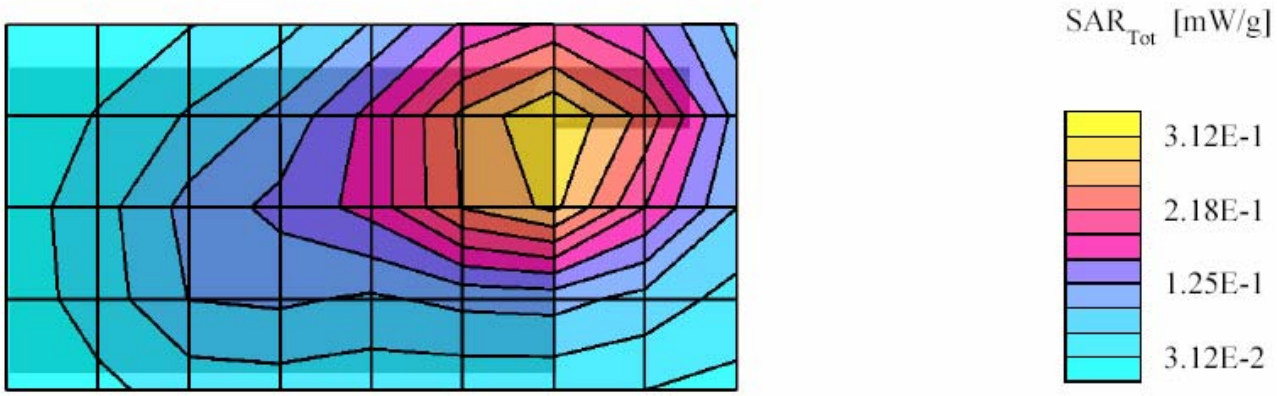
DUT with carry case against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(5.00,5.00,5.00); Probe cal date: 15/05/03; Crest factor: 8.0; FCC Body 1880MHz: σ = 1.57 mho/m ε = 51.0 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.309 mW/g, SAR (10g): 0.187 mW/g * Max outside, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 12.0, 88.5, 4.7
Power drift: -0.09dB
Note: "Max outside" has been identified by SPEAG as an unresolved intermittent occurrence with the DASY 3 application even when the entire peak area is captured.

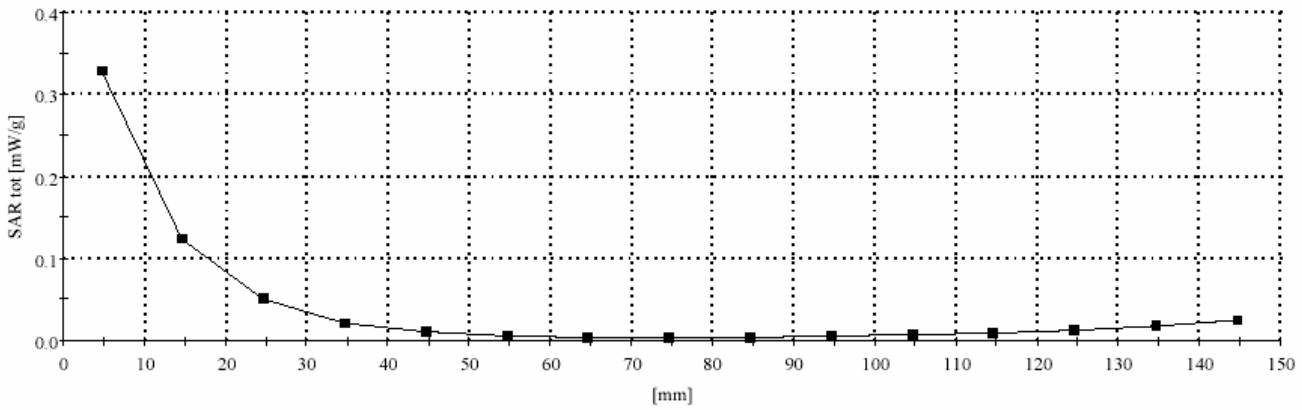


FCC ID: AZ489FT5829; Test Date: 3/17/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040317-04
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 1880.2 MHz
Tissue Temp: 20.5 (Celsius)
Start Power: 1.01 W

Antenna Fixed- STUBBY
Battery Kit: SNN5595B
Carry case: NNTN5444A
Audio/Data Acc.: NNTN5004A

DUT with carry case against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(5.00,5.00,5.00); Probe cal date: 15/05/03; Crest factor: 8.0; FCC Body 1880MHz: σ = 1.58 mho/m ε = 51.0 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.330 mW/g, SAR (10g): 0.198 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 21.0, 88.5, 4.7
Power drift: -0.10dB

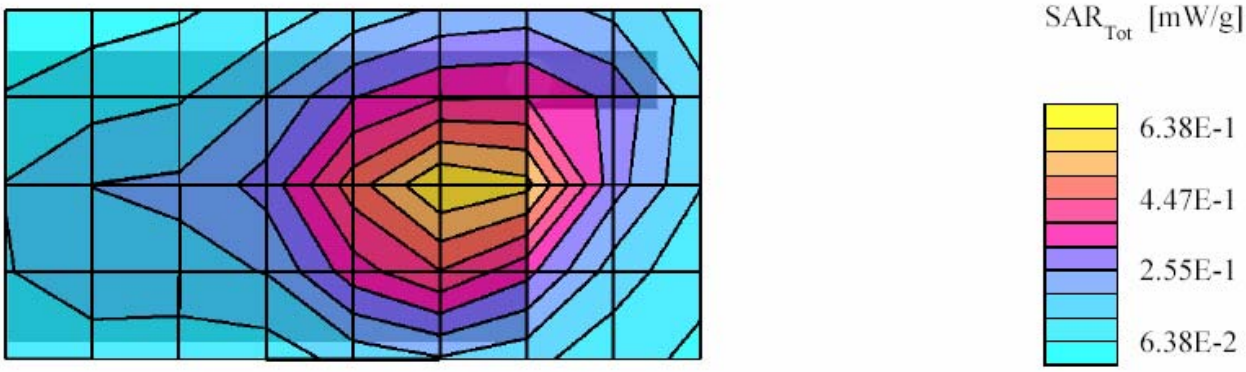


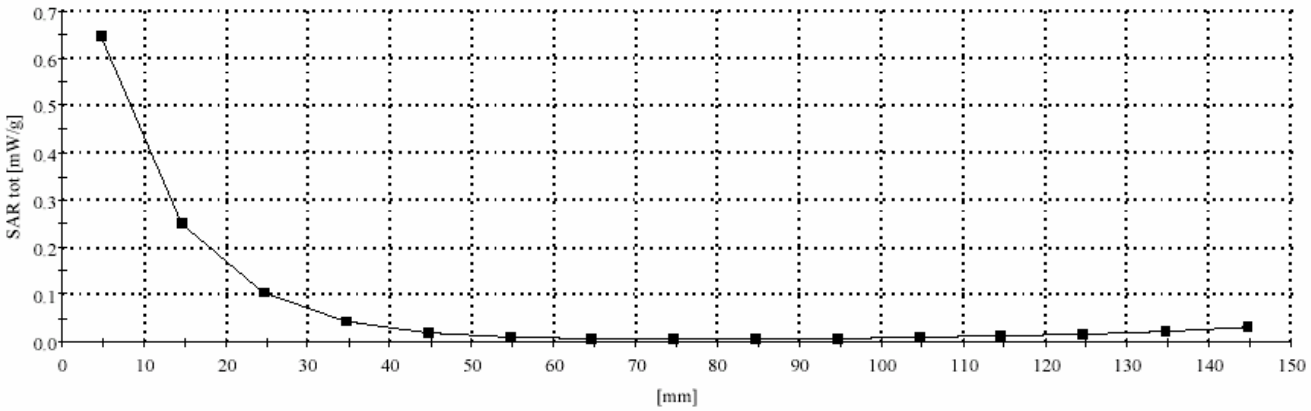


FCC ID: AZ489FT5829; Test Date: 3/17/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040317-07
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 1880.2 MHz
Tissue Temp: 20.2 (Celsius)
Start Power: 1.07 W

Antenna: Fixed- STUBBY
Battery Kit: SNN5595B
Carry case: NNTN5444A
Audio/Data Acc.: NKN6560A

DUT with carry case against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(5.00,5.00,5.00); Probe cal date: 15/05/03; Crest factor: 4.0; FCC Body 1880MHz: σ = 1.58 mho/m ε = 51.0 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.654 mW/g, SAR (10g): 0.384 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 30.0, 81.0, 4.7
Power drift: -0.11dB

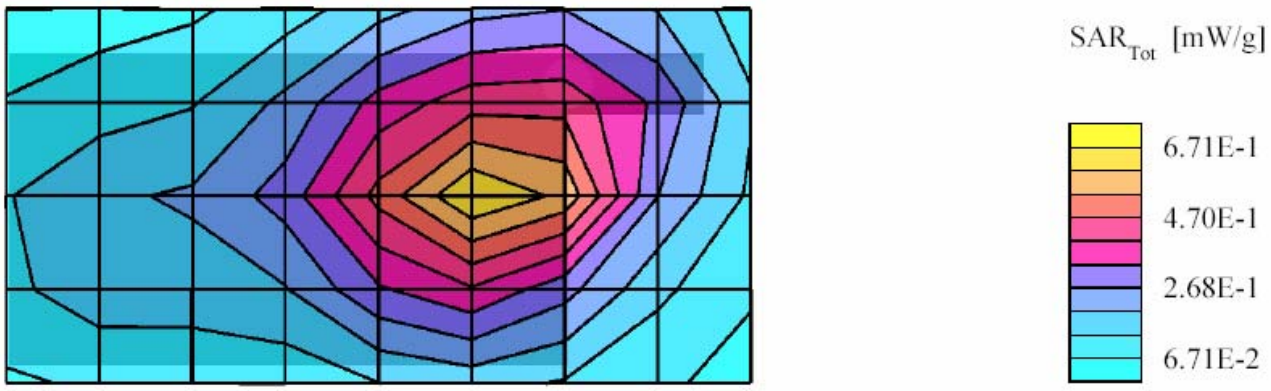


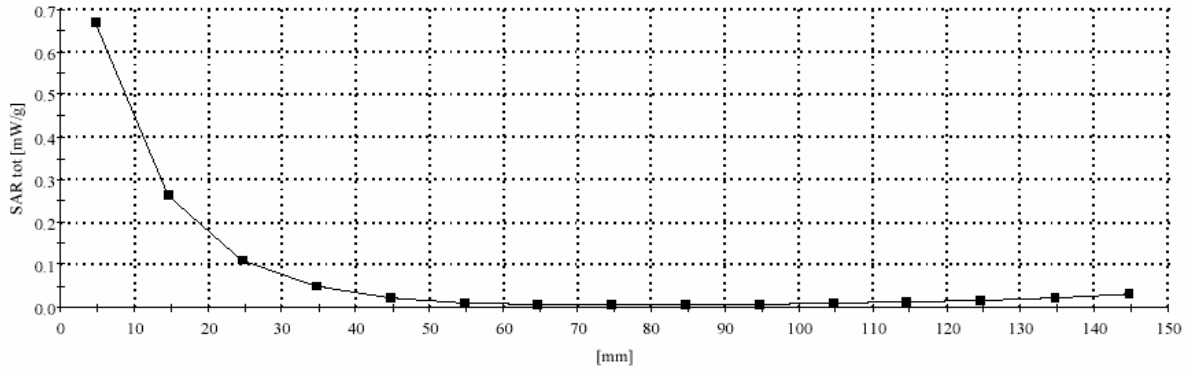


FCC ID: AZ489FT5829; Test Date: 3/17/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040317-09
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 1850.2 MHz
Tissue Temp: 20.1 (Celsius)
Start Power: 1.05 W

Antenna: Fixed- STUBBY
Battery Kit: SNN5595B
Carry case: NNTN5444A
Audio/Data Acc.: NKN6560A

DUT with carry case against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(5.00,5.00,5.00); Probe cal date: 15/05/03; Crest factor: 4.0; FCC Body 1880MHz: σ = 1.58 mho/m ε = 51.0 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.663 mW/g, SAR (10g): 0.392 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 30.0, 78.0, 4.7
Power drift: -0.14dB

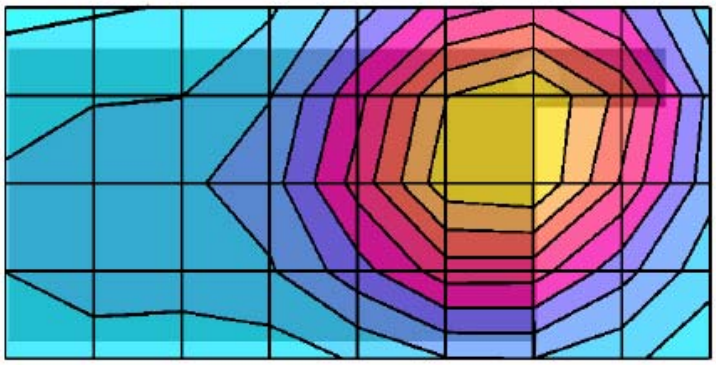


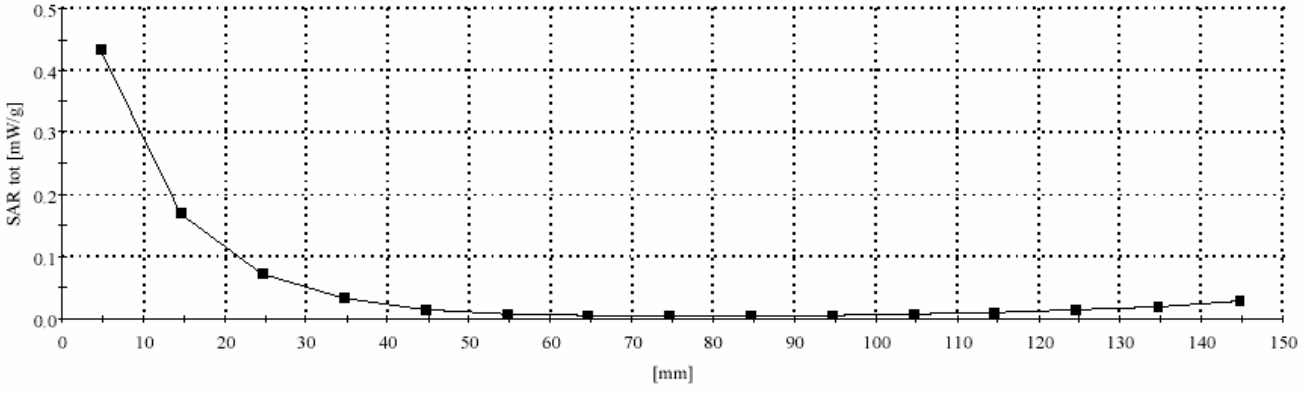


FCC ID: AZ489FT5829; Test Date: 3/17/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040317-11
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 1850.2 MHz
Tissue Temp: 20.1 (Celsius)
Start Power: 1.05 W

Antenna: Fixed- STUBBY
Battery Kit: SNN5595B
Carry case: None
Audio/Data Acc.: NKN6560A

DUT back towards the phantom with antenna separated 2.5cm
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(5.00,5.00,5.00); Probe cal date: 15/05/03; Crest factor: 4.0; FCC Body 1880MHz: σ = 1.58 mho/m ε = 51.0 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.435 mW/g, SAR (10g): 0.271 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 24.0, 85.5, 4.7
Power drift: -0.09dB

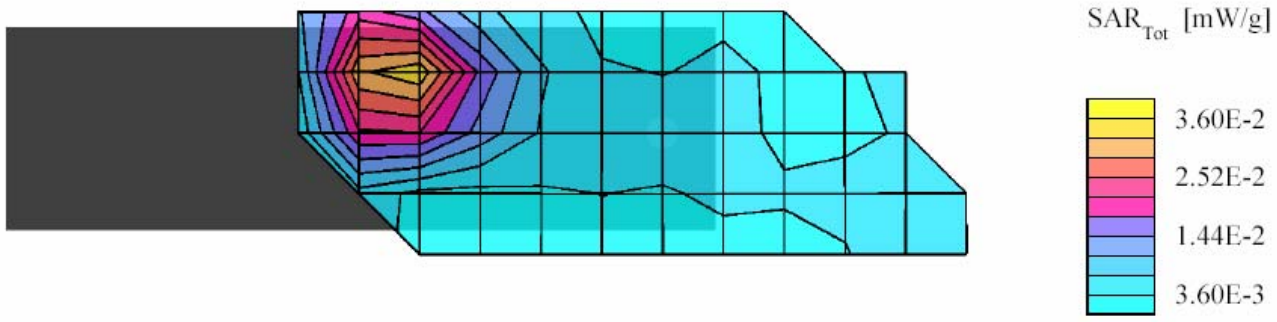


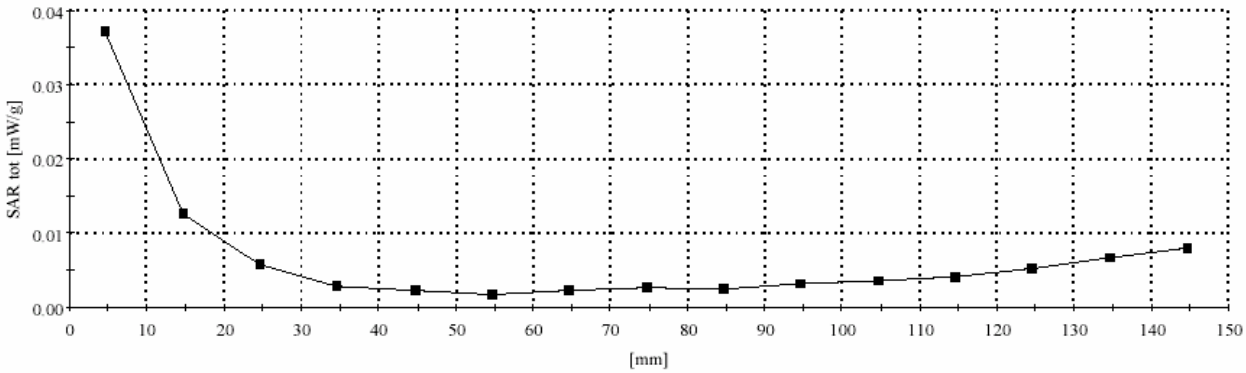


FCC ID: AZ489FT5829; Test Date: 3/3/04
Motorola CGISS EME Laboratory
Run #: EC- LEAR-R1-040303-02
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 2412 MHz
Tissue Temp: 20.9 (Celsius)
Start Power: 46.5 mW
Start Power: 1.05 W

Antenna: Fixed-PIFA
Battery Kit: SNN5595B
Carry case: NONE
Audio/Data Acc.: NONE

DUT at the left ear in cheek touch position (Flip opened)
SAM Phantom; Left Head Section; Position: (90°,59°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(5.00,5.00,5.00); Probe cal date: 15/05/03; Crest factor: 7.0; IEEE Head 2437 MHz: σ = 1.78 mho/m ε = 37.7 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.0383 mW/g, SAR (10g): 0.0201 mW/g * Max outside, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 39.0, 46.5, 4.7
Power drift: -0.45dB
Note: "Max outside" has been identified by SPEAG as an unresolved intermittent occurrence with the DASY 3 application even when the entire peak area is captured.

