

Appendix 1

SAR distribution comparisons for System Accuracy Verifications

System Accuracy Verification Measurements for Head SAR Measurements

Date/Time: 8/23/2011 7:12:30 AM

Test Laboratory: Motorola - Aug-23-2011 835 MHz Head

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 436TR; FCC ID: IHDP56ME4

Procedure Notes: 835 MHz System Performance Check; Dipole Sn# 436TR; Input Power = 200 mW

Sim.Temp@meas = 18.4 C; Sim.Temp@SPC = 18.4 C; Room Temp @ SPC = 20.8 C

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

Medium: Validation *HEAD Tissue*

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.91 \text{ mho/m}$; $\epsilon_r = 40.6$; $\rho = 1000 \text{ kg/m}^3$

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(6.11, 6.11, 6.11); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Sugar SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1235;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (5x15x1):

Measurement grid: $dx=10\text{mm}$, $dy=15\text{mm}$; Maximum value of SAR (measured) = 2.15 mW/g

Daily SPC Check/0-Degree, 5x5x7 Cube (5x5x7)/Cube 0:

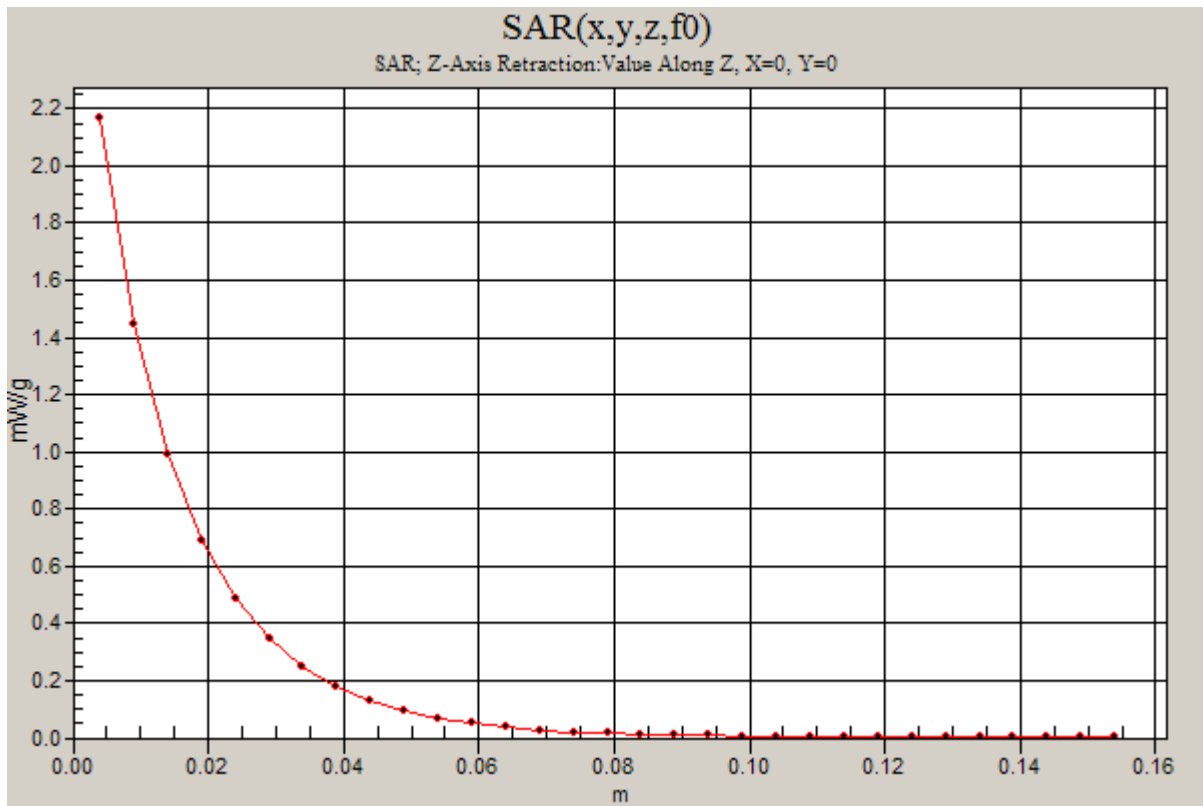
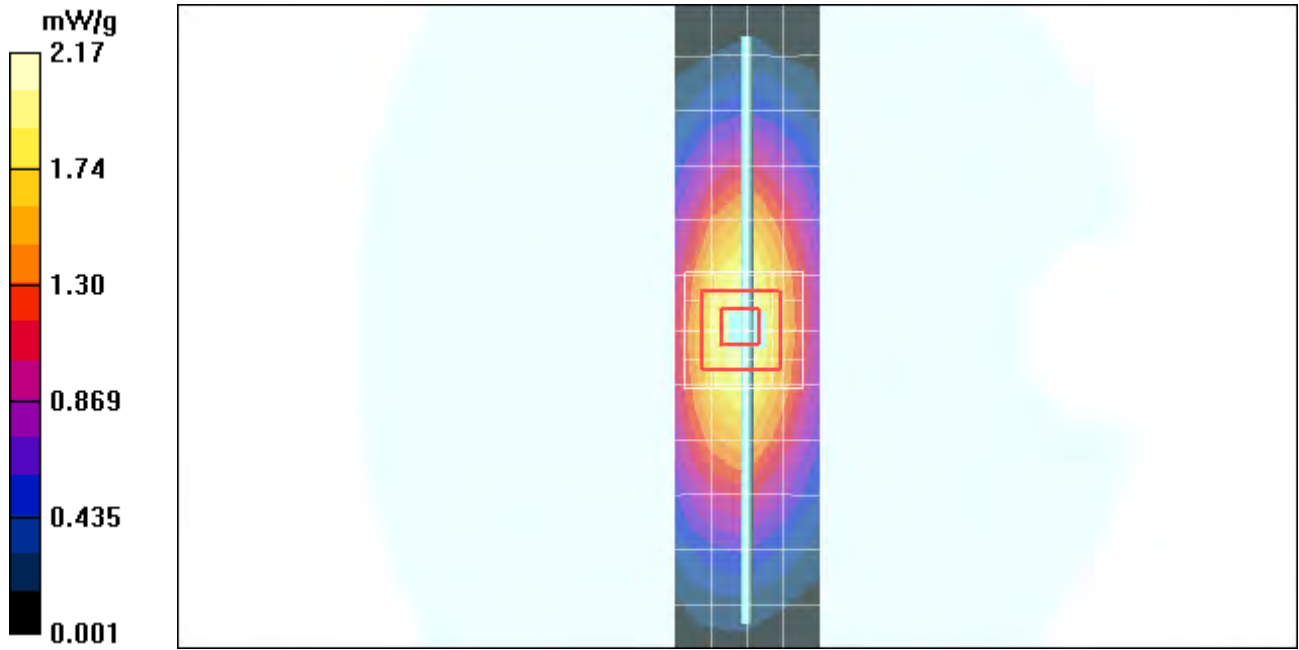
Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 49.0 V/m; Power Drift = -0.010 dB; Peak SAR (extrapolated) = 2.98 W/kg

SAR(1 g) = 2 mW/g; SAR(10 g) = 1.3 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$, $dz=5\text{mm}$; Maximum value of SAR (measured) = 2.17 mW/g



Date/Time: 9/7/2011 5:26:41 PM

Test Laboratory: Motorola - Sep-07-2011 835 MHz

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 422TR; FCC ID: IHDP56ME4

Procedure Notes: 835 MHz System Performance Check; Dipole Sn# 422TR; Input Power = 200 mW

Sim.Temp@meas = 20.7°C; Sim.Temp@SPC = 20.5°C; Room Temp @ SPC = 21.1°C

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

Medium: Validation *HEAD Tissue*

Medium parameters used: $f = 835$ MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 41.9$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(5.87, 5.87, 5.87); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6 SUGAR SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1131;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (5x15x1):

Measurement grid: dx=10mm, dy=15mm; Maximum value of SAR (measured) = 2.09 mW/g

Daily SPC Check/0-Degree, 5x5x7 Cube (5x5x7)/Cube 0:

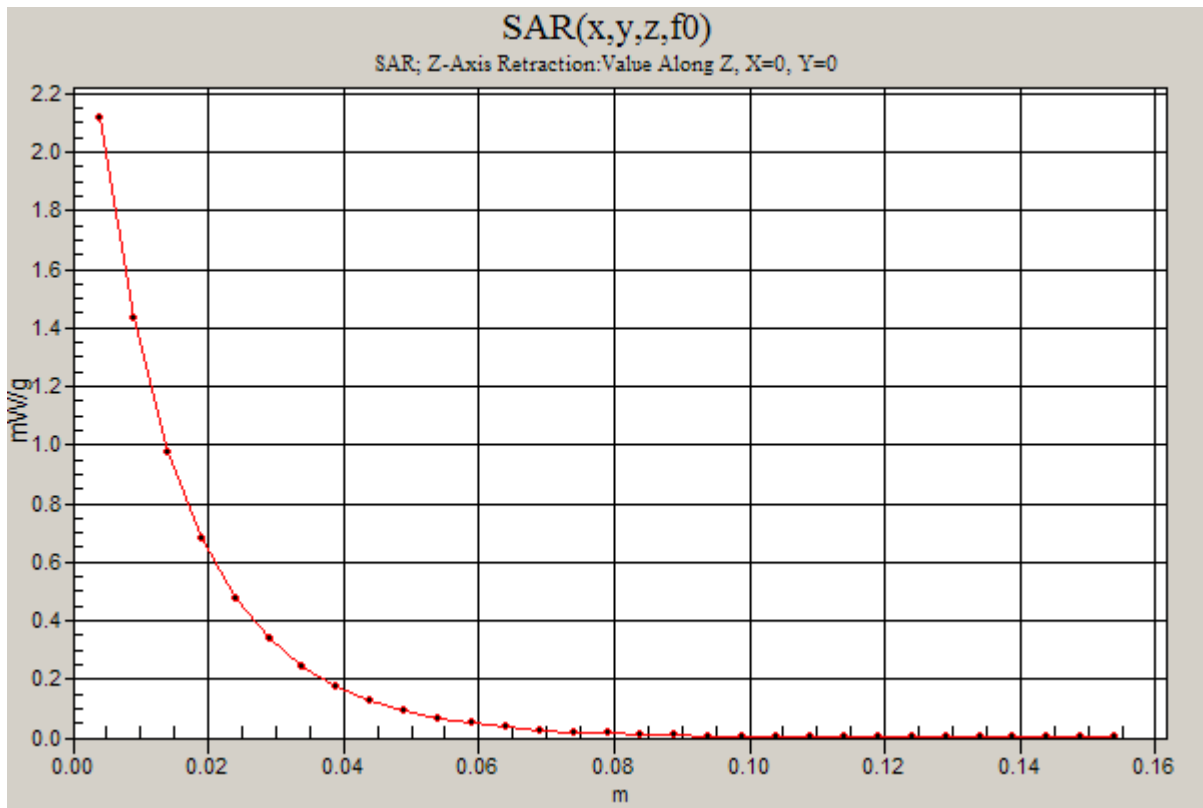
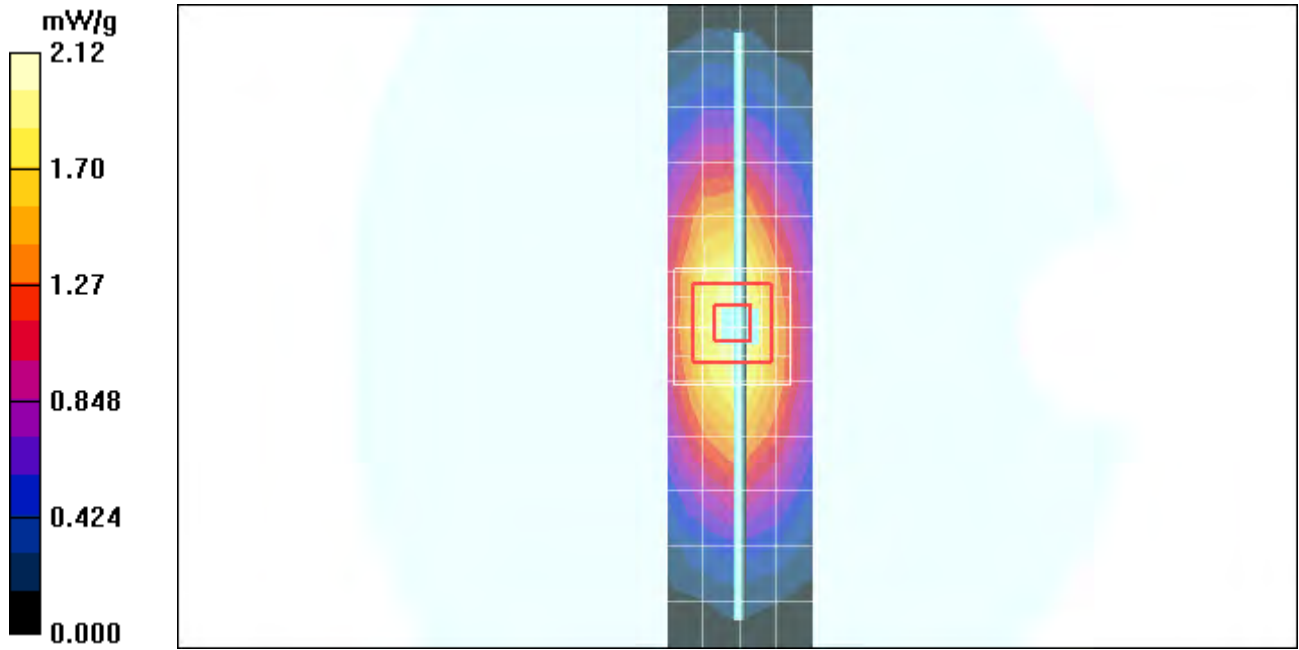
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 48.9 V/m; Power Drift = -0.005 dB; Peak SAR (extrapolated) = 2.87 W/kg

SAR(1 g) = 1.95 mW/g; SAR(10 g) = 1.28 mW/g; Maximum value of SAR (measured) = 2.12 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: dx=20mm, dy=20mm, dz=5mm



Date/Time: 8/23/2011 8:30:56 PM

Test Laboratory: Motorola - Aug-23-2011 1800 MHz Head

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN: 259TR; FCC ID: IHDP56ME4

Procedure Notes: 1800 MHz System Performance Check; Dipole Sn# 259TR; Input Power = 200 mW

Sim.Temp@meas = 18.6°C; Sim.Temp@SPC = 18.2°C; Room Temp @ SPC = 20.4°C

Communication System: CW - Dipole; Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: Validation *HEAD Tissue*

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 40.3$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(5.11, 5.11, 5.11); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2 Glycol SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1136;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (5x15x1):

Measurement grid: dx=10mm, dy=15mm; Maximum value of SAR (measured) = 8.54 mW/g

Daily SPC Check/0-Degree, 5x5x7 Cube (5x5x7)/Cube 0:

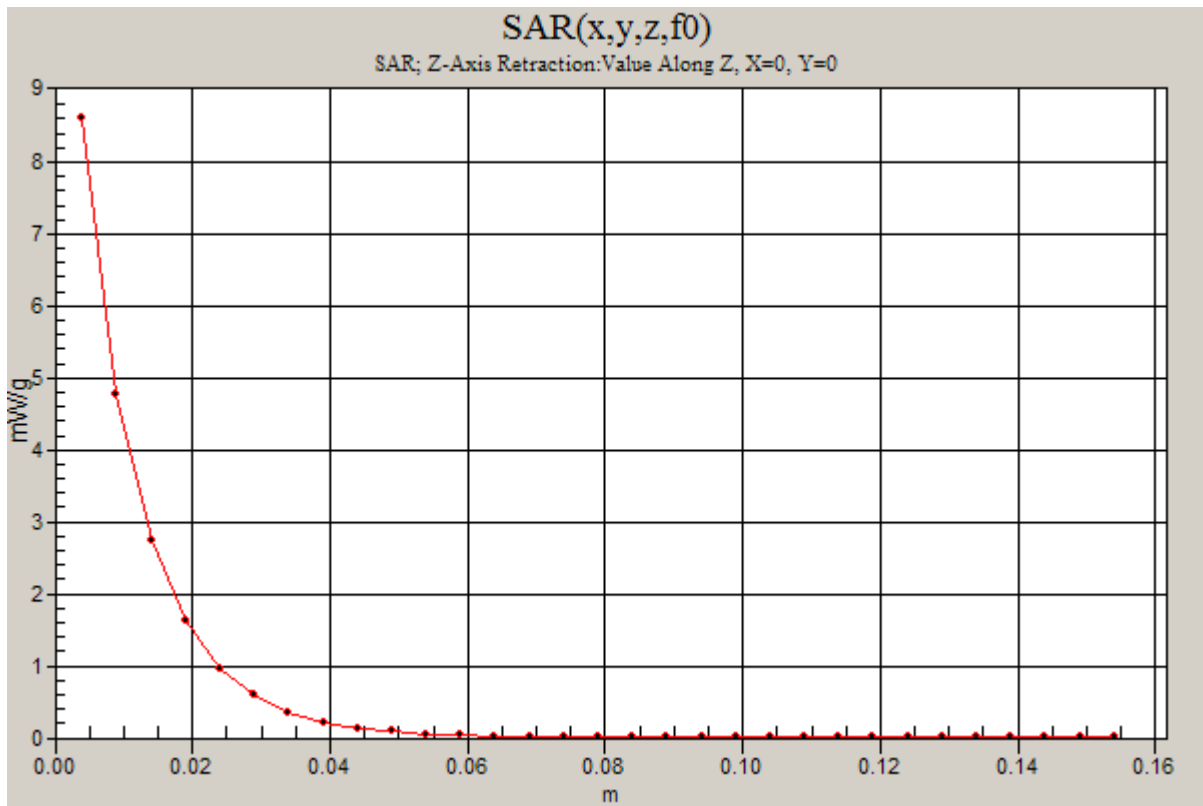
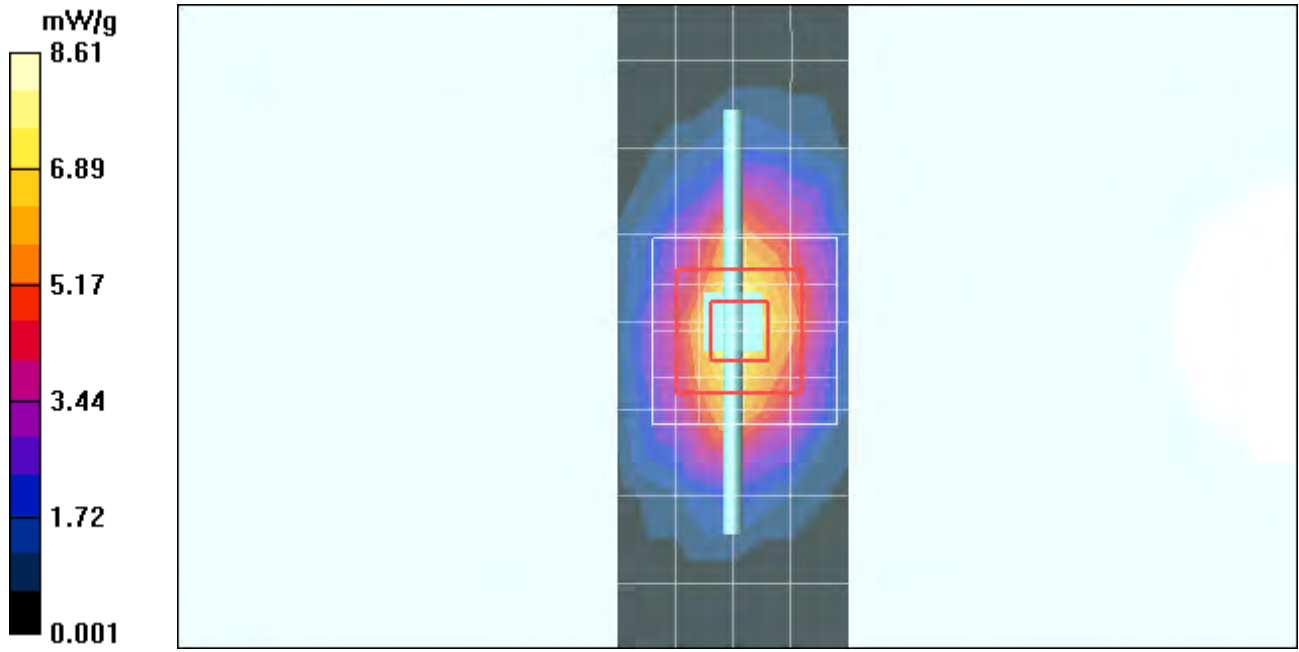
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 79.6 V/m; Power Drift = -0.034 dB; Peak SAR (extrapolated) = 14.3 W/kg

SAR(1 g) = 7.69 mW/g; SAR(10 g) = 4.02 mW/g; Maximum value of SAR (measured) = 8.62 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: dx=20mm, dy=20mm, dz=5mm; Maximum value of SAR (measured) = 8.61 mW/g



Date/Time: 8/24/2011 3:22:22 PM

Test Laboratory: Motorola - Aug-24-2011 1800 MHz Head

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN: 259TR; FCC ID: IHDP56ME4

Procedure Notes: 1800 MHz System Performance Check; Dipole Sn# 259TR; Input Power = 200 mW

Sim.Temp@meas = 19.1°C; Sim.Temp@SPC = 19.3°C; Room Temp @ SPC = 21.0°C

Communication System: CW - Dipole; Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: Validation *HEAD Tissue*

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(5.11, 5.11, 5.11); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2 Glycol SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1136;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (5x15x1):

Measurement grid: dx=10mm, dy=15mm; Maximum value of SAR (measured) = 8.58 mW/g

Daily SPC Check/0-Degree, 5x5x7 Cube (5x5x7)/Cube 0:

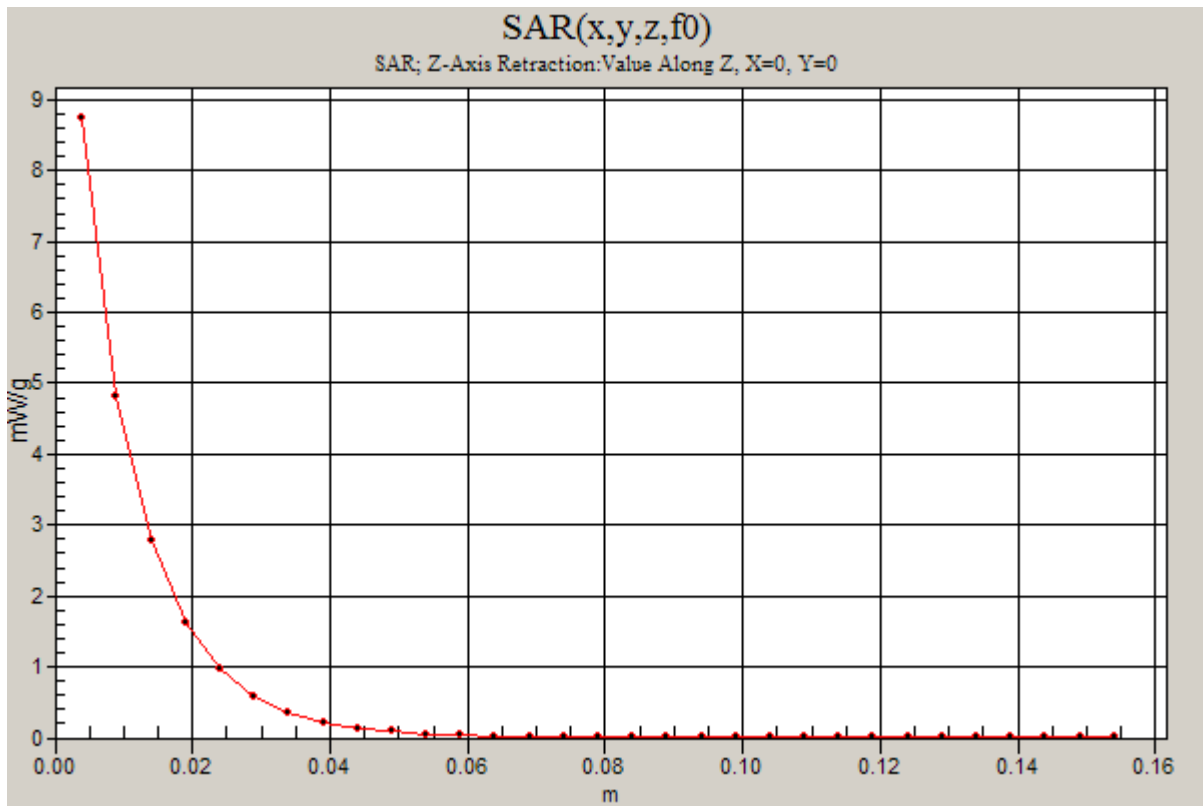
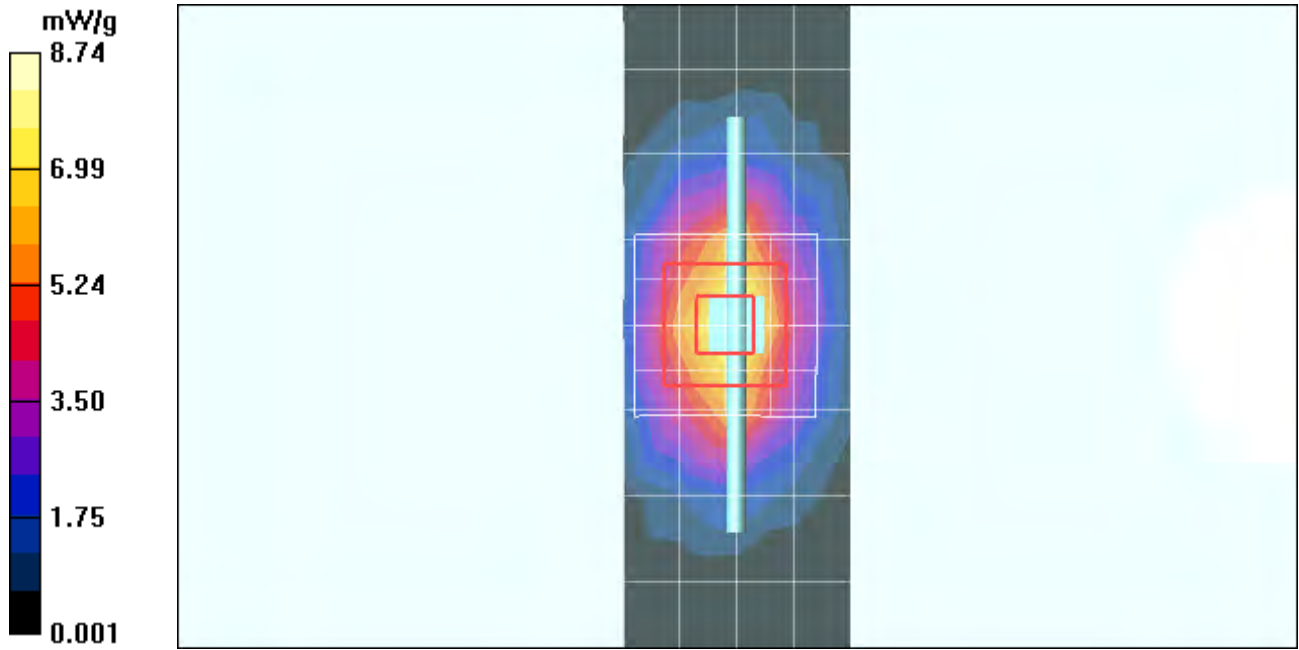
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 79.8 V/m; Power Drift = 0.001 dB; Peak SAR (extrapolated) = 14.5 W/kg

SAR(1 g) = 7.77 mW/g; SAR(10 g) = 4.06 mW/g; Maximum value of SAR (measured) = 8.71 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: dx=20mm, dy=20mm, dz=5mm; Maximum value of SAR (measured) = 8.74 mW/g



Date/Time: 9/2/2011 7:03:01 AM

Test Laboratory: Motorola - Sep-02-2011 1800 MHz Head

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN: 259TR; FCC ID: IHDP56ME4

Procedure Notes: 1800 MHz System Performance Check; Dipole Sn# 259TR; Input Power = 200 mW

Sim.Temp@meas = 19.0 C; Sim.Temp@SPC = 19.0 C; Room Temp @ SPC = 20.8 C

Communication System: CW - Dipole; Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: Validation *HEAD Tissue*

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.37$ mho/m; $\epsilon_r = 38.4$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(5.11, 5.11, 5.11); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Section 1, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (9x4x1):

Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 6.80 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:

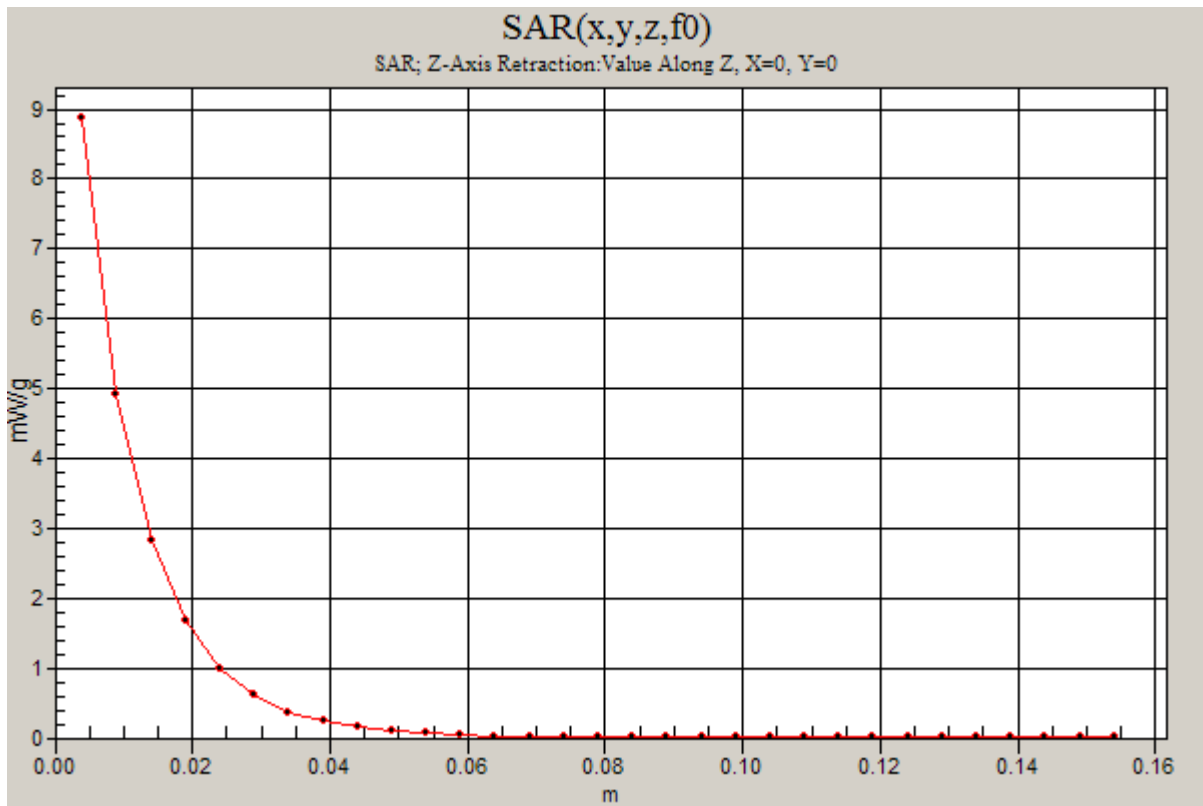
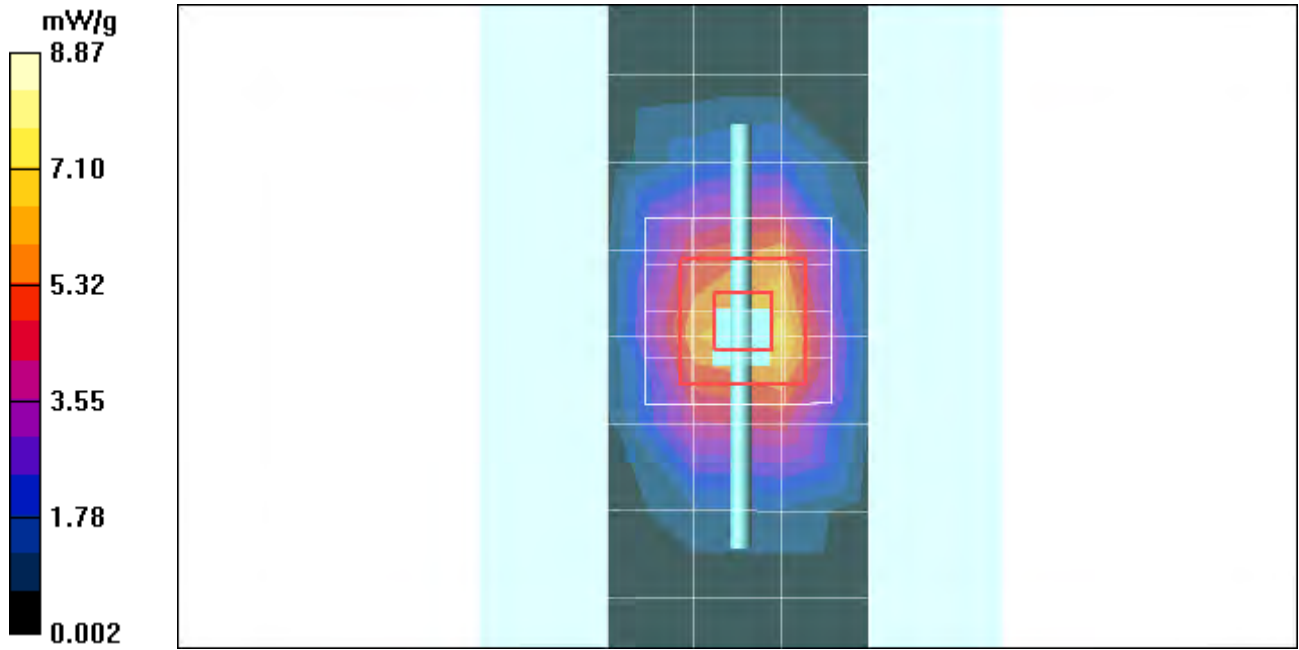
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 81.4 V/m; Power Drift = -0.004 dB; Peak SAR (extrapolated) = 14.6 W/kg

SAR(1 g) = 7.95 mW/g; SAR(10 g) = 4.18 mW/g; Maximum value of SAR (measured) = 8.79 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: dx=20mm, dy=20mm, dz=5mm; Maximum value of SAR (measured) = 8.87 mW/g



Test Laboratory: Motorola Mobility 2450 MHz System Performance Check

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:863

Procedure Notes: PM1 Power = 200 mW Refl.Pwr PM3 = -19dB [Sim.Temp@SPC](#) = 20.5°C Room Temp @ SPC = 21.5°C

Communication System: CW - Dipole; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: Validation *HEAD Tissue* ; Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.86 \text{ mho/m}$; $\epsilon_r = 38.2$; $\rho = 1000 \text{ kg/m}^3$

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.39, 4.39, 4.39); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6 Glycol SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1131;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (5x15x1): Measurement grid: dx=10mm, dy=15mm

Maximum value of SAR (measured) = 11.1 mW/g

Daily SPC Check/0-Degree, 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 73.5 V/m; Power Drift = 0.058 dB

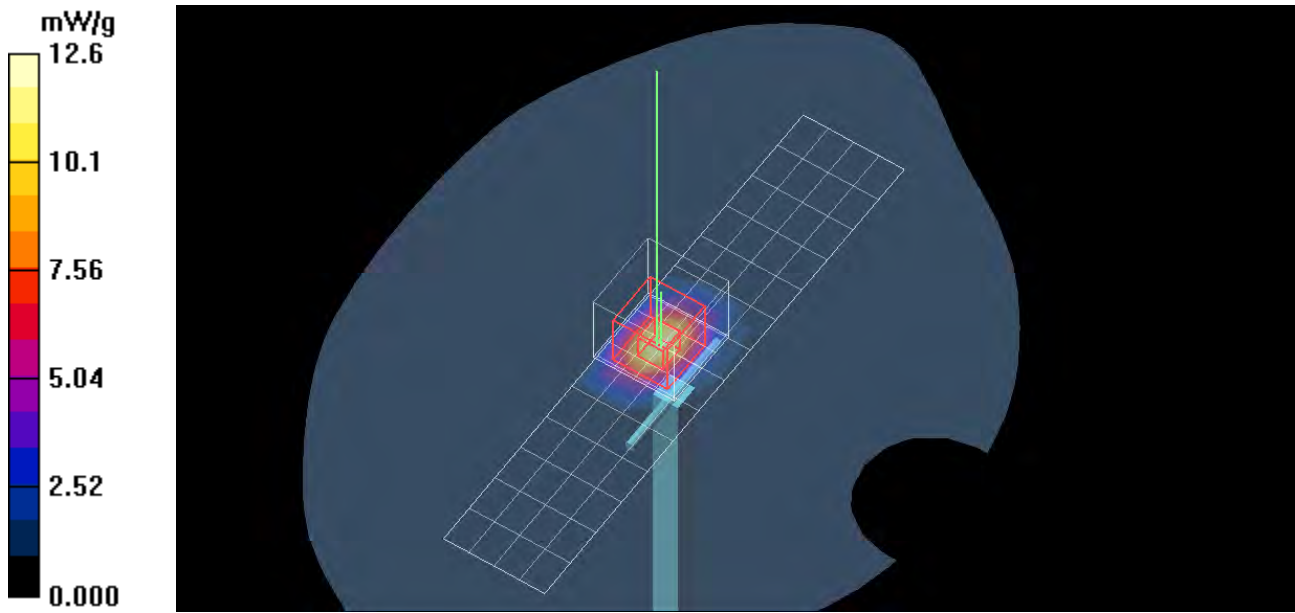
Peak SAR (extrapolated) = 24.2 W/kg

SAR(1 g) = 11.3 mW/g; SAR(10 g) = 5.17 mW/g

Maximum value of SAR (measured) = 12.7 mW/g

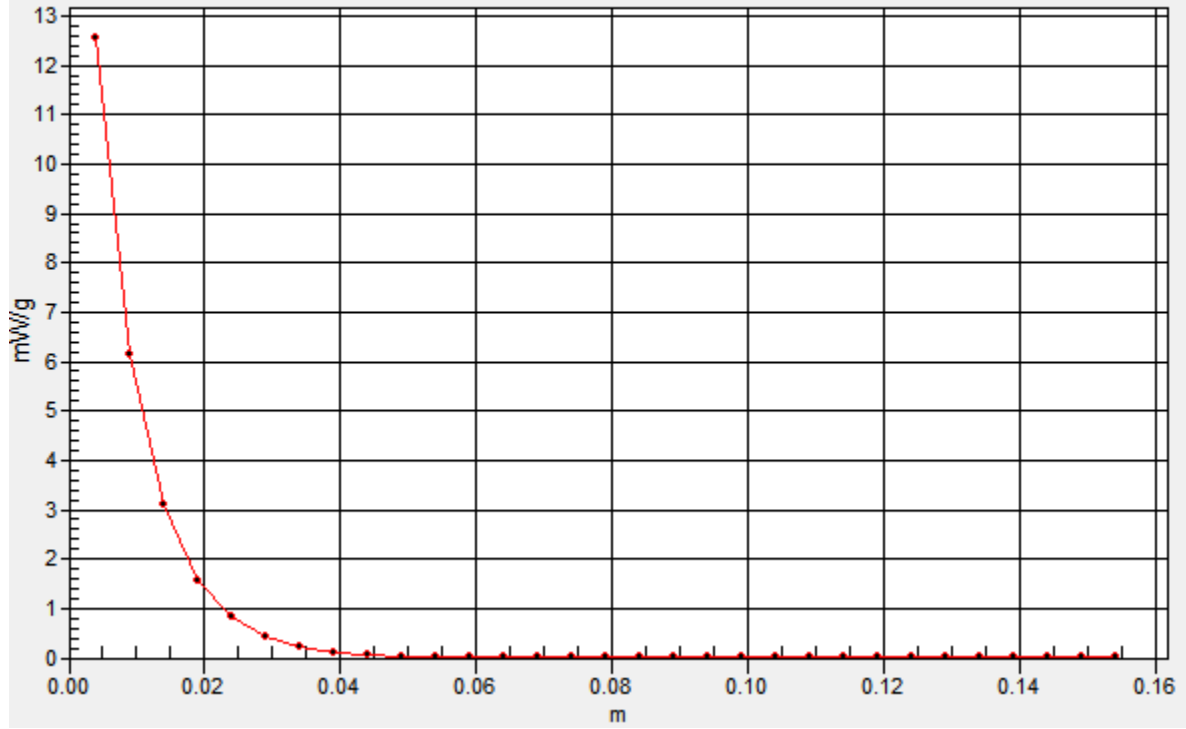
Daily SPC Check/Z-Axis Retraction (1x1x31): Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of SAR (measured) = 12.6 mW/g



SAR(x,y,z,f0)

SAR; Z-Axis Retraction: Value Along Z, X=0, Y=0



System Accuracy Verification Measurements for Body SAR Measurements

Date/Time: 8/28/2011 6:27:43 AM

Test Laboratory: Motorola - Aug-28-2011 835 MHz Body

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 436TR; FCC ID: IHDP56ME4

Procedure Notes: 835 MHz System Performance Check; Dipole Sn# 436TR; Input Power = 200 mW

