

**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 8, 2003
Report Revision: Rev. 0
Manufacturer: Motorola
Product Description: 1:6, 2:6, 81:120, 1:12 TDMA; 64
QAM, 16 QAM & QPSK
Modulation; 0.6 W Pulse average
FCC ID: **AZ489FT5825**
Device Model: H63XAH6RR3AN

Test Period: 6/26/03-7/18/03

EME Tech: Clint Miller/Ed Church

EME Eng.: Deanna Zakharia (Elect. Principle Staff Eng.)

Author: Michael Sailsman
Global EME Regulatory Affairs Liaison
and
Deanna Zakharia (Elect. Principle Staff Eng.)

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

8/8/2003

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

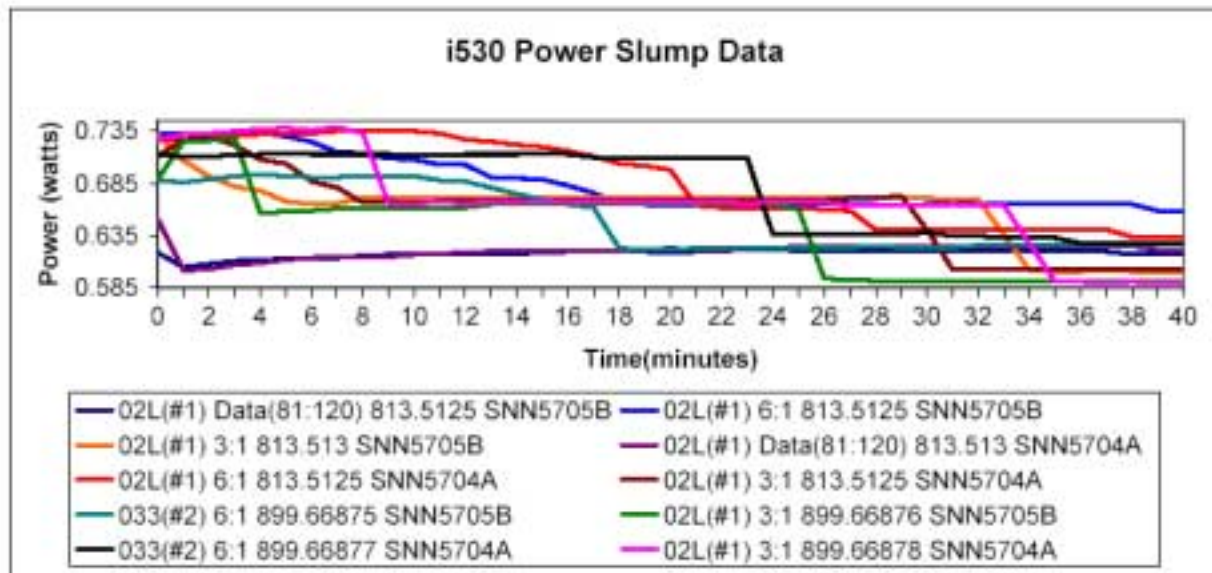
Date Approved

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



Shortened Scan Results

FCC ID: AZ489FT5825; Test Date: 7/16/03

Motorola CGISS EME Laboratory

Run #: CM-REAR-R2-030716-07

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 806.0125 MHz

Sim Tissue Temp: 21.1 (Celsius)

Start Power: .0.730 W Normal scan (27min)

Start Power: 0.707 W Short scan (10min)

Antenna: IN

Battery Kit: SNN5705B/NNTN4907A

Carry Accessories: None

Attached Accessories: None

This shortened scan reflects the highest S.A.R. producing configuration; Run time 10 minutes.

Representative “normal” scan run time was 27 minutes

“Shortened” scan max calculated S.A.R. using S.A.R. drift: 1-g Avg. = 1.263 mW/g; 10-g Avg. = 0.864 mW/g

“Normal” scan max calculated S.A.R. using S.A.R. drift: 1-g Avg. = 1.370 mW/g; 10-g Avg. = 0.923 mW/g

(see section 7.1 run # CM-REAR-R2-030715-07)

DUT in cheek touch position Right Ear

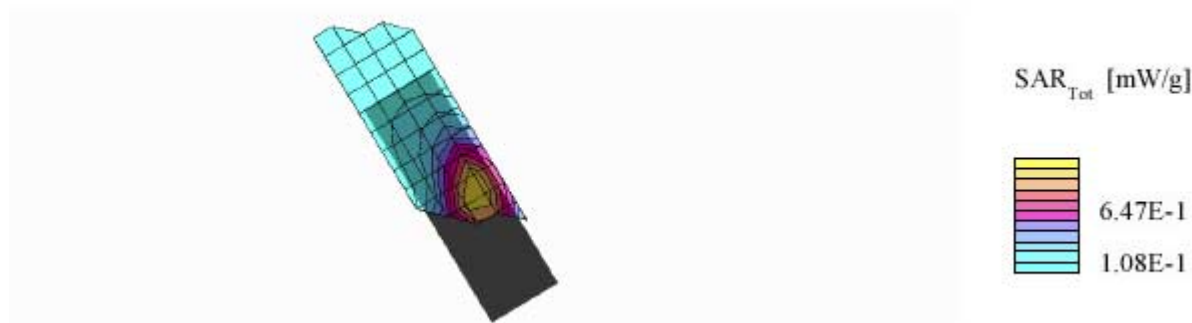
SAM Phantom; Right Hand Section; Position: (90°, 301°);

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.50,6.50,6.50); Probe cal date: 28/09/02; Crest factor: 3.0; IEEE

HEAD 813MHz: $\sigma = 0.92$ mho/m $\epsilon_r = 42.1$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 1.16 mW/g, SAR (10g): 0.793 mW/g,

(Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 34.5, 19.5, 4.7

Powerdrift: -0.37 dB



APPENDIX B

Data Results

FCC ID: AZ489FT5825; Test Date: 6/26/03

Motorola CGISS EME Laboratory

Run #: CM-LEAR-R2-030626-03

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 813.5125 MHz

Sim Tissue Temp: 21.9 (Celsius)

Antenna: IN

Battery Kit: SNN5705B/NNTN4907A

Carry Accessories: None

Attached Accessories: None

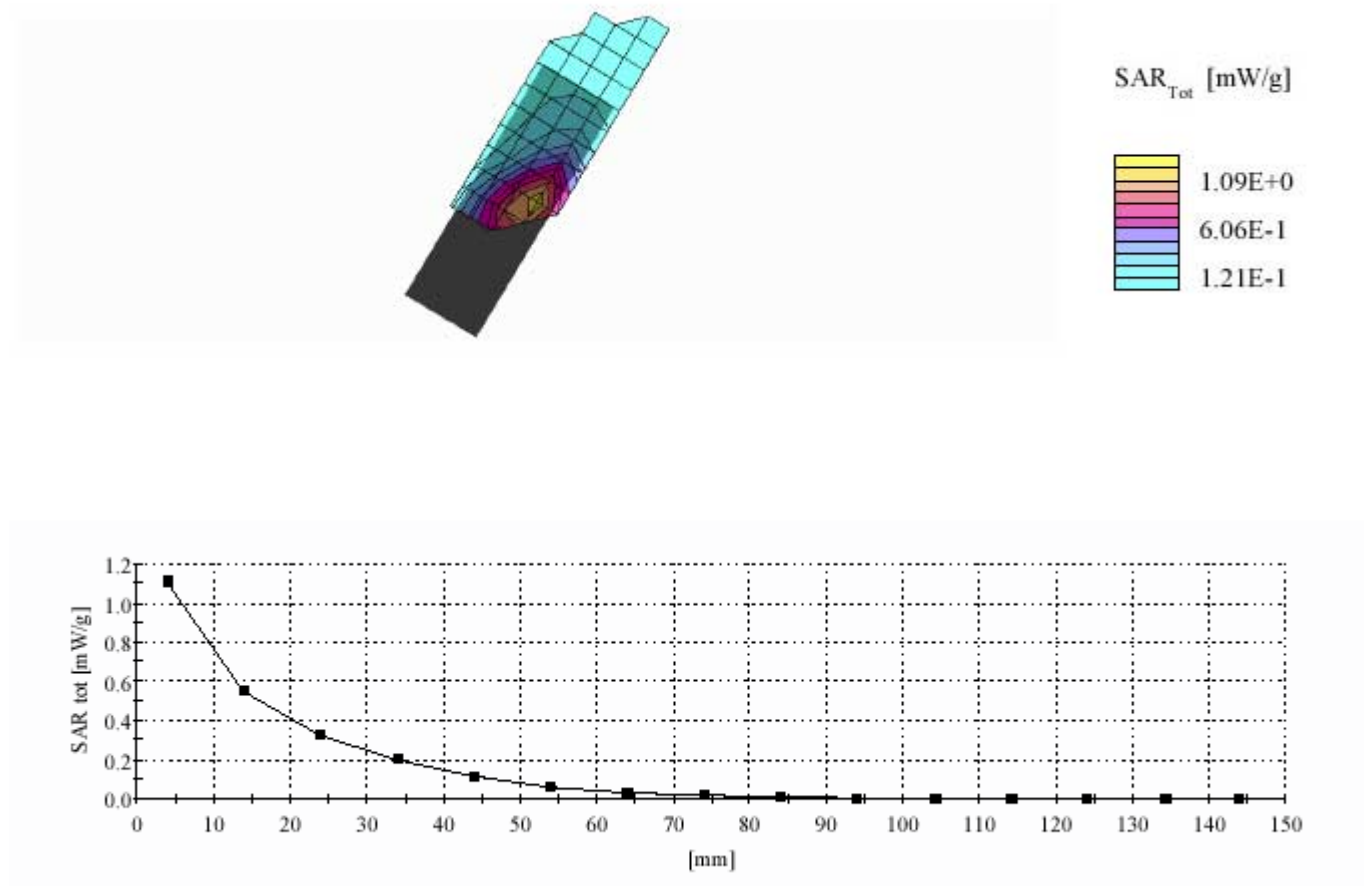
DUT in cheek touch position Left Ear

SAM Phantom; Left Hand Section;

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.50,6.50,6.50); Probe cal date: 28/09/02; Crest factor: 3.0; IEEE

HEAD 813MHz: $\sigma = 0.93$ mho/m $\rho_r = 42.4$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 1.03 mW/g, SAR (10g): 0.691 mW/g, (Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 42.0, 15.0, 4.0

Powerdrift: -0.43 dB



FCC ID: AZ489FT5825; Test Date: 7/15/03

Motorola CGISS EME Laboratory

Run #: CM-LEAR-R2-030715-02

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 806.0125 MHz

Sim Tissue Temp: 21.5 (Celsius)

Antenna: IN

Battery Kit: SNN5705B/NNTN4907A

Carry Accessories: None

Attached Accessories: None

DUT in cheek touch position Left Ear

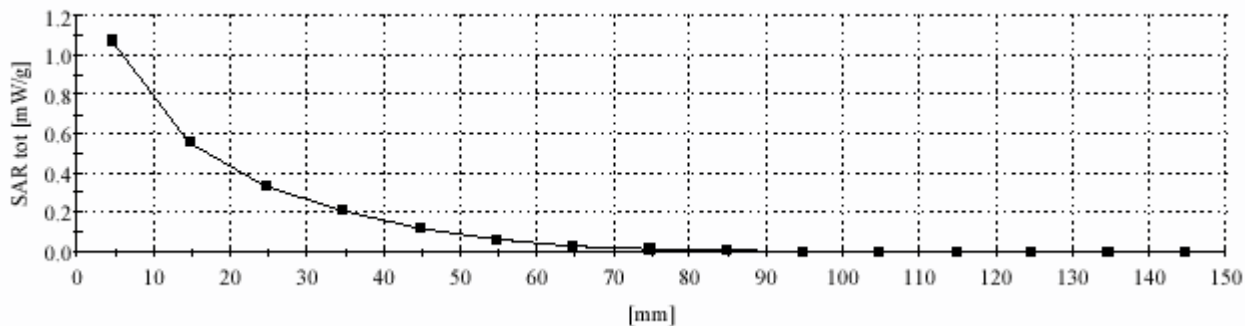
SAM Phantom; Left Hand Section; Position: (90°,59°);

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.50,6.50,6.50); Probe cal date: 28/09/02; Crest factor: 3.0; IEEE

HEAD 813MHz: $\sigma = 0.92$ mho/m $\epsilon_r = 41.9$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 1.05 mW/g, SAR (10g): 0.726 mW/g,

(Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 40.5, 21.0, 4.7

Powerdrift: -0.44 dB



FCC ID: AZ489FT5825; Test Date: 7/15/03

Motorola CGISS EME Laboratory

Run #: CM-REAR-R2-030715-06

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 813.5125 MHz

Sim Tissue Temp: 21.6 (Celsius)

Antenna: OUT

Battery Kit: SNN5705B/NNTN4907A

Carry Accessories: None

Attached Accessories: None

DUT in cheek touch position Right Ear

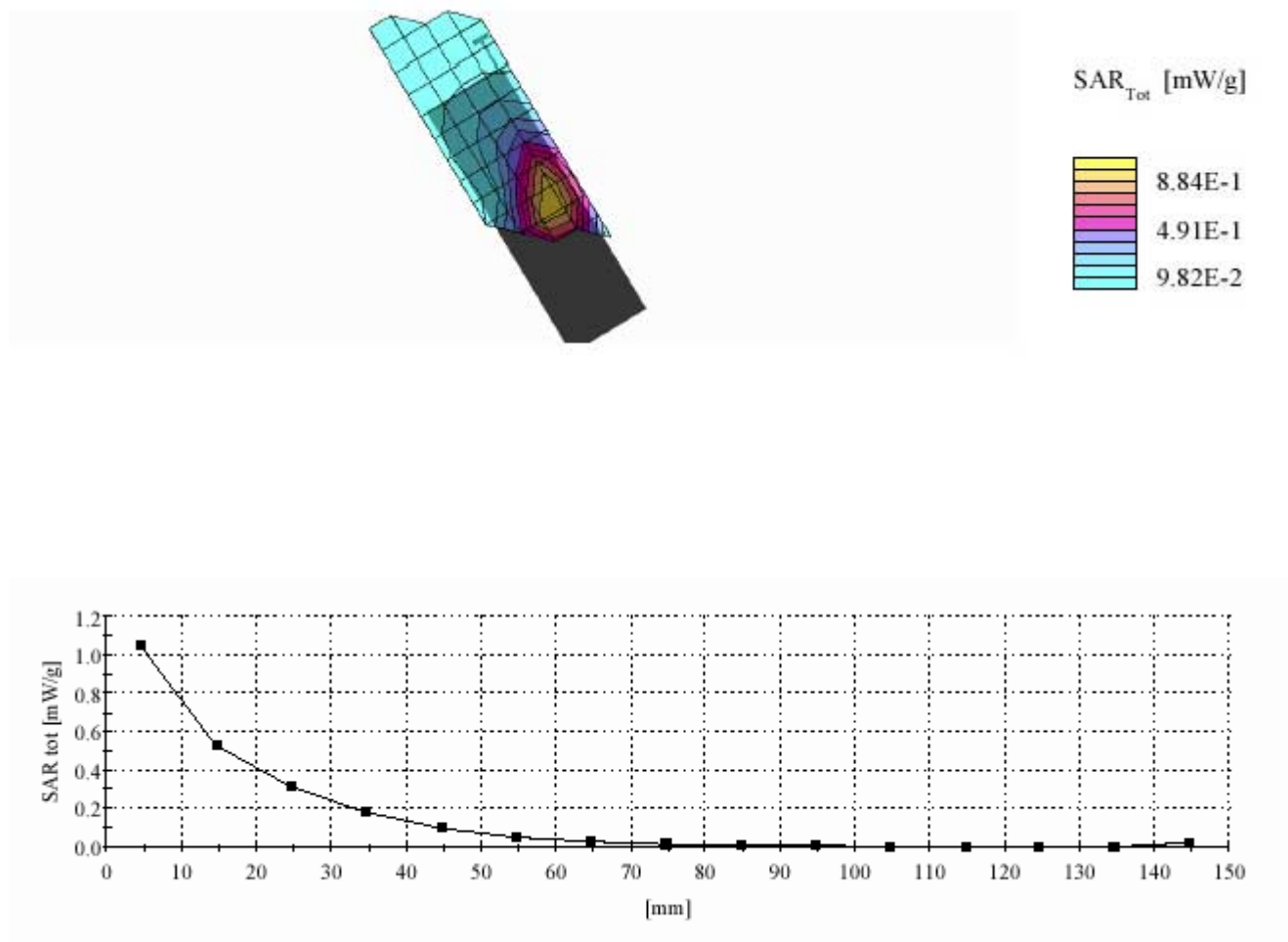
SAM Phantom; Left Hand Section; Position: (90°,301°);

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.50,6.50,6.50); Probe cal date: 28/09/02; Crest factor: 3.0; IEEE

HEAD 813MHz: $\sigma = 0.92$ mho/m $\epsilon_r = 41.9$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 1.01 mW/g, SAR (10g): 0.681 mW/g,

(Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 37.5, 18.0, 4.7

Powerdrift: -0.69 dB



FCC ID: AZ489FT5825; Test Date: 7/15/03

Motorola CGISS EME Laboratory

Run #: CM-REAR-R2-030715-07

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 806.0125 MHz

Sim Tissue Temp: 21.6 (Celsius)

Antenna: IN

Battery Kit: SNN5705B/NNTN4907A

Carry Accessories: None

Attached Accessories: None

DUT in cheek touch position Right Ear

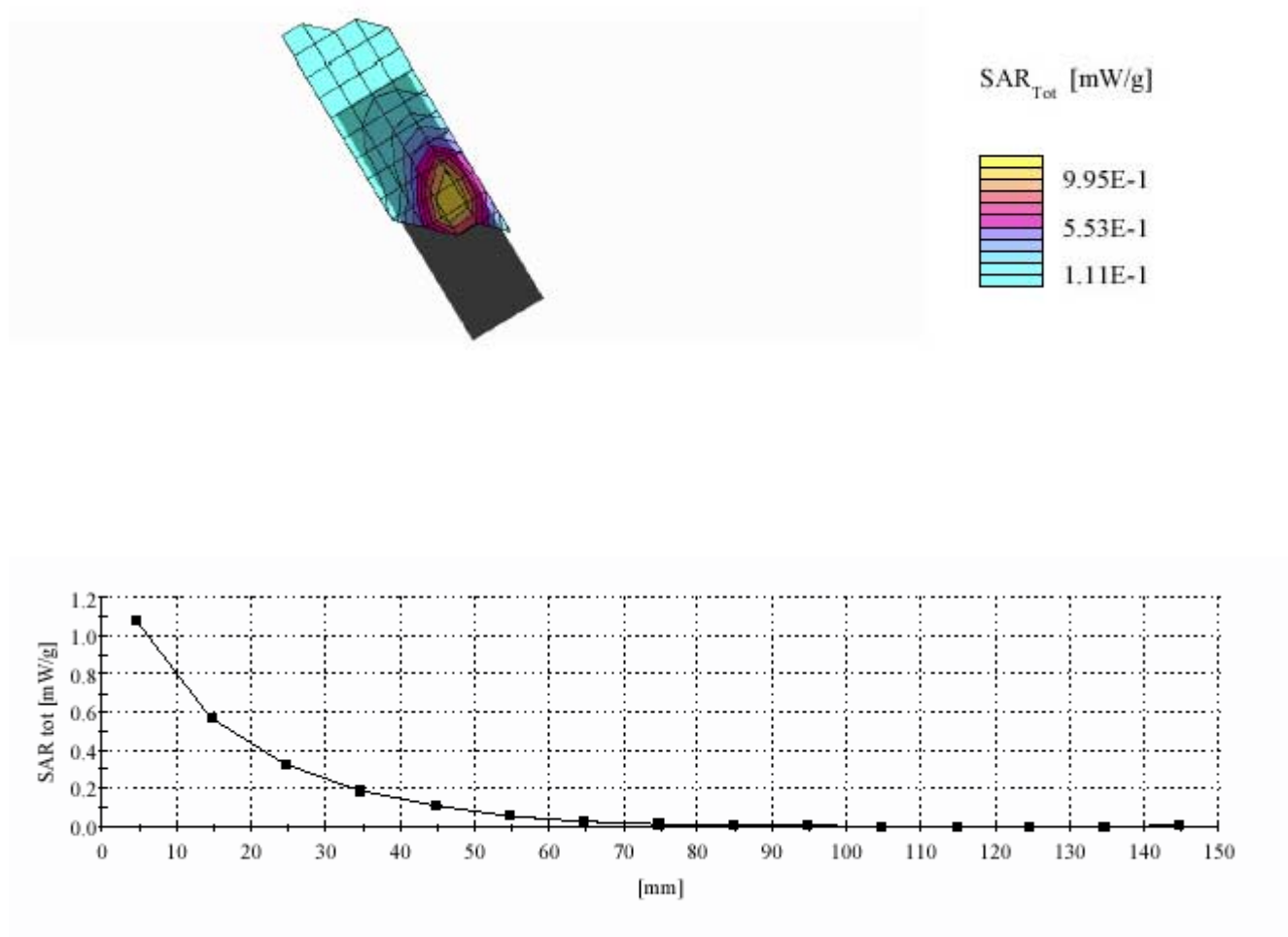
SAM Phantom; Right Hand Section; Position: (90°, 301°);

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.50,6.50,6.50); Probe cal date: 28/09/02; Crest factor: 3.0; IEEE

HEAD 813MHz: $\sigma = 0.92$ mho/m $\epsilon_r = 41.9$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 1.21 mW/g, SAR (10g): 0.815 mW/g,

(Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 34.5, 22.5, 4.7

Powerdrift: -0.54 dB



FCC ID: AZ489FT5825; Test Date: 7/08/03

Motorola CGISS EME Laboratory

Run #: CM-FACE-R2-030708-11

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 813.5125 MHz

Sim Tissue Temp: 21.4 (Celsius)

Antenna: IN

Battery Kit: SNN5705B/NNTN4907A

Carry Accessories: None

Attached Accessories: None

DUT w/front towards phantom; flip closed; w/2.5 cm separation.