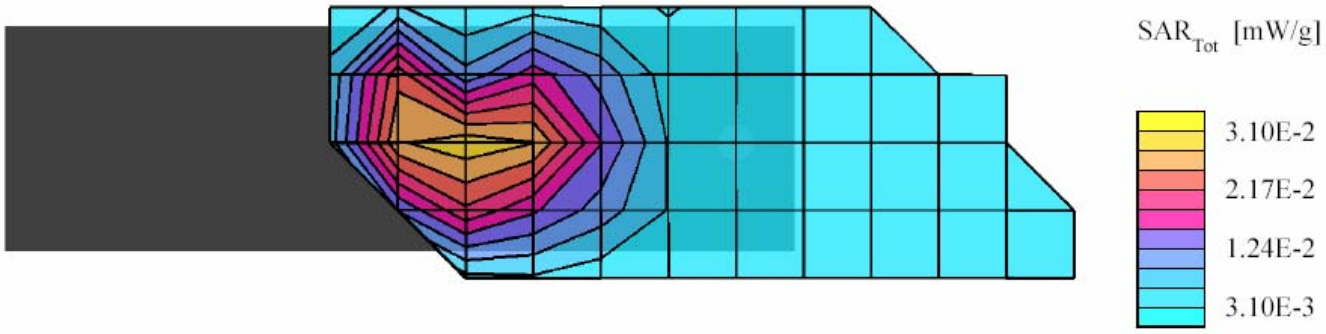


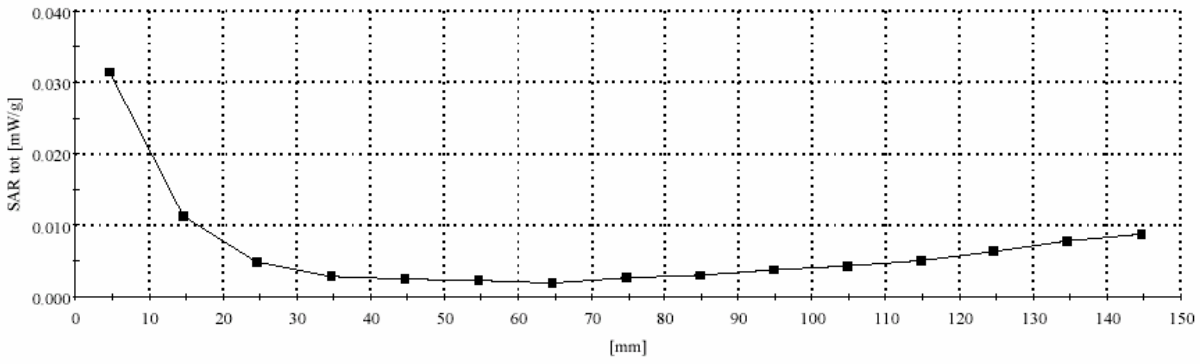


FCC ID: AZ489FT5829; Test Date: 3/3/04
Motorola CGISS EME Laboratory
Run #: EC-LEAR-R1-040303-05
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 2437 MHz
Tissue Temp: 20.9 (Celsius)
Start Power: 39.3mW

Antenna: Fixed-STUBBY
Battery Kit: SNN5595B
Carry case: NONE
Audio/Data Acc.: NONE

DUT at the left ear in cheek touch position (Flip opened)
SAM Phantom; Left head Section; Position: (90°,59°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(5.00,5.00,5.00); Probe cal date: 15/05/03; Crest factor: 7.0; IEEE
Head 2437 MHz: σ = 1.78 mho/m ε = 37.7 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.0314 mW/g, SAR (10g): 0.0169 mW/g * Max outside, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 43.5, 25.5, 4.7
Power drift: -0.67dB
Note: "Max outside" has been identified by SPEAG as an unresolved intermittent occurrence with the DASY 3 application even when the entire peak area is captured.

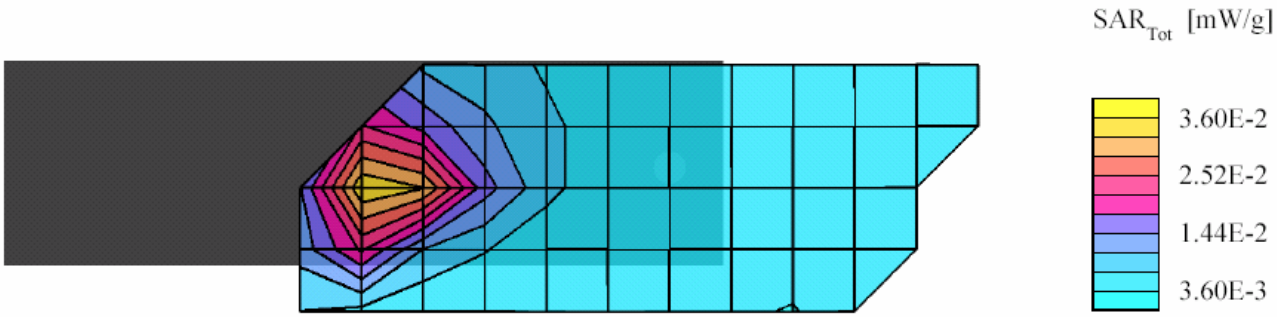


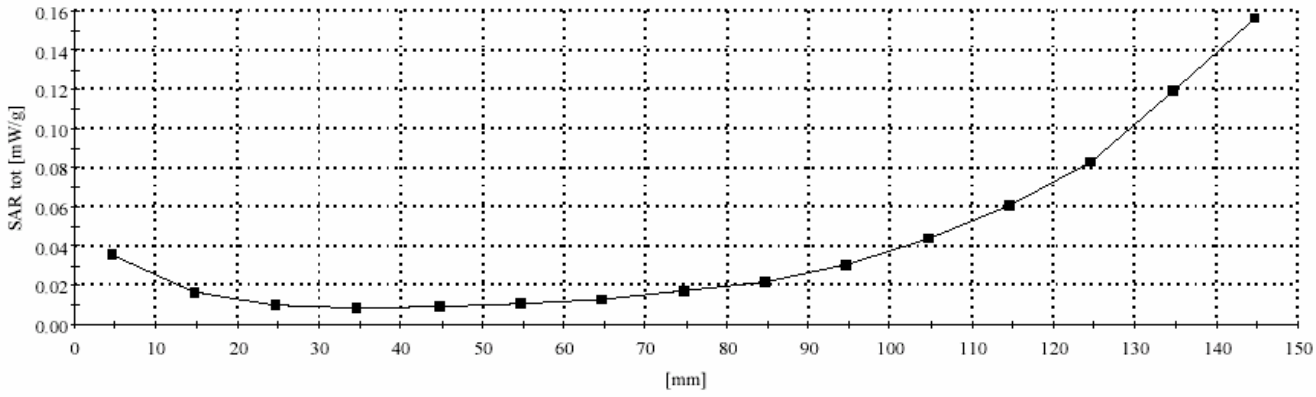


FCC ID: AZ489FT5829; Test Date: 3/4/04
Motorola CGISS EME Laboratory
Run #: EC- REAR-R1-040304-04
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 2412 MHz
Tissue Temp: 20.3 (Celsius)
Start Power: 47.9mW

Antenna: Fixed-PIFA
Battery Kit: SNN5595B
Carry case: NONE
Audio/Data Acc.: NONE

DUT at the right ear in cheek touch position (Flip opened)
SAM Phantom; Right Head Section; Position: (90°,301°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(5.00,5.00,5.00); Probe cal date: 15/05/03; Crest factor: 7.0; IEEE Head 2437MHz: σ = 1.79 mho/m ε = 37.6 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.0365 mW/g, SAR (10g): 0.0219 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 21.0, 33.0, 4.7
Power drift: -0.29dB

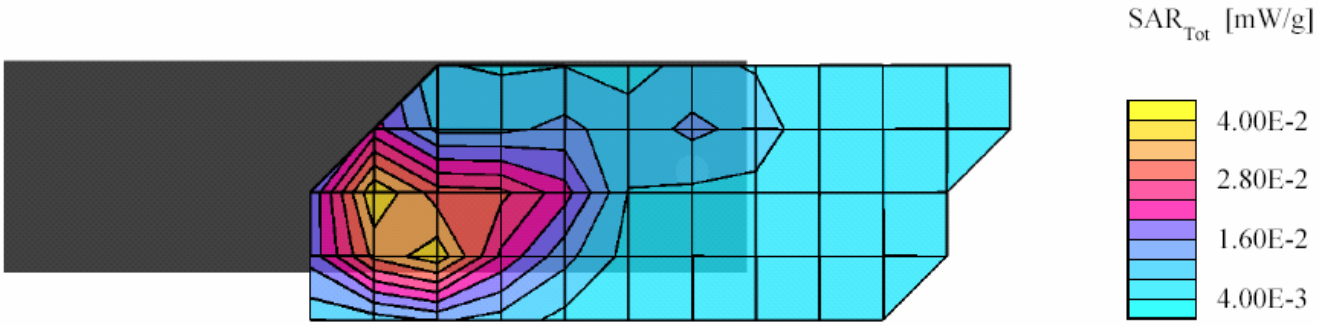


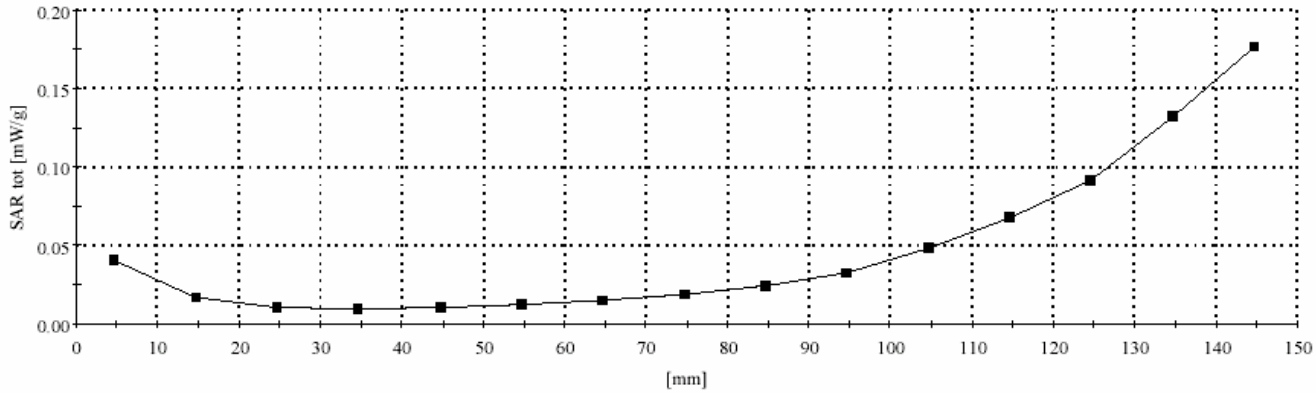


FCC ID: AZ489FT5829; Test Date: 3/4/04
Motorola CGISS EME Laboratory
Run #: EC-REAR-R1-040304-10
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 2412 MHz
Tissue Temp: 20.2 (Celsius)
Start Power: 47.4mW

Antenna: Fixed-STUBBY
Battery Kit: SNN5595B
Carry case: NONE
Audio/Data Acc.: NONE

DUT at the right ear in cheek touch position (Flip opened)
SAM Phantom; Right Head Section; Position: (90°,301°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(5.00,5.00,5.00); Probe cal date: 15/05/03; Crest factor: 7.0; IEEE
Head 2437MHz: σ = 1.79 mho/m ε = 37.6 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.0431 mW/g, SAR (10g): 0.0250 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 24.0, 19.5, 4.7
Power drift: -0.82dB

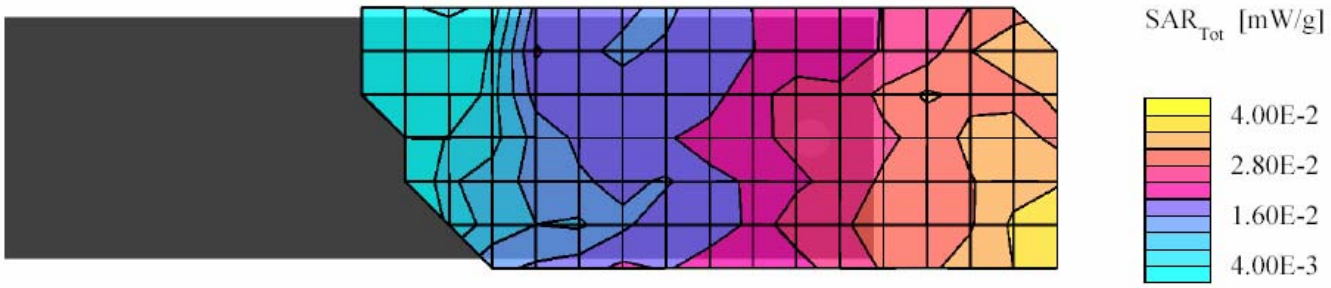


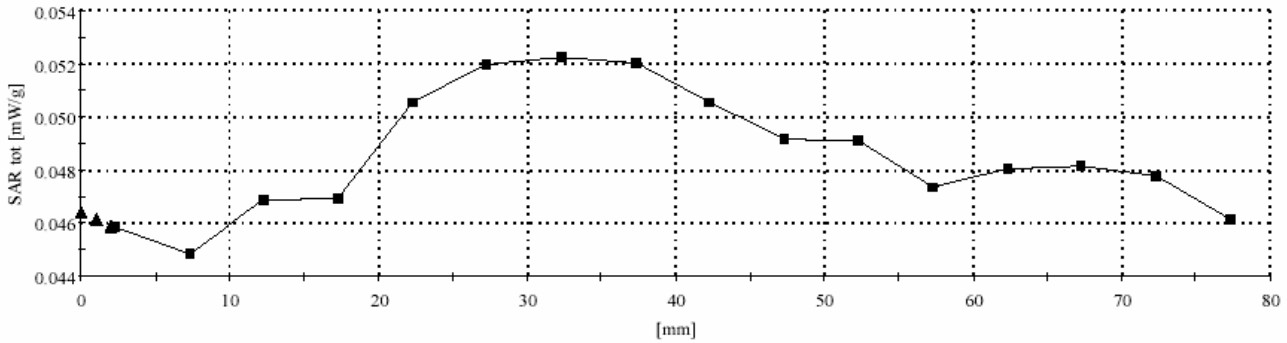


FCC ID: AZ489FT5829; Test Date: 3/10/04
Motorola CGISS EME Laboratory
Run #: EC-Lear-R1-040310-05
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 5260 MHz
Tissue Temp: 20.1 (Celsius)
Start Power: 31.0 mW

Antenna: Fixed -PIFA
Battery Kit: SNN5588A
Carry: None
Audio/Data Acc.: None

DUT at the right ear in cheek touch position
SAR using SAR calculator tool was 0.050mW/g
Max Calc SAR with drift was 0.050mW/g
SAM - Expanded Phantom; Left Hand Section; Position: (90°,59°);
Probe: EX3DV3 - SN3512; ConvF(5.02,5.02,5.02); Probe cal date: 23/1/04; Crest factor: 7.0; IEEE Head 5260MHz:
σ =4.88 mho/m ε = 35.0 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003:
Coarse: Dx = 9.0, Dy = 9.0, Dz = 10.0; Max at 153.0, 0.0, 2.3
Power drift: -0.84dB

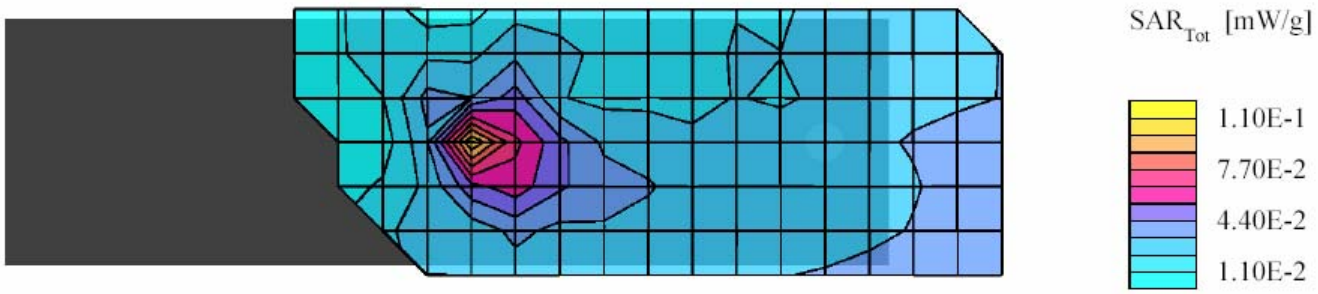


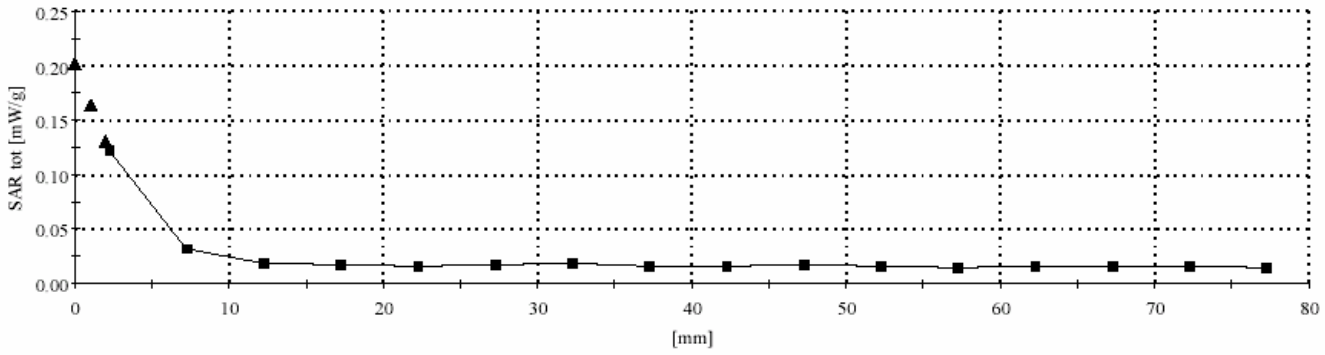


FCC ID: AZ489FT5829; Test Date: 3/11/04
Motorola CGISS EME Laboratory
Run #: EC-Lear-R1-040311-08
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 5320 MHz
Tissue Temp: 20.2 (Celsius)
Start Power: 28.2 mW

Antenna: Fixed -STUBBY
Battery Kit: SNN5588A
Carry case: None
Audio/Data Acc.: None

DUT at the left ear in cheek touch position
SAR using SAR calculator tool was 0.070 mW/g
Max Calc SAR with drift was 0.083 mW/g
SAM Phantom; Left Head Section; Position: (90°,59°);
Probe: EX3DV3 - SN3512; ConvF(5.02,5.02,5.02); Probe cal date: 23/1/04; Crest factor: 7.0; IEEE Head 5260MHz: σ = 4.90 mho/m ε = 34.5 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Coarse: Dx = 9.0, Dy = 9.0, Dz = 10.0; Max at 45.9, 26.1, 2.3
Power drift: -0.30dB

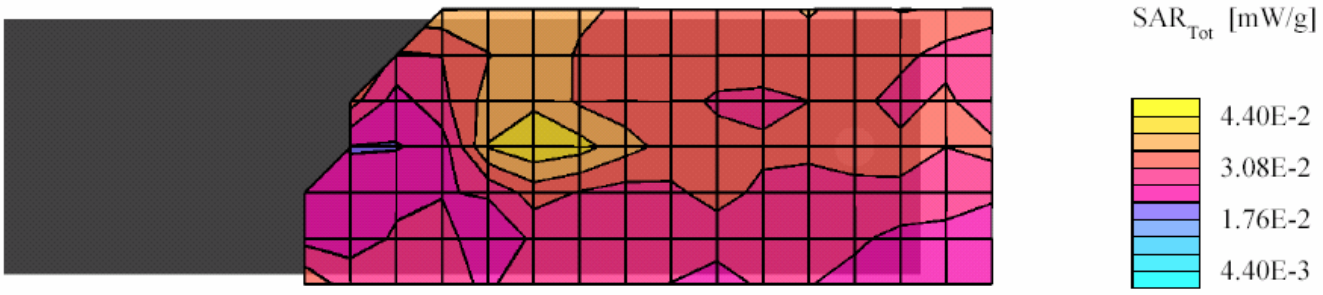


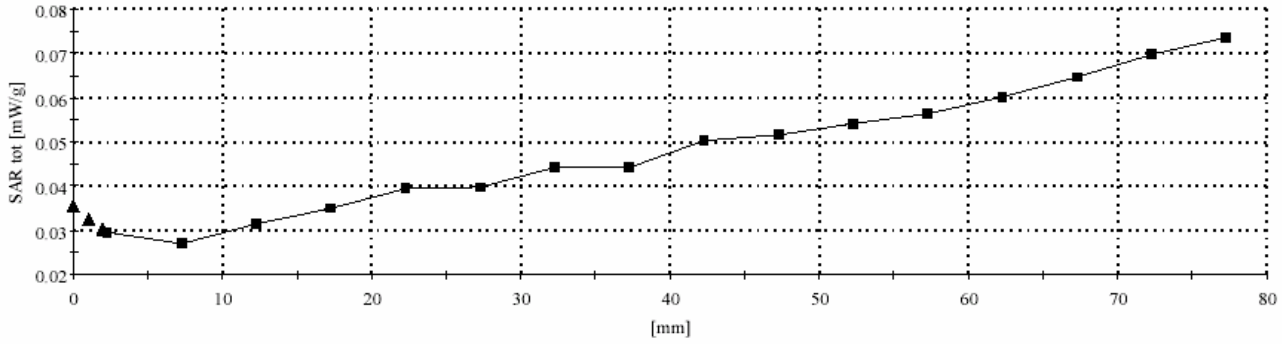


FCC ID: AZ489FT5829; Test Date: 3/12/04
Motorola CGISS EME Laboratory
Run #: EC-Rear-R1-040312-02
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 5260 MHz
Tissue Temp: 20.5 (Celsius)
Start Power: 30.1mW

