



MOTOROLA



CGISS EME Test Laboratory

8000 West Sunrise Blvd
Fort Lauderdale, FL. 33322

S.A.R. EME Compliance Test Report

Part 2 of 2

Date of Report: August 20, 2004
Report Revision: Rev. O
Manufacturer: Motorola
Product Description: iDEN i265; 1:6, 1:3, 81:120, 1:12 TDMA; 64 QAM, 16 QAM & QPSK Modulation; 0.6 W Pulse average
FCC ID: AZ489FT5839
Device Model: H45XAN6RR4AN/NUF3975A00

Test Period: 8/2/04-8/12/04
Technician: Clint Miller (EME Technician Electronics II)
Responsible Eng: Jim Fortier (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.

Jim Fortier's Signature on file for Ken Enger

8/20/04

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

Date Approved

Note: This report shall not be reproduced without written approval from an officially designated representative of the Motorola EME Laboratory.

APPENDIX A

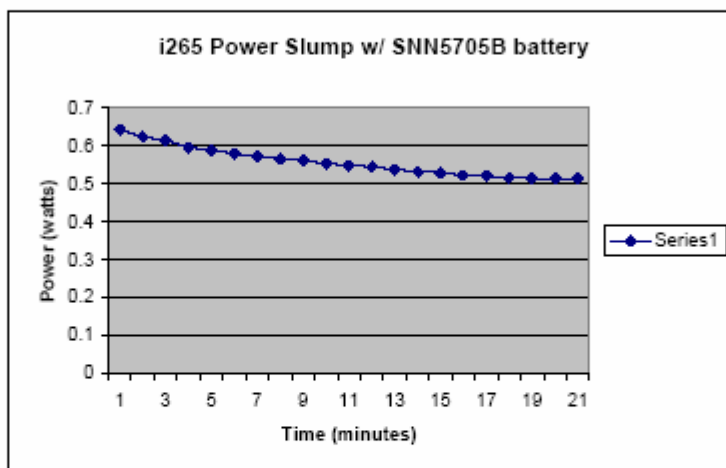
Power Slump Data/Shortened Scan

DUT Power versus time data

POWER SLUMP FOR I265 GRASSY KEY,
S/N 364YEN7JB8 at 813.5125MHz with SNN5705B Battery, DUT in 81:120 DATA mode

TIME (Minutes)	POWER (Watts)
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0	0.642
2	0.623
4	0.614
6	0.594
8	0.590
10	0.578
12	0.571
14	0.565
16	0.561
18	0.553
20	0.548
22	0.544
24	0.537
26	0.532
28	0.529
30	0.522
32	0.520
34	0.516
36	0.514
38	0.513
40	0.512



Shortened Scan Results

FCC ID: AZ489FT5839; Test Date: 8/12/04

Motorola CGISS EME Laboratory

Run #: CM-Ab-R3-040812-05

Model #: H45XAN6RR4AN/NUF3975A SN: 364YEN7JB8

TX Freq: 824.9875 MHz

Sim Tissue Temp: 18.9 (Celsius)

Start Power: 0.609 W

Antenna: In

Battery Kit: SNN5704C w/ NNTN5845A back cover

Carry Acc: NNTN5821A

Audio/Data Acc.: NONE

Shortened scan reflect highest S.A.R. producing configuration; Run time 11minutes.

Representative “normal” scan run time was 24 minutes

“Shortened” scan max calculated S.A.R. using S.A.R. drift: 1-g Avg. = 1.38mW/g; 10-g Avg. = 1.01mW/g

“Normal” scan max calculated S.A.R. using S.A.R. drift: 1-g Avg. = 1.29mW/g; 10-g Avg. = 0.94mW/g

(see section 7.1 run # CM-Ab-R3-040812-04)

DUT w/ body worn accessory against phantom

Flat Phantom; Section; Position: (90°,90°);

Probe: ET3DV6 - SN1383(Cal Date 25 Feb 2004); ConvF(5.82,5.82,5.82); Probe cal date: 25/2/04; Crest factor: 1.5; FCC

Body 813: $\sigma = 0.96$ mho/m $\epsilon_r = 54.4$ $\rho = 1.00$ g/cm³; DAE3: 401V1 DAE Cal Date: 08/21/2003

Cube 5x5x7: SAR (1g): 1.17 mW/g, SAR (10g): 0.858 mW/g, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0; SAR (1g): 1.17 mW/g, SAR (10g): 0.858 mW/g

Power Drift: -0.49 dB



APPENDIX B

Data Results

FCC ID: AZ489FT5839; Test Date: 8/5/04

Motorola CGISS EME Laboratory

Run #: JF-LEAR-R3-040805-02

Model #: H45XAN6RR4AN/NUF3975A SN: 364YEN7JB8

TX Freq: 824.9875 MHz

Sim Tissue Temp: 19.1 (Celsius)

Start Power: 0.643 W

Antenna: In

Battery Kit: SNN5705B w/ NNTN5845A back cover

Carry Acc: NONE

Audio/Data Acc.: NONE

DUT at Left ear in cheek touch position

SAM; Left Hand Section; Position: (90°,59°);

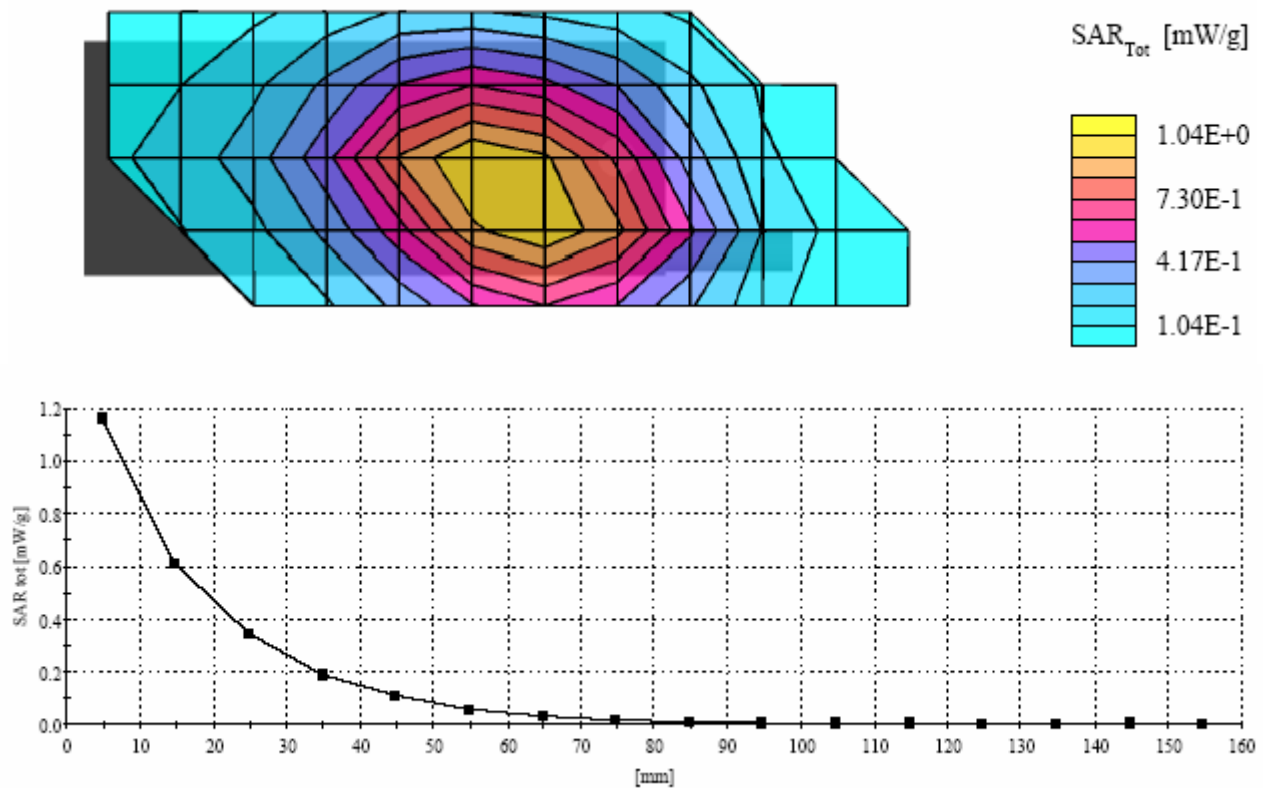
Probe: ET3DV6 - SN1383(Cal Date 25 Feb 2004); ConvF(6.30,6.30,6.30); Probe cal date: 25/2/04; Crest factor: 3.0; IEEE

Head 813 MHz: $\sigma = 0.93$ mho/m $\epsilon_r = 42.1$ $\rho = 1.00$ g/cm³; DAE3: 401V1 DAE Cal Date: 08/21/2003

Cube 7x7x7: SAR (1g): 1.14 mW/g, SAR (10g): 0.787 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 81.0, 24.0, 4.7

Power Drift: -0.08 dB



FCC ID: AZ489FT5839; Test Date: 8/5/04

Motorola CGISS EME Laboratory

Run #: CM-FACE-R3-040805-15

Model #: H45XAN6RR4AN/NUF3975A SN: 364YEN7JB8

TX Freq: 813.5125 MHz

Sim Tissue Temp: 18.9 (Celsius)

Start Power: 0.654 W

Antenna: In

Battery Kit: SNN5705B w/ NNTN5845A back cover

Carry Acc: NONE

Audio/Data Acc.: NONE

DUT front separated 2.5cm from phantom

SAM - Expanded Phantom; Flat Section; Position: (90°,90°);

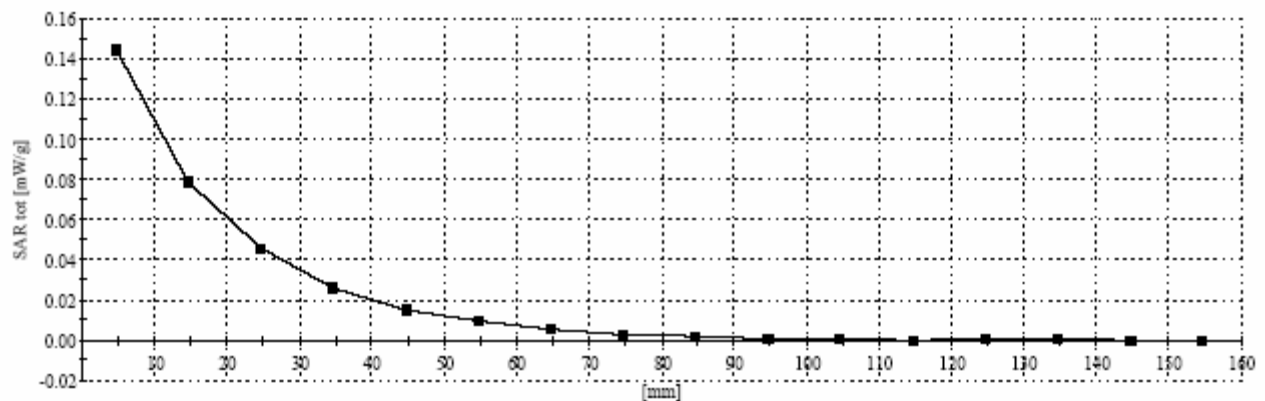
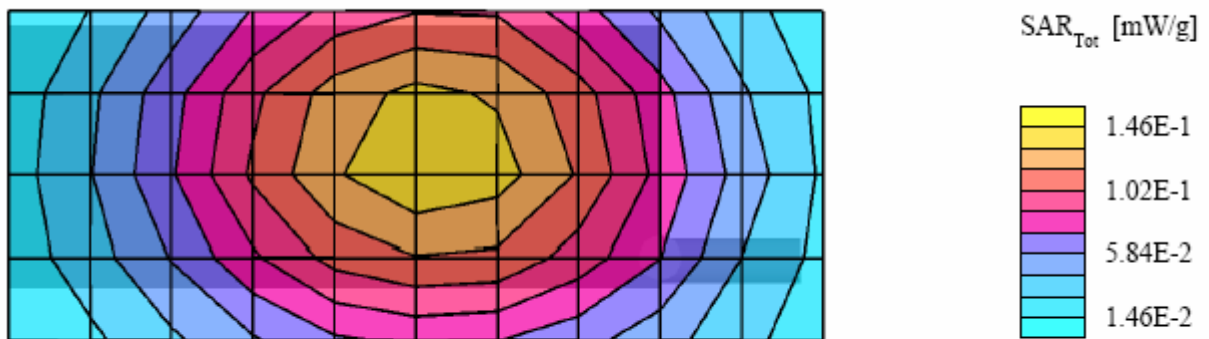
Probe: ET3DV6 - SN1383(Cal Date 25 Feb 2004); ConvF(6.30,6.30,6.30); Probe cal date: 25/2/04; Crest factor: 6.0; IEEE