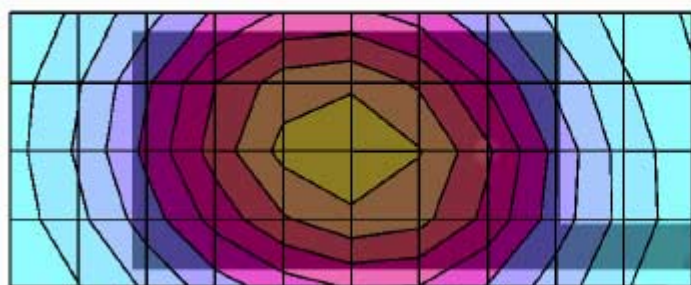
SAM Phantom; Flat Section; Position: (90°,90°);

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.50,6.50,6.50); Probe cal date: 28/09/02; Crest factor: 6.0; IEEE

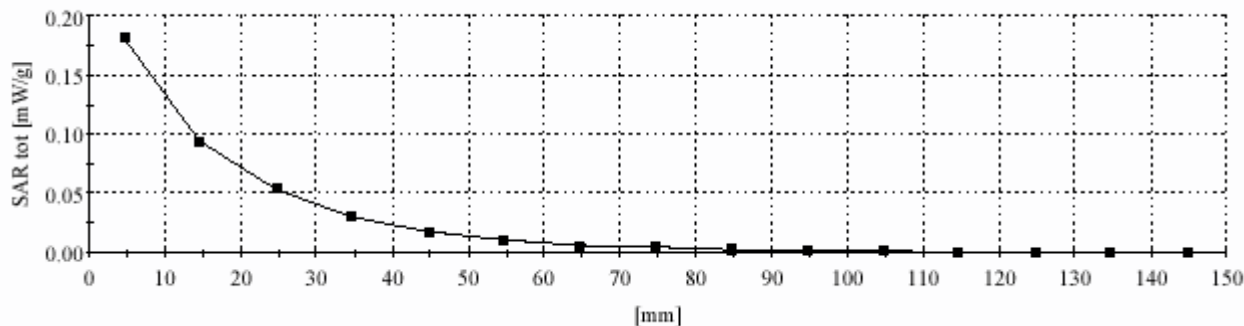
HEAD 813MHz: $\sigma = 0.93$ mho/m $\epsilon_r = 42.3$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 0.200 mW/g, SAR (10g): 0.143 mW/g,

(Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 30.0, 73.5, 4.7

Powerdrift: 0.02 dB



SAR_{Tot} [mW/g]



FCC ID: AZ489FT5825; Test Date: 7/09/03

Motorola CGISS EME Laboratory

Run #: CM- FACE-R2-030709-06

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 806.0125 MHz

Sim Tissue Temp: 20.6 (Celsius)

Antenna: IN

Battery Kit: SNN5705B/NNTN4907A

Carry Accessories: None

Attached Accessories: None

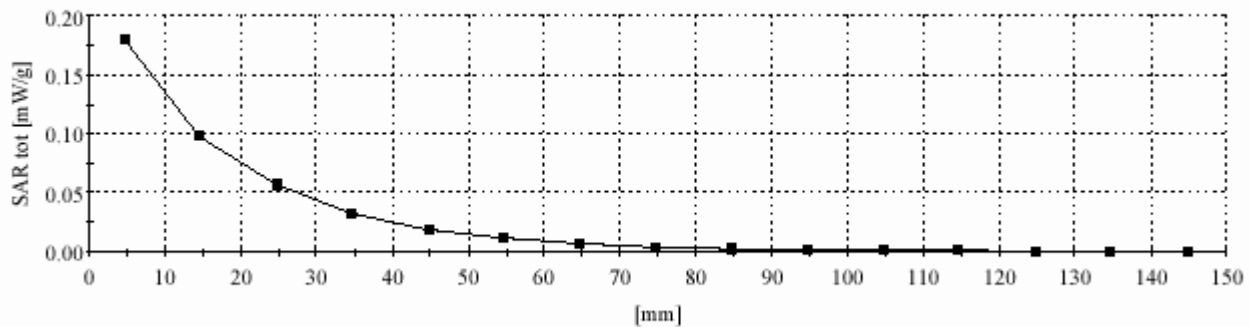
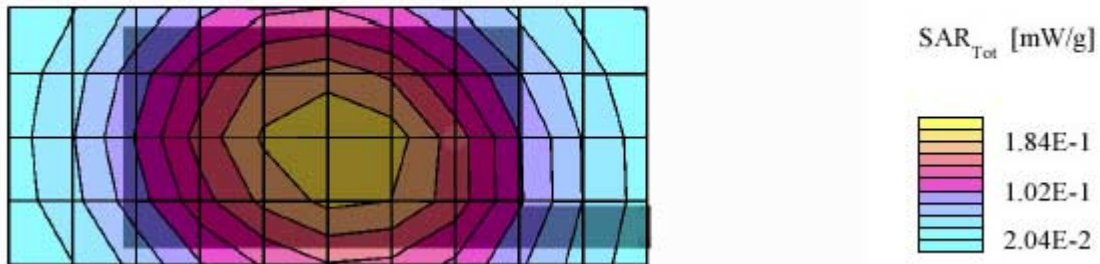
DUT w/front towards phantom; flip closed; w/2.5 cm separation.

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

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.50,6.50,6.50); Probe cal date: 28/09/02; Crest factor:

6.0; IEEE HEAD 813MHz: $\sigma = 0.93$ mho/m $\epsilon_r = 42.0$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 0.206 mW/g, SAR (10g): 0.149 mW/g, (Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 33.0, 79.5, 4.7

Powerdrift: -0.39 dB



FCC ID: AZ489FT5825; Test Date: 7/01/03

Motorola CGISS EME Laboratory

Run #: CM-LEAR-R2-030701-04

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 899.66875 MHz

Sim Tissue Temp: 21.7 (Celsius)

Antenna: OUT

Battery Kit: SNN5704A/NNTN4907A

Carry Accessories: None

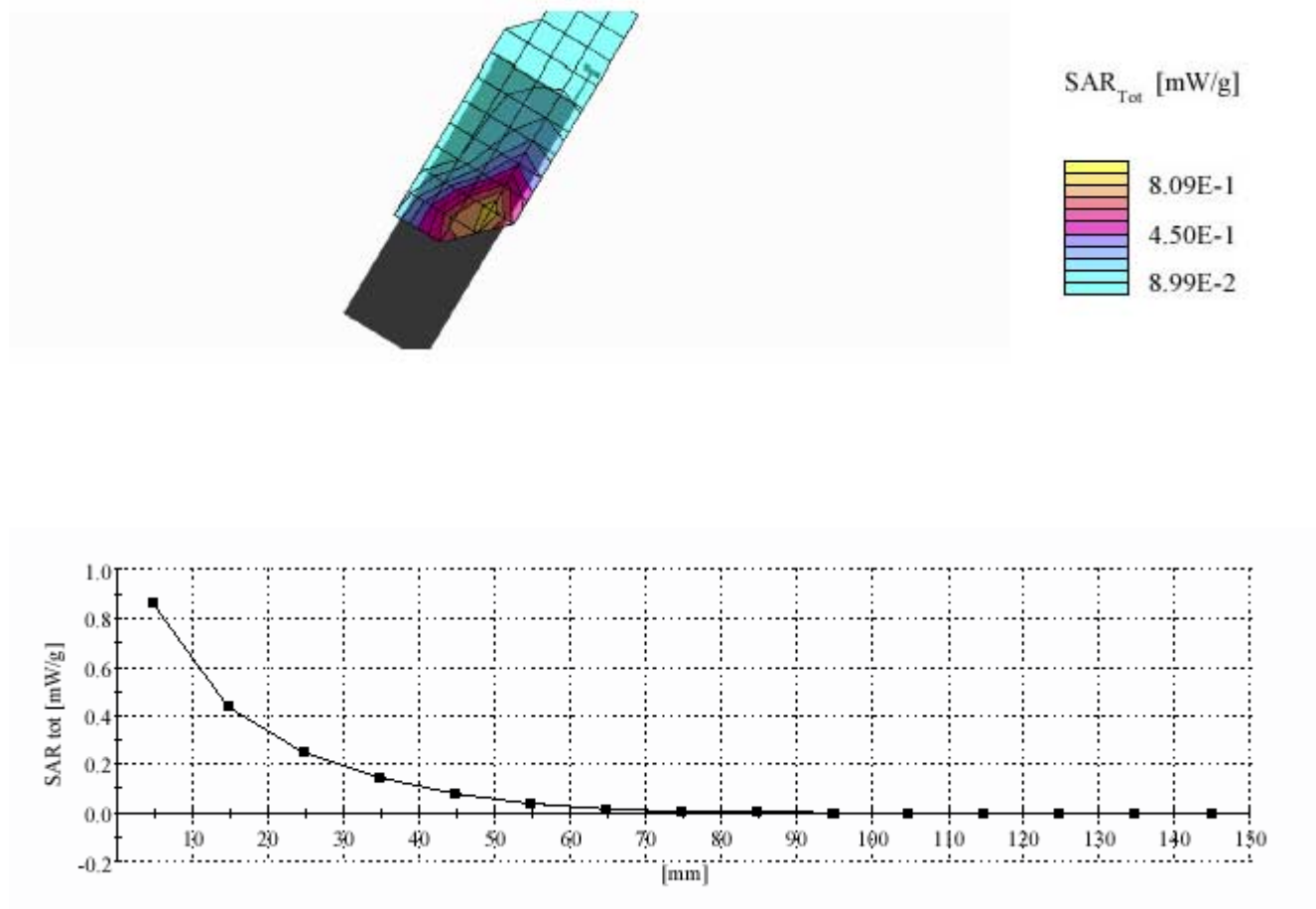
Attached Accessories: None

DUT in cheek touch position Left Ear

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

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.50,6.50,6.50); Probe cal date: 28/09/02; Crest factor: 3.0; IEEE HEAD 899MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 41.3$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 0.829 mW/g, SAR (10g): 0.549 mW/g, (Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 40.5, 15.0, 4.7

Powerdrift: -0.28 dB



FCC ID: AZ489FT5825; Test Date: 7/02/03

Motorola CGISS EME Laboratory

Run #: CM-LEAR-R2-030702-06

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 901.98125 MHz

Sim Tissue Temp: 21.7 (Celsius)

Antenna: OUT

Battery Kit: SNN5704A/NNTN4907A

Carry Accessories: None

Attached Accessories: None

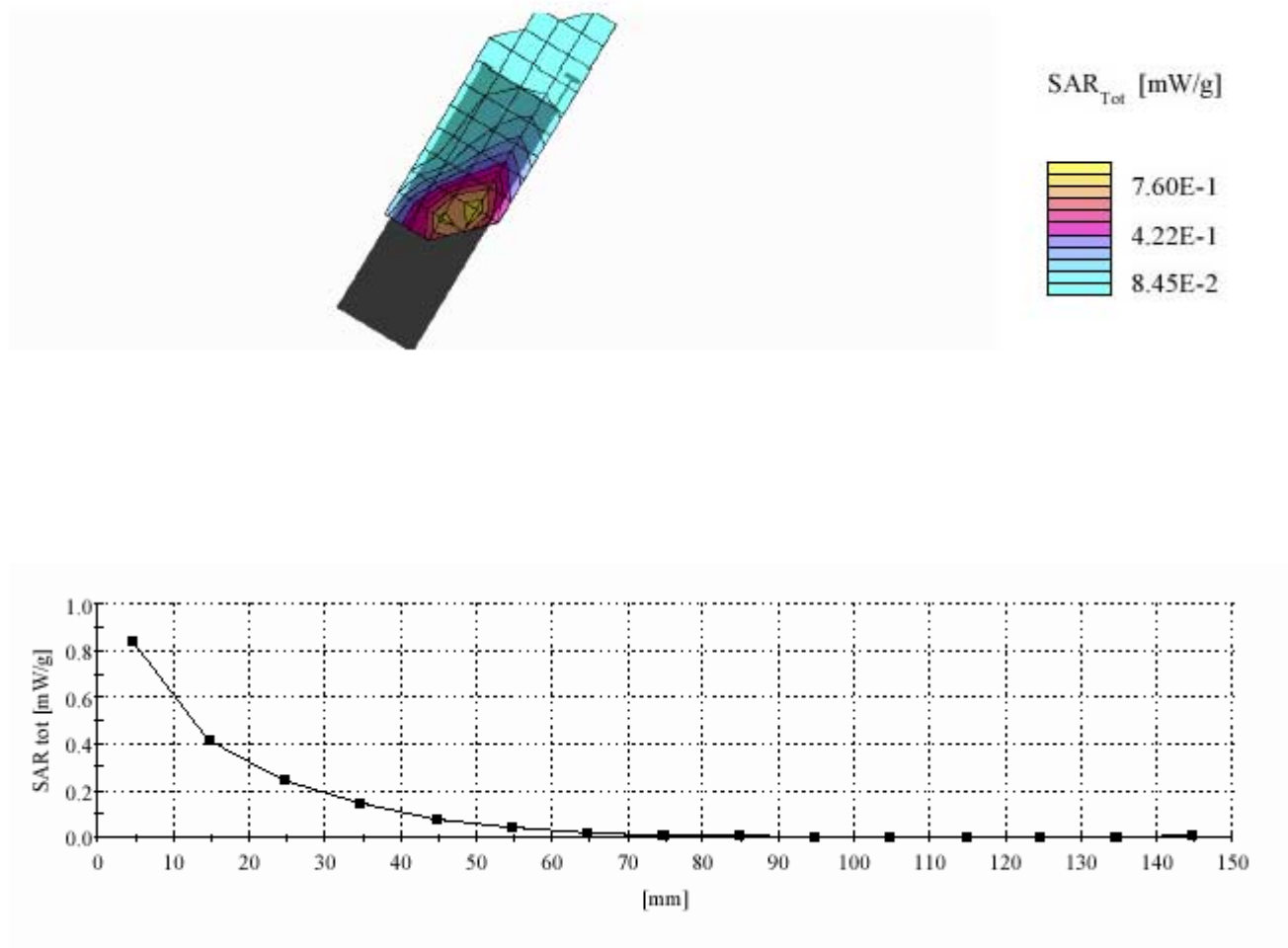
DUT in cheek touch position Left Ear

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

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.50,6.50,6.50); Probe cal date: 28/09/02; Crest factor: 3.0; IEEE

HEAD 899MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 40.8$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 0.801 mW/g, SAR (10g): 0.536 mW/g, (Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 39.0, 19.5, 4.7

Powerdrift: -0.20 dB



FCC ID: AZ489FT5825; Test Date: 7/03/03

Motorola CGISS EME Laboratory

Run #: CM- REAR-R2-030703-05

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 899.66875 MHz

Sim Tissue Temp: 21.7 (Celsius)

Antenna: OUT

Battery Kit: SNN5704A/NNTN4907A

Carry Accessories: None

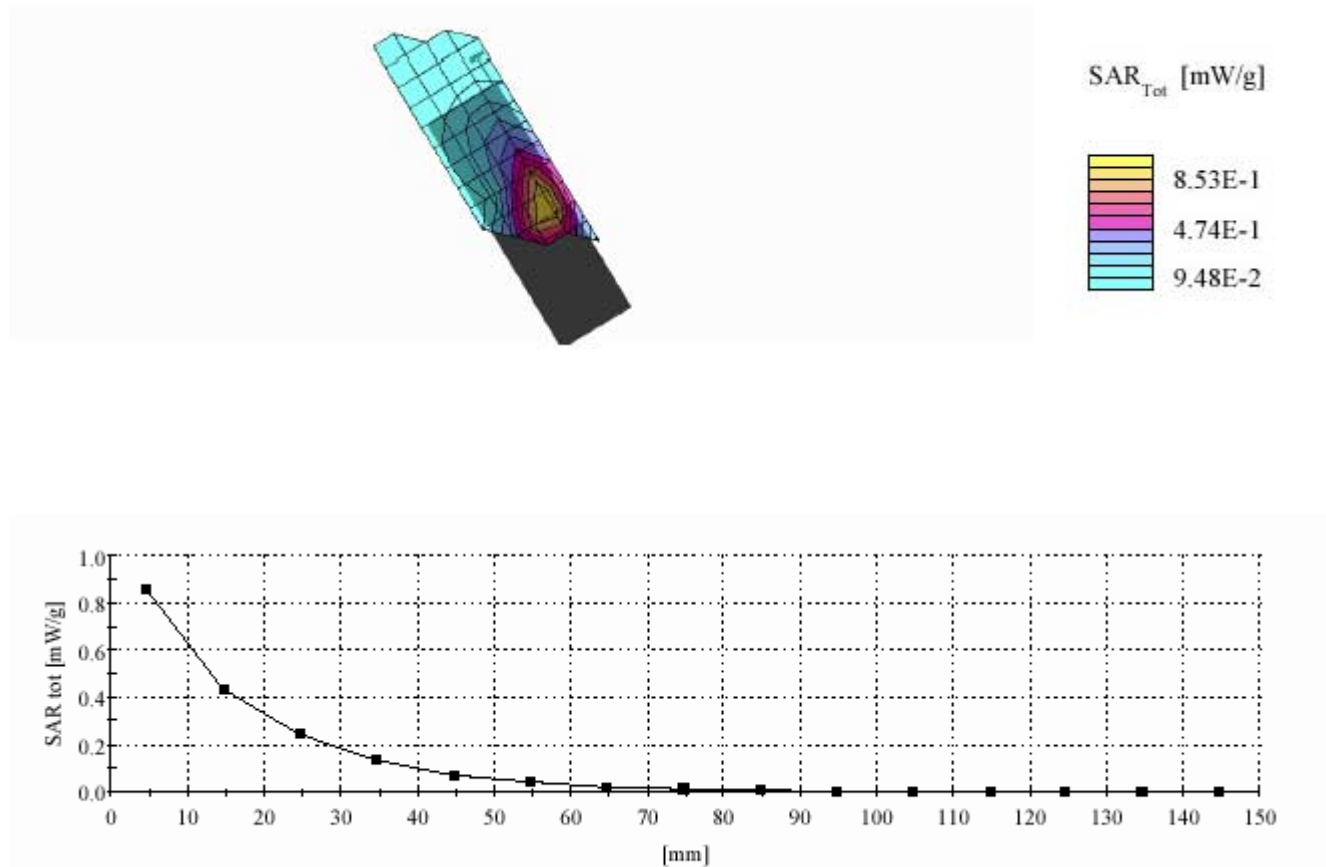
Attached Accessories: NNTN4877A Mini Keyboard