Sim.Temp@meas = 19.2°C; Sim.Temp@SPC = 19.2°C; Room Temp @ SPC = 21.0°C

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

Medium: Validation *BODY Tissue*

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.97 \text{ mho/m}$; $\epsilon_r = 54.1$; $\rho = 1000 \text{ kg/m}^3$

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(6.1, 6.1, 6.1); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Section 2, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (9x4x1):

Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$; Maximum value of SAR (measured) = 1.87 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:

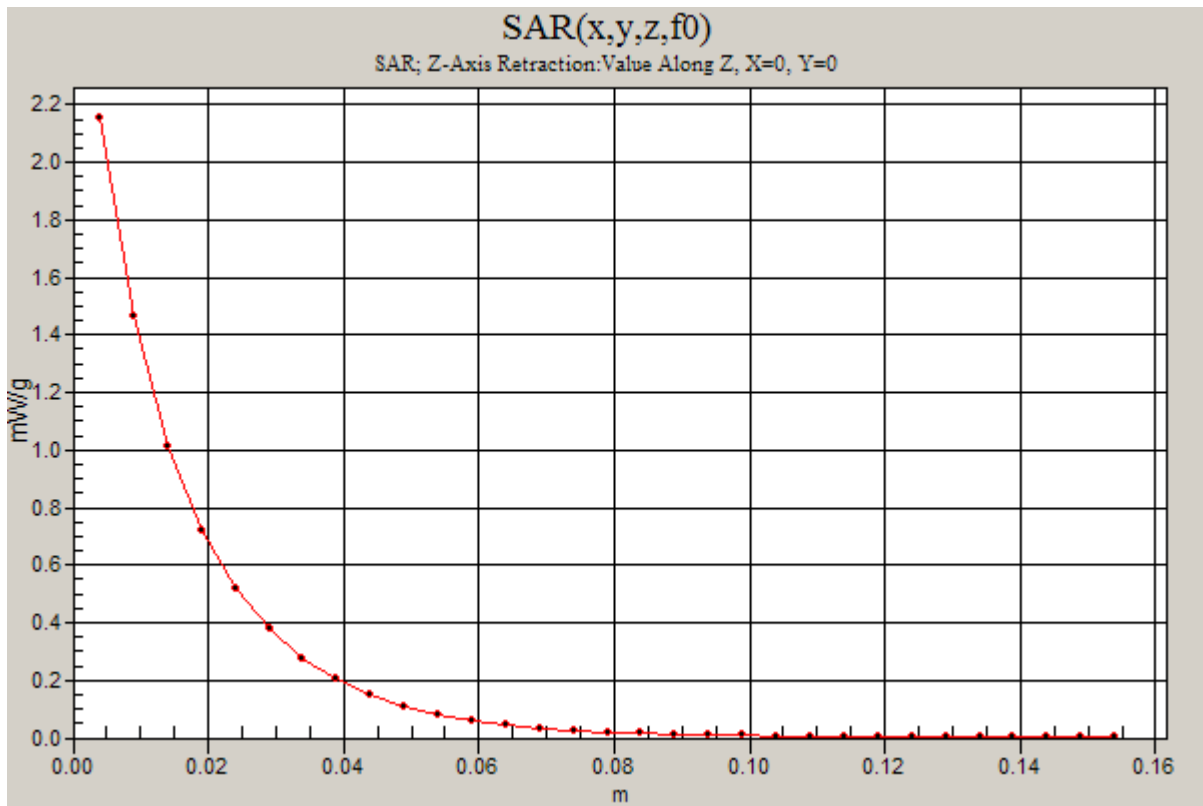
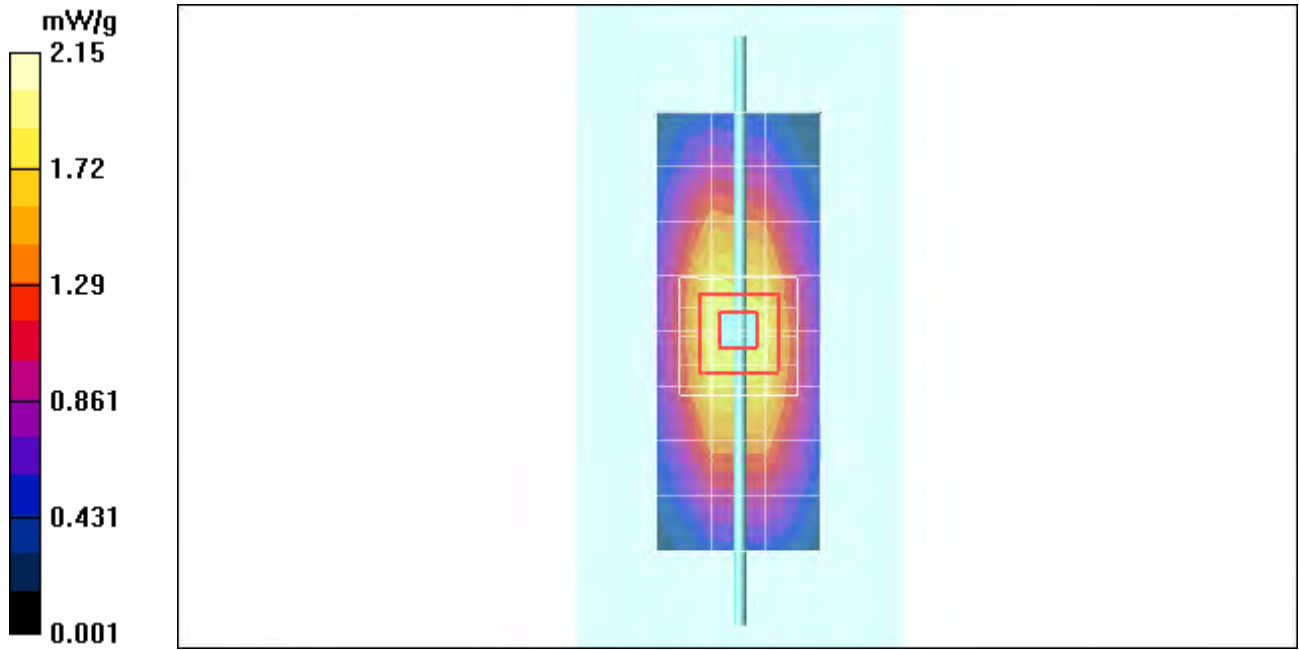
Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 47.7 V/m; Power Drift = 0.005 dB; Peak SAR (extrapolated) = 2.99 W/kg

SAR(1 g) = 2.01 mW/g; SAR(10 g) = 1.31 mW/g; Maximum value of SAR (measured) = 2.16 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$, $dz=5\text{mm}$; Maximum value of SAR (measured) = 2.15 mW/g



Date/Time: 9/9/2011 9:10:57 AM

Test Laboratory: Motorola - Sep-09-2011 835 MHz Body

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 422TR; FCC ID: IHDP56ME4

Procedure Notes: 835 MHz System Performance Check; Dipole Sn# 422TR; Input Power = 200 mW

Sim.Temp@meas = 20.7 C; Sim.Temp@SPC = 19.7 C; Room Temp @ SPC = 21.2 C

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

Medium: Validation *BODY Tissue*

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.98 \text{ mho/m}$; $\epsilon_r = 53.8$; $\rho = 1000 \text{ kg/m}^3$

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(5.88, 5.88, 5.88); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#_6 - Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: N/A;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (4x15x1):

Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 1.79 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:

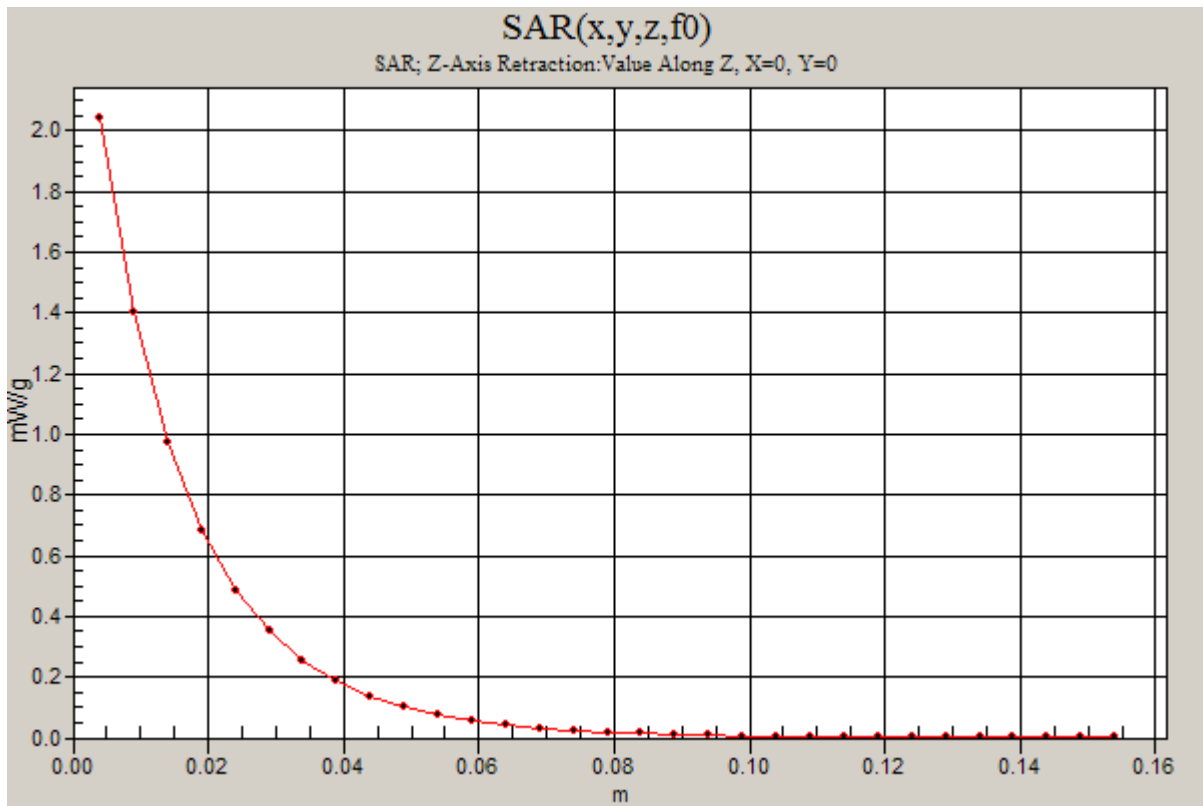
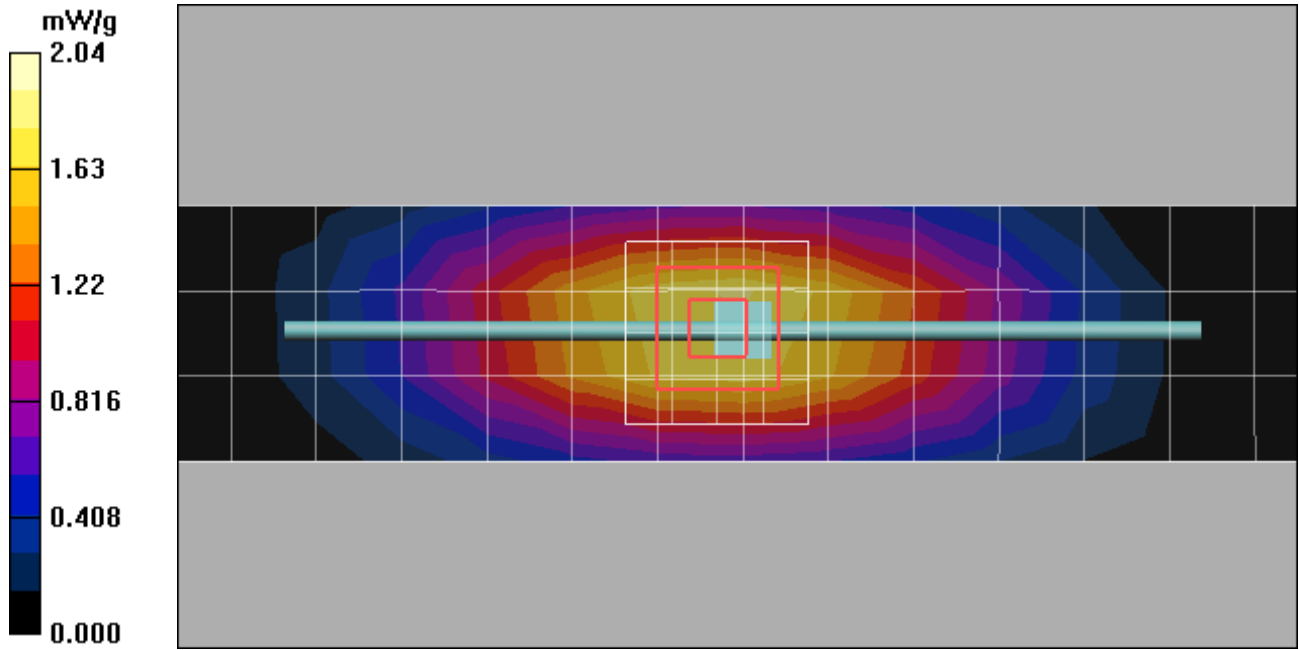
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 46.4 V/m; Power Drift = -0.117 dB; Peak SAR (extrapolated) = 2.73 W/kg

SAR(1 g) = 1.9 mW/g; SAR(10 g) = 1.25 mW/g; Maximum value of SAR (measured) = 2.05 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: dx=20mm, dy=20mm, dz=5mm; Maximum value of SAR (measured) = 2.04 mW/g



Date/Time: 9/17/2011 5:35:07 AM

Test Laboratory: Motorola - Sep-17-2011 835 MHz Body

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 422TR; FCC ID: IHDP56ME4

Procedure Notes: 835 MHz System Performance Check; Dipole Sn# 422TR; Input Power = 200 mW

Sim.Temp@meas = 20.2 C; Sim.Temp@SPC = 20.2 C; Room Temp @ SPC = 21.1 C

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

Medium: Validation *BODY Tissue*

Medium parameters used: $f = 835$ MHz; $\sigma = 0.97$ mho/m; $\epsilon_r = 55.3$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(5.88, 5.88, 5.88); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#6 - Triple Flat Phantom 5.1C (rev.2); Type: QD 000 P51 CA; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (4x15x1):

Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 1.95 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:

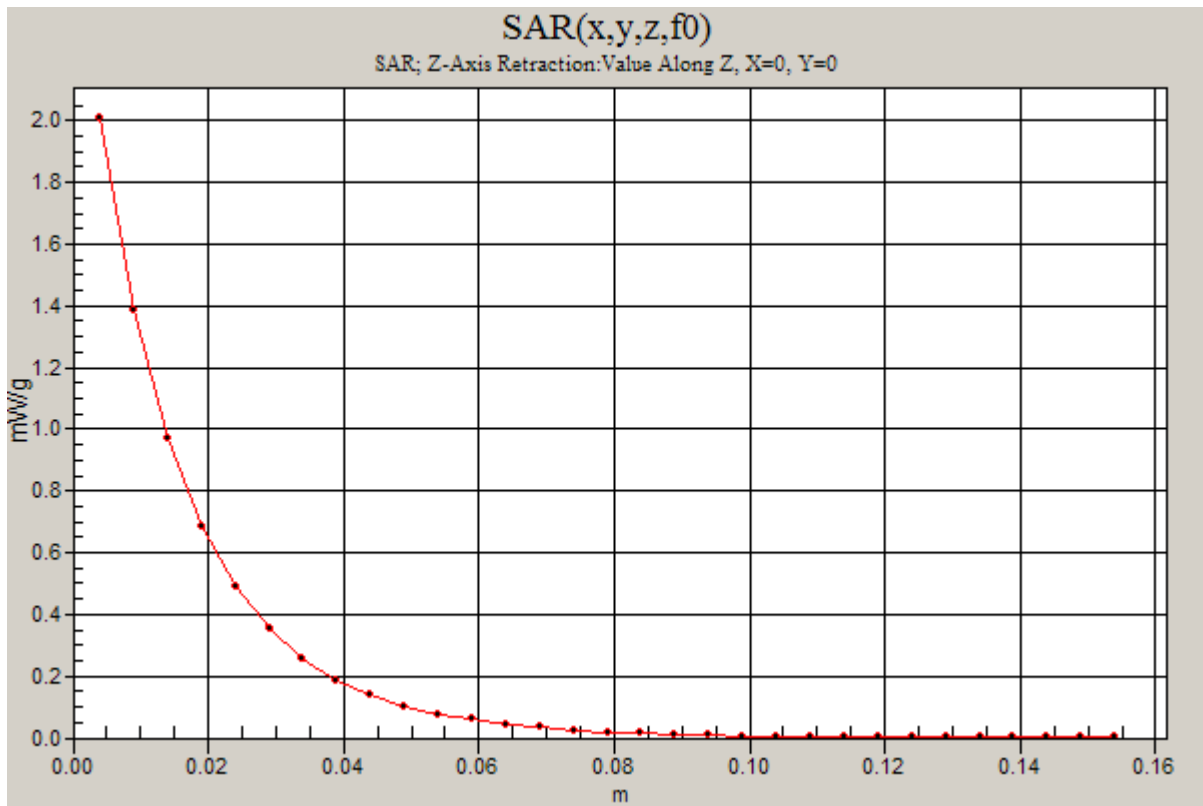
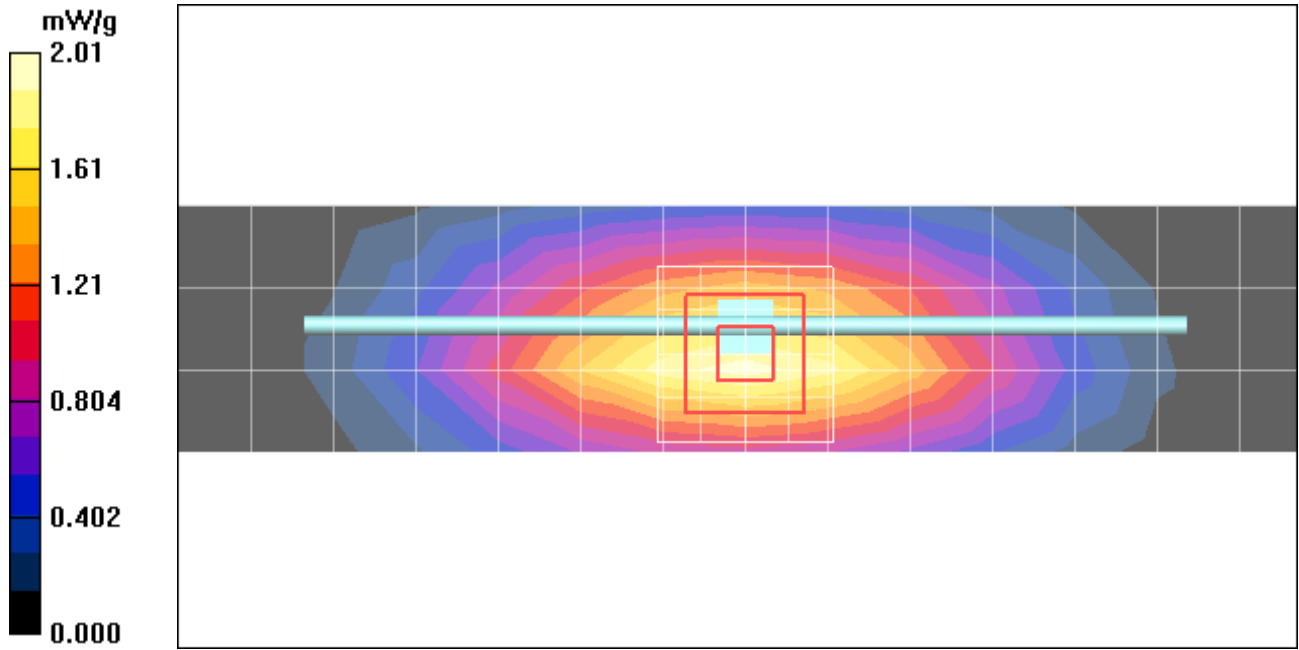
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 45.0 V/m; Power Drift = -0.018 dB; Peak SAR (extrapolated) = 2.68 W/kg

SAR(1 g) = 1.86 mW/g; SAR(10 g) = 1.23 mW/g; Maximum value of SAR (measured) = 2.01 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: dx=20mm, dy=20mm, dz=5mm



Date/Time: 9/19/2011 5:30:12 PM

Test Laboratory: Motorola - Sep-19-2011 835 MHz

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 422TR; FCC ID: IHDP56ME4

Procedure Notes: 835 MHz System Performance Check; Dipole Sn# 422TR; Input Power = 200 mW

Sim.Temp@meas = 20.3 C; Sim.Temp@SPC = 20.0 C; Room Temp @ SPC = 21.1 C

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

Medium: Validation *big BODY Tissue*

Medium parameters used: $f = 835$ MHz; $\sigma = 0.99$ mho/m; $\epsilon_r = 55.7$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(5.88, 5.88, 5.88); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6 Glycol SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1131;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (5x15x1):

Measurement grid: dx=10mm, dy=15mm; Maximum value of SAR (measured) = 2.10 mW/g

Daily SPC Check/0-Degree, 5x5x7 Cube (5x5x7)/Cube 0:

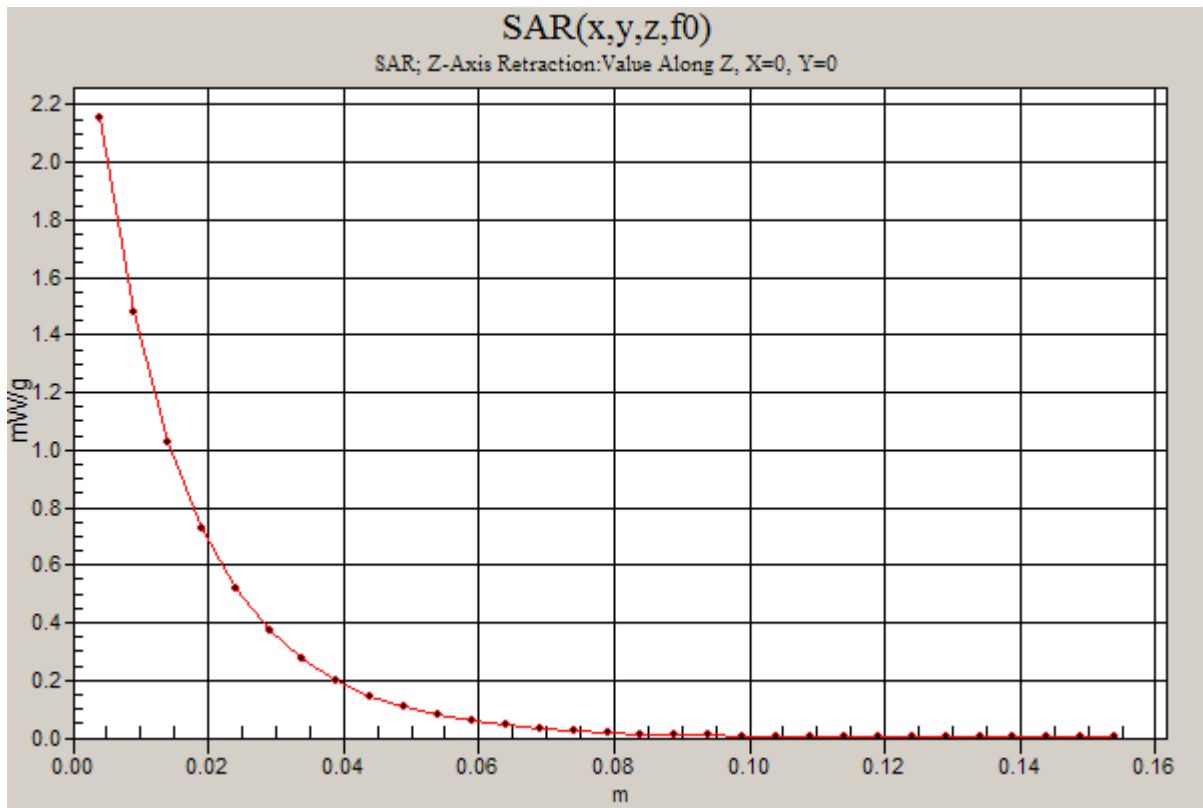
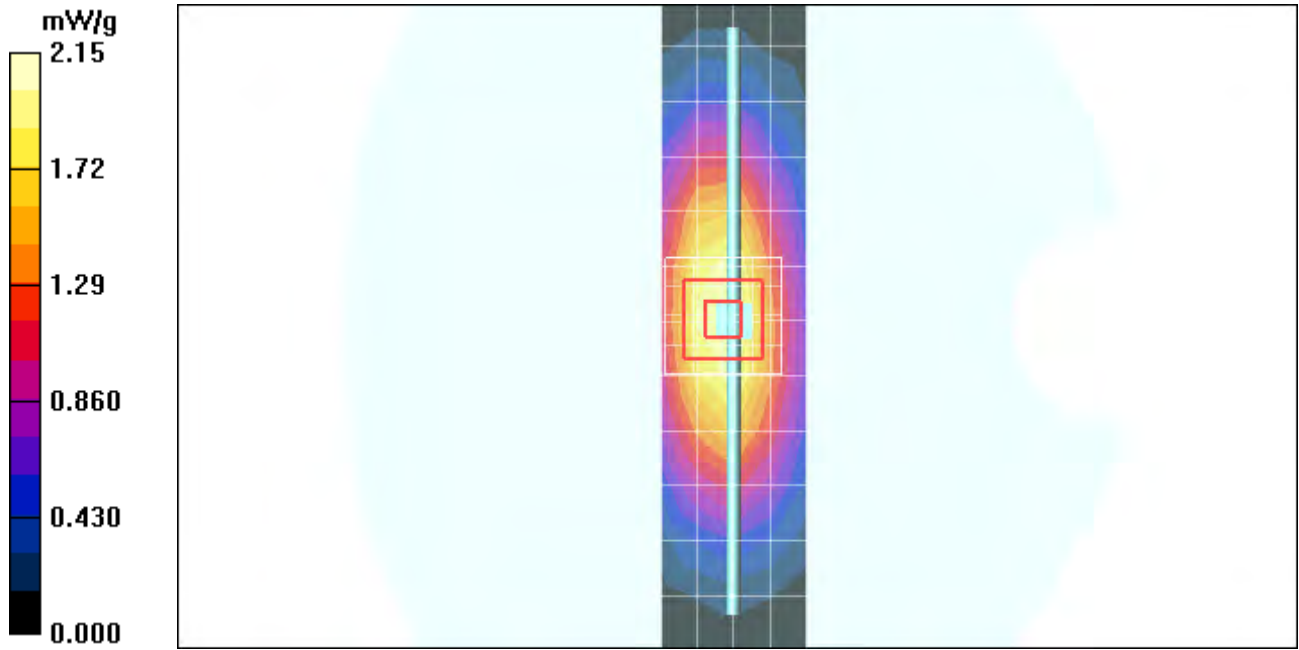
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 46.8 V/m; Power Drift = 0.005 dB; Peak SAR (extrapolated) = 2.88 W/kg

SAR(1 g) = 1.99 mW/g; SAR(10 g) = 1.31 mW/g; Maximum value of SAR (measured) = 2.16 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: dx=20mm, dy=20mm, dz=5mm; Maximum value of SAR (measured) = 2.15 mW/g



Test Laboratory: Motorola

835 MHz System Performance Check - Body Tissue

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:436

Procedure Notes: PM1 Power = 200 mW Refl.Pwr PM3 = -20.34 dB [Sim.Temp@SPC](#) = 20.2 Room Temp @ SPC = 21.4

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

Medium: Validation *BODY Tissue* ; Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.98 \text{ mho/m}$; $\epsilon_r = 55.3$; $\rho = 1000 \text{ kg/m}^3$

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(6.1, 6.1, 6.1); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn702; Calibrated: 4/14/2011
- Phantom: R#2_ Section 2, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (9x4x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 1.87 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

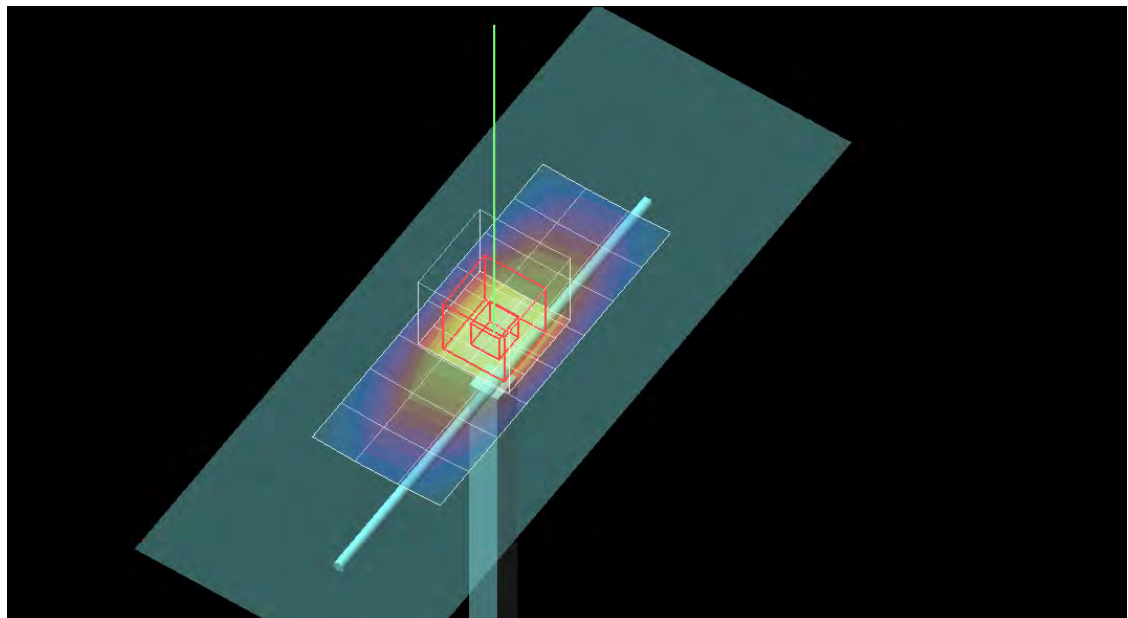
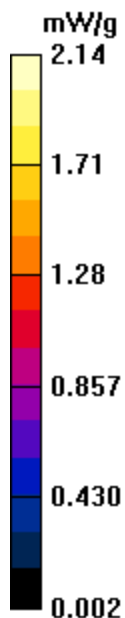
Reference Value = 47.4 V/m; Power Drift = -0.024 dB

Peak SAR (extrapolated) = 2.91 W/kg

SAR(1 g) = 1.99 mW/g; SAR(10 g) = 1.31 mW/g

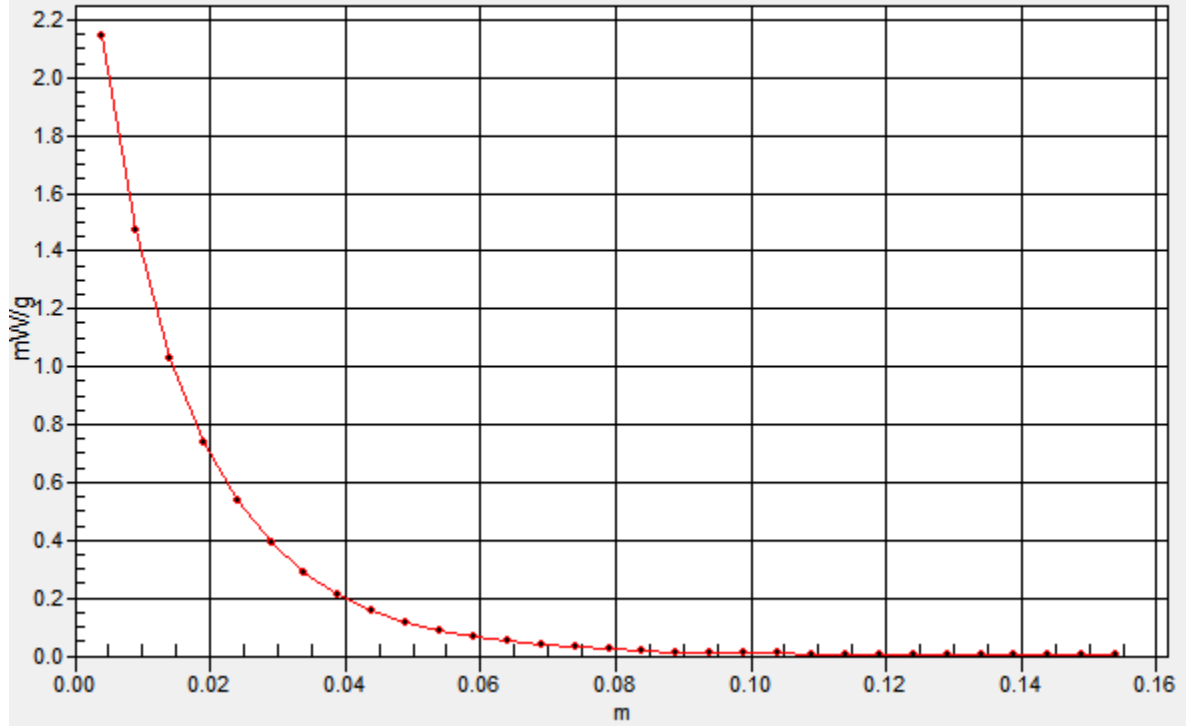
Maximum value of SAR (measured) = 2.14 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$, $dz=5\text{mm}$



SAR(x,y,z,f0)

SAR; Z-Axis Retraction: Value Along Z, X=0, Y=0



Date/Time: 8/25/2011 12:18:05 AM

Test Laboratory: Motorola - Aug-25-2011 1800 MHz Body

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN: 271TR; FCC ID: IHDP56ME4

Procedure Notes: 1800 MHz System Performance Check; Dipole Sn# 271TR; Input Power = 200 mW

Sim.Temp@meas = 19.0°C; Sim.Temp@SPC = 18.5°C; Room Temp @ SPC = 21.2°C

Communication System: CW - Dipole; Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: Validation *BODY Tissue*

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 51.7$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(4.9, 4.9, 4.9); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Section 1, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (9x4x1):

Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 7.73 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:

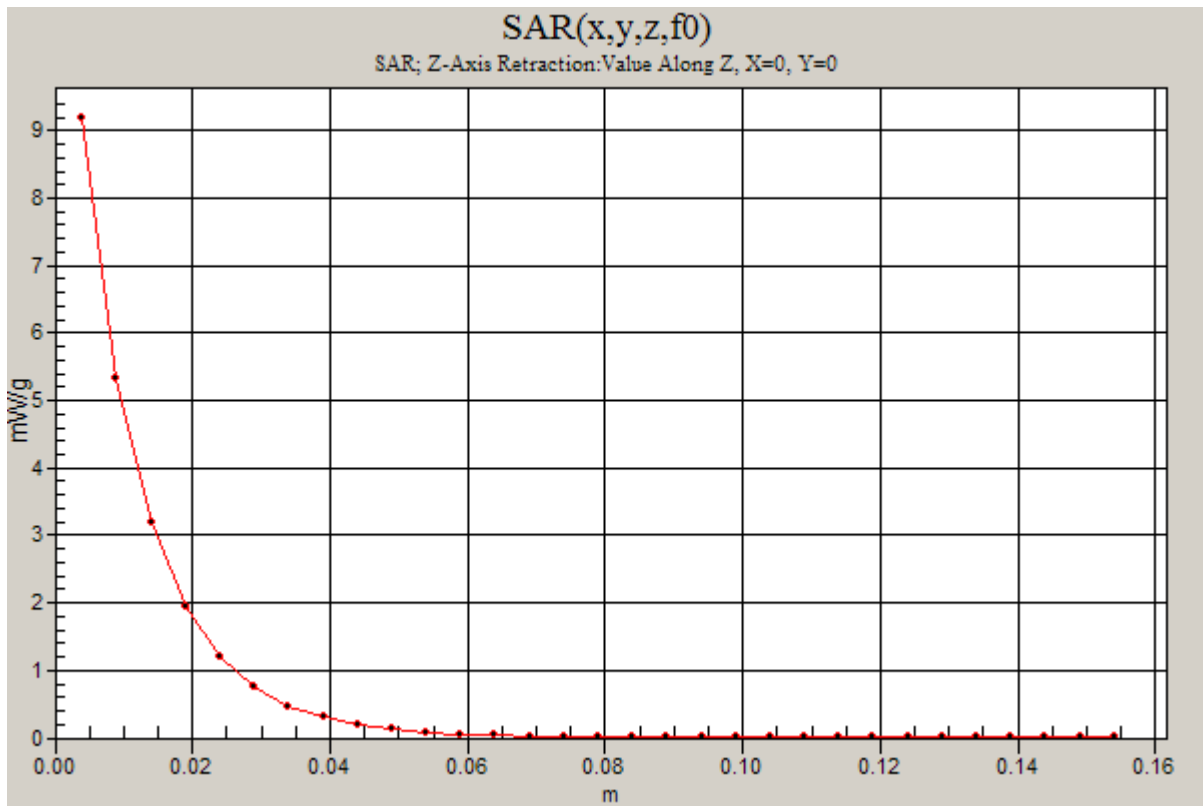
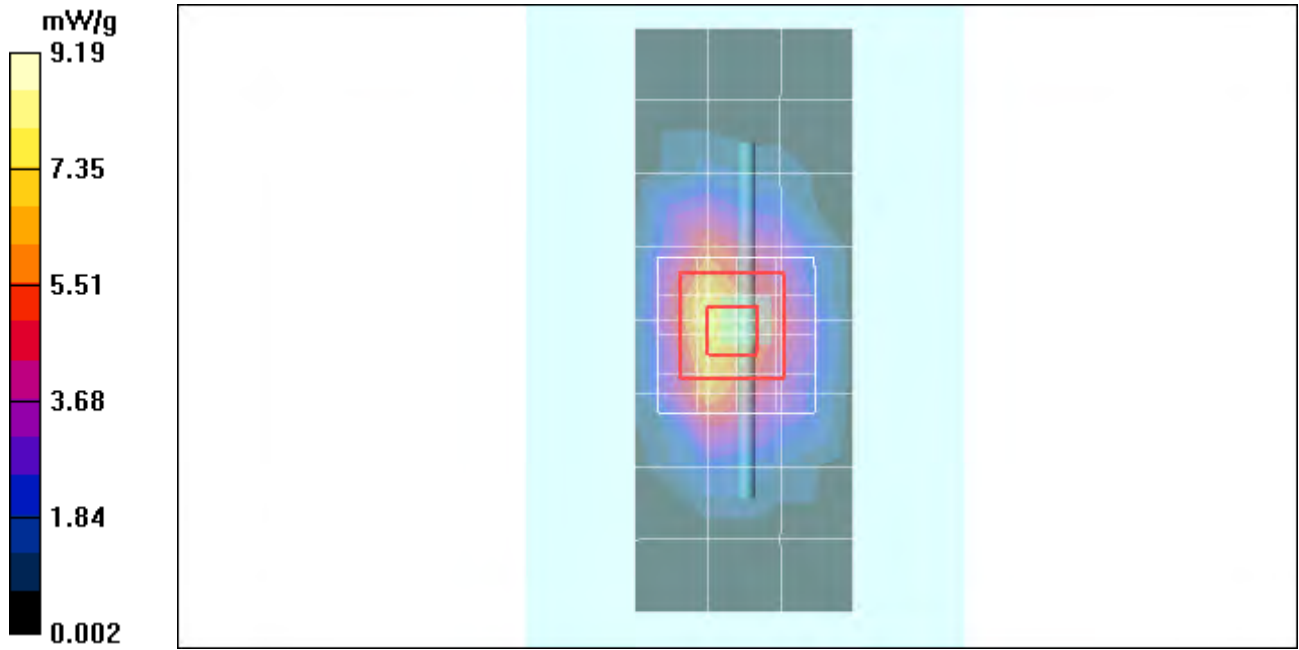
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 77.2 V/m; Power Drift = -0.002 dB; Peak SAR (extrapolated) = 14.6 W/kg

SAR(1 g) = 8.23 mW/g; SAR(10 g) = 4.36 mW/g; Maximum value of SAR (measured) = 9.21 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: dx=20mm, dy=20mm, dz=5mm; Maximum value of SAR (measured) = 9.19 mW/g



Date/Time: 8/27/2011 9:39:21 AM

Test Laboratory: Motorola - Aug-27-2011 1800 MHz Body

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN: 259TR; FCC ID: IHDP56ME4

Procedure Notes: 1800 MHz System Performance Check; Dipole Sn# 259TR; Input Power = 200 mW

Sim.Temp@meas = 19.3°C; Sim.Temp@SPC = 19.3°C; Room Temp @ SPC = 21.0°C

Communication System: CW - Dipole; Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: Validation *BODY Tissue*

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.49$ mho/m; $\epsilon_r = 51$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(4.9, 4.9, 4.9); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Section 1, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (9x4x1):

Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 5.93 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:

