

DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:4.15
 Medium parameters used: $f = 836.6 \text{ MHz}$; $\sigma = 0.991 \text{ mho/m}$; $\epsilon_r = 55.3$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3643; ConvF(8.97, 8.97, 8.97); Calibrated: 2011-01-24; Electronics: DAE3 Sn519
 Phantom: SAM with 835MHz; Type: SAM; Serial: TP-1223
 Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-10; Ambient Temp: 22.0; Tissue Temp: 22.5

2cm space from Body, Front, GSM850 GPRS Class 10 Ch. 190, Ant Internal

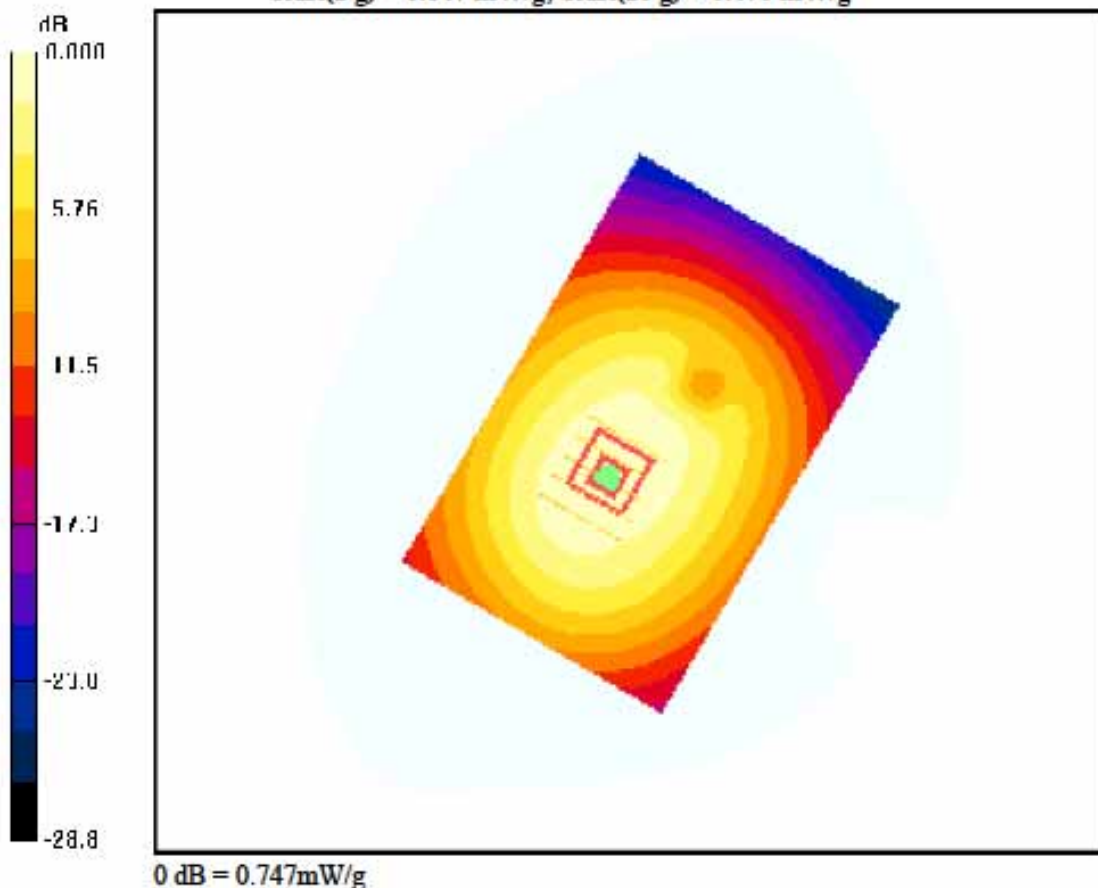
Area Scan (71x111x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Power Drift = 0.020 dB

Peak SAR (extrapolated) = 0.866 W/kg

SAR(1 g) = 0.647 mW/g; SAR(10 g) = 0.470 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:2.075
Medium parameters used: $f = 836.6 \text{ MHz}$; $\sigma = 0.991 \text{ mho/m}$; $\epsilon_r = 55.3$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3643; ConvF(8.97, 8.97, 8.97); Calibrated: 2011-01-24; Electronics: DAE3 Sn519
Phantom: SAM with 835MHz; Type: SAM; Serial: TP-1223
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