Antenna: Fixed -PIFA
Battery Kit: SNN5588A
Carry case: None
Audio/Data Acc.: None

DUT at the right ear in cheek touch position
SAR using SAR calculator tool was 0.030mW/g
Max Calc SAR with drift was 0.035mW/g
SAM Phantom; Right Head Section; Position: (90°,301°);
Probe: EX3DV3 - SN3512; ConvF(5.02,5.02,5.02); Probe cal date: 23/1/04; Crest factor: 7.0; IEEE Head 5260MHz:
σ = 4.78 mho/m ε = 34.4 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Coarse: Dx = 9.0, Dy = 9.0, Dz = 10.0; Max at 42.3, 27.9, 2.3
Power drift: -0.48dB

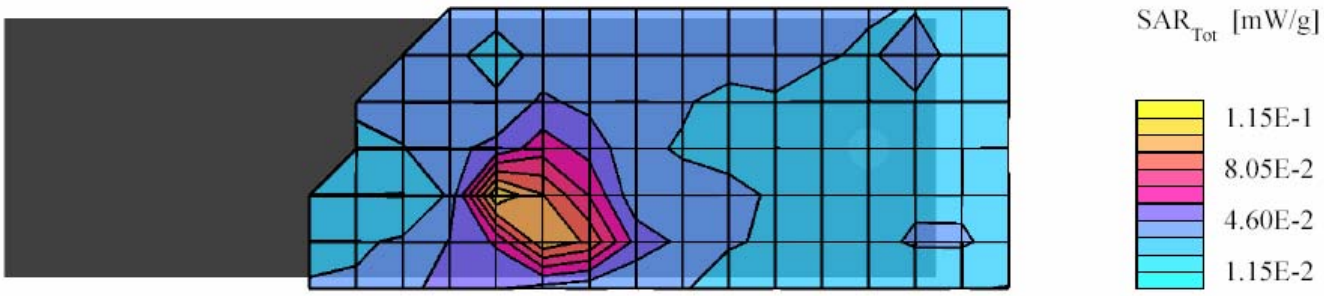


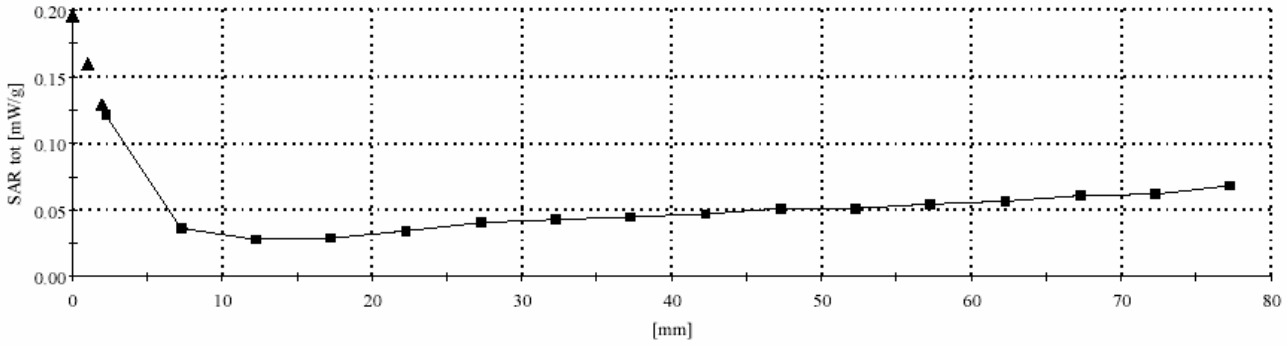


FCC ID: AZ489FT5829; Test Date: 3/12/04
Motorola CGISS EME Laboratory
Run #: EC-Rear-R1-040312-06
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 5260 MHz
Tissue Temp: 20.3 (Celsius)
Start Power: 30.0 mW

Antenna: Fixed -STUBBY
Battery Kit: SNN5588A
Carry case: None
Audio/Data Acc.: None

DUT at the right ear in cheek touch position
SAR using SAR calculator tool was 0.070mW/g
Max Calc SAR with drift was 0.080mW/g
SAM Phantom; Right Head Section; Position: (90°,301°);
Probe: EX3DV3 - SN3512; ConvF(5.02,5.02,5.02); Probe cal date: 23/1/04; Crest factor: 7.0; IEEE Head 5260MHz:
σ = 4.78 mho/m ε = 34.4 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Coarse: Dx = 9.0, Dy = 9.0, Dz = 10.0; Max at 37.8, 17.1, 2.3
Power drift: -0.44dB

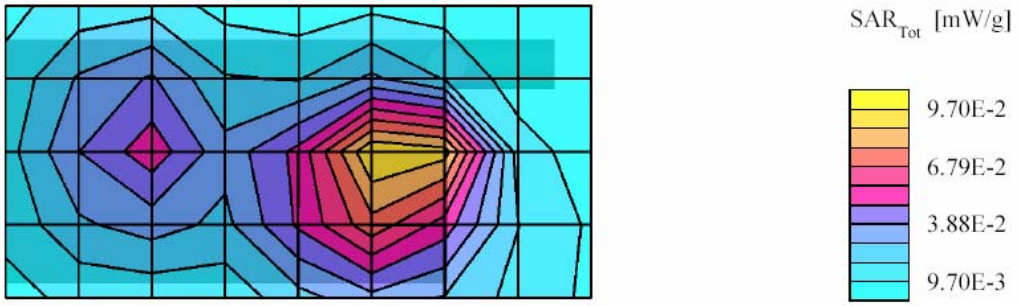


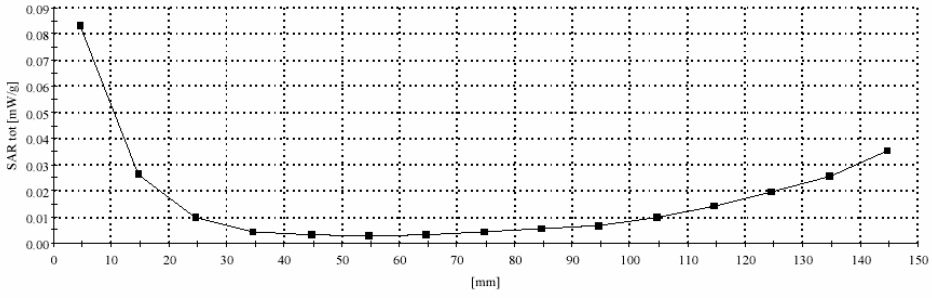


FCC ID: AZ489FT5829; Test Date: 3/18/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040318-03
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 2437 MHz
Tissue Temp: 20.7 (Celsius)
Start Power: 42.9mW

Antenna: Fixed-PIFA
Battery Kit: SNN5595B
Carry case: NNTN5444A
Audio/Data Acc.: NONE

DUT with carry case against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(4.80,4.80,4.80); Probe cal date: 15/05/03; Crest factor: 1.0; FCC Body 2437 MHz: σ = 1.90 mho/m ε = 51.9 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.0908 mW/g, SAR (10g): 0.0483 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 33.0, 81.0, 4.7
Power drift: -1.69 dB

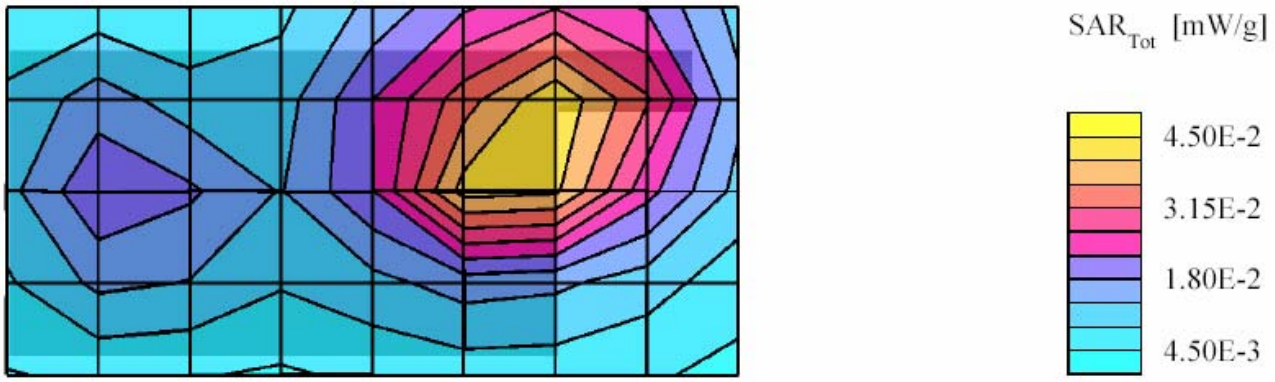


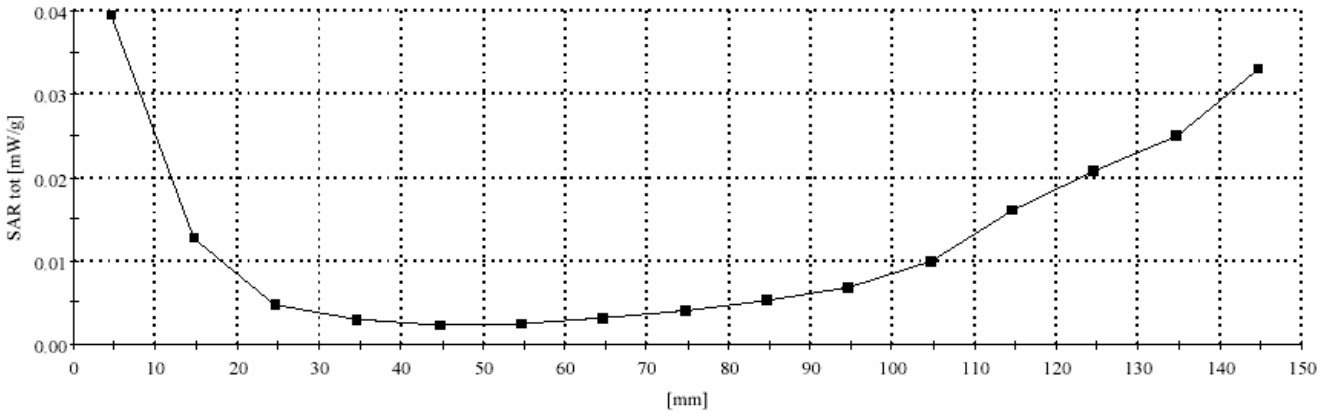


FCC ID: AZ489FT5829; Test Date: 3/18/04
Motorola CGISS EME Laboratory
Run #: EC-Ab--R1-040318-06
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 2437 MHz
Tissue Temp: 20.6 (Celsius)
Start Power: 42.2mW

Antenna: Fixed-STUBBY
Battery Kit: SNN5595B
Carry case: NNTN5444A
Audio/Data Acc.: NONE

DUT with carry case against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(4.80,4.80,4.80); Probe cal date: 15/05/03; Crest factor: 1.0; FCC Body 2437 MHz: σ = 1.90 mho/m ε = 51.9 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.0433 mW/g, SAR (10g): 0.0236 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 24.0, 84.0, 4.7
Power drift: -1.86 dB

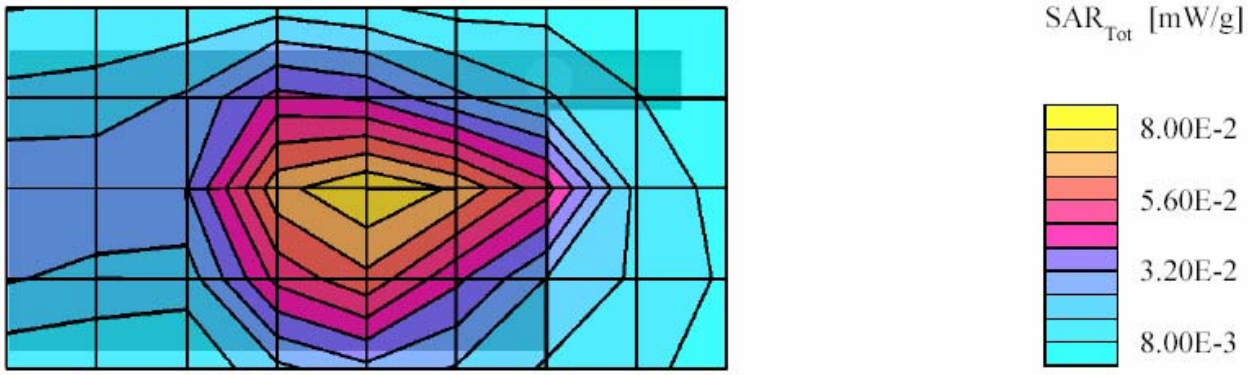


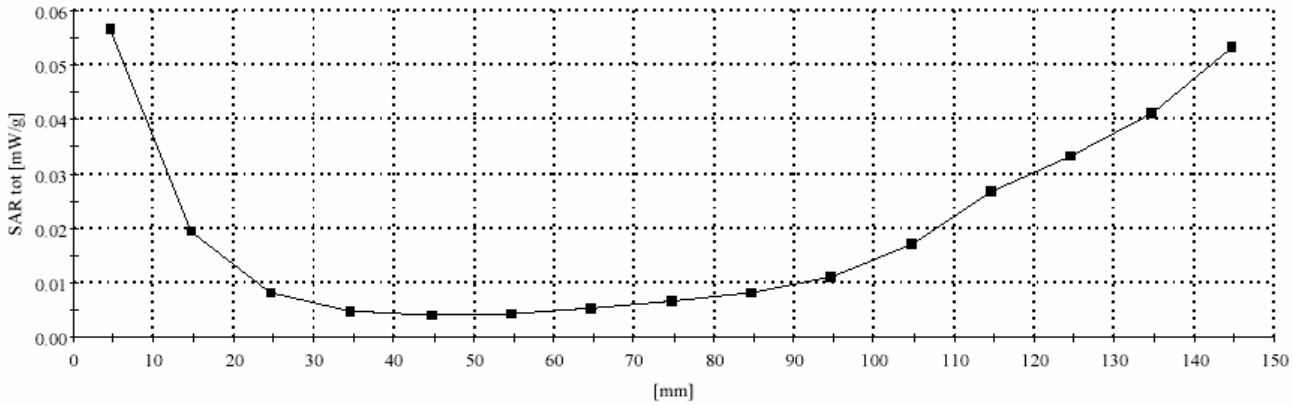


FCC ID: AZ489FT5829; Test Date: 3/18/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040318-07
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 2437 MHz
Tissue Temp: 20.4 (Celsius)
Start Power: 42.7mW

Antenna: Fixed-PIFA
Battery Kit: SNN5595B
Carry case: NNTN5444A
Audio/Data Acc.: NKN6560A

DUT with carry case against the phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(4.80,4.80,4.80); Probe cal date: 15/05/03; Crest factor: 1.0; FCC Body 2437 MHz: σ = 1.90 mho/m ε = 51.9 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.0664 mW/g, SAR (10g): 0.0380 mW/g * Max outside, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 33.0, 58.5, 4.7
Power drift: -2.09 dB
Note: "Max outside" has been identified by SPEAG as an unresolved intermittent occurrence with the DASY 3 application even when the entire peak area is captured.

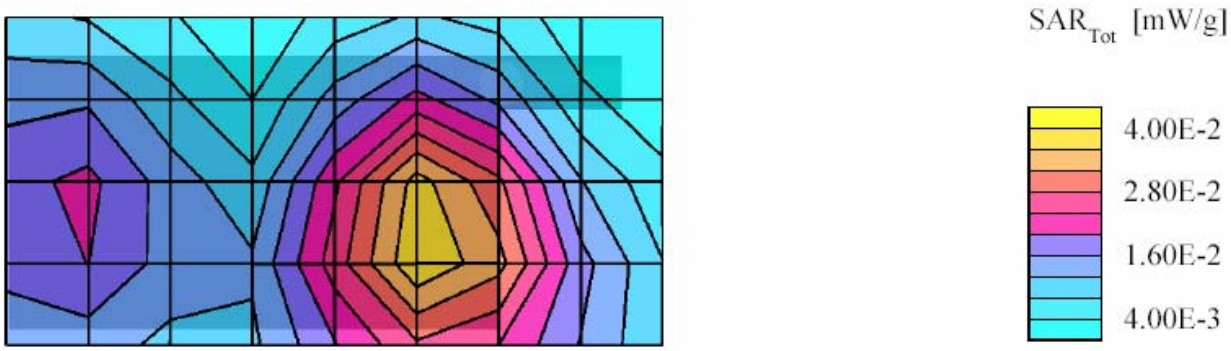


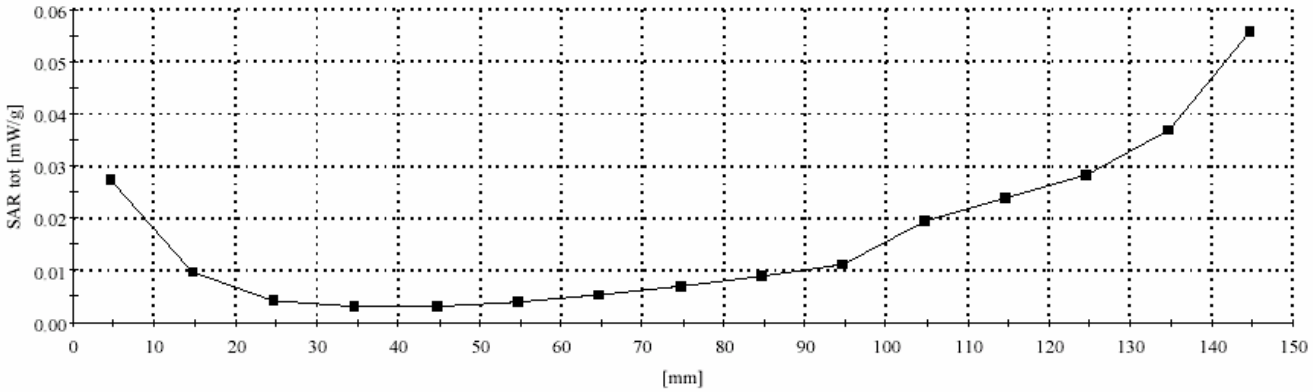


FCC ID: AZ489FT5829; Test Date: 3/19/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040319-12
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 2437 MHz
Tissue Temp: 20.3 (Celsius)
Start Power: 40.8mW

Antenna: Fixed-PIFA
Battery Kit: SNN5595B
Carry case: None
Audio/Data Acc.: None

DUT back separated 2.5cm from phantom
Flat Phantom; Device Section; Position: (90°,90°);
Probe: ET3DV6 - SN1384(Cal Date 05-15-2003); ConvF(4.80,4.80,4.80); Probe cal date: 15/05/03; Crest factor: 1.0; FCC Body 2437 MHz: σ = 1.98 mho/m ε = 52.6 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Cube 7x7x7: SAR (1g): 0.0315 mW/g, SAR (10g): 0.0186 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 39.0, 76.5, 4.7
Power drift: -2.49 dB