Head 813 MHz: $\sigma = 0.93$ mho/m $\epsilon_r = 42.1$ $\rho = 1.00$ g/cm³; DAE3: 401V1 DAE Cal Date: 08/21/2003

Cube 7x7x7: SAR (1g): 0.146 mW/g, SAR (10g): 0.105 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 27.0, 78.0, 4.7

Power drift: 0.05 dB



FCC ID: AZ489FT5839; Test Date: 8/4/04

Motorola CGISS EME Laboratory

Run #: CM-LEAR-R3-040804-23

Model #: H45XAN6RR4AN/NUF3975A SN: 364YEN7JB8

TX Freq: 896.01875 MHz

Sim Tissue Temp: 19.3 (Celsius)

Start Power: 0.623 W

Antenna: In

Battery Kit: SNN5705B w/ NNTN5845A back cover

Carry Acc: NONE

Audio/Data Acc.: NONE

DUT at Left ear in cheek touch position

SAM; Left Hand Section; Position: (90°, 59°);

Probe: ET3DV6 - SN1383(Cal Date 25 Feb 2004); ConvF(6.30,6.30,6.30); Probe cal date: 25/2/04; Crest factor: 3.0; IEEE

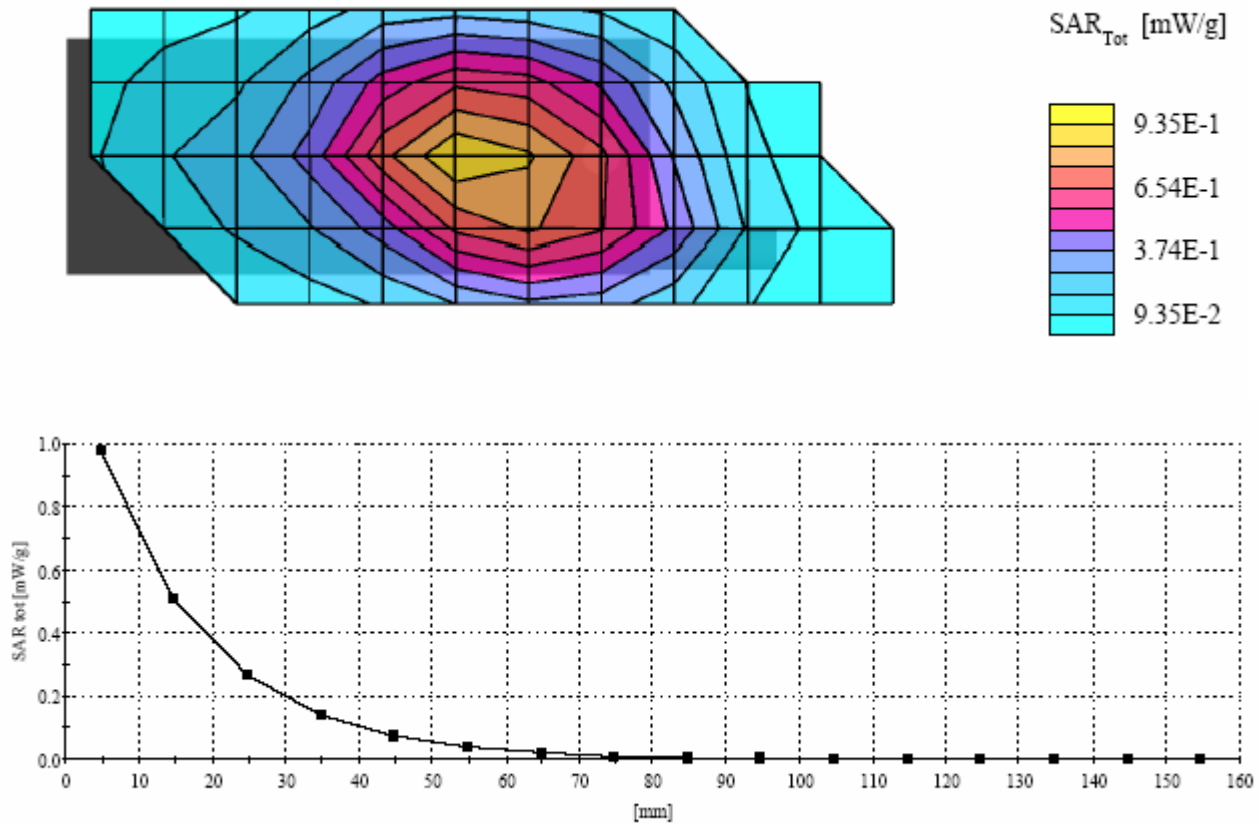
Head 899 MHz: $\sigma = 1.00$ mho/m $\epsilon_r = 40.8$ $\rho = 1.00$ g/cm³; DAE3: 401V1 DAE Cal Date: 08/21/2003

Cube 7x7x7: SAR (1g): 0.957 mW/g, SAR (10g): 0.653 mW/g * Max outside, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 78.0, 28.5, 4.7

Power drift: 0.00 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: AZ489FT5839; Test Date: 8/5/04

Motorola CGISS EME Laboratory

Run #: CM-FACE-R3-040805-16

Model #: H45XAN6RR4AN/NUF3975A SN: 364YEN7JB8

TX Freq: 896.01875 MHz

Sim Tissue Temp: 18.9 (Celsius)

Start Power: 0.635 W

Antenna: In

Battery Kit: SNN5705B w/ NNTN5845A back cover

Carry Acc: NONE

Audio/Data Acc.: NONE

DUT front separated 2.5cm from phantom

SAM - Expanded Phantom; Flat Section; Position SAM - Expanded Phantom; Flat Section; Position: (90°,90°);

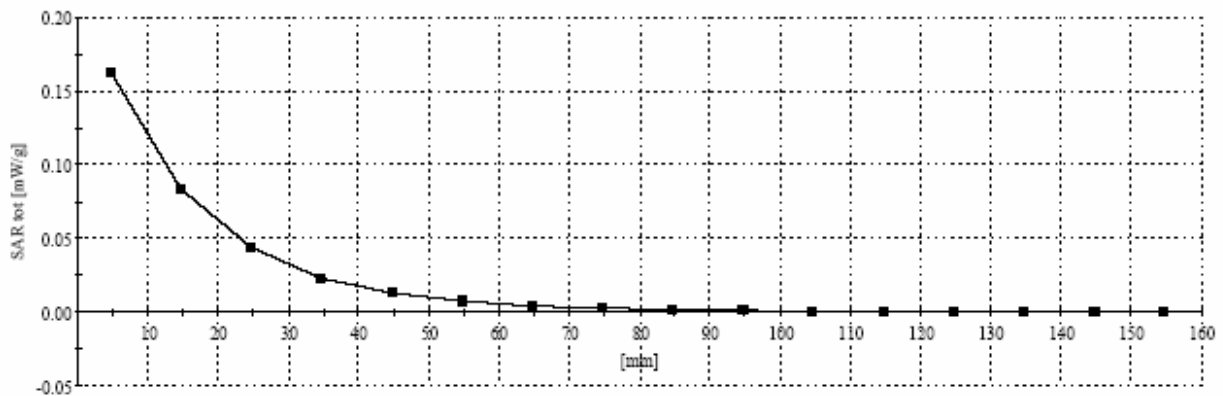
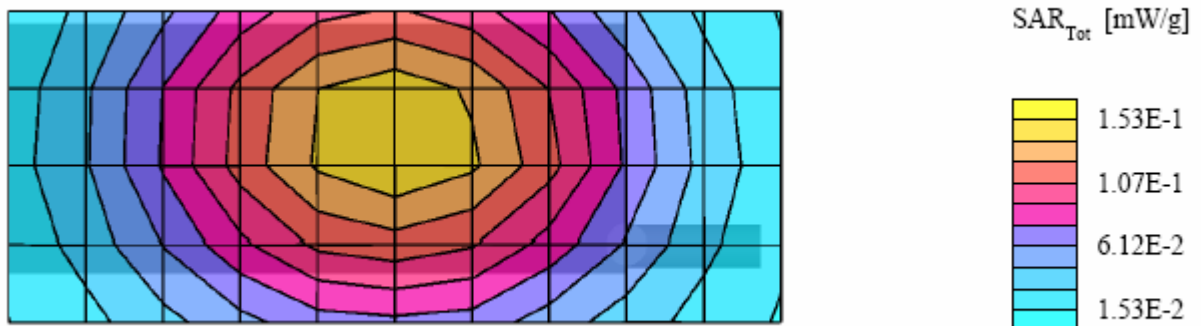
Probe: ET3DV6 - SN1383(Cal Date 25 Feb 2004); ConvF(6.30,6.30,6.30); Probe cal date: 25/2/04; Crest factor: 6.0; IEEE

Head 899 MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 41.1$ $\rho = 1.00$ g/cm³; DAE3: 401V1 DAE Cal Date: 08/21/2003

Cube 7x7x7: SAR (1g): 0.154 mW/g, SAR (10g): 0.109 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 24.0, 75.0, 4.7

Power drift: -0.09 dB



FCC ID: AZ489FT5839; Test Date: 8/12/04

Motorola CGISS EME Laboratory

Run #: CM-Ab-R3-040812-05

Model #: H45XAN6RR4AN/NUF3975A SN: 364YEN7JB8

TX Freq: 824.9875 MHz

Sim Tissue Temp: 18.9 (Celsius)

Start Power: 0.609 W

Antenna: In

Battery Kit: SNN5704C w/ NNTN5845A back cover

Carry Acc: NNTN5821A

Audio/Data Acc.: NONE

DUT w/ carry accessory against the phantom

Flat Phantom; Position: (90°,90°);

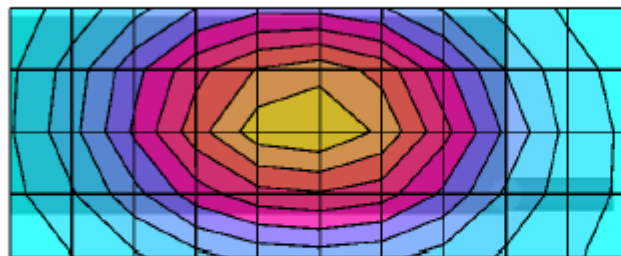
Probe: ET3DV6 - SN1383(Cal Date 25 Feb 2004); ConvF(5.82,5.82,5.82); Probe cal date: 25/2/04; Crest factor: 1.5; FCC

Body 813: $\sigma = 0.96$ mho/m $\epsilon_r = 54.4$ $\rho = 1.00$ g/cm³; DAE3: 401V1 DAE Cal Date: 08/21/2003