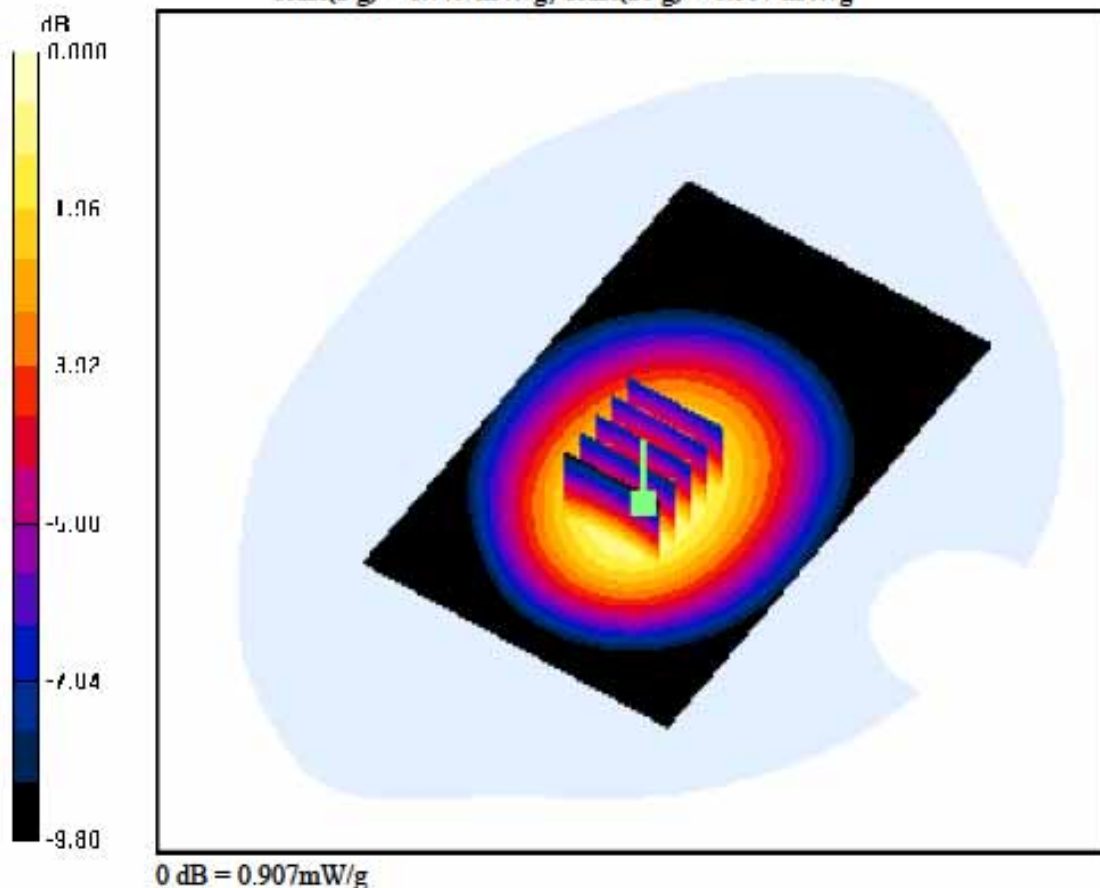
Test Date: 2011-02-10; Ambient Temp: 22.0; Tissue Temp: 22.5

2cm space from Body, Rear, GSM850 EDGE Class 12 Ch. 190, Ant Internal**Area Scan (71x111x1):** Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$ **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Power Drift = -0.188 dB

Peak SAR (extrapolated) = 1.05 W/kg

SAR(1 g) = 0.779 mW/g; SAR(10 g) = 0.557 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.57 \text{ mho/m}$; $\epsilon_r = 53.4$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3643; ConvF(7.19, 7.19, 7.19); Calibrated: 2011-01-24; Electronics: DAE3 Sn519
Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-11; Ambient Temp: 22.5; Tissue Temp: 22.8