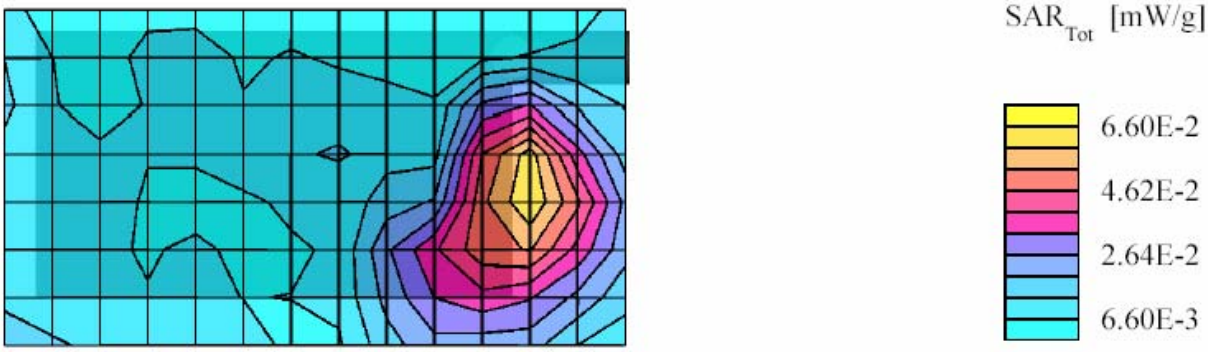


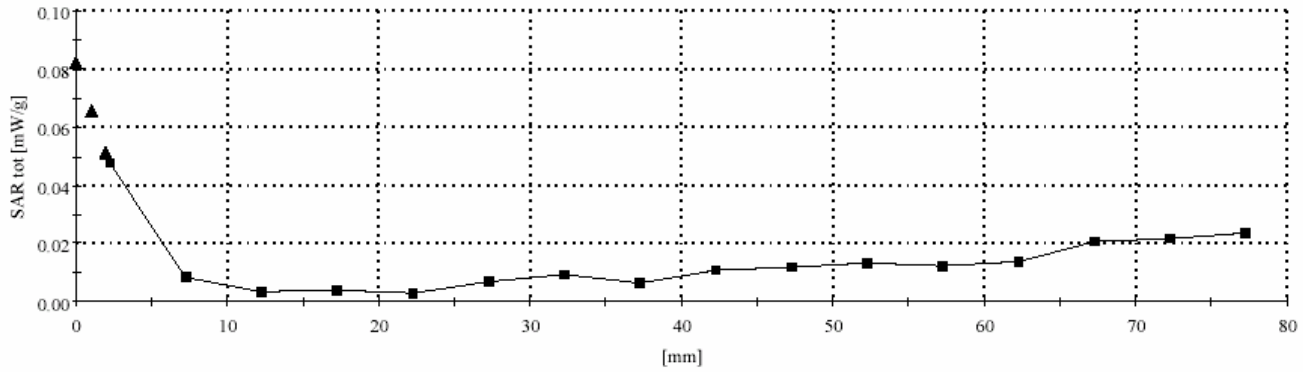


FCC ID: AZ489FT5829; Test Date: 3/20/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040320-04
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 5260 MHz
Tissue Temp: 20.8 (Celsius)
Start Power: 25.5mW

Antenna: Fixed -PIFA
Battery Kit: SNN5595B
Carry case: NNTN5444A
Audio/Data Acc.: None

DUT carry case against the phantom
SAR using SAR calculator tool was .05 mW/g
Max Calc SAR with drift was .119 mW/g
Flat Phantom; Device Section; Position: (90°,90°);
Probe: EX3DV3 - SN3512; ConvF(4.25,4.25,4.25); Probe cal date: 23/1/04; Crest factor: 1.0; FCC Body 5260 MHz:
σ =5.62 mho/m ε = 47.0 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Coarse: Dx = 9.0, Dy = 9.0, Dz = 10.0; Max at 31.5, 98.1, 2.3
Power drift: -2.78 dB

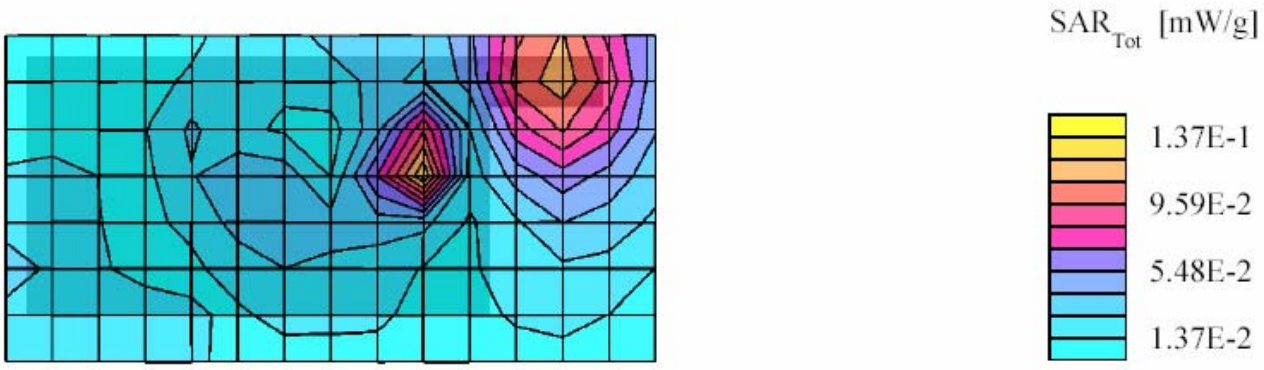


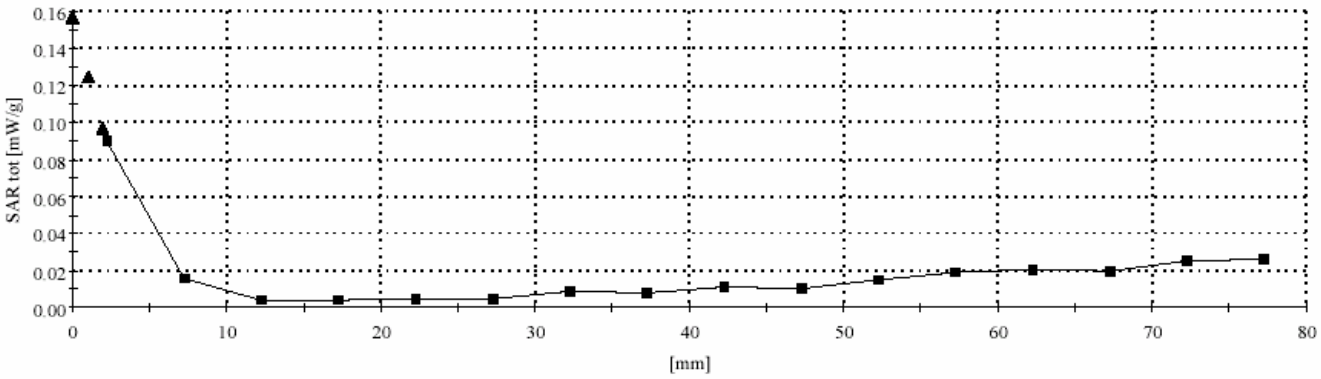


FCC ID: AZ489FT5829; Test Date: 3/20/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040320-06
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 5260 MHz
Tissue Temp: 20.8 (Celsius)
Start Power: 25.2 mW

Antenna: Fixed -STUBBY
Battery Kit: SNN5595B
Carry case: NNTN5444A
Audio/Data Acc.: None

DUT with carry case against the phantom
SAR using SAR calculator tool was .08 mW/g
Max Calc SAR with drift was .157 mW/g
Flat Phantom; Device Section; Position: (90°,90°);
Probe: EX3DV3 - SN3512; ConvF(4.25,4.25,4.25); Probe cal date: 23/1/04; Crest factor: 1.0; FCC Body 5260 MHz:
σ = 5.62 mho/m ε = 47.0 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Coarse: Dx = 9.0, Dy = 9.0, Dz = 10.0; Max at 25.2, 80.1, 2.3
Power drift: -1.88 dB

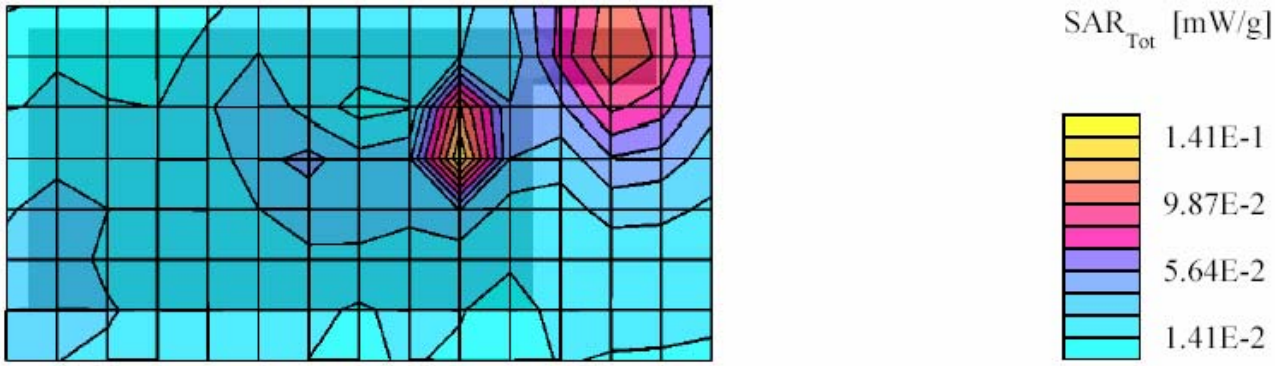


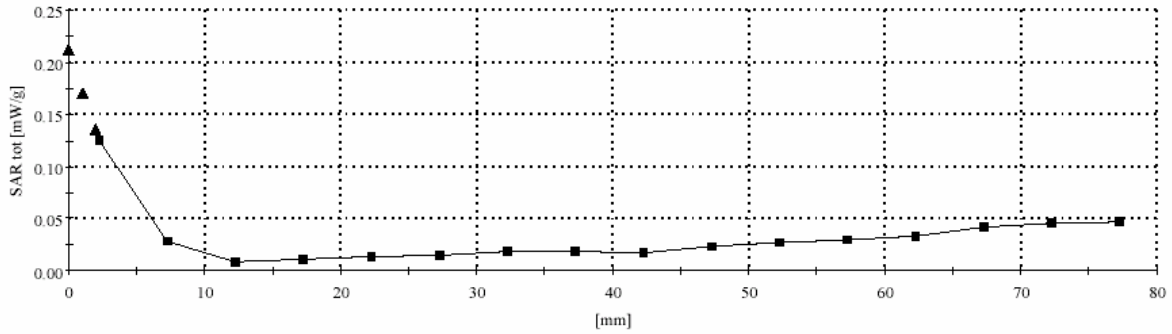


FCC ID: AZ489FT5829; Test Date: 3/20/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040320-08
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 5260 MHz
Tissue Temp: 20.7 (Celsius)
Start Power: 25.4 mW

Antenna: Fixed -STUBBY
Battery Kit: SNN5595B
Carry case: NNTN5444A
Audio/Data Acc.: NKN6559A

DUT with carry case against the phantom
SAR using SAR calculator tool was 0.10 W/g
Max Calc SAR with drift was 0.180 W/g
Flat Phantom; Device Section; Position: (90°,90°);
Probe: EX3DV3 - SN3512; ConvF(4.25,4.25,4.25); Probe cal date: 23/1/04; Crest factor: 1.0; FCC Body 5260 MHz: σ = 5.62 mho/m ε = 47.0 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Coarse: Dx = 9.0, Dy = 9.0, Dz = 10.0; Max at 24.3, 81.0, 2.3
Power drift: -1.54 dB

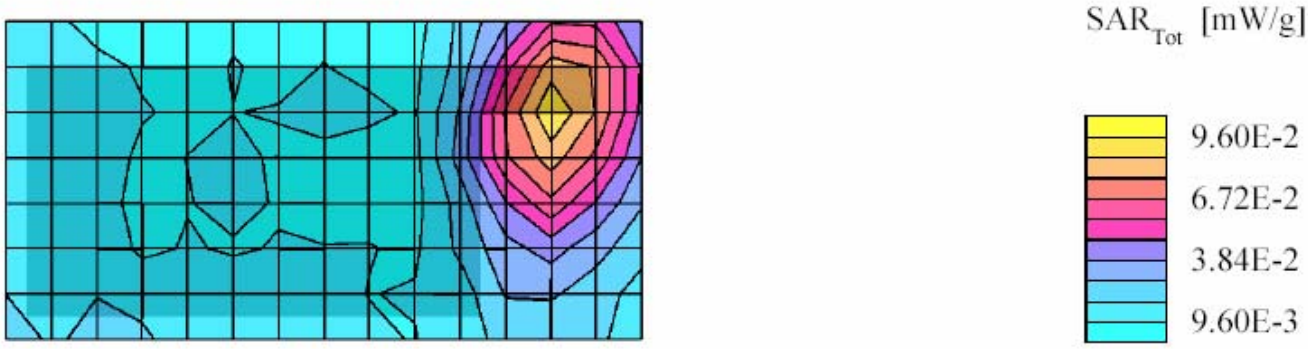


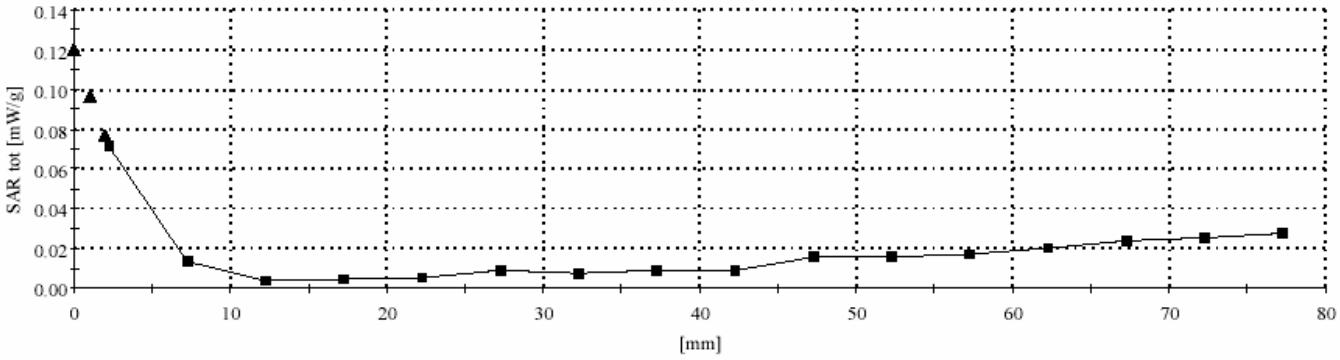


FCC ID: AZ489FT5829; Test Date: 3/21/04
Motorola CGISS EME Laboratory
Run #: EC-Ab-R1-040321-09
Model #: H77UBH6JA5AA SN: 365ADY006P
TX Freq: 5260 MHz
Tissue Temp: 20.6 (Celsius)
Start Power: 25.6 mW

Antenna: Fixed -STUBBY
Battery Kit: SNN5595B
Carry case: None
Audio/Data Acc.: NKN6560A

DUT back towards the phantom with antenna separated 2.5cm
SAR using SAR calculator tool was .08 mW/g
Max Calc SAR with drift was .170 mW/g
Flat Phantom; Device Section; Position: (90°,90°);
Probe: EX3DV3 - SN3512; ConvF(4.25,4.25,4.25); Probe cal date: 23/1/04; Crest factor: 1.0; FCC Body 5260 MHz:
σ = 5.56 mho/m ε = 46.6 ρ = 1.00 g/cm3; DAE3: 363V1 DAE Cal Date: 05/13/2003
Coarse: Dx = 9.0, Dy = 9.0, Dz = 10.0; Max at 17.1, 108.9, 2.3
Power drift: -2.31 dB





APPENDIX C

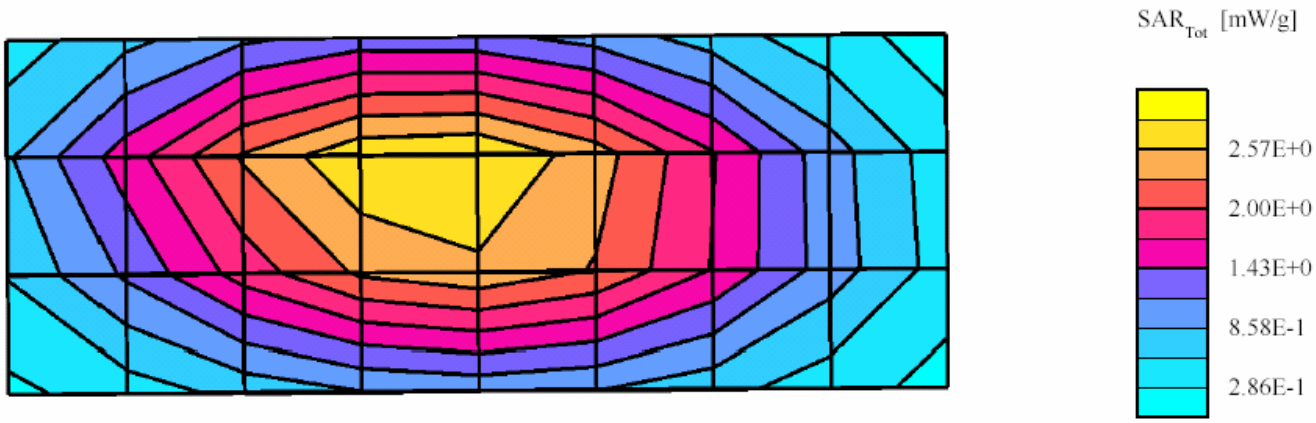
Dipole System Performance Check Results

Dipole validation scans at the head from SPEAG are provided in APPENDIX D. 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 900 MHz Dipole; Model D900V2, SN 085; Test Date: 2/19/03
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040219-01
TX Freq: 900 MHz
Sim Tissue Temp: 21.3 (Celsius)
Start Power; 250mW

SAR target at 1W is 12.00 mW/g (1g avg, including drift)
SAR target at 1W is 7.52 mW/g (10g avg, including drift)
SAR calculated at 1W is 12.20 mW/g (1g avg). Percent from target (including drift) is + 1.63 %
SAR calculated at 1W is 7.62 mW/g (10g avg). Percent from target (including drift) is + 1.36 %

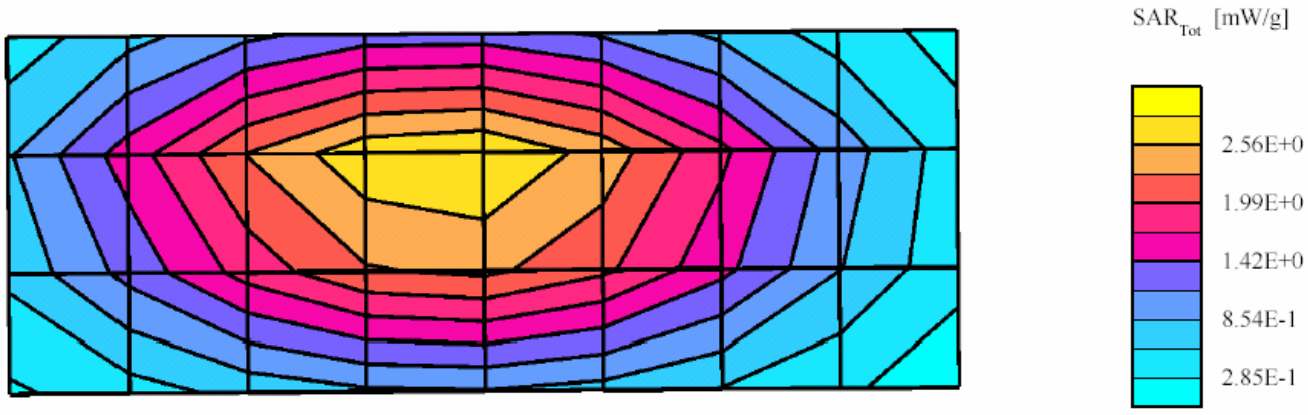
SAM Phantom; Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(6.60,6.60,6.60); Crest factor: 1.0; IEEE Head 900 MHz : σ = 1.00 mho/m ε = 40.6 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003 Cubes (2): Peak: 5.00 mW/g ± 0.04 dB, SAR (1g): 3.12 mW/g ± 0.03 dB, SAR (10g): 1.95 mW/g ± 0.02 dB, (Worst-case extrapolation) Penetration depth: 11.3 (10.5, 12.4) [mm]
Power drift: 0.10 dB