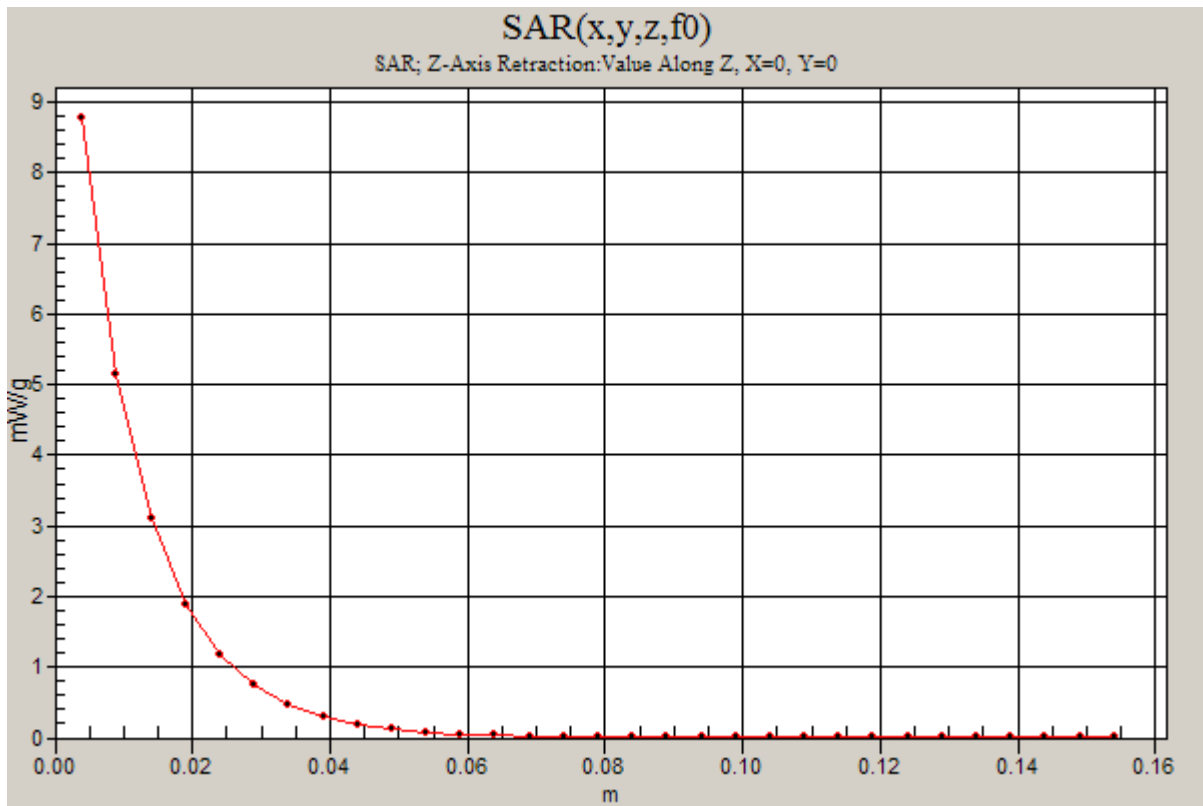
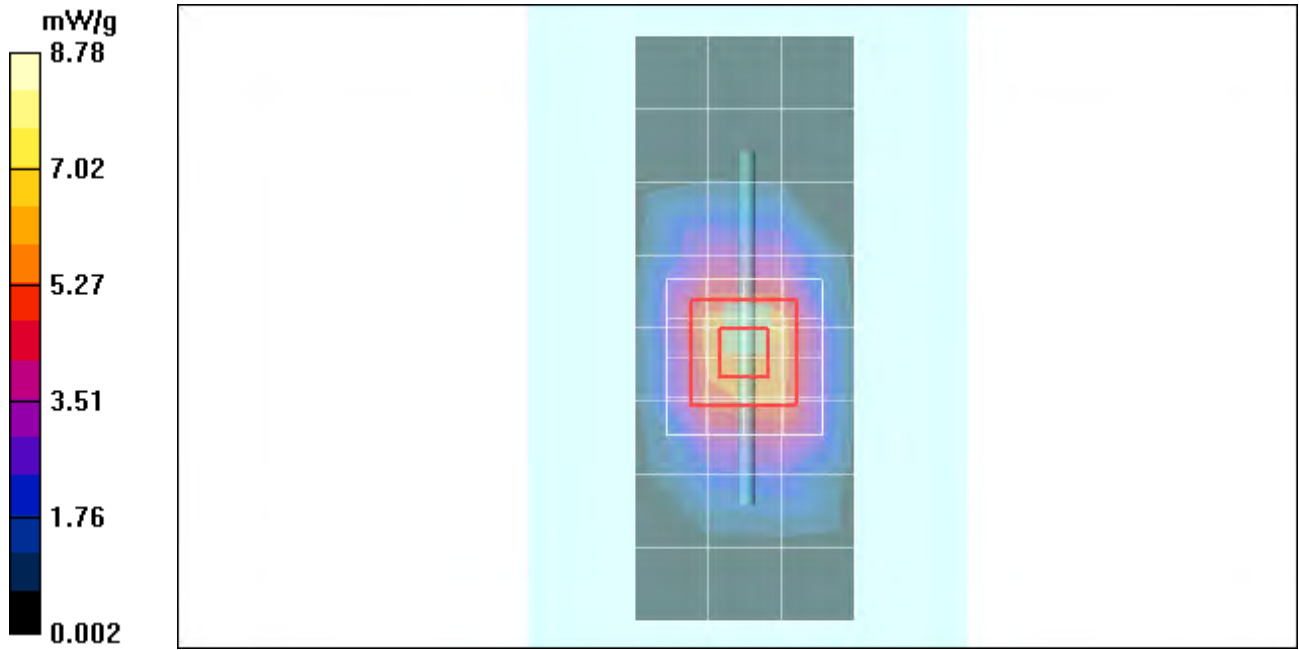
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 77.4 V/m; Power Drift = 0.010 dB; Peak SAR (extrapolated) = 13.9 W/kg

SAR(1 g) = 7.87 mW/g; SAR(10 g) = 4.18 mW/g; Maximum value of SAR (measured) = 8.85 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: dx=20mm, dy=20mm, dz=5mm; Maximum value of SAR (measured) = 8.78 mW/g



Date/Time: 9/3/2011 6:33:40 AM

Test Laboratory: Motorola - Sep-03-2011 1800 MHz Body

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN: 259TR; FCC ID: IHDP56ME4

Procedure Notes: 1800 MHz System Performance Check; Dipole Sn# 259TR; Input Power = 200 mW

Sim.Temp@meas = 19.2°C; Sim.Temp@SPC = 19.2°C; Room Temp @ SPC = 21.3°C

Communication System: CW - Dipole; Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: Validation *BODY Tissue*

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 51.1$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(4.9, 4.9, 4.9); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Section 1, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (9x4x1):

Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 7.04 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:

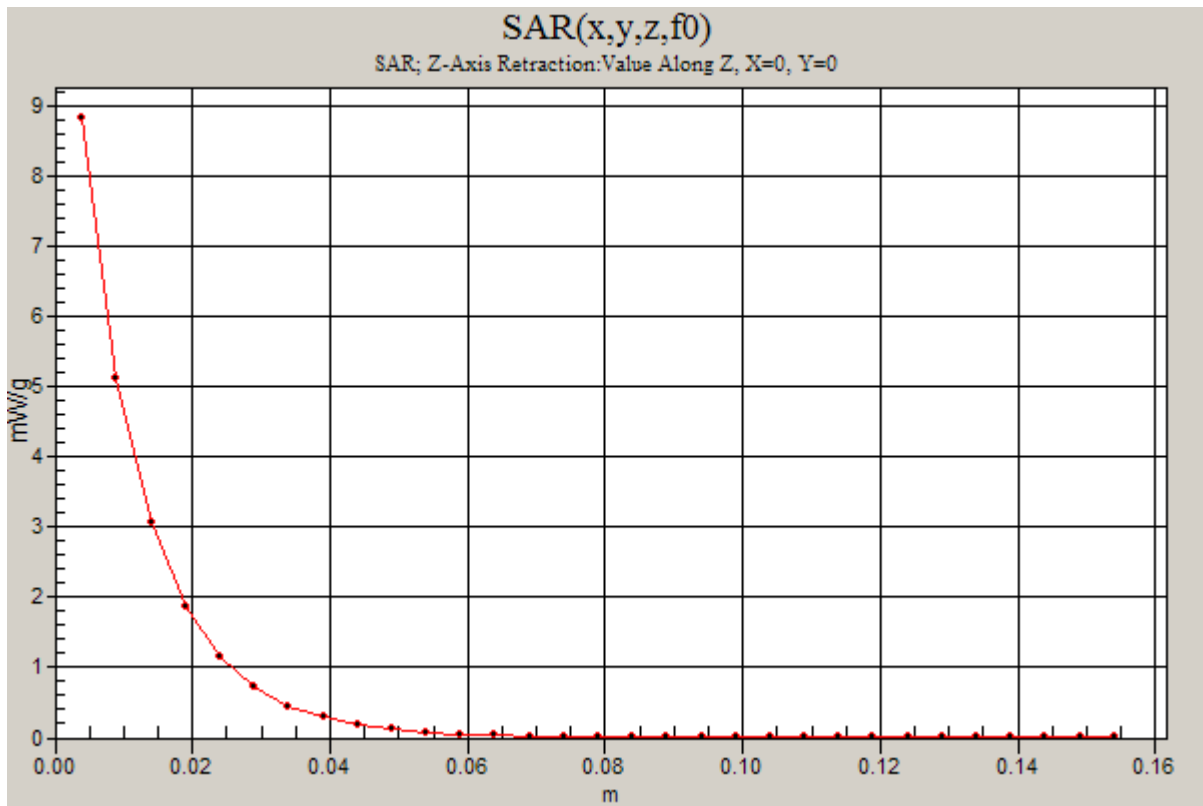
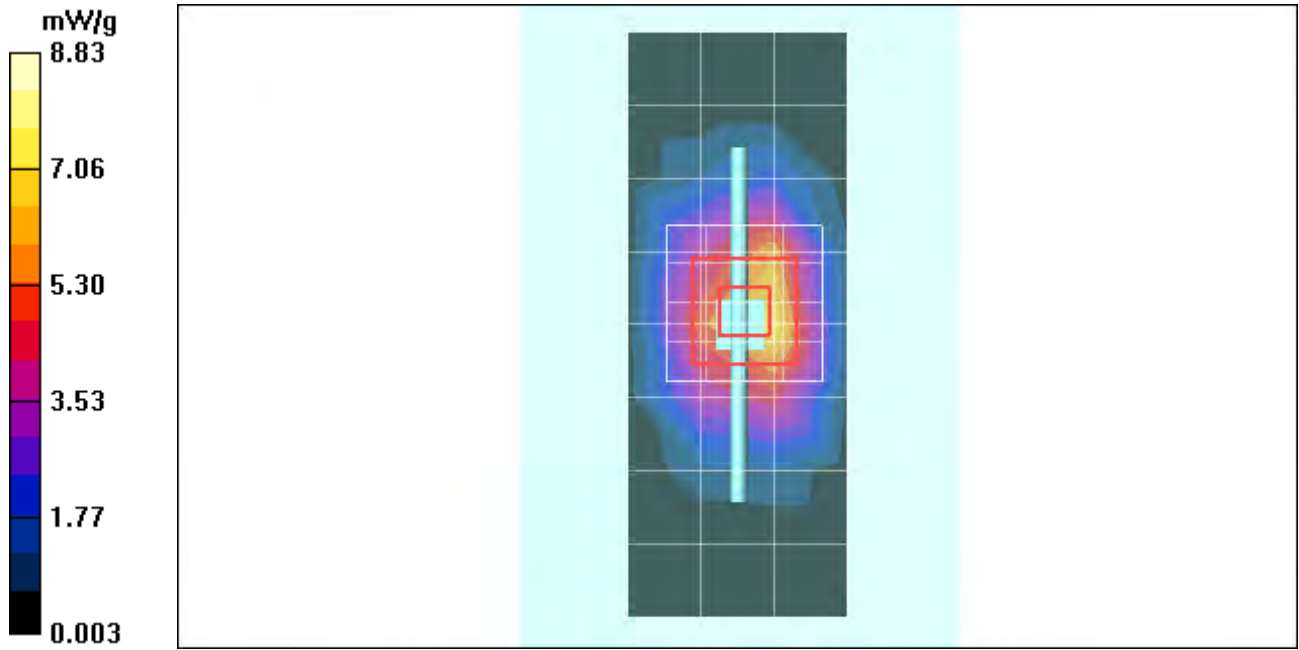
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 78.4 V/m; Power Drift = 0.004 dB; Peak SAR (extrapolated) = 14.1 W/kg

SAR(1 g) = 7.92 mW/g; SAR(10 g) = 4.2 mW/g; Maximum value of SAR (measured) = 8.89 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: dx=20mm, dy=20mm, dz=5mm; Maximum value of SAR (measured) = 8.83 mW/g



Date/Time: 9/18/2011 11:28:40 AM

Test Laboratory: Motorola - Sep-18-2011 1800 MHz Body

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN: 250TR; FCC ID: IHDP56ME4

Procedure Notes: 1800 MHz System Performance Check; Dipole Sn# 250TR; Input Power = 200 mW

Sim.Temp@meas = 19.8 C; Sim.Temp@SPC = 19.6 C; Room Temp @ SPC = 21.1 C

Communication System: CW - Dipole; Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: Validation *BODY Tissue*

Medium parameters used: $f = 1800 \text{ MHz}$; $\sigma = 1.49 \text{ mho/m}$; $\epsilon_r = 51.2$; $\rho = 1000 \text{ kg/m}^3$

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.61, 4.61, 4.61); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#6 - Triple Flat Phantom 5.1C (rev.2); Type: QD 000 P51 CA; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (4x15x1):

Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$; Maximum value of SAR (measured) = 6.66 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:

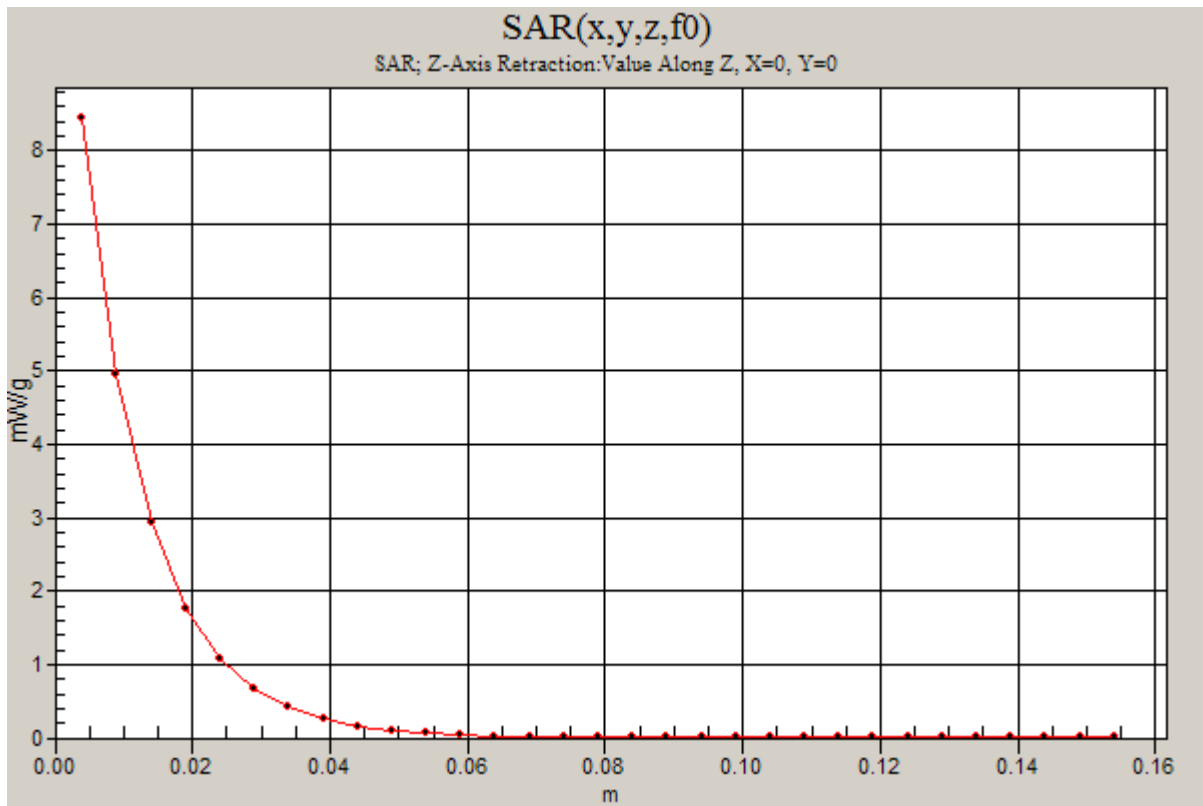
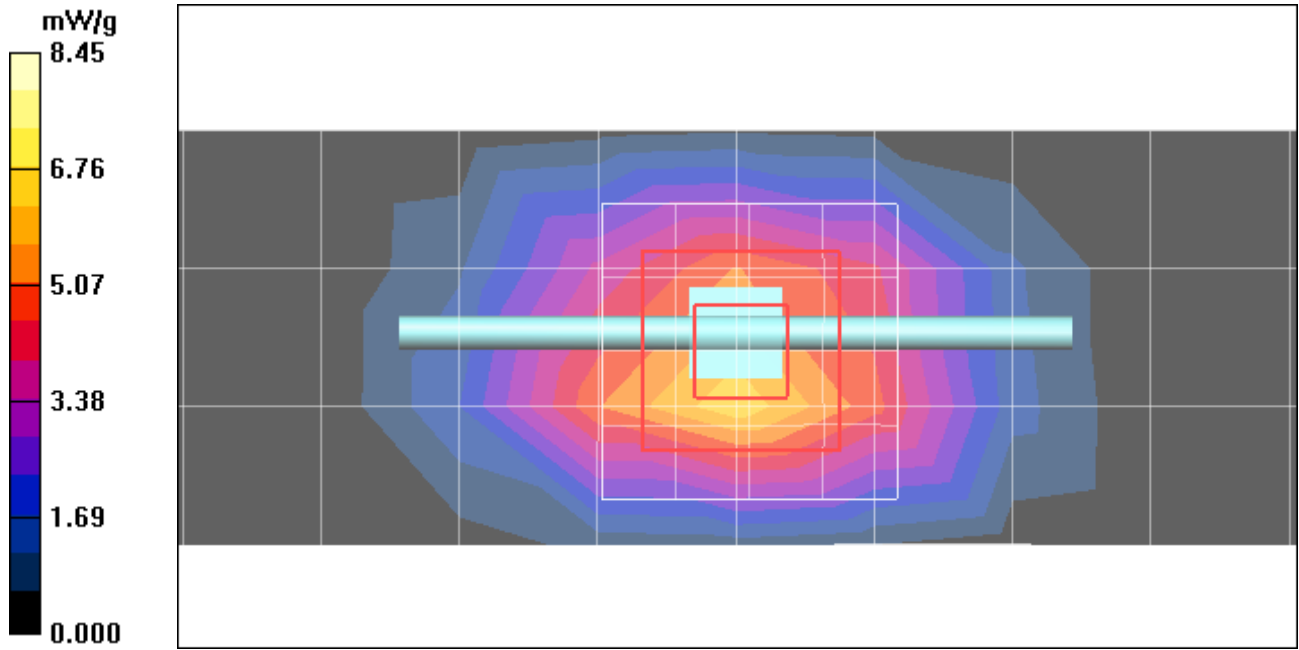
Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 76.6 V/m; Power Drift = -0.059 dB; Peak SAR (extrapolated) = 12.9 W/kg

SAR(1 g) = 7.5 mW/g; SAR(10 g) = 4.01 mW/g; Maximum value of SAR (measured) = 8.49 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$, $dz=5\text{mm}$; Maximum value of SAR (measured) = 8.45 mW/g



Date/Time: 9/19/2011 1:36:55 PM

Test Laboratory: Motorola - Sep-19-2011 1800 MHz Body

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN: 250TR; FCC ID: IHDP56ME4

Procedure Notes: 1800 MHz System Performance Check; Dipole Sn# 250TR; Input Power = 200 mW

Sim.Temp@meas = 20.1 C; Sim.Temp@SPC = 19.6 C; Room Temp @ SPC = 21.3 C

Communication System: CW - Dipole; Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: Validation *BODY Tissue*

Medium parameters used: $f = 1800 \text{ MHz}$; $\sigma = 1.49 \text{ mho/m}$; $\epsilon_r = 51.7$; $\rho = 1000 \text{ kg/m}^3$

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.61, 4.61, 4.61); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6 Glycol SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1131;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (5x15x1):

Measurement grid: $dx=10\text{mm}$, $dy=15\text{mm}$; Maximum value of SAR (measured) = 9.10 mW/g

Daily SPC Check/0-Degree, 5x5x7 Cube (5x5x7)/Cube 0:

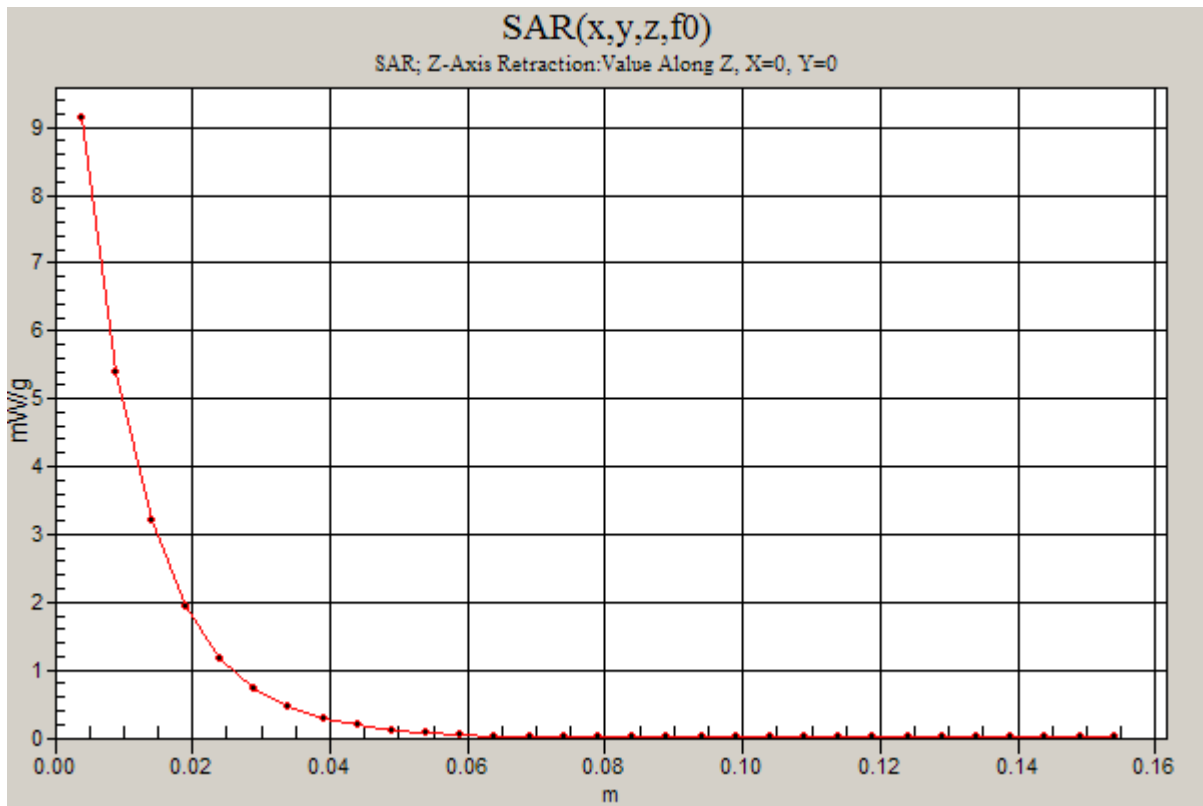
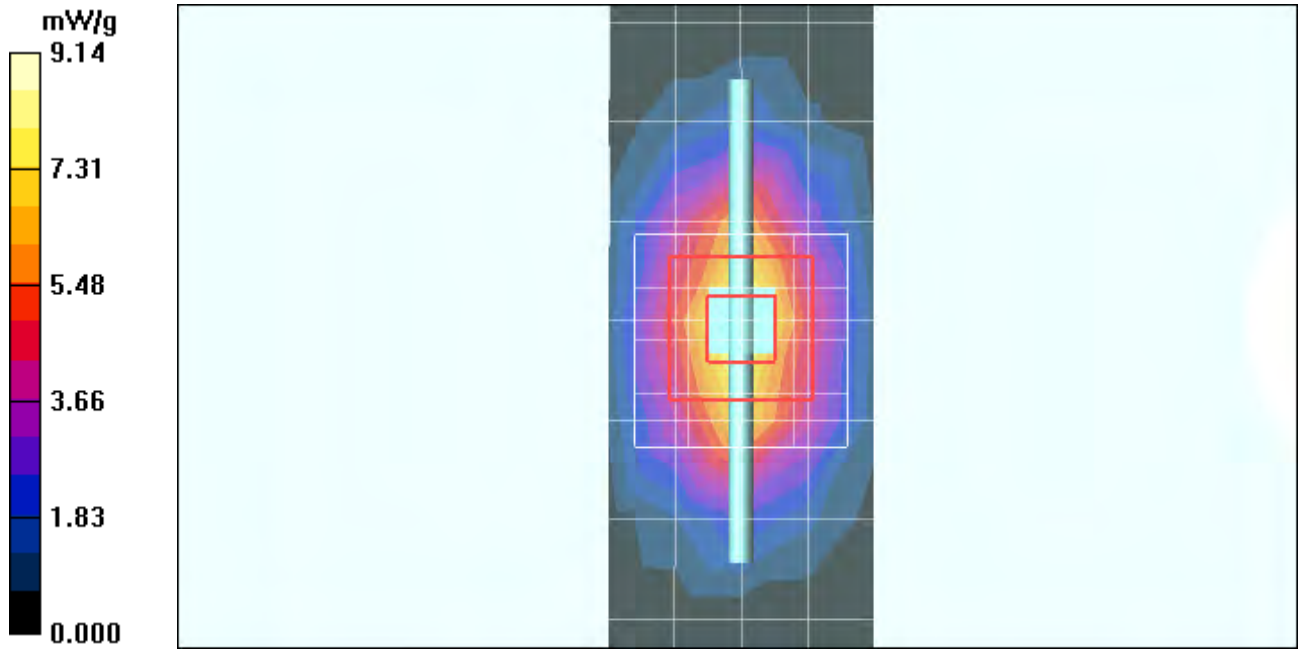
Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 80.7 V/m; Power Drift = -0.033 dB; Peak SAR (extrapolated) = 13.9 W/kg

SAR(1 g) = 8.08 mW/g; SAR(10 g) = 4.31 mW/g; Maximum value of SAR (measured) = 9.11 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$, $dz=5\text{mm}$; Maximum value of SAR (measured) = 9.14 mW/g



Test Laboratory: Motorola 1800 MHz System Performance Check - Body Tissue

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:271TR

Procedure Notes: PM1 Power = 200 mW Refl.Pwr PM3 = -19.77dB [Sim.Temp@SPC](#) = 20.9 Room Temp @ SPC = 21.3

Communication System: CW - Dipole; Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: Validation *BODY Tissue* ; Medium parameters used: $f = 1800$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 51.6$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(4.9, 4.9, 4.9); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn702; Calibrated: 4/14/2011
- Phantom: R#2_ Section 1, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (9x4x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 6.22 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 78.3 V/m; Power Drift = -0.022 dB

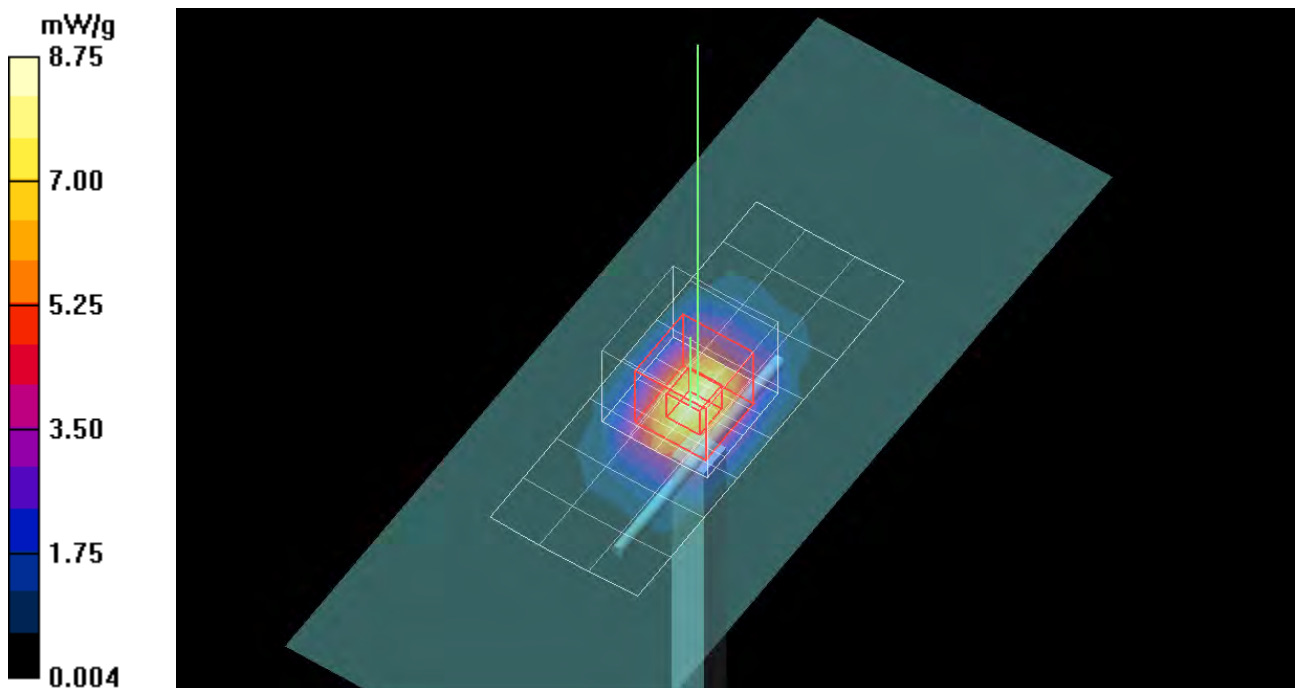
Peak SAR (extrapolated) = 13.7 W/kg

SAR(1 g) = 7.85 mW/g; SAR(10 g) = 4.2 mW/g

Maximum value of SAR (measured) = 8.81 mW/g

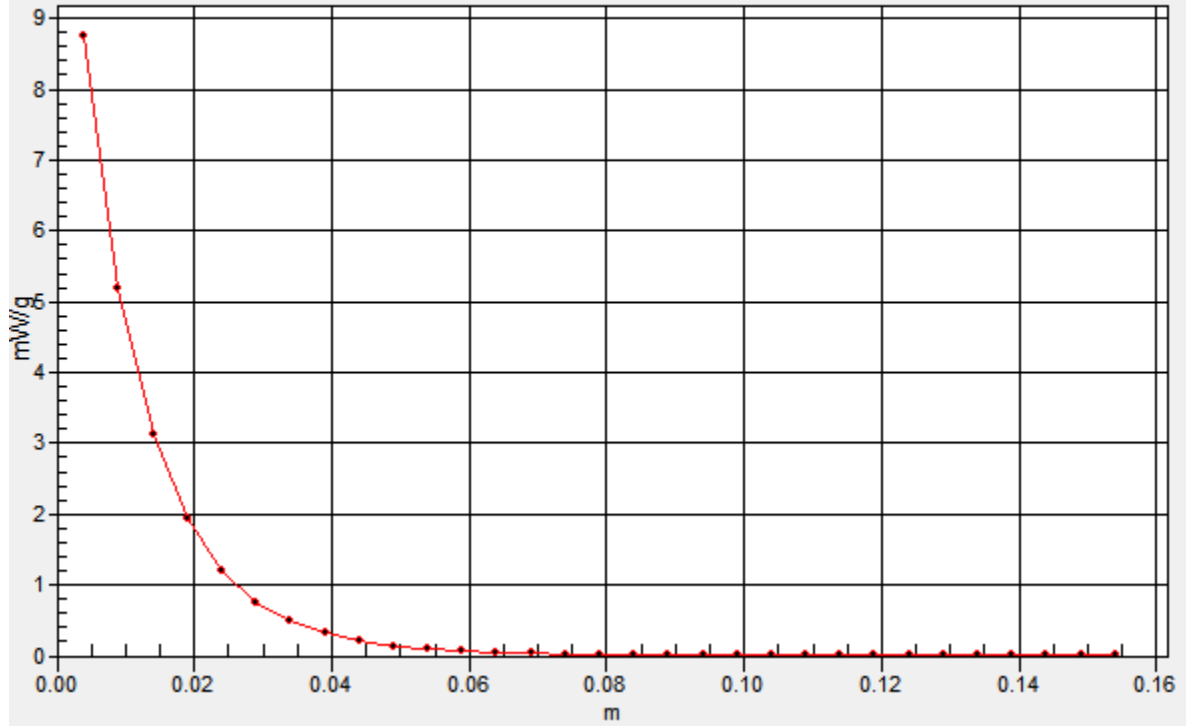
Daily SPC Check/Z-Axis Retraction (1x1x31): Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of SAR (measured) = 8.75 mW/g



SAR(x,y,z,f0)

SAR; Z-Axis Retraction: Value Along Z, X=0, Y=0



Test Laboratory: Motorola Mobility 2450 MHz System Performance Check

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:863

Procedure Notes: PM1 Power = 200 mW Refl.Pwr PM3 = -19.9dB [Sim.Temp@SPC](#) = 20.2°C Room Temp @ SPC = 21.1°C

Communication System: CW - Dipole; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: Validation *BODY Tissue* ; Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.96 \text{ mho/m}$; $\epsilon_r = 52$; $\rho = 1000 \text{ kg/m}^3$

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.12, 4.12, 4.12); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6 Glycol SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1131;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (5x15x1): Measurement grid: dx=10mm, dy=15mm

Maximum value of SAR (measured) = 12.9 mW/g

Daily SPC Check/0-Degree, 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 80.7 V/m; Power Drift = -0.002 dB

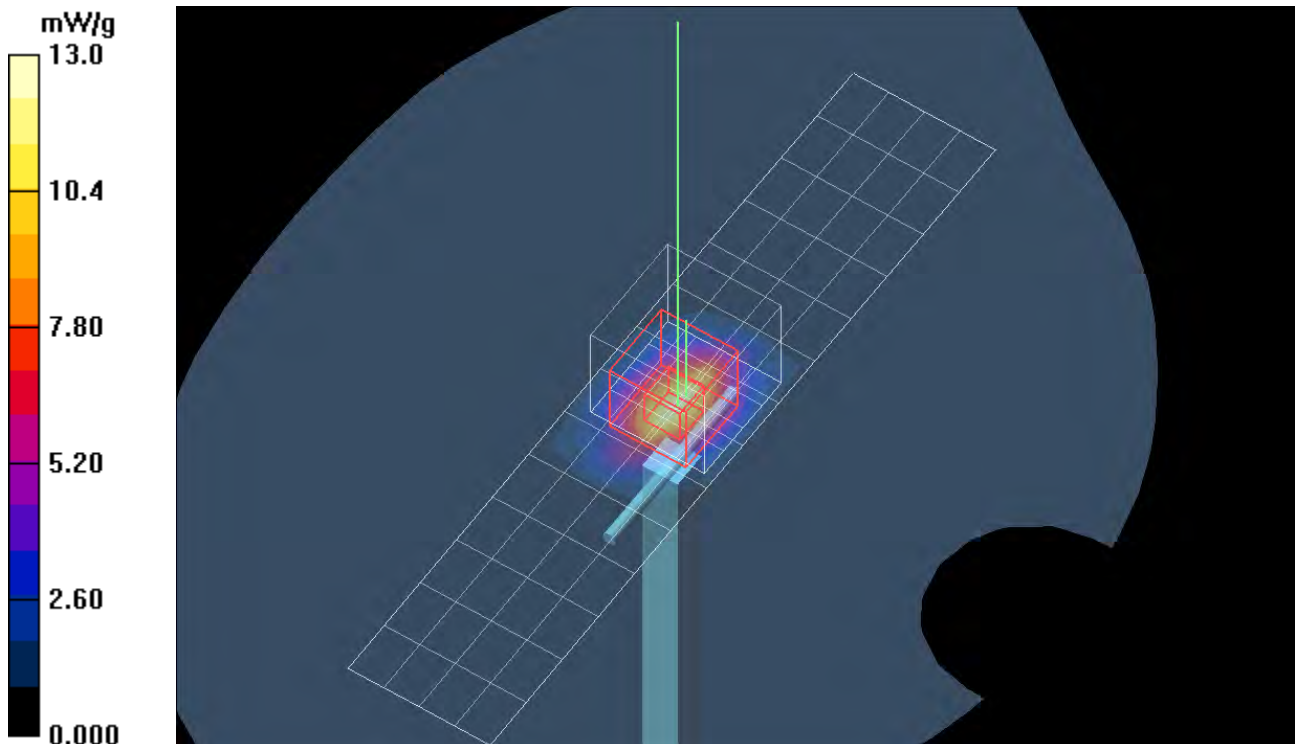
Peak SAR (extrapolated) = 24.6 W/kg

SAR(1 g) = 11.5 mW/g; SAR(10 g) = 5.3 mW/g

Maximum value of SAR (measured) = 12.6 mW/g

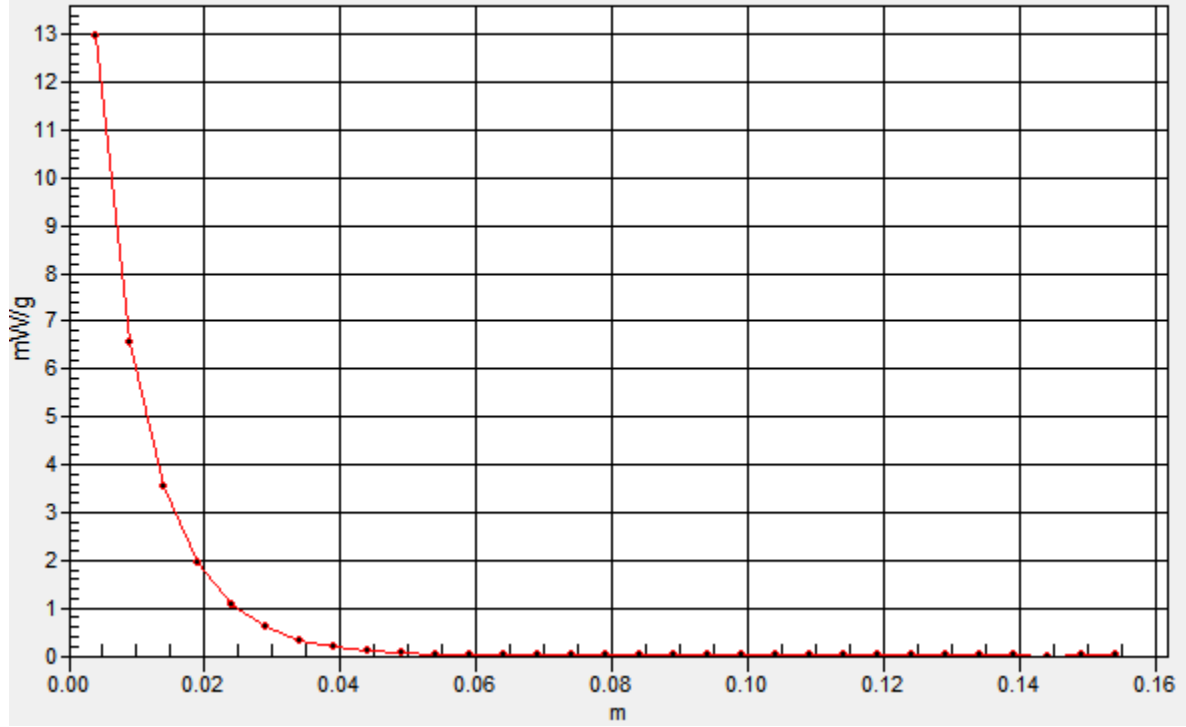
Daily SPC Check/Z-Axis Retraction (1x1x31): Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of SAR (measured) = 13.0 mW/g



SAR(x,y,z,f0)

SAR; Z-Axis Retraction: Value Along Z, X=0, Y=0



Test Laboratory: Motorola Mobility 2450 MHz System Performance Check

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:863

Procedure Notes: PM1 Power = 200 mW Refl.Pwr PM3 = -18dB [Sim.Temp@SPC](#) = 20.8°C Room Temp @ SPC = 21.4°C

Communication System: CW - Dipole; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: Validation *BODY Tissue* ; Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.94 \text{ mho/m}$; $\epsilon_r = 50.7$; $\rho = 1000 \text{ kg/m}^3$

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.12, 4.12, 4.12); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6, Triple Flat Phantom 5.1C (Rev.3); Type: QD 000 P51 CA; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (4x15x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 10.2 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 81.1 V/m; Power Drift = -0.041 dB