2cm space from Body, Rear, PCS1900 Ch. 661, Ant Internal

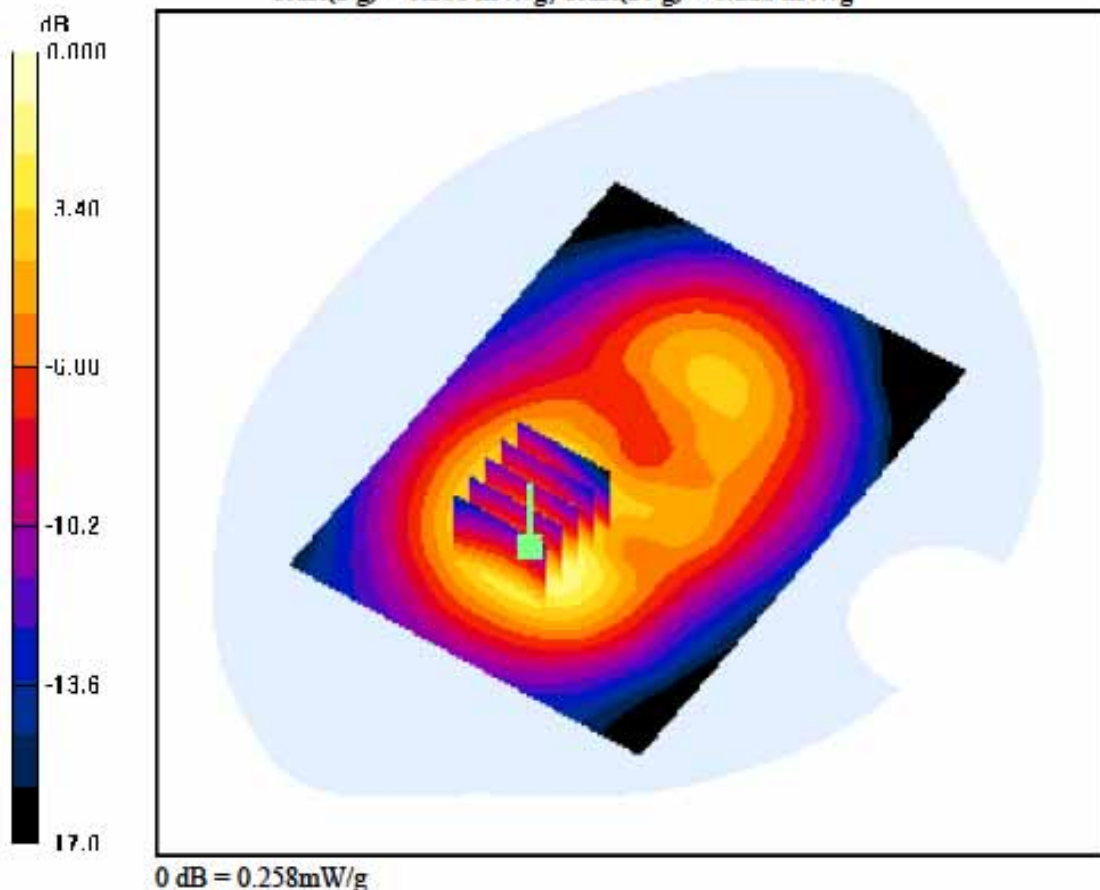
Area Scan (81x111x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Power Drift = 0.143 dB

Peak SAR (extrapolated) = 0.319 W/kg

SAR(1 g) = 0.206 mW/g; SAR(10 g) = 0.126 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.57 \text{ mho/m}$; $\epsilon_r = 53.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section**DASY4 Configuration:**

Probe: EX3DV4 - SN3643; ConvF(7.19, 7.19, 7.19); Calibrated: 2011-01-24; Electronics: DAE3 Sn519

Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-11; Ambient Temp: 22.5; Tissue Temp: 22.8