SPEAG 900 MHz Dipole; Model D900V2, SN 085; Test Date: 2/20/03
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040220-01
TX Freq: 900 MHz
Sim Tissue Temp: 20.6 (Celsius)
Start Power; 250mW

SAR target at 1W is 12.00 mW/g (1g avg, including drift)
SAR target at 1W is 7.52 mW/g (10g avg, including drift)
SAR calculated at 1W is 11.86 mW/g (1g avg). Percent from target (including drift) is - 1.20 %
SAR calculated at 1W is 7.41 mW/g (10g avg). Percent from target (including drift) is - 1.46 %

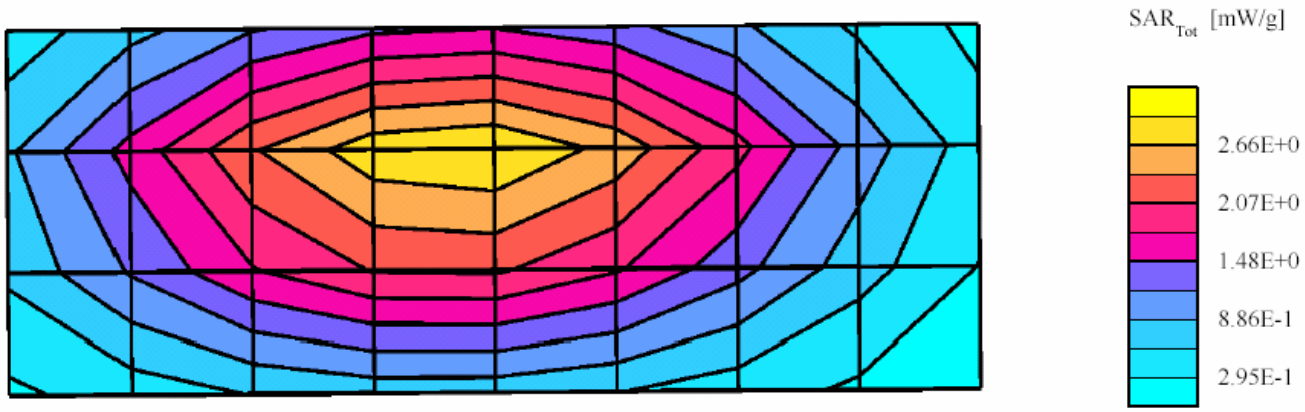
SAM Phantom; Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(6.60,6.60,6.60); Crest factor: 1.0; IEEE Head 900 MHz : σ = 1.00 mho/m ε = 41.4 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003 Cubes (2): Peak: 4.88 mW/g ± 0.02 dB, SAR (1g): 3.04 mW/g ± 0.02 dB, SAR (10g): 1.90 mW/g ± 0.02 dB, (Worst-case extrapolation) Penetration depth: 11.2 (10.4, 12.3) [mm]
Power drift: 0.11 dB



SPEAG 900 MHz Dipole; Model D900V2, SN 085; Test Date: 2/21/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040221-01
TX Freq: 900 MHz
Sim Tissue Temp: 20.6 (Celsius)
Start Power; 250mW

SAR target at 1W is 12.00 mW/g (1g avg, including drift)
SAR target at 1W is 7.52 mW/g (10g avg, including drift)
SAR calculated at 1W is 11.78 mW/g (1g avg). Percent from target (including drift) is - 1.85 %
SAR calculated at 1W is 7.37 mW/g (10g avg). Percent from target (including drift) is - 1.98 %

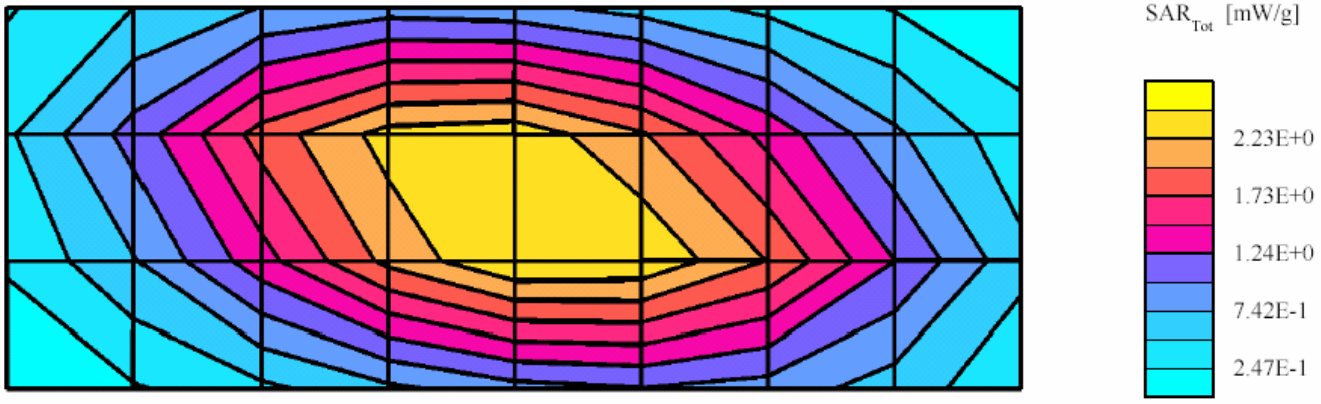
SAM Phantom; Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(6.60,6.60,6.60); Crest factor: 1.0; IEEE Head 900 MHz : σ = 1.00 mho/m ε = 41.1 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003 Cubes (2): Peak: 4.82 mW/g ± 0.03 dB, SAR (1g): 3.02 mW/g ± 0.01 dB, SAR (10g): 1.89 mW/g ± 0.00 dB, (Worst-case extrapolation) Penetration depth: 11.3 (10.6, 12.4) [mm]
Power drift: 0.11 dB



SPEAG 900 MHz Dipole; Model D900V2, SN 085; Test Date: 2/22/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040222-01
TX Freq: 900 MHz
Sim Tissue Temp: 21.4 (Celsius)
Start Power; 250mW

SAR target at 1W is 11.17 mW/g (1g avg, including drift)
SAR target at 1W is 7.11 mW/g (10g avg, including drift)
SAR calculated at 1W is 11.36 mW/g (1g avg). Percent from target (including drift) is + 1.66 %
SAR calculated at 1W is 7.18 mW/g (10g avg). Percent from target (including drift) is + 0.96 %

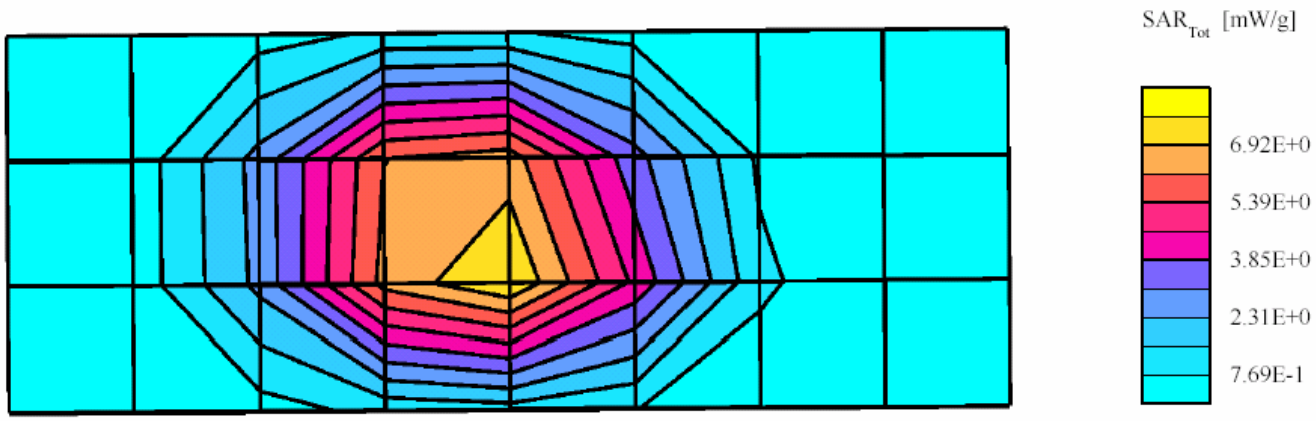
Flat Phantom; Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(6.50,6.50,6.50); Crest factor: 1.0; FCC Body 900 MHz: σ = 1.03 mho/m ε = 52.8 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Cubes (2): Peak: 4.41 mW/g ± 0.00 dB, SAR (1g): 2.80 mW/g ± 0.01 dB, SAR (10g): 1.77 mW/g ± 0.01 dB, (Worst-case extrapolation) Penetration depth: 12.1 (11.1, 13.4) [mm]
Power drift: -0.06 dB



SPEAG 1800 MHz Dipole; Model D1800V2 SN: 278; Test Date: 2/24/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040224-01
TX Freq: 1800 MHz
Sim Tissue Temp: 21.2 (Celsius)
Start Power; 250mW

SAR target at 1W is 38.42 mW/g (1g avg, including drift)
SAR target at 1W is 20.37 mW/g (10g avg, including drift)
SAR calculated at 1W is 38.38 mW/g (1g avg). Percent from target (including drift) is - 0.10 %
SAR calculated at 1W is 20.06 mW/g (10g avg). Percent from target (including drift) is - 1.53 %

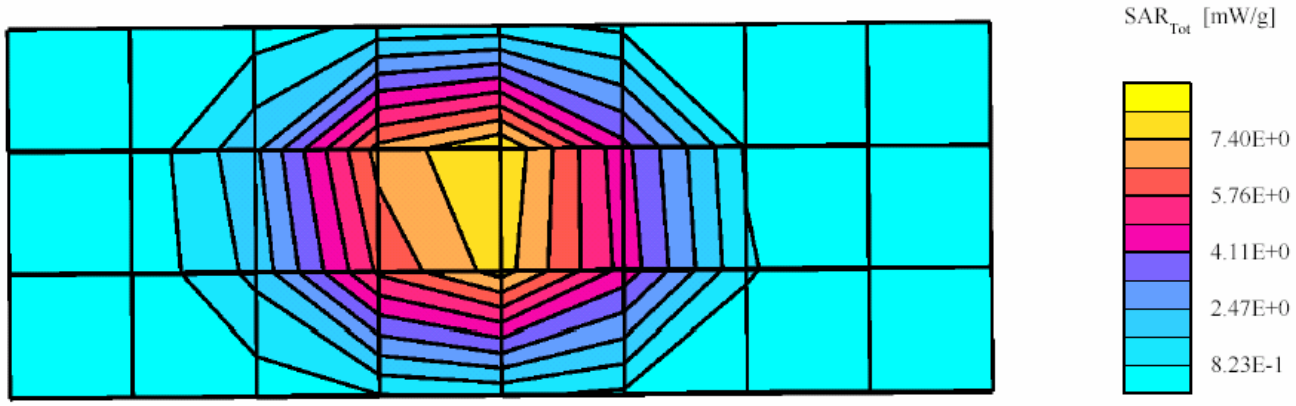
SAM Phantom; Flat Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(5.40,5.40,5.40); Crest factor: 1.0; IEEE Head 1800MHz: σ = 1.37 mho/m ε = 40.2 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Cubes (2): Peak: 17.6 mW/g ± 0.01 dB, SAR (1g): 9.53 mW/g ± 0.02 dB, SAR (10g): 4.98 mW/g ± 0.03 dB, (Worst-case extrapolation)Penetration depth: 8.4 (8.1, 9.2) [mm]
Power drift: -0.03 dB



SPEAG 1900 MHz Dipole; Model D1900V2 SN: 521; Test Date: 2/25/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040225-01
TX Freq: 1900 MHz
Sim Tissue Temp: 21.0 (Celsius)
Start Power: 250mW

SAR target at 1W is 42.10 mW/g (1g avg, including drift)
SAR target at 1W is 21.93 mW/g (10g avg, including drift)
SAR calculated at 1W is 43.30 mW/g (1g avg). Percent from target (including drift) is + 2.84 %
SAR calculated at 1W is 21.85 mW/g (10g avg). Percent from target (including drift) is - 0.36 %

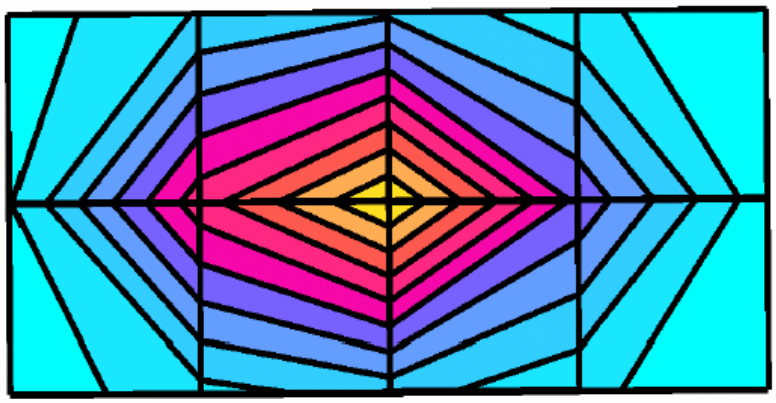
SAM Phantom; Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(5.40,5.40,5.40); Crest factor: 1.0; IEEE Head 1900MHz: σ = 1.47 mho/m ε= 40.0 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003 Cubes (2): Peak: 20.3 mW/g ± 0.03 dB, SAR (1g): 10.7 mW/g ± 0.03 dB, SAR (10g): 5.40 mW/g ± 0.03 dB, (Worst-case extrapolation) Penetration depth: 7.9 (7.6, 8.7) [mm]
Power drift: -0.05 dB



SPEAG 2450 MHz Dipole; Model D2450V2 SN: 704; Test Date: 3/02/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040302-10
TX Freq: 2450 MHz
Sim Tissue Temp: 21.1 (Celsius)
Start Power: 250mW

SAR target at 1W is 52.64 mW/g (1g avg, including drift)
SAR target at 1W is 24.07 mW/g (10g avg, including drift)
SAR calculated at 1W is 52.40 mW/g (1g avg). Percent from target (including drift) is - 0.46 %
SAR calculated at 1W is 24.28 mW/g (10g avg). Percent from target (including drift) is + 0.87 %

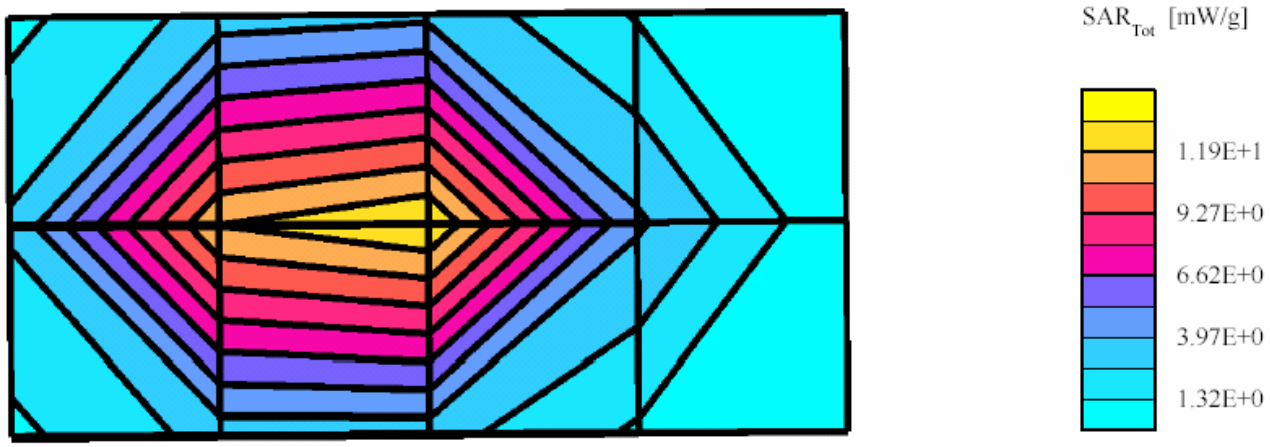
SAM Phantom; Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(5.00,5.00,5.00); Crest factor: 1.0; IEEE Head 2450 MHz: σ = 1.79 mho/m ε = 37.8 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003 Cubes (2): Peak: 26.6 mW/g ± 0.06 dB, SAR (1g): 13.1 mW/g ± 0.05 dB, SAR (10g): 6.07 mW/g ± 0.04 dB, (Worst-case extrapolation) Penetration depth: 6.7 (6.5, 7.3) [mm]
Power drift: -0.00 dB



SPEAG 2450 MHz Dipole; Model D2450V2 SN: 704; Test Date: 3/03/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040303-01
TX Freq: 2450 MHz
Sim Tissue Temp: 20.9 (Celsius)
Start Power: 250mW

SAR target at 1W is 52.64 mW/g (1g avg, including drift)
SAR target at 1W is 24.07 mW/g (10g avg, including drift)
SAR calculated at 1W is 55.84 mW/g (1g avg). Percent from target (including drift) is + 6.08 %
SAR calculated at 1W is 25.65 mW/g (10g avg). Percent from target (including drift) is + 6.58 %

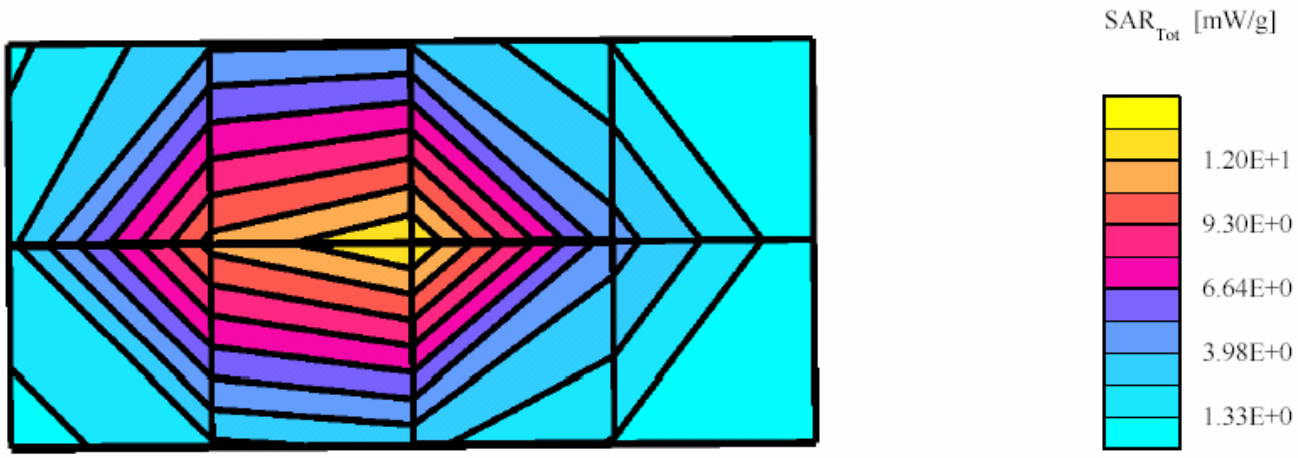
SAM - Expanded; Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(5.00,5.00,5.00); Crest factor: 1.0; IEEE Head 2450 MHz: σ = 1.79 mho/m ε = 37.7 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003 Cubes (2): Peak: 28.2 mW/g ± 0.04 dB, SAR (1g): 13.8 mW/g ± 0.04 dB, SAR (10g): 6.34 mW/g ± 0.04 dB, (Worst-case extrapolation) Penetration depth: 6.7 (6.5, 7.3) [mm]
Power drift: -0.05 dB



SPEAG 2450 MHz Dipole; Model D2450V2 SN: 704; Test Date: 3/04/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040304-01
TX Freq: 2450 MHz
Sim Tissue Temp: 20.3 (Celsius)
Start Power: 250mW

SAR target at 1W is 52.64 mW/g (1g avg, including drift)
SAR target at 1W is 24.07 mW/g (10g avg, including drift)
SAR calculated at 1W is 53.60 mW/g (1g avg). Percent from target (including drift) is + 1.82 %
SAR calculated at 1W is 24.72 mW/g (10g avg). Percent from target (including drift) is + 2.70 %