DUT in cheek touch position Right Ear

SAM Phantom; Right Hand Section; Position: (90°,301°);

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.50,6.50,6.50); Probe cal date: 28/09/02; Crest factor: 3.0; IEEE HEAD 899MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 41.7$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 0.868 mW/g, SAR (10g): 0.585 mW/g, (Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 37.5, 18.0, 4.7

Powerdrift: -0.60 dB



FCC ID: AZ489FT5825; Test Date: 7/03/03

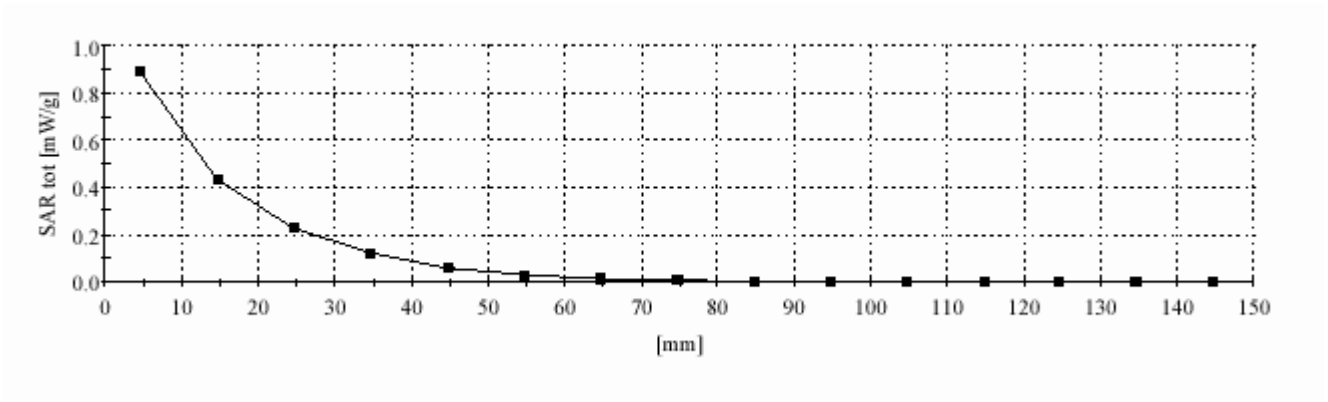
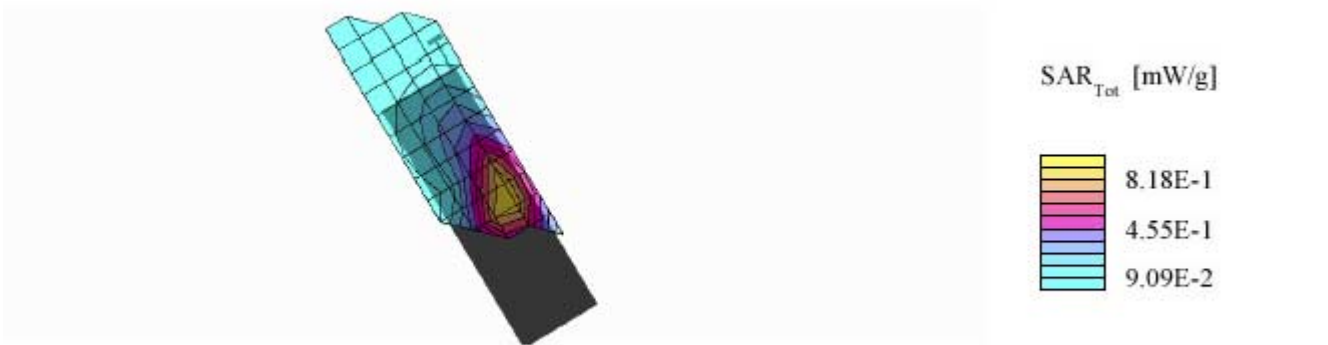
Motorola CGISS EME Laboratory

Run #: CM- REAR-R2-030703-11
Model #: H63XAH6RR3AN SN: 364TOL002L
TX Freq: 901.98125 MHz
Sim Tissue Temp: 21.8 (Celsius)

Antenna: OUT
Battery Kit: SNN5704A/NNTN4907A
Carry Accessories: None
Attached Accessories: NNTN4877A Mini Keyboard

DUT in cheek touch position Right Ear

SAM Phantom; Left Hand Section; Position: (90°,301°);
Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.50,6.50,6.50); Probe cal date: 28/09/02; Crest factor: 3.0; IEEE
HEAD 899MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 41.7$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 0.856 mW/g, SAR (10g): 0.577 mW/g,
(Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 34.5, 18.0, 4.7
Powerdrift: -1.04 dB



FCC ID: AZ489FT5825; Test Date: 7/15/03

Motorola CGISS EME Laboratory

Run #: CM-FACE-R2-030707-02

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 899.66875 MHz

Sim Tissue Temp: 21.6 (Celsius)

Antenna: OUT

Battery Kit: SNN5704A/NNTN4907A

Carry Accessories: None

Attached Accessories: None

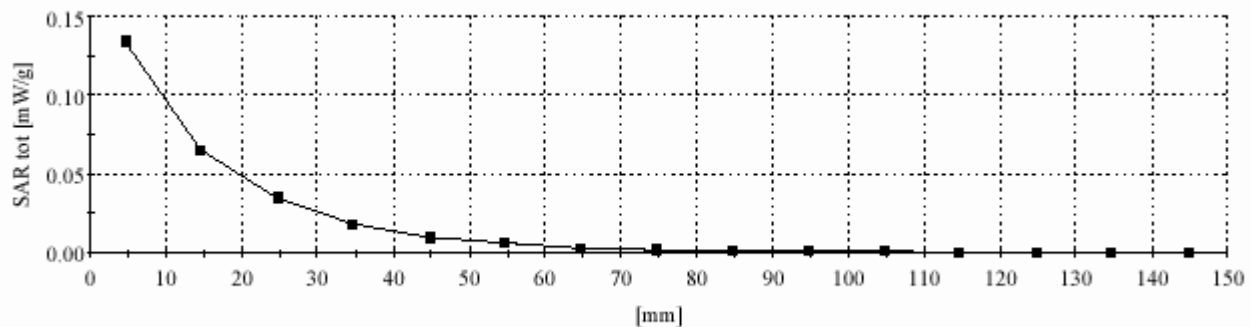
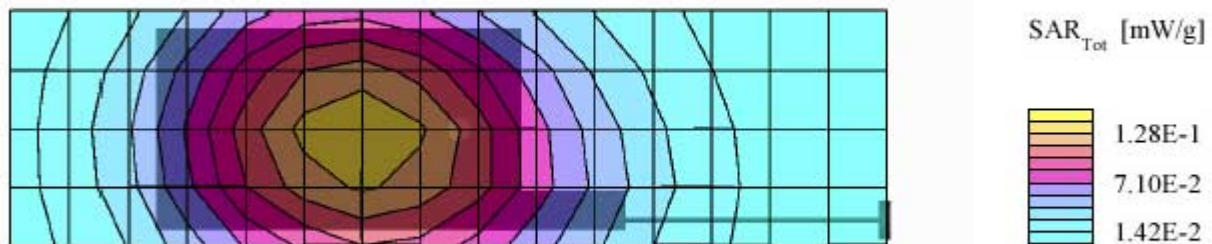
DUT w/front towards phantom; flip closed; w/2.5 cm separation.

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

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.50,6.50,6.50); Probe cal date: 28/09/02; Crest factor: 6.0; IEEE

HEAD 899MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 40.9$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 0.144 mW/g, SAR (10g): 0.101 mW/g, (Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 31.5, 88.5, 4.7

Powerdrift: -0.49 dB



FCC ID: AZ489FT5825; Test Date: 7/18/03

Motorola CGISS EME Laboratory

Run #: CM- FACE-R2-030718-11

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 901.98125 MHz

Sim Tissue Temp: 20.0 (Celsius)

Antenna: OUT

Battery Kit: SNN5704A/NNTN4907A

Carry Accessories: None

Attached Accessories: None

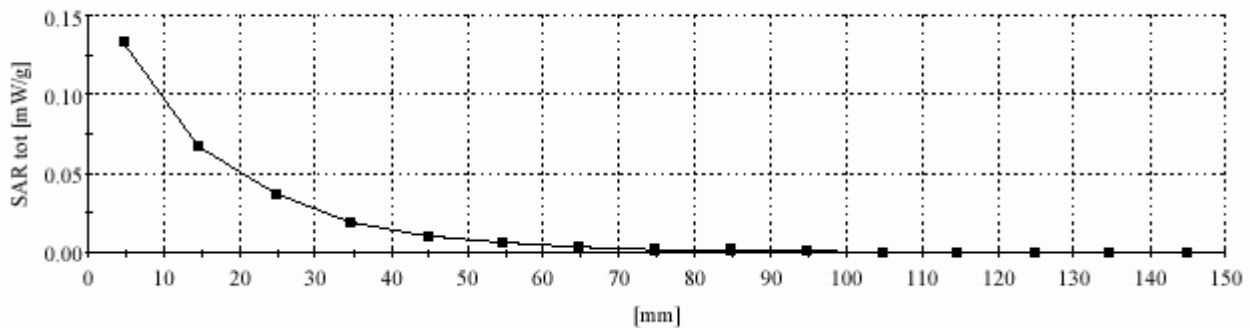
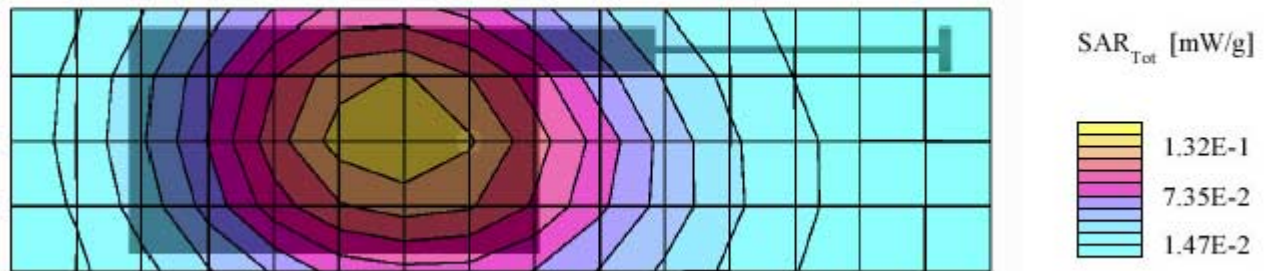
DUT w/front towards phantom; flip closed; w/2.5 cm separation.

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

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.50,6.50,6.50); Probe cal date: 28/09/02; Crest factor: 6.0; IEEE

HEAD 899MHz: $\sigma = 0.99$ mho/m $\epsilon_r = 40.2$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 0.149 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, 87.0, 4.7

Powerdrift: -0.28 dB



FCC ID: AZ489FT5825; Test Date: 7/09/03

Motorola CGISS EME Laboratory

Run #: CM- Ab-R2-030709-13

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 813.5125 MHz

Sim Tissue Temp: 21.8 (Celsius)

Antenna: IN

Battery Kit: SNN5704A/NNTN4907A

Carry Accessories: NNTN4756A Holster

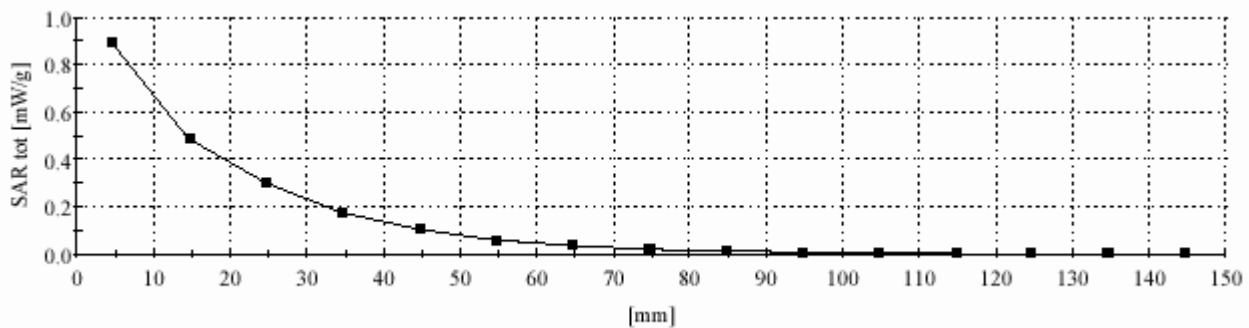
Attached Accessories: None

DUT w/holster against the flat phantom.

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

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.20,6.20,6.20); Probe cal date: 28/09/02; Crest factor: 1.5; FCC Body 813: $\sigma = 0.97$ mho/m $\epsilon_r = 55.9$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 0.951 mW/g, SAR (10g): 0.689 mW/g, (Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0; Max at 36.0, 78.0, 4.7

Powerdrift: -0.29 dB



FCC ID: AZ489FT5825; Test Date: 7/10/03

Motorola CGISS EME Laboratory

Run #: CM- Ab-R2-030710-02

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 813.5125 MHz

Sim Tissue Temp: 21.3 (Celsius)

Antenna: IN

Battery Kit: SNN5704A/NNTN4907A

Carry Accessories: NNTN4756A Holster

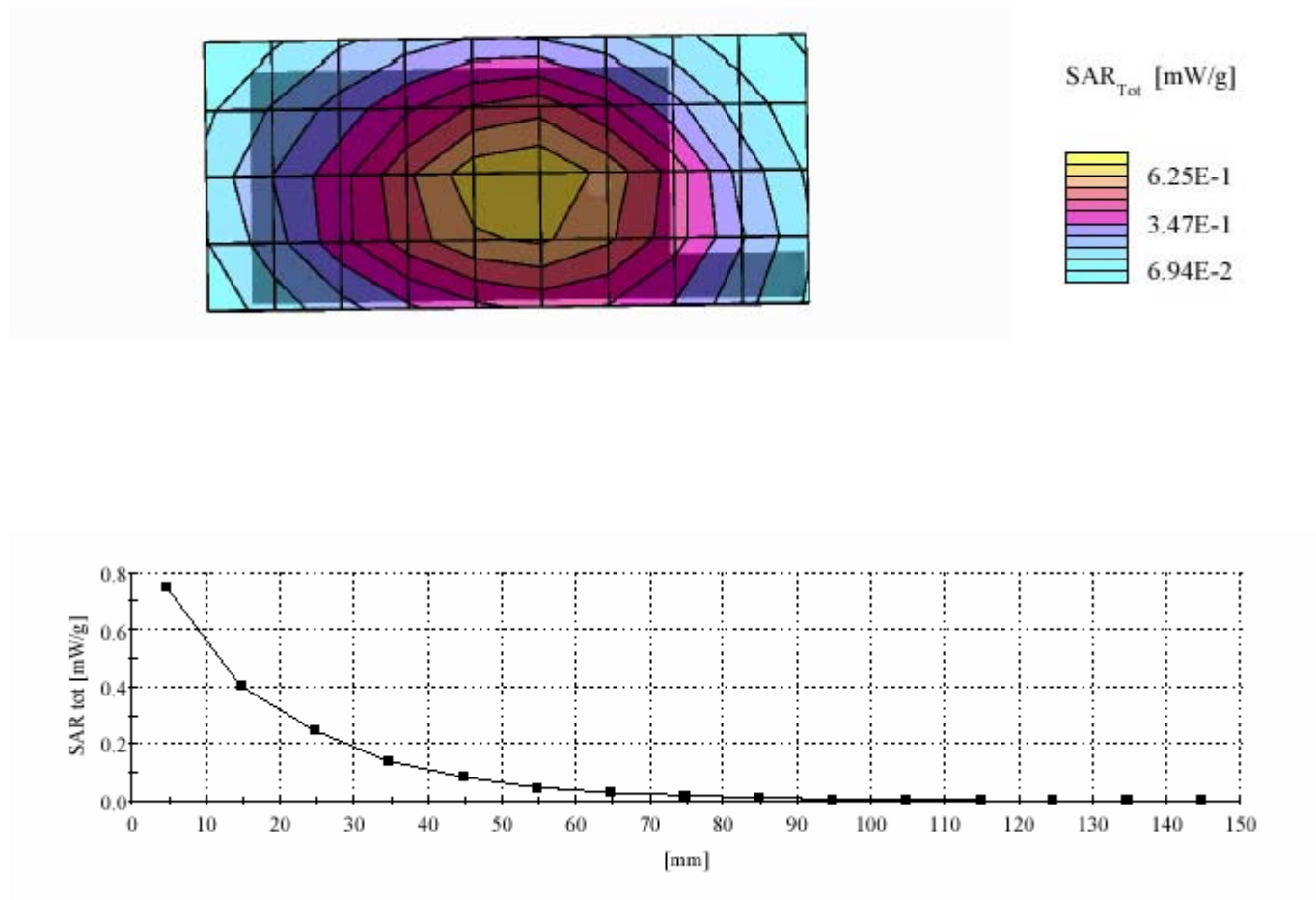
Attached Accessories: NKN6544B Data cable

DUT w/holster against the flat phantom.