2cm space from Body, Rear, PCS1900 GPRS Class 8 Ch. 661, Ant Internal

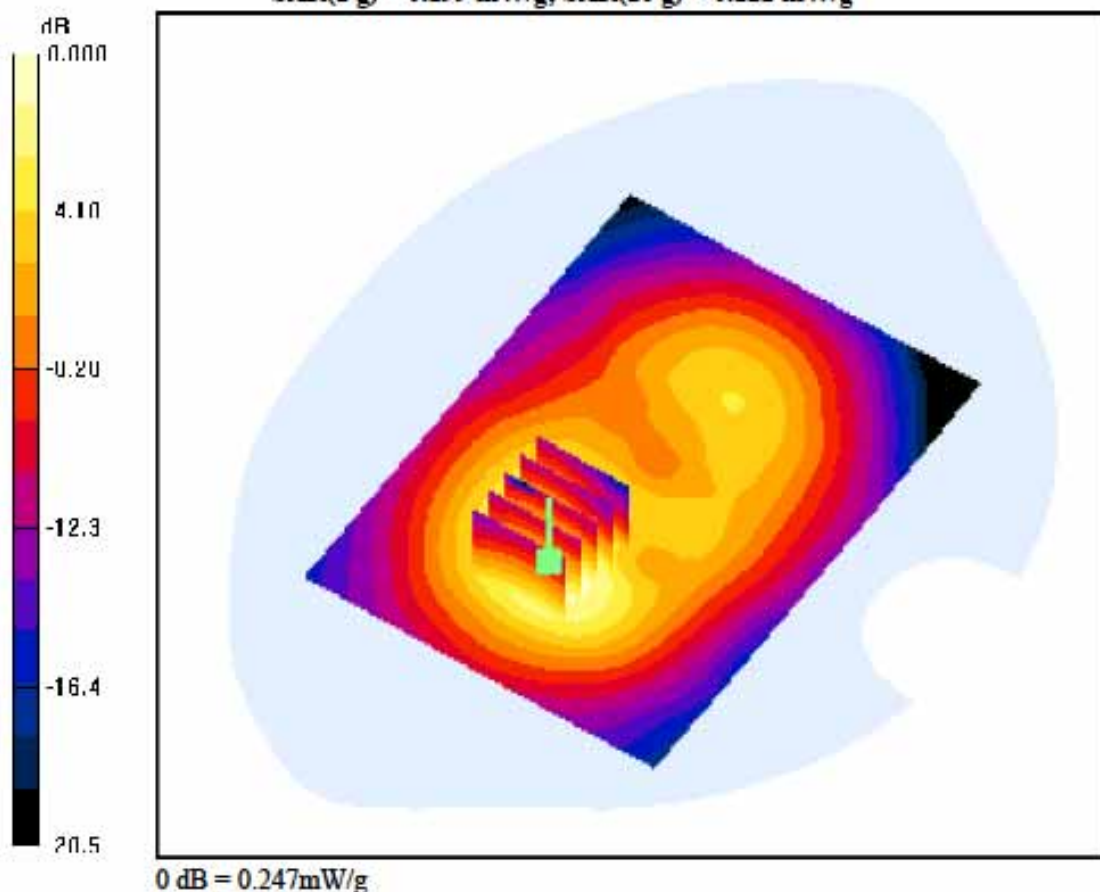
Area Scan (81x111x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Power Drift = 0.261 dB

Peak SAR (extrapolated) = 0.308 W/kg

SAR(1 g) = 0.199 mW/g; SAR(10 g) = 0.122 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:4.15
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.57$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section**DASY4 Configuration:**

Probe: EX3DV4 - SN3643; ConvF(7.19, 7.19, 7.19); Calibrated: 2011-01-24; Electronics: DAE3 Sn519

Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-11; Ambient Temp: 22.5; Tissue Temp: 22.8