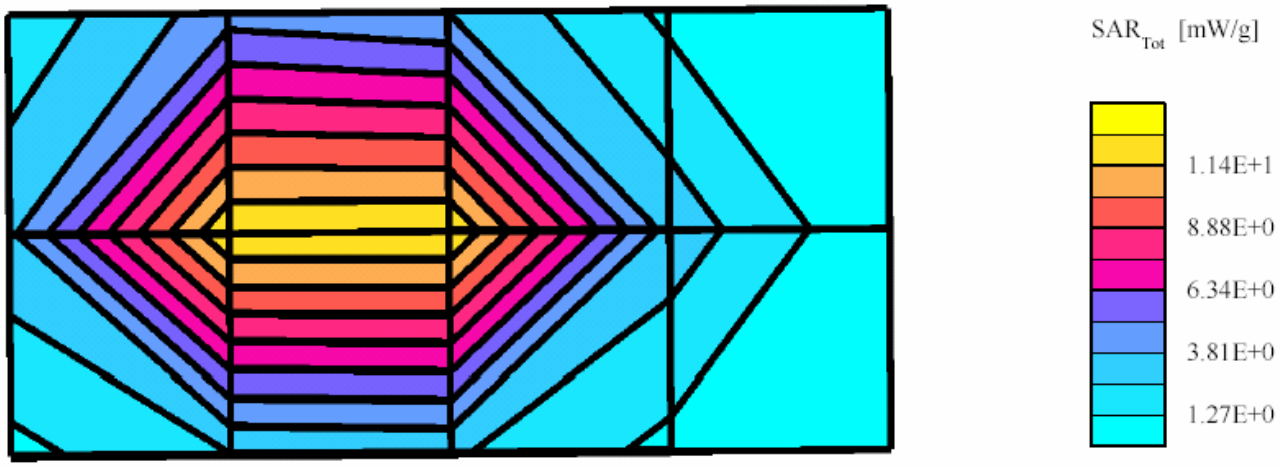
SAM Phantom; Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(5.00,5.00,5.00); Crest factor: 1.0; IEEE Head 2450 MHz: σ = 1.81 mho/m ε = 37.6 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Cubes (2): Peak: 27.4 mW/g ± 0.03 dB, SAR (1g): 13.4 mW/g ± 0.04 dB, SAR (10g): 6.18 mW/g ± 0.05 dB, (Worst-case extrapolation) Penetration depth: 6.7 (6.5, 7.3) [mm]
Power drift: -0.00 dB



SPEAG 2450 MHz Dipole; Model D2450V2 SN: 704; Test Date: 3/05/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040305-01
TX Freq: 2450 MHz
Sim Tissue Temp: 20.5 (Celsius)
Start Power: 250mW

SAR target at 1W is 52.64 mW/g (1g avg, including drift)
SAR target at 1W is 24.07 mW/g (10g avg, including drift)
SAR calculated at 1W is 55.99 mW/g (1g avg). Percent from target (including drift) is + 6.36 %
SAR calculated at 1W is 25.86 mW/g (10g avg). Percent from target (including drift) is + 7.43 %

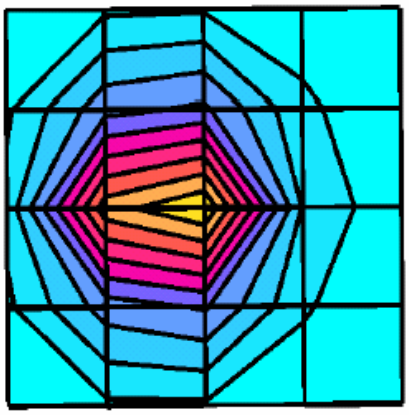
SAM - Expanded; Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(5.00,5.00,5.00); Crest factor: 1.0; IEEE Head 2450 MHz: σ = 1.79 mho/m ε = 37.6 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Cubes (2): Peak: 28.4 mW/g ± 0.03 dB, SAR (1g): 13.9 mW/g ± 0.04 dB, SAR (10g): 6.42 mW/g ± 0.04 dB, (Worst-case extrapolation) Penetration depth: 6.7 (6.5, 7.3) [mm]
Power drift: -0.03 dB

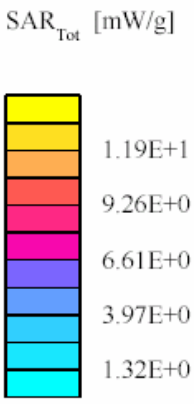


SPEAG 5200 MHz Dipole; Model D5GHzV2 SN: 1010; Test Date: 3/06/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040306-01
TX Freq: 5200 MHz
Sim Tissue Temp: 21.0 (Celsius)
Start Power: 100 mW

SAR target at 1W is 82.9 mW/g (1g avg, including drift)
Measured cube at zero degrees is 8.18 mW/g
Measured cube at ninety degrees is 8.40 mW/g
Average of cubes is 8.29 mW/g
SAR calculated at 1W is 82.90 mW/g (1g avg). Percent from target (including drift) is 0 %

SAM Phantom; Probe: EX3DV3 - SN3512;Probe Cal Date: 23/1/04ConvF(5.02,5.02,5.02); Crest factor: 1.0; IEEE Head 5200MHz: σ = 4.70 mho/m ε = 34.9 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Power drift: -0.00 dB

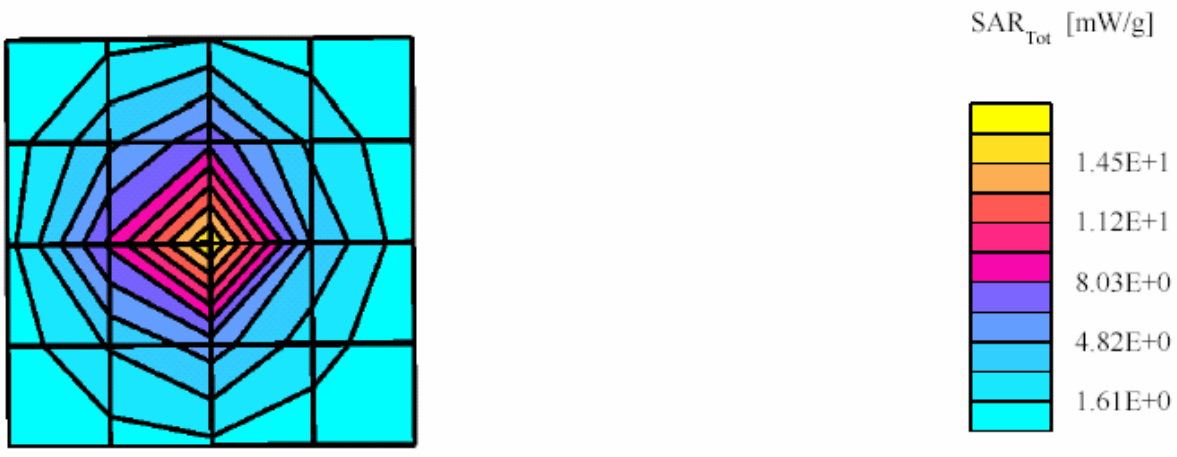




SPEAG 5200 MHz Dipole; Model D5GHzV2 SN: 1010; Test Date: 3/10/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040310-01
TX Freq: 5200 MHz
Sim Tissue Temp: 21.0 (Celsius)
Start Power: 100 mW

SAR target at 1W is 82.9 mW/g (1g avg, including drift)
Measured cube at zero degrees is 8.54 mW/g
Measured cube at ninety degrees is 8.72 mW/g
Average of cubes is 8.29 mW/g
SAR calculated at 1W is 87.30 mW/g (1g avg). Percent from target (including drift) is + 5.31 %

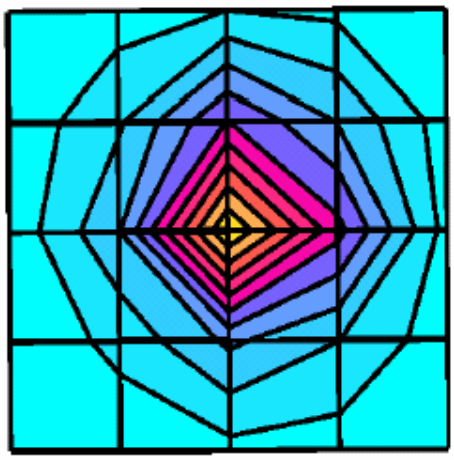
SAM - Expanded; Probe: EX3DV3 - SN3512;Probe Cal Date: 23/1/04ConvF(5.02,5.02,5.02); Crest factor: 1.0; IEEE Head 5200MHz: σ = 4.81 mho/m ε = 35.1 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Power drift: -0.05 dB



SPEAG 5200 MHz Dipole; Model D5GHzV2 SN: 1010; Test Date: 3/11/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040311-01
TX Freq: 5200 MHz
Sim Tissue Temp: 20.5 (Celsius)
Start Power: 100 mW

SAR target at 1W is 82.9 mW/g (1g avg, including drift)
Measured cube at zero degrees is 8.57 mW/g
Measured cube at ninety degrees is 8.57 mW/g
Average of cubes is 8.57 mW/g
SAR calculated at 1W is 80.72 mW/g (1g avg). Percent from target (including drift) is - 2.63 %

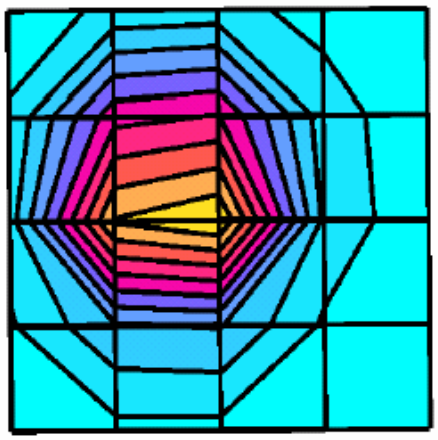
SAM Phantom; Probe: EX3DV3 - SN3512;Probe Cal Date: 23/1/04ConvF(5.02,5.02,5.02); Crest factor: 1.0; IEEE Head 5200MHz: σ = 4.82 mho/m ε = 34.6 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Power drift: 0.26 dB

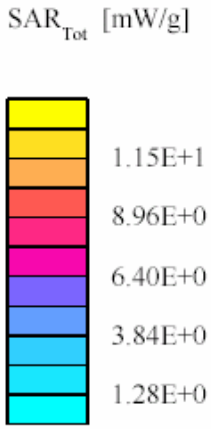


SPEAG 5200 MHz Dipole; Model D5GHzV2 SN: 1010; Test Date: 3/12/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040312-01
TX Freq: 5200 MHz
Sim Tissue Temp: 20.7 (Celsius)
Start Power: 100 mW

SAR target at 1W is 82.9 mW/g (1g avg, including drift)
Measured cube at zero degrees is 8.60 mW/g
Measured cube at ninety degrees is 8.68 mW/g
Average of cubes is 8.64 mW/g
SAR calculated at 1W is 87.60 mW/g (1g avg). Percent from target (including drift) is + 5.67 %

SAM - Expanded; Probe: EX3DV3 - SN3512;Probe Cal Date: 23/1/04ConvF(5.02,5.02,5.02); Crest factor: 1.0; IEEE Head 5200MHz: σ = 4.71 mho/m ε = 34.5 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Power drift: -0.06 dB

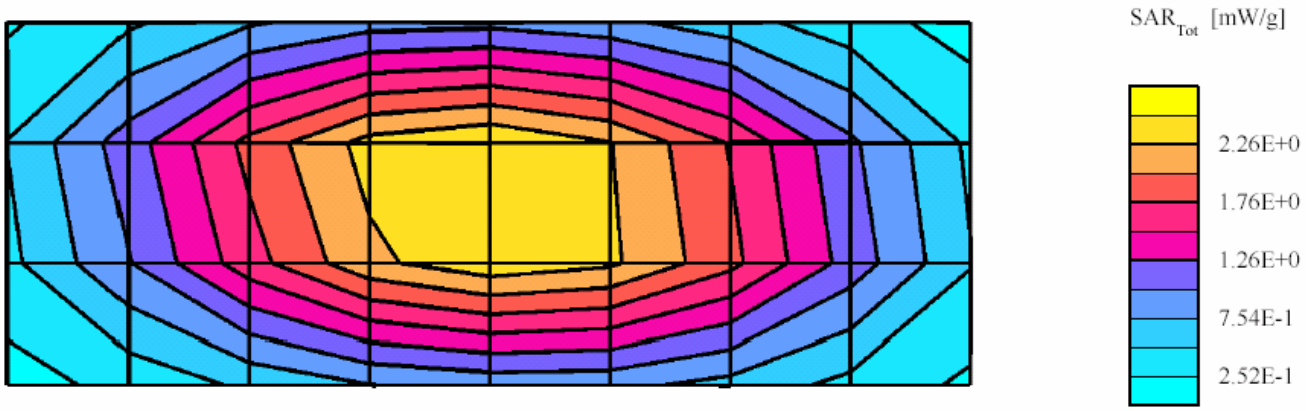




SPEAG 900 MHz Dipole; Model D900V2 SN: 85; Test Date: 3/13/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040313-01
TX Freq: 900 MHz
Sim Tissue Temp: 21.0 (Celsius)
Start Power; 250mW

SAR target at 1W is 11.17 mW/g (1g avg, including drift)
SAR target at 1W is 7.11 mW/g (10g avg, including drift)
SAR calculated at 1W is 11.32 mW/g (1g avg). Percent from target (including drift) is + 1.34 %
SAR calculated at 1W is 7.20 mW/g (10g avg). Percent from target (including drift) is + 1.27 %

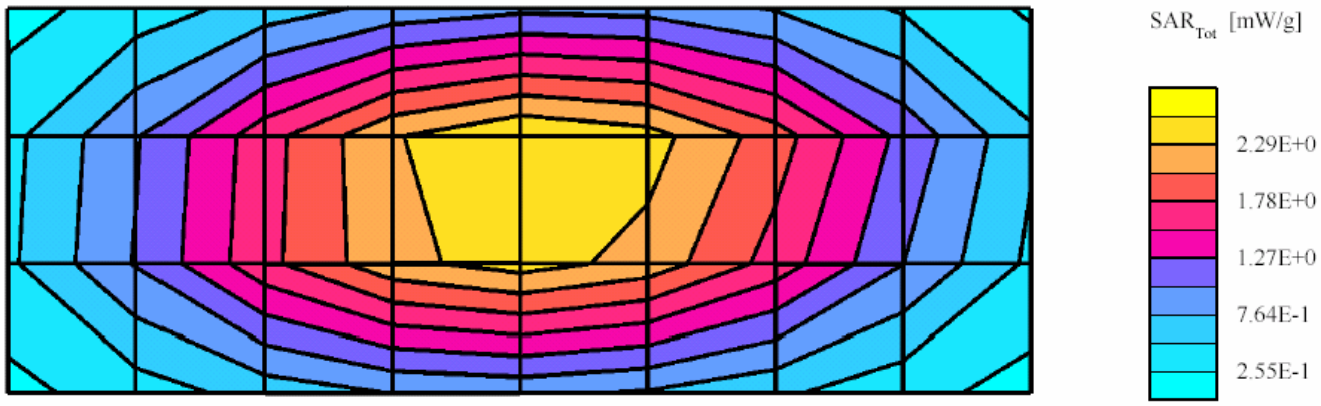
Flat Phantom; Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(6.50,6.50,6.50); Crest factor: 1.0; FCC Body 900 MHz: σ = 1.02 mho/m ε = 54.1 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Cubes (2): Peak: 4.43 mW/g ± 0.03 dB, SAR (1g): 2.83 mW/g ± 0.03 dB, SAR (10g): 1.80 mW/g ± 0.03 dB, (Worst-case extrapolation) Penetration depth: 12.1 (11.1, 13.5) [mm]
Power drift: 0.00 dB



SPEAG 900 MHz Dipole; Model D900V2 SN: 85; Test Date: 3/14/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040314-01
TX Freq: 900 MHz
Sim Tissue Temp: 20.9 (Celsius)
Start Power; 250mW

SAR target at 1W is 11.17 mW/g (1g avg, including drift)
SAR target at 1W is 7.11 mW/g (10g avg, including drift)
SAR calculated at 1W is 11.33 mW/g (1g avg). Percent from target (including drift) is + 1.45 %
SAR calculated at 1W is 7.23 mW/g (10g avg). Percent from target (including drift) is + 1.73 %

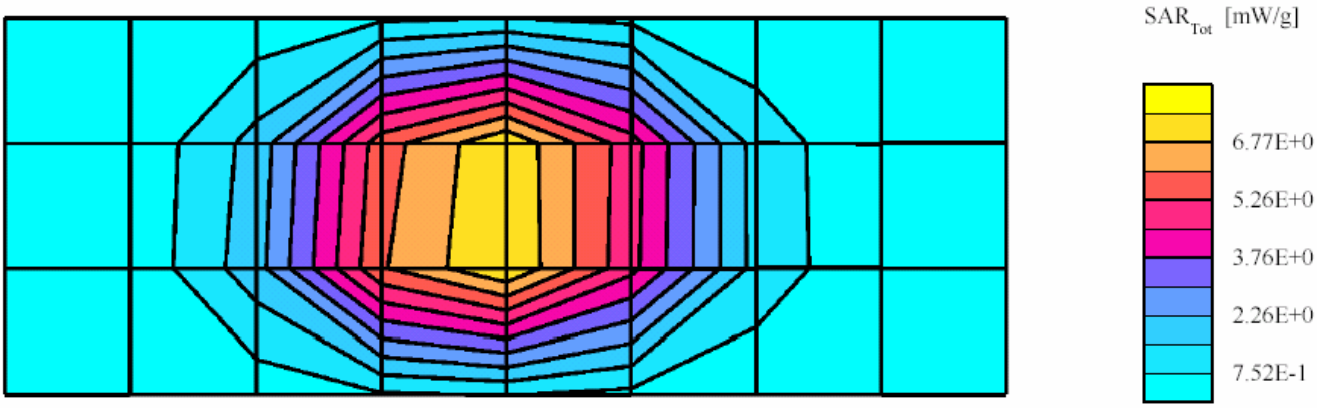
Flat Phantom; Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(6.50,6.50,6.50); Crest factor: 1.0; FCC Body 900 MHz: σ = 1.02 mho/m ε = 54.1 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Cubes (2): Peak: 4.40 mW/g ± 0.05 dB, SAR (1g): 2.82 mW/g ± 0.05 dB, SAR (10g): 1.80 mW/g ± 0.04 dB, (Worst-case extrapolation) Penetration depth: 12.3 (11.3, 13.6) [mm]
Power drift: -0.02 dB



SPEAG 1800 MHz Dipole; Model D1800V2 SN: 278; Test Date: 3/15/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040315-01
TX Freq: 1800 MHz
Sim Tissue Temp: 20.3 (Celsius)
Start Power; 250mW

SAR target at 1W is 36.69 mW/g (1g avg, including drift)
SAR target at 1W is 19.61 mW/g (10g avg, including drift)
SAR calculated at 1W is 40.00 mW/g (1g avg). Percent from target (including drift) is + 9.02 %
SAR calculated at 1W is 21.00 mW/g (10g avg). Percent from target (including drift) is + 7.09 %

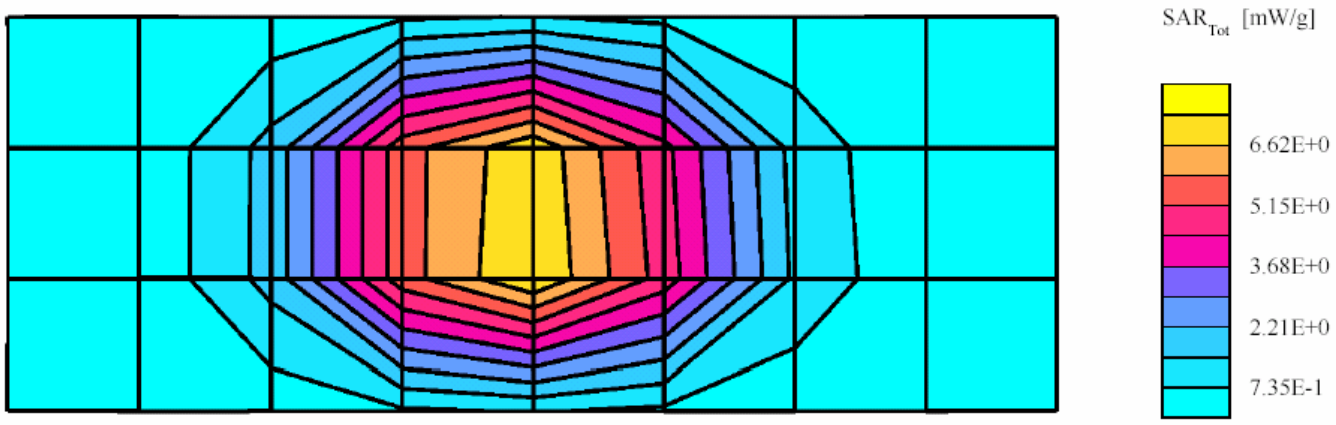
Flat Phantom; Device Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(5.00,5.00,5.00); Crest factor: 1.0; FCC Body 1800 MHz: σ = 1.51 mho/m ε = 53.5 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Cubes (2): Peak: 18.3 mW/g ± 0.04 dB, SAR (1g): 10.0 mW/g ± 0.04 dB, SAR (10g): 5.25 mW/g ± 0.03 dB, (Worst-case extrapolation) Penetration depth: 8.9 (8.3, 9.9) [mm]
Power drift: 0.00 dB