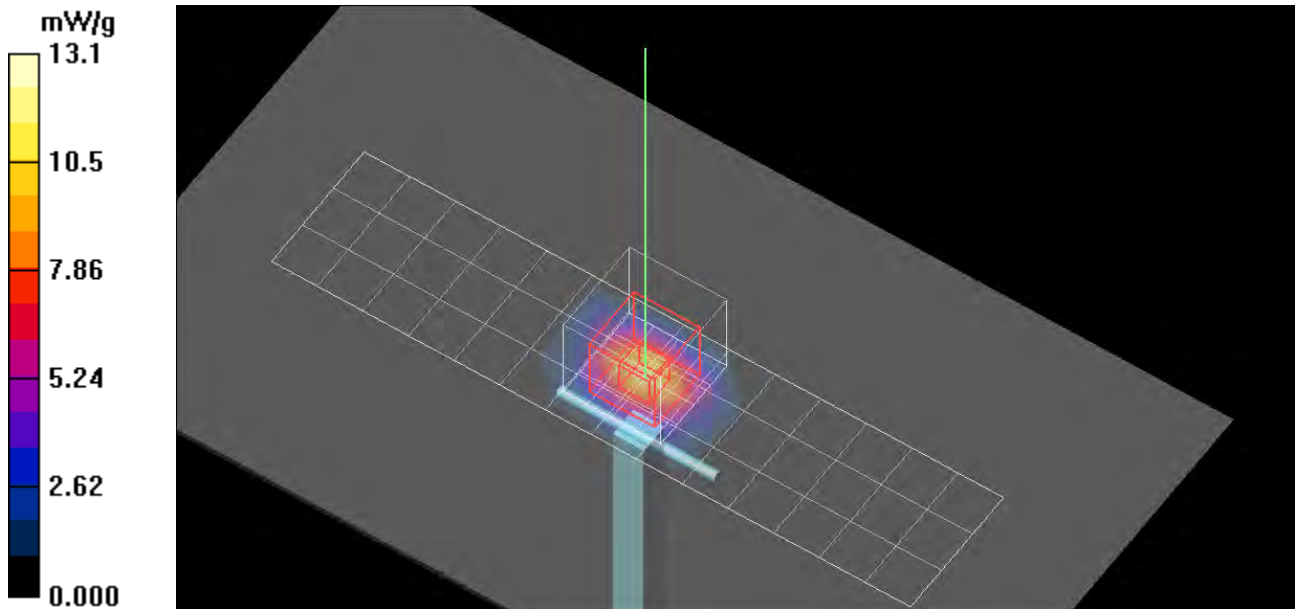
Peak SAR (extrapolated) = 24.1 W/kg

SAR(1 g) = 11.4 mW/g; SAR(10 g) = 5.3 mW/g

Maximum value of SAR (measured) = 12.8 mW/g

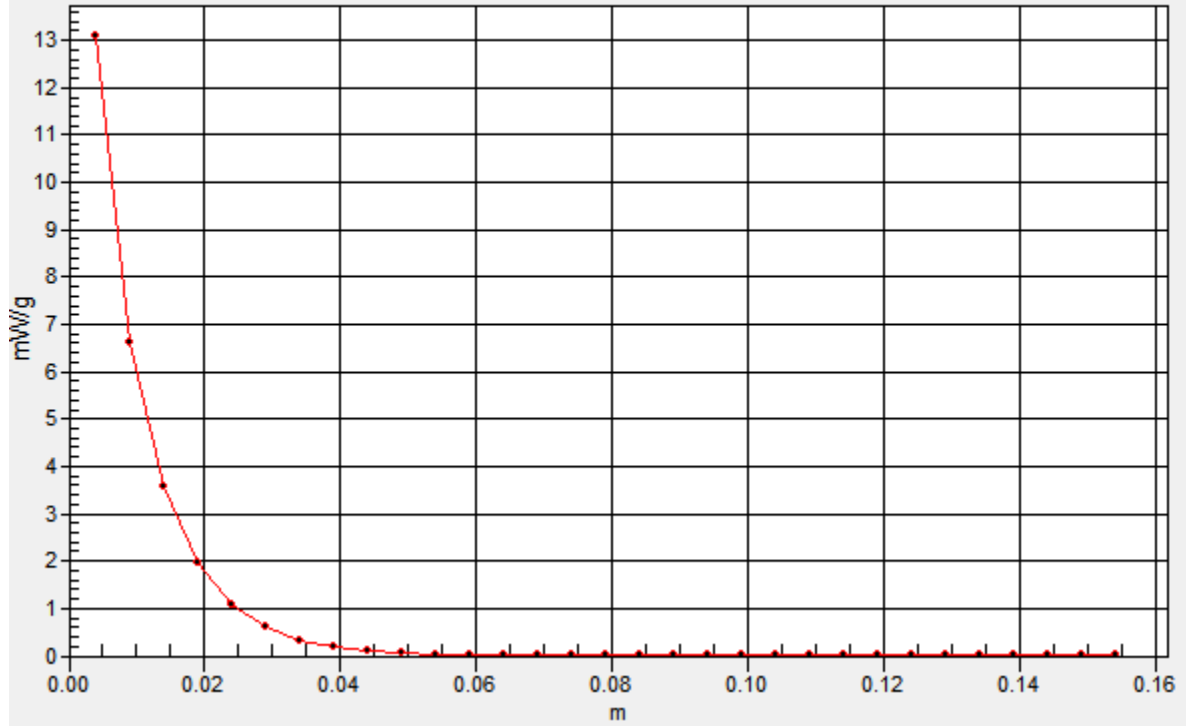
Daily SPC Check/Z-Axis Retraction (1x1x31): Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of SAR (measured) = 13.1 mW/g



SAR(x,y,z,f0)

SAR; Z-Axis Retraction: Value Along Z, X=0, Y=0



Test Laboratory: Motorola Mobility 2450 MHz System Performance Check

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:863

Procedure Notes: PM1 Power = 200 mW Refl.Pwr PM3 = -18.5dB [Sim.Temp@SPC](#) = 20.5°C Room Temp @ SPC = 21.5°C

Communication System: CW - Dipole; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: Validation *BODY Tissue* ; Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.94 \text{ mho/m}$; $\epsilon_r = 50.8$; $\rho = 1000 \text{ kg/m}^3$

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.12, 4.12, 4.12); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6, Triple Flat Phantom 5.1C (Rev.3); Type: QD 000 P51 CA; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Daily SPC Check/Dipole Area Scan (4x15x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 9.03 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 75.8 V/m; Power Drift = -0.023 dB

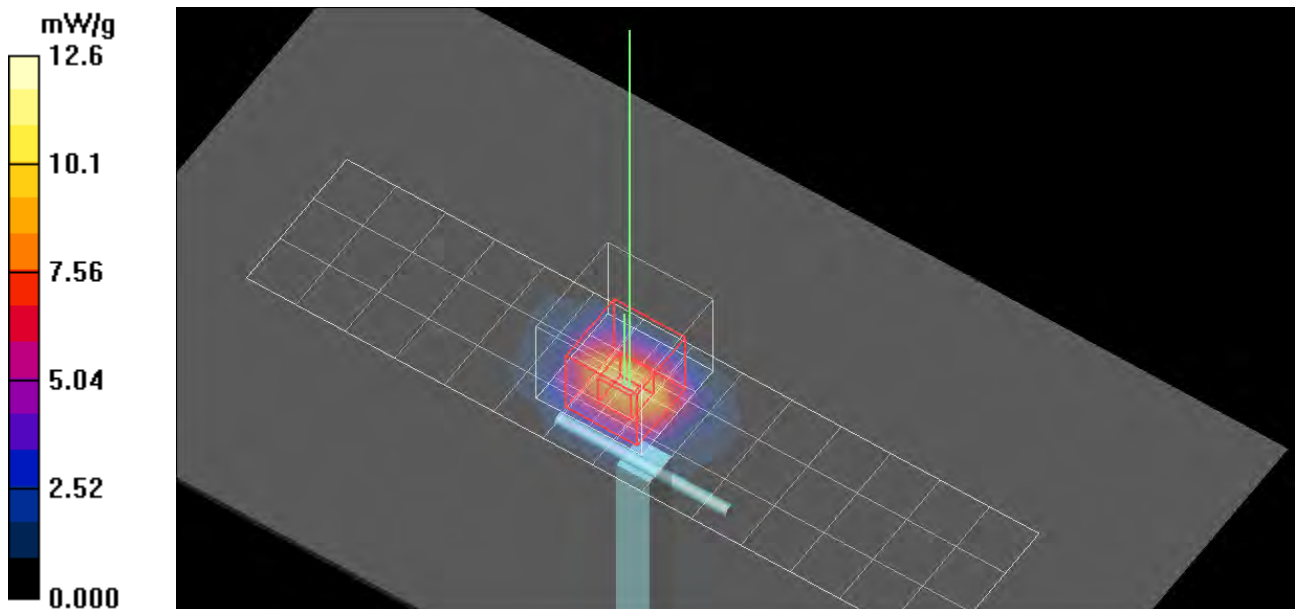
Peak SAR (extrapolated) = 23.6 W/kg

SAR(1 g) = 11.1 mW/g; SAR(10 g) = 5.16 mW/g

Maximum value of SAR (measured) = 12.5 mW/g

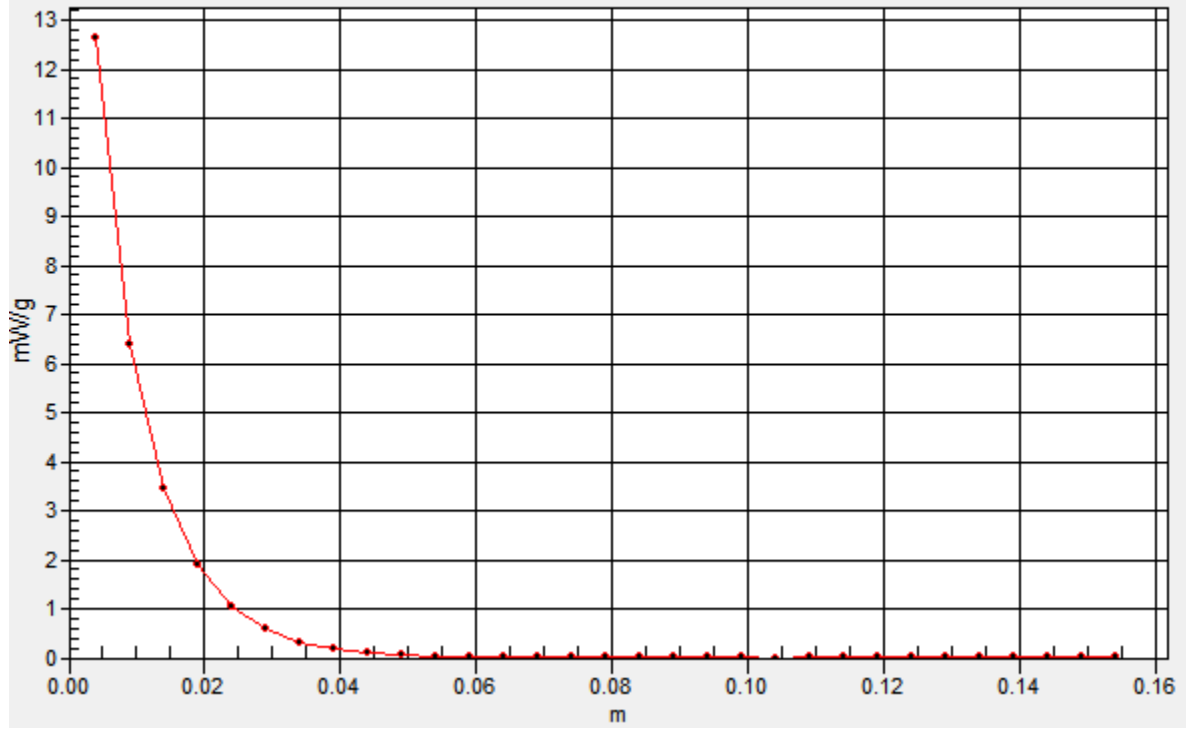
Daily SPC Check/Z-Axis Retraction (1x1x31): Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of SAR (measured) = 12.6 mW/g



SAR(x,y,z,f0)

SAR; Z-Axis Retraction: Value Along Z, X=0, Y=0



Appendix 2

SAR distribution plots for Head Adjacent Test Results

Date/Time: 8/23/2011 4:46:08 PM

Test Laboratory: Motorola - GSM 850 Cheek

Serial: LS3A280035 ; FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 5; Antenna Position: Internal; Accessory Model #: N/A

Battery Model #: Internal; DEVICE POSITION (cheek or rotated): Cheek

Communication System: GSM 850; Frequency: 836.6 MHz; Channel Number: 190; Duty Cycle: 1:8.3

Medium: Low Freq Head

Medium parameters used: $f = 835$ MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 40.6$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(6.11, 6.11, 6.11); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Sugar SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1235;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Head Template/Area Scan - Normal (15mm) (7x17x1):

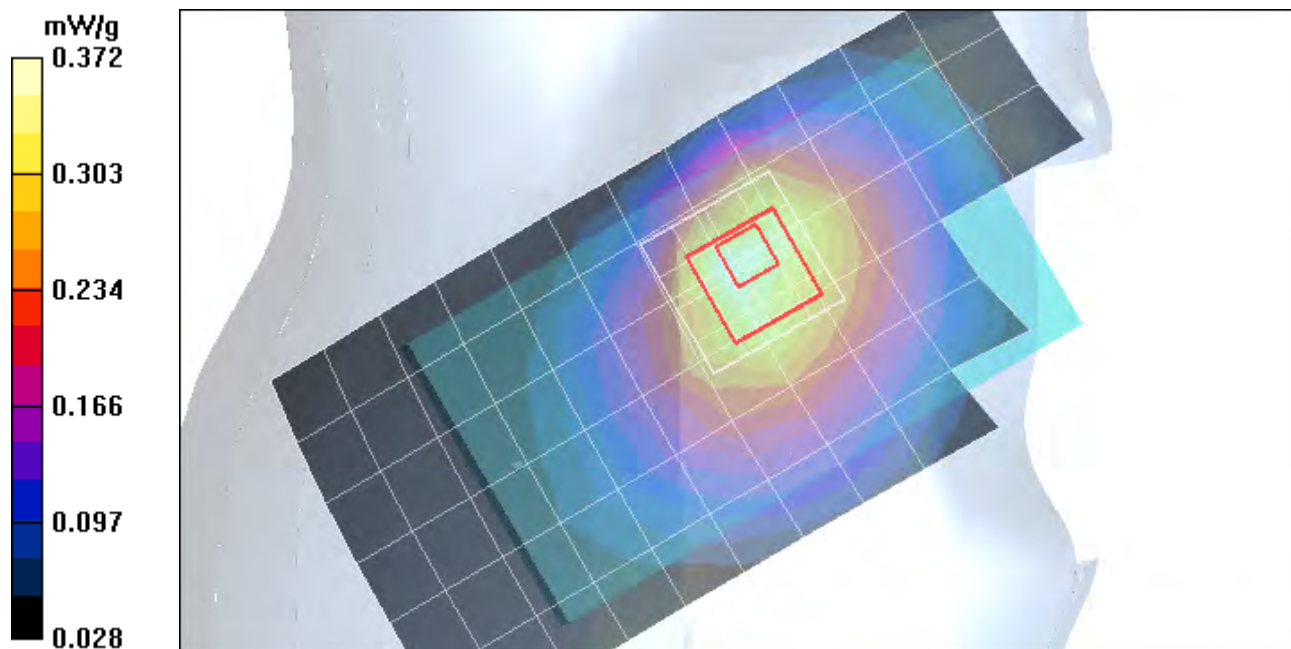
Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 0.375 mW/g

Right Head Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.2 V/m; Power Drift = -0.100 dB; Peak SAR (extrapolated) = 0.503 W/kg

SAR(1 g) = 0.357 mW/g; SAR(10 g) = 0.255 mW/g; Maximum value of SAR (measured) = 0.372 mW/g



Date/Time: 9/7/2011 10:42:08 PM

Test Laboratory: Motorola - WCDMA 850 Cheek

Serial: LS3A280035; FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: All Up Bits; Antenna Position: Internal; Accessory Model #: N/A

Battery Model #: Internal; DEVICE POSITION (cheek or rotated): Cheek

Communication System: WCDMA 850; Frequency: 836 MHz; Channel Number: 4180; Duty Cycle: 1:1

Medium: Low Freq Head

Medium parameters used: $f = 835$ MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 41.9$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(5.87, 5.87, 5.87); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6 SUGAR SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1131;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Head Template/Area Scan - Normal Extended (10mm) (10x25x1):

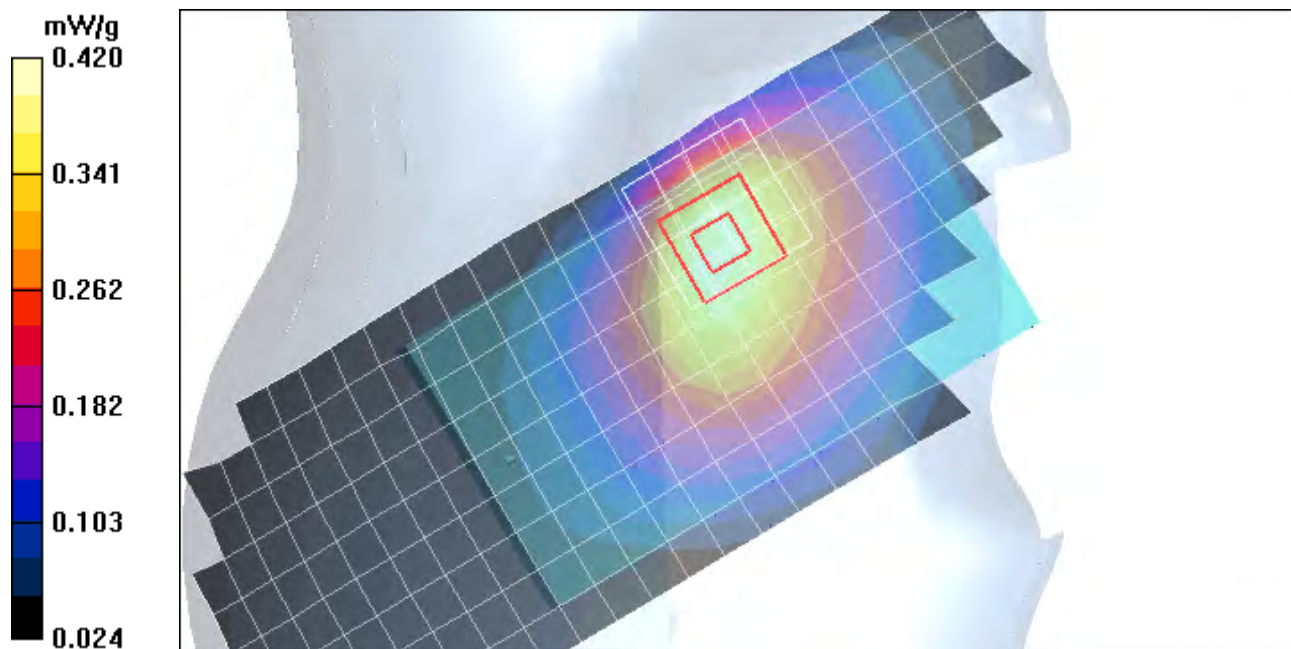
Measurement grid: dx=10mm, dy=10mm; Maximum value of SAR (measured) = 0.417 mW/g

Right Head Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.9 V/m; Power Drift = 0.117 dB; Peak SAR (extrapolated) = 0.529 W/kg

SAR(1 g) = 0.400 mW/g; SAR(10 g) = 0.288 mW/g; Maximum value of SAR (measured) = 0.420 mW/g



Date/Time: 9/2/2011 9:40:11 PM

Test Laboratory: Motorola - GSM 1900 Cheek

Serial: LS3A280035; FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 0; Antenna Position: Internal; Accessory Model #: N/A

Battery Model #: Internal; DEVICE POSITION (cheek or rotated): Cheek

Communication System: GSM 1900; Frequency: 1880 MHz; Channel Number: 661; Duty Cycle: 1:8.3

Medium: Regular Glycol Head 1750/1880

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(5.11, 5.11, 5.11); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2 Glycol SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1136;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Head Template/Area Scan - Normal Extended (15mm) (7x17x1):

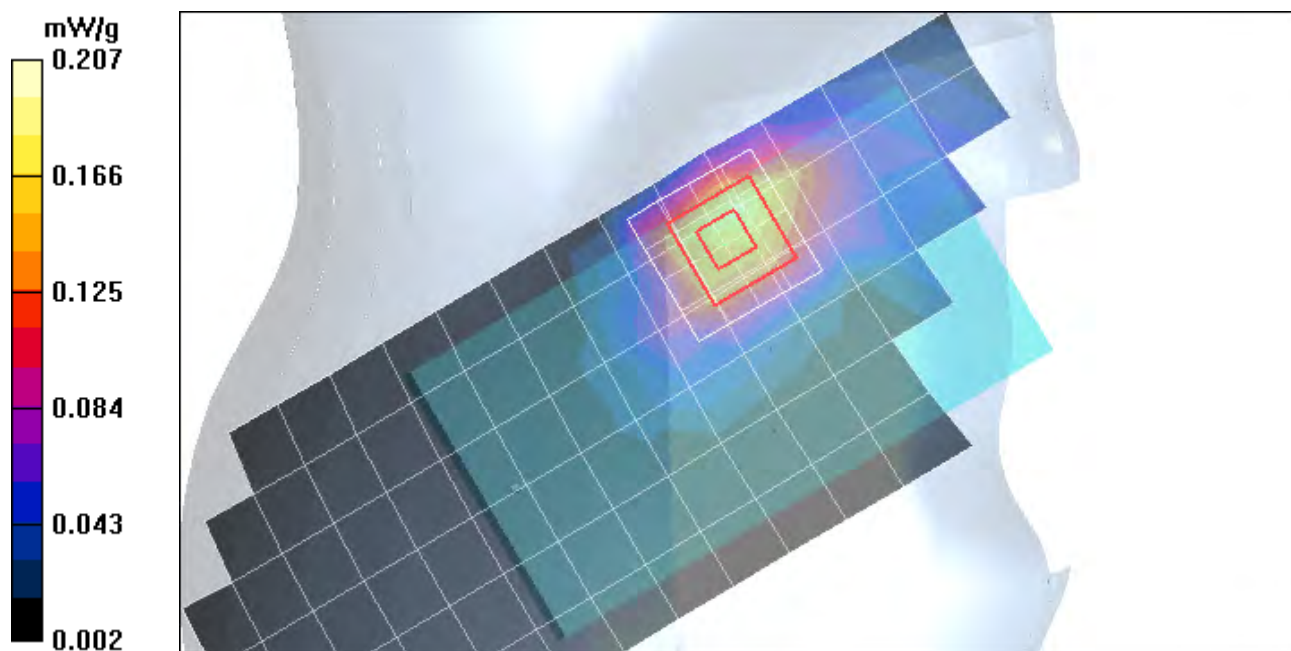
Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 0.189 mW/g

Right Head Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.10 V/m; Power Drift = 0.098 dB; Peak SAR (extrapolated) = 0.305 W/kg

SAR(1 g) = 0.187 mW/g; SAR(10 g) = 0.109 mW/g; Maximum value of SAR (measured) = 0.207 mW/g



Date/Time: 8/24/2011 12:57:20 AM

Test Laboratory: Motorola - WCDMA 1900 Cheek

Serial: LS3A280035 ; FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: All up Bits; Antenna Position: Internal; Accessory Model #: N/A

Battery Model #: Internal; DEVICE POSITION (cheek or rotated): Cheek

Communication System: WCDMA 1900; Frequency: 1880 MHz; Channel Number: 9400; Duty Cycle: 1:1

Medium: Regular Glycol Head 1750/1880

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.47$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(5.11, 5.11, 5.11); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2 Glycol SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1136;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Head Template/Area Scan - Normal (15mm) (7x17x1):

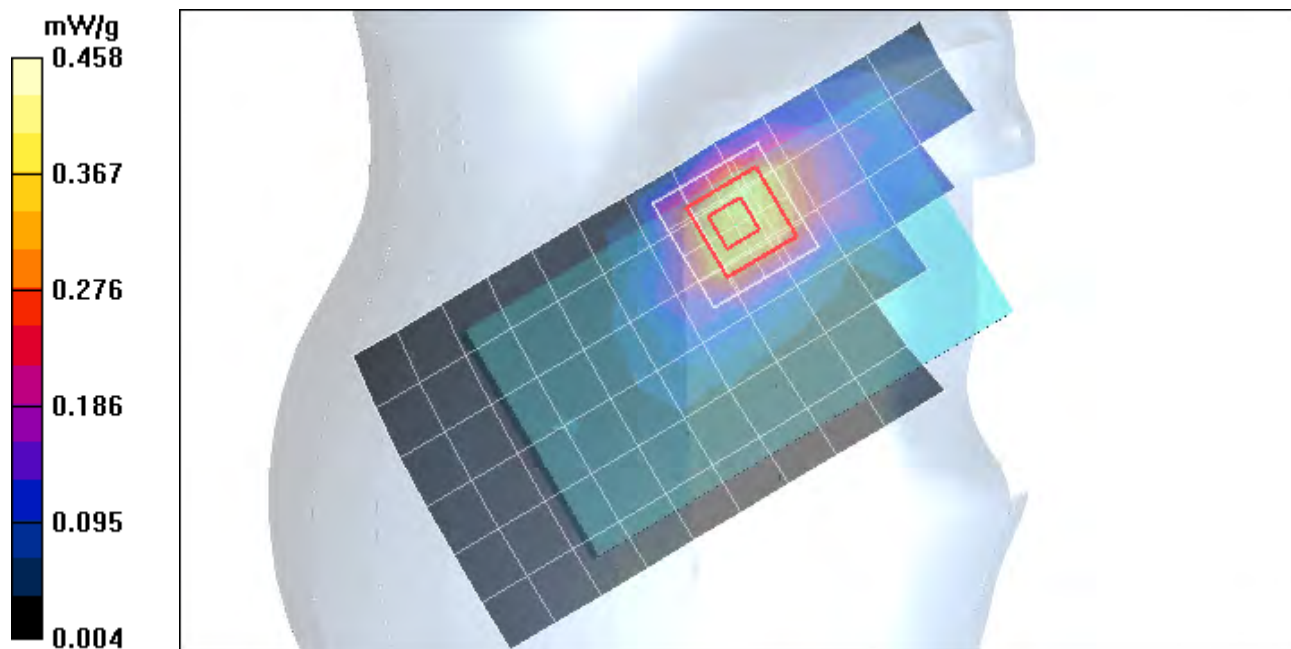
Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 0.383 mW/g

Right Head Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.7 V/m; Power Drift = 0.162 dB; Peak SAR (extrapolated) = 0.690 W/kg

SAR(1 g) = 0.417 mW/g; SAR(10 g) = 0.241 mW/g; Maximum value of SAR (measured) = 0.458 mW/g



Test Laboratory: Motorola Mobility 2450 MHz WiFi Cheek Touch

DUT: Serial: TA22300PPO, FCC ID: IHDP56ME4

Procedure Notes: 802.11b 1Mbps Chn 1 Battery Model #: INTERNAL DEVICE POSITION : CHEEK TESTER

INITIALS: ron Power Level: 20 Duty Cycle: 98 Data Rate: 1 Mbps

Communication System: Wi-Fi 2450; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: 2450 Glycol Head; Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.86 \text{ mho/m}$; $\epsilon_r = 38.2$; $\rho = 1000 \text{ kg/m}^3$

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.39, 4.39, 4.39); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6 Glycol SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1131;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Head Template/Area Scan - Normal (15mm) (7x17x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.160 mW/g

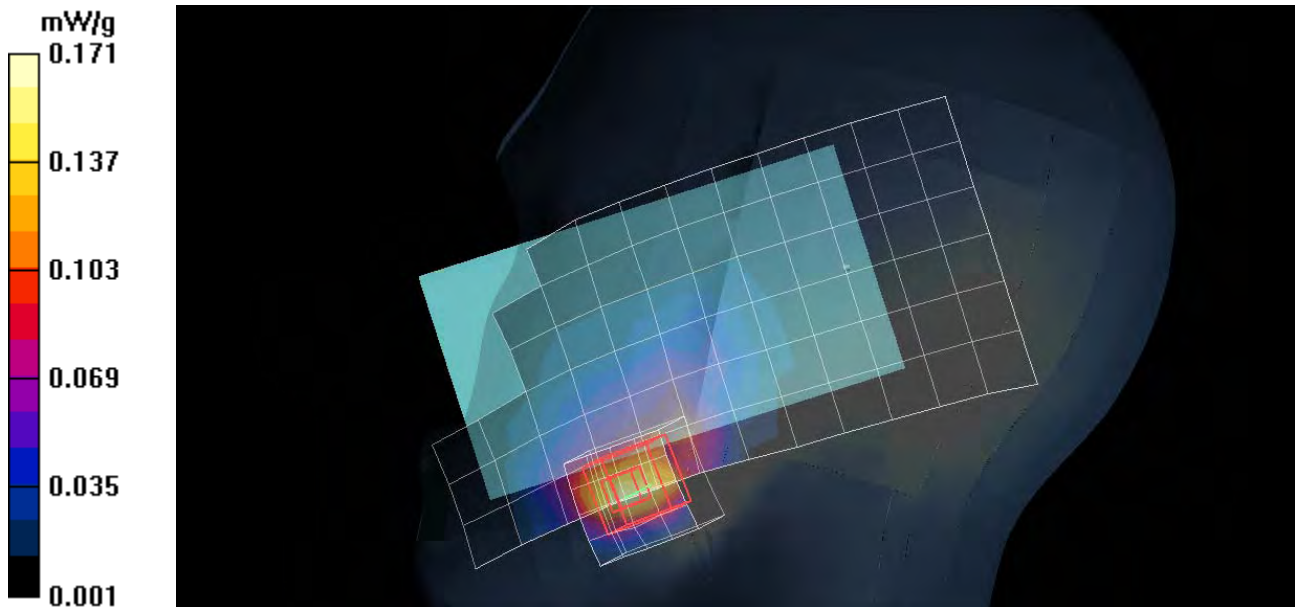
Right Head Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.87 V/m; Power Drift = -0.194 dB

Peak SAR (extrapolated) = 0.307 W/kg

SAR(1 g) = 0.151 mW/g; SAR(10 g) = 0.078 mW/g

Maximum value of SAR (measured) = 0.171 mW/g



Date/Time: 8/23/2011 3:30:03 PM

Test Laboratory: Motorola - GSM 850 Tilt

Serial: LS3A280035 ; FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 5; Antenna Position: Internal; Accessory Model #: N/A

Battery Model #: Internal; DEVICE POSITION (cheek or rotated): Tilt

Communication System: GSM 850; Frequency: 836.6 MHz; Channel Number: 190; Duty Cycle: 1:8.3

Medium: Low Freq Head

Medium parameters used: $f = 835$ MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 40.6$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(6.11, 6.11, 6.11); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Sugar SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1235;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Head Template/Area Scan - Normal (15mm) (7x17x1):

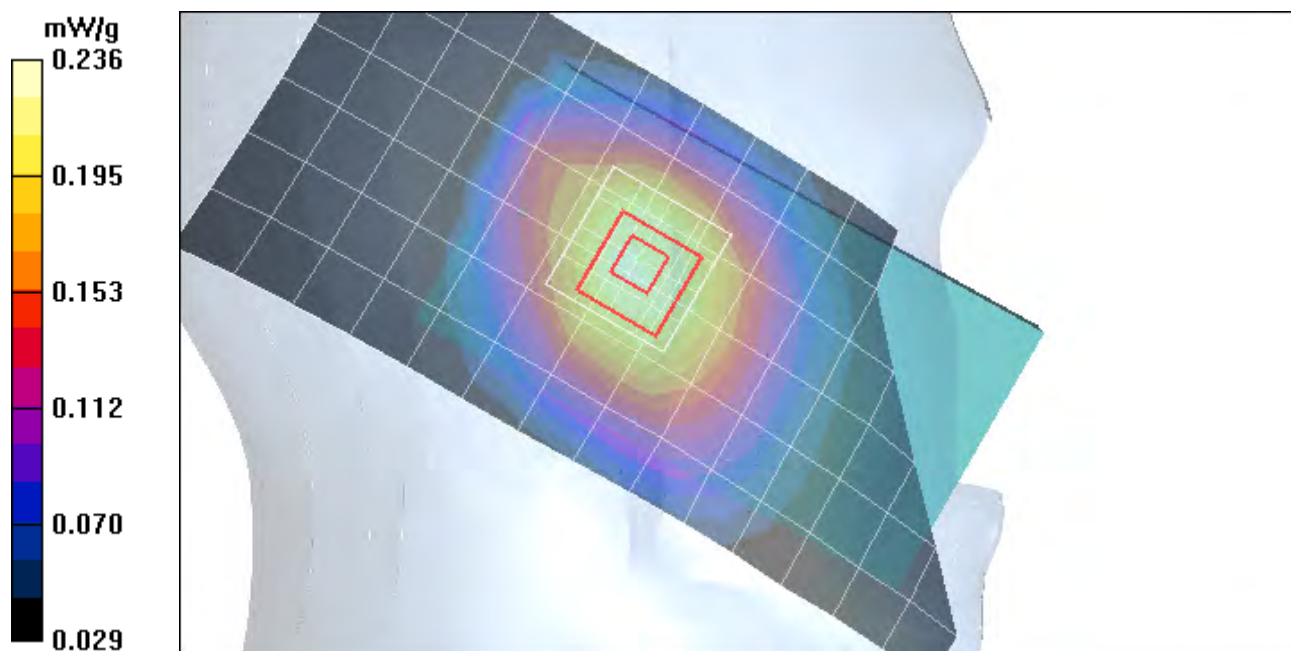
Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 0.230 mW/g

Left Head Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.6 V/m; Power Drift = -0.051 dB; Peak SAR (extrapolated) = 0.282 W/kg

SAR(1 g) = 0.223 mW/g; SAR(10 g) = 0.168 mW/g; Maximum value of SAR (measured) = 0.236 mW/g



Test Laboratory: Motorola GSM 1900 Tilt

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 0 Battery Model #: Internal DEVICE POSITION: 15 Degree Tilt

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: Regular Glycol Head 1750/1880; Medium parameters used: $f = 1880$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(5.11, 5.11, 5.11); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2 Glycol SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1136;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Head Template/Area Scan - Normal Extended (15mm) (7x17x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.049 mW/g

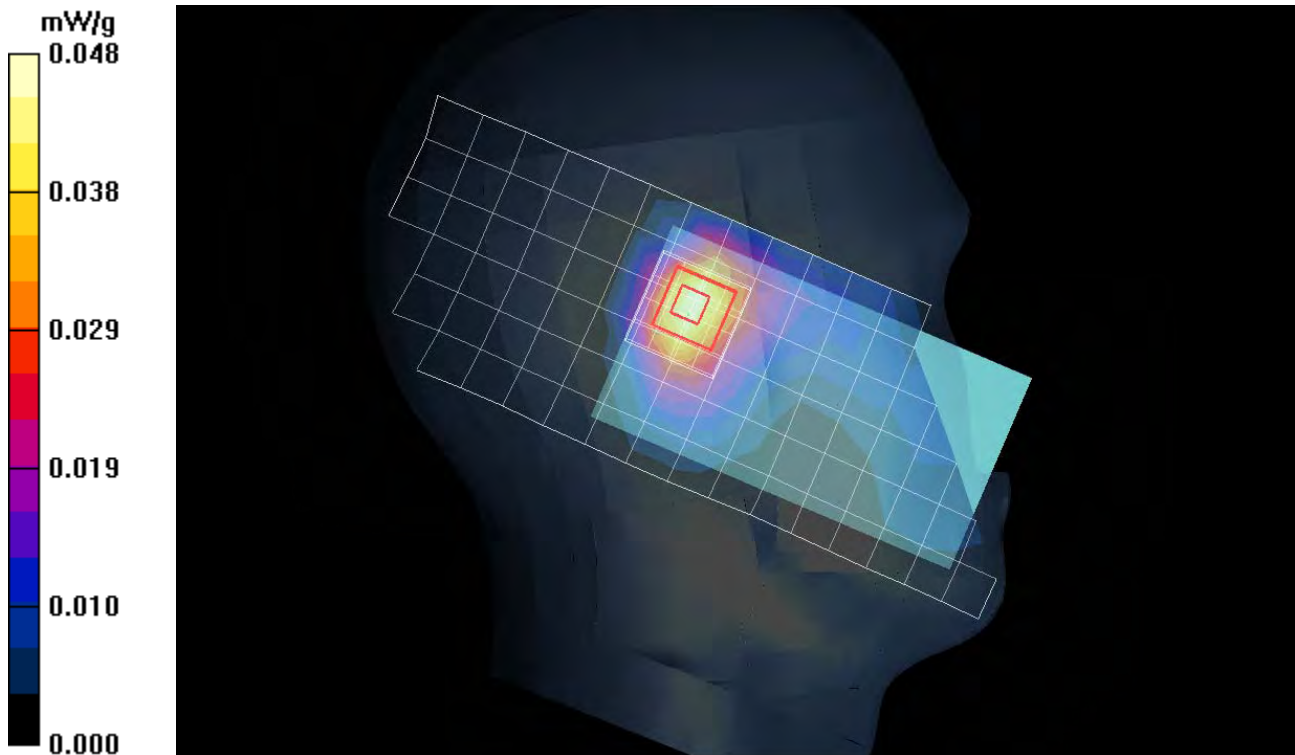
Left Head Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.41 V/m; Power Drift = -0.016 dB

Peak SAR (extrapolated) = 0.076 W/kg

SAR(1 g) = 0.046 mW/g; SAR(10 g) = 0.026 mW/g

Maximum value of SAR (measured) = 0.048 mW/g



Date/Time: 8/24/2011 5:10:45 PM

Test Laboratory: Motorola - WCDMA 1900 Tilt

Serial: LS3A280035 ; FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: All up Bits; Antenna Position: Internal; Accessory Model #: N/A

Battery Model #: Internal; DEVICE POSITION (cheek or rotated): Tilt

Communication System: WCDMA 1900; Frequency: 1880 MHz; Channel Number: 9400; Duty Cycle: 1:1

Medium: Regular Glycol Head 1750/1880

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.47$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(5.11, 5.11, 5.11); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2 Glycol SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1136;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Head Template/Area Scan - Normal (15mm) (7x17x1):

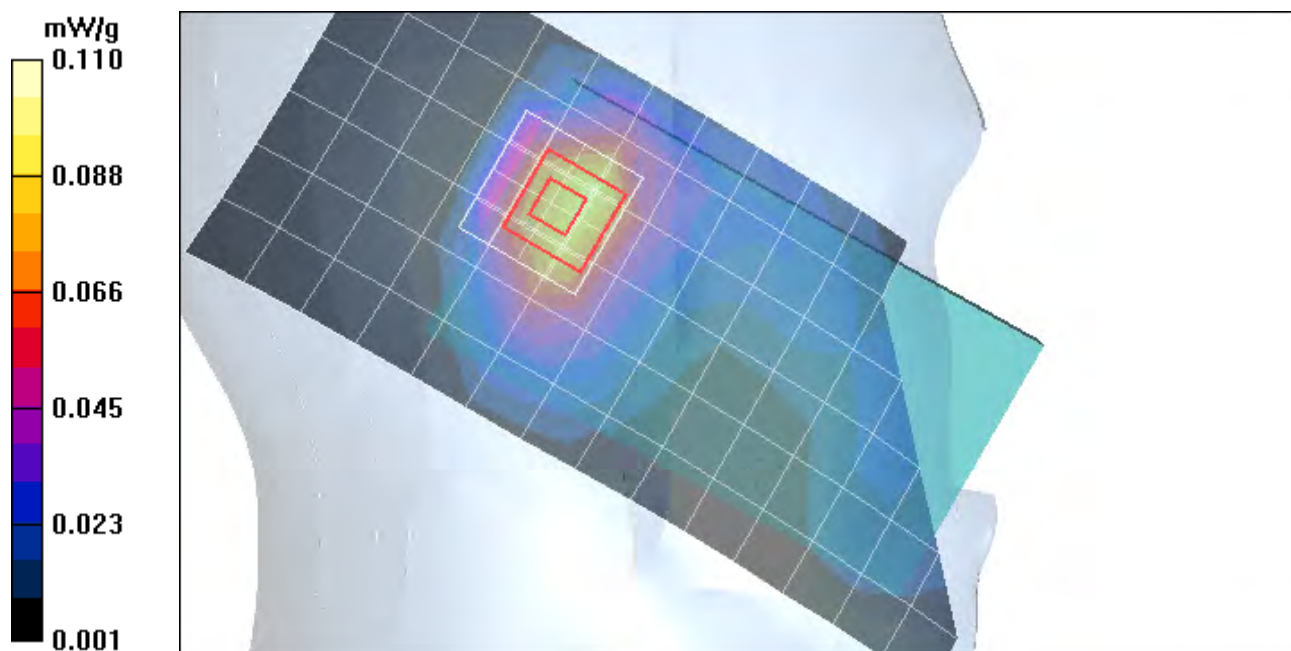
Measurement grid: $dx=15$ mm, $dy=15$ mm; Maximum value of SAR (measured) = 0.095 mW/g

Left Head Template/5x5x7 Zoom Scan (≤ 3 GHz) (5x5x7)/Cube 0:

Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 8.43 V/m; Power Drift = 0.124 dB; Peak SAR (extrapolated) = 0.167 W/kg

SAR(1 g) = 0.099 mW/g; SAR(10 g) = 0.057 mW/g; Maximum value of SAR (measured) = 0.110 mW/g



Test Laboratory: Motorola Mobility 2450 MHz 15 Degree Tilt

DUT: Serial: TA22300PPO, FCC ID: IHDP56ME4

Procedure Notes: 802.11b 1Mbps Chn 11 Battery Model #: INTERNAL Test Configuration = 15 Degree TILT

Communication System: Wi-Fi 2450; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: 2450 Glycol Head; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.86$ mho/m; $\epsilon_r = 38.2$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.39, 4.39, 4.39); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6 Glycol SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1131;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Head Template/Area Scan - Normal (15mm) (7x17x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.034 mW/g