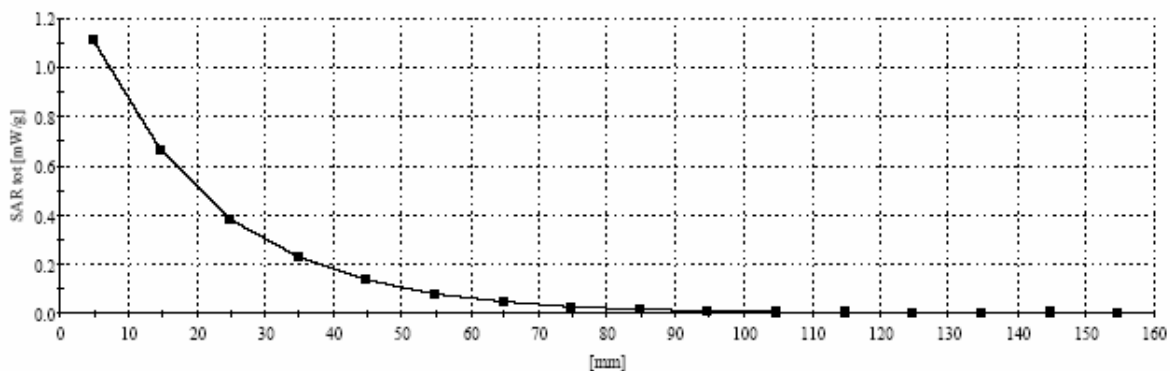
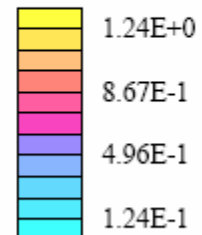
Cube 5x5x7: SAR (1g): 1.17 mW/g, SAR (10g): 0.858 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 27.0, 70.5, 4.7

Power Drift: -0.49 dB



SAR_{Tot} [mW/g]



FCC ID: AZ489FT5839; Test Date: 8/10/04

Motorola CGISS EME Laboratory

Run #: CM- Ab-R3-040810-16

Model #: H45XAN6RR4AN/NUF3975A SN: 364YEN7JB8

TX Freq: 899.66875 MHz

Sim Tissue Temp: 18.5 (Celsius)

Start Power: 0.618 W

Antenna: In

Battery Kit: SNN5704C w/ NNTN5845A back cover

Carry Acc: NNTN5821A

Audio/Data Acc.: NNTN5005A

DUT w/ body worn accessory against the phantom

Flat Phantom; Position: (90°,90°);

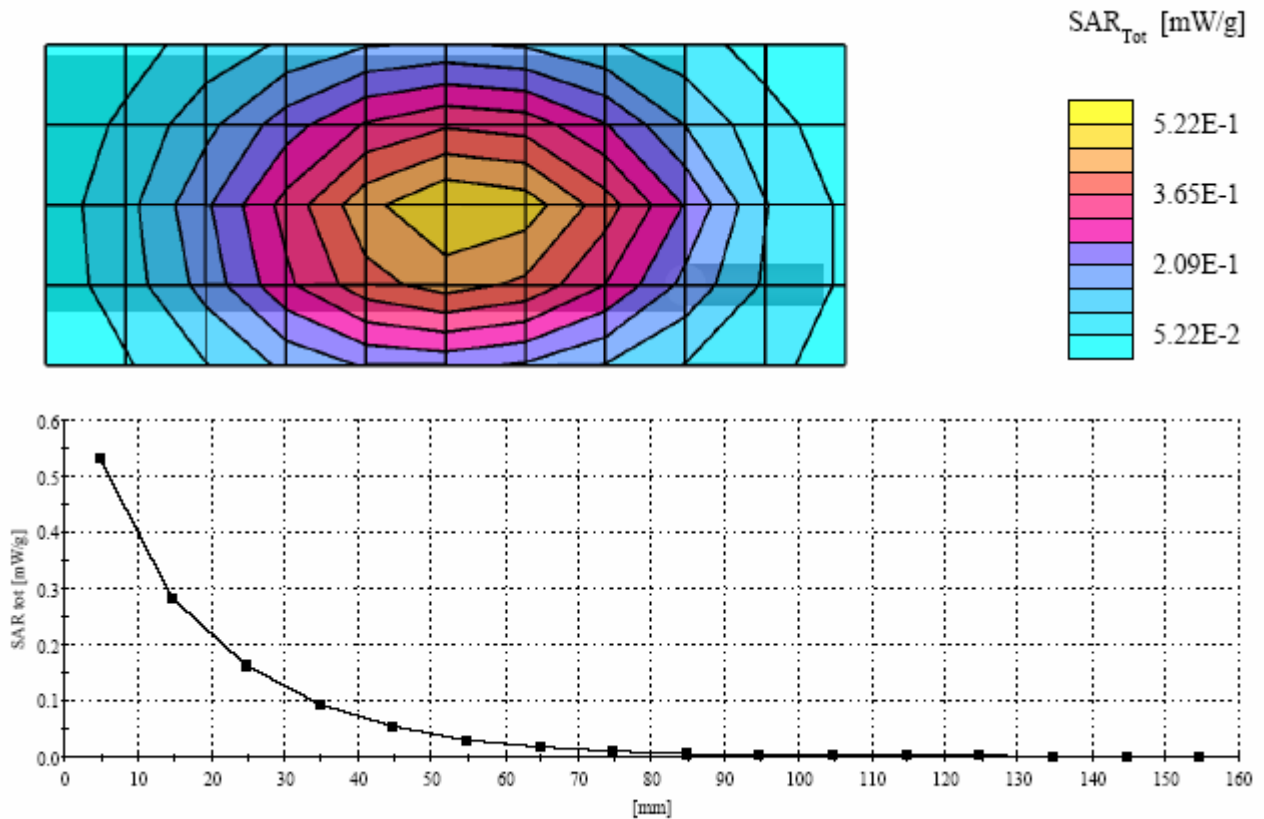
Probe: ET3DV6 - SN1383(Cal Date 25 Feb 2004); ConvF(5.82,5.82,5.82); Probe cal date: 25/2/04; Crest factor: 3.0; FCC

Body 899: $\sigma = 1.05$ mho/m $\epsilon_r = 54.2$ $\rho = 1.00$ g/cm³; DAE3: 401V1 DAE Cal Date: 08/21/2003

Cube 7x7x7: SAR (1g): 0.511 mW/g, SAR (10g): 0.361 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 31.5, 79.5, 4.7

Power drift: -0.02 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: 8/2/04

Motorola CGISS EME Lab

Run #: Sys Perf-R3-040802-01

TX Freq: 900 MHz

Sim Tissue Temp: 20.0 (Celsius)

Start Power; 250mW

SAR target at 1W is 12.0 mW/g (1g avg, including drift)

SAR target at 1W is 7.52 mW/g (10g avg, including drift)

SAR calculated at 1W is 12.14 mW/g (1g avg). Percent from target (including drift) is 1.1 %

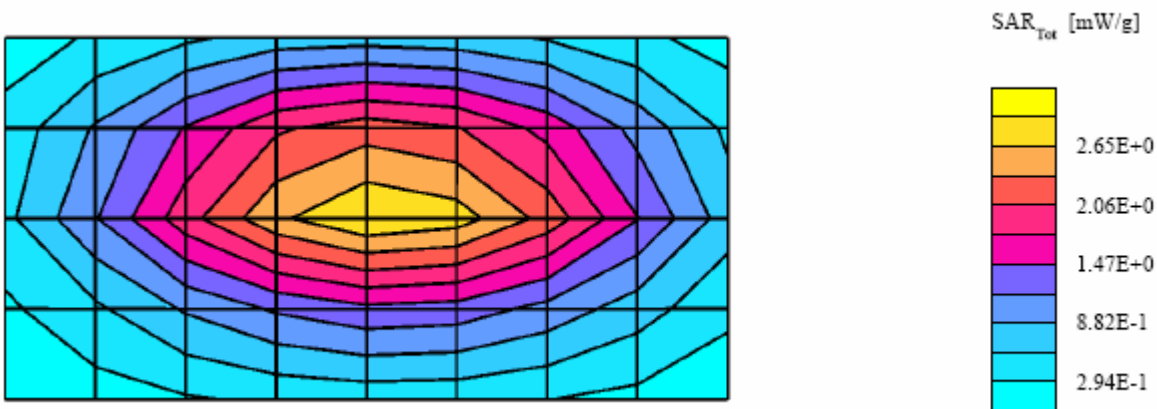
SAR calculated at 1W is 7.55 mW/g (10g avg). Percent from target (including drift) is 0.46 %

SAM - Expanded; Flat Probe: ET3DV6 - SN1383(Cal Date 25 Feb 2004);Probe Cal Date: 25/2/04ConvF(6.30,6.30,6.30);

Crest factor: 1.0; IEEE Head 900 MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 41.3$ $\rho = 1.00$ g/cm³; DAE3: 401 DAE Cal Date: 08/21/2003

Cubes (2): Peak: 4.85 mW/g ± 0.01 dB, SAR (1g): 3.02 mW/g ± 0.01 dB, SAR (10g): 1.88 mW/g ± 0.01 dB, (Worst-case extrapolation) Penetration depth: 11.2 (10.3, 12.3) [mm]

Power drift: -0.02 dB



SPEAG 900 MHz Dipole; Model D900V2, SN 085; Test Date: 8/3/04

Motorola CGISS EME Lab

Run #: Sys Perf-R3-040803-01

TX Freq: 900 MHz

Sim Tissue Temp: 19.5 (Celsius)

Start Power; 250mW

SAR target at 1W is 12.0 mW/g (1g avg, including drift)

SAR target at 1W is 7.52 mW/g (10g avg, including drift)

SAR calculated at 1W is 12.16 mW/g (1g avg). Percent from target (including drift) is 1.33 %

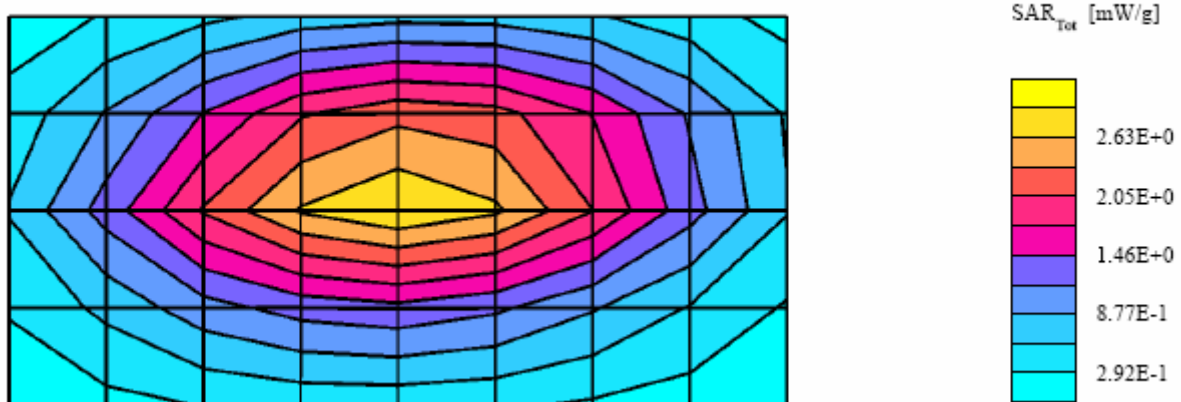
SAR calculated at 1W is 7.60 mW/g (10g avg). Percent from target (including drift) is 1.06 %

SAM - Expanded; Flat Probe: ET3DV6 - SN1383(Cal Date 25 Feb 2004);Probe Cal Date: 25/2/04ConvF(6.30,6.30,6.30);

Crest factor: 1.0; IEEE Head 900 MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 40.9$ $\rho = 1.00$ g/cm³; DAE3: 401 DAE Cal Date: 08/21/2003

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 ± 0.03 dB, (Worst-case extrapolation) Penetration depth: 11.1 (10.3, 12.3) [mm]

Power drift: 0.00 dB



SPEAG 900 MHz Dipole; Model D900V2, SN 085; Test Date: 8/4/04

Motorola CGISS EME Lab

Run #: Sys Perf-R3-040804-01

TX Freq: 900 MHz

Sim Tissue Temp: 19.7 (Celsius)

Start Power; 250mW

SAR target at 1W is 12.0 mW/g (1g avg, including drift)