SPEAG 1800 MHz Dipole; Model D1800V2 SN: 278; Test Date: 3/16/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040316-01
TX Freq: 1800 MHz
Sim Tissue Temp: 20.3 (Celsius)
Start Power; 250mW

SAR target at 1W is 36.69 mW/g (1g avg, including drift)
SAR target at 1W is 19.61 mW/g (10g avg, including drift)
SAR calculated at 1W is 39.28 mW/g (1g avg). Percent from target (including drift) is + 7.06 %
SAR calculated at 1W is 20.44 mW/g (10g avg). Percent from target (including drift) is + 4.23%

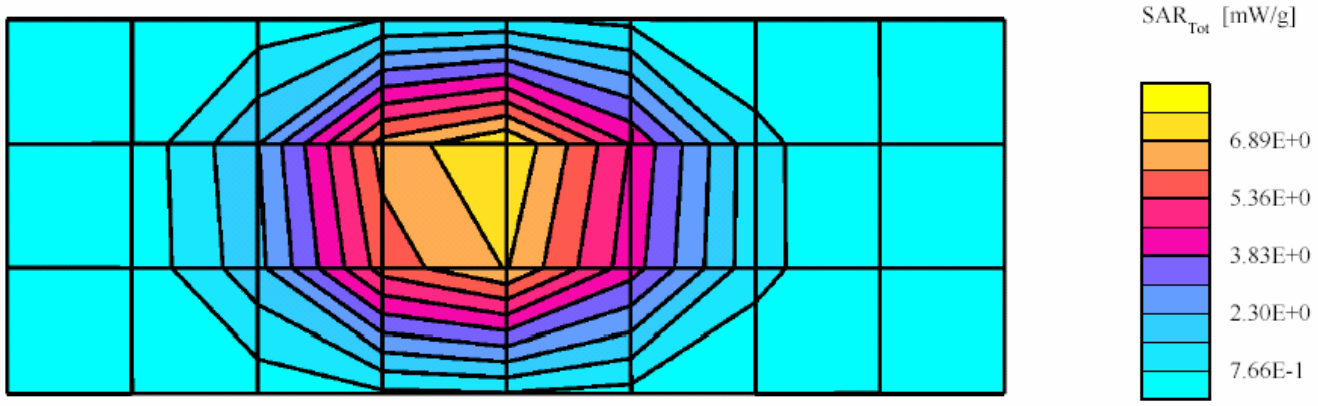
Flat Phantom; Device Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(5.00,5.00,5.00); Crest factor: 1.0; FCC Body 1800 MHz: σ = 1.48 mho/m ε = 51.3 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Cubes (2): Peak: 17.9 mW/g ± 0.01 dB, SAR (1g): 9.74 mW/g ± 0.02 dB, SAR (10g): 5.10 mW/g ± 0.02 dB, (Worst-case extrapolation) Penetration depth: 8.8 (8.3, 9.9) [mm]
Power drift: 0.00 dB



SPEAG 1800 MHz Dipole; Model D1800V2 SN: 278; Test Date: 3/17/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040317-01
TX Freq: 1800 MHz
Sim Tissue Temp: 20.4 (Celsius)
Start Power; 250mW

SAR target at 1W is 36.69 mW/g (1g avg, including drift)
SAR target at 1W is 19.61 mW/g (10g avg, including drift)
SAR calculated at 1W is 39.72 mW/g (1g avg). Percent from target (including drift) is + 8.27 %
SAR calculated at 1W is 20.79 mW/g (10g avg). Percent from target (including drift) is + 6.02%

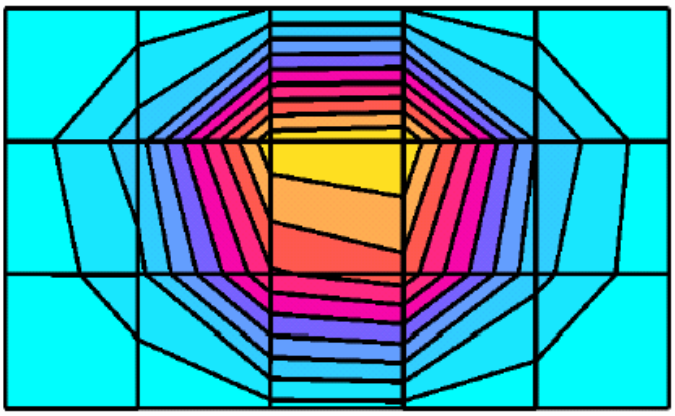
Flat Phantom; Device Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(5.00,5.00,5.00); Crest factor: 1.0; FCC Body 1800 MHz: σ = 1.49 mho/m ε = 51.3 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Cubes (2): Peak: 18.0 mW/g ± 0.02 dB, SAR (1g): 9.84 mW/g ± 0.03 dB, SAR (10g): 5.15 mW/g ± 0.03 dB, (Worst-case extrapolation) Penetration depth: 8.9 (8.3, 9.9) [mm]
Power drift: -0.04 dB



SPEAG 2450 MHz Dipole; Model D2450V2 SN: 704; Test Date: 3/18/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040318-01
TX Freq: 2450 MHz
Sim Tissue Temp: 22.5 (Celsius)
Start Power: 250mW

SAR target at 1W is 51.32 mW/g (1g avg, including drift)
SAR target at 1W is 23.73 mW/g (10g avg, including drift)
SAR calculated at 1W is 48.19 mW/g (1g avg). Percent from target (including drift) is -6.10 %
SAR calculated at 1W is 22.38 mW/g (10g avg). Percent from target (including drift) is -5.69 %

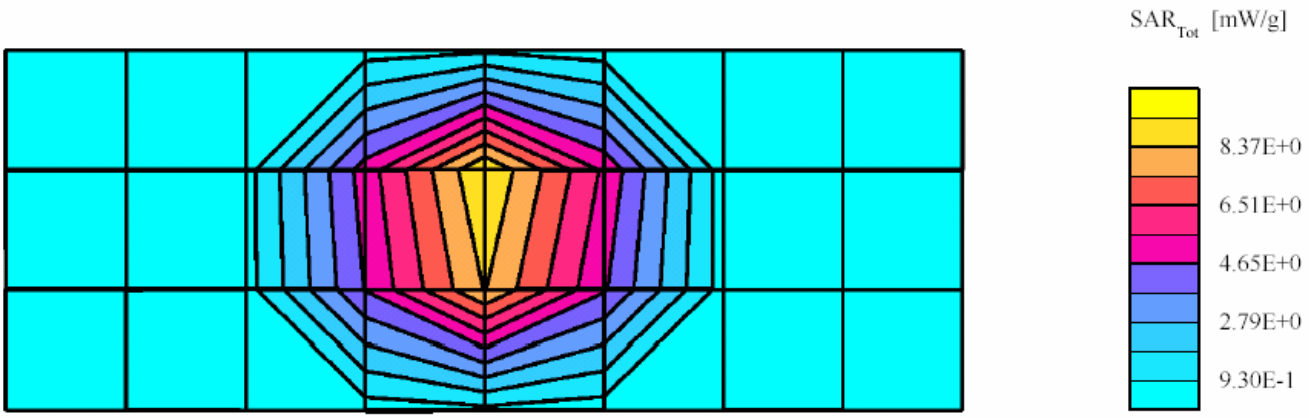
Flat Phantom; Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(4.80,4.80,4.80); Crest factor: 1.0; FCC Body 2450MHz: σ = 1.92 mho/m ε = 51.9 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Cubes (2): Peak: 23.7 mW/g ± 0.01 dB, SAR (1g): 11.8 mW/g ± 0.01 dB, SAR (10g): 5.48 mW/g ± 0.02 dB, (Worst-case extrapolation) Penetration depth: 7.5 (7.1, 8.4) [mm]
Power drift: -0.09 dB



SPEAG 5200 MHz Dipole; Model #: D2450V2 SN: 704; Test Date: 3/19/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040319-01
TX Freq: 2450 MHz
Sim Tissue Temp: 20.6 (Celsius)
Start Power: 250mW

SAR target at 1W is 51.32 mW/g (1g avg, including drift)
SAR target at 1W is 23.73 mW/g (10g avg, including drift)
SAR calculated at 1W is 50.45 mW/g (1g avg). Percent from target (including drift) is - 1.69 %
SAR calculated at 1W is 23.40 mW/g (10g avg). Percent from target (including drift) is - 1.40 %

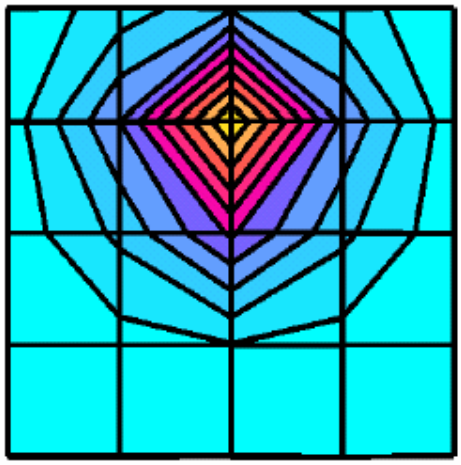
Flat Phantom; Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(4.80,4.80,4.80); Crest factor: 1.0; FCC Body 2450MHz: σ = 2.00 mho/m ε = 52.5 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Cubes (2): Peak: 25.6 mW/g ± 0.06 dB, SAR (1g): 12.7 mW/g ± 0.06 dB, SAR (10g): 5.89 mW/g ± 0.05 dB, (Worst-case extrapolation) Penetration depth: 7.2 (6.9, 8.1) [mm]
Power drift: 0.03 dB



SPEAG 5200 MHz Dipole; Model D5GHzV2 SN: 1010; Test Date: 3/20/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040320-01
TX Freq: 5200 MHz
Sim Tissue Temp: 20.6 (Celsius)
Start Power: 100mW

SAR target at 1W is 80.82 mW/g (1g avg, including drift)
Measured cube at zero degrees is 8.62 mW/g
Measured cube at ninety degrees is 8.69 mW/g
Average of cubes is 8.655 mW/g
SAR calculated at 1W is 82.85 mW/g (1g avg). Percent from target (including drift) is + 2.51 %

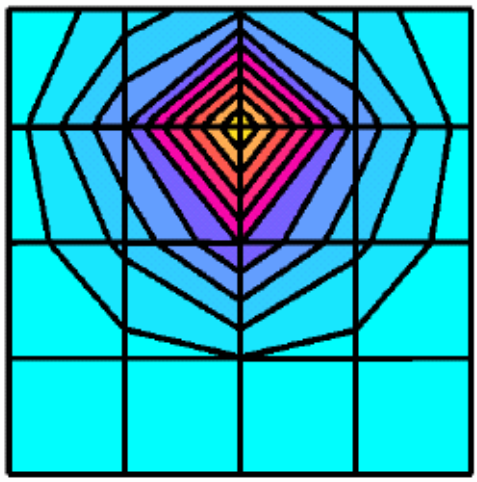
Flat Phantom; Probe: EX3DV3 - SN3512;Probe Cal Date: 23/1/04ConvF(4.25,4.25,4.25); Crest factor: 1.0; FCC Body 5200 MHz: σ = 5.53 mho/m ε = 47.1 ρ =1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Power drift: 0.19 dB



SPEAG 5200 MHz Dipole; Model D5GHzV2 SN: 1010; Test Date: 3/21/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040321-01
TX Freq: 5200 MHz
Sim Tissue Temp: 20.6 (Celsius)
Start Power: 100mW

SAR target at 1W is 80.82 mW/g (1g avg, including drift)
Measured cube at zero degrees is 8.54 mW/g
Measured cube at ninety degrees is 8.66 mW/g
Average of cubes is 8.60 mW/g
SAR calculated at 1W is 82.32 mW/g (1g avg). Percent from target (including drift) is + 1.85 %

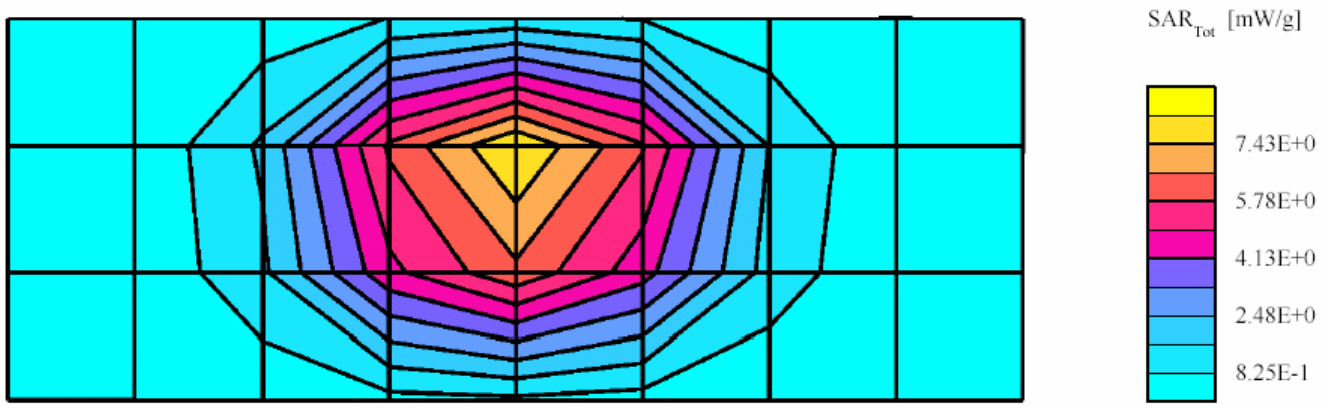
Flat Phantom; Probe: EX3DV3 - SN3512;Probe Cal Date: 23/1/04ConvF(4.25,4.25,4.25); Crest factor: 1.0; FCC Body 5200 MHz: σ = 5.48 mho/m ε = 46.8 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Power drift: 0.19 dB



SPEAG 1800 MHz Dipole; Model D1800V2 SN: 278; Test Date: 3/22/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040322-01
TX Freq: 1800 MHz
Sim Tissue Temp: 20.9 (Celsius)
Start Power; 250mW

SAR target at 1W is 36.69 mW/g (1g avg, including drift)
SAR target at 1W is 19.61 mW/g (10g avg, including drift)
SAR calculated at 1W is 38.66 mW/g (1g avg). Percent from target (including drift) is + 5.37 %
SAR calculated at 1W is 20.51 mW/g (10g avg). Percent from target (including drift) is + 4.57 %

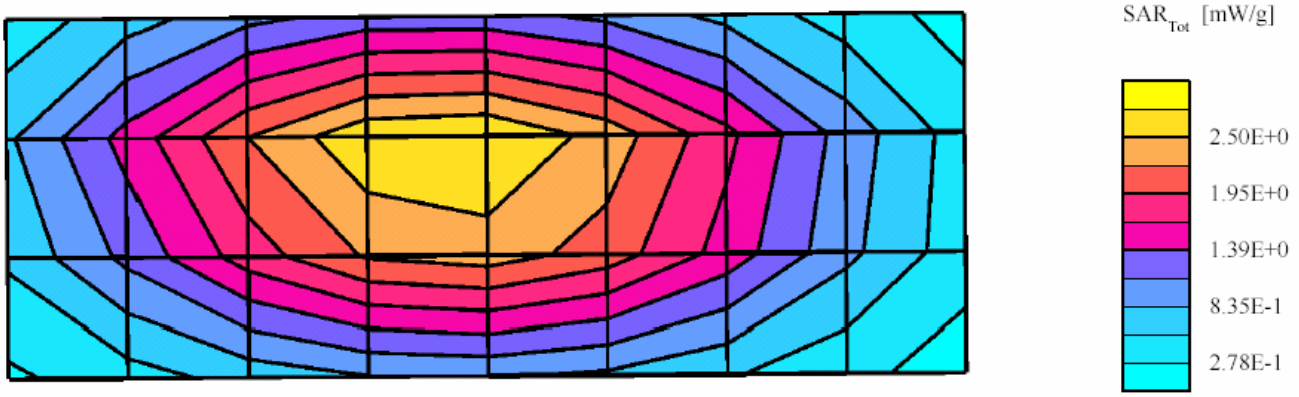
Flat Phantom; Device Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(5.00,5.00,5.00); Crest factor: 1.0; FCC Body 1800 MHz: σ = 1.48mho/m ε = 51.3 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Cubes (2): Peak: 17.6 mW/g ± 0.02 dB, SAR (1g): 9.71 mW/g ± 0.01 dB, SAR (10g): 5.15 mW/g ± 0.04 dB, (Worst-case extrapolation) Penetration depth: 9.1 (8.5, 10.1) [mm]
Power drift: 0.02 dB



SPEAG 900 MHz Dipole; Model D900V2 SN: 85; Test Date: 3/22/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040322-04
TX Freq: 900 MHz
Sim Tissue Temp: 20.6 (Celsius)
Start Power; 250mW

SAR target at 1W is 12.00 mW/g (1g avg, including drift)
SAR target at 1W is 7.52 mW/g (10g avg, including drift)
SAR calculated at 1W is 11.63 mW/g (1g avg). Percent from target (including drift) is - 3.05 %
SAR calculated at 1W is 7.28 mW/g (10g avg). Percent from target (including drift) is - 3.24 %

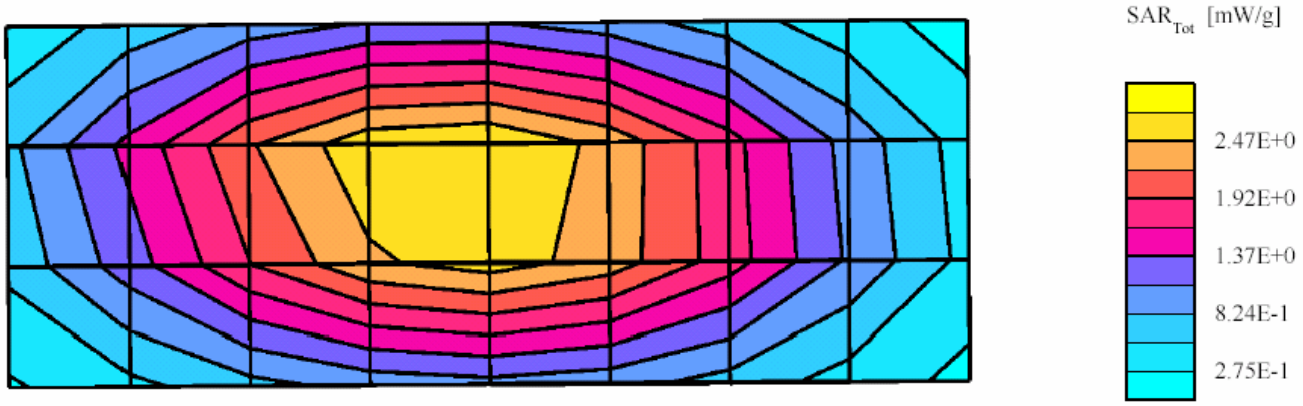
SAM - Expanded; Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(6.60,6.60,6.60); Crest factor: 1.0; IEEE Head 900 MHz : σ = 1.00 mho/m ε = 40.3 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Cubes (2): Peak: 4.77 mW/g ± 0.02 dB, SAR (1g): 2.99 mW/g ± 0.02 dB, SAR (10g): 1.87 mW/g ± 0.01 dB, (Worst-case extrapolation) Penetration depth: 11.3 (10.5, 12.4) [mm]
Power drift: 0.12 dB