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

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.20,6.20,6.20); Probe cal date: 28/09/02; Crest factor: 1.5; FCC Body 813: $\sigma = 0.98$ mho/m $\epsilon_r = 55.4$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 0.726 mW/g, SAR (10g): 0.523 mW/g, (Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0; Max at 33.0, 70.5, 4.7

Powerdrift: -0.24 dB



FCC ID: AZ489FT5825; Test Date: 7/10/03

Motorola CGISS EME Laboratory

Run #: CM- Ab-R2-030710-10

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 813.5125 MHz

Sim Tissue Temp: 21.5 (Celsius)

Antenna: IN

Battery Kit: SNN5704A/NNTN4907A

Carry Accessories: NNTN4756A Holster

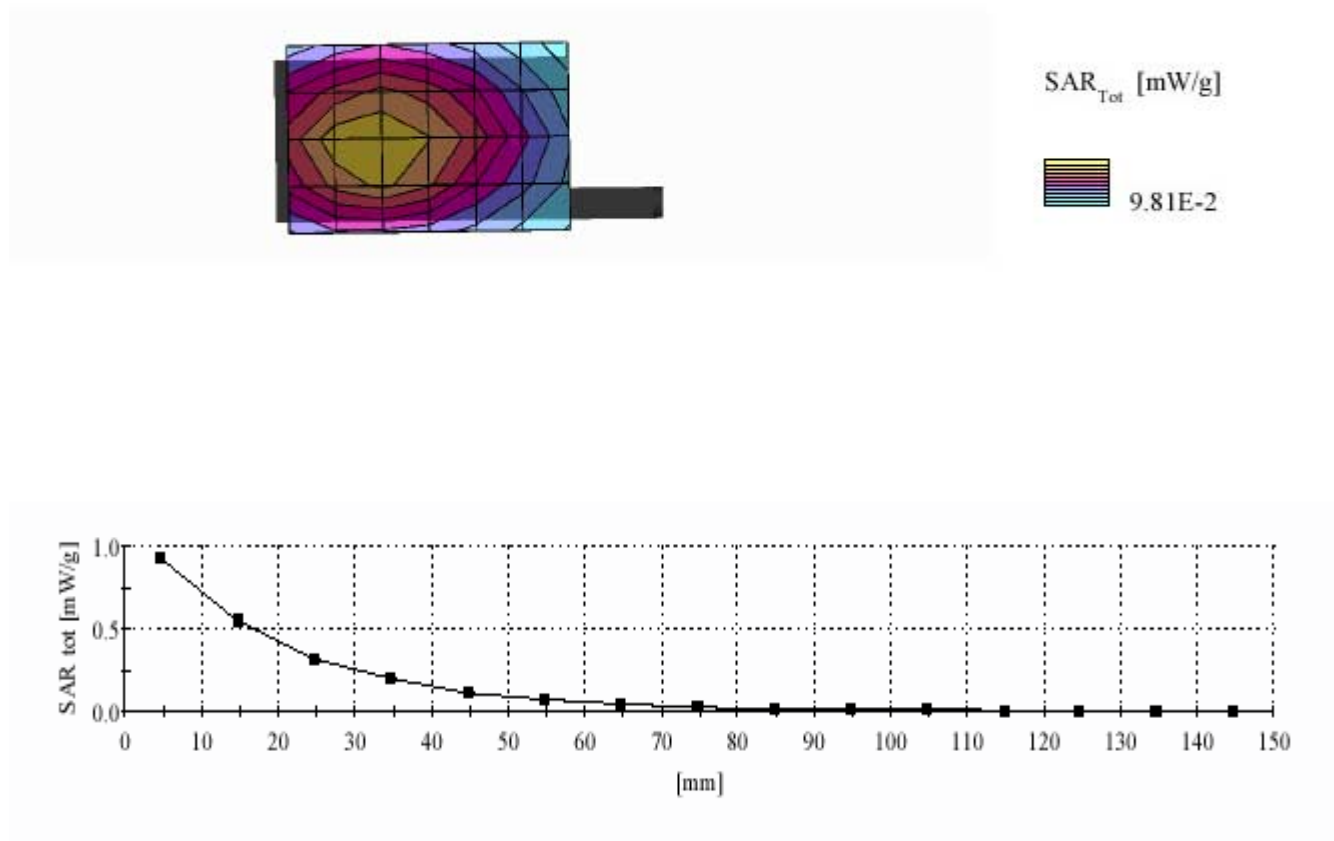
Attached Accessories: SYN0547A Camera

DUT w/holster against the flat phantom.

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

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.20,6.20,6.20); Probe cal date: 28/09/02; Crest factor: 1.5; FCC Body 813: $\sigma = 0.98$ mho/m $\epsilon_r = 55.4$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 0.944 mW/g, SAR (10g): 0.684 mW/g, (Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0; Max at 33.0, 25.5, 4.7

Powerdrift: -0.29 dB



FCC ID: AZ489FT5825; Test Date: 7/11/03

Motorola CGISS EME Laboratory

Run #: EC- Ab-R2-030711-14

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 813.5125 MHz

Sim Tissue Temp: 20.3 (Celsius)

Antenna: IN

Battery Kit: SNN5704A/NNTN4907A

Carry Accessories: NNTN4756A Holster

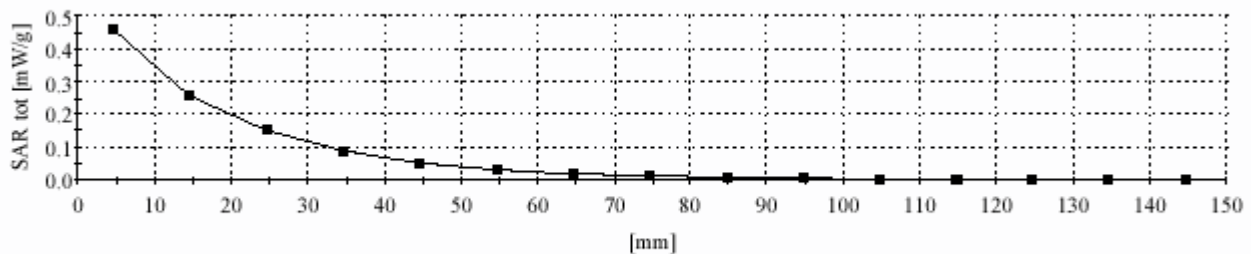
Attached Accessories: NTN8513A Headset

DUT w/holster against the flat phantom.

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

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.20,6.20,6.20); Probe cal date: 28/09/02; Crest factor: 3.0; FCC Body 813: $\sigma = 0.97$ mho/m $\epsilon_r = 54.8$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 0.509 mW/g, SAR (10g): 0.360 mW/g, (Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0; Max at 36.0, 75.0, 4.7

Powerdrift: -0.37 dB



FCC ID: AZ489FT5825; Test Date: 7/13/03

Motorola CGISS EME Laboratory

Run #: EC- Ab-R2-030713-06

Model #: H63XAH6RR3AN SN: 364TOL0033

TX Freq: 806.0125 MHz

Sim Tissue Temp: 21.5 (Celsius)

Antenna: IN

Battery Kit: SNN5704A/NNTN4907A

Carry Accessories: NNTN4756A Holster

Attached Accessories: SYN0547A Camera

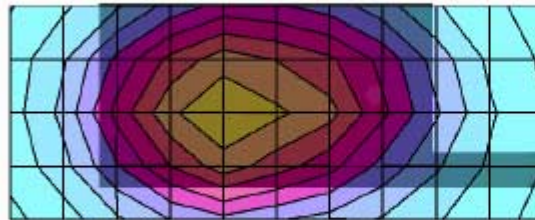
DUT w/holster against the flat phantom.

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

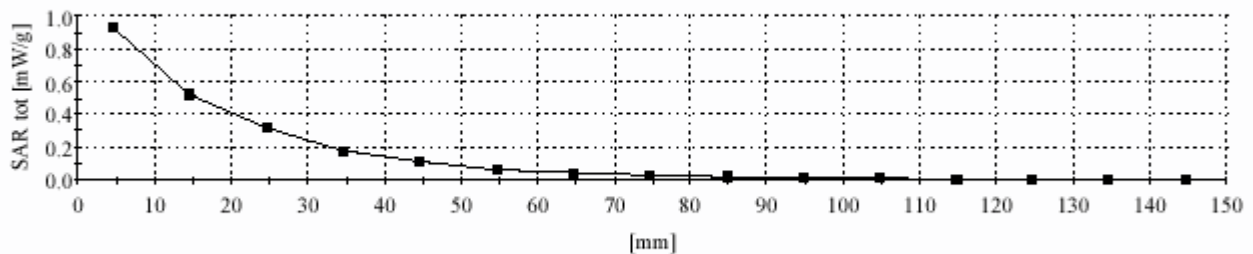
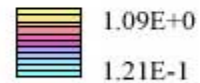
Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.20,6.20,6.20); Probe cal date: 28/09/02; Crest factor: 1.5; FCC

Body 813: $\sigma = 0.99$ mho/m $\epsilon_r = 56.3$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 0.978 mW/g, SAR (10g): 0.702 mW/g, (Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0; Max at 30.0, 60.0, 4.7

Powerdrift: -0.82 dB



SAR_{Tot} [mW/g]



FCC ID: AZ489FT5825; Test Date: 7/18/03

Motorola CGISS EME Laboratory

Run #: CM- Ab-R2-030718-06

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 806.0125 MHz

Sim Tissue Temp: 20.9 (Celsius)

Antenna: IN

Battery Kit: SNN5704A/NNTN4907A

Carry Accessories: None

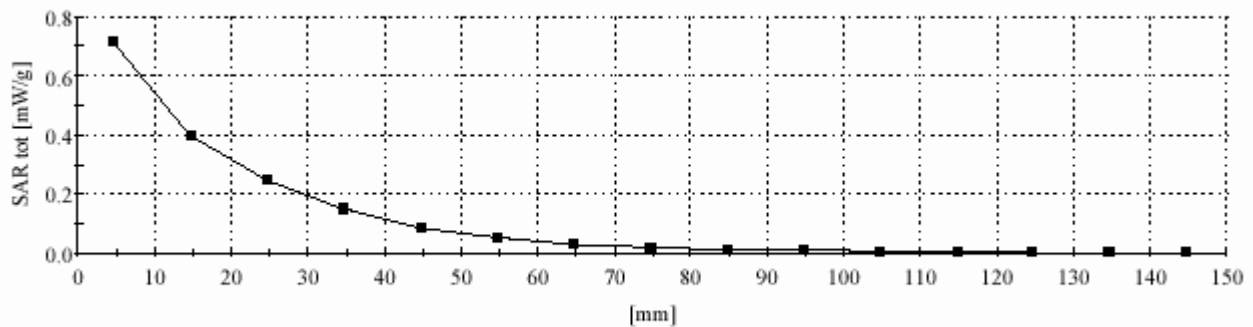
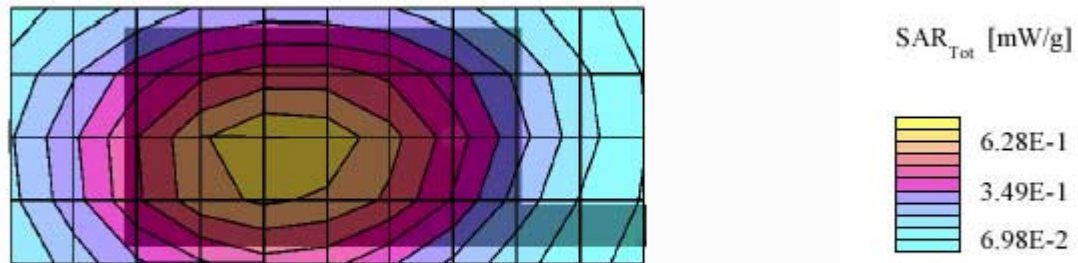
Attached Accessories: SYN0547A Camera

DUT back; antenna at 2.5cm from flat phantom

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

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.20,6.20,6.20); Probe cal date: 28/09/02; Crest factor: 1.5; FCC Body 813: $\sigma = 0.97$ mho/m $\epsilon_r = 54.7$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 0.705 mW/g, SAR (10g): 0.520 mW/g, (Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0; Max at 33.0, 64.5, 4.7

Powerdrift: -0.36 dB



FCC ID: AZ489FT5825; Test Date: 7/12/03

Motorola CGISS EME Laboratory

Run #: EC-Ab-R2-030712-13

Model #: H63XAH6RR3AN SN: 364TOL002L

TX Freq: 901.98125 MHz

Sim Tissue Temp: 20.0 (Celsius)

Antenna: OUT

Battery Kit: SNN5704A/NNTN4907A

Carry Accessories: NNTN4756A Holster

Attached Accessories: NTN8513B Headset

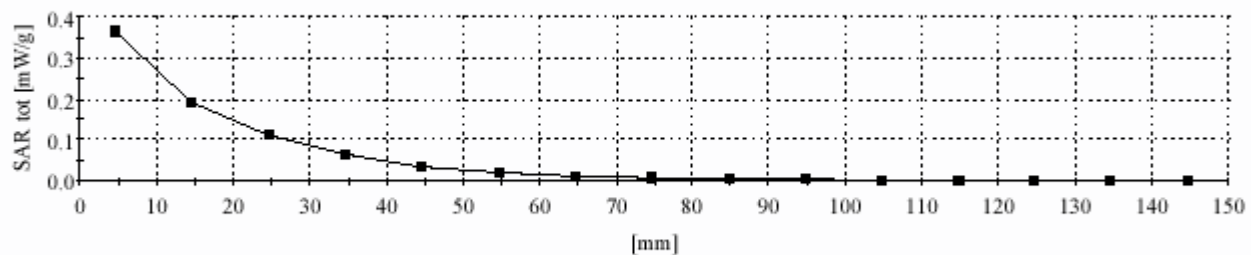
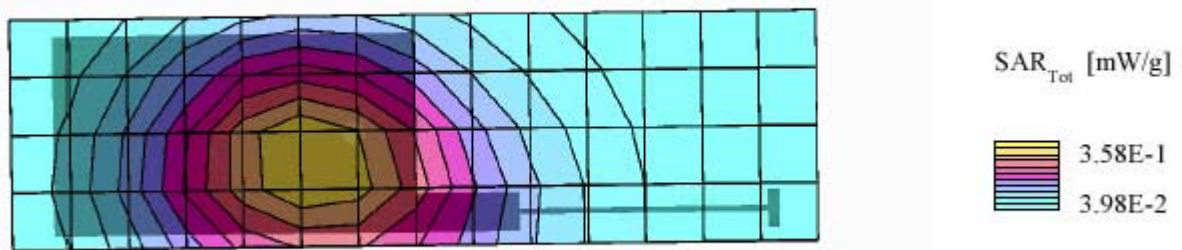
DUT w/holster against the flat phantom.

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

Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.20,6.20,6.20); Probe cal date: 28/09/02; Crest factor: 3.0; FCC

Body 899: $\sigma = 1.07$ mho/m $\epsilon_r = 53.9$ $\rho = 1.00$ g/cm³ Cube 7x7x7: SAR (1g): 0.387 mW/g, SAR (10g): 0.273 mW/g, (Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0; Max at 37.5, 76.5, 4.7

Powerdrift: -0.28 dB



APPENDIX C
Dipole System Performance Check Results

SPEAG 900 MHz Dipole D900V2; SN-084; Test Date: 06/26/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030626-01

TX Freq: 900 MHz

Simulated tissue temp: 21.9 (Celsius)

Start power: 250mW

SAR target at 1W is 11.66 mW/g (1g avg, including drift)

SAR target at 1W is 7.26 mW/g (10g avg, including drift)

SAR calculated 1g is 11.78 mW/g percent from target (including drift) is +1.06%

SAR calculated 10g is 7.35 mW/g percent from target (including drift) is +1.31%

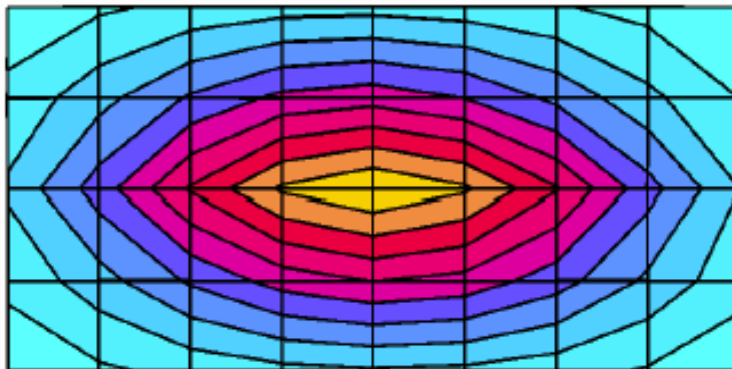
SAM; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.50,6.50,6.50); Crest factor: 1.0;

IEEE HEAD 900MHz: $\sigma = 1.00$ mho/m $\epsilon_r = 41.0$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.88 mW/g ± 0.02 dB, SAR (1g): 2.98 mW/g ± 0.02 dB, SAR (10g): 1.86 mW/g ± 0.01 dB,

(Worst-case extrapolation) Penetration depth: 11.1 (9.9, 12.6) [mm]

Powerdrift: 0.05 dB



SAR_{Tot} [mW/g]



SPEAG 900 MHz Dipole D900V2; SN-084; Test Date: 06/27/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030627-01

TX Freq: 900 MHz

Simulated tissue temp: 21.9 (Celsius)

Start power: 250mW

SAR target at 1W is 11.66 mW/g (1g avg, including drift)

SAR target at 1W is 7.26 mW/g (10g avg, including drift)

SAR calculated 1g is 11.70mW/g percent from target (including drift) is +0.38%

SAR calculated 10g is 7.32mW/g percent from target (including drift) is +0.76%

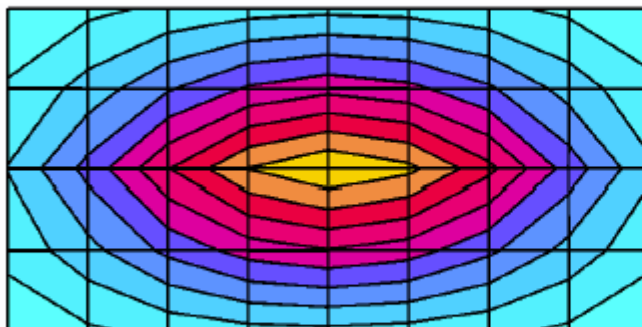
SAM; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.50,6.50,6.50); Crest factor: 1.0;

IEEE HEAD 900MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 41.5$ $\rho = 1.00$ g/cm³

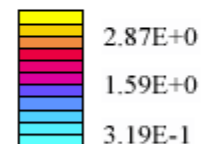
Cubes (2): Peak: 4.84 mW/g ± 0.01 dB, SAR (1g): 2.96 mW/g ± 0.01 dB, SAR (10g): 1.85 mW/g ± 0.02 dB,

(Worst-case extrapolation) Penetration depth: 11.1 (10.0, 12.7) [mm]

Powerdrift: 0.05 dB



SAR_{Tot} [mW/g]



SPEAG 900 MHz Dipole D900V2; SN-084. Test Date: 06/28/03

Motorola CGISS EME Lab

Run #: Sys Perf-R2-030628-01

TX Freq: 900 MHz

Sim Tissue Temp: 21.9 (Celsius)

Start Power; 250mW

SAR target at 1W is 11.66 mW/g (1g avg, including drift)

SAR target at 1W is 7.26 mW/g (10g avg, including drift)

SAR calculated 1g is 11.94 mW/g percent from target (including drift) is +2.44%

SAR calculated 10g is 7.53 mW/g percent from target (including drift) is +3.65%

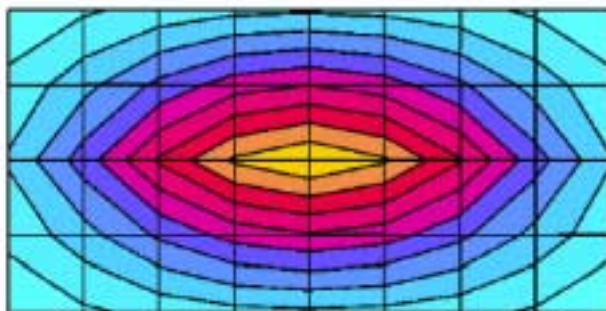
SAM; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.50,6.50,6.50); Crest factor: 1.0;

IEEE HEAD 900MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 41.6$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.80 mW/g ± 0.00 dB, SAR (1g): 3.00 mW/g ± 0.00 dB, SAR (10g): 1.89 mW/g ± 0.01 dB,

(Worst-case extrapolation) Penetration depth: 11.3 (10.4, 12.5) [mm]

Powerdrift: 0.02 dB



SAR_{Tot} [mW/g]



SPEAG 900 MHz Dipole D900V2; SN-084. Test Date: 06/29/03

Motorola CGISS EME Lab

Run #: Sys Perf-R2-030629-01

TX Freq: 900 MHz

Simulated tissue temp: 21.9 (Celsius)

Start power: 250mW

SAR target at 1W is 11.66 mW/g (1g avg, including drift)

SAR target at 1W is 7.26 mW/g (10g avg, including drift)