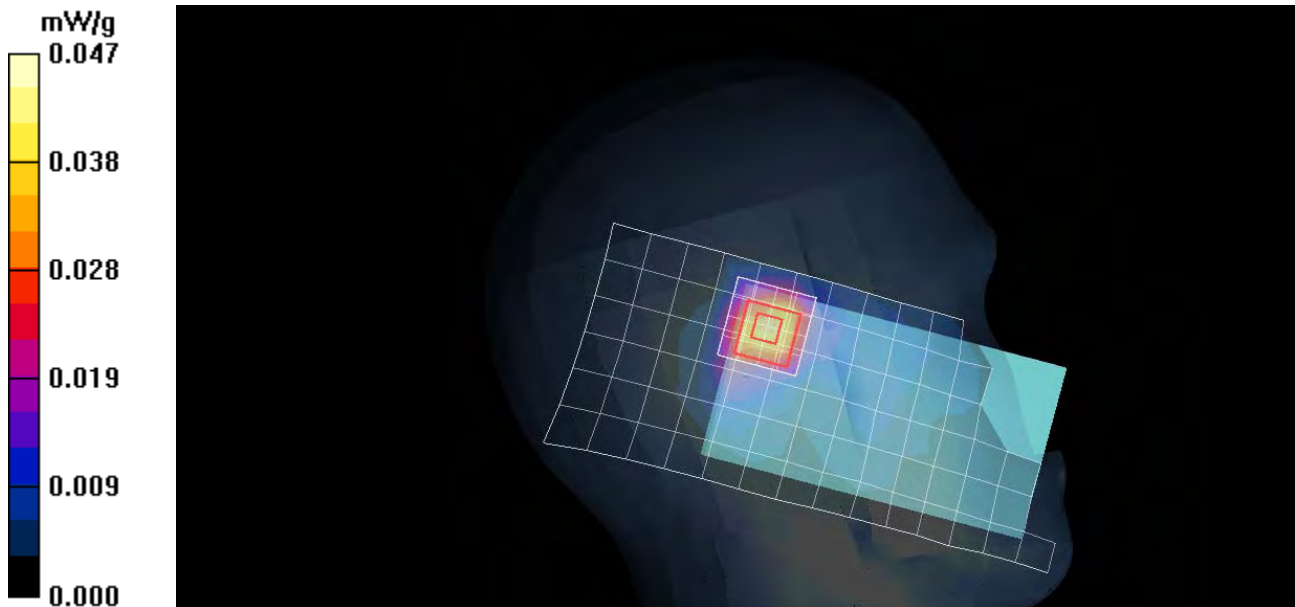
Left Head Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.54 V/m; Power Drift = 0.081 dB

Peak SAR (extrapolated) = 0.084 W/kg

SAR(1 g) = 0.043 mW/g; SAR(10 g) = 0.022 mW/g

Maximum value of SAR (measured) = 0.047 mW/g



Date/Time: 9/7/2011 11:21:42 PM

Test Laboratory: Motorola - WCDMA 850 Tilt

Serial: LS3A280035; FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: All Up Bits; Antenna Position: Internal; Accessory Model #: N/A

Battery Model #: Internal; DEVICE POSITION (cheek or rotated): Rotated

Communication System: WCDMA 850; Frequency: 836 MHz; Channel Number: 4180; Duty Cycle: 1:1

Medium: Low Freq Head

Medium parameters used: $f = 835$ MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 41.9$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(5.87, 5.87, 5.87); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6 SUGAR SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1131;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Head Template/Area Scan - Normal Extended (10mm) (10x25x1):

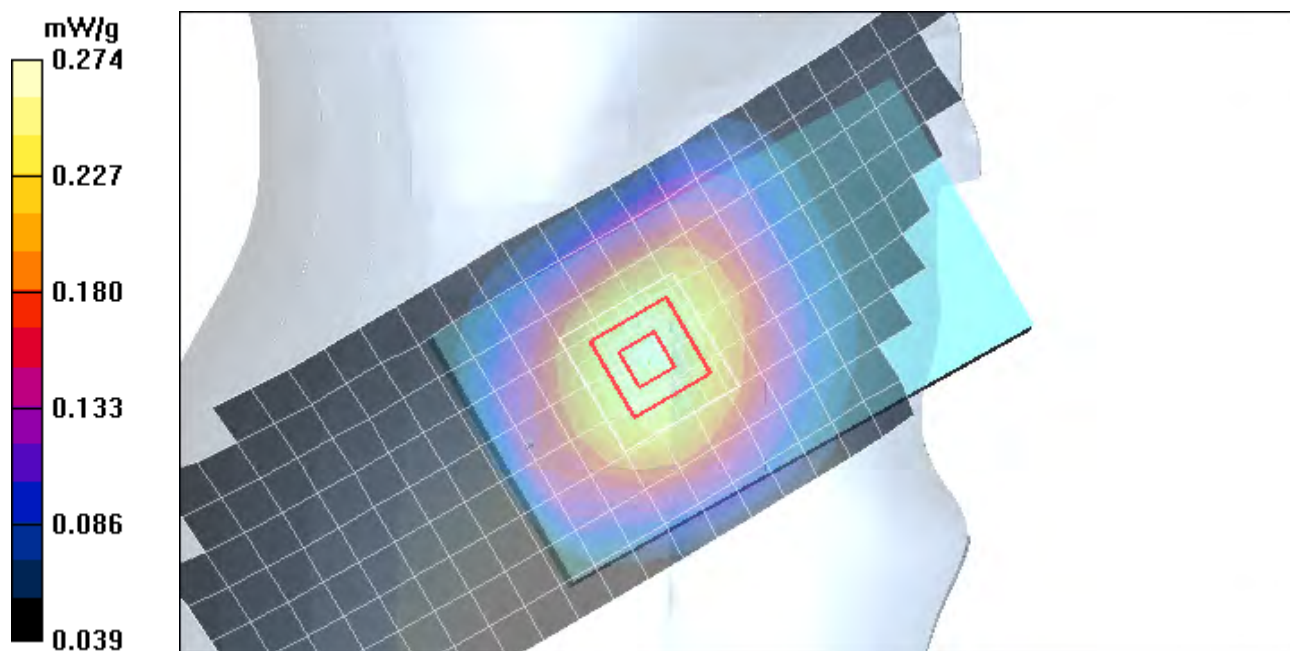
Measurement grid: dx=10mm, dy=10mm; Maximum value of SAR (measured) = 0.265 mW/g

Right Head Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.8 V/m; Power Drift = 0.100 dB; Peak SAR (extrapolated) = 0.315 W/kg

SAR(1 g) = 0.259 mW/g; SAR(10 g) = 0.199 mW/g; Maximum value of SAR (measured) = 0.274 mW/g



Appendix 3

SAR distribution plots for Body Worn Test Results

Date/Time: 9/17/2011 8:10:27 AM

Test Laboratory: Motorola - GSM 850 Body-Worn

Serial: LS3A280035; FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 5; Antenna Position: Internal; Battery Model #: Internal

Device Position: Body Worn, Front of Phone 25 mm from Phantom

Communication System: GPRS 850 Cl 11; Frequency: 836.6 MHz; Channel Number: 190; Duty Cycle: 1:2.76

Medium: Low Freq Body

Medium parameters used: $f = 835$ MHz; $\sigma = 0.97$ mho/m; $\epsilon_r = 55.3$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(5.88, 5.88, 5.88); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#6 - Triple Flat Phantom 5.1C (rev.2); Type: QD 000 P51 CA; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Triple Flat Phone Template/Area Scan - Normal Body (15mm) (14x9x1):

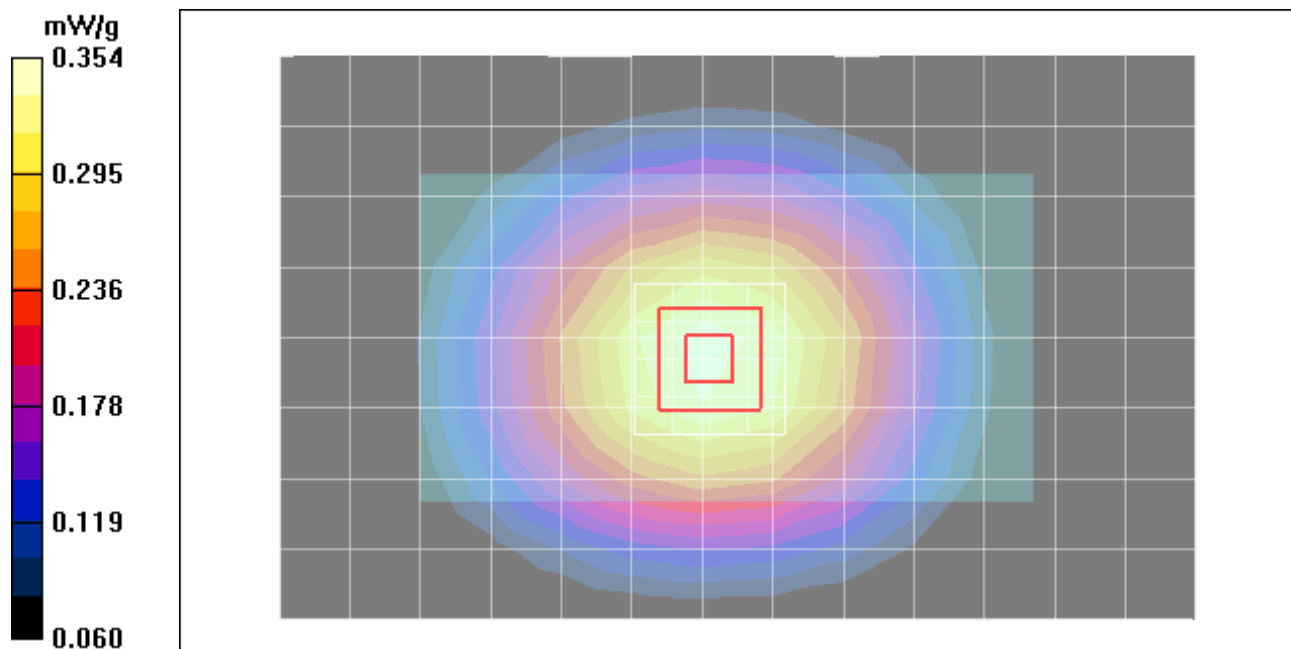
Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 0.347 mW/g

Triple Flat Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.6 V/m; Power Drift = 0.106 dB; Peak SAR (extrapolated) = 0.419 W/kg

SAR(1 g) = 0.336 mW/g; SAR(10 g) = 0.254 mW/g; Maximum value of SAR (measured) = 0.354 mW/g



Date/Time: 9/9/2011 9:47:01 AM

Test Laboratory: Motorola - WCDMA 850 Body-Worn

Serial: LS3A280035; FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: All up Bits; Antenna Position: Internal; Battery Model #: Internal

Device Position: Body Worn, Front of Phone 25 mm from Phantom

Communication System: WCDMA 850; Frequency: 836 MHz; Channel Number: 4180; Duty Cycle: 1:1

Medium: Low Freq Body

Medium parameters used: $f = 835$ MHz; $\sigma = 0.98$ mho/m; $\epsilon_r = 53.8$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(5.88, 5.88, 5.88); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#_6 - Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: N/A;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Triple Flat Phone Template/Area Scan - Normal Body (15mm) (12x8x1):

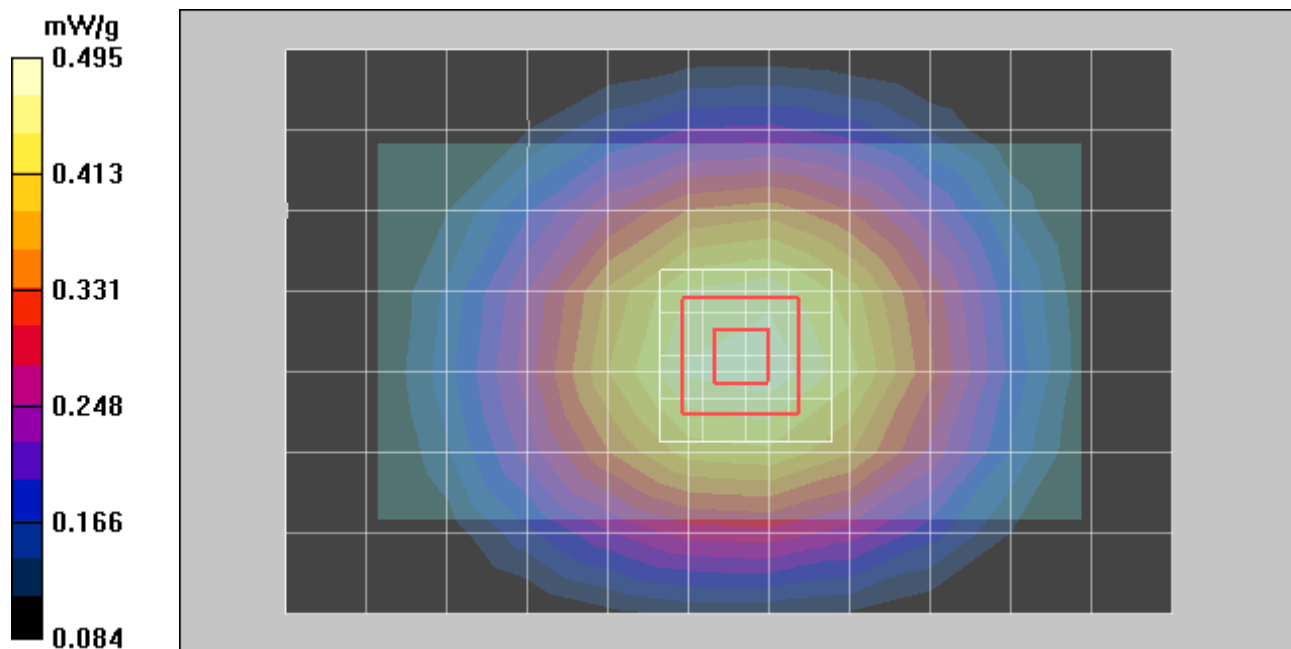
Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 0.489 mW/g

Triple Flat Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 22.3 V/m; Power Drift = -0.056 dB; Peak SAR (extrapolated) = 0.589 W/kg

SAR(1 g) = 0.470 mW/g; SAR(10 g) = 0.352 mW/g; Maximum value of SAR (measured) = 0.495 mW/g



Date/Time: 9/3/2011 9:04:08 AM

Test Laboratory: Motorola - GSM 1900 Body-Worn

Serial: LS3A280035 ; FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 0; Antenna Position: Internal; Battery Model #: Internal

Device Position: Body worn, Back of Phone 25 mm from Phantom

Communication System: GSM 1900; Frequency: 1880 MHz; Channel Number: 661; Duty Cycle: 1:8.3

Medium: Regular Glycol Body 1750/1880

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.57$ mho/m; $\epsilon_r = 50.7$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(4.9, 4.9, 4.9); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Section 1, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Amy Twin Phone Template/Area Scan - Normal Extended Body (15mm) (16x7x1):

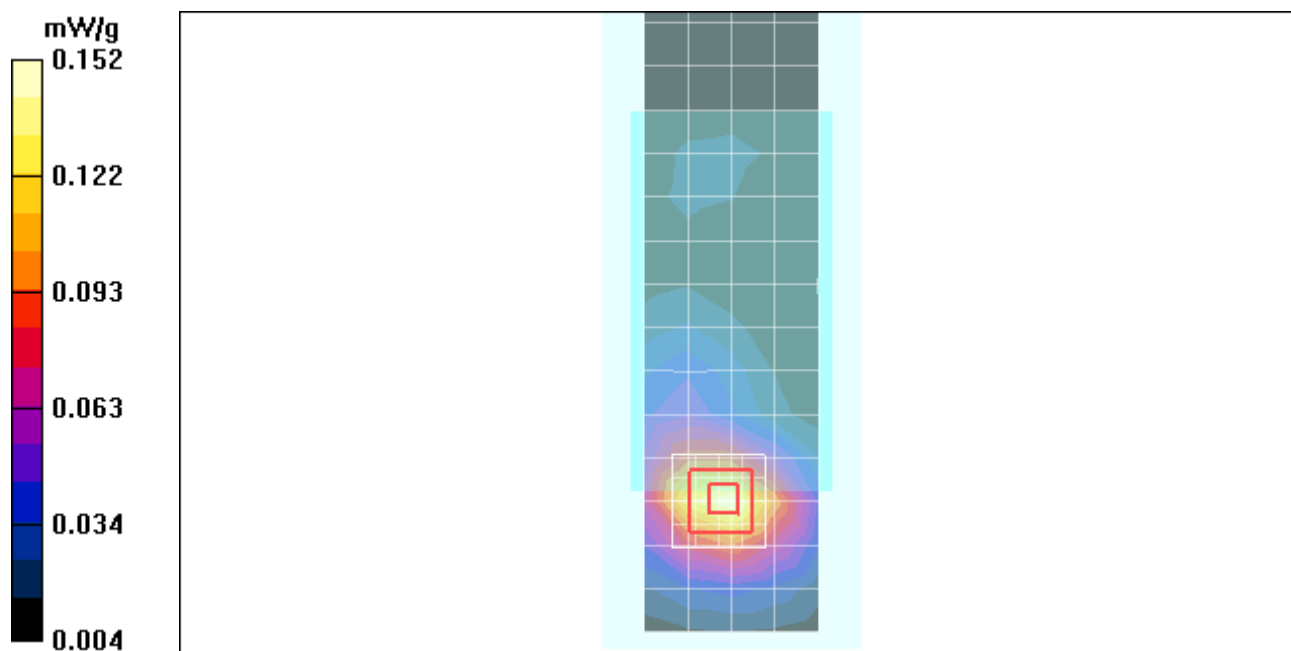
Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 0.152 mW/g

Amy Twin Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.71 V/m; Power Drift = -0.115 dB; Peak SAR (extrapolated) = 0.216 W/kg

SAR(1 g) = 0.140 mW/g; SAR(10 g) = 0.086 mW/g



Date/Time: 8/25/2011 8:54:25 AM

Test Laboratory: Motorola - WCDMA 1900 Body-Worn

Serial: LS3A280035 ; FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: All up Bits; Antenna Position: Internal; Battery Model #: Internal

Device Position: Body Worn, Back of Phone 25 mm from Phantom

Communication System: WCDMA 1900; Frequency: 1880 MHz; Channel Number: 9400; Duty Cycle: 1:1

Medium: Regular Glycol Body 1750/1880

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.57$ mho/m; $\epsilon_r = 51$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(4.9, 4.9, 4.9); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Section 1, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Amy Twin Phone Template/Area Scan - Normal Extended Body (15mm) (16x7x1):

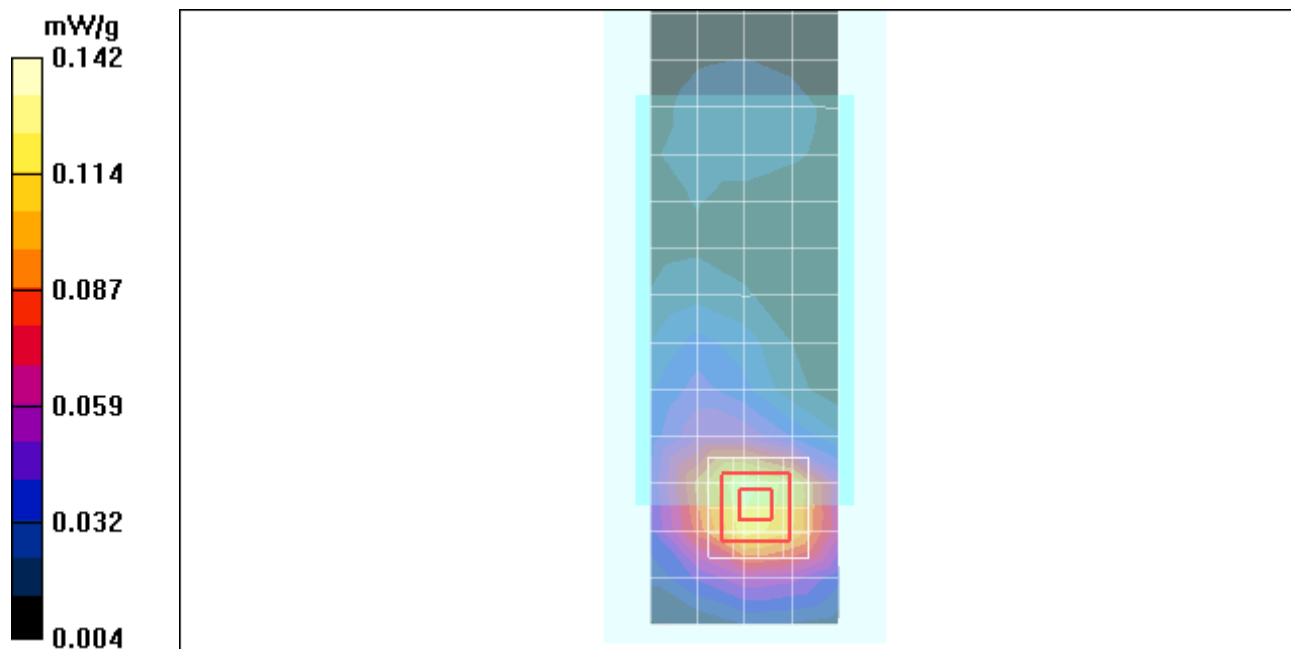
Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 0.128 mW/g

Amy Twin Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.38 V/m; Power Drift = 0.049 dB; Peak SAR (extrapolated) = 0.200 W/kg

SAR(1 g) = 0.132 mW/g; SAR(10 g) = 0.082 mW/g; Maximum value of SAR (measured) = 0.142 mW/g



Test Laboratory: Motorola Mobility 2450 MHz WiFi Body Worn

DUT: Tablet; Serial: TA22300PPO, FCC ID: IHDP56ME4

Procedure Notes: 802.11b 1Mbps Chn 1 Battery Model #: INTERNAL Test Configuration = Back Surface 25mm from Phantom

Communication System: Wi-Fi 2450; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: 2450 Glycol Body; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.7$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.12, 4.12, 4.12); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6, Triple Flat Phantom 5.1C (Rev.3); Type: QD 000 P51 CA; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Triple Flat Phone Template/Area Scan - Extended Phone (15mm) (18x9x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 0.024 mW/g

Triple Flat Phone Template/5x5x7 Zoom Scan (≤ 3 GHz) (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm,

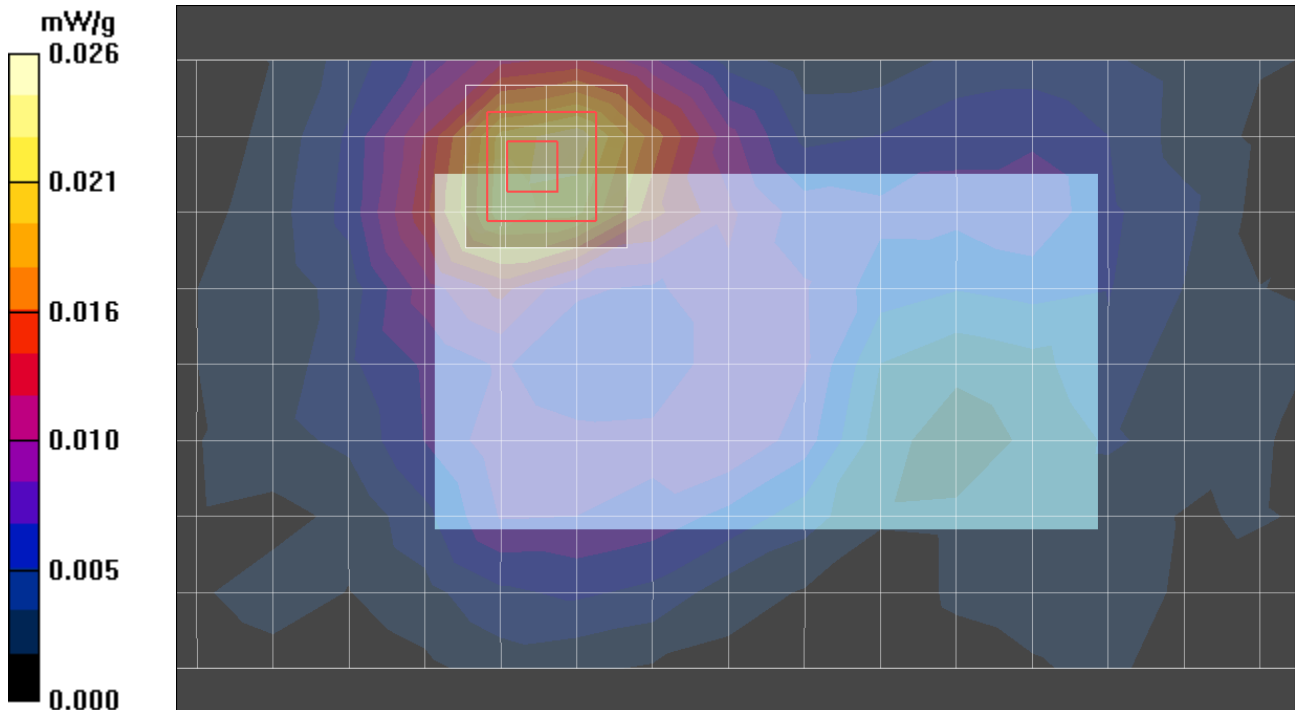
$dy=8$ mm, $dz=5$ mm

Reference Value = 3.02 V/m; Power Drift = 0.002 dB

Peak SAR (extrapolated) = 0.044 W/kg

SAR(1 g) = 0.025 mW/g; SAR(10 g) = 0.014 mW/g

Maximum value of SAR (measured) = 0.026 mW/g



Appendix 4

SAR distribution plots for Lapdock Accessory Test Results

Date/Time: 9/19/2011 6:21:00 PM

Test Laboratory: Motorola - GSM 850 with Lapdock

Serial: LS3A280035; FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 5; Antenna Position: Internal; Battery Model #: Internal

Device Position: Body-Adjacent with Lapdock, Bottom Surface 0 mm from Phantom

Communication System: GPRS 850 CI 11; Frequency: 836.6 MHz; Channel Number: 190; Duty Cycle: 1:2.76

Medium: Big Body

Medium parameters used: $f = 835$ MHz; $\sigma = 0.99$ mho/m; $\epsilon_r = 55.7$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(5.88, 5.88, 5.88); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6 Glycol SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1131;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

SAM Phone Against Flat Section/Tablet Long Edge Area Scan - Body (15mm) (21x8x1):

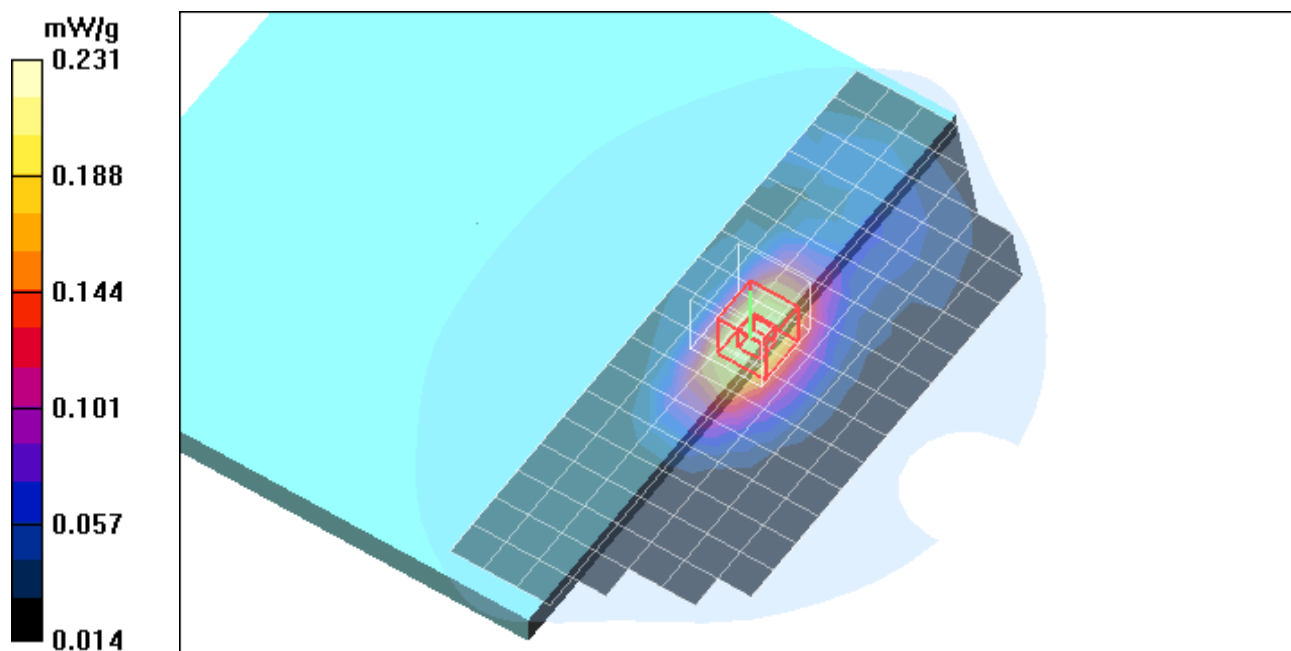
Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 0.209 mW/g

SAM Phone Against Flat Section/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.4 V/m; Power Drift = 0.007 dB; Peak SAR (extrapolated) = 0.305 W/kg

SAR(1 g) = 0.216 mW/g; SAR(10 g) = 0.144 mW/g; Maximum value of SAR (measured) = 0.231 mW/g



Date/Time: 9/19/2011 5:56:32 PM

Test Laboratory: Motorola - WCDMA 850 with Lapdock

Serial: LS3A280035; FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: All up Bits; Antenna Position: Internal; Battery Model #: Internal

Device Position: Body-Adjacent with Lapdock, Bottom Surface 0 mm from Phantom

Communication System: WCDMA 850; Frequency: 836 MHz; Channel Number: 4180; Duty Cycle: 1:1

Medium: Big Body

Medium parameters used: $f = 835$ MHz; $\sigma = 0.99$ mho/m; $\epsilon_r = 55.7$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(5.88, 5.88, 5.88); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6 Glycol SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1131;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

SAM Phone Against Flat Section/Tablet Long Edge Area Scan - Body (15mm) (21x8x1):

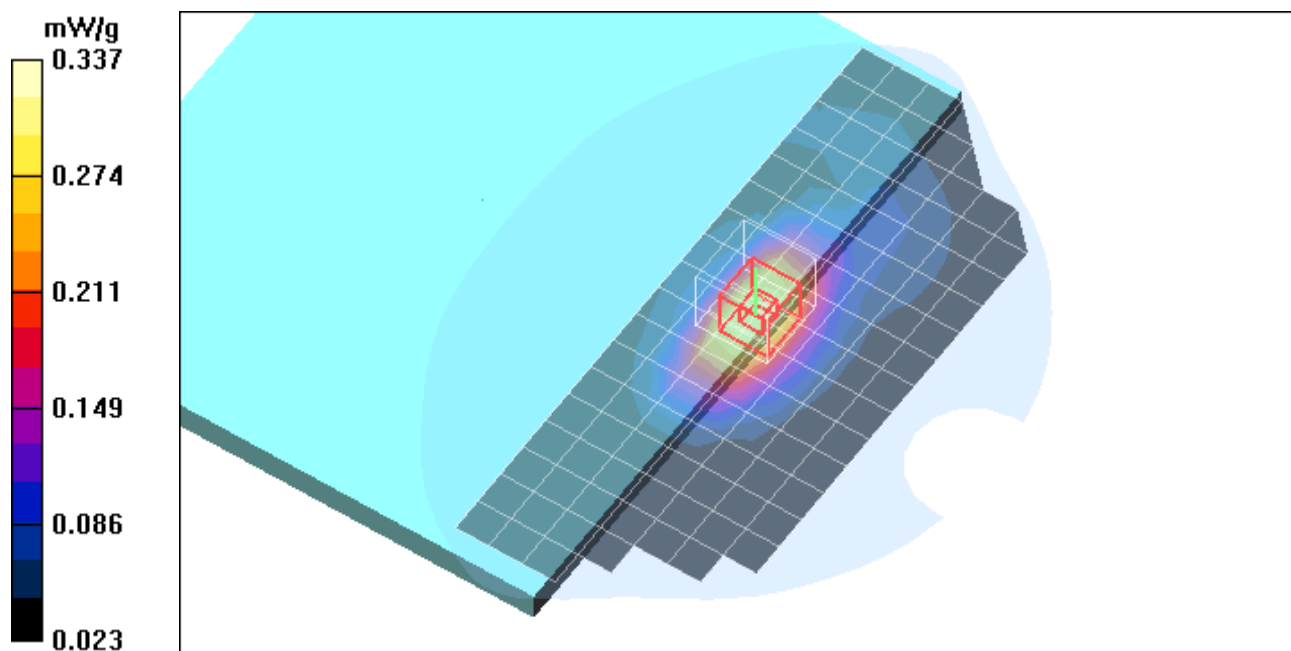
Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 0.298 mW/g

SAM Phone Against Flat Section/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.9 V/m; Power Drift = -0.170 dB; Peak SAR (extrapolated) = 0.443 W/kg

SAR(1 g) = 0.315 mW/g; SAR(10 g) = 0.210 mW/g; Maximum value of SAR (measured) = 0.337 mW/g



Date/Time: 9/19/2011 2:45:29 PM

Test Laboratory: Motorola - GSM 1900 with Lapdock

Serial: LS3A280035; FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 0; Antenna Position: Internal; Battery Model #: Internal

Device Position: Body-Adjacent with Lapdock, Bottom Surface 0 mm from Phantom

Communication System: GPRS 1900 CI 11; Frequency: 1880 MHz; Channel Number: 661; Duty Cycle: 1:2.76

Medium: Regular Glycol Body 1750/1880

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.59$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.61, 4.61, 4.61); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6 Glycol SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1131;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

SAM Phone Against Flat Section/Tablet Long Edge Area Scan - Body (15mm) (21x8x1):

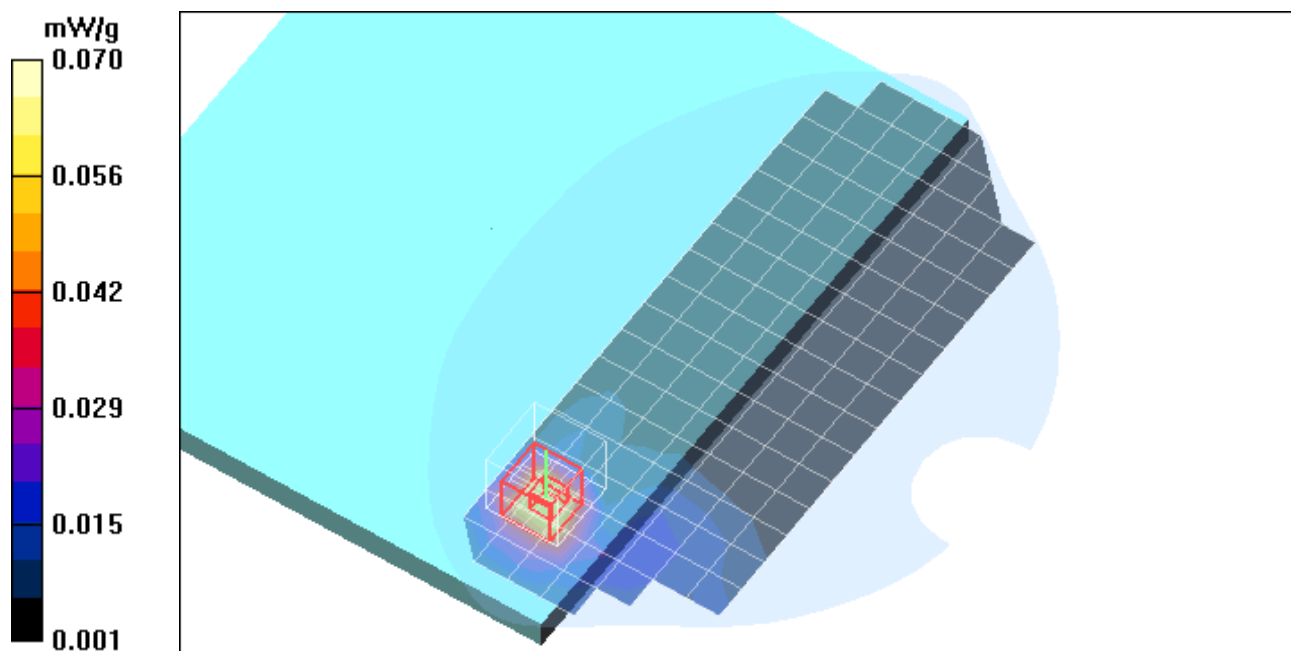
Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 0.055 mW/g

SAM Phone Against Flat Section/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.02 V/m; Power Drift = 0.013 dB; Peak SAR (extrapolated) = 0.103 W/kg

SAR(1 g) = 0.064 mW/g; SAR(10 g) = 0.036 mW/g; Maximum value of SAR (measured) = 0.070 mW/g



Date/Time: 9/19/2011 4:57:41 PM

Test Laboratory: Motorola - WCDMA 1900 with Lapdock

Serial: LS3A280035; FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: All up bits; Antenna Position: Internal; Battery Model #: Internal

Device Position: Body-Adjacent with Lapdock, Bottom Surface 0 mm from Phantom

Communication System: WCDMA 1900; Frequency: 1880 MHz; Channel Number: 9400; Duty Cycle: 1:1

Medium: Regular Glycol Body 1750/1880

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.59$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.61, 4.61, 4.61); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6 Glycol SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1131;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

SAM Phone Against Flat Section/Tablet Long Edge Area Scan - Body (15mm) (21x8x1):

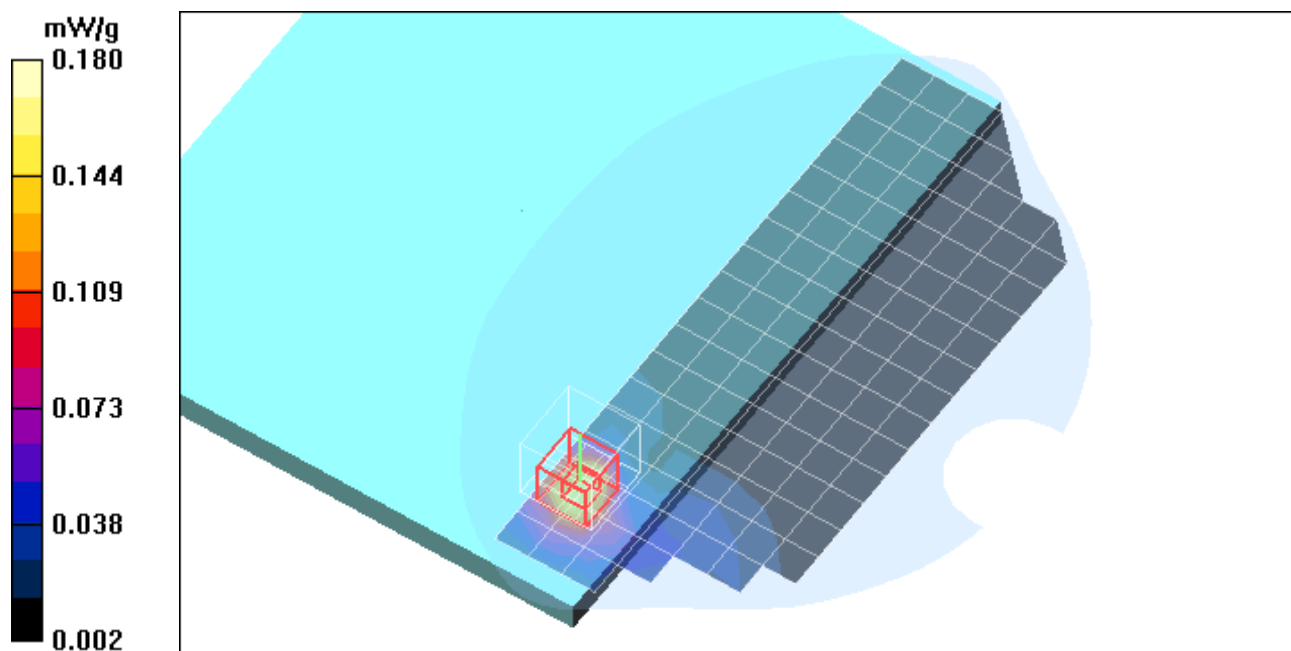
Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 0.161 mW/g

SAM Phone Against Flat Section/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.86 V/m; Power Drift = -0.148 dB; Peak SAR (extrapolated) = 0.267 W/kg

SAR(1 g) = 0.166 mW/g; SAR(10 g) = 0.094 mW/g; Maximum value of SAR (measured) = 0.180 mW/g



Date/Time: 9/19/2011 8:32:28 PM

Test Laboratory: Motorola - Wi-Fi 2450 with Lapdock

Serial: LS3A280035; FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: Antenna Position: Internal; Battery Model #: Internal

Device Position: Body-Adjacent with Lapdock, Bottom Surface 0 mm from Phantom

Device Mode: 802.11b mode, 1 Mbps data rate

Communication System: Wi-Fi 2450; Frequency: 2462 MHz; Channel Number: 11; Duty Cycle: 1:1

Medium: 2450 Glycol Body

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.96$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.12, 4.12, 4.12); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6 Glycol SAM (extended range), Rev.1 (25-Mar-05); Type: SAM v4.0; Serial: TP-1131;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

SAM Phone Against Flat Section/Tablet Long Edge Area Scan - Body (15mm) (21x8x1):