SAR target at 1W is 7.52 mW/g (10g avg, including drift)

SAR calculated at 1W is 12.15 mW/g (1g avg). Percent from target (including drift) is 1.23 %

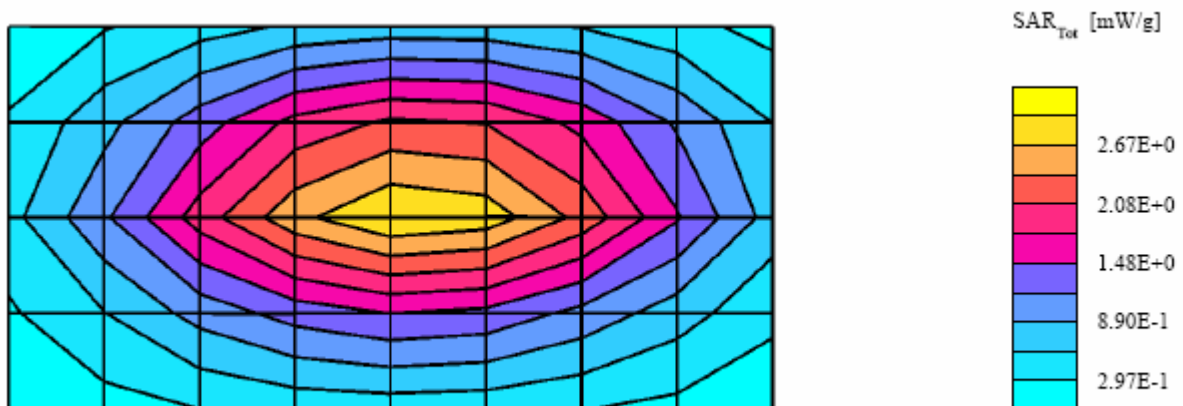
SAR calculated at 1W is 7.62 mW/g (10g avg). Percent from target (including drift) is 1.30 %

SAM - Expanded; Flat Probe: ET3DV6 - SN1383(Cal Date 25 Feb 2004);Probe Cal Date: 25/2/04ConvF(6.30,6.30,6.30);

Crest factor: 1.0; IEEE Head 900 MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 40.7$ $\rho = 1.00$ g/cm³; DAE3: 401 DAE Cal Date: 08/21/2003

Cubes (2): Peak: 4.87 mW/g $\pm$ 0.03 dB, SAR (1g): 3.03 mW/g $\pm$ 0.03 dB, SAR (10g): 1.90 mW/g $\pm$ 0.03 dB, (Worst-case extrapolation) Penetration depth: 11.2 (10.4, 12.4) [mm]

Power drift: -0.01 dB



SPEAG 900 MHz Dipole; Model D900V2, SN 085; Test Date: 8/5/04

Motorola CGISS EME Lab

Run #: Sys Perf-R3-040805-01

TX Freq: 900 MHz

Sim Tissue Temp: 19.1 (Celsius)

Start Power: 250mW

SAR target at 1W is 12.0 mW/g (1g avg, including drift)

SAR target at 1W is 7.52 mW/g (10g avg, including drift)

SAR calculated at 1W is 12.33 mW/g (1g avg). Percent from target (including drift) is 2.74 %

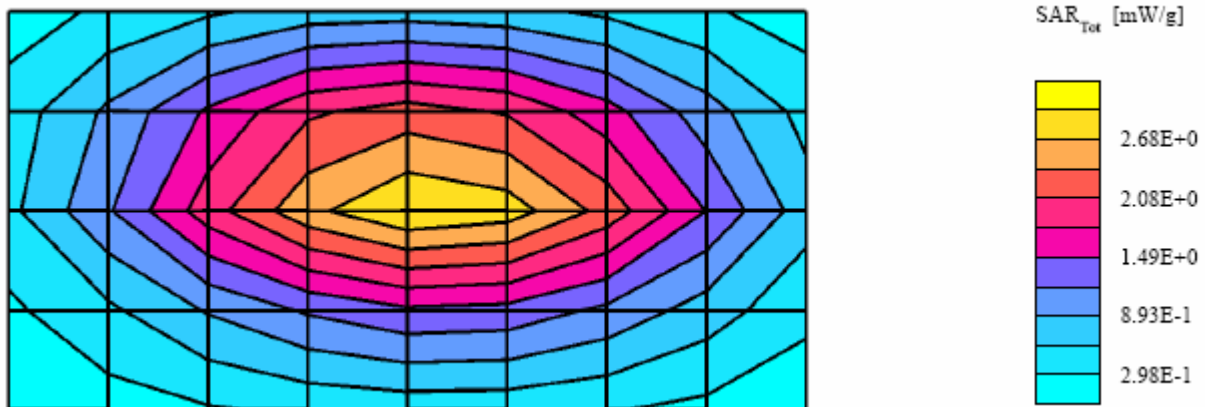
SAR calculated at 1W is 7.71 mW/g (10g avg). Percent from target (including drift) is 2.47 %

SAM - Expanded; Flat Probe: ET3DV6 - SN1383(Cal Date 25 Feb 2004);Probe Cal Date: 25/2/04ConvF(6.30,6.30,6.30);

Crest factor: 1.0; IEEE Head 900 MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 41.1$ $\rho = 1.00$ g/cm³; DAE3: 401 DAE Cal Date: 08/21/2003

Cubes (2): Peak: 4.87 mW/g ± 0.01 dB, SAR (1g): 3.04 mW/g ± 0.01 dB, SAR (10g): 1.90 mW/g ± 0.01 dB, (Worst-case extrapolation) Penetration depth: 11.2 (10.4, 12.4) [mm]

Power drift: -0.06 dB



SPEAG 900 MHz Dipole; Model D900V2, SN 085; Test Date: 8/6/04

Motorola CGISS EME Lab

Run #: Sys Perf-R3-040806-01

TX Freq: 900 MHz

Sim Tissue Temp: 19.5 (Celsius)

Start Power; 250mW

SAR target at 1W is 12.0 mW/g (1g avg, including drift)

SAR target at 1W is 7.52 mW/g (10g avg, including drift)

SAR calculated at 1W is 12.19 mW/g (1g avg). Percent from target (including drift) is 1.57 %

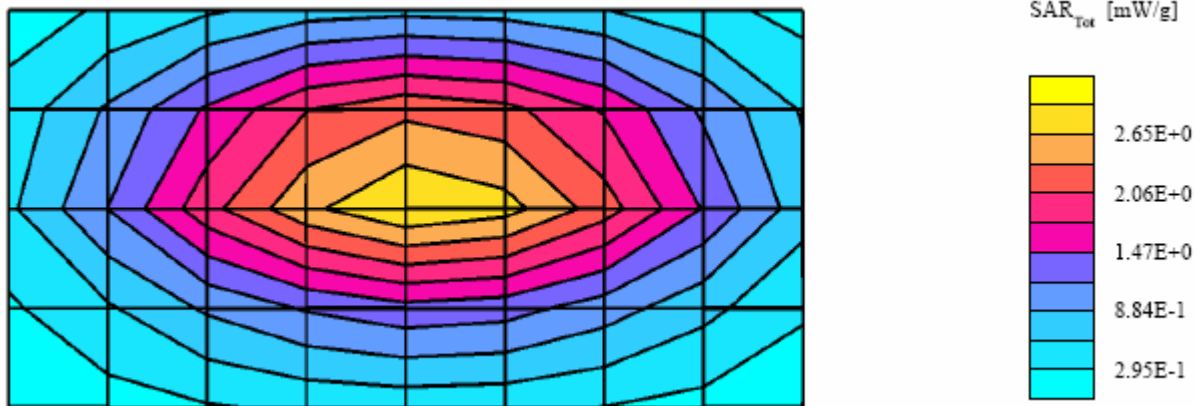
SAR calculated at 1W is 7.62 mW/g (10g avg). Percent from target (including drift) is 1.30 %

SAM - Expanded; Flat Probe: ET3DV6 - SN1383(Cal Date 25 Feb 2004);Probe Cal Date: 25/2/04ConvF(6.30,6.30,6.30);

Crest factor: 1.0; IEEE Head 900 MHz: $\sigma = 1.01 \text{ mho/m}$ $\epsilon_r = 40.2$ $\rho = 1.00 \text{ g/cm}^3$; DAE3: 401 DAE Cal Date: 08/21/2003

Cubes (2): Peak: $4.87 \text{ mW/g} \pm 0.02 \text{ dB}$, SAR (1g): $3.04 \text{ mW/g} \pm 0.02 \text{ dB}$, SAR (10g): $1.90 \text{ mW/g} \pm 0.01 \text{ dB}$, (Worst-case extrapolation)Penetration depth: 11.2 (10.4, 12.4) [mm]

Power drift: -0.01 dB



SPEAG 900 MHz Dipole; Model D900V2, SN 085; Test Date: 8/9/04

Motorola CGISS EME Lab

Run #: Sys Perf-R3-040809-01

TX Freq: 835 MHz

Sim Tissue Temp: 19.7 (Celsius)

Start Power: 250mW

SAR target at 1W is 10.56 mW/g (1g avg, including drift)

SAR target at 1W is 6.80 mW/g (10g avg, including drift)

SAR calculated at 1W is 10.60 mW/g (1g avg). Percent from target (including drift) is 0.38 %

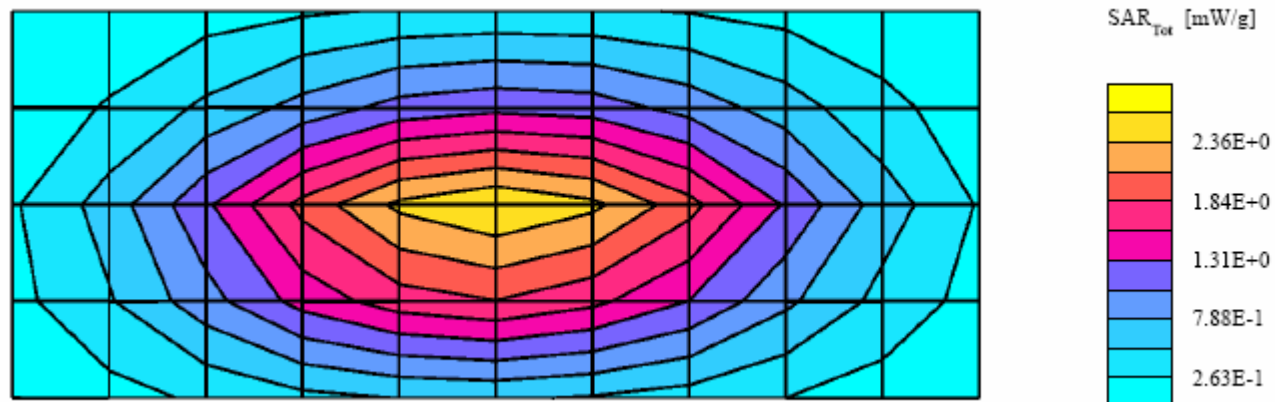
SAR calculated at 1W is 6.84 mW/g (10g avg). Percent from target (including drift) is 0.59 %

Flat; Probe: ET3DV6 - SN1383(Cal Date 25 Feb 2004);Probe Cal Date: 25/2/04ConvF(5.82,5.82,5.82); Crest factor: 1.0; FCC

Body 835: $\sigma = 0.98$ mho/m $\epsilon_r = 54.6$ $\rho = 1.00$ g/cm³; DAE3: 401 DAE Cal Date: 08/21/2003

Cubes (2): Peak: 4.11 mW/g ± 0.03 dB, SAR (1g): 2.65 mW/g ± 0.02 dB, SAR (10g): 1.71 mW/g ± 0.02 dB, (Worst-case extrapolation) Penetration depth: 12.6 (11.5, 14.1) [mm]

Power drift: -0.00 dB



SPEAG 900 MHz Dipole; Model D900V2, SN 085; Test Date: 8/10/04

Motorola CGISS EME Lab

Run #: Sys Perf-R3-040810-01

TX Freq: 835 MHz

Sim Tissue Temp: 19.7 (Celsius)