SAR calculated 1g is 12.04 mW/g percent from target (including drift) is +3.26 %

SAR calculated 10g is 7.56 mW/g percent from target (including drift) is +4.13 %

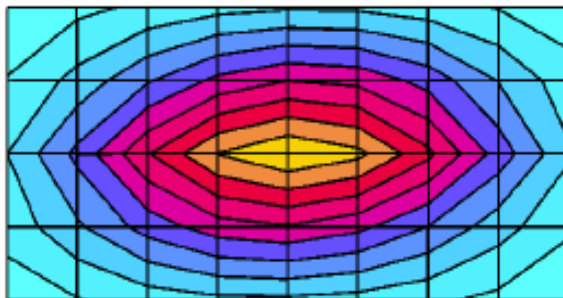
SAM; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.50,6.50,6.50); Crest factor: 1.0;

IEEE HEAD 900MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 41.1$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.81 mW/g ± 0.01 dB, SAR (1g): 3.01 mW/g ± 0.02 dB, SAR (10g): 1.89 mW/g ± 0.03 dB,

(Worst-case extrapolation) Penetration depth: 11.3 (10.5, 12.5) [mm]

Powerdrift: 0.00 dB



SAR_{Tot} [mW/g]



SPEAG 900 MHz Dipole; D900V2; SN-084. Test Date: 06/30/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030630-01

TX Freq: 900 MHz

Simulated tissue temp: 21.9 (Celsius)

Start power: 250mW

SAR target at 1W is 11.66 mW/g (1g avg, including drift)

SAR target at 1W is 7.26 mW/g (10g avg, including drift)

SAR calculated 1g is 12.08mW/g percent from target (including drift) is +3.60%

SAR calculated 10g is 7.60mW/g percent from target (including drift) is +4.68%

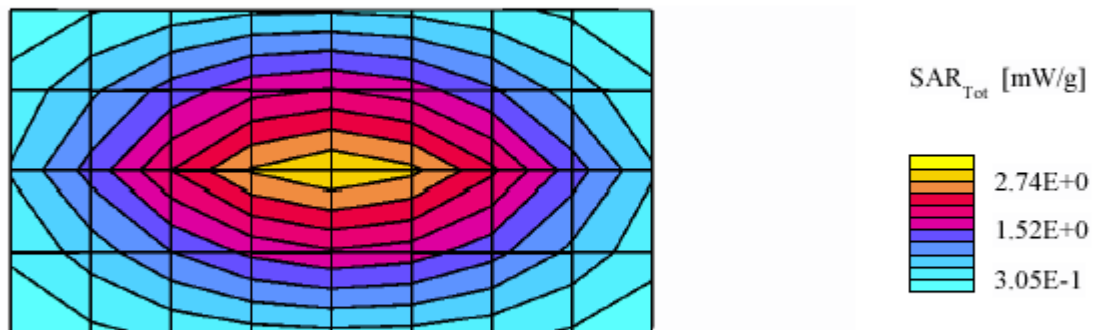
SAM; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.50,6.50,6.50); Crest factor: 1.0;

IEEE HEAD 900MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 41.4$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.84 mW/g ± 0.03 dB, SAR (1g): 3.02 mW/g ± 0.03 dB, SAR (10g): 1.90 mW/g ± 0.03 dB,

(Worst-case extrapolation) Penetration depth: 11.3 (10.4, 12.5) [mm]

Powerdrift: 0.00 dB



SPEAG 900 MHz Dipole; D900V2; SN-084. Test Date: 07/01/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030701-01

TX Freq: 900 MHz

Simulated tissue temp: 21.7 (Celsius)

Start power: 250mW

SAR target at 1W is 11.66 mW/g (1g avg, including drift)

SAR target at 1W is 7.26 mW/g (10g avg, including drift)

SAR calculated 1g is 11.83 mW/g percent from target (including drift) is +1.43 %

SAR calculated 10g is 7.46 mW/g percent from target (including drift) is +2.72 %

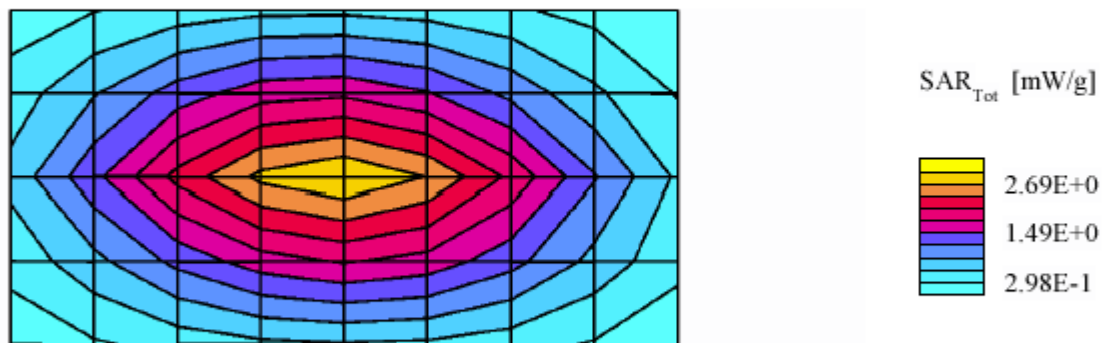
SAM; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.50,6.50,6.50); Crest factor: 1.0;

IEEE HEAD 900MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 41.3$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.70 mW/g ± 0.02 dB, SAR (1g): 2.95 mW/g ± 0.03 dB, SAR (10g): 1.86 mW/g ± 0.03 dB,

(Worst-case extrapolation) Penetration depth: 11.3 (10.5, 12.5) [mm]

Powerdrift: -0.01 dB



SPEAG 900 MHz Dipole; D900V2; SN-084. Test Date: 07/02/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030702-01

TX Freq: 900 MHz

Simulated tissue temp: 21.7 (Celsius)

Start power: 250mW

SAR target at 1W is 11.66 mW/g (1g avg, including drift)

SAR target at 1W is 7.26 mW/g (10g avg, including drift)

SAR calculated 1g is 12.03 mW/g percent from target (including drift) is +3.18 %

SAR calculated 10g is 7.55 mW/g percent from target (including drift) is +3.98 %

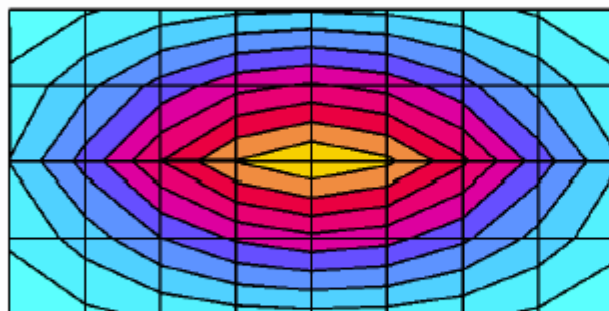
SAM; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.50,6.50,6.50); Crest factor: 1.0;

IEEE HEAD 900MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 40.8$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.75 mW/g ± 0.02 dB, SAR (1g): 2.98 mW/g ± 0.02 dB, SAR (10g): 1.87 mW/g ± 0.03 dB,

(Worst-case extrapolation) Penetration depth: 11.3 (10.5, 12.5) [mm]

Powerdrift: -0.04 dB



SAR_{Tot} [mW/g]



SPEAG 900 MHz Dipole; D900V2; SN-084. Test Date: 07/03/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030703-01

TX Freq: 900 MHz

Simulated tissue temp: 21.7 (Celsius)

Start power: 250mW

SAR target at 1W is 11.66 mW/g (1g avg, including drift)

SAR target at 1W is 7.26 mW/g (10g avg, including drift)

SAR calculated 1g is 11.83 mW/g percent from target (including drift) is +1.42 %

SAR calculated 10g is 7.45 mW/g percent from target (including drift) is +2.56 %

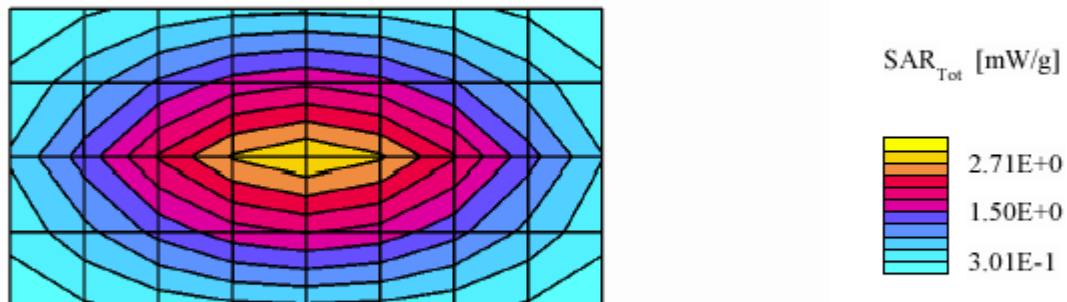
SAM; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.50,6.50,6.50); Crest factor: 1.0;

IEEE HEAD 900MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 41.7$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.74 mW/g ± 0.03 dB, SAR (1g): 2.97 mW/g ± 0.03 dB, SAR (10g): 1.87 mW/g ± 0.03 dB,

(Worst-case extrapolation) Penetration depth: 11.4 (10.6, 12.5) [mm]

Powerdrift: 0.02 dB



SPEAG 900 MHz Dipole; D900V2; SN-084. Test Date: 07/07/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030707-01

TX Freq: 900 MHz

Simulated tissue temp: 21.2 (Celsius)

Start power: 250mW

SAR target at 1W is 11.66 mW/g (1g avg, including drift)

SAR target at 1W is 7.26 mW/g (10g avg, including drift)

SAR calculated 1g is 11.93 mW/g percent from target (including drift) is +2.34 %

SAR calculated 10g is 7.50 mW/g percent from target (including drift) is +3.34 %

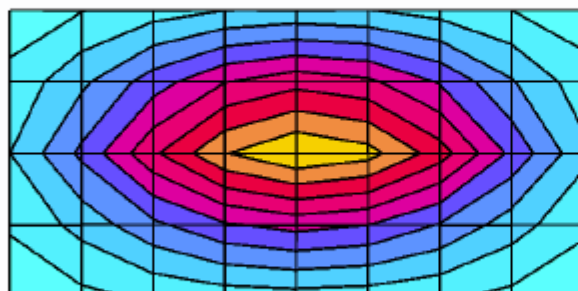
SAM; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.50,6.50,6.50); Crest factor: 1.0;

IEEE HEAD 900MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 40.9$ $\rho = 1.00$ g/cm³

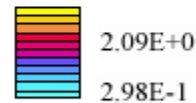
Cubes (2): Peak: 4.78 mW/g ± 0.01 dB, SAR (1g): 2.99 mW/g ± 0.01 dB, SAR (10g): 1.88 mW/g ± 0.01 dB,

(Worst-case extrapolation) Penetration depth: 11.3 (10.4, 12.5) [mm]

Powerdrift: 0.01 dB



SAR_{Tot} [mW/g]



SPEAG 900 MHz Dipole; D900V2; SN-084. Test Date: 07/08/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030708-01

TX Freq: 900 MHz

Simulated tissue temp: 21.4 (Celsius)

Start power: 250mW

SAR target at 1W is 11.66 mW/g (1g avg, including drift)

SAR target at 1W is 7.26 mW/g (10g avg, including drift)

SAR calculated 1g is 12.10 mW/g percent from target (including drift) is +3.78 %

SAR calculated 10g is 7.62 mW/g percent from target (including drift) is +4.95 %

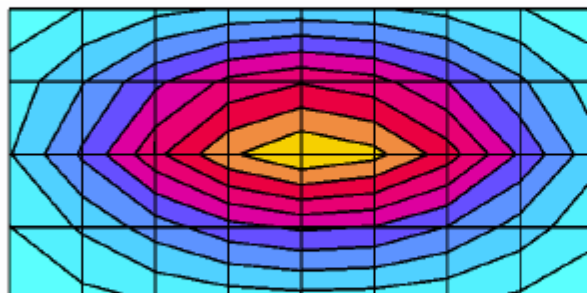
SAM; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.50,6.50,6.50); Crest factor: 1.0;

IEEE HEAD 900MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 41.2$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.73 mW/g ± 0.02 dB, SAR (1g): 2.97 mW/g ± 0.02 dB, SAR (10g): 1.87 mW/g ± 0.02 dB,

(Worst-case extrapolation) Penetration depth: 11.3 (10.5, 12.4) [mm]

Powerdrift: -0.08 dB



SAR_{Tot} [mW/g]



SPEAG 900 MHz Dipole; D900V2; SN-084. Test Date: 07/09/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030709-01

TX Freq: 900 MHz

Simulated tissue temp: 20.5 (Celsius)

Start power: 250mW

SAR target at 1W is 11.66 mW/g (1g avg, including drift)

SAR target at 1W is 7.26 mW/g (10g avg, including drift)

SAR calculated 1g is 11.98 mW/g percent from target (including drift) is +2.78 %

SAR calculated 10g is 7.53 mW/g percent from target (including drift) is +3.65 %

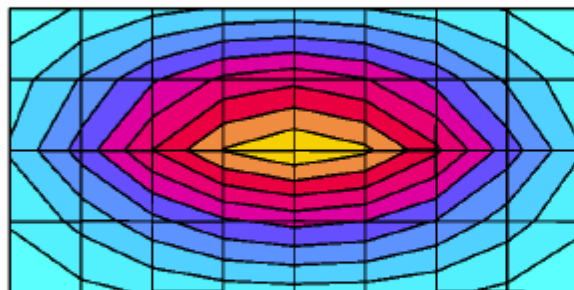
SAM; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.50,6.50,6.50); Crest factor: 1.0;

IEEE HEAD 900MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 40.8$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.80 mW/g ± 0.02 dB, SAR (1g): 3.01 mW/g ± 0.03 dB, SAR (10g): 1.89 mW/g ± 0.03 dB,

(Worst-case extrapolation) Penetration depth: 11.3 (10.5, 12.5) [mm]

Powerdrift: 0.02 dB



SAR_{Tot} [mW/g]



SPEAG 900 MHz Dipole; D900V2; SN-084. Test Date: 07/09/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030709-10

TX Freq: 900 MHz

Simulated tissue temp: 21.8 (Celsius)

Start power: 250mW

SAR target at 1W is 11.99 mW/g (1g avg, including drift)

SAR target at 1W is 7.58 mW/g (10g avg, including drift)

SAR calculated 1g is 11.73 mW/g percent from target (including drift) is -2.14 %

SAR calculated 10g is 7.51 mW/g percent from target (including drift) is -0.86 %

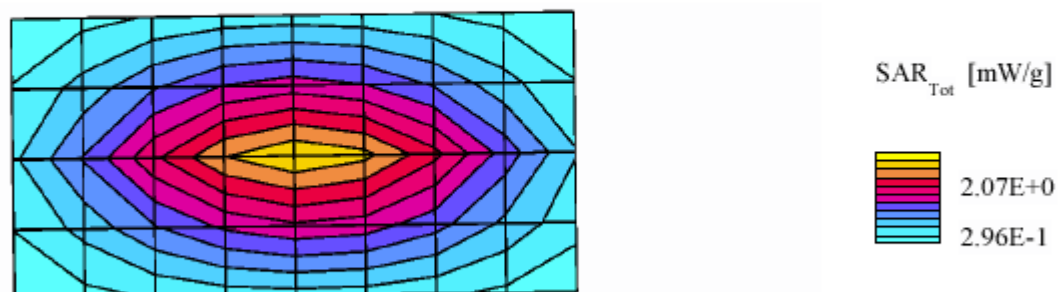
Flat; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.20,6.20,6.20); Crest factor: 1.0;

FCC Body 900: $\sigma = 1.07$ mho/m $\epsilon_r = 55.0$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.56 mW/g ± 0.01 dB, SAR (1g): 2.92 mW/g ± 0.02 dB, SAR (10g): 1.87 mW/g ± 0.02 dB,

(Worst-case extrapolation) Penetration depth: 12.2 (11.2, 13.6) [mm]

Powerdrift: -0.02 dB



SPEAG 900 MHz Dipole; D900V2; SN-084. Test Date: 07/10/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030710-01

TX Freq: 900 MHz

Simulated tissue temp: 21.3 (Celsius)

Start power: 250mW

SAR target at 1W is 11.99 mW/g (1g avg, including drift)

SAR target at 1W is 7.58 mW/g (10g avg, including drift)

SAR calculated 1g is 11.88 mW/g percent from target (including drift) is -0.94 %

SAR calculated 10g is 7.59 mW/g percent from target (including drift) is +0.10 %

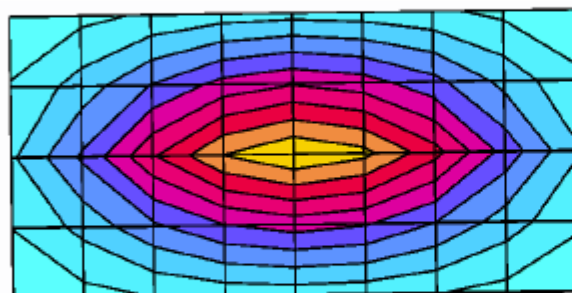
Flat; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.20,6.20,6.20); Crest factor: 1.0;

FCC Body 900: $\sigma = 1.08$ mho/m $\epsilon_r = 54.5$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.67 mW/g ± 0.00 dB, SAR (1g): 2.99 mW/g ± 0.01 dB, SAR (10g): 1.91 mW/g ± 0.01 dB,

(Worst-case extrapolation) Penetration depth: 12.2 (11.1, 13.5) [mm]

Powerdrift: 0.03 dB



SAR_{Tot} [mW/g]



SPEAG 900 MHz Dipole; D900V2; SN-084. Test Date: 07/11/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030711-01

TX Freq: 900 MHz

Simulated tissue temp: 20.3 (Celsius)

Start power: 250mW

SAR target at 1W is 11.99 mW/g (1g avg, including drift)

SAR target at 1W is 7.58 mW/g (10g avg, including drift)

SAR calculated 1g is 11.91 mW/g percent from target (including drift) is -0.67%

SAR calculated 10g is 7.6 mW/g percent from target (including drift) is +0.26 %

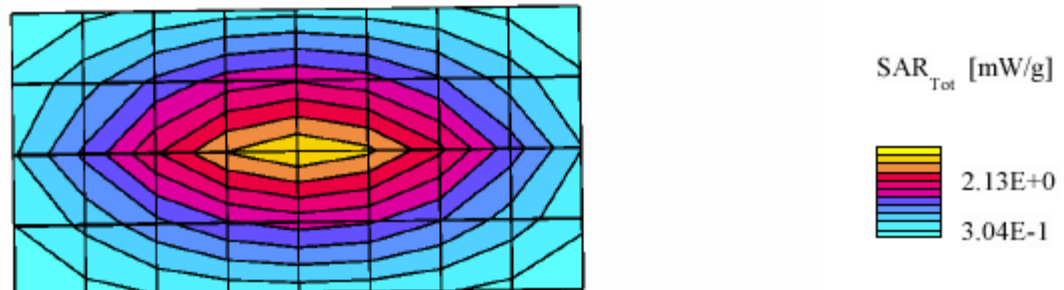
Flat; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.20,6.20,6.20); Crest factor: 1.0;

FCC Body 900: $\sigma = 1.07$ mho/m $\epsilon_r = 53.9$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.67 mW/g ± 0.02 dB, SAR (1g): 2.99 mW/g ± 0.02 dB, SAR (10g): 1.91 mW/g ± 0.02 dB,

(Worst-case extrapolation) Penetration depth: 12.2 (11.3, 13.4) [mm]

Powerdrift: -0.02 dB



SPEAG 900 MHz Dipole; D900V2; SN-084. Test Date: 07/12/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030712-14