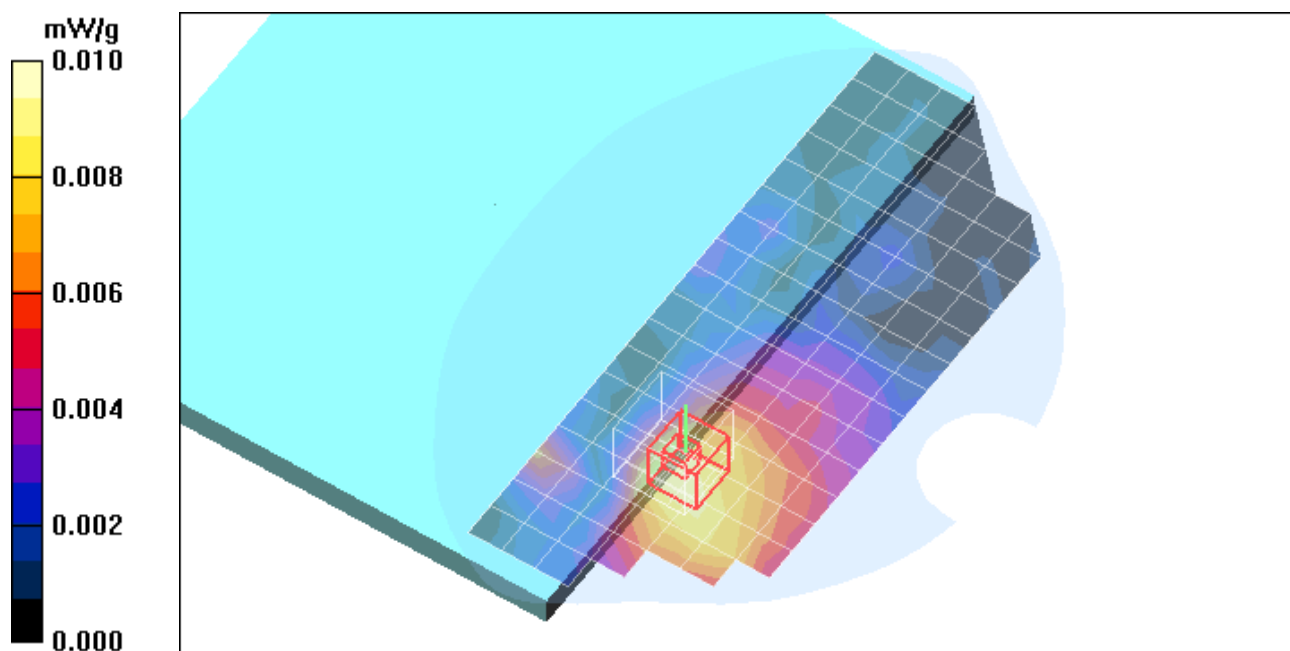
Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 0.009 mW/g

SAM Phone Against Flat Section/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.05 V/m; Power Drift = -0.135 dB; Peak SAR (extrapolated) = 0.021 W/kg

SAR(1 g) = 0.00891 mW/g; SAR(10 g) = 0.00513 mW/g; Maximum value of SAR (measured) = 0.010 mW/g



Appendix 5

SAR distribution plots for Mobile Hotspot Test Results

Test Laboratory: Motorola GPRS 850 Mobile Hotspot - Bottom Edge

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 5 Battery Model #: INTERNAL Test Configuration = BOTTOM EDGE OF PHONE
10MM FROM PHANTOM

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:2.76

Medium: Low Freq Body; Medium parameters used: $f = 835$ MHz; $\sigma = 0.98$ mho/m; $\epsilon_r = 55.3$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(6.1, 6.1, 6.1); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn702; Calibrated: 4/14/2011
- Phantom: R#2_ Section 2, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Amy Twin Phone Template/Area Scan - Normal Extended Body (15mm) (16x7x1): Measurement grid:
dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.032 mW/g

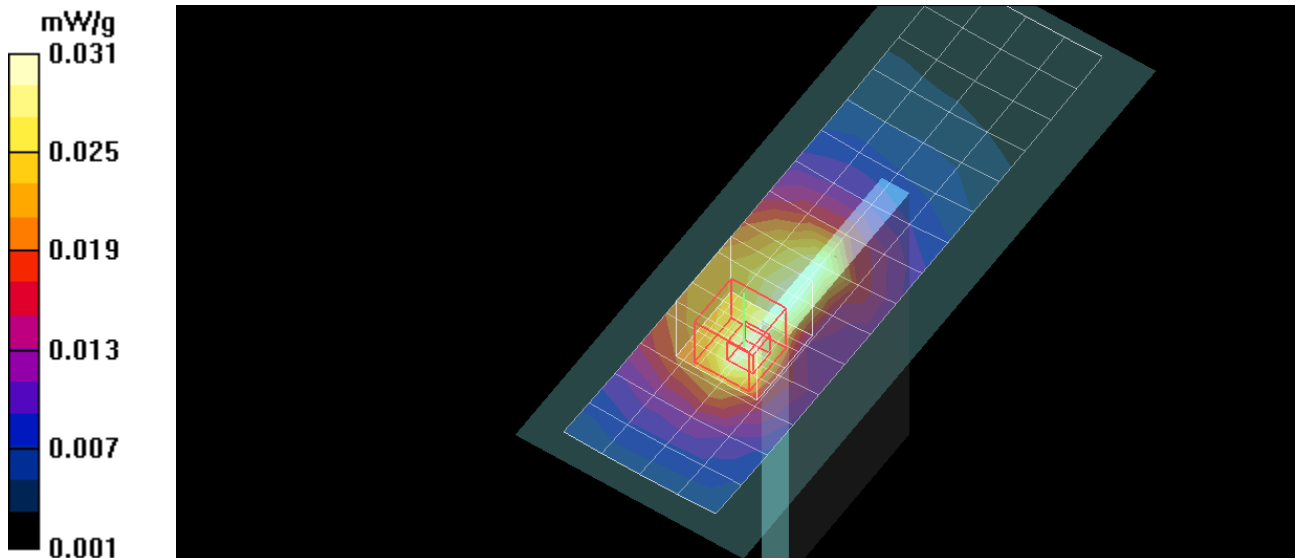
Amy Twin Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0: Measurement grid: dx=8mm,
dy=8mm, dz=5mm

Reference Value = 5.80 V/m; Power Drift = -0.120 dB

Peak SAR (extrapolated) = 0.050 W/kg

SAR(1 g) = 0.029 mW/g; SAR(10 g) = 0.018 mW/g

Maximum value of SAR (measured) = 0.031 mW/g



Test Laboratory: Motorola Mobility WCDMA 850 Mobile Hotspot - Bottom Edge

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: ALL UP BITS Battery Model #: INTERNAL Test Configuration = bottom edge 10mm from phantom

Communication System: 3G-WCDMA 850; Frequency: 836 MHz; Duty Cycle: 1:1

Medium: Low Freq Body; Medium parameters used: $f = 835$ MHz; $\sigma = 0.98$ mho/m; $\epsilon_r = 53.8$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(5.88, 5.88, 5.88); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#_6 - Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Triple Flat Phone Template/Tablet Short Edge Area Scan - Body (15mm) (15x6x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.040 mW/g

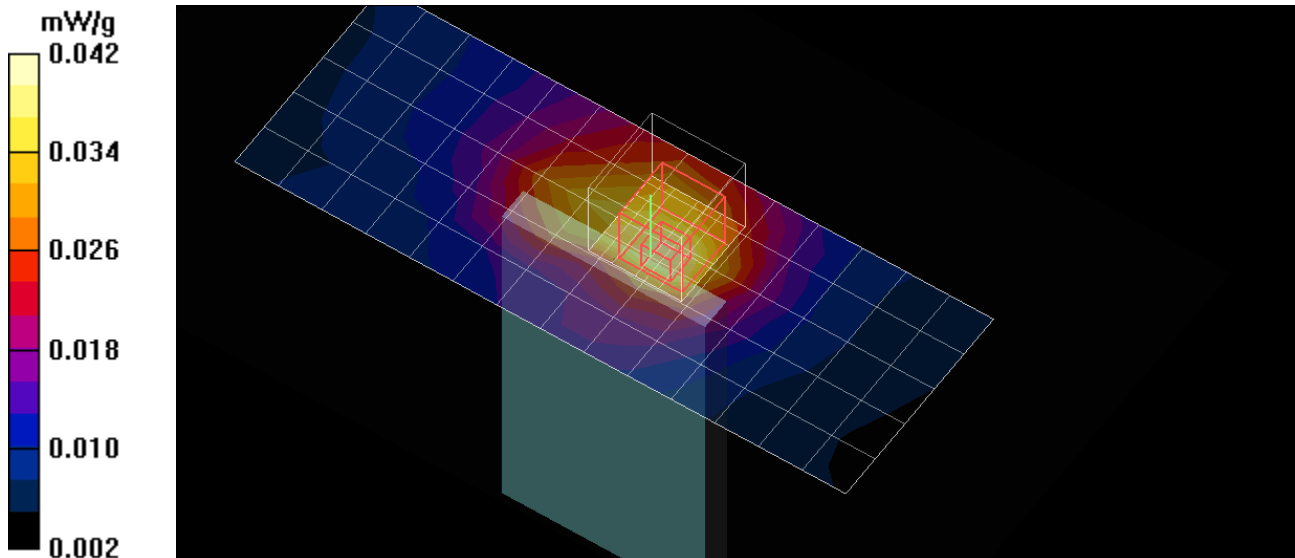
Triple Flat Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.49 V/m; Power Drift = 0.141 dB

Peak SAR (extrapolated) = 0.068 W/kg

SAR(1 g) = 0.039 mW/g; SAR(10 g) = 0.024 mW/g

Maximum value of SAR (measured) = 0.042 mW/g



Test Laboratory: Motorola Mobility - GPRS 1900 Mobile Hotspot - Bottom Edge

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 0 Battery Model #:internal Test Configuration = BOTTOM EDGE OF PHONE 10MM FROM PHANTOM

Communication System: GPRS 1900 - Class 8; Frequency: 1880 MHz; Duty Cycle: 1:2.76

Medium: Regular Glycol Body 1750/1880; Medium parameters used: $f = 1880$ MHz; $\sigma = 1.59$ mho/m; $\epsilon_r = 50.7$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(4.9, 4.9, 4.9); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Section 1, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Amy Twin Phone Template/Area Scan - Normal Extended Body (15mm) (16x7x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 0.399 mW/g

Amy Twin Phone Template/5x5x7 Zoom Scan (≤ 3 GHz) (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm,

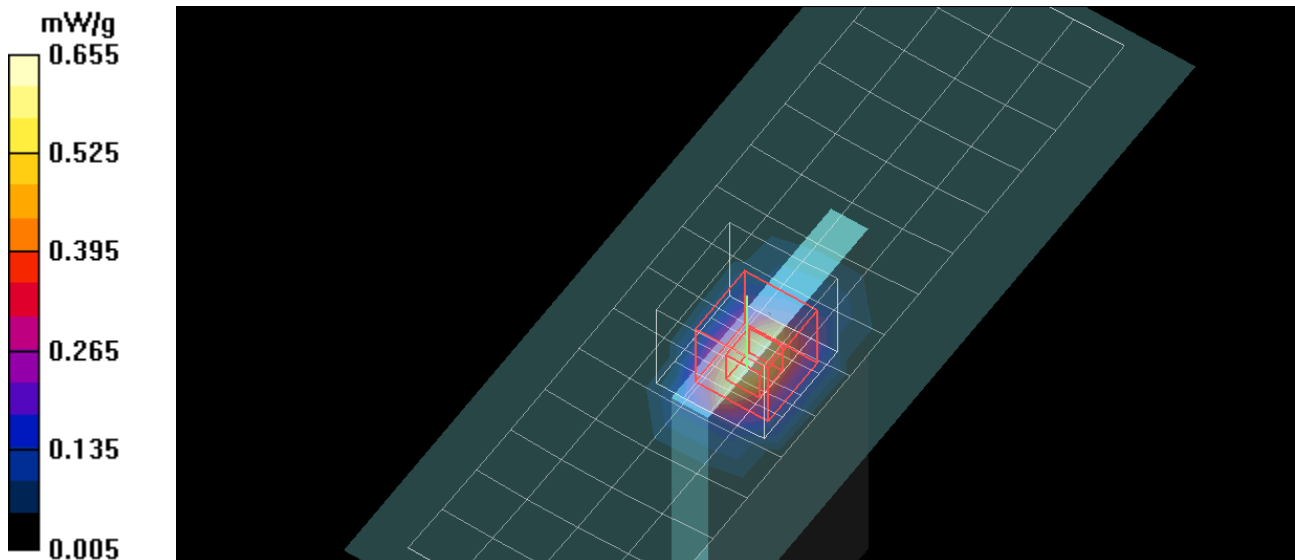
$dy=8$ mm, $dz=5$ mm

Reference Value = 15.6 V/m; Power Drift = 0.043 dB

Peak SAR (extrapolated) = 1.06 W/kg

SAR(1 g) = 0.575 mW/g; SAR(10 g) = 0.283 mW/g

Maximum value of SAR (measured) = 0.655 mW/g



Test Laboratory: Motorola WCDMA 1900 Mobile Hotspot - Bottom Edge

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: ALWAYS UP Battery Model #: INTERNAL Test Configuration =BODY, BOTTOM EDGE OF PHONE 10MM FROM PHANTOM

Communication System: 3G/WCDMA 1900; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium: Regular Glycol Body 1750/1880; Medium parameters used: $f = 1880$ MHz; $\sigma = 1.58$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(4.9, 4.9, 4.9); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn702; Calibrated: 4/14/2011
- Phantom: R#2_ Section 1, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Amy Twin Phone Template/Area Scan - Normal Extended Body (15mm) (16x7x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (measured) = 1.23 mW/g

Amy Twin Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0: Measurement grid:

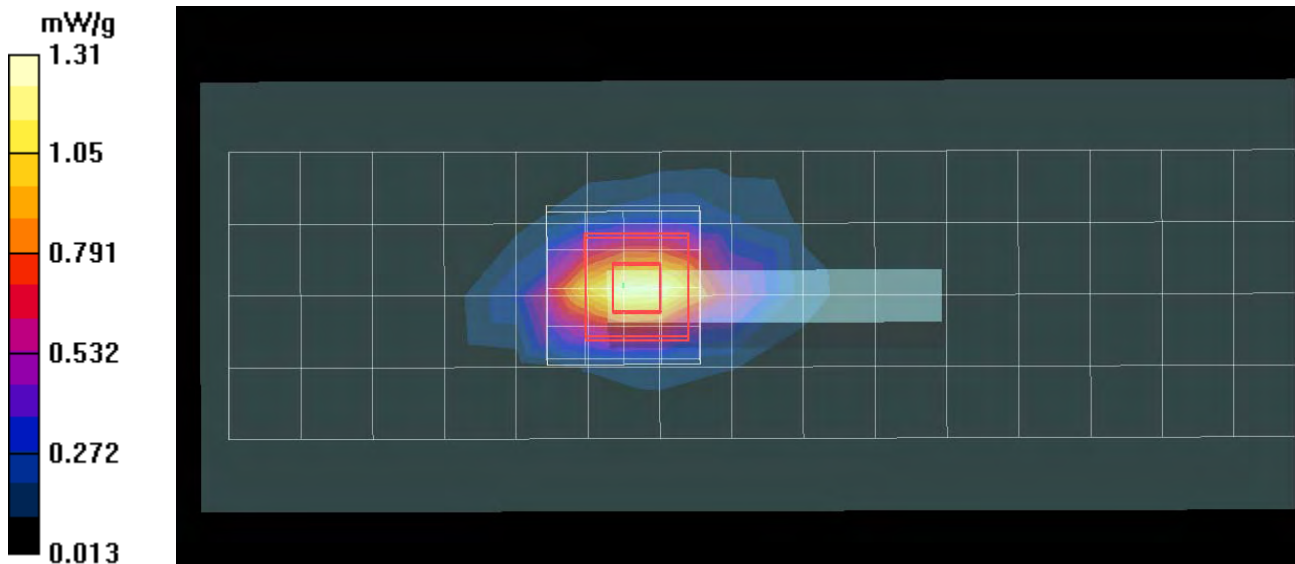
dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.1 V/m; Power Drift = 0.016 dB

Peak SAR (extrapolated) = 2.08 W/kg

SAR(1 g) = 1.16 mW/g; SAR(10 g) = 0.580 mW/g

Maximum value of SAR (measured) = 1.31 mW/g



Test Laboratory: Motorola Mobility 2450 MHz WiFi Mobile Hotspot - Bottom Edge

DUT: Serial: TA22300PPO, FCC ID: IHDP56ME4

Procedure Notes: 802.11b 1 Mbps Chn 11 Battery Model #: INTERNAL Test Configuration = Bottom Edge 10mm from Phantom

Communication System: Wi-Fi 2450; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: 2450 Glycol Body; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.8$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.12, 4.12, 4.12); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6, Triple Flat Phantom 5.1C (Rev.3); Type: QD 000 P51 CA; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Triple Flat Phone Template/Area Scan - Normal Body (15mm) (12x8x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.018 mW/g

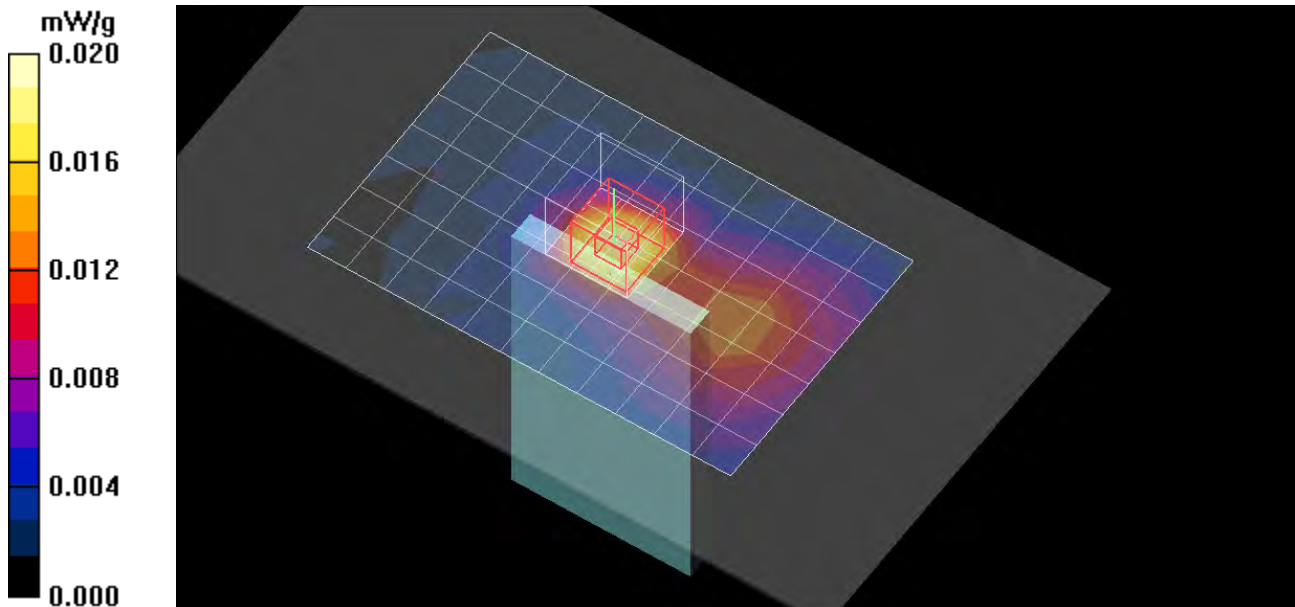
Triple Flat Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.63 V/m; Power Drift = -0.029 dB

Peak SAR (extrapolated) = 0.032 W/kg

SAR(1 g) = 0.018 mW/g; SAR(10 g) = 0.010 mW/g

Maximum value of SAR (measured) = 0.020 mW/g



Test Laboratory: Motorola GPRS 850 Mobile Hotspot - Left Edge

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 5 Battery Model #: INTERNAL Test Configuration = LEFT EDGE OF PHONE 10MM FROM PHANTOM

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:2.76

Medium: Low Freq Body; Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.98 \text{ mho/m}$; $\epsilon_r = 55.3$; $\rho = 1000 \text{ kg/m}^3$

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(6.1, 6.1, 6.1); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn702; Calibrated: 4/14/2011
- Phantom: R#2_ Section 2, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Amy Twin Phone Template/Area Scan - Normal Extended Body (15mm) (16x7x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.353 mW/g

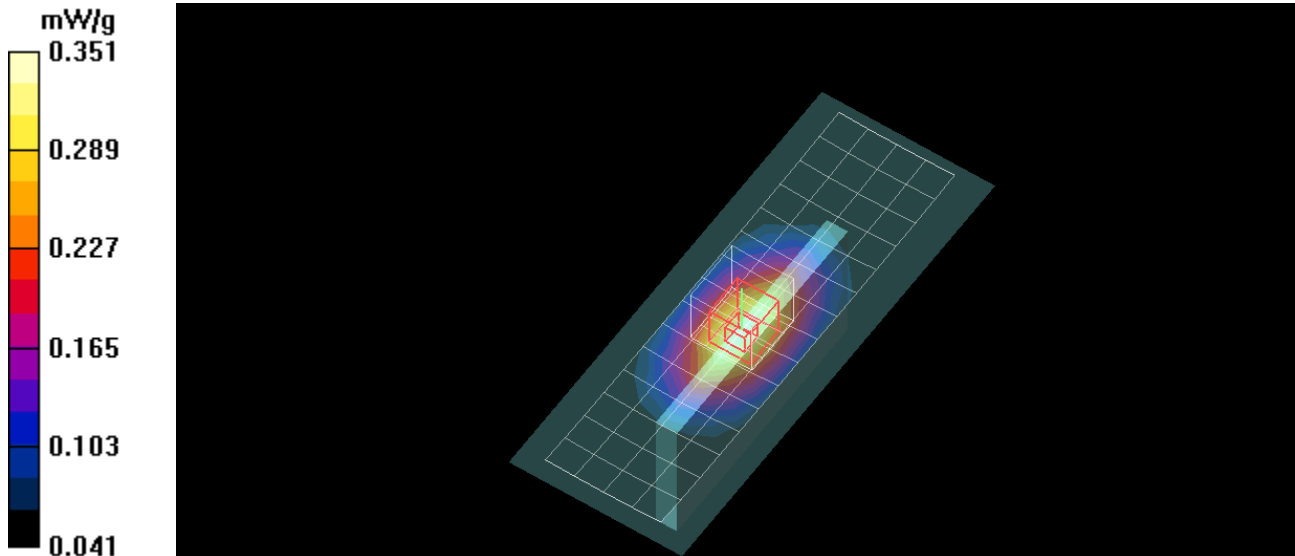
Amy Twin Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.6 V/m; Power Drift = -0.091 dB

Peak SAR (extrapolated) = 0.451 W/kg

SAR(1 g) = 0.329 mW/g; SAR(10 g) = 0.230 mW/g

Maximum value of SAR (measured) = 0.351 mW/g



Test Laboratory: Motorola Mobility - WCDMA 850 Mobile Hotspot - Left Edge

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: ALL UP BITS Battery Model #: INTERNAL Test Configuration = left edge 10mm from phantom

Communication System: 3G-WCDMA 850; Frequency: 836 MHz; Duty Cycle: 1:1

Medium: Low Freq Body; Medium parameters used: $f = 835$ MHz; $\sigma = 0.98$ mho/m; $\epsilon_r = 53.8$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(5.88, 5.88, 5.88); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#_6 - Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Triple Flat Phone Template/Tablet Short Edge Area Scan - Body (15mm) (15x6x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.623 mW/g

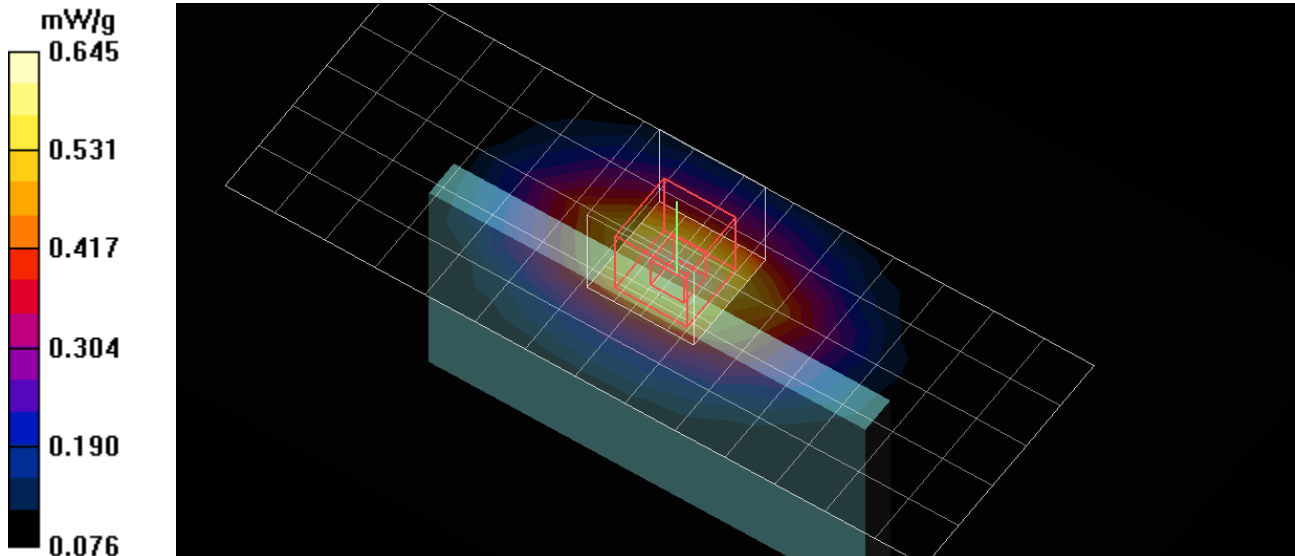
Triple Flat Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.3 V/m; Power Drift = -0.030 dB

Peak SAR (extrapolated) = 0.826 W/kg

SAR(1 g) = 0.603 mW/g; SAR(10 g) = 0.418 mW/g

Maximum value of SAR (measured) = 0.645 mW/g



Test Laboratory: Motorola GPRS 1900 Mobile Hotspot - Left Edge

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 0 Battery Model #:internal Test Configuration = LEFT EDGE OF PHONE 10MM FROM PHANTOM

Communication System: GPRS 1900 - Class 8; Frequency: 1880 MHz; Duty Cycle: 1:2.76

Medium: Regular Glycol Body 1750/1880; Medium parameters used: $f = 1880$ MHz; $\sigma = 1.59$ mho/m; $\epsilon_r = 50.7$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(4.9, 4.9, 4.9); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Section 1, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Amy Twin Phone Template/Area Scan - Normal Extended Body (15mm) (16x7x1): Measurement grid: dx=15mm, dy=15mm

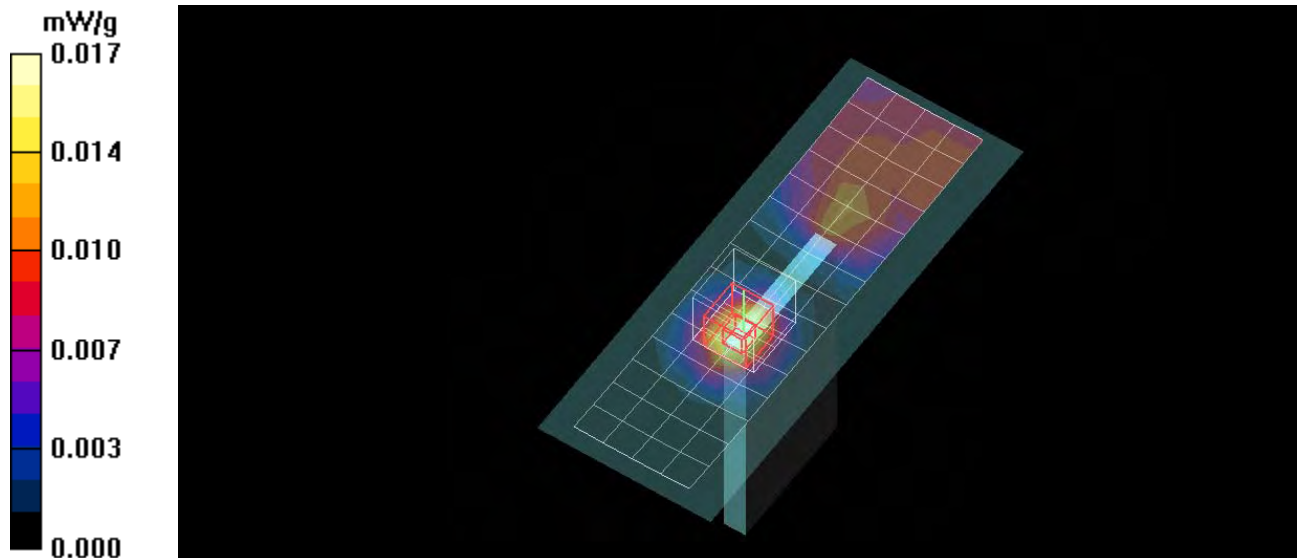
Maximum value of SAR (measured) = 0.017 mW/g

Amy Twin Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.09 V/m; Power Drift = -0.004 dB

Peak SAR (extrapolated) = 0.026 W/kg

SAR(1 g) = 0.016 mW/g; SAR(10 g) = 0.00916 mW/g



Test Laboratory: Motorola Mobility - WCDMA 1900 Mobile Hotspot - Left Edge

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: ALL UP BITS Battery Model #: INTERNAL Test Configuration = Left Edge 10mm from Phantom

Communication System: 3G/WCDMA 1900; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Regular Glycol Body 1750/1880; Medium parameters used: $f = 1880$ MHz; $\sigma = 1.58$ mho/m; $\epsilon_r = 50.8$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.61, 4.61, 4.61); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#6 - Triple Flat Phantom 5.1C (rev.2); Type: QD 000 P51 CA; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Triple Flat Phone Template/Area Scan - Extended Phone (15mm) (18x8x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 0.033 mW/g

Triple Flat Phone Template/5x5x7 Zoom Scan (≤ 3 GHz) (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm,

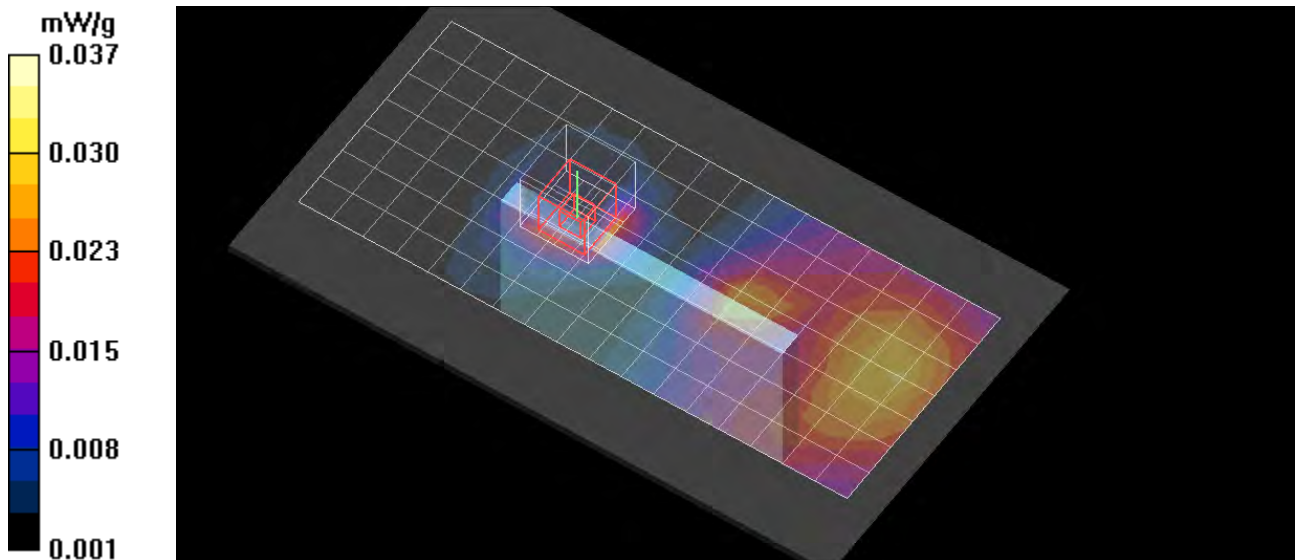
$dy=8$ mm, $dz=5$ mm

Reference Value = 4.61 V/m; Power Drift = -0.094 dB

Peak SAR (extrapolated) = 0.052 W/kg

SAR(1 g) = 0.033 mW/g; SAR(10 g) = 0.020 mW/g

Maximum value of SAR (measured) = 0.037 mW/g



Test Laboratory: Motorola GPRS 850 Mobile Hotspot - Right Edge

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 5 Battery Model #: INTERNAL Test Configuration = RIGHT EDGE OF PHONE 10MM FROM PHANTOM

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:2.76

Medium: Low Freq Body; Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.98 \text{ mho/m}$; $\epsilon_r = 55.3$; $\rho = 1000 \text{ kg/m}^3$

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(6.1, 6.1, 6.1); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn702; Calibrated: 4/14/2011
- Phantom: R#2_ Section 2, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Amy Twin Phone Template/Area Scan - Normal Extended Body (15mm) (16x7x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.275 mW/g

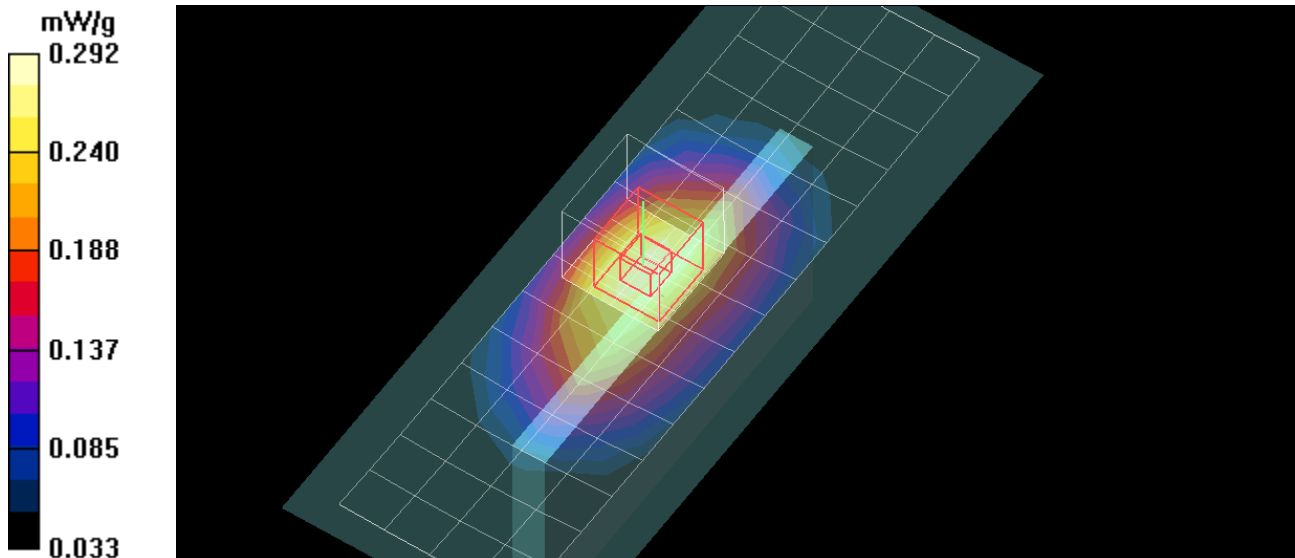
Amy Twin Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.9 V/m; Power Drift = -0.049 dB

Peak SAR (extrapolated) = 0.379 W/kg

SAR(1 g) = 0.274 mW/g; SAR(10 g) = 0.192 mW/g

Maximum value of SAR (measured) = 0.292 mW/g



Test Laboratory: Motorola Mobility - WCDMA 850 Mobile Hotspot - Right Edge

DUT: Serial: LS3A280035, FC ID: IHDP56ME4

Procedure Notes: Pwr Step: always up Battery Model #:internal Test Configuration = RIGHT EDGE OF PHONE
10MM FROM PHANTOM

Communication System: 3G-WCDMA 850; Frequency: 836 MHz;Duty Cycle: 1:1

Medium: Low Freq Body; Medium parameters used: $f = 835$ MHz; $\sigma = 0.97$ mho/m; $\epsilon_r = 54.1$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(6.1, 6.1, 6.1); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Section 2, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Amy Twin Phone Template/Area Scan - Normal Extended Body (15mm) (16x7x1): Measurement grid:
dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.325 mW/g

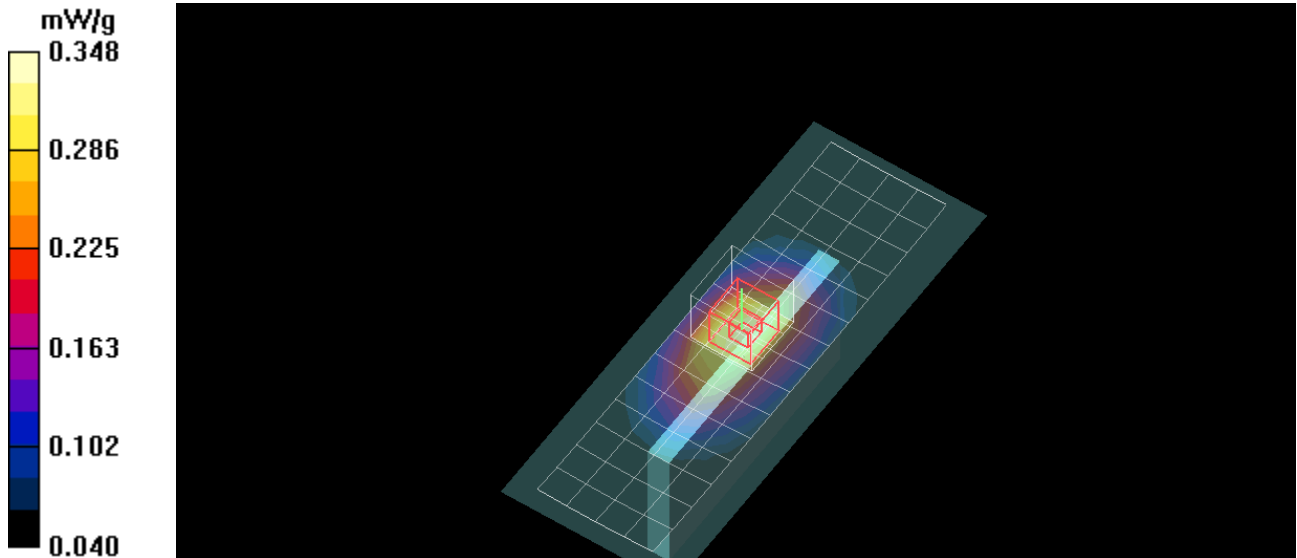
Amy Twin Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0: Measurement grid: dx=8mm,
dy=8mm, dz=5mm

Reference Value = 18.7 V/m; Power Drift = 0.012 dB

Peak SAR (extrapolated) = 0.459 W/kg

SAR(1 g) = 0.326 mW/g; SAR(10 g) = 0.227 mW/g

Maximum value of SAR (measured) = 0.348 mW/g



Test Laboratory: Motorola Mobility - GPRS 1900 Mobile Hotspot - Right Edge

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 0 Battery Model #:internal Test Configuration = RIGHT EDGE OF PHONE 10MM FROM PHANTOM

Communication System: GPRS 1900 - Class 8; Frequency: 1880 MHz; Duty Cycle: 1:2.76

Medium: Regular Glycol Body 1750/1880; Medium parameters used: $f = 1880$ MHz; $\sigma = 1.59$ mho/m; $\epsilon_r = 50.7$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(4.9, 4.9, 4.9); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Section 1, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Amy Twin Phone Template/Area Scan - Normal Extended Body (15mm) (16x7x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 0.080 mW/g

Amy Twin Phone Template/5x5x7 Zoom Scan (≤ 3 GHz) (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm,

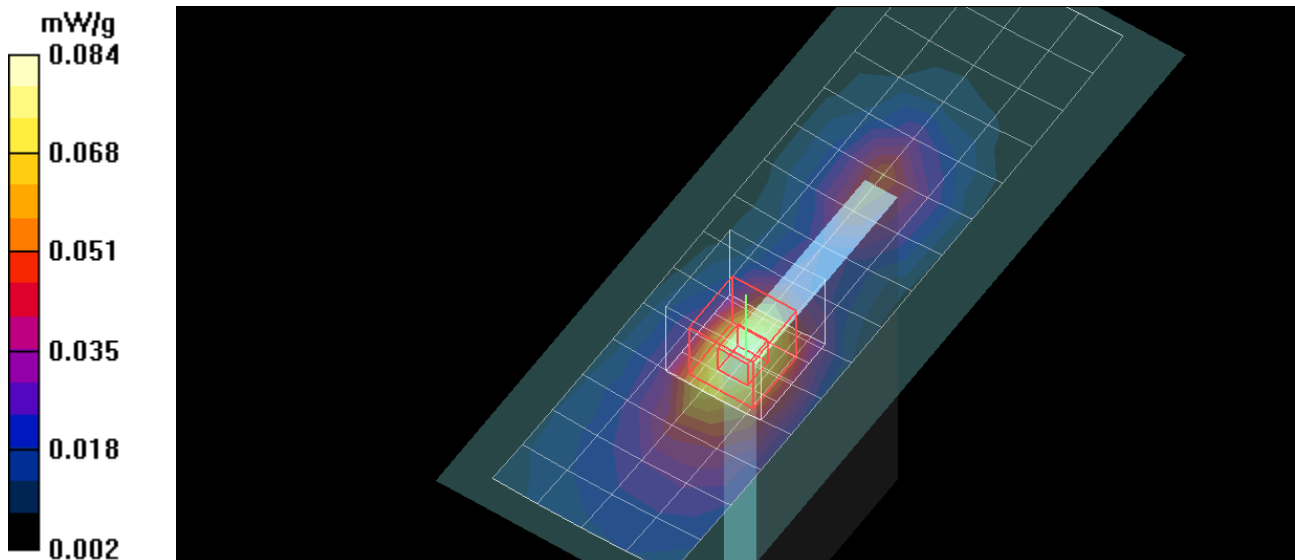
$dy=8$ mm, $dz=5$ mm

Reference Value = 6.93 V/m; Power Drift = -0.060 dB

Peak SAR (extrapolated) = 0.117 W/kg

SAR(1 g) = 0.076 mW/g; SAR(10 g) = 0.045 mW/g

Maximum value of SAR (measured) = 0.084 mW/g



Test Laboratory: Motorola Mobility - WCDMA 1900 Mobile Hotspot - Right Edge

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: ALL UP BITS Battery Model #: INTERNAL Test Configuration = Right Edge 10mm from Phantom