SPEAG 900 MHz Dipole; Model D900V2 SN: 85; Test Date: 3/24/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040324-01
TX Freq: 900 MHz
Sim Tissue Temp: 20.9 (Celsius)
Start Power; 250mW

SAR target at 1W is 12.00 mW/g (1g avg, including drift)
SAR target at 1W is 7.52 mW/g (10g avg, including drift)
SAR calculated at 1W is 12.26 mW/g (1g avg). Percent from target (including drift) is + 2.15 %
SAR calculated at 1W is 7.63 mW/g (10g avg). Percent from target (including drift) is + 1.48 %

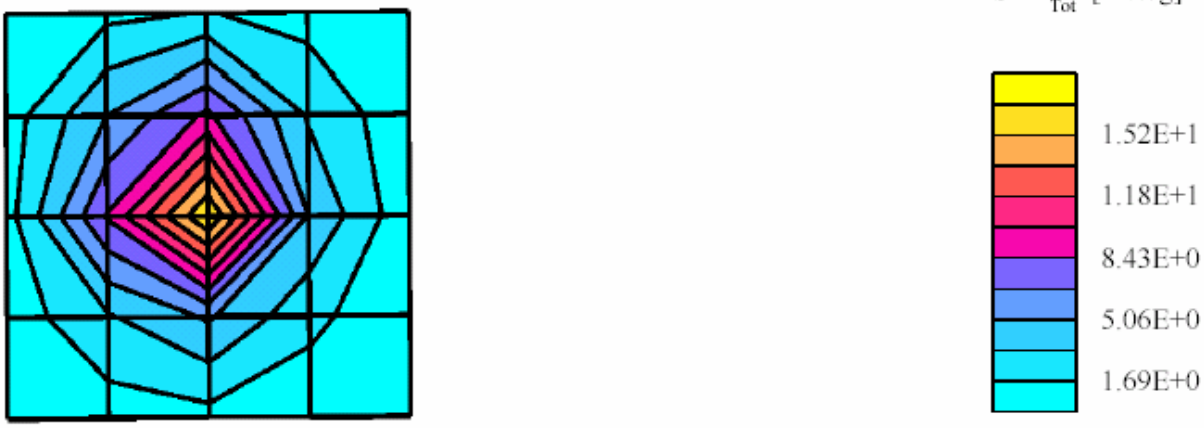
SAM - Expanded; Probe: ET3DV6 - SN1384(Cal Date 05-15-2003);Probe Cal Date: 15/05/03ConvF(6.60,6.60,6.60); Crest factor: 1.0; IEEE Head 900 MHz : σ = 1.01mho/m ε = 41.1 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003 Cubes (2): Peak: 4.98 mW/g ± 0.02 dB, SAR (1g): 3.10 mW/g ± 0.02 dB, SAR (10g): 1.93 mW/g ± 0.02 dB, (Worst-case extrapolation) Penetration depth: 11.1 (10.3, 12.3) [mm]
Power drift: 0.05 dB



SPEAG 5200 MHz Dipole; Model D5GHzV2 SN: 1010; Test Date: 3/24/04
Motorola CGISS EME Lab
Run #: Sys Perf-R1-040324-09
TX Freq: 5200 MHz
Sim Tissue Temp: 20.9 (Celsius)
Start Power: 100 mW

SAR target at 1W is 82.9 mW/g (1g avg, including drift)
Measured cube at zero degrees is 8.98 mW/g
Measured cube at ninety degrees is 9.07 mW/g
Average of cubes is 9.025 mW/g
SAR calculated at 1W is 89.63 mW/g (1g avg). Percent from target (including drift) is + 8.12 %

SAM - Expanded; Probe: EX3DV3 - SN3512;Probe Cal Date: 23/1/04ConvF(5.02,5.02,5.02); Crest factor: 1.0; IEEE Head 5200MHz: σ = 4.72 mho/m ε = 34.4 ρ = 1.00 g/cm3; DAE3: SN363-V1 DAE Cal Date: 05/13/2003
Power drift: 0.03 dB



SYSTEM VALIDATION

Date:	12/16/2003	Frequency (MHz):	900
Lab Location:	CGISS	Mixture Type:	IEEE Head
Robot System:	CGISS-3	Ambient Temp.(°C):	22.8
Probe Serial #:	ET3DV6-1393	Tissue Temp.(°C):	20.9
DAE Serial #:	406		

Tissue Characteristics

Permitivity:	41.5	Phantom Type/SN:	SAMTP1208
Conductivity:	1.00	Distance (mm):	15 (tissue/dipole cnt)

Reference Source:	900V2 (Dipole)
Reference SN:	85

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

Target SAR Value: (normalized to 1.0 W)	10.8	mW/g,	6.9	mW/g (10g avg.)
Measured SAR Value:	3	mW/g,	1.88	mW/g (10g avg.)
Power Drift:	0	dB		
Measured SAR Value: (normalized to 1.0 W, including drift)	12.00	mW/g,	7.52	mW/g (10g avg.)

Percent Difference From Target (MUST be within System Uncertainty):	11.11	% (1g ave)
	8.99	% (10g ave)

Test performed by: Edward R. Church Initial: E. C

SPEAG DIPOLE D900V2; Test date:12/16/03

Run #: Sys Val-R3-031216-03
Model #: D900V2
Robot: CGISS-3
TX Freq: 900 MHz
Start Power; 250mW
DAE3: SN: 406

Phantom #:SAMTP1208
SN: 085
Tester: E. Church
Sim Tissue Temp; 20.9 (Celsius)

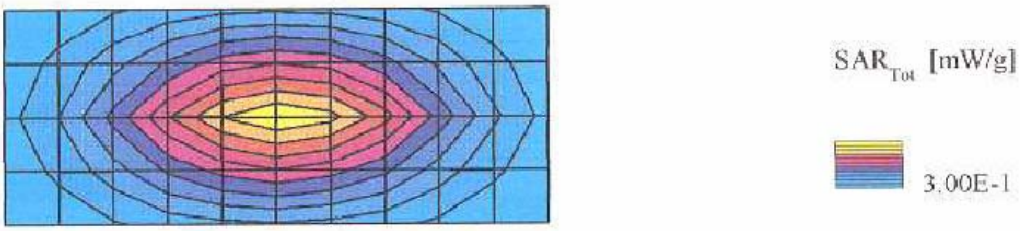
DAE Cal Date: 11/20/03

- Comments-

IEEE 1528 Target at 1W is 10.04 mW/g (1g) and 6.9 mW/g (10g avg.)

SAR calculated 1g is 11.96 mW/g percet from target (including drift) + 10.74 %
SAR Calculated 10g is 7.52 mW/g Percent from target (including drift) is + 8.99 %

SAM; Probe: ET3DV6 - SN1393 (Cal Date 16 April 2003) ; ConvF(7.00,7.00,7.00); Crest factor: 1.0; IEEE Head 900 MHz. υ – 1.00 mho/m ε_r = 41.5 ρ = 1.00 g/cm^3
Cubes (2): Peak: 4.78 mW/g ± 0.04 dB, SAR (1g): 3.00 mW/g ± 0.04 dB, SAR (10g): 1.88 mW/g ± 0.05 dB, (Worst-case extrapolation)
Penetration depth: 11.2 (10.5, 12.3) [mm]
Powerdrift: 0.00 dB



SYSTEM PERFORMANCE CHECK TARGET SAR

Date:	12/16/2003	Frequency (MHz):	900
Lab Location:	CGISS	Mixture Type:	FCC Body
Robot System:	CGISS-3	Ambient Temp.(°C):	22.7
Probe Serial #:	ET3DV6-1393	Tissue Temp.(°C):	21
DAE Serial #:	406		

Tissue Characteristics

Permitivity:	52.6	Phantom Type/SN:	80302002A-S8
Conductivity:	1.03	Distance (mm):	15 (tissue/dipole cnt)

Reference Source:	900	(Dipole)
Reference SN:	85	

Power to Dipole: 250 mW

Measured SAR Value:	2.78	mW/g,	1.77	mW/g (10g avg.)
Power Drift:	-0.02	dB		

New Target/Measured SAR Value: (normalized to 1.0 W, including drift)	11.17	mW/g,	7.11	mW/g (10g avg.)

Test performed by: Edward R. Church Initial: E. C

SPEAG DIPOLE D900V2; Test date:12/16/03

Run #: Sys Perf-R3-031216-06
Model #: D900V2
Robot: CGISS-3
TX Freq: 900 MHz
Start Power; 250mW
DAE3: SN: 406

Phantom #:80302002A-S8
SN: 085
Tester: E. Church
Sim Tissue Temp: 21.0 (Celsius)

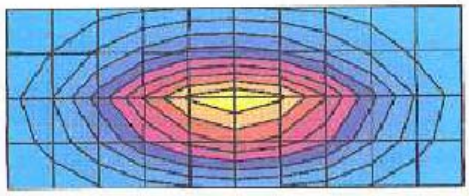
DAE Cal Date: 11/20/03

- Comments-

New Target at 1W is calc SAR values 11.17 mW/g (1g) and 7.11 mW/g (10g avg.)

SAR calculated 1g is 11.17 mW/g percet from target (including drift) 0 %
SAR Calculated 10g is 7.11 mW/g Percent from target (including drift) is 0 %

Flat; Probe: ET3DV6 - SN1393 (Cal Date 16 April 2003) ; ConvF(6.80,6.80,6.80); Crest factor: 1.0; FCC Body 900MHz: σ = 1.03 mho/m ε_r = 52.6 ρ = 1.00 g/cm^3
Cubes (2): Peak: 4.34 mW/g ± 0.03 dB, SAR (1g): 2.78 mW/g ± 0.03 dB, SAR (10g): 1.77 mW/g ± 0.03 dB, (Worst-case extrapolation)
Penetration depth: 12.1 (11.2, 13.3) [mm]
Powerdrift: -0.02 dB



SYSTEM VALIDATION

Date:	09/04/2003	Frequency (MHz):	1800
Lab Location:	CGISS	Mixture Type:	1800-IEEE Head
Robot System:	CGISS-3	Ambient Temp.(°C):	23.0
Probe Serial #:	1393	Tissue Temp.(°C):	20.9
DAE Serial #:	DAE3V1 SN374		

Tissue Characteristics		Phantom Type/SN:	VAL30242005B
Permitivity:	38.3	Distance (mm):	10
Conductivity:	1.38		

Reference Source: Dipole (Dipole/Handset)
Reference SN: 278

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

Target SAR Value: 38.1 mW/g, 19.8 mW/g (10g avg.)
(normalized to 1.0 W)

Measured SAR Value: 9.30 mW/g, 4.93 mW/g (10g avg.)
Power Drift: -0.14 dB

Measured SAR Value: 38.42 mW/g, 20.37 mW/g (10g avg.)
(normalized to 1.0 W,
with drift compensation)

Percent Difference From Target (must be within System Uncertainty): +0.84 % (1g avg)
+2.86 % (10g avg)

Test performed by: Dave Hopper Initial: 

SPEAG DIPOLE D1800V2; Test date:09/04/03

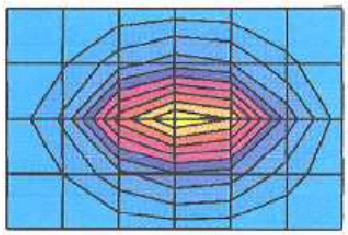
Run #: Sys Val-R3-0300904-01 Phantom # : VAL30242005B/S9
Model #: D1800V2 SN:278
Robot: CGISS-3 Tester: Dave Hopper
TX Freq: 1800 MHz Sim Tissue Temp: 20.9 (Celsius)
Start Power; 250mW
DAE3: SN:374 DAE Cal Date: 02/19/03

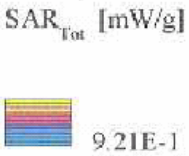
- Comments-

IEEE Target at 1W is 38.1 mW/g and 19.8 mW/g (10g avg.)

SAR calculated 1g is 38.42 mW/g percent from target (including drift) +0.84 %
SAR Calculated 10g is 20.37 mW/g Percent from target (including drift) is +2.86%

Flat; Probe: ET3DV6 - SN1393 (Cal Date 16 April 2003) ; ConvF(5.50,5.50,5.50); Crest factor: 1.0; Head Glycol 1800 MHz: $\sigma = 1.38$ mho/m $\varepsilon_r = 38.3$ $\rho = 1.00$ g/cm^3
Cubes (2): Peak: 16.8 mW/g ± 0.01 dB, SAR (1g): 9.30 mW/g ± 0.03 dB, SAR (10g): 4.93 mW/g ± 0.03 dB, (Worst-case extrapolation)
Penetration depth: 8.5 (8.2, 9.1) [mm]
Powerdrift: -0.14 dB





SYSTEM PERFORMANCE CHECK TARGET SAR

Date:	09/04/2003	Frequency (MHz):	1800
Lab Location:	CGISS	Mixture Type:	1800-FCC Body
Robot System:	CGISS-3	Ambient Temp.(°C):	23.2
Probe Serial #:	1393	Tissue Temp.(°C):	20.9
DAE Serial #:	DAE3V1 SN374		

Tissue Characteristics		Phantom Type/SN:	40302002B/S9
Permitivity:	51.2	Distance (mm):	10
Conductivity:	1.47		

Reference Source:	Dipole (Dipole)
Reference SN:	278
Power to Dipole:	250 mW

Measured SAR Value:	9.13 mW/g,	4.88 mW/g (10g avg.)
Power Drift:	-0.02 dB	

New Target/Measured SAR Value: (Normalized to 1.0 W, with drift compensation)	36.69 mW/g,	19.61 mW/g (10g avg.)

Test performed by: Dave Hopper Initial: 

SPEAG DIPOLE D1800V2; Test date:09/04/03

Run #: Sys Perf-R3-0300904-02
Model #: D1800V2
Robot: CGISS-3
TX Freq: 1800 MHz
Start Power; 250mW
DAE3: SN:374

Phantom # : 40302002B/S9
SN:278
Tester: Dave Hopper
Sim Tissue Temp: 20.9 (Celsius)

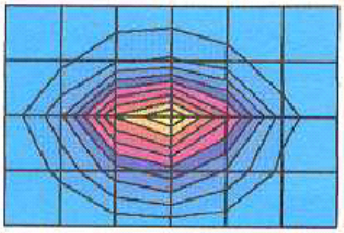
DAE Cal Date: 02/19/03

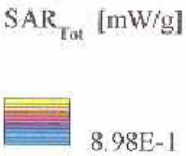
- Comments-

Body New Targets are as follows:

SAR calculated 1g is 36.69 mW/g
SAR Calculated 10g is 19.61 mW/g

Flat; Probe: ET3DV6 - SN1393 (Cal Date 16 April 2003) ; ConvF(5.10,5.10,5.10); Crest factor: 1.0; FCC Body 1800MHz: $\sigma = 1.47$ mho/m $\varepsilon_r = 51.2$ $\rho = 1.00$ g/cm^3
Cubes (2): Peak: 16.3 mW/g ± 0.01 dB, SAR (1g): 9.13 mW/g ± 0.03 dB, SAR (10g): 4.88 mW/g ± 0.04 dB, (Worst-case extrapolation)
Penetration depth: 9.0 (8.5, 10.0) [mm]
Powerdrift: -0.02 dB





SYSTEM VALIDATION

Date:	09/04/2003	Frequency (MHz):	1900
Lab Location:	CGISS	Mixture Type:	1900-IEEE Head
Robot System:	CGISS-3	Ambient Temp.(°C):	23.1
Probe Serial #:	1393	Tissue Temp.(°C):	20.9
DAE Serial #:	DAE3V1 SN374		

Tissue Characteristics		Phantom Type/SN:	VAL30242005B
Permitivity:	38.2	Distance (mm):	10
Conductivity:	1.46		

Reference Source: Dipole (Dipole/Handset)
Reference SN: 521

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

Target SAR Value: 39.7 mW/g, 20.5 mW/g (10g avg.)
(normalized to 1.0 W)

Measured SAR Value: 10.05 mW/g, 5.47 mW/g (10g avg.)
Power Drift: -0.01 dB

Measured SAR Value: 42.10 mW/g, 21.93 mW/g (10g avg.)
(normalized to 1.0 W,
with drift compensation)

Percent Difference From Target (must be within System Uncertainty): + 6.04 % (1g avg)
+ 6.98 % (10g avg)

Test performed by: Dave Hopper Initial: 

SPEAG DIPOLE D1900V2; Test date:09/04/03

Run #: Sys Val-R3-0300904-03
Model #: D1900V2
Robot: CGISS-3
TX Freq: 1900 MHz
Start Power; 250mW
DAE3: SN:374

Phantom # : VAL30242005B/S9
SN: 521
Tester: Dave Hopper
Sim Tissue Temp: 20.9 (Celsius)

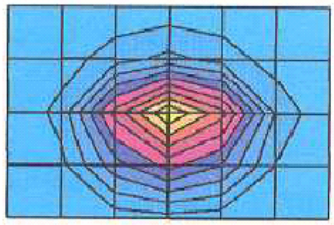
DAE Cal Date: 02/19/03

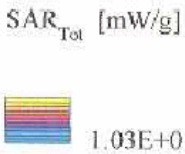
- Comments-

IEEE Target at 1W is 39.7 mW/g and 20.5 mW/g (10g avg.)

SAR calculated 1g is 42.10 mW/g percent from target (including drift) +6.04 %
SAR Calculated 10g is 21.93 mW/g Percent from target (including drift) is +6.98 %

Flat; Probe: ET3DV6 - SN1393 (Cal Date 16 April 2003) ; ConvF(5.50,5.50,5.50); Crest factor: 1.0; Head Glycol 1900 MHz: σ = 1.46 mho/m ε_r = 38.2 ρ = 1.00 g/cm^3
Cubes (2): Peak: 19.4 mW/g ± 0.01 dB, SAR (1g): 10.5 mW/g ± 0.02 dB, SAR (10g): 5.47 mW/g ± 0.04 dB, (Worst-case extrapolation)
Penetration depth: 8.0 (7.8, 8.6) [mm]
Powerdrift: -0.01 dB





SYSTEM PERFORMANCE CHECK TARGET SAR

Date:	09/04/2003	Frequency (MHz):	1900
Lab Location:	CGISS	Mixture Type:	1900-FCC Body
Robot System:	CGISS-3	Ambient Temp.(°C):	23.1
Probe Serial #:	1393	Tissue Temp.(°C):	20.9
DAE Serial #:	DAE3V1 SN374		

Tissue Characteristics		Phantom Type/SN:	40302002B/S9
Permitivity:	50.9	Distance (mm):	10
Conductivity:	1.57		

Reference Source:	Dipole (Dipole)
Reference SN:	521
Power to Dipole:	250 mW

Measured SAR Value:	9.67 mW/g,	5.04 mW/g (10g avg.)
Power Drift:	-0.01 dB	

New Target/Measured SAR Value: (Normalized to 1.0 W, with drift compensation)	38.77 mW/g,	20.21 mW/g (10g avg.)

Test performed by: Dave Hopper Initial:

SPEAG DIPOLE D1900V2; Test date:09/04/03

Run #: Sys Perf-R3-0300904-04 Phantom # : 40302002B/S9
Model #: D1900V2 SN:521
Robot: CGISS-3 Tester: Dave Hopper
TX Freq: 1900 MHz Sim Tissue Temp: 20.9 (Celsius)
Start Power; 250mW
DAE3: SN:374 DAE Cal Date: 02/19/03

- Comments-

Body New Targets are as follows:

SAR calculated 1g is 38.77 mW/g
SAR Calculated 10g is 20.21 mW/g

Flat; Probe: ET3DV6 - SN1393 (Cal Date 16 April 2003) ; ConvF(5.10,5.10,5.10); Crest factor: 1.0; FCC Body 1900MHz: σ = 1.57 mho/m ε_r = 50.9 ρ = 1.00 g/cm^3
Cubes (2): Peak: 17.7 mW/g ± 0.04 dB, SAR (1g): 9.67 mW/g ± 0.01 dB, SAR (10g): 5.04 mW/g ± 0.04 dB, (Worst-case extrapolation)
Penetration depth: 8.5 (8.1, 9.4) [mm]
Powerdrift: -0.01 dB