TX Freq: 900 MHz

Simulated tissue temp: 20.3 (Celsius)

Start power: 250mW

SAR target at 1W is 11.99 mW/g (1g avg, including drift)

SAR target at 1W is 7.58 mW/g (10g avg, including drift)

SAR calculated 1g is 12.11 mW/g percent from target (including drift) is +0.98 %

SAR Calculated 10g is 7.74 mW/g percent from target (including drift) is +2.08 %

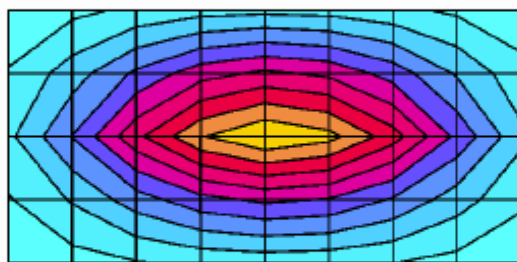
Flat; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.20,6.20,6.20); Crest factor: 1.0;

FCC Body 900: $\sigma = 1.09$ mho/m $\epsilon_r = 55.5$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.73 mW/g ± 0.01 dB, SAR (1g): 3.02 mW/g ± 0.01 dB, SAR (10g): 1.93 mW/g ± 0.02 dB,

(Worst-case extrapolation) Penetration depth: 12.1 (11.1, 13.4) [mm]

Powerdrift: -0.01 dB



SAR_{Tot} [mW/g]



SPEAG 900 MHz Dipole; D900V2; SN-084. Test Date: 07/13/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030713-09

TX Freq: 900 MHz

Simulated tissue temp: 21.1 (Celsius)

Start power: 250mW

SAR target at 1W is 11.66 mW/g (1g avg, including drift)

SAR target at 1W is 7.26 mW/g (10g avg, including drift)

SAR calculated 1g is 11.96 mW/g percent from target (including drift) is +2.57 %

SAR Calculated 10g is 7.52 mW/g percent from target (including drift) is +3.58 %

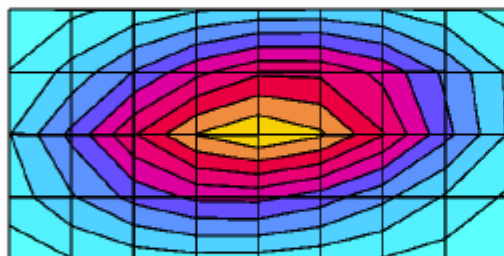
SAM; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.50,6.50,6.50); Crest factor: 1.0;

IEEE HEAD 900MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 40.6$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.75 mW/g ± 0.03 dB, SAR (1g): 2.99 mW/g ± 0.03 dB, SAR (10g): 1.88 mW/g ± 0.03 dB,

(Worst-case extrapolation) Penetration depth: 11.4 (10.5, 12.5) [mm]

Powerdrift: 0.00 dB



SAR_{Tot} [mW/g]



SPEAG 900 MHz Dipole; D900V2; SN-084. Test Date: 07/15/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030715-01

TX Freq: 900 MHz

Simulated tissue temp: 21.5 (Celsius)

Start power: 250mW

SAR target at 1W is 11.66 mW/g (1g avg, including drift)

SAR target at 1W is 7.26 mW/g (10g avg, including drift)

SAR calculated 1g is 12.10 mW/g percent from target (including drift) is +3.76%

SAR Calculated 10g is 7.61 mW/g percent from target (including drift) is +4.78%

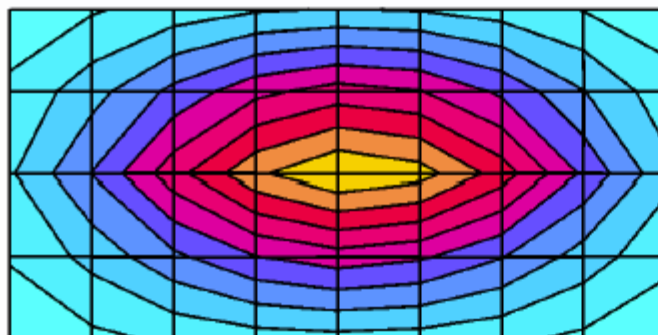
SAM; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.50,6.50,6.50); Crest factor: 1.0;

IEEE HEAD 900MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 40.8$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.77 mW/g ± 0.03 dB, SAR (1g): 2.99 mW/g ± 0.03 dB, SAR (10g): 1.88 mW/g ± 0.02 dB,

(Worst-case extrapolation) Penetration depth: 11.3 (10.5, 12.5) [mm]

Powerdrift: -0.05 dB



SAR_{Tot} [mW/g]



SPEAG 900 MHz Dipole; D900V2; SN-084. Test Date: 07/16/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030716-01

TX Freq: 900 MHz

Simulated tissue temp: 21.1 (Celsius)

Start power: 250mW

SAR target at 1W is 11.66 mW/g (1g avg, including drift)

SAR target at 1W is 7.26 mW/g (10g avg, including drift)

SAR calculated 1g is 11.76 mW/g percent from target (including drift) is +0.84 %

SAR Calculated 10g is 7.36 mW/g percent from target (including drift) is +1.77 %

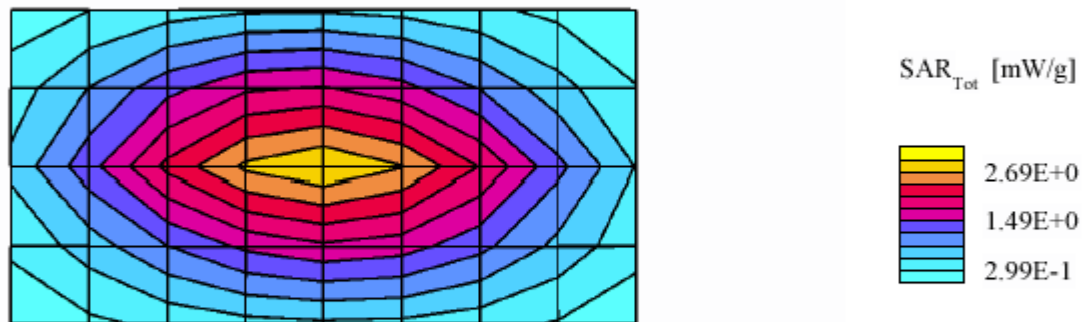
SAM; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.50,6.50,6.50); Crest factor: 1.0;

IEEE HEAD 900MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 40.9$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.71 mW/g ± 0.03 dB, SAR (1g): 2.96 mW/g ± 0.03 dB, SAR (10g): 1.86 mW/g ± 0.03 dB,

(Worst-case extrapolation) Penetration depth: 11.4 (10.6, 12.5) [mm]

Powerdrift: 0.03 dB



SPEAG 900 MHz Dipole; D900V2; SN-084. Test Date: 07/17/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030717-01

TX Freq: 900 MHz

Simulated tissue temp: 21.3 (Celsius)

Start power: 250mW

SAR target at 1W is 11.66 mW/g (1g avg, including drift)

SAR target at 1W is 7.26 mW/g (10g avg, including drift)

SAR calculated 1g is 12.04 mW/g percent from target (including drift) is +3.26%

SAR Calculated 10g is 7.60 mW/g percent from target (including drift) is +4.68 %

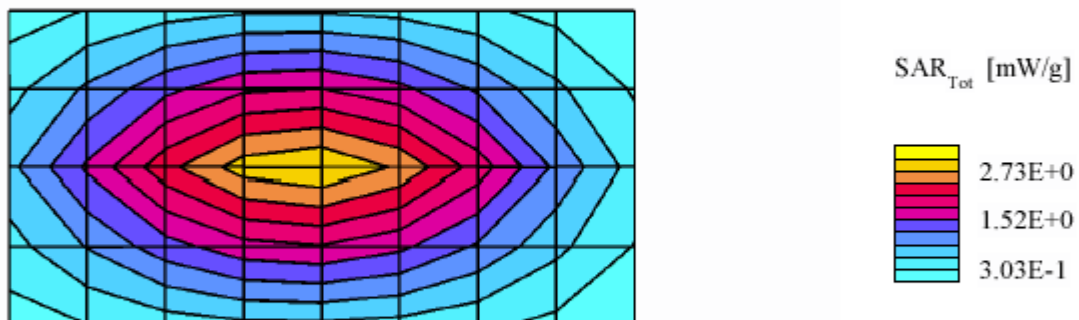
SAM; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.50,6.50,6.50); Crest factor: 1.0;

IEEE HEAD 900MHz: $\sigma = 1.01$ mho/m $\epsilon_r = 40.8$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.79 mW/g ± 0.01 dB, SAR (1g): 3.01 mW/g ± 0.01 dB, SAR (10g): 1.90 mW/g ± 0.01 dB,

(Worst-case extrapolation) Penetration depth: 11.4 (10.6, 12.5) [mm]

Powerdrift: 0.00 dB



SPEAG 900 MHz Dipole; D900V2; SN-084. Test Date: 07/18/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030718-01

TX Freq: 900 MHz

Simulated tissue temp: 21.5 (Celsius)

Start power: 250mW

SAR target at 1W is 11.99 mW/g (1g avg, including drift)

SAR target at 1W is 7.58 mW/g (10g avg, including drift)

SAR calculated 1g is 11.56 mW/g percent from target (including drift) is -1.68 %

SAR Calculated 10g is 7.40 mW/g Percent from target (including drift) is -0.41 %

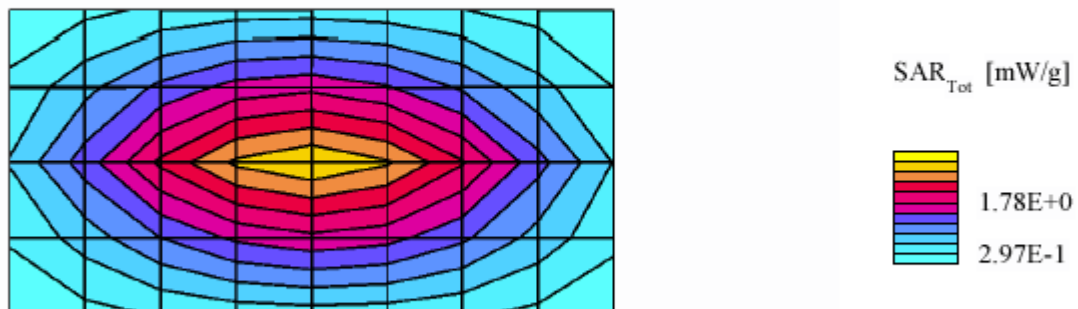
Flat; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.20,6.20,6.20); Crest factor: 1.0;

FCC Body 900: $\sigma = 1.06$ mho/m $\epsilon_r = 53.8$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.57 mW/g ± 0.01 dB, SAR (1g): 2.92 mW/g ± 0.01 dB, SAR (10g): 1.87 mW/g ± 0.02 dB,

(Worst-case extrapolation) Penetration depth: 12.1 (11.1, 13.4) [mm]

Powerdrift: -0.04 dB



SPEAG 900 MHz Dipole; D900V2; SN-084. Test Date: 07/18/03

Motorola CGISS EME Lab

Run #: System Perf-R2-030718-09

TX Freq: 900 MHz

Simulated tissue temp: 20.0 (Celsius)

Start power: 250mW

SAR target at 1W is 11.66 mW/g (1g avg, including drift)

SAR target at 1W is 7.26 mW/g (10g avg, including drift)

SAR calculated 1g is 11.80 mW/g percent from target (including drift) is +1.21 %

SAR Calculated 10g is 7.41 mW/g Percent from target (including drift) is +2.08 %

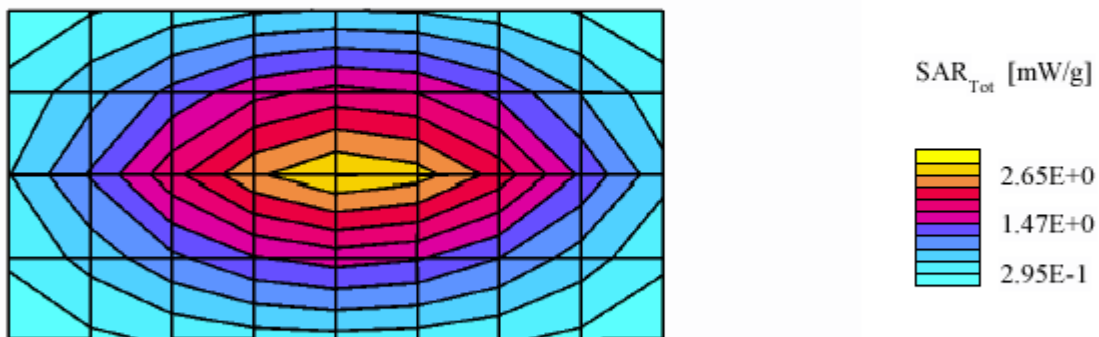
SAM; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); Probe Cal Date: 28/09/02ConvF(6.50,6.50,6.50); Crest factor: 1.0;

IEEE HEAD 900MHz: $\sigma = 0.99$ mho/m $\epsilon_r = 40.2$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.68 mW/g ± 0.03 dB, SAR (1g): 2.93 mW/g ± 0.04 dB, SAR (10g): 1.84 mW/g ± 0.05 dB,

(Worst-case extrapolation) Penetration depth: 11.3 (10.4, 12.5) [mm]

Powerdrift: -0.03 dB



SYSTEM PERFORMANCE CHECK TARGET SAR

Date: 05/22/03 Frequency (MHz): 900
Lab Location: CGISS Mixture Type: 900-FCC Body
Robot System: CGISS-2 Ambient Temp.(°C): 20.9
Probe Serial #: 1547 Tissue Temp.(°C): 21.0
DAE Serial #: DAE3V1 SN401

Tissue Characteristics Phantom Type/SN: 80302002A/S8
Permittivity: 53.9 Distance (mm): 15
Conductivity: 1.07

Reference Source: Dipole (Dipole/Handset)
Reference SN: 084

Power to Dipole: 250 mW

Measured SAR Value: 2.99 mW/g, 1.89 mW/g (10g avg.)
Power Drift: -0.01 dB

New Target/Measured
SAR Value: 11.99 mW/g, 7.58 mW/g (10g avg.)
(normalized to 1.0 W,
with drift compensation)

Test performed by: Kim Uong Initial: KU

Dipole D900V2 SN084; Test Date: 05/22/03

Run #: 0305022-06

Phantom #:80302002A/S8

Model#: SPEAG dipole D900V2 SN084

Robot#: CGISS-2

DAE: DAE3V1 SN374 (2/11/02)

Tester: Kim Uong

Tx Freq:900MHz

Simulated tissue temp: 21.0C, Ambient :20.9C

Start power: 250mW

Target:

11.8mW/g for 1g-SAR, 7.52mW/g for 10g-SAR, +/-12% from SPEAG Dipole certificate 2/11/02

Flat Phantom; Section:

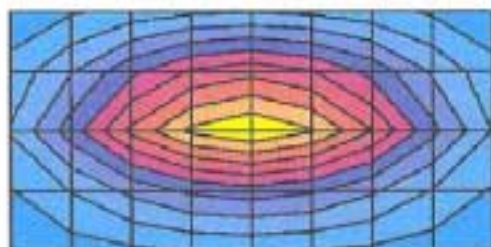
Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002); ConvF(6.20,6.20,6.20); Probe cal date: 28/09/02; Crest

factor: 1.0; FCC Body 900: $\sigma = 1.07$ mho/m $\epsilon_r = 53.9$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 2.99 mW/g ± 0.03 dB, SAR (10g): 1.89 mW/g ± 0.03 dB, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 28.5, 60.0, 4.0

Powerdrift: -0.01 dB



SAR_{Tot} [mW/g]



Motorola CGISS EME Lab

SYSTEM PERFORMANCE CHECK TARGET SAR

Date: 05/05/03 Frequency (MHz): 900
Lab Location: CGISS Mixture Type: 900-IEEE Head
Robot System: CGISS-2 Ambient Temp.(°C): 22.4
Probe Serial #: 1547 Tissue Temp.(°C): 20.3
DAE Serial #: DAE3V1 SN401

Tissue Characteristics Phantom Type/SN: SAMTP1209
Permittivity: 40.5 Distance (mm): 15
Conductivity: 0.98

Reference Source: Dipole (Dipole/Handset)
Reference SN: 084

Power to Dipole: 250 mW

Measured SAR Value: 2.97 mW/g, 1.85 mW/g (10g avg.)
Power Drift: 0.08 dB

New Target/Measured
SAR Value: 11.66 mW/g, 7.26 mW/g (10g avg.)
(normalized to 1.0 W,
with drift compensation)

Test performed by: Kim Uong Initial: KU

Dipole D900V2 SN084; Test date:05/05/03

Run #: 030505-01

Phantom #:SAMTP1209

Model#: SPEAG dipole D900V2 SN084

Robot#: CGISS-2

DAE: DAE3V1 SN401 (8/26/02)

Tester: Kim Uong

Tx Freq:900MHz

Simulated tissue temp: 20.3C

Start power: 250mW

Target:

11.2mW/g for 1g-SAR, 7.12mW/g for 10g-SAR, +/-12% from SPEAG Dipole certificate 2/11/02.

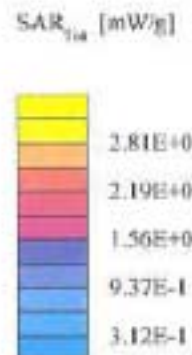
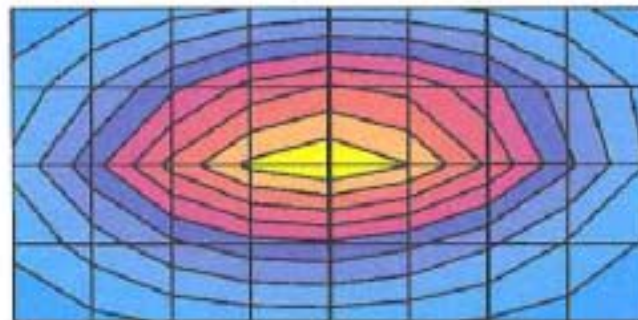
11.66mW/g for 1g-SAR, 7.26mW/g for 10g-SAR, +/-10% from system performance target 05/05/03.