2cm space from Body, Rear, PCS1900 GPRS Class 10 Ch. 661, Ant Internal

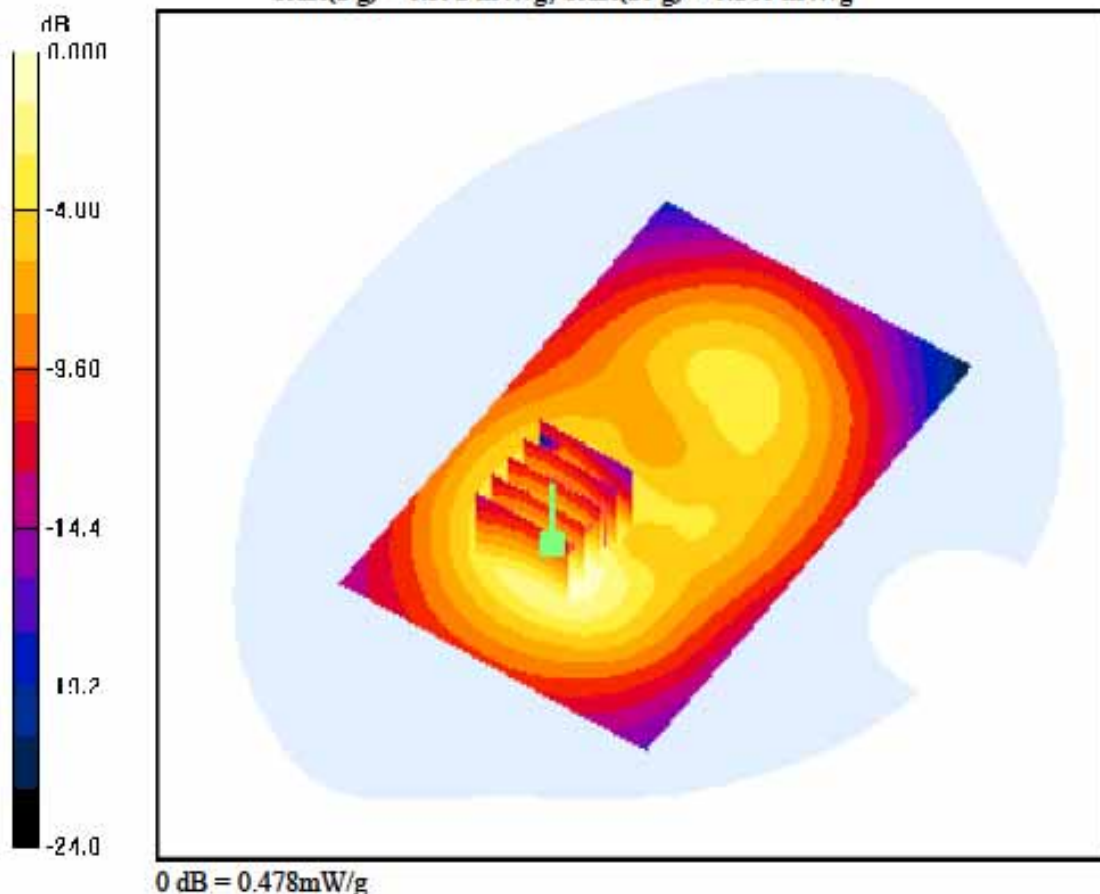
Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Power Drift = 0.132 dB

Peak SAR (extrapolated) = 0.606 W/kg

SAR(1 g) = 0.392 mW/g; SAR(10 g) = 0.240 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:2.77
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.57$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section**DASY4 Configuration:**

Probe: EX3DV4 - SN3643; ConvF(7.19, 7.19, 7.19); Calibrated: 2011-01-24; Electronics: DAE3 Sn519

Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-11; Ambient Temp: 22.5; Tissue Temp: 22.8

2cm space from Body, Rear, PCS1900 GPRS Class 11 Ch. 661, Ant Internal

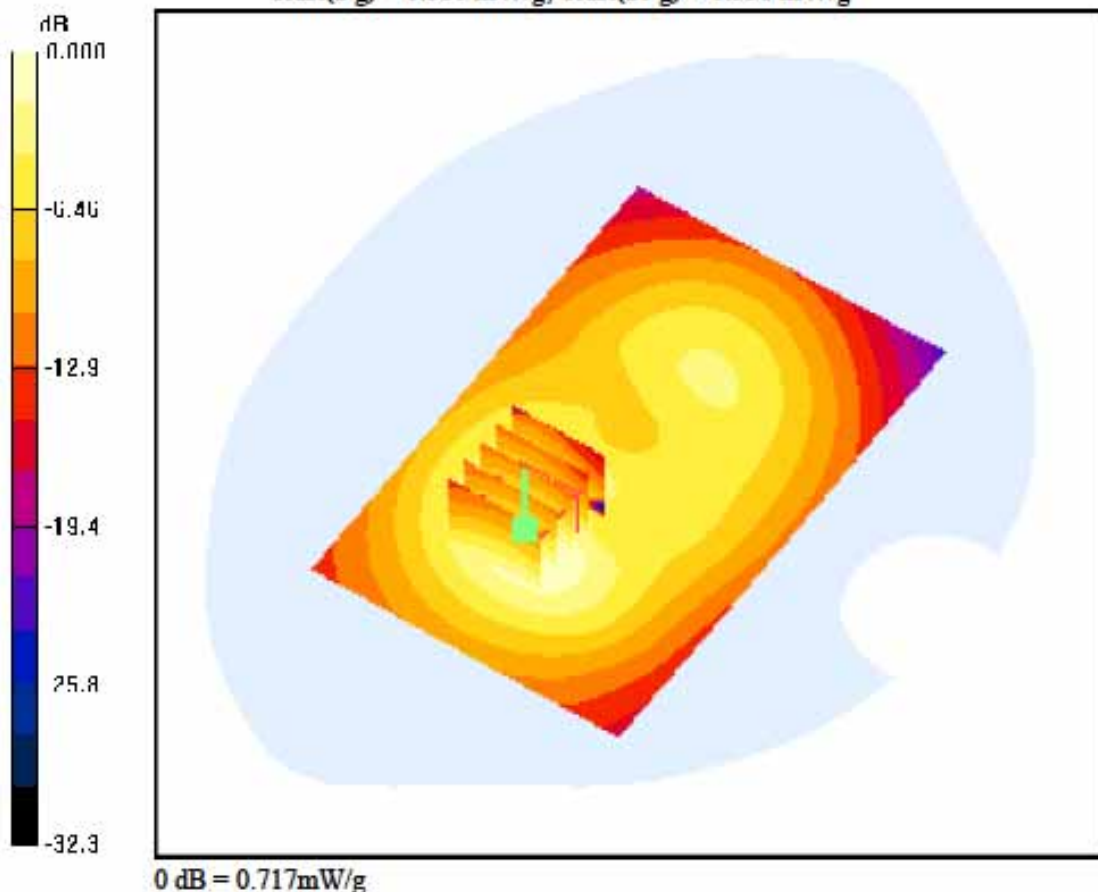
Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Power Drift = 0.014 dB