Start Power; 250mW

SAR target at 1W is 10.56 mW/g (1g avg, including drift)

SAR target at 1W is 6.80 mW/g (10g avg, including drift)

SAR calculated at 1W is 11.25 mW/g (1g avg). Percent from target (including drift) is 6.57 %

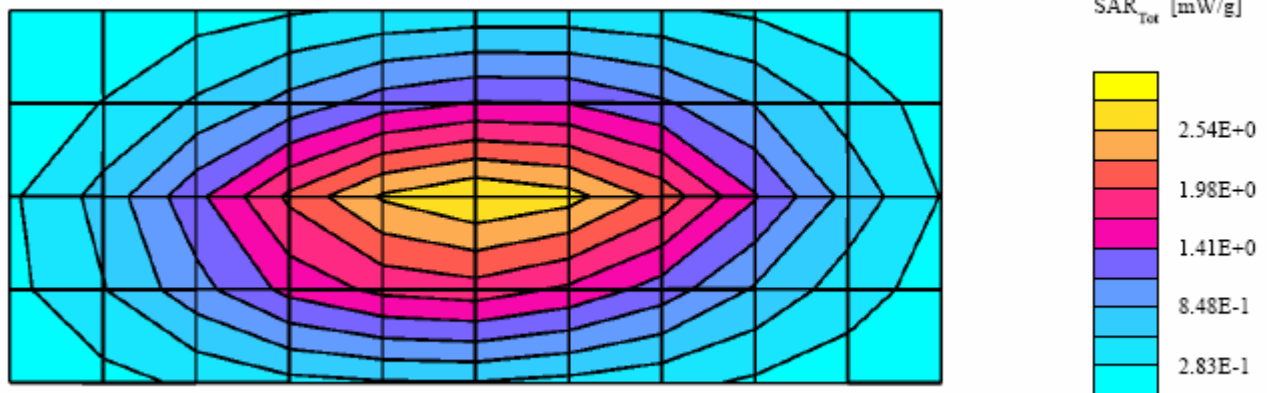
SAR calculated at 1W is 7.26 mW/g (10g avg). Percent from target (including drift) is 6.81 %

Flat; Probe: ET3DV6 - SN1383(Cal Date 25 Feb 2004);Probe Cal Date: 25/2/04ConvF(5.82,5.82,5.82); Crest factor: 1.0; FCC

Body 835: $\sigma = 0.98$ mho/m $\epsilon_r = 54.8$ $\rho = 1.00$ g/cm³; DAE3: 401 DAE Cal Date: 08/21/2003

Cubes (2): Peak: 4.37 mW/g ± 0.01 dB, SAR (1g): 2.82 mW/g ± 0.01 dB, SAR (10g): 1.82 mW/g ± 0.01 dB, (Worst-case extrapolation) Penetration depth: 12.5 (11.4, 13.9) [mm]

Power drift: 0.01 dB



SPEAG 900 MHz Dipole; Model D900V2, SN 085; Test Date: 8/11/04

Motorola CGISS EME Lab

Run #: Sys Perf-R3-040811-01

TX Freq: 900 MHz

Sim Tissue Temp: 18.9 (Celsius)

Start Power; 250mW

SAR target at 1W is 12.0 mW/g (1g avg, including drift)

SAR target at 1W is 7.52 mW/g (10g avg, including drift)

SAR calculated at 1W is 12.24 mW/g (1g avg). Percent from target (including drift) is 2.0 %

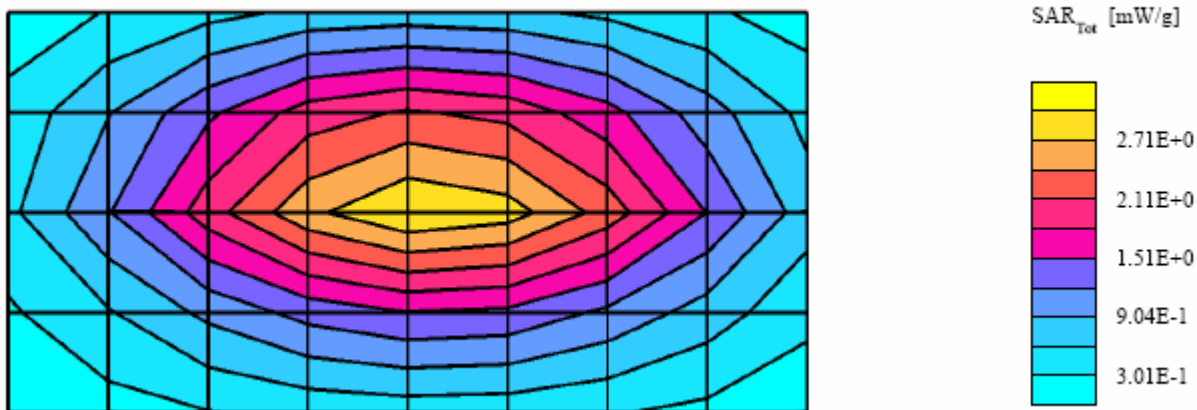
SAR calculated at 1W is 7.68 mW/g (10g avg). Percent from target (including drift) is 2.13 %

SAM - Expanded; Flat Probe: ET3DV6 - SN1383(Cal Date 25 Feb 2004);Probe Cal Date: 25/2/04ConvF(6.30,6.30,6.30);

Crest factor: 1.0; IEEE Head 900 MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 40.8$ $\rho = 1.00$ g/cm³; DAE3: 401 DAE Cal Date: 08/21/2003

Cubes (2): Peak: 4.91 mW/g ± 0.03 dB, SAR (1g): 3.06 mW/g ± 0.03 dB, SAR (10g): 1.92 mW/g ± 0.02 dB, (Worst-case extrapolation)Penetration depth: 11.2 (10.4, 12.4) [mm]

Power drift: 0.00 dB



SPEAG 900 MHz Dipole; Model D900V2, SN 085; Test Date: 8/12/04

Motorola CGISS EME Lab

Run #: Sys Perf-R3-040812-01

TX Freq: 835 MHz Sim Tissue Temp: 19.3 (Celsius)

Start Power; 250mW

SAR target at 1W is 10.56 mW/g (1g avg, including drift)

SAR target at 1W is 6.80 mW/g (10g avg, including drift)

SAR calculated at 1W is 10.97 mW/g (1g avg). Percent from target (including drift) is 3.93 %

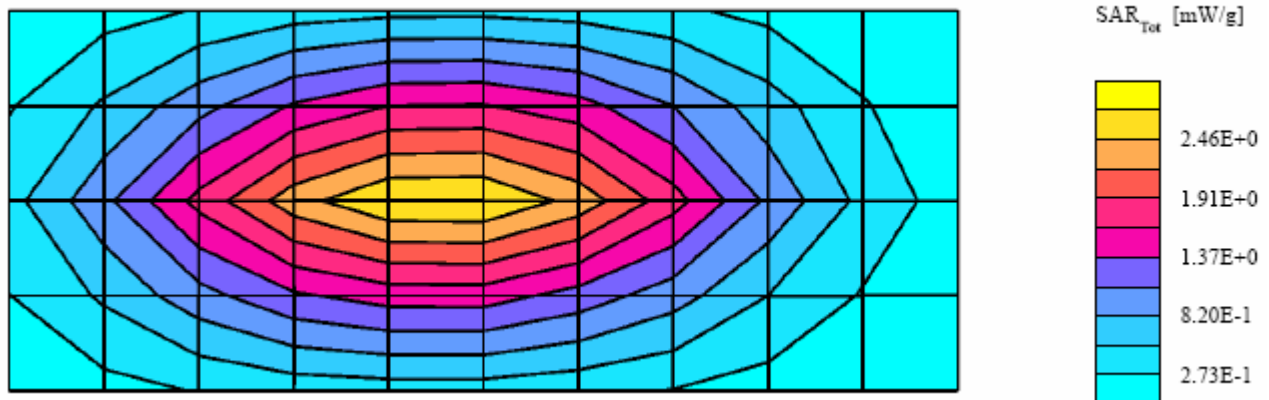
SAR calculated at 1W is 7.06 mW/g (10g avg). Percent from target (including drift) is 3.88 %

Flat; Probe: ET3DV6 - SN1383(Cal Date 25 Feb 2004);Probe Cal Date: 25/2/04ConvF(5.82,5.82,5.82); Crest factor: 1.0; FCC

Body 835: $\sigma = 0.98$ mho/m $\epsilon_r = 54.2$ $\rho = 1.00$ g/cm³; DAE3: 401 DAE Cal Date: 08/21/2003

Cubes (2): Peak: 4.29 mW/g ± 0.01 dB, SAR (1g): 2.75 mW/g ± 0.01 dB, SAR (10g): 1.77 mW/g ± 0.01 dB, (Worst-case extrapolation)Penetration depth: 12.4 (11.3, 14.0) [mm]

Power drift: 0.01 dB



SYSTEM VALIDATION

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

Tissue Characteristics

Permittivity:	<u>41.5</u>	Phantom Type/SN:	<u>SAMTP1208</u>
Conductivity:	<u>1.00</u>	Distance (mm):	<u>15 (tissue/dipole cnt)</u>

Reference Source:	<u>900V2</u>	(Dipole)
Reference SN:	<u>85</u>	

Power to Dipole:	<u>250</u>	mW
Power Output (radio	<u>NA</u>	mW

Target SAR Value:	<u>10.8</u>	mW/g,	<u>6.9</u>	mW/g (10g avg.)
(normalized to 1.0 W)				

Measured SAR Value:	<u>3</u>	mW/g,	<u>1.88</u>	mW/g (10g avg.)
Power Drift:	<u>0</u>	dB		

Measured SAR Value:	<u>12.00</u>	mW/g,	<u>7.52</u>	mW/g (10g avg.)
(normalized to 1.0 W, including drift)				

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

Test performed by:	<u>Edward R. Church</u>	Initial:	<u>EC</u>
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SPEAG DIPOLE D900V2; Test date:12/16/03

Run #: Sys Val-R3-031216-03

Phantom #:SAMTP1208

Model #: D900V2

SN: 085

Robot: CGISS-3

Tester: E. Church

TX Freq: 900 MHz

Sim Tissue Temp: 20.9 (Celsius)

Start Power: 250mW

DAE3: SN: 406

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 percent from target (including drift) + 10.74 %

SAR Calculated 10g is 7.52 mW/g Percent from target (including drift) is + 8.99 %

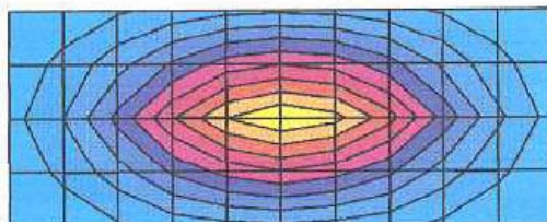
SAM; Probe: ET3DV6 - SN1393 (Cal Date 16 April 2003) ; ConvF(7.00,7.00,7.00); Crest factor: 1.0; IEEE

Head 900 MHz: $\sigma = 1.00$ mho/m $\epsilon_r = 41.5$ $\rho = 1.00$ g/cm³

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



SAR_{Tot} [mW/g]



3.00E-1

SYSTEM PERFORMANCE CHECK TARGET SAR

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

Tissue Characteristics

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

Reference Source:	<u>900</u>	(Dipole)
Reference SN:	<u>85</u>	

Power to Dipole: 250 mW

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

New Target/Measured

SAR Value:	<u>11.17</u> mW/g,	<u>7.11</u> mW/g (10g avg.)
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(normalized to 1.0 W, including drift)

Test performed by: Edward R. Church Initial: ERC

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

Run #: Sys Perf-R3-031216-06

Phantom #: 80302002A-S8

Model #: D900V2

SN: 085

Robot: CGISS-3

Tester: E. Church

TX Freq: 900 MHz

Sim Tissue Temp: 21.0 (Celsius)