SAM; Probe: ET3DV6 - SN1547 (Cal Date 09-28-2002), ConvP(6.50,6.50,6.50); Crest factor: 1.0; IEEE HEAD 900MHz: $\sigma = 0.98$ mho/m $\epsilon_r = 40.5$ $\rho = 1.00$ g/cm³

Cubes (2): Peak: 4.85 mW/g ± 0.02 dB, SAR (1g): 2.97 mW/g ± 0.02 dB, SAR (10g): 1.85 mW/g ± 0.02 dB, (Worst-case extrapolation)

Penetration depth: 11.1 (9.9, 12.7) [mm]

Powerdrift: 0.08 dB



APPENDIX D
Calibration Certificates

Schmid & Partner Engineering AG

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

Calibration Certificate

Dosimetric E-Field Probe

Type:

ET3DV6

Serial Number:

1547

Place of Calibration:

Zurich

Date of Calibration:

September 28, 2002

Calibration Interval:

12 months

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

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

Calibrated by:

D. Vetterli

Approved by:

Julian Kötter

Probe ET3DV6

SN:1547

Manufactured:	October 16, 2000
Last calibration:	November 16, 2001
Recalibrated:	September 28, 2002

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: ET3DV6 SN:1547**Sensitivity in Free Space**

NormX	$1.37 \mu\text{V}/(\text{V}/\text{m})^2$
NormY	$1.23 \mu\text{V}/(\text{V}/\text{m})^2$
NormZ	$1.23 \mu\text{V}/(\text{V}/\text{m})^2$

Diode Compression

DCP X	90	mV
DCP Y	90	mV
DCP Z	90	mV

Sensitivity in Tissue Simulating Liquid

Head	835 MHz	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.90 \pm 5\% \text{ mho/m}$
Head	900 MHz	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.97 \pm 5\% \text{ mho/m}$
ConvF X	6.5	$\pm 9.5\% (k=2)$	Boundary effect:
ConvF Y	6.5	$\pm 9.5\% (k=2)$	Alpha 1.47
ConvF Z	6.5	$\pm 9.5\% (k=2)$	Depth 1.19
Head	1900 MHz	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\% \text{ mho/m}$
Head	1800 MHz	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\% \text{ mho/m}$
ConvF X	5.2	$\pm 9.5\% (k=2)$	Boundary effect:
ConvF Y	5.2	$\pm 9.5\% (k=2)$	Alpha 0.63
ConvF Z	5.2	$\pm 9.5\% (k=2)$	Depth 2.21

Boundary Effect

Head	835 MHz	Typical SAR gradient: 5 % per mm	
Probe Tip to Boundary		1 mm	2 mm
SAR _{be} [%] Without Correction Algorithm		7.1	2.9
SAR _{be} [%] With Correction Algorithm		0.0	0.1
Head	1900 MHz	Typical SAR gradient: 10 % per mm	
Probe Tip to Boundary		1 mm	2 mm
SAR _{be} [%] Without Correction Algorithm		13.2	8.5
SAR _{be} [%] With Correction Algorithm		0.1	0.4

Sensor Offset

Probe Tip to Sensor Center	2.7	mm
Optical Surface Detection	1.3 ± 0.2	mm

Schmid & Partner Engineering AG

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

Additional Conversion Factors for Dosimetric E-Field Probe

Type:

ET3DV6

Serial Number:

1547

Place of Assessment:

Zurich

Date of Assessment:

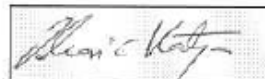
September 30, 2002

Probe Calibration Date:

September 28, 2002

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

Assessed by:



Dosimetric E-Field Probe ET3DV6 SN:1547

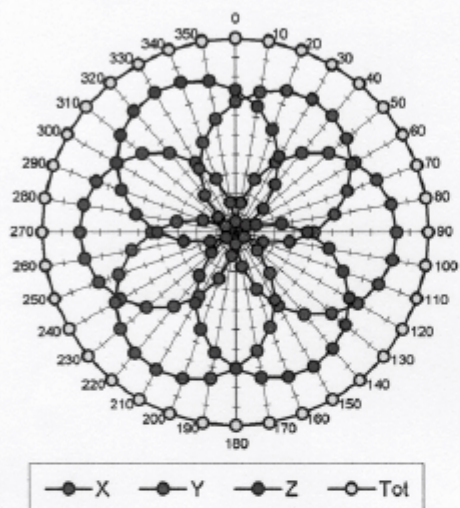
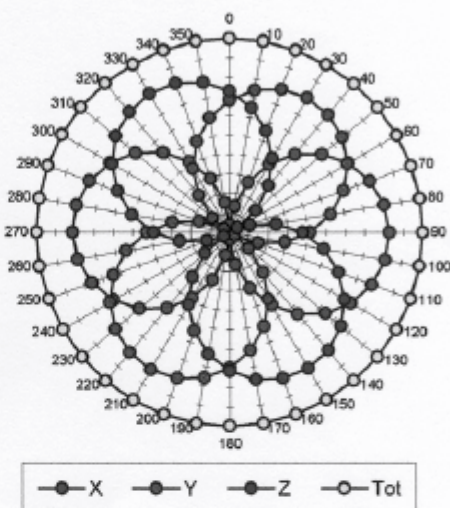
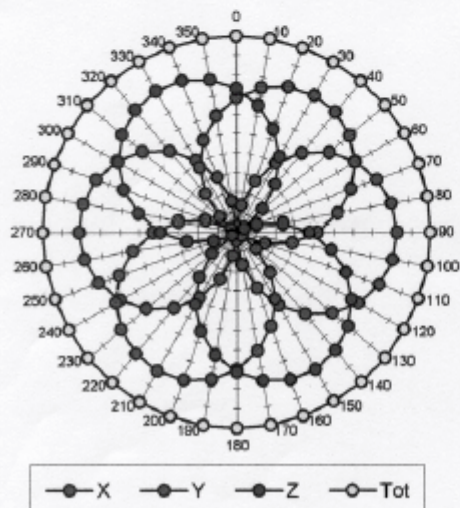
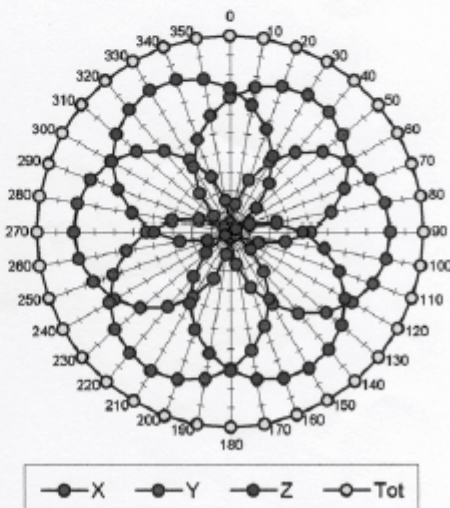
Conversion factor ($\pm$ standard deviation)

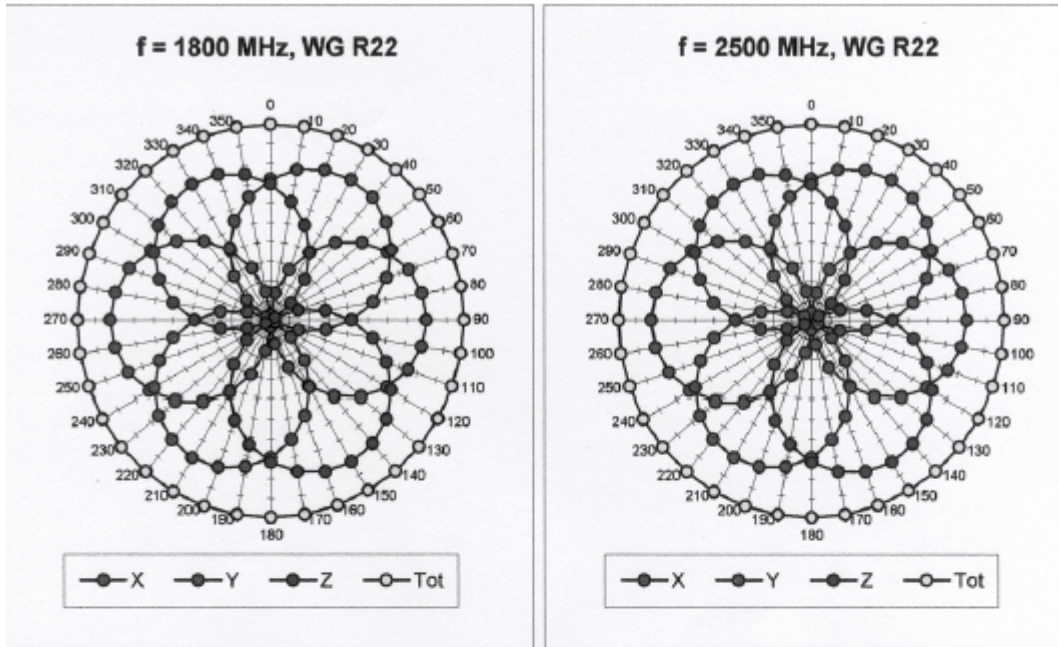
150 MHz	ConvF	$8.0 \pm 8\%$	$\epsilon_r = 61.9 \pm 5\%$ $\sigma = 0.80 \pm 5\% \text{ mho/m}$ (body tissue)
236 MHz	ConvF	$7.8 \pm 8\%$	$\epsilon_r = 59.8 \pm 5\%$ $\sigma = 0.87 \pm 5\% \text{ mho/m}$ (body tissue)
300 MHz	ConvF	$7.7 \pm 8\%$	$\epsilon_r = 58.2 \pm 5\%$ $\sigma = 0.92 \pm 5\% \text{ mho/m}$ (body tissue)
350 MHz	ConvF	$7.6 \pm 8\%$	$\epsilon_r = 57.7 \pm 5\%$ $\sigma = 0.93 \pm 5\% \text{ mho/m}$ (body tissue)
450 MHz	ConvF	$7.3 \pm 8\%$	$\epsilon_r = 56.7 \pm 5\%$ $\sigma = 0.94 \pm 5\% \text{ mho/m}$ (body tissue)
784 MHz	ConvF	$6.4 \pm 8\%$	$\epsilon_r = 55.4 \pm 5\%$ $\sigma = 0.97 \pm 5\% \text{ mho/m}$ (body tissue)
1450 MHz	ConvF	$5.3 \pm 8\%$	$\epsilon_r = 54.0 \pm 5\%$ $\sigma = 1.30 \pm 5\% \text{ mho/m}$ (body tissue)

Dosimetric E-Field Probe ET3DV6R SN:1545

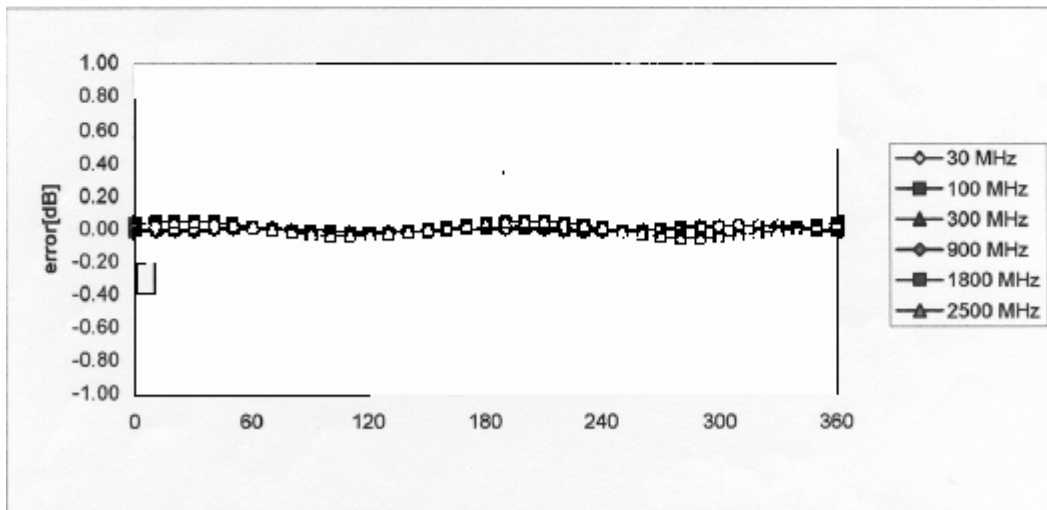
Conversion factor ($\pm$ standard deviation)

150 MHz	ConvF	$8.8 \pm 8\%$	$\epsilon_r = 52.3 \pm 5\%$ $\sigma = 0.76 \pm 5\% \text{ mho/m}$ (head tissue)
236 MHz	ConvF	$8.0 \pm 8\%$	$\epsilon_r = 48.3 \pm 5\%$ $\sigma = 0.82 \pm 5\% \text{ mho/m}$ (head tissue)
300 MHz	ConvF	$7.6 \pm 8\%$	$\epsilon_r = 45.3 \pm 5\%$ $\sigma = 0.87 \pm 5\% \text{ mho/m}$ (head tissue)
350 MHz	ConvF	$7.5 \pm 8\%$	$\epsilon_r = 44.7 \pm 5\%$ $\sigma = 0.87 \pm 5\% \text{ mho/m}$ (head tissue)
400 MHz	ConvF	$7.4 \pm 8\%$	$\epsilon_r = 44.4 \pm 5\%$ $\sigma = 0.87 \pm 5\% \text{ mho/m}$ (head tissue)
450 MHz	ConvF	$7.3 \pm 8\%$	$\epsilon_r = 43.5 \pm 5\%$ $\sigma = 0.87 \pm 5\% \text{ mho/m}$ (head tissue)
784 MHz	ConvF	$6.6 \pm 8\%$	$\epsilon_r = 41.8 \pm 5\%$ $\sigma = 0.90 \pm 5\% \text{ mho/m}$ (head tissue)
835 MHz	ConvF	$6.5 \pm 8\%$	$\epsilon_r = 42.5 \pm 5\%$ $\sigma = 0.98 \pm 5\% \text{ mho/m}$ (head tissue)
1450 MHz	ConvF	$5.7 \pm 8\%$	$\epsilon_r = 40.4$ $\sigma = 1.20 \text{ mho/m}$ (head tissue)

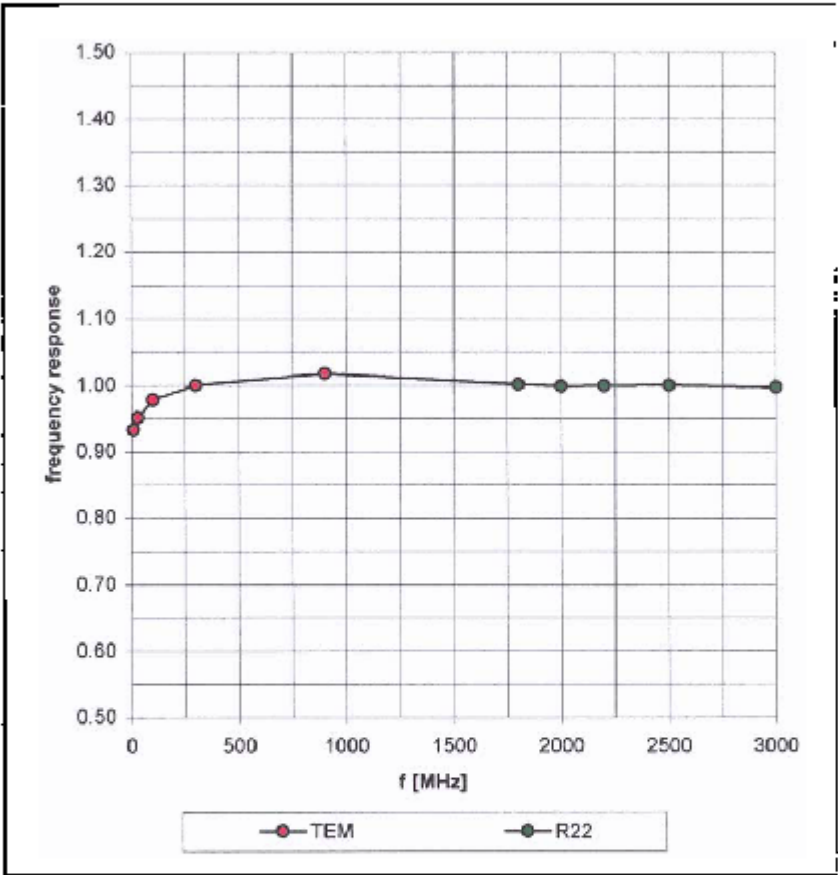
Receiving Pattern (ϕ), $\theta = 0^\circ$ **f = 30 MHz, TEM cell ifi110****f = 100 MHz, TEM cell ifi110****f = 300 MHz, TEM cell ifi110****f = 900 MHz, TEM cell ifi110**



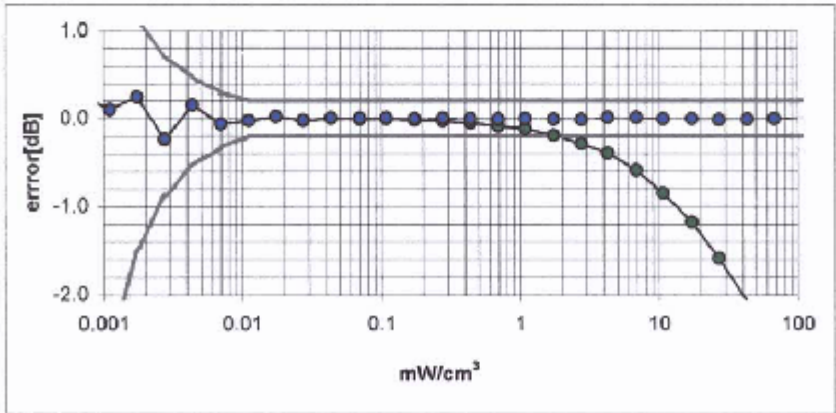
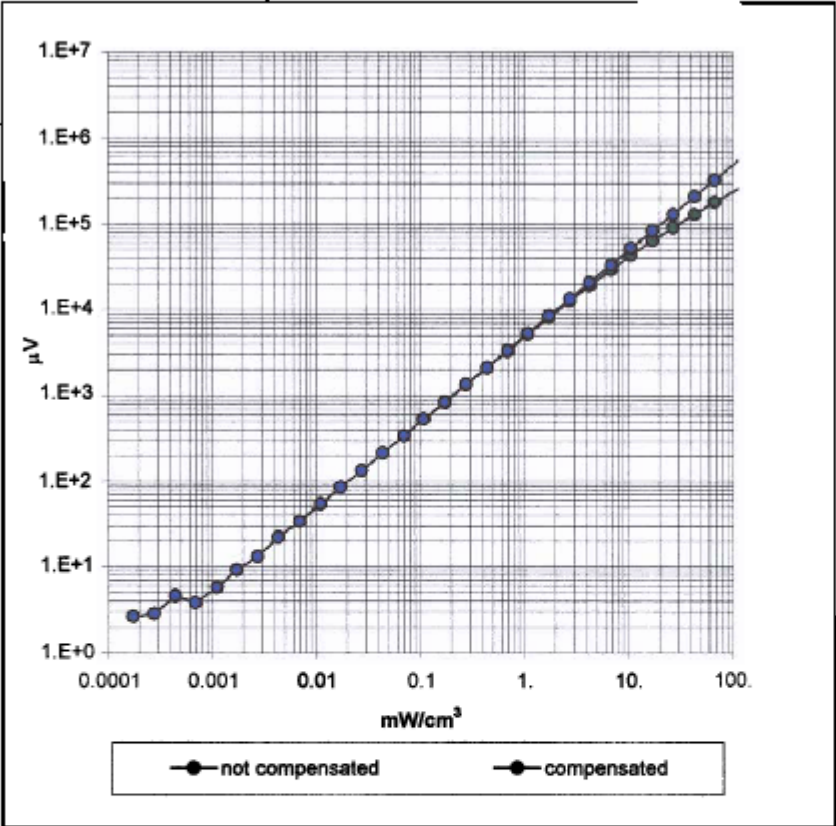
Isotropy Error (ϕ), $\theta = 0^\circ$