Peak SAR (extrapolated) = 0.883 W/kg

SAR(1 g) = 0.580 mW/g; SAR(10 g) = 0.356 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: PCS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:2.075
Medium parameters used: $f = 1850.2 \text{ MHz}$; $\sigma = 1.57 \text{ mho/m}$; $\epsilon_r = 53.3$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3643; ConvF(7.19, 7.19, 7.19); Calibrated: 2011-01-24; Electronics: DAE3 Sn519
Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-11; Ambient Temp: 22.5; Tissue Temp: 22.8

2cm space from Body, Rear, PCS1900 GPRS Class 12 Ch. 512, Ant Internal

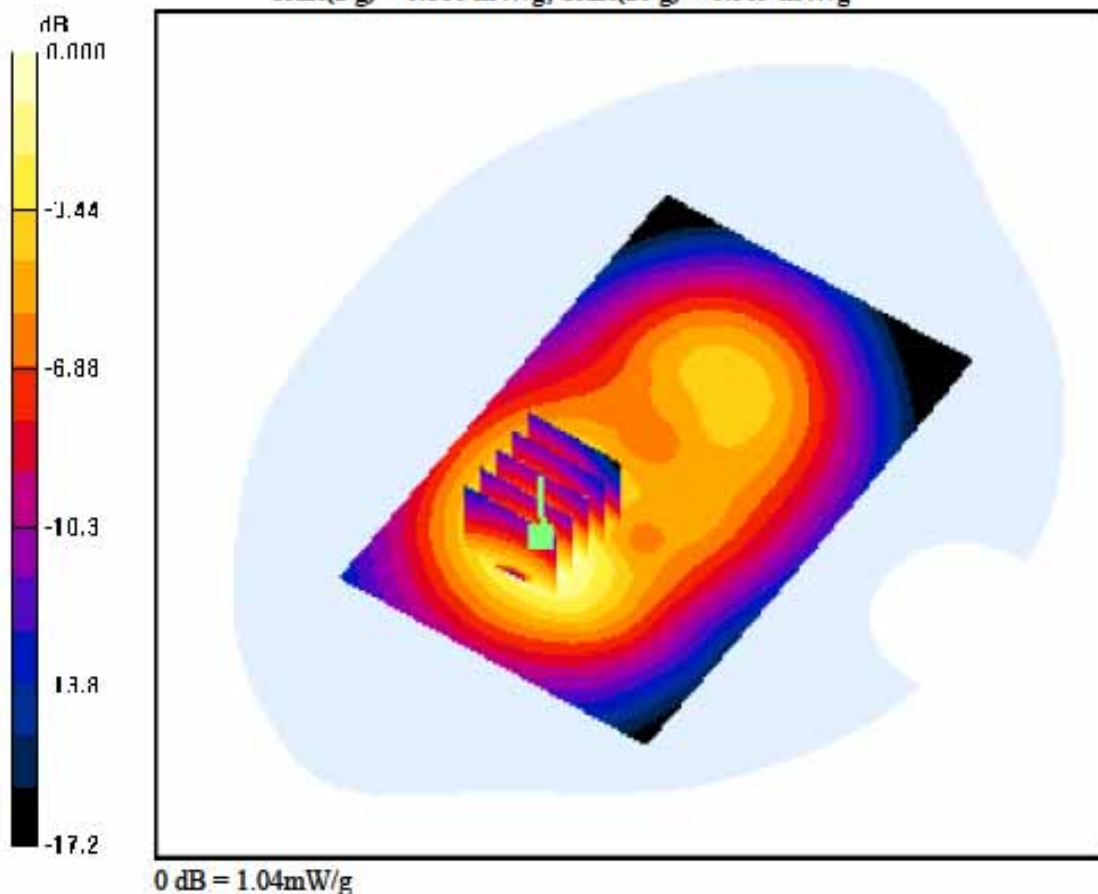
Area Scan (71x111x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Power Drift = -0.086 dB