Start Power: 250mW

DAE3: SN: 406

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 percent from target (including drift) 0 %

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

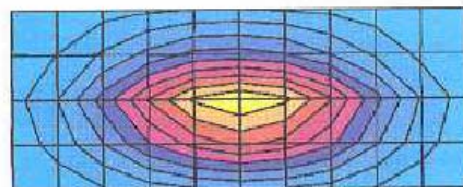
Flat; Probe: ET3DV6 - SN1393 (Cal Date 16 April 2003) ; ConvF(6.80,6.80,6.80); Crest factor: 1.0; FCC

Body 900MHz: $\sigma = 1.03$ mho/m $\epsilon_r = 52.6$ $\rho = 1.00$ g/cm³

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



SAR_{Tot} [mW/g]



SYSTEM PERFORMANCE CHECK TARGET SAR

Date:	<u>4/14/2004</u>	Frequency (MHz):	<u>835</u>
Lab Location:	<u>CGISS</u>	Mixture Type:	<u>FCC Body</u>
Robot System:	<u>3</u>	Ambient Temp.(°C):	<u>23</u>
Probe Serial #:	<u>1545</u>	Tissue Temp.(°C):	<u>20.5</u>
DAE Serial #:	<u>406</u>		

Tissue Characteristics			
Permittivity:	<u>54</u>	Phantom Type/SN:	<u>80302002A/S8</u>
Conductivity:	<u>0.98</u>	Distance (mm):	<u>15 (tissue/dipole cnt)</u>

Reference Source:	<u>D835V2</u>	(Dipole)
Reference SN:	<u>426</u>	

Power to Dipole: 250 mW

Measured SAR Value:	<u>2.64</u> mW/g,	<u>1.7</u> mW/g (10g avg.)
Power Drift:	<u>0</u> dB	

New Target/Measured
SAR Value: 10.56 mW/g, 6.80 mW/g (10g avg.)
(normalized to 1.0 W, including drift)

Test performed by: C. Miller Initial: 

Sys. Per. Chk. Form: 021024

SPEAG DIPOLE D835V2; Test date:04/14/04

Run #: Sys Perf-040414-10

Model #: D835 V2

Robot: CGISS-3

TX Freq: 835 MHz

Start Power: 250 mW

DAE3: 401

- Comments-

Phantom #: 80302002A/S8

SN: 426

Tester: C. Miller

835 MHz Sim Tissue Temp: 20.5 (Celsius)

DAE Cal Date: 08/21/2003

SAR calculated at 1W is 10.56 mW/g (1g avg).

SAR calculated at 1W is 6.80 mW/g (10g avg).

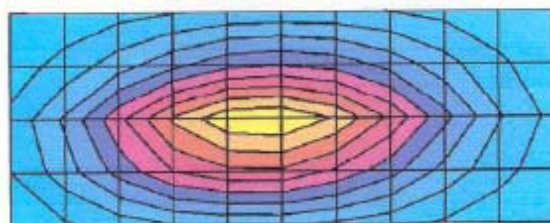
Flat; Probe: ET3DV6 - SN1383(Cal Date 25 Feb 2004); ConvF(5.82,5.82,5.82); Crest factor: 1.0; FCC Body

835 MHz: $\sigma = 0.98$ mho/m $\epsilon_r = 54.0$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.08 mW/g ± 0.05 dB, SAR (1g): 2.64 mW/g ± 0.04 dB, SAR (10g): 1.70 mW/g ± 0.04 dB, (Worst-case extrapolation)

Penetration depth: 12.6 (11.6, 14.0) [mm]

Powerdrift: -0.00 dB



SAR_{Tot} [mW/g]



APPENDIX D

Probe/Dipole Calibration Certificates

Client **Motorola CGISS**

CALIBRATION CERTIFICATE

Object(s) **ET3DVB - SN 1383**

Calibration procedure(s) **QA CAL-01-v2
Calibration procedure for dosimetric E-field probes**

Calibration date: **February 25, 2004**

Condition of the calibrated item **In Tolerance (according to the specific calibration document)**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature 22 ± 2 degrees Celsius and humidity $< 75\%$.

Calibration Equipment used (M&TE critical for calibration)

Model Type	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM E4419B	GB41293874	2-Apr-03 (METAS, No 252-0250)	Apr-04
Power sensor E4412A	MY41495277	2-Apr-03 (METAS, No 252-0250)	Apr-04
Reference 20 dB Attenuator	SN: 5086 (20b)	3-Apr-03 (METAS, No. 251-0340)	Apr-04
Fliuke Process Calibrator Type 702	SN: 6295803	8-Sep-03 (Sintrel SCS No. E-030020)	Sep-04
Power sensor HP 8481A	MY41092180	18-Sep-02 (SPEAG, in house check Oct-03)	In house check: Oct 05
RF generator HP 8684C	US3642U01700	4-Aug-99 (SPEAG, in house check Aug-02)	In house check: Aug-05
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Oct-03)	In house check: Oct 05

Calibrated by:	Name Oliver Metten	Function Technician	Signature 
Approved by:	Name Edgar Pokorski	Function Laboratory Director	Signature 

Date issued: February 25, 2004

This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed.

DASY - Parameters of Probe: ET3DV6 SN:1383

Sensitivity in Free Space

Diode Compression^A

NormX	1.88 $\mu\text{V}/(\text{V}/\text{m})^2$	DCP X	92	mV
NormY	1.63 $\mu\text{V}/(\text{V}/\text{m})^2$	DCP Y	92	mV
NormZ	1.71 $\mu\text{V}/(\text{V}/\text{m})^2$	DCP Z	92	mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 7.

Boundary Effect

Head 900 MHz Typical SAR gradient: 5 % per mm

Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm
SAR _{pe} [%]	Without Correction Algorithm	9.9	5.0
SAR _{pe} [%]	With Correction Algorithm	0.1	0.3

Head 1800 MHz Typical SAR gradient: 10 % per mm

Sensor to Surface Distance		3.7 mm	4.7 mm
SAR _{pe} [%]	Without Correction Algorithm	13.6	8.8
SAR _{pe} [%]	With Correction Algorithm	0.1	0.2

Sensor Offset

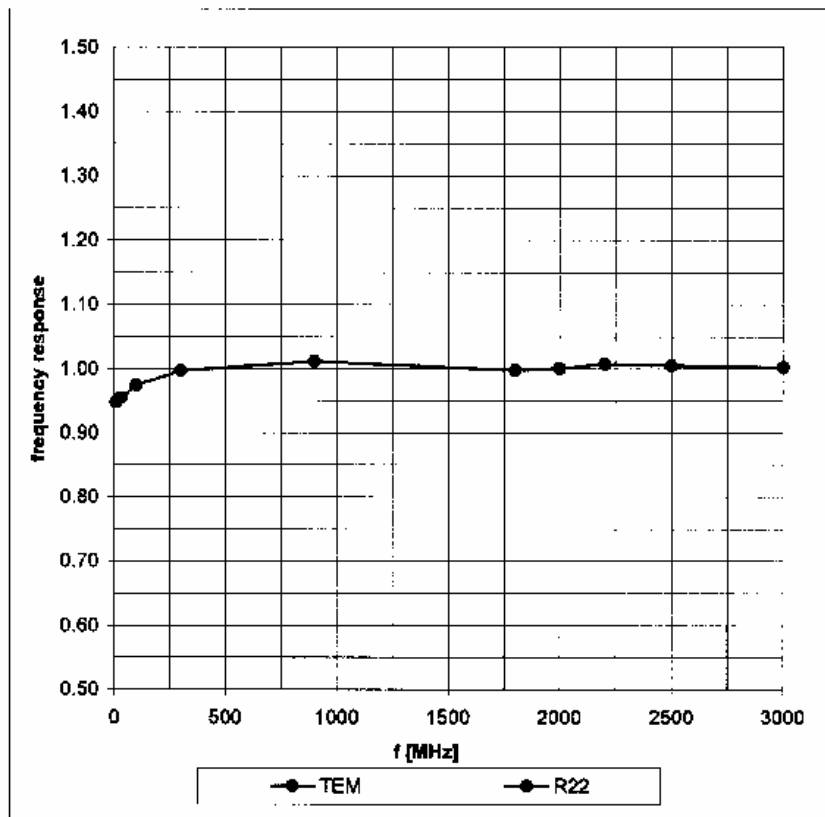
Probe Tip to Sensor Center	2.7 mm
Optical Surface Detection	very low, but repeatable

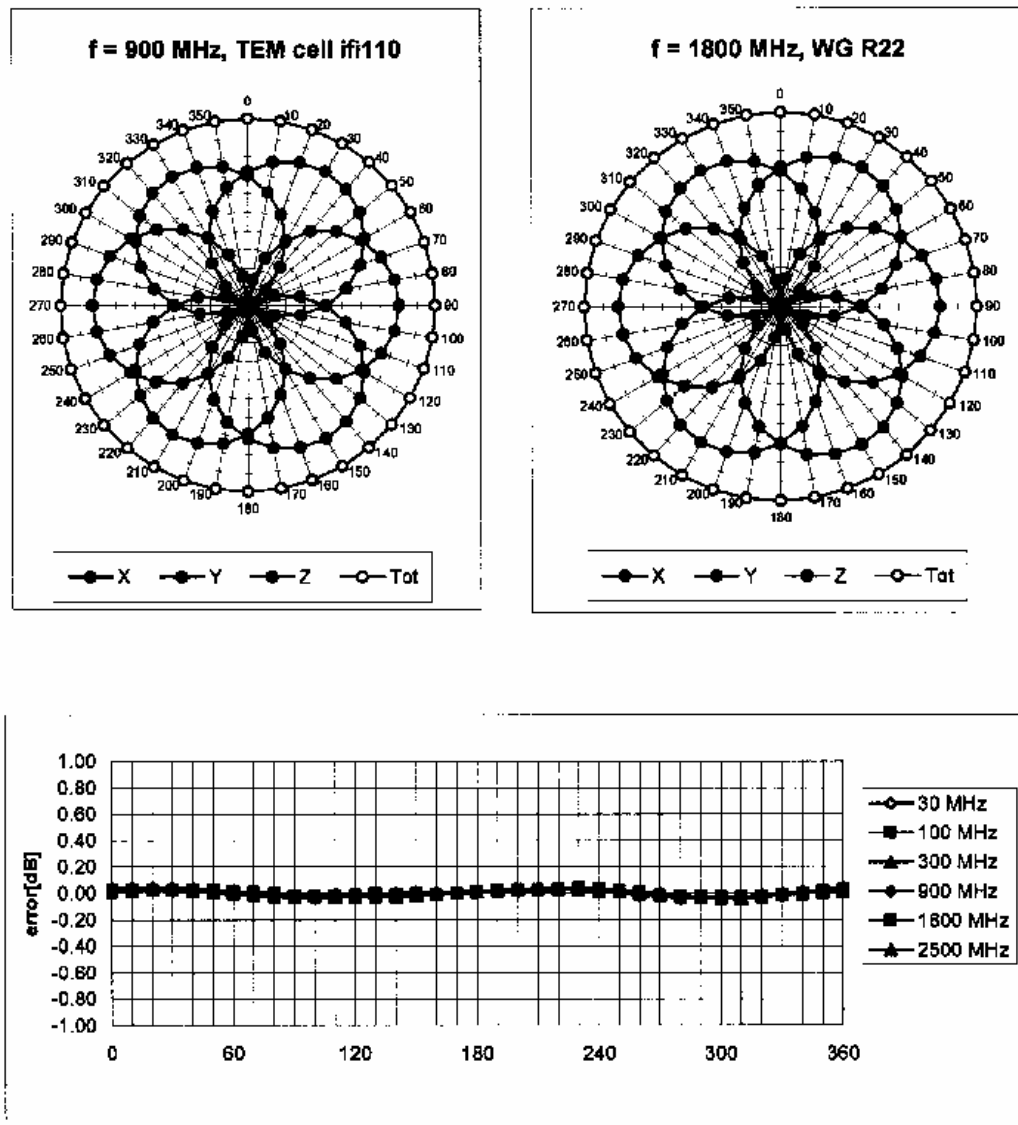
The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A numerical linearization parameter: uncertainty not required