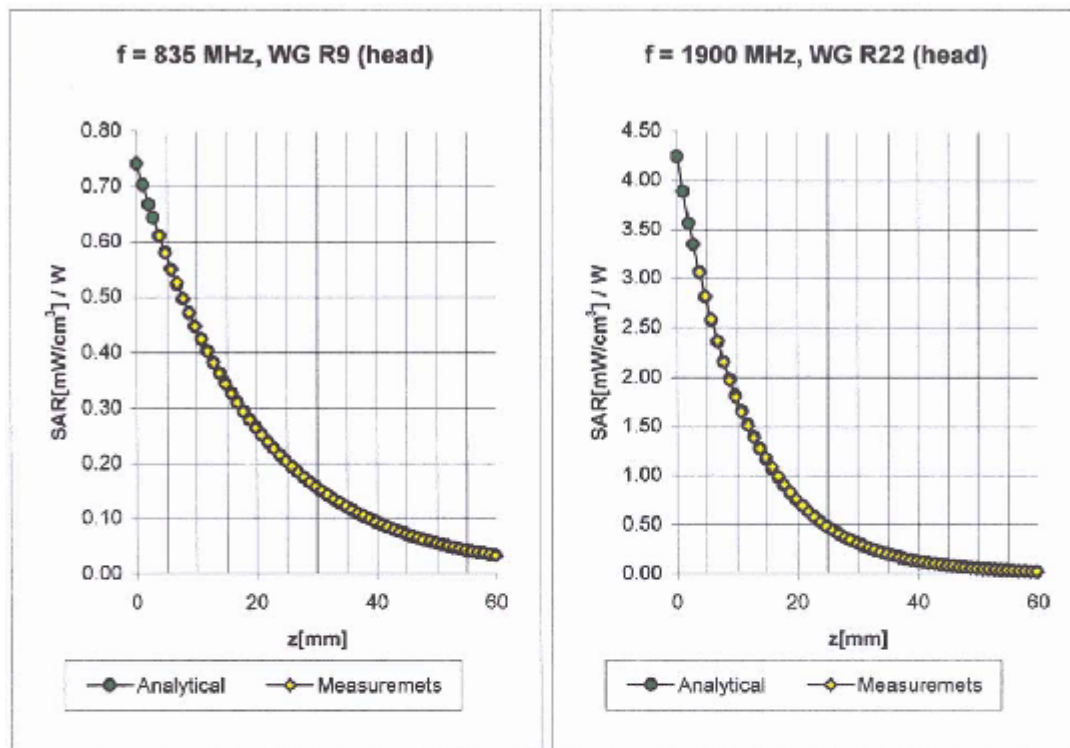
Frequency Response of E-Field
(TEM-Cell:ifi110, Waveguide R22)



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

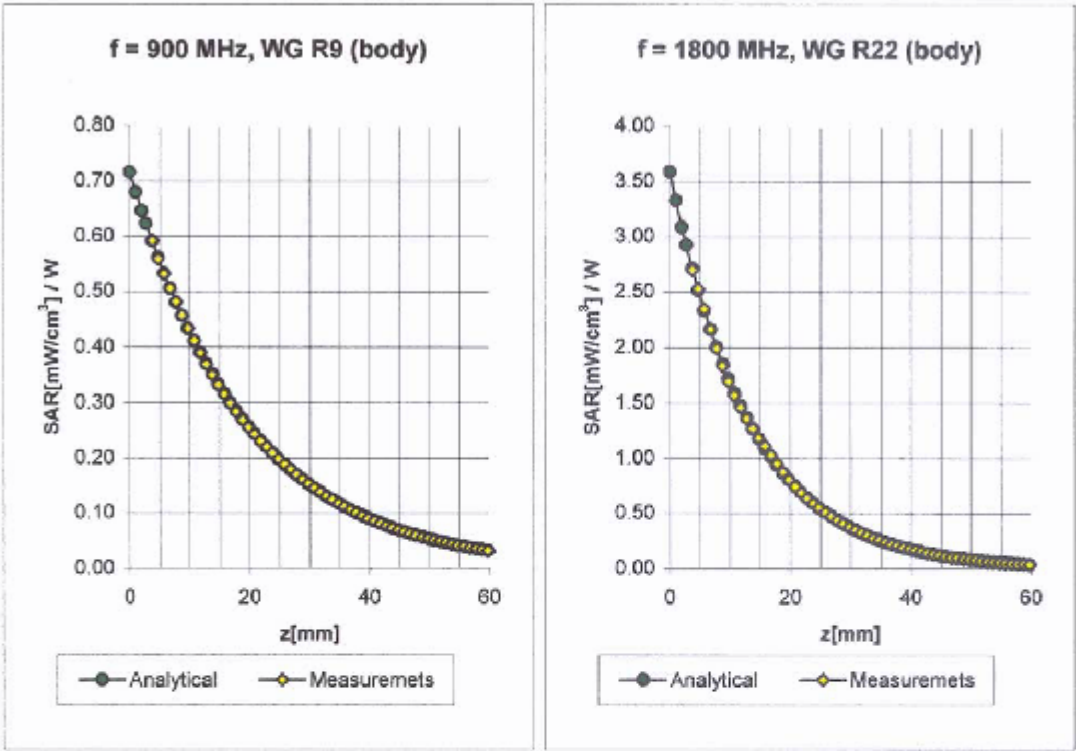


Conversion Factor Assessment



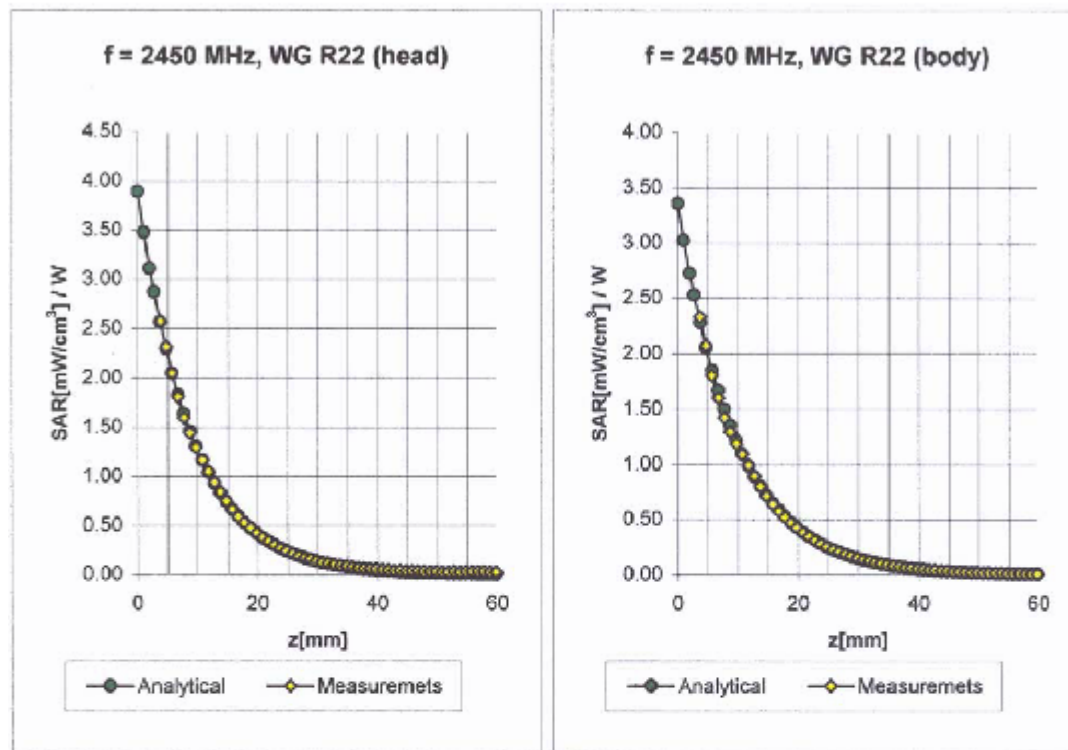
Head	835 MHz	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.90 \pm 5\% \text{ mho/m}$
	900 MHz	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.97 \pm 5\% \text{ mho/m}$
	ConvF X	$6.5 \pm 9.5\% (k=2)$	Boundary effect:
	ConvF Y	$6.5 \pm 9.5\% (k=2)$	Alpha 1.47
	ConvF Z	$6.5 \pm 9.5\% (k=2)$	Depth 1.19
Head	1900 MHz	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\% \text{ mho/m}$
	1800 MHz	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\% \text{ mho/m}$
	ConvF X	$5.2 \pm 9.5\% (k=2)$	Boundary effect:
	ConvF Y	$5.2 \pm 9.5\% (k=2)$	Alpha 0.63
	ConvF Z	$5.2 \pm 9.5\% (k=2)$	Depth 2.21

Conversion Factor Assessment



Body	900 MHz	$\epsilon_r = 55.0 \pm 5\%$	$\sigma = 1.05 \pm 5\%$ mho/m
	835 MHz	$\epsilon_r = 55.2 \pm 5\%$	$\sigma = 0.97 \pm 5\%$ mho/m
	ConvF X	$6.2 \pm 9.5\%$ (k=2)	Boundary effect:
	ConvF Y	$6.2 \pm 9.5\%$ (k=2)	Alpha 0.46
	ConvF Z	$6.2 \pm 9.5\%$ (k=2)	Depth 2.34
	1800 MHz	$\epsilon_r = 53.3 \pm 5\%$	$\sigma = 1.52 \pm 5\%$ mho/m
	1900 MHz	$\epsilon_r = 53.3 \pm 5\%$	$\sigma = 1.52 \pm 5\%$ mho/m
	ConvF X	$5.0 \pm 9.5\%$ (k=2)	Boundary effect:
	ConvF Y	$5.0 \pm 9.5\%$ (k=2)	Alpha 0.67
	ConvF Z	$5.0 \pm 9.5\%$ (k=2)	Depth 2.24

Conversion Factor Assessment



Head **MHz** $\epsilon_r = 39.2 \pm 5\%$ $\sigma = 1.80 \pm 5\% \text{ mho/m}$

ConvF X **4.8** $\pm 8.9\%$ (k=2)

Boundary effect:

ConvF Y **4.8** $\pm 8.9\%$ (k=2)

Alpha **1.00**

ConvF Z **4.8** $\pm 8.9\%$ (k=2)

Depth **1.81**

Body **MHz** $\epsilon_r = 52.7 \pm 5\%$ $\sigma = 1.95 \pm 5\% \text{ mho/m}$

ConvF X **4.5** $\pm 8.9\%$ (k=2)

Boundary effect:

ConvF Y **4.5** $\pm 8.9\%$ (k=2)

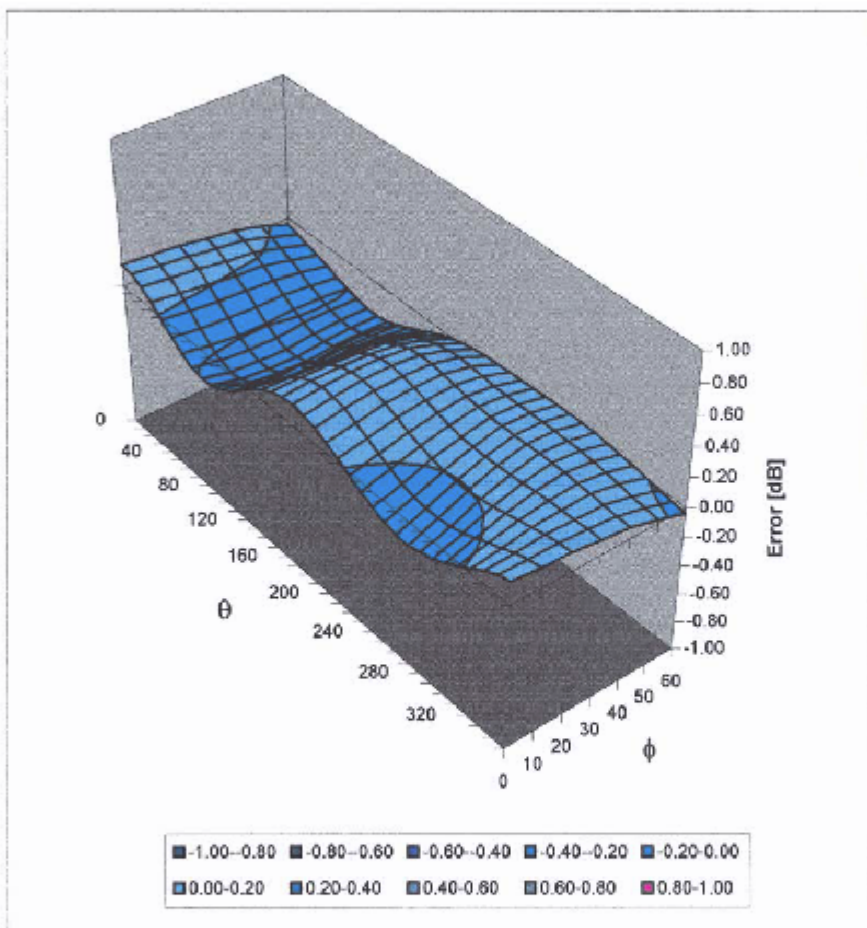
Alpha **1.00**

ConvF Z **4.5** $\pm 8.9\%$ (k=2)

Depth **1.50**

Deviation from Isotropy n HSL

Error ϕ , f 900 MHz



Schmid & Partner Engineering AG

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Calibration Certificate

900 MHz System Validation Dipole

Type:

D900V2

Serial Number:

084

Place of Calibration:

Zurich

Date of Calibration:

February 11, 2002

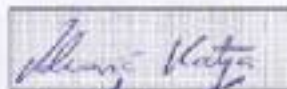
Calibration Interval:

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:



Approved by:



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 900 MHz:

Relative Dielectricity	41.1	$\pm 5\%$
Conductivity	0.95 mho/m	$\pm 5\%$

The DASY3 System (Software version 3.1d) with a dosimetric E-field probe ET3DV6 (SN:1507, Conversion factor 6.5) 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 $250\text{mW} \pm 3\%$. The results are normalized to 1W input power.

2. SAR Measurement

Standard SAR-measurements were performed with the phantom according to the measurement conditions described in section 1. The results have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values are:

averaged over 1 cm^3 (1 g) of tissue:	11.2 mW/g
averaged over 10 cm^3 (10 g) of tissue:	7.12 mW/g

Note: If the liquid parameters for validation are slightly different from the ones used for initial calibration, the SAR-values will be different as well.

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:	0.997	(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:	$\text{Re}\{Z\} = 52.1 \Omega$
	$\text{Im}\{Z\} = -4.3 \Omega$
Return Loss at 900 MHz	-26.5 dB

4. Measurement Conditions

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

Relative Dielectricity	54.8	$\pm 5\%$
Conductivity	1.03 mho/m	$\pm 5\%$

The DASY3 System (Software version 3.1d) with a dosimetric E-field probe ET3DV6 (SN:1507, Conversion factor 6.2) 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 $\pm 3\%$. The results are normalized to 1W input power.

5. SAR Measurement

Standard SAR-measurements were performed with the phantom according to the measurement conditions described in section 4. The results have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values are:

averaged over 1 cm³ (1 g) of tissue: 11.8 mW/g

averaged over 10 cm³ (10 g) of tissue: 7.52 mW/g

6. Dipole Impedance and Return Loss

The dipole was positioned at the flat phantom sections according to section 4 and the distance holder was in place during impedance measurements.

Feedpoint impedance at 900 MHz: $\text{Re}\{Z\} = 47.6 \Omega$

$\text{Im}\{Z\} = -6.0 \Omega$

Return Loss at 900 MHz -23.6 dB

7. 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.

8. Design

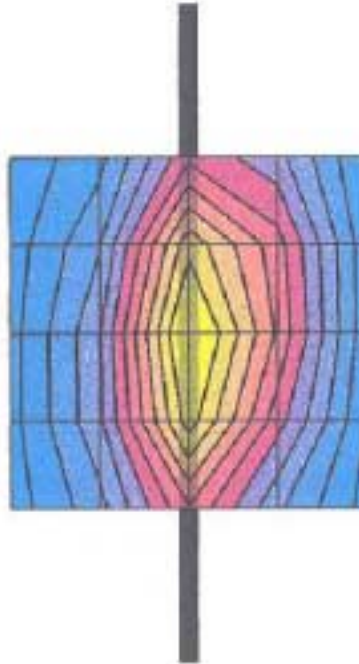
The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

9. 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:084, d = 15 mm

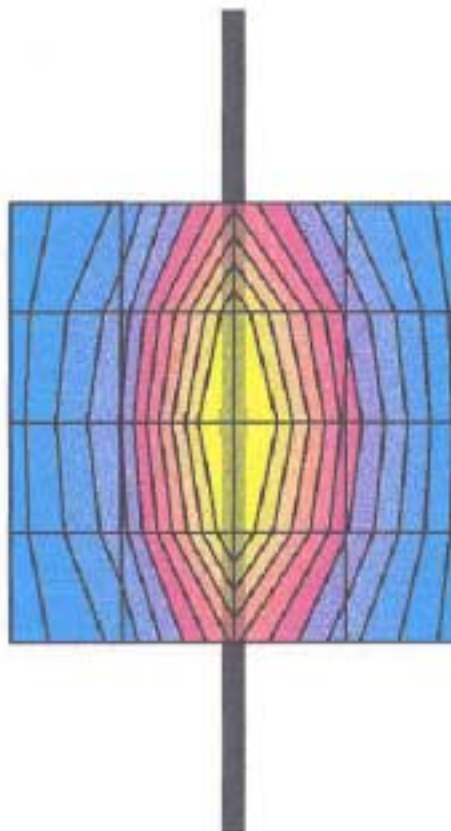
Frequency: 900 MHz; Antenna Input Power: 250 [mW]
SAM Phantom; Flat Section; Grid Spacing: Dx = 20.0, Dy = 20.0, Dz = 10.0
Probe: ET3DV6 - SN1507; ConvF(8.50,6.50,6.50) at 900 MHz; IEEE1528 900 MHz: $\sigma = 0.95 \text{ mho/m}$, $\epsilon_r = 41.1$, $\rho = 1.00 \text{ g/cm}^3$
(Cubes (2): Peak: 4.54 mW/g $\pm 0.03 \text{ dB}$, SAR (1g): 2.81 mW/g $\pm 0.02 \text{ dB}$, SAR (10g): 1.78 mW/g $\pm 0.02 \text{ dB}$, (Worst-case extrapolation)
Penetration depth: 11.5 (10.3, 13.2) [mm]
Powerdrift: -0.01 dB



02/11/02

Validation Dipole D900V2 SN:084, d = 15 mm

Frequency: 900 MHz; Antenna Input Power: 250 [mW]
 SAM Phantom; Flat Saddle; Grid Spacing: $D_x = 20.0$, $D_y = 20.0$, $D_z = 10.0$
 Probe: ET3DW3--SN1507; CorvF(5.20, 5.20, 5.20) at 900 MHz; Muscle 900 MHz: $\sigma = 1.03$ mho/m $\epsilon_r = 54.8$ $\rho = 1.00$ g/cm³
 Cubes (2): Peak: 4.72 mW/g ± 0.02 dB, SAR (1g): 2.95 mW/g ± 0.01 dB, SAR (10g): 1.88 mW/g ± 0.00 dB (Worst-case extrapolation)
 Penetration depth: 12.0 (10.7, 13.7) [mm]
 Powerdrift: -0.01 dB



Schmid & Partner Engineering AG, Zurich, Switzerland

APPENDIX E
Illustration of Body-Worn Accessories

The purpose of this appendix is to illustrate the body-worn carry accessories for FCC ID: AZ489FT5825. 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 NNTN4756A
Front View



Photo 2.
Model NNTN4756A
Side View



Photo 3.
Model NNTN4756A
Back 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 ?	Separation distances between DUT antenna and phantom surface. (mm)	Comments
NNTN4756A	Yes	37-44	NA

Audio Acc. Models	Tested ?	Separation distances between DUT antenna and phantom surface. (mm)	Comments
SYN7875C	Yes	NA	NA
SYN8390B	Yes	NA	NA
SYN8146C	Yes	NA	NA
NTN8513B	Yes	NA	NA
NTN8496A	Yes	NA	NA
NNTN4033A	Yes	NA	NA
NSN6066A	Yes	NA	NA
NNTN4620A	No	NA	Same as model SYN8390B

DATA cable/other attachments Models	Tested ?	Separation distances between DUT antenna and phantom surface. (mm)	Comments
NKN6544B	Yes	NA	NA
NKN6540A	Yes	NA	NA
NNTN4007A	Yes	NA	NA
NNTN4049A	Yes	NA	NA
NNTN4877A	Yes	NA	NA
SYN0547A	Yes	NA	NA

Other attachments Models	Tested ?	Separation distances between DUT antenna and phantom surface. (mm)	Comments
NNTN4907A	Yes	NA	NA