Peak SAR (extrapolated) = 1.32 W/kg

SAR(1 g) = 0.860 mW/g; SAR(10 g) = 0.509 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:2.075
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.57 \text{ mho/m}$; $\epsilon_r = 53.4$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3643; ConvF(7.19, 7.19, 7.19); Calibrated: 2011-01-24; Electronics: DAE3 Sn519
Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-11; Ambient Temp: 22.5; Tissue Temp: 22.8

2cm space from Body, Rear, PCS1900 GPRS Class 12 Ch. 661, Ant Internal

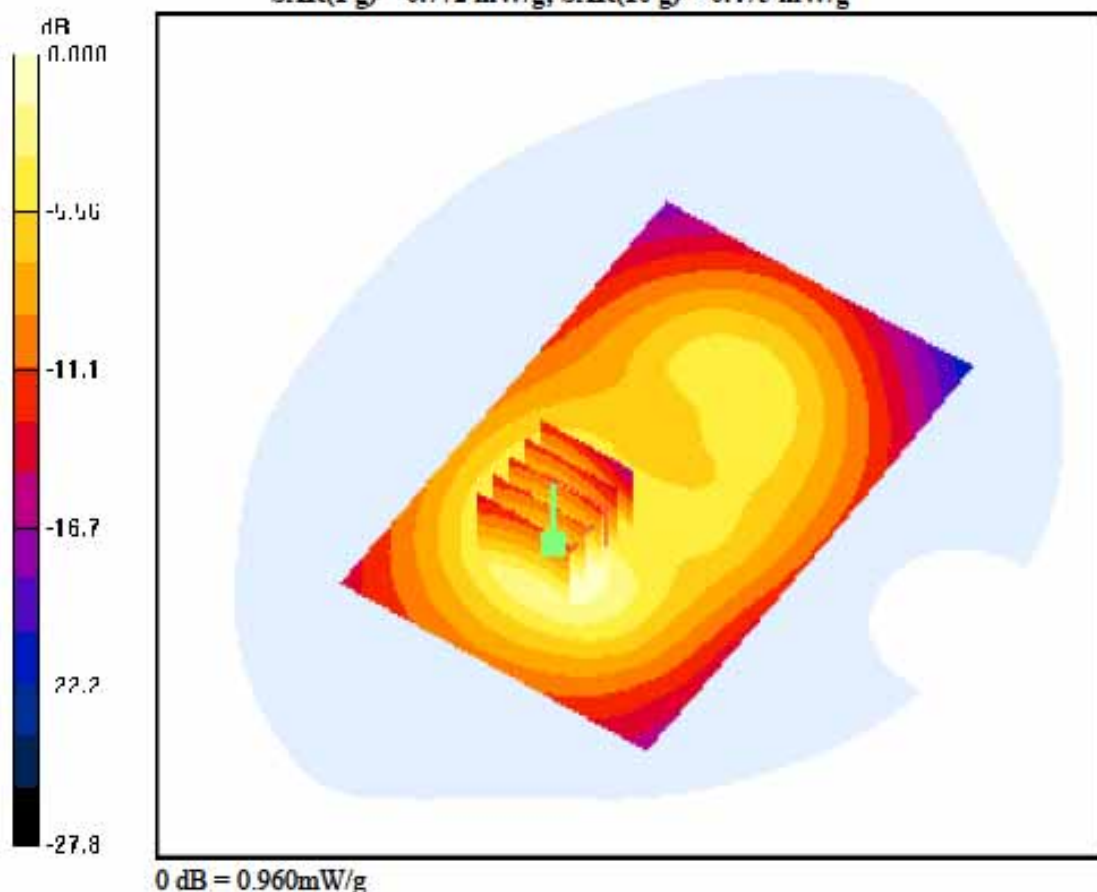
Area Scan (71x111x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Power Drift = -0.225 dB