Communication System: 3G/WCDMA 1900; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Regular Glycol Body 1750/1880; Medium parameters used: $f = 1880$ MHz; $\sigma = 1.58$ mho/m; $\epsilon_r = 50.8$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.61, 4.61, 4.61); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#6 - Triple Flat Phantom 5.1C (rev.2); Type: QD 000 P51 CA; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Triple Flat Phone Template/Area Scan - Extended Phone (15mm) (18x8x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 0.158 mW/g

Triple Flat Phone Template/5x5x7 Zoom Scan (≤ 3 GHz) (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm,

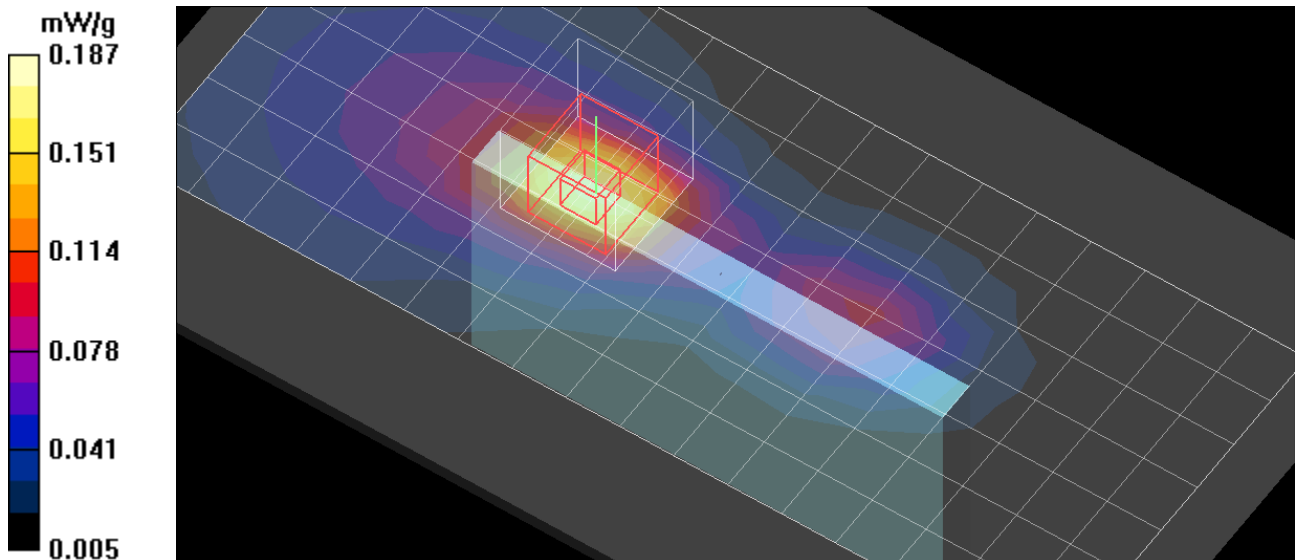
$dy=8$ mm, $dz=5$ mm

Reference Value = 10.7 V/m; Power Drift = 0.120 dB

Peak SAR (extrapolated) = 0.265 W/kg

SAR(1 g) = 0.171 mW/g; SAR(10 g) = 0.103 mW/g

Maximum value of SAR (measured) = 0.187 mW/g



Test Laboratory: Motorola Mobility 2450 MHz WiFi Mobile Hotspot - Right Edge

DUT: Serial: TA22300PPO, FCC ID: IHDP56ME4

Procedure Notes: 802.11b 1 Mbps Chn 1 Battery Model #: INTERNAL Test Configuration = Right Edge 10mm from Phantom

Communication System: Wi-Fi 2450; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: 2450 Glycol Body; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.8$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.12, 4.12, 4.12); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6, Triple Flat Phantom 5.1C (Rev.3); Type: QD 000 P51 CA; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Triple Flat Phone Template/Area Scan - Extended Phone (15mm) (18x8x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 0.267 mW/g

Triple Flat Phone Template/5x5x7 Zoom Scan (≤ 3 GHz) (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm,

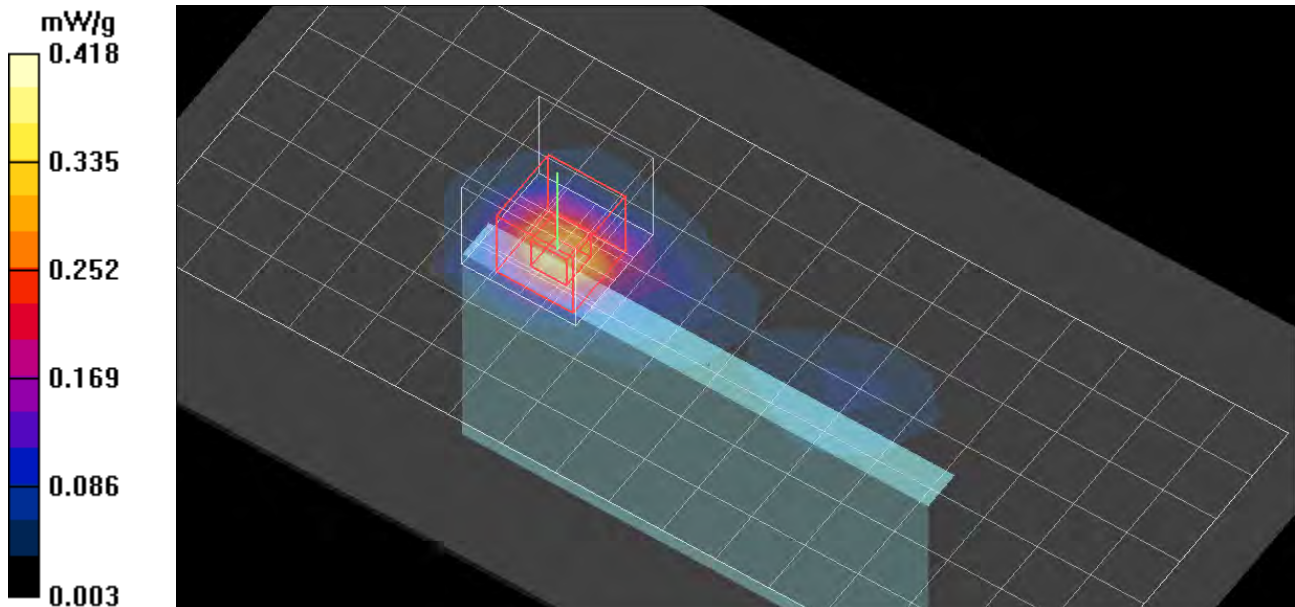
$dy=8$ mm, $dz=5$ mm

Reference Value = 14.3 V/m; Power Drift = 0.065 dB

Peak SAR (extrapolated) = 0.756 W/kg

SAR(1 g) = 0.361 mW/g; SAR(10 g) = 0.169 mW/g

Maximum value of SAR (measured) = 0.418 mW/g



Test Laboratory: Motorola Mobility GPRS 850 Mobile Hotspot - Front Surface

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 5 Battery Model #: INTERNAL Test Configuration = FRONT OF PHONE 10MM FROM PHANTOM

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:2.76

Medium: Low Freq Body; Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.98 \text{ mho/m}$; $\epsilon_r = 55.3$; $\rho = 1000 \text{ kg/m}^3$

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(6.1, 6.1, 6.1); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn702; Calibrated: 4/14/2011
- Phantom: R#2_ Section 2, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Amy Twin Phone Template/Area Scan - Normal Extended Body (15mm) (16x7x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.542 mW/g

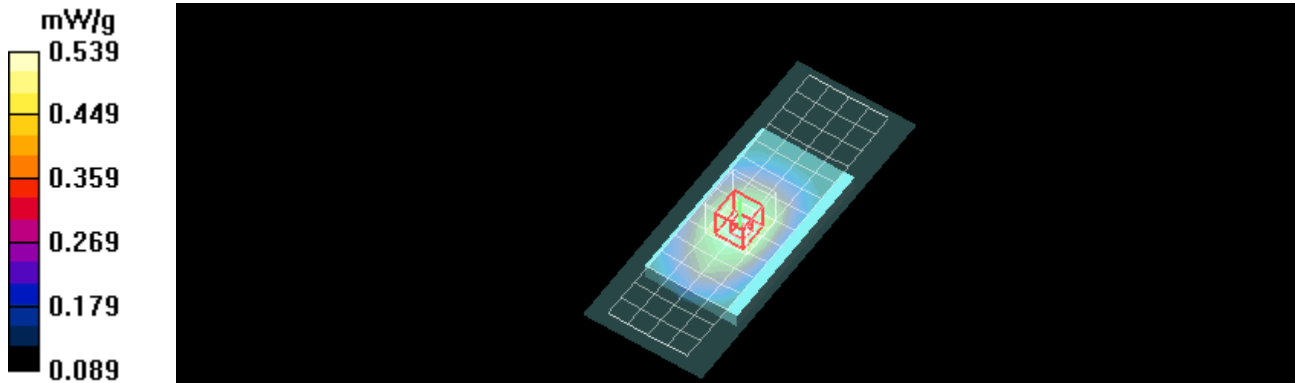
Amy Twin Phone Template/5x5x7 Zoom Scan ($\leq 3\text{GHz}$) (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 23.3 V/m; Power Drift = -0.014 dB

Peak SAR (extrapolated) = 0.623 W/kg

SAR(1 g) = 0.518 mW/g; SAR(10 g) = 0.405 mW/g

Maximum value of SAR (measured) = 0.539 mW/g



Test Laboratory: Motorola Mobility - WCDMA 850 Mobile Hotspot - Front Surface

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: always up Battery Model #:internal Test Configuration = FRONT OF PHONE 10MM FROM PHANTOM

Communication System: 3G-WCDMA 850; Frequency: 836 MHz; Duty Cycle: 1:1

Medium: Low Freq Body; Medium parameters used: $f = 835$ MHz; $\sigma = 0.97$ mho/m; $\epsilon_r = 54.1$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(6.1, 6.1, 6.1); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Section 2, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Amy Twin Phone Template/Area Scan - Normal Extended Body (15mm) (16x7x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.714 mW/g

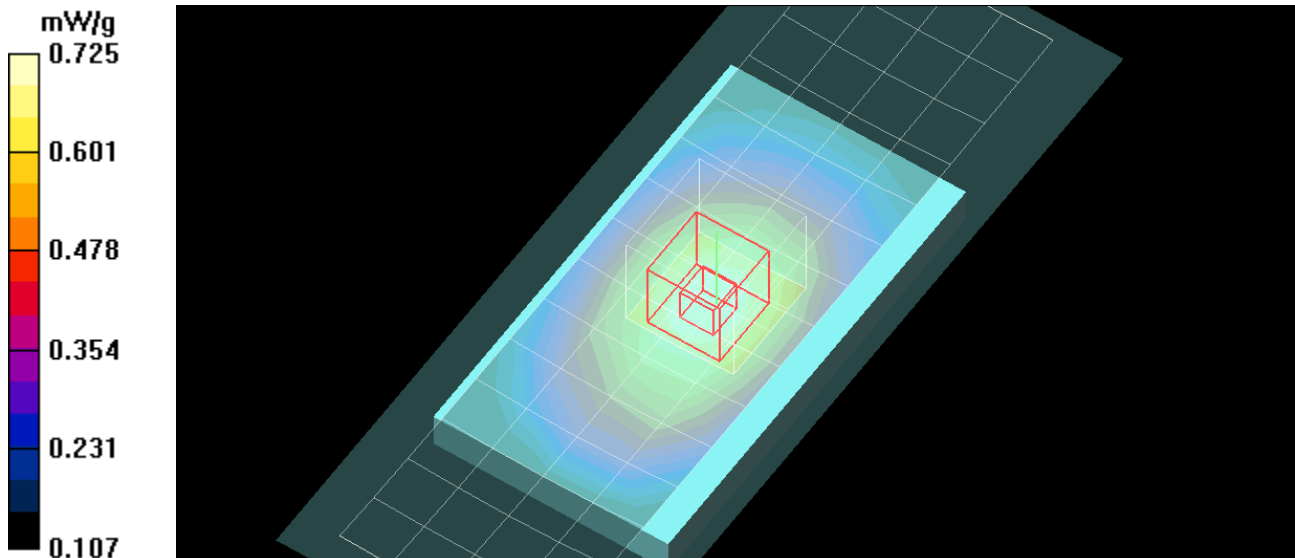
Amy Twin Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 26.7 V/m; Power Drift = 0.025 dB

Peak SAR (extrapolated) = 0.856 W/kg

SAR(1 g) = 0.695 mW/g; SAR(10 g) = 0.535 mW/g

Maximum value of SAR (measured) = 0.725 mW/g



Test Laboratory: Motorola GPRS 1900 Mobile Hotspot - Front Surface

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 0 Battery Model #:internal Test Configuration =GPRS CLASS 11 (3 Uplot) BODY, FRONT OF PHONE 10MM FROM PHANTOM

Communication System: GPRS 1900 - Class 11; Frequency: 1880 MHz;Duty Cycle: 1:2.76

Medium: Regular Glycol Body 1750/1880; Medium parameters used: $f = 1880$ MHz; $\sigma = 1.59$ mho/m; $\epsilon_r = 50.7$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(4.9, 4.9, 4.9); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Section 1, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Amy Twin Phone Template/Area Scan - Normal Extended Body (15mm) (16x7x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.663 mW/g

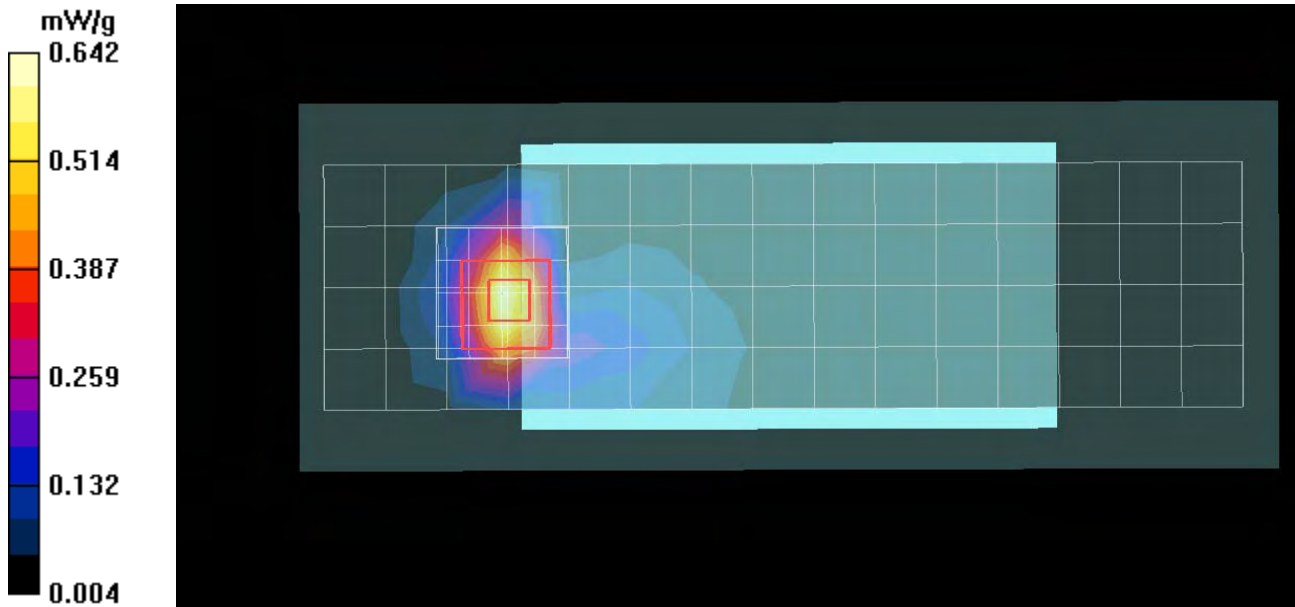
Amy Twin Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.4 V/m; Power Drift = -0.280 dB

Peak SAR (extrapolated) = 1.08 W/kg

SAR(1 g) = 0.592 mW/g; SAR(10 g) = 0.293 mW/g

Maximum value of SAR (measured) = 0.642 mW/g



Test Laboratory: Motorola Mobility - WCDMA 1900 Mobile Hotspot - Front Surface

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: ALL UP BITS Battery Model #: INTERNAL Test Configuration = Front Surface 10mm from Phantom

Communication System: 3G/WCDMA 1900; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Regular Glycol Body 1750/1880; Medium parameters used: $f = 1880$ MHz; $\sigma = 1.59$ mho/m; $\epsilon_r = 50.9$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.61, 4.61, 4.61); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#6 - Triple Flat Phantom 5.1C (rev.2); Type: QD 000 P51 CA; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Triple Flat Phone Template/Area Scan - Extended Phone (15mm) (18x8x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 0.983 mW/g

Triple Flat Phone Template/5x5x7 Zoom Scan (≤ 3 GHz) (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm,

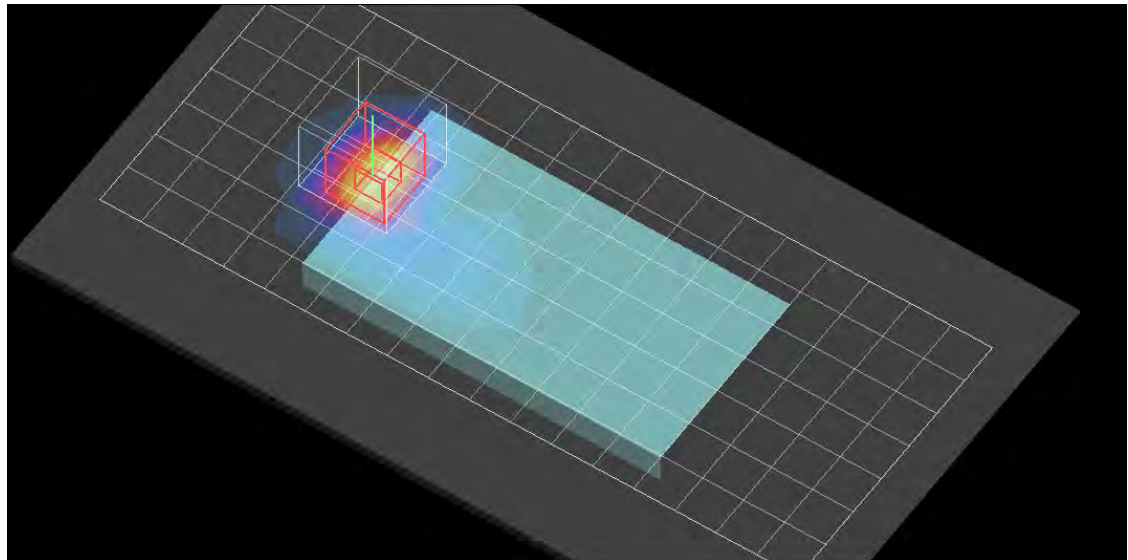
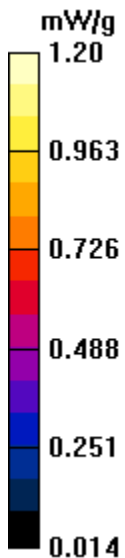
$dy=8$ mm, $dz=5$ mm

Reference Value = 18.4 V/m; Power Drift = 0.057 dB

Peak SAR (extrapolated) = 1.91 W/kg

SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.578 mW/g

Maximum value of SAR (measured) = 1.20 mW/g



Test Laboratory: Motorola Mobility 2450 MHz WiFi Mobile Hotspot - Front Surface

DUT: Serial: TA22300PPO, FCC ID: IHDP56ME4

Procedure Notes: 802.11b 1 Mbps Chn 11 Battery Model #: INTERNAL Test Configuration = Front Surface
10mm from Phantom

Communication System: Wi-Fi 2450; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: 2450 Glycol Body; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.8$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.12, 4.12, 4.12); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6, Triple Flat Phantom 5.1C (Rev.3); Type: QD 000 P51 CA; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Triple Flat Phone Template/Area Scan - Extended Phone (15mm) (18x9x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 0.125 mW/g

Triple Flat Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm,

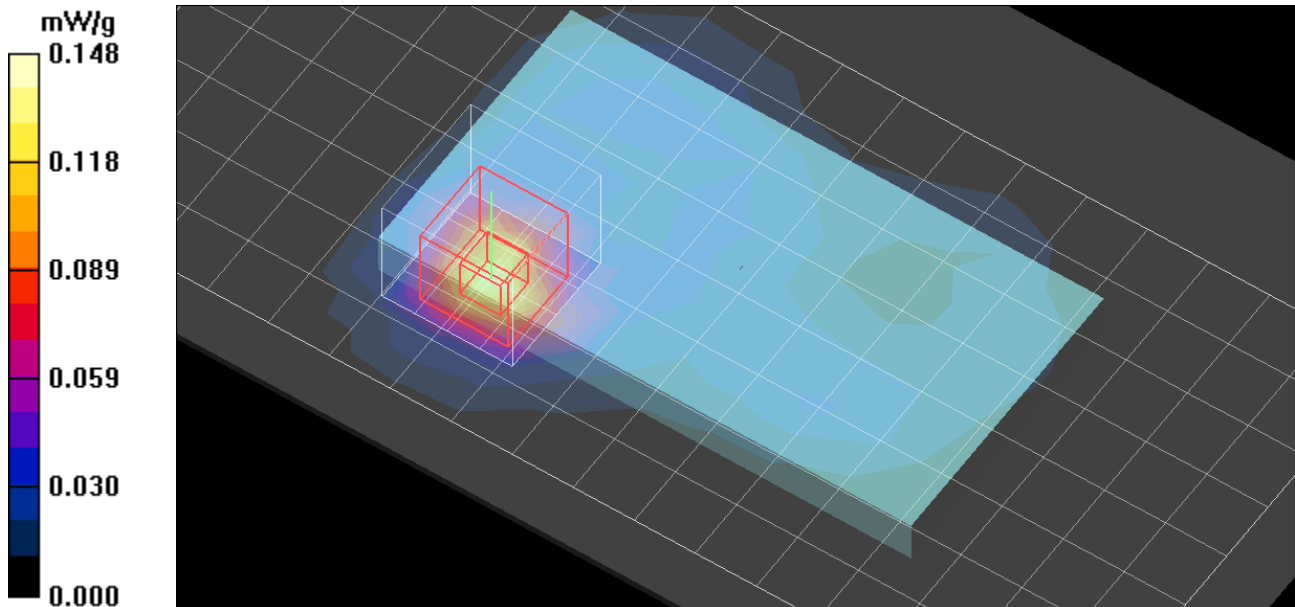
$dy=8$ mm, $dz=5$ mm

Reference Value = 7.59 V/m; Power Drift = -0.155 dB

Peak SAR (extrapolated) = 0.272 W/kg

SAR(1 g) = 0.131 mW/g; SAR(10 g) = 0.064 mW/g

Maximum value of SAR (measured) = 0.148 mW/g



Test Laboratory: Motorola GPRS 850 Mobile Hotspot - Back Surface

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 5 Battery Model #: INTERNAL Test Configuration =GPRS Class 11 (3 Upslot) BODY, BACK OF PHONE 10MM FROM PHANTOM

Communication System: GPRS 850 - Class 11; Frequency: 836.6 MHz; Duty Cycle: 1:2.76

Medium: Low Freq Body; Medium parameters used: $f = 835$ MHz; $\sigma = 0.98$ mho/m; $\epsilon_r = 55.3$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(6.1, 6.1, 6.1); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn702; Calibrated: 4/14/2011
- Phantom: R#2_ Section 2, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Amy Twin Phone Template/Area Scan - Normal Extended Body (15mm) (16x7x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.591 mW/g

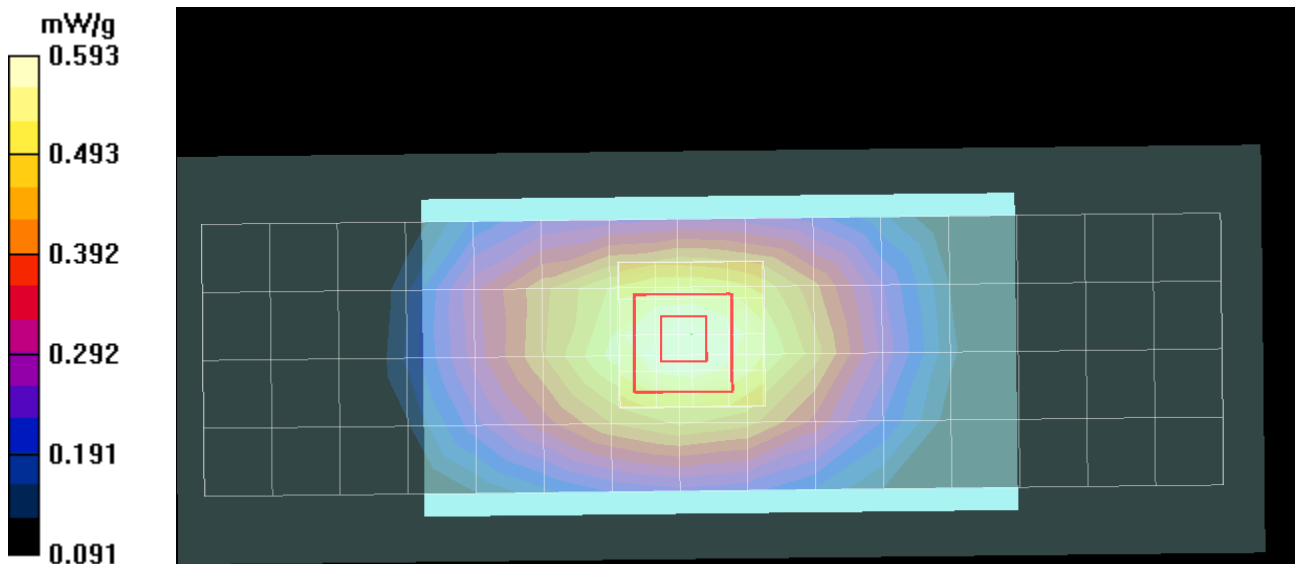
Amy Twin Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 24.1 V/m; Power Drift = -0.032 dB

Peak SAR (extrapolated) = 0.682 W/kg

SAR(1 g) = 0.567 mW/g; SAR(10 g) = 0.439 mW/g

Maximum value of SAR (measured) = 0.593 mW/g



Date/Time: 8/28/2011 10:37:44 AM

Test Laboratory: Motorola - WCDMA 850 Mobile Hotspot - Back

Serial: LS3A280035 ; FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: All up Bits; Antenna Position: Internal; Battery Model #: Internal

Device Position: Mobile Hotspot (Body-Adjacent) position, Back of Phone 10 mm from Phantom

Communication System: WCDMA 850; Frequency: 836 MHz; Channel Number: 4180; Duty Cycle: 1:1

Medium: Low Freq Body

Medium parameters used: $f = 835$ MHz; $\sigma = 0.97$ mho/m; $\epsilon_r = 54.1$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(6.1, 6.1, 6.1); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Section 2, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Amy Twin Phone Template/Area Scan - Normal Extended Body (15mm) (16x7x1):

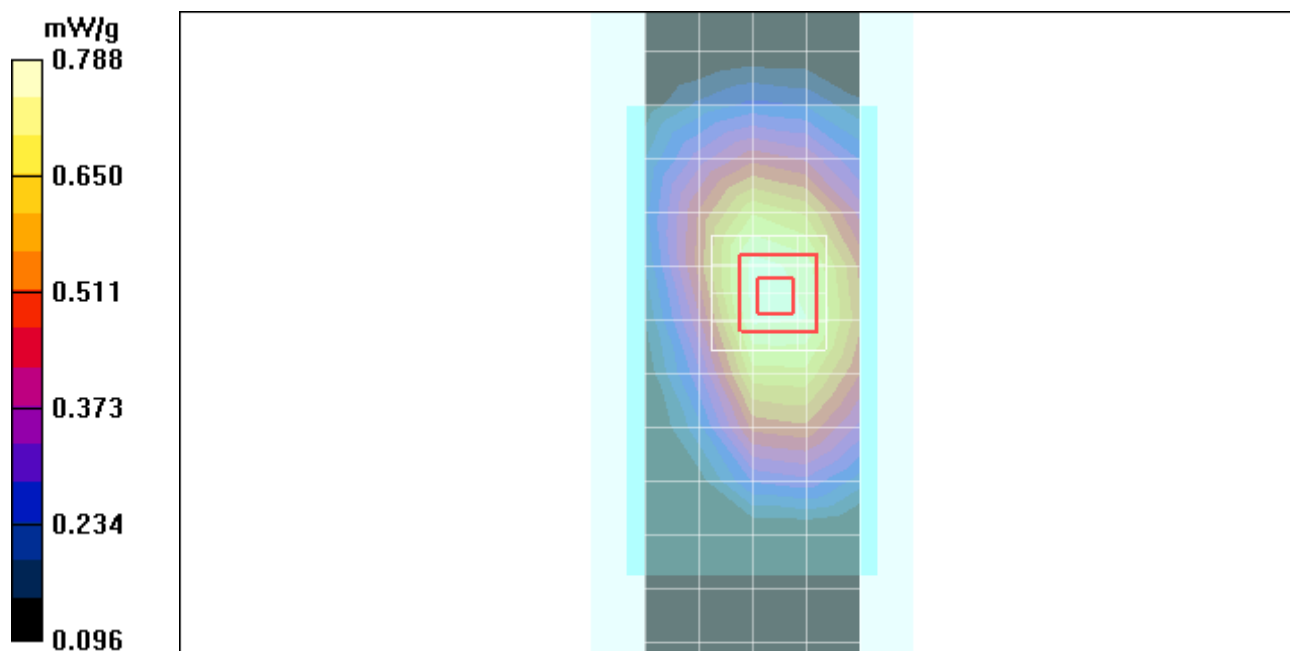
Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 0.766 mW/g

Amy Twin Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.5 V/m; Power Drift = -0.120 dB; Peak SAR (extrapolated) = 0.958 W/kg

SAR(1 g) = 0.752 mW/g; SAR(10 g) = 0.563 mW/g; Maximum value of SAR (measured) = 0.788 mW/g



Test Laboratory: Motorola Mobility - GPRS 1900 Mobile Hotspot - Back Surface

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: 0 Battery Model #:internal Test Configuration = BACK OF PHONE 10MM FROM PHANTOM

Communication System: GPRS 1900 - Class 8; Frequency: 1880 MHz;Duty Cycle: 1:2.76

Medium: Regular Glycol Body 1750/1880; Medium parameters used: $f = 1880$ MHz; $\sigma = 1.59$ mho/m; $\epsilon_r = 50.7$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3184; ConvF(4.9, 4.9, 4.9); Calibrated: 3/11/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn699; Calibrated: 9/20/2010
- Phantom: R#2_ Section 1, Amy Twin, Rev3 (3-Feb-10); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Amy Twin Phone Template/Area Scan - Normal Extended Body (15mm) (16x7x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.403 mW/g

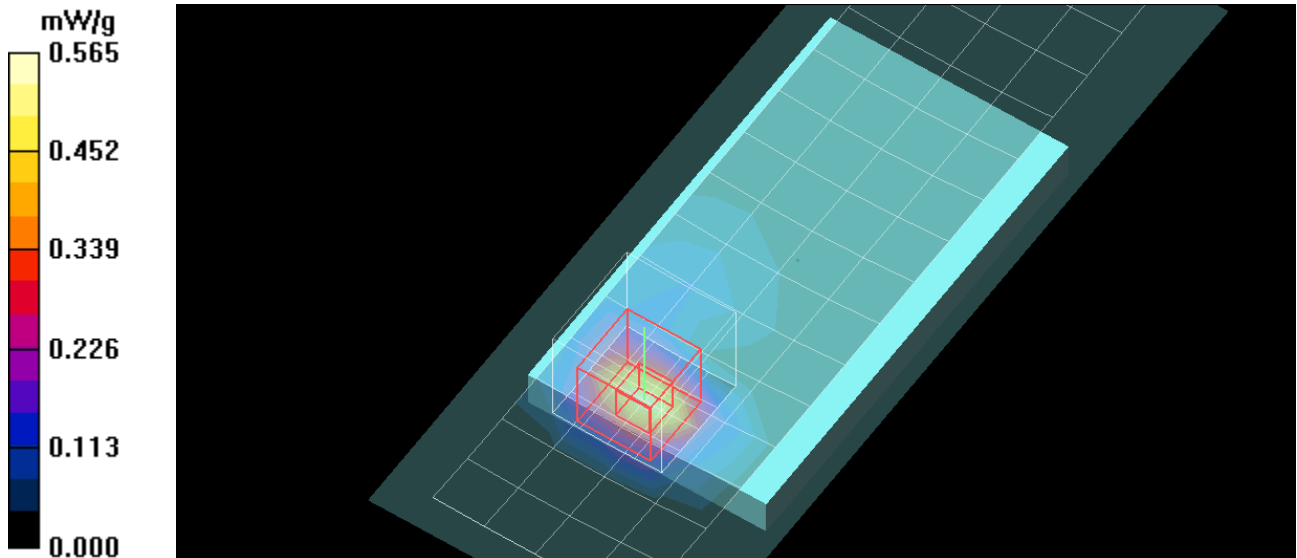
Amy Twin Phone Template/5x5x7 Zoom Scan (<=3GHz) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.1 V/m; Power Drift = 0.303 dB

Peak SAR (extrapolated) = 0.880 W/kg

SAR(1 g) = 0.493 mW/g; SAR(10 g) = 0.250 mW/g

Maximum value of SAR (measured) = 0.565 mW/g



Test Laboratory: Motorola Mobility - WCDMA 1900 Mobile Hotspot - Back Surface

DUT: Serial: LS3A280035, FCC ID: IHDP56ME4

Procedure Notes: Pwr Step: ALL UP BITS Battery Model #: INTERNAL Test Configuration = Back Surface 10mm from Phantom

Communication System: 3G/WCDMA 1900; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Regular Glycol Body 1750/1880; Medium parameters used: $f = 1880$ MHz; $\sigma = 1.59$ mho/m; $\epsilon_r = 50.9$; $\rho = 1000$ kg/m³

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.61, 4.61, 4.61); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#6 - Triple Flat Phantom 5.1C (rev.2); Type: QD 000 P51 CA; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Triple Flat Phone Template/Area Scan - Extended Phone (15mm) (18x8x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 1.17 mW/g

Triple Flat Phone Template/5x5x7 Zoom Scan (≤ 3 GHz) (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm,

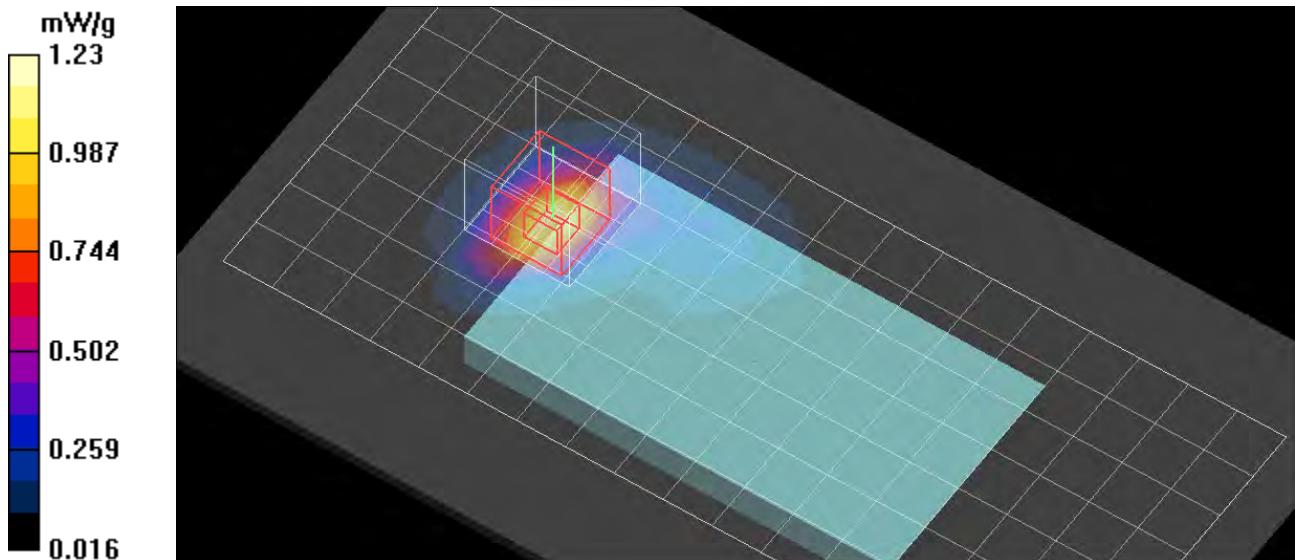
$dy=8$ mm, $dz=5$ mm

Reference Value = 21.0 V/m; Power Drift = 0.170 dB

Peak SAR (extrapolated) = 1.88 W/kg

SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.584 mW/g

Maximum value of SAR (measured) = 1.23 mW/g



Test Laboratory: Motorola Mobility 2450 MHz WiFi Mobile Hotspot - Back Surface

DUT: Serial: TA22300PPO, FCC ID: IHDP56ME4

Procedure Notes: 802.11b 1Mbps chn 11 Battery Model #: INTERNAL Test Configuration = Back Surface
10mm from Phantom

Communication System: Wi-Fi 2450; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: 2450 Glycol Body; Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.94 \text{ mho/m}$; $\epsilon_r = 50.8$; $\rho = 1000 \text{ kg/m}^3$

DASY4 Configuration:

- Probe: ES3DV3 - SN3115; ConvF(4.12, 4.12, 4.12); Calibrated: 1/12/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn434; Calibrated: 1/13/2011
- Phantom: R#-6, Triple Flat Phantom 5.1C (Rev.3); Type: QD 000 P51 CA; Serial: n/a;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Triple Flat Phone Template/Area Scan - Extended Phone (15mm) (18x9x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.121 mW/g

Triple Flat Phone Template/5x5x7 Zoom Scan ($\leq 3\text{GHz}$) (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$,

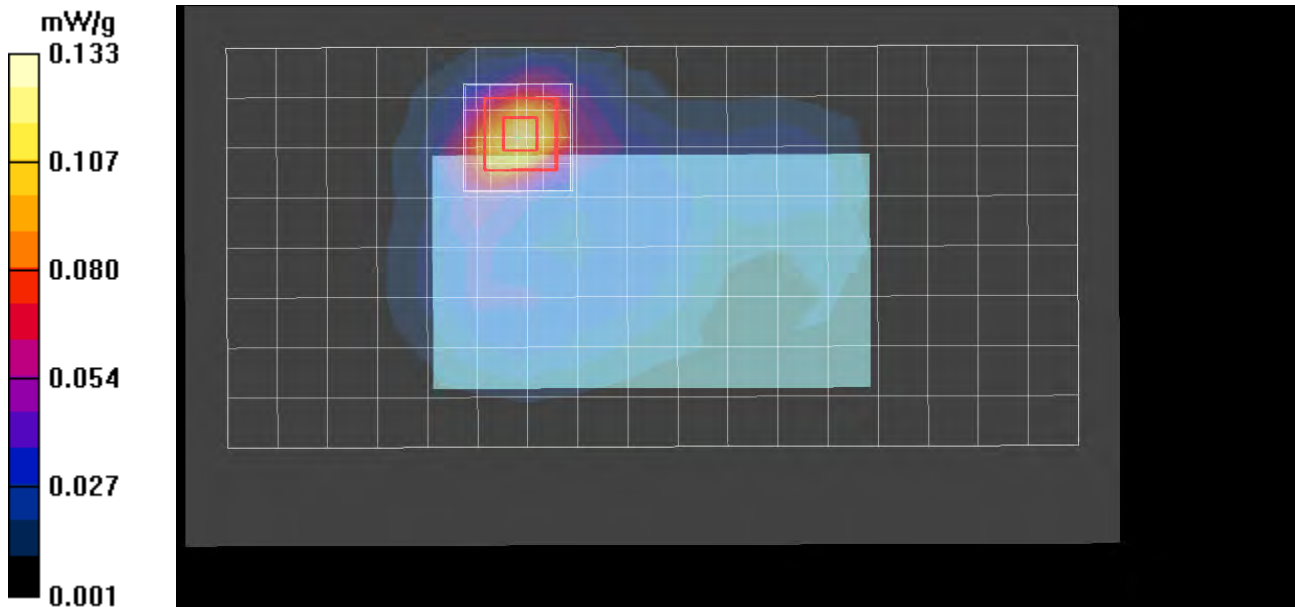
$dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 6.53 V/m; Power Drift = 0.006 dB