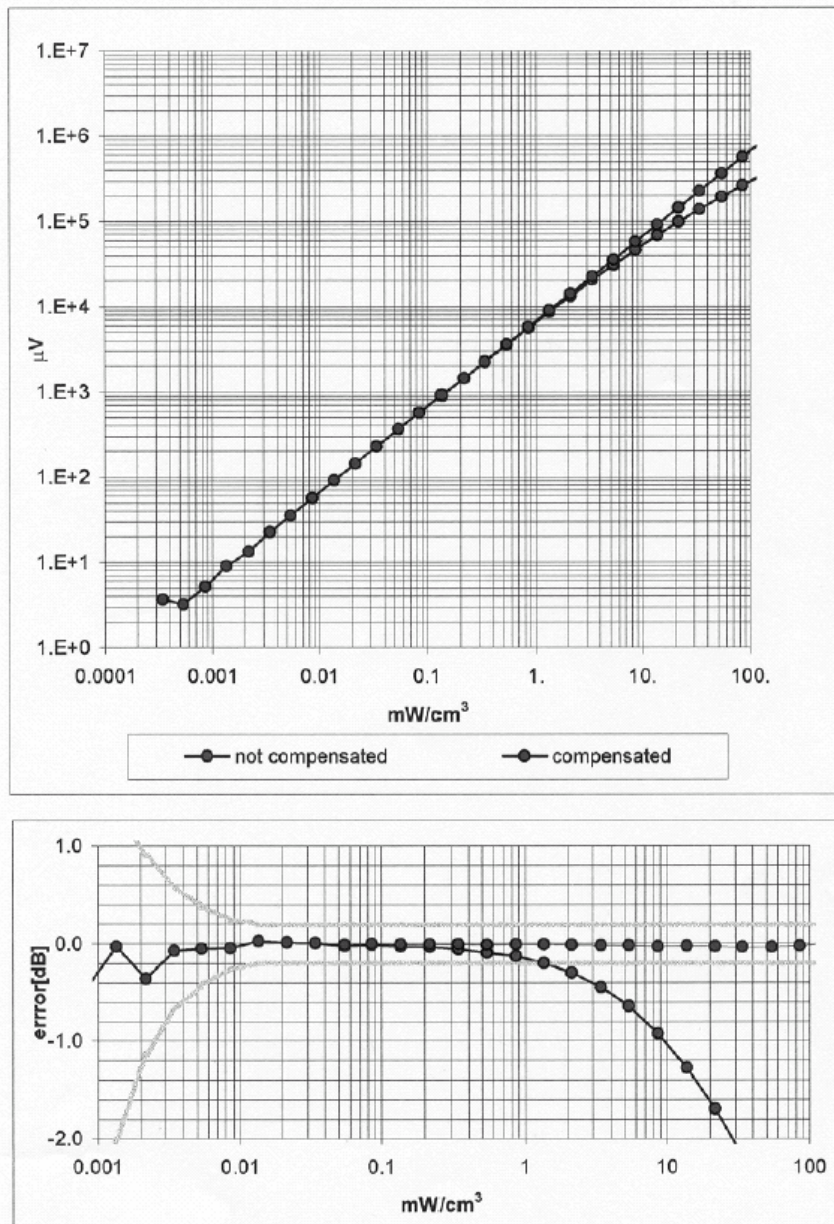
Frequency Response of E-Field

(TEM-Cell:ifi110, Waveguide R22)



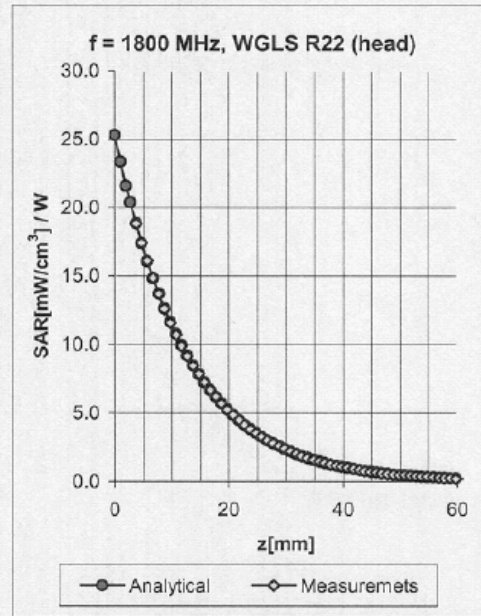
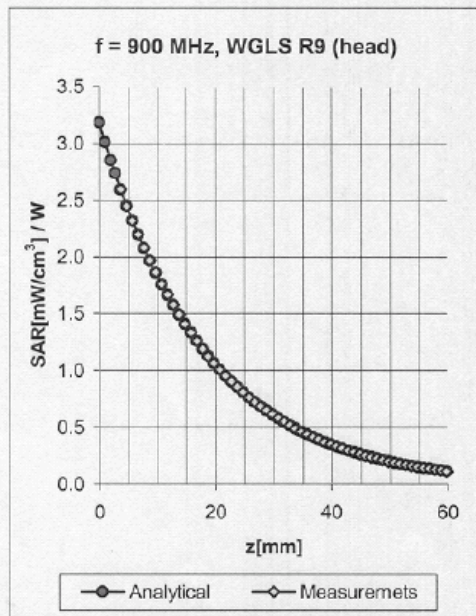
Receiving Pattern (ϕ) , $\theta = 0^\circ$ **Axial Isotropy Error $< \pm 0.2$ dB**

Dynamic Range f(SAR_{head}) (Waveguide R22)



Probe Linearity < ± 0.2 dB

Conversion Factor Assessment

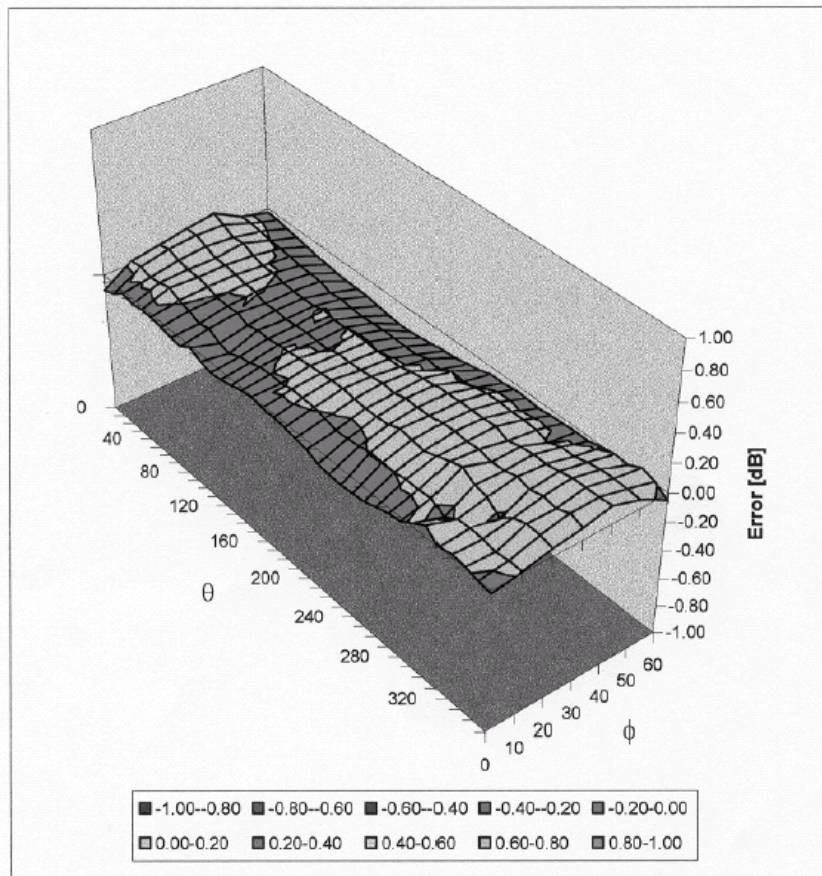


f [MHz]	Validity [MHz] ^B	Tissue	Permittivity	Conductivity	Alpha	Depth	ConvF	Uncertainty
900	800-1000	Head	41.5 ± 5%	0.97 ± 5%	0.72	1.77	6.30	± 9.5% (k=2)
1450	1400-1500	Head	40.5 ± 5%	1.20 ± 5%	0.55	2.40	5.72	± 9.5% (k=2)
1800	1710-1910	Head	40.0 ± 5%	1.40 ± 5%	0.57	2.38	5.14	± 9.5% (k=2)
2450	2400-2500	Head	39.2 ± 5%	1.80 ± 5%	1.18	1.72	4.76	± 9.5% (k=2)
900	800-1000	Body	55.0 ± 5%	1.05 ± 5%	0.51	2.27	5.82	± 9.5% (k=2)
1450	1400-1500	Body	54.0 ± 5%	1.30 ± 5%	0.53	2.58	5.27	± 9.5% (k=2)
1800	1710-1910	Body	53.3 ± 5%	1.52 ± 5%	0.62	2.67	4.55	± 9.5% (k=2)
2450	2400-2500	Body	52.7 ± 5%	1.95 ± 5%	1.91	1.23	4.41	± 9.5% (k=2)

^B The stated uncertainty of calibration was assessed according to P1528.

Deviation from Isotropy in HSL

Error (θ, ϕ), $f = 900$ MHz



Spherical Isotropy Error $< \pm 0.4$ dB

Schmid & Partner Engineering AG

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

Calibration Certificate

900 MHz System Validation Dipole

Type:

D900V2

Serial Number:

085

Place of Calibration:

Zurich

Date of Calibration:

August 27, 2002

Calibration Interval:

24 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:

D. Vetter

Approved by:

Thomas Klatzer

1. Measurement Conditions

The measurements were performed in the flat section of the new generic twin phantom filled with head simulating solution of the following electrical parameters at 900 MHz:

Relative Dielectricity	41.7	± 5%
Conductivity	0.97 mho/m	± 5%

The DASY System with a dosimetric E-field probe ET3DV6 (SN:1507, Conversion factor 6.5 at 900 MHz) was used for the measurements.

The dipole was mounted on the small tripod so that the dipole feedpoint was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 15mm from dipole center to the solution surface. The included distance holder was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 20mm was aligned with the dipole. The 5x5x7 fine cube was chosen for cube integration. Probe isotropy errors were cancelled by measuring the SAR with normal and 90° turned probe orientations and averaging.

The dipole input power (forward power) was 250mW ± 3 %. The results are normalized to 1W input power.

2.1. SAR Measurement with DASY3 System

Standard SAR-measurements were performed according to the measurement conditions described in section 1. The results (see figure supplied) have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values measured with the dosimetric probe ET3DV6 SN:1507 and applying the worst-case extrapolation are:

averaged over 1 cm ³ (1 g) of tissue:	11.0 mW/g
averaged over 10 cm ³ (10 g) of tissue:	6.92 mW/g

2.2 SAR Measurement with DASY4 System

Standard SAR-measurements were performed according to the measurement conditions described in section 1. The results (see figure supplied) have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values measured with the dosimetric probe ET3DV6 SN:1507 and applying the advanced extrapolation are:

averaged over 1 cm ³ (1 g) of tissue:	10.3 mW/g
averaged over 10 cm ³ (10 g) of tissue:	6.64 mW/g

3. Dipole Impedance and Return Loss

The impedance was measured at the SMA-connector with a network analyzer and numerically transformed to the dipole feedpoint. The transformation parameters from the SMA-connector to the dipole feedpoint are:

Electrical delay:	1.389 ns	(one direction)
Transmission factor:	0.991	(voltage transmission, one direction)

The dipole was positioned at the flat phantom sections according to section 1 and the distance holder was in place during impedance measurements.

Feedpoint impedance at 900 MHz:	$\text{Re}\{Z\} = 50.1 \, \Omega$
	$\text{Im}\{Z\} = -3.9 \, \Omega$
Return Loss at 900 MHz	-28.3 dB

4. Handling

Do not apply excessive force to the dipole arms, because they might bend. Bending of the dipole arms stresses the soldered connections near the feedpoint leading to a damage of the dipole.

5. Design

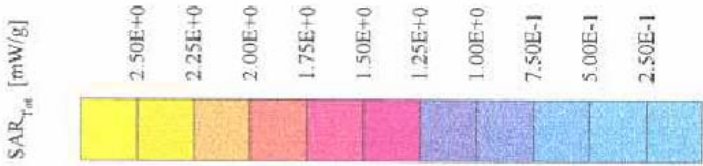
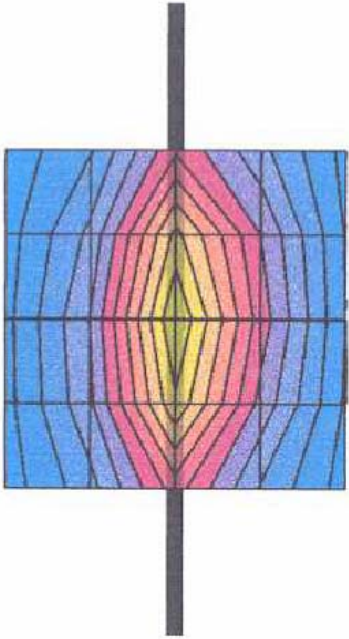
The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

6. Power Test

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

Validation Dipole D900V2 SN:085, d=15 mm

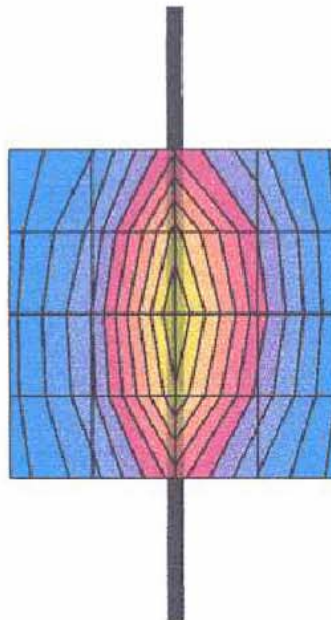
Frequency: 900 MHz, Antenna Input Power: 250 [mW]
SAM Phantom, Flat Section, Grid Spacing: Dx = 20.0, Dy = 20.0, Dz = 10.0
Probe: ET3DV6 - SN1507; ConvF(6.50,6.50) at 900 MHz; IEEE 1528 900 MHz: $\sigma = 0.97$ mho/m $\epsilon_r = 41.7$ $\rho = 1.00$ g/cm³
Cubes (2): Peak: 4.34 mW/g ± 0.01 dB, SAR (1g): 2.74 mW/g ± 0.01 dB, SAR (10g): 1.73 mW/g ± 0.02 dB, (Worst-case extrapolation)
Penetration depth: 11.6 (10.8, 12.8) [mm]
Powerdrift: -0.00 dB



08/27/02

Validation Dipole D900V2 SN:085, d=15 mm

Frequency: 900 MHz, Antenna Input Power: 250 [mW]
SAM Phantom, Flat Section, Grid Spacing: Dx = 20.0, Dy = 20.0, Dz = 10.0
Probe: ET3DV6 - SN1507, ConvF(6.50,6.50,6.50) at 900 MHz, IEEE 1528 900 MHz: $\sigma = 0.97$ mho/m $\epsilon_r = 41.7$ $\rho = 1.00$ g/cm³
Cubes (2), Peak: 3.85 mW/g ± 0.01 dB, SAR (1g): 2.57 mW/g ± 0.01 dB, SAR (10g): 1.66 mW/g ± 0.02 dB, (Advanced extrapolation)
Penetration depth: 12.6 (12.4, 12.9) [mm]
Powerdrift: -0.00 dB



Schmid & Partner Engineering AG, Zurich, Switzerland

Client **Motorola CGISS**

CALIBRATION CERTIFICATE

Object(s) **D835V2 - SN:426**

Calibration procedure(s) **QA CAL-05 v2**
Calibration procedure for dipole validation kits

Calibration date: **March 22, 2004**

Condition of the calibrated item **In Tolerance (according to the specific calibration document)**

This calibration statement documents traceability of M&TE used in the calibration procedures and conformity of the procedures with the ISO/IEC 17025 international standard.

All calibrations have been conducted in the closed laboratory facility: environment temperature 22 +/- 2 degrees Celsius and humidity < 75%.

Calibration Equipment used (M&TE critical for calibration)

Model Type	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM E442	GB37480704	6-Nov-03 (METAS, No. 252-0254)	Nov-04
Power sensor HP 8481A	US37282783	6-Nov-03 (METAS, No. 252-0254)	Nov-04
Power sensor HP 8481A	MY41092317	18-Oct-02 (Agilent, No. 20021018)	Oct-04
RF generator R&S SML-03	100698	27-Mar-2002 (R&S, No. 20-92389)	In house check: Mar-05
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Nov-03)	In house check: Oct 05

	Name	Function	Signature
Calibrated by:	Judith Mueller	Technician	
Approved by:	Katja Polovic	Laboratory Director	

Date issued: March 23, 2004

This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed.

1. Measurement Conditions

The measurements were performed in the flat section of the SAM twin phantom filled with head simulating solution of the following electrical parameters at 835 MHz:

Relative Dielectricity	42.1	± 5%
Conductivity	0.89 mho/m	± 5%

The DASY4 System with a dosimetric E-field probe ET3DV6 (SN:1507, Conversion factor 6.3 at 835 MHz) was used for the measurements.

The dipole was mounted on the small tripod so that the dipole feedpoint was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 15mm from dipole center to the solution surface. The included distance spacer was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 15mm was aligned with the dipole. The 7x7x7 fine cube was chosen for cube integration.

The dipole input power (forward power) was 250 mW ± 3 %. The results are normalized to 1W input power.

2. SAR Measurement with DASY4 System

Standard SAR-measurements were performed according to the measurement conditions described in section 1. The results (see figure supplied) have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values measured with the dosimetric probe ET3DV6 SN:1507 and applying the advanced extrapolation are:

averaged over 1 cm ³ (1 g) of tissue:	10.0 mW/g ± 16.8 % (k=2) ¹
averaged over 10 cm ³ (10 g) of tissue:	6.52 mW/g ± 16.2 % (k=2) ¹

3. Dipole Impedance and Return Loss

The impedance was measured at the SMA-connector with a network analyzer and numerically transformed to the dipole feedpoint. The transformation parameters from the SMA-connector to the dipole feedpoint are:

Electrical delay:	1.377 ns	(one direction)
Transmission factor:	0.986	(voltage transmission, one direction)

The dipole was positioned at the flat phantom sections according to section 1 and the distance holder was in place during impedance measurements.

Feedpoint impedance at 835 MHz:	$\text{Re}\{Z\} = 51.9 \, \Omega$
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$\text{Im}\{Z\} = 0.7 \, \Omega$

Return Loss at 835 MHz	-34.2 dB
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4. Handling

Do not apply excessive force to the dipole arms, because they might bend. Bending of the dipole arms stresses the soldered connections near the feedpoint leading to a damage of the dipole.

5. Design

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

6. Power Test

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN426

Communication System: CW-835; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL 835 MHz;

Medium parameters used: $f = 835$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 42.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507; ConvF(6.3, 6.3, 6.3); Calibrated: 1/23/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn411; Calibrated: 11/6/2003
- Phantom: SAM with CRP - TP1006; Type: SAM 4.0; Serial: TP:1006;
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

Pin = 250 mW; d = 15 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 57 V/m; Power Drift = -0.009 dB

Maximum value of SAR (interpolated) = 2.68 mW/g

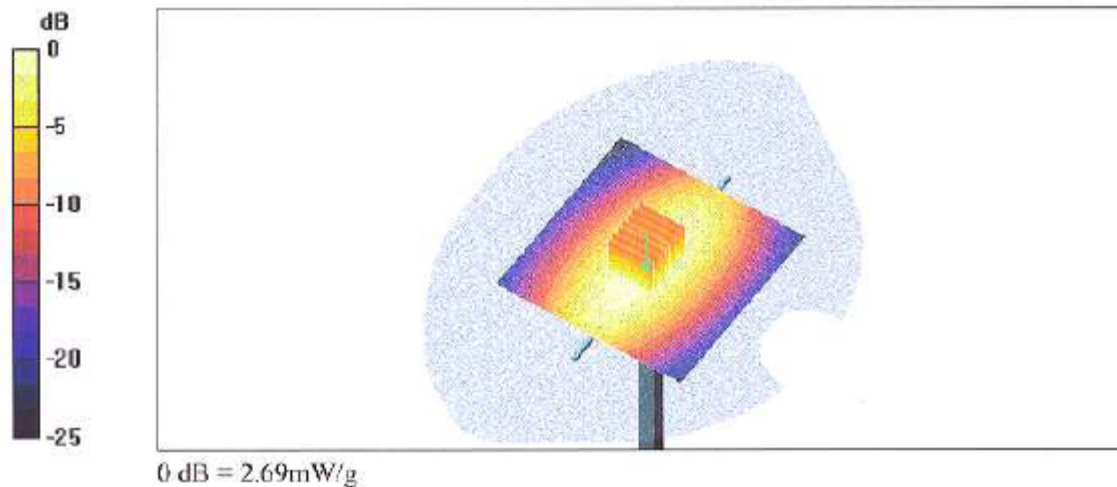
Pin = 250 mW; d = 15 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57 V/m; Power Drift = -0.009 dB

Maximum value of SAR (measured) = 2.69 mW/g

Peak SAR (extrapolated) = 3.73 W/kg

SAR(1 g) = 2.49 mW/g; SAR(10 g) = 1.63 mW/g



APPENDIX E
Illustration of Body-Worn Accessories

The purpose of this appendix is to illustrate the body-worn carry accessories for FCC ID: AZ489FT5839. The sample that was used in the following photos represents the product used to obtain the results presented herein and was used in this section to demonstrate the different body-worn accessories.



Photo 1.
Model NNTN5821A
Back View



Photo 2.
Model NNTN5821A
Side View

Appendix F

Accessories and options test status and separation distances

The following table summarizes the test status and separation distance provided by each of the body-worn accessories:

Carry Case Models	Tested ?	Min. Separation distances between DUT antenna and phantom surface. (mm)	Comments
NNTN5821A	Yes	33-36	NA

Audio Acc. Models	Tested ?	Separation distances between DUT antenna and phantom surface. (mm)	Comments
NNTN4620A	Yes	NA	NA
SYN8146C	Yes	NA	NA
SYN7875C	Yes	NA	NA
NTN8496A	Yes	NA	NA
NTN8513B	Yes	NA	NA
SYN8390B	Yes	NA	NA
NNTN4033A	Yes	NA	NA
NSN6066A	Yes	NA	NA
NNTN5004A	Yes	NA	NA
NNTN5005A	Yes	NA	NA
NNTN5006A	Yes	NA	NA
NNTN5330A	Yes	NA	NA
NNTN5211A	Yes	NA	NA
NNTN5751A	Yes	NA	NA

Data cable Models	Tested ?	Separation distances between DUT antenna and phantom surface. (mm)	Comments
NKN6560A	Yes	NA	NA
NKN6559A	Yes	NA	NA
NNTN5405A	Yes	NA	Similar to NKN6559A
NNTN5406A	Yes	NA	Similar to NKN6560A

Other attachment models	Tested ?	Separation distances between DUT antenna and phantom surface. (mm)	Comments
NNTN5845A	Yes	NA	Tested with offered battery models