Peak SAR (extrapolated) = 1.25 W/kg

SAR(1 g) = 0.772 mW/g; SAR(10 g) = 0.475 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: PCS1900; Frequency: 1909.8 MHz; Duty Cycle: 1:2.075
Medium parameters used: $f = 1909.8 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 53.8$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3643; ConvF(7.19, 7.19, 7.19); Calibrated: 2011-01-24; Electronics: DAE3 Sn519
Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-11; Ambient Temp: 22.5; Tissue Temp: 22.8

2cm space from Body, Rear, PCS1900 GPRS Class 12 Ch. 810, Ant Internal

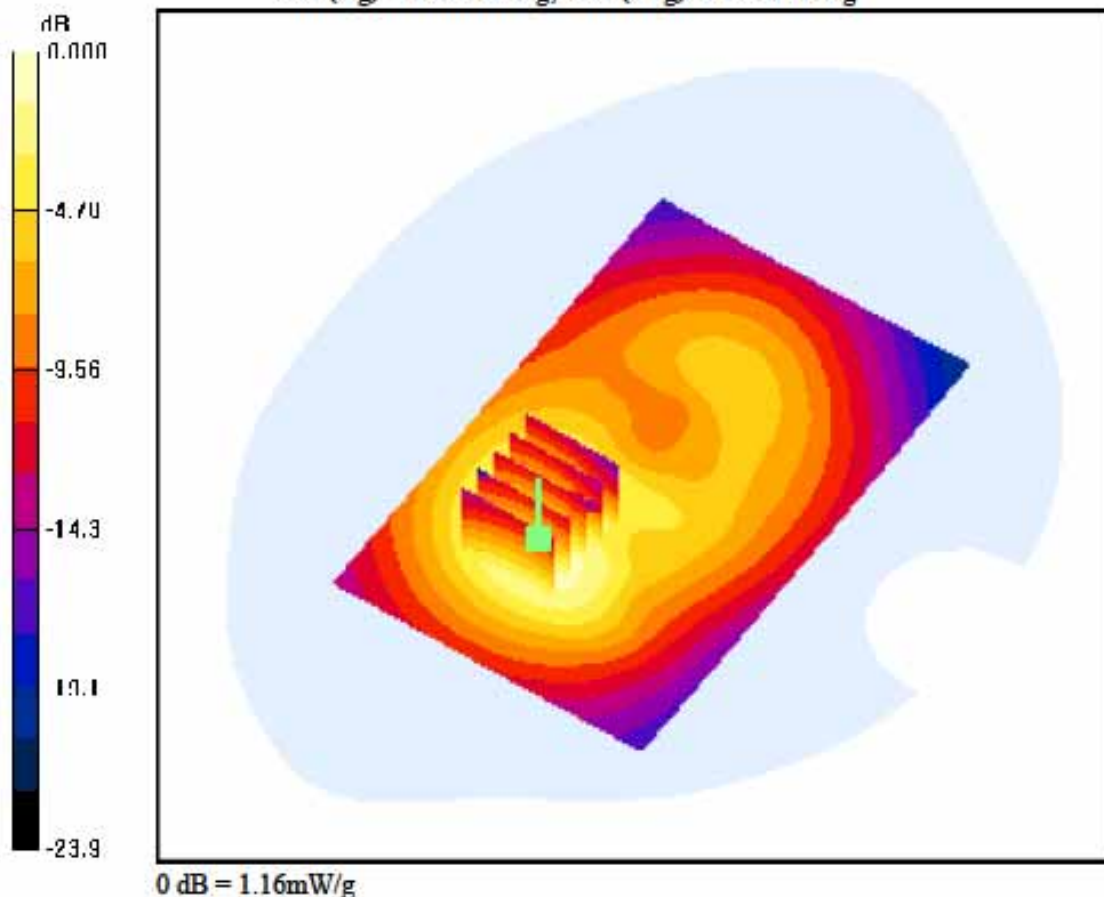
Area Scan (71x111x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Power Drift = -0.044 dB

Peak SAR (extrapolated) = 1.46 W/kg

SAR(1 g) = 0.940 mW/g; SAR(10 g) = 0.566 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:2.075
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.57 \text{ mho/m}$; $\epsilon_r = 53.4$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3643; ConvF(7.19, 7.19, 7.19); Calibrated: 2011-01-24; Electronics: DAE3 Sn519
Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-11; Ambient Temp: 22.5; Tissue Temp: 22.8

2cm space from Body, Front, PCS1900 GPRS Class 12 Ch. 661, Ant Internal