Peak SAR (extrapolated) = 0.240 W/kg

SAR(1 g) = 0.120 mW/g; SAR(10 g) = 0.060 mW/g

Maximum value of SAR (measured) = 0.133 mW/g



Appendix 6

Measurement Uncertainty Budget

Uncertainty Budget for Device Under Test, for 735 MHz to 2 GHz

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e = f(d,k)</i>	<i>f</i>	<i>g</i>	<i>h = c x f / e</i>	<i>i = c x g / e</i>	<i>k</i>
Uncertainty Component	Description IEEE1528(2003) / IEC62209-1(2005)	Tol. (± %)	Prob Dist	Div.	<i>c_i</i> (1 g)	<i>c_i</i> (10 g)	1 g <i>u_i</i> (±%)	10 g <i>u_i</i> (±%)	<i>v_i</i>
Measurement System									
Probe Calibration [ES3DV3]	E.2.1 / 7.2.1	5.5	N	1.00	1	1	5.5	5.5	∞
Axial Isotropy	E.2.2 / 7.2.1.2	4.7	R	1.73	0.707	0.707	1.9	1.9	∞
Hemispherical Isotropy	E.2.2 / 7.2.1.2	9.6	R	1.73	0.707	0.707	3.9	3.9	∞
Boundary Effect	E.2.3 / 7.2.1.5	1.0	R	1.73	1	1	0.6	0.6	∞
Linearity	E.2.4 / 7.2.1.3	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	E.2.5 / 7.2.1.4	1.0	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	E.2.6 / 7.2.1.6	0.3	N	1.00	1	1	0.3	0.3	∞
Response Time	E.2.7 / 7.2.1.7	1.1	R	1.73	1	1	0.6	0.6	∞
Integration Time	E.2.8 / 7.2.1.8	1.1	R	1.73	1	1	0.6	0.6	∞
RF Ambient Conditions - Noise	E.6.1 / 7.2.3.6	3.0	R	1.73	1	1	1.7	1.7	∞
RF Ambient Conditions - Reflections	E.6.1 / 7.2.3.6	3.0	R	1.73	1	1	1.7	1.7	∞
Probe Positioner Mech. Tolerance	E.6.2 / 7.2.2.1	0.4	R	1.73	1	1	0.2	0.2	∞
Probe Positioning w.r.t Phantom	E.6.3 / 7.2.2.3	1.4	R	1.73	1	1	0.8	0.8	∞
Max. SAR Evaluation (ext., int., avg.)	E.5 / 7.2.4	3.4	R	1.73	1	1	2.0	2.0	∞
Test sample Related									
Test Sample Positioning	E.4.2 / 7.2.2.4	3.4	N	1.00	1	1	3.4	3.4	79
Device Holder Uncertainty	E.4.1 / 7.2.2.4.2	4.5	N	1.00	1	1	4.5	4.5	11
SAR drift	6.6.2 / 7.2.3.5	0.0	R	1.73	1	1	0.0	0.0	∞
Phantom and Tissue Parameters									
Phantom Uncertainty	E.3.1 / 7.2.2.2	4.0	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity (target)	E.3.2 / 7.2.3.3	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity (measurement)	E.3.3 / 7.2.3.3	2.5	N	1.00	0.64	0.43	1.6	1.1	6
Liquid Permittivity (target)	E.3.2 / 7.2.3.4	5.0	R	1.73	0.6	0.49	1.7	1.4	∞
Liquid Permittivity (measurement)	E.3.2 / 7.2.3.4	2.3	N	1.00	0.6	0.49	1.4	1.1	6
Combined Standard Uncertainty			RSS				11	11	338
Expanded Uncertainty (95% CONFIDENCE LEVEL)			<i>k</i> =2				22	21	

Uncertainty Budget for Device Under Test, for 2 GHz to 3 GHz

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e = f(d,k)</i>	<i>f</i>	<i>g</i>	<i>h = c x f / e</i>	<i>i = c x g / e</i>	<i>k</i>
Uncertainty Component	Description IEEE1528(2003) / IEC62209-1(2005)	Tol. (± %)	Prob Dist	Div.	<i>c_i</i> (1 g)	<i>c_i</i> (10 g)	1 g <i>u_i</i> (±%)	10 g <i>u_i</i> (±%)	<i>v_i</i>
Measurement System									
Probe Calibration [ES3DV3]	E.2.1 / 7.2.1	5.5	N	1.00	1	1	5.5	5.5	∞
Axial Isotropy	E.2.2 / 7.2.1.2	4.7	R	1.73	0.707	0.707	1.9	1.9	∞
Hemispherical Isotropy	E.2.2 / 7.2.1.2	9.6	R	1.73	0.707	0.707	3.9	3.9	∞
Boundary Effect	E.2.3 / 7.2.1.5	1.0	R	1.73	1	1	0.6	0.6	∞
Linearity	E.2.4 / 7.2.1.3	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	E.2.5 / 7.2.1.4	1.0	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	E.2.6 / 7.2.1.6	0.3	N	1.00	1	1	0.3	0.3	∞
Response Time	E.2.7 / 7.2.1.7	1.1	R	1.73	1	1	0.6	0.6	∞
Integration Time	E.2.8 / 7.2.1.8	1.1	R	1.73	1	1	0.6	0.6	∞
RF Ambient Conditions - Noise	E.6.1 / 7.2.3.6	3.0	R	1.73	1	1	1.7	1.7	∞
RF Ambient Conditions - Reflections	E.6.1 / 7.2.3.6	3.0	R	1.73	1	1	1.7	1.7	∞
Probe Positioner Mech. Tolerance	E.6.2 / 7.2.2.1	0.4	R	1.73	1	1	0.2	0.2	∞
Probe Positioning w.r.t Phantom	E.6.3 / 7.2.2.3	1.4	R	1.73	1	1	0.8	0.8	∞
Max. SAR Evaluation (ext., int., avg.)	E.5 / 7.2.4	3.4	R	1.73	1	1	2.0	2.0	∞
Test sample Related									
Test Sample Positioning	E.4.2 / 7.2.2.4	3.4	N	1.00	1	1	3.4	3.4	79
Device Holder Uncertainty	E.4.1 / 7.2.2.4.2	4.5	N	1.00	1	1	4.5	4.5	11
SAR drift	6.6.2 / 7.2.3.5	0.0	R	1.73	1	1	0.0	0.0	∞
Phantom and Tissue Parameters									
Phantom Uncertainty	E.3.1 / 7.2.2.2	4.0	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity (target)	E.3.2 / 7.2.3.3	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity (measurement)	E.3.3 / 7.2.3.3	2.5	N	1.00	0.64	0.43	1.6	1.1	6
Liquid Permittivity (target)	E.3.2 / 7.2.3.4	10.0	R	1.73	0.6	0.49	3.5	2.8	∞
Liquid Permittivity (measurement)	E.3.2 / 7.2.3.4	2.3	N	1.00	0.6	0.49	1.4	1.1	6
Combined Standard Uncertainty			RSS				11	11	392
Expanded Uncertainty (95% CONFIDENCE LEVEL)			<i>k</i> =2				22	22	

Appendix 7

Probe Calibration Certificate



Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client **Motorola MDb**

Certificate No: **ES3-3115_Jan11**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3115**

Calibration procedure(s) **QA CAL-01.v7, QA CAL-23.v4 and QA CAL-25.v3
Calibration procedure for dosimetric E-field probes**

Calibration date: **January 12, 2011**

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 $(22 \pm 3)^\circ\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41283874	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41495277	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41498087	1-Apr-10 (No. 217-01136)	Apr-11
Reference 3 dB Attenuator	SN: S5054 (3c)	30-Mar-10 (No. 217-01150)	Mar-11
Reference 20 dB Attenuator	SN: S5086 (20b)	30-Mar-10 (No. 217-01161)	Mar-11
Reference 30 dB Attenuator	SN: S5129 (30b)	30-Mar-10 (No. 217-01160)	Mar-11
Reference Probe ES3DV2	SN: 3013	29-Dec-10 (No. ES3-3013_Dec10)	Dec-11
DAE4	SN: 660	20-Apr-10 (No. DAE4-660_Apr10)	Apr-11
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390685	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

Calibrated by:	Name Jeton Kasirali	Function Laboratory Technician	Signature
Approved by:	Name Katja Pokovic	Function Technical Manager	Signature

Issued: January 13, 2011

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



Accredited by the Swiss Accreditation Service (SAS)
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Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}:** Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not effect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(ϑ)_{x,y,z} = NORM_{x,y,z} * frequency_response** (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP_{x,y,z}:** DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; VR_{x,y,z}:** A, B, C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters:** Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy):** in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset:** The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe ES3DV3

SN:3115

Manufactured:	March 6, 2006
Last calibrated:	January 19, 2010
Recalibrated:	January 12, 2011

Calibrated for DASY/EASY Systems

(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: ES3DV3 SN:3115**Basic Calibration Parameters**

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	1.29	1.30	1.18	$\pm 10.1\%$
DCP (mV) ^B	100.2	102.3	101.3	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc ^C (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	113.4	$\pm 2.4\%$
			Y	0.00	0.00	1.00	150.5	
			Z	0.00	0.00	1.00	142.6	

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 The uncertainties of NormX, Y, Z do not affect the E²-field uncertainty inside TSI. (see Pages 5 and 6).

^B Numerical linearization parameter; uncertainty not required.

^C Uncertainty is determined using the maximum deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: ES3DV3 SN:3115

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz)	Validity (MHz)^c	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
835	± 50 / ± 100	41.5 ± 5%	0.90 ± 5%	5.87	5.87	5.87	0.34	1.74 ± 11.0%
1810	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	5.02	5.02	5.02	0.43	1.62 ± 11.0%
1950	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.80	4.80	4.80	0.62	1.36 ± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	4.39	4.39	4.39	0.94	1.13 ± 11.0%

^c The validity of ± 100 MHz only applies for DASY v1.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

DASY/EASY - Parameters of Probe: ES3DV3 SN:3115

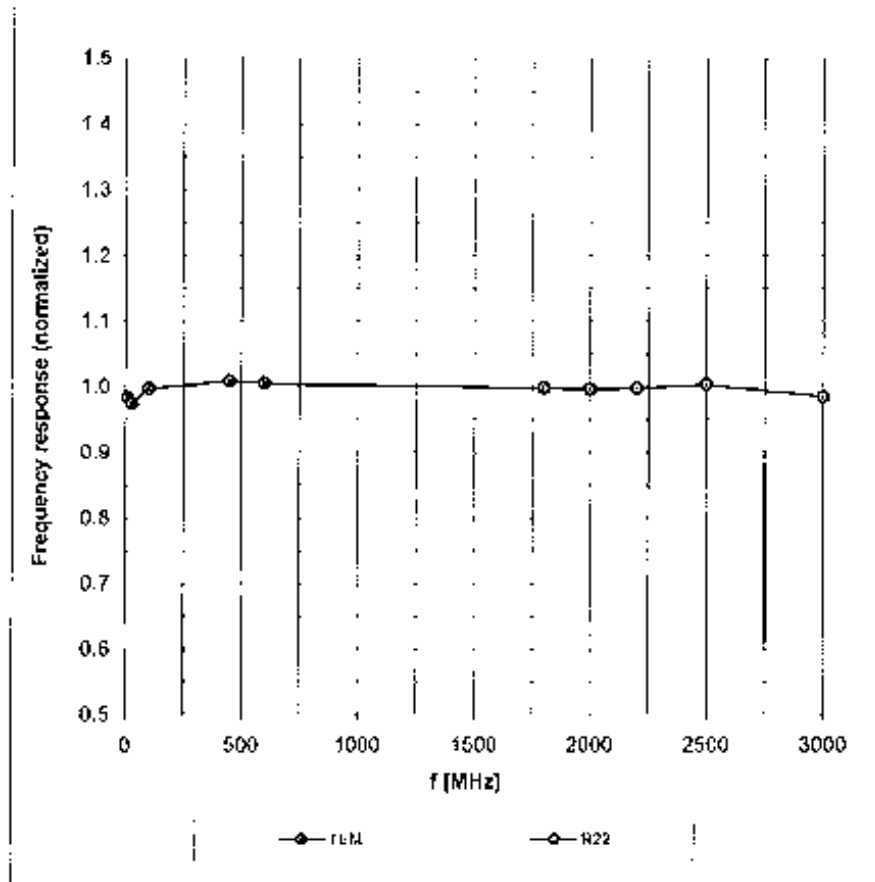
Calibration Parameter Determined in Body Tissue Simulating Media

f [MHz]	Validity [MHz] ^c	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
835	± 50 / ± 100	55.2 ± 5%	0.97 ± 5%	5.88	5.88	5.88	0.57	1.41 ± 11.0%
1810	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.61	4.61	4.61	0.33	2.26 ± 11.0%
1950	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.57	4.57	4.57	0.36	2.19 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	4.12	4.12	4.12	0.99	0.75 ± 11.0%

^c The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

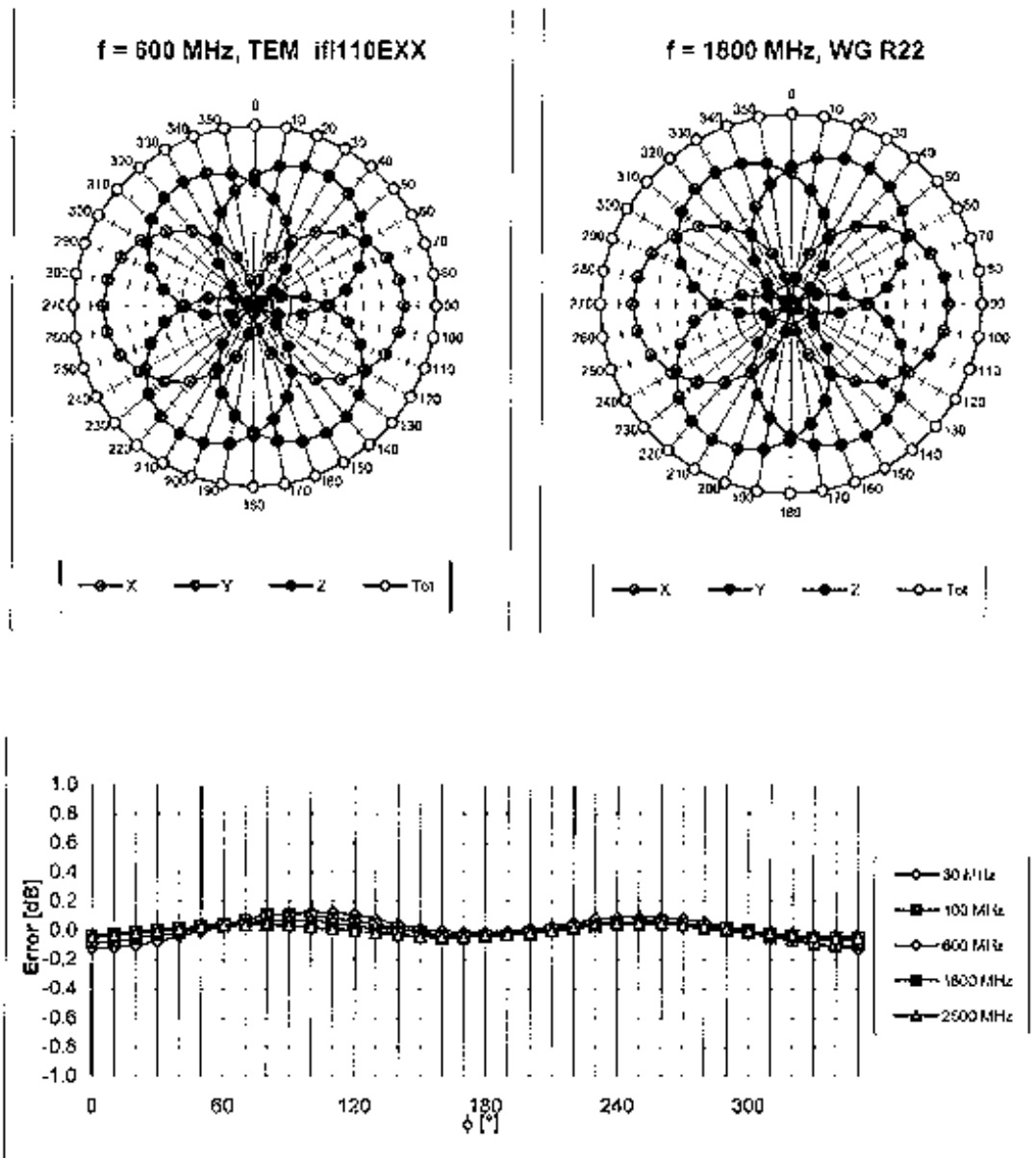
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

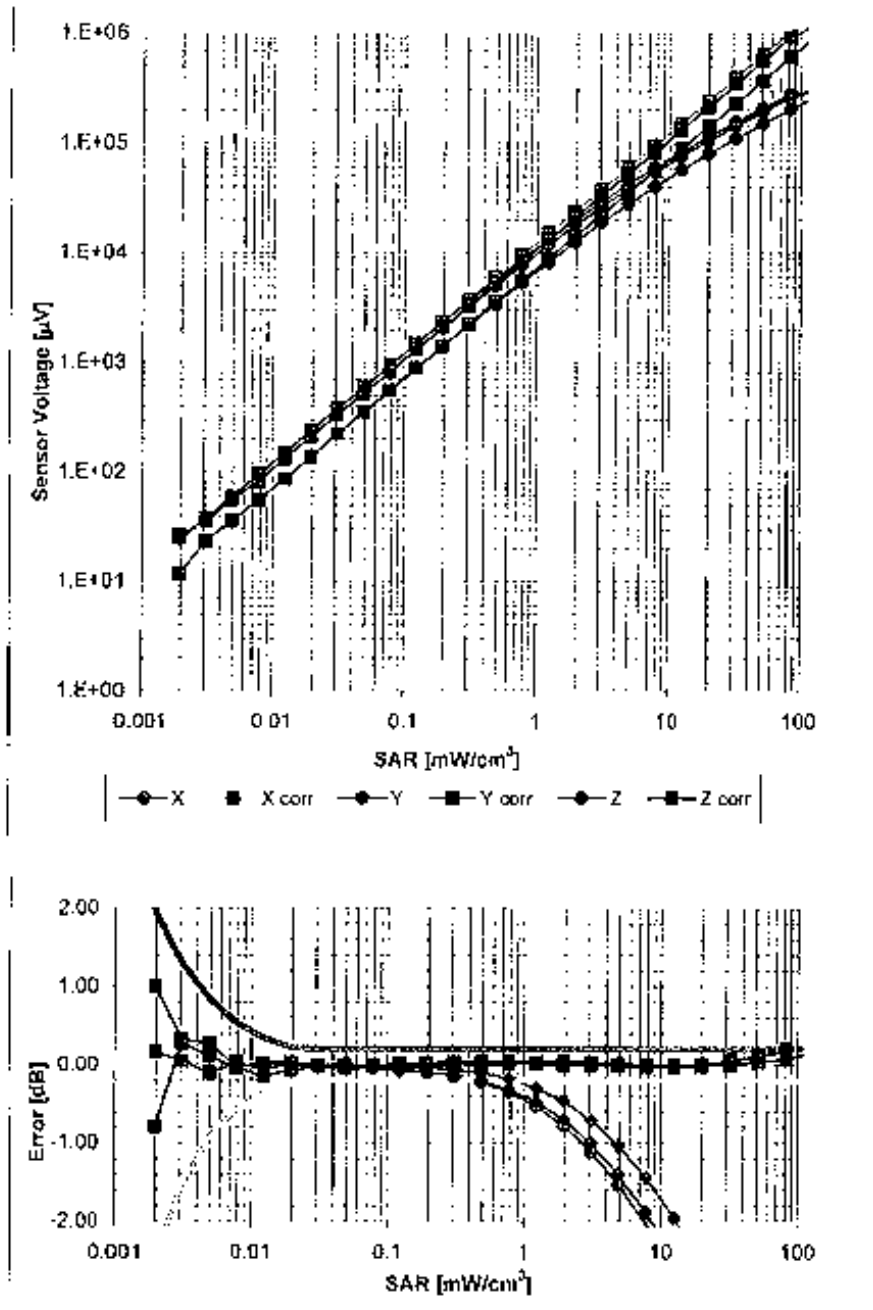
Receiving Pattern (ϕ), $\theta = 0^\circ$



Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

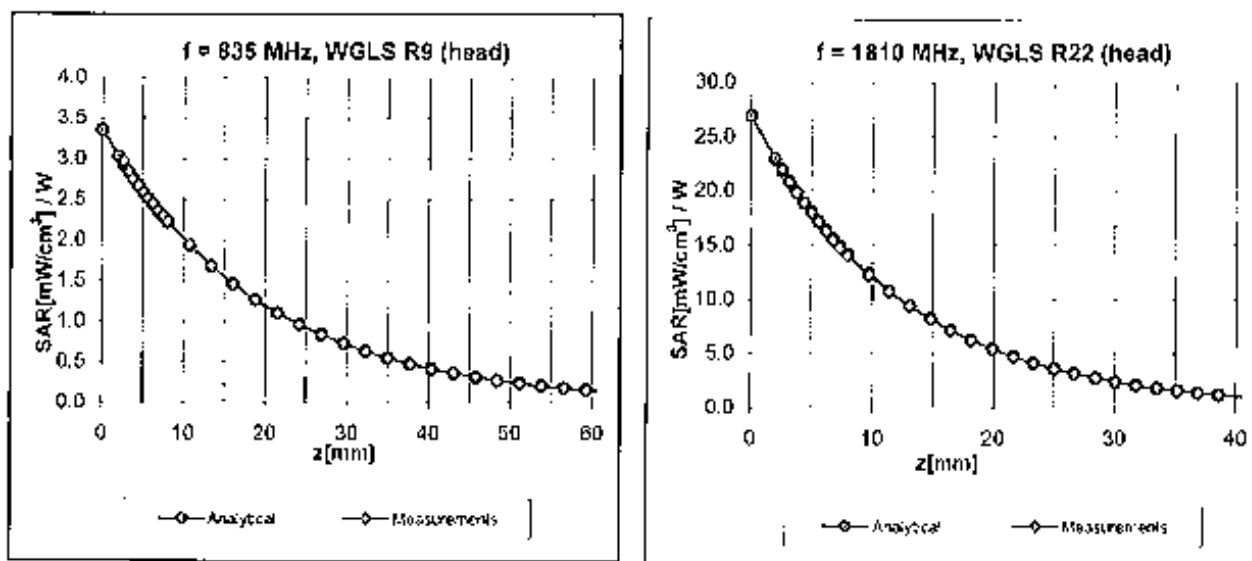
Dynamic Range f(SAR_{head})

(TEM cell, f = 900 MHz)



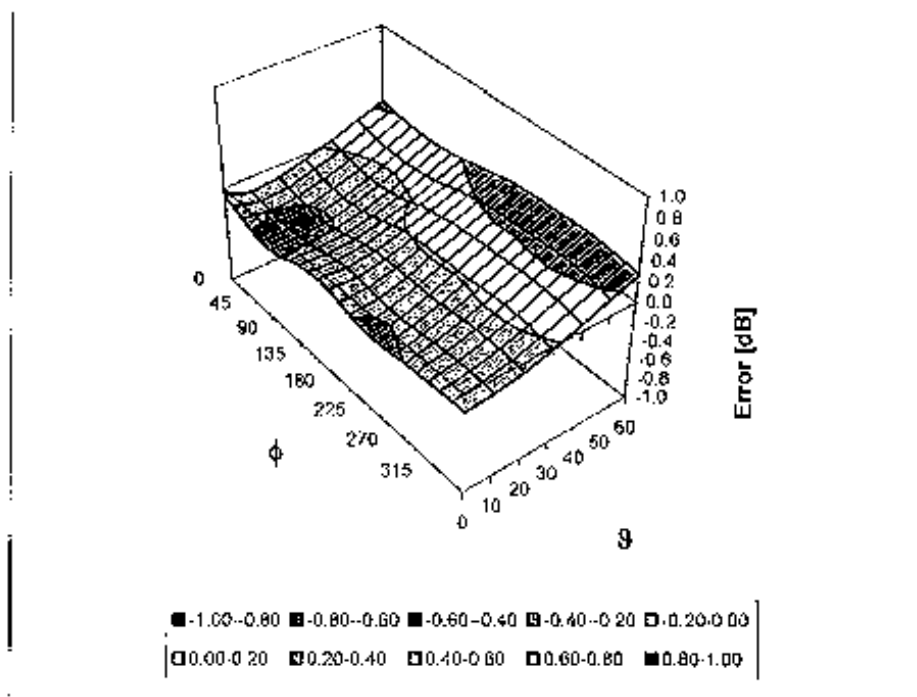
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



Deviation from Isotropy in HSL

Error (ϕ, θ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: $\pm 2.8\%$ (k=2)

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	Not applicable
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Motorola MDB**

Certificate No: **ES3-3184_Mar11**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3184**

Calibration procedure(s) **QA CAL-01.v7, QA CAL-23.v4, QA CAL-25.v3
Calibration procedure for dosimetric E-field probes**

Calibration date: **March 11, 2011**

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 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	01-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41495277	01-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41498087	01-Apr-10 (No. 217-01136)	Apr-11
Reference 3 dB Attenuator	SN: S5054 (3c)	30-Mar-10 (No. 217-01159)	Mar-11
Reference 20 dB Attenuator	SN: S5086 (20b)	30-Mar-10 (No. 217-01161)	Mar-11
Reference 30 dB Attenuator	SN: S5129 (30b)	30-Mar-10 (No. 217-01160)	Mar-11
Reference Probe ES3DV2	SN: 3013	29-Dec-10 (No. ES3-3013_Dec10)	Dec-11
DAE4	SN: 654	23-Apr-10 (No. DAE4-654_Apr10)	Apr-11
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: March 16, 2011

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Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z}** = NORM_{x,y,z} * frequency_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}** are numerical linearization parameters in dB assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media.
- VR**: VR is the validity range of the calibration related to the average diode voltage or DAE voltage in mV.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe ES3DV3

SN:3184

Manufactured: August 19, 2008
Calibrated: March 11, 2011

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3184

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V/m})^2$) ^A	1.27	1.40	1.27	$\pm 10.1\%$
DCP (mV) ^B	96.8	98.9	99.5	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc ^E (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	110.8	$\pm 3.0\%$
			Y	0.00	0.00	1.00	117.2	
			Z	0.00	0.00	1.00	107.9	

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 The uncertainties of NormX,Y,Z do not affect the E^2 -field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3184

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^c	Relative Permittivity ^f	Conductivity (S/m) ^f	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	41.5	0.90	6.11	6.11	6.11	1.00	1.04	± 12.0 %
1810	40.0	1.40	5.11	5.11	5.11	0.93	1.08	± 12.0 %
1950	40.0	1.40	4.93	4.93	4.93	0.96	1.07	± 12.0 %
2450	39.2	1.80	4.48	4.48	4.48	0.73	1.28	± 12.0 %

^c Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^f At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: ES3DV3- SN:3184

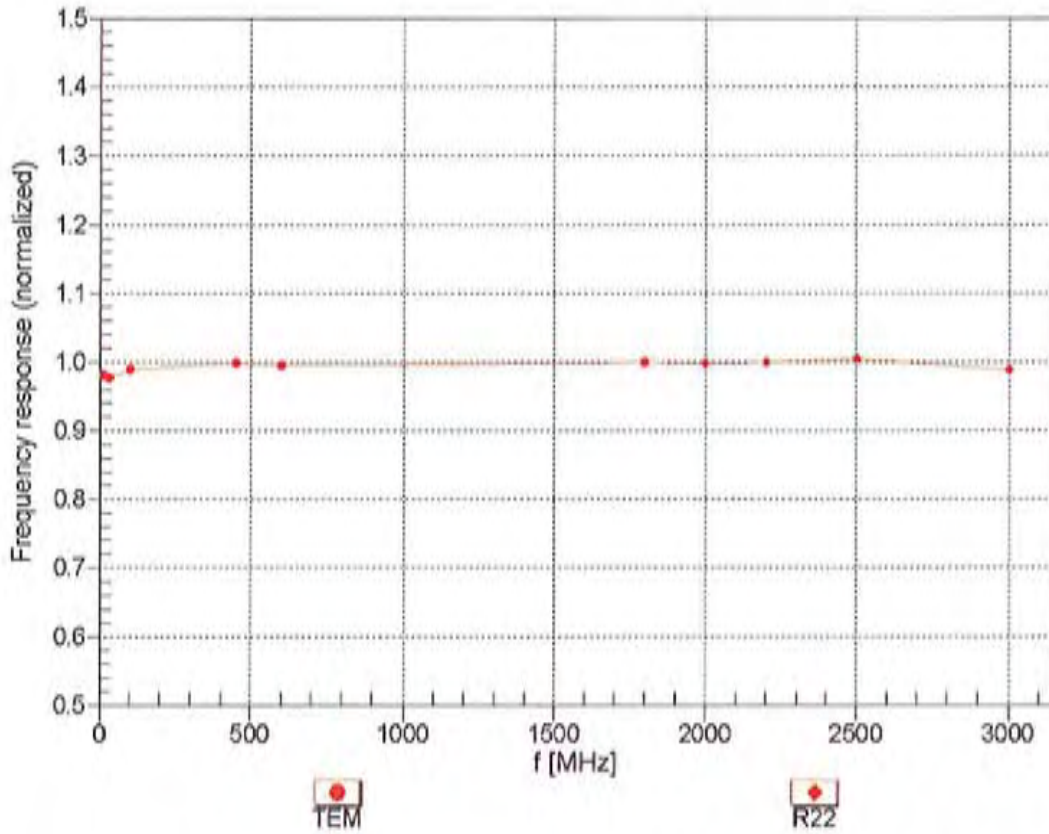
Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^G	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	6.10	6.10	6.10	1.00	1.00	± 12.0 %
1810	53.3	1.52	4.90	4.90	4.90	0.87	1.26	± 12.0 %
1950	53.3	1.52	4.86	4.86	4.86	0.73	1.38	± 12.0 %
2450	52.7	1.95	4.33	4.33	4.33	1.00	1.03	± 12.0 %

^G Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

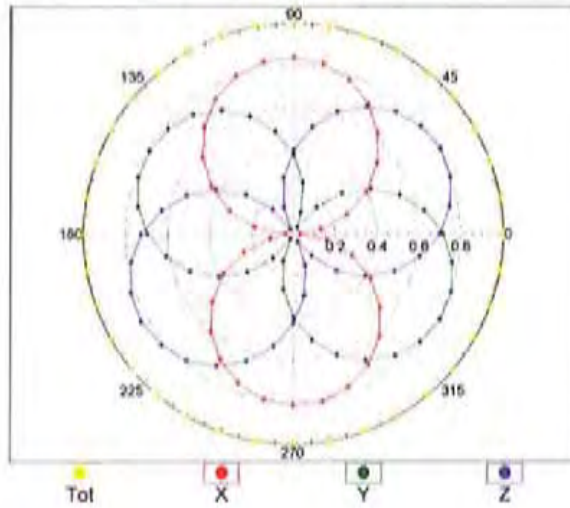
Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)



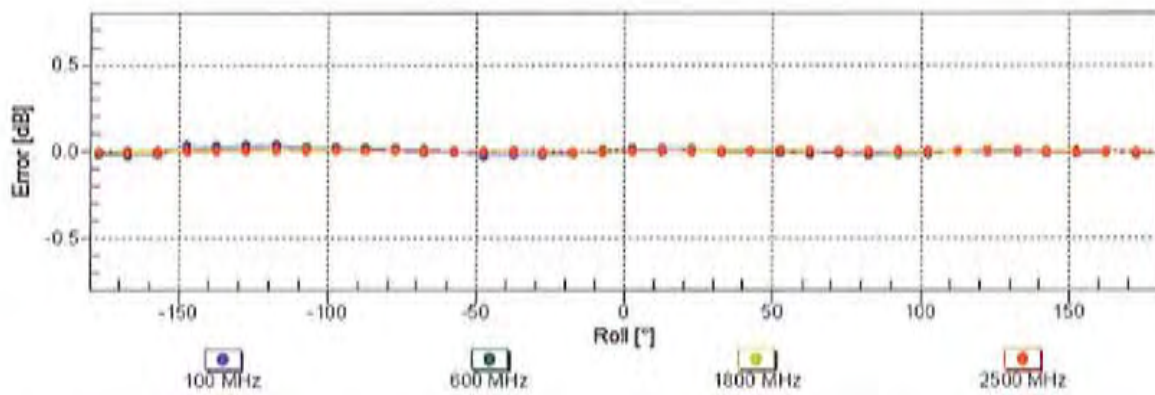
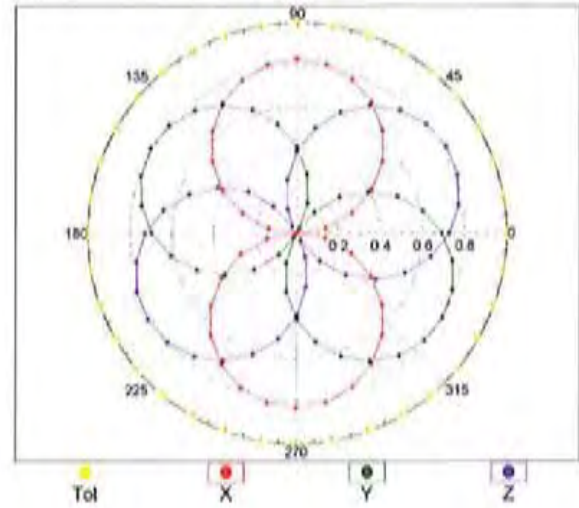
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

Receiving Pattern (ϕ), $\theta = 0^\circ$

f=600 MHz,TEM

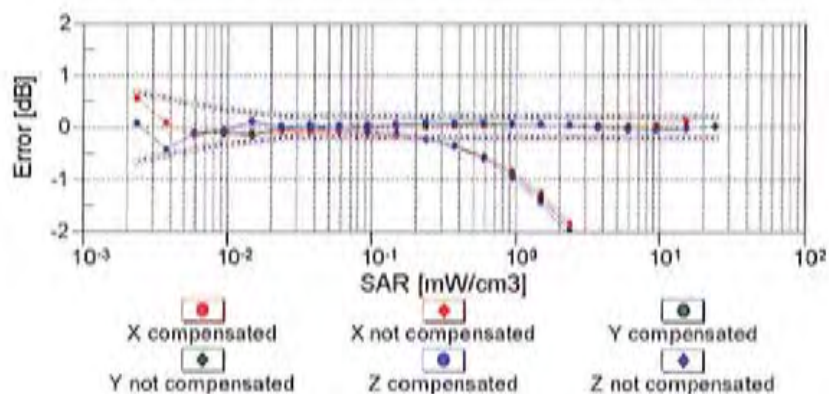
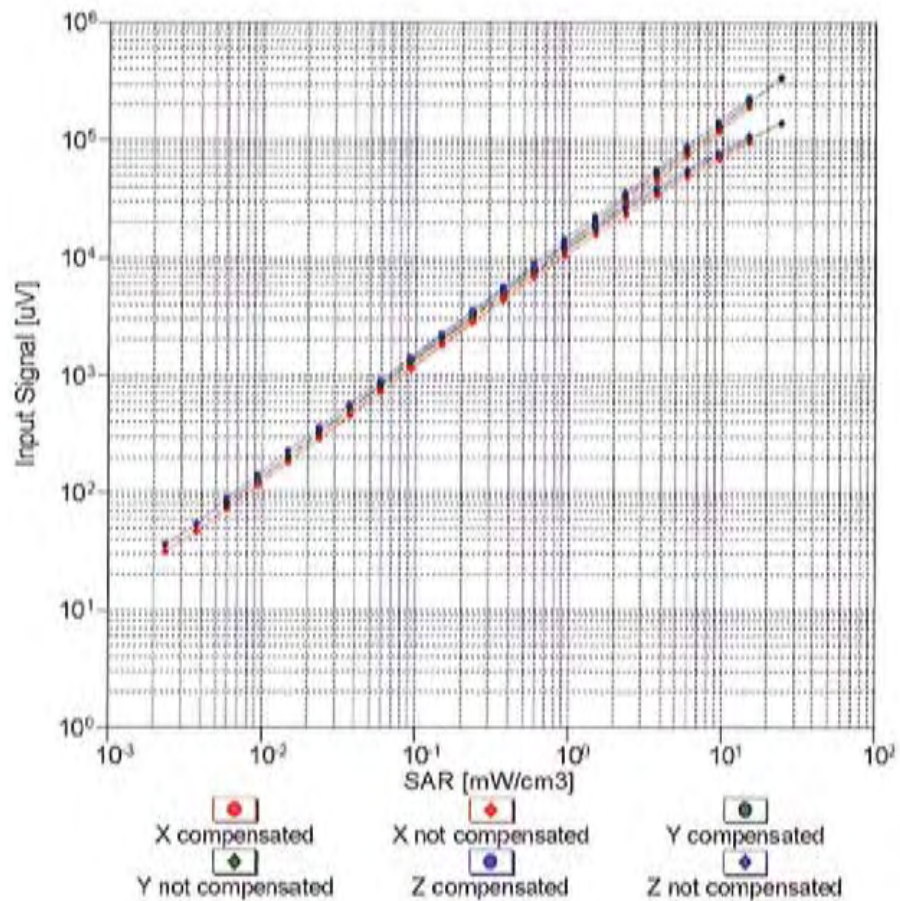


f=1800 MHz,R22



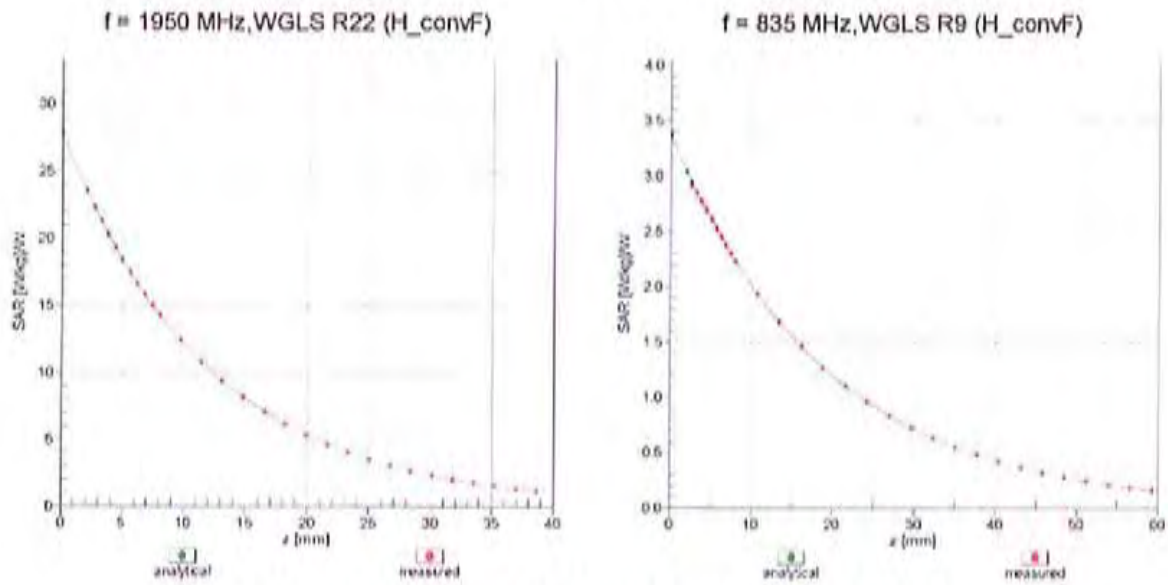
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

Dynamic Range f(SAR_{head}) (TEM cell , f = 900 MHz)

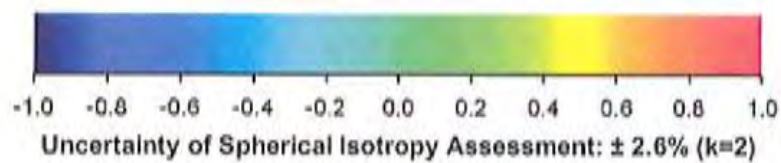
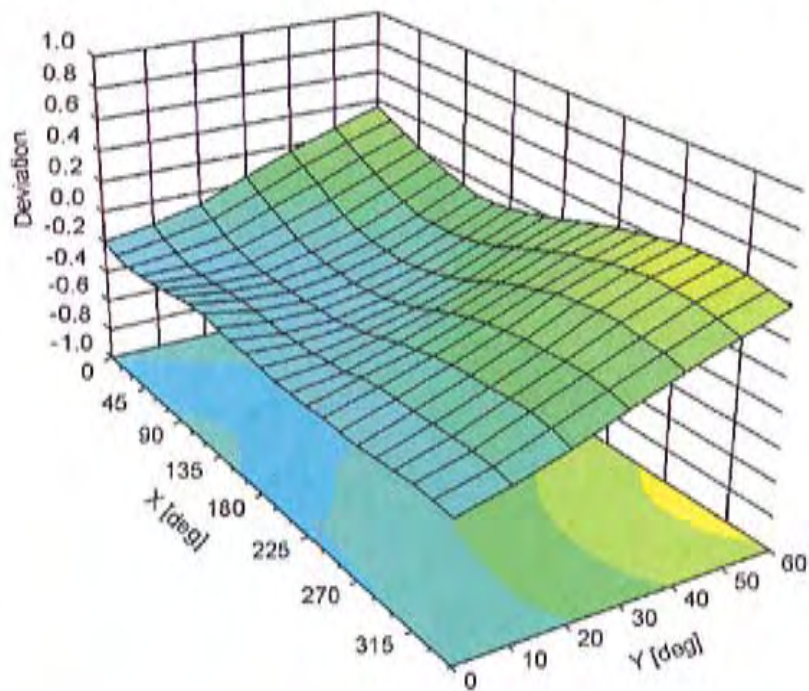


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



Deviation from Isotropy in Liquid Error (ϕ, θ), f = 900 MHz



DASY/EASY - Parameters of Probe: ES3DV3 - SN:3184**Other Probe Parameters**

Sensor Arrangement	Triangular
Connector Angle (°)	Not applicable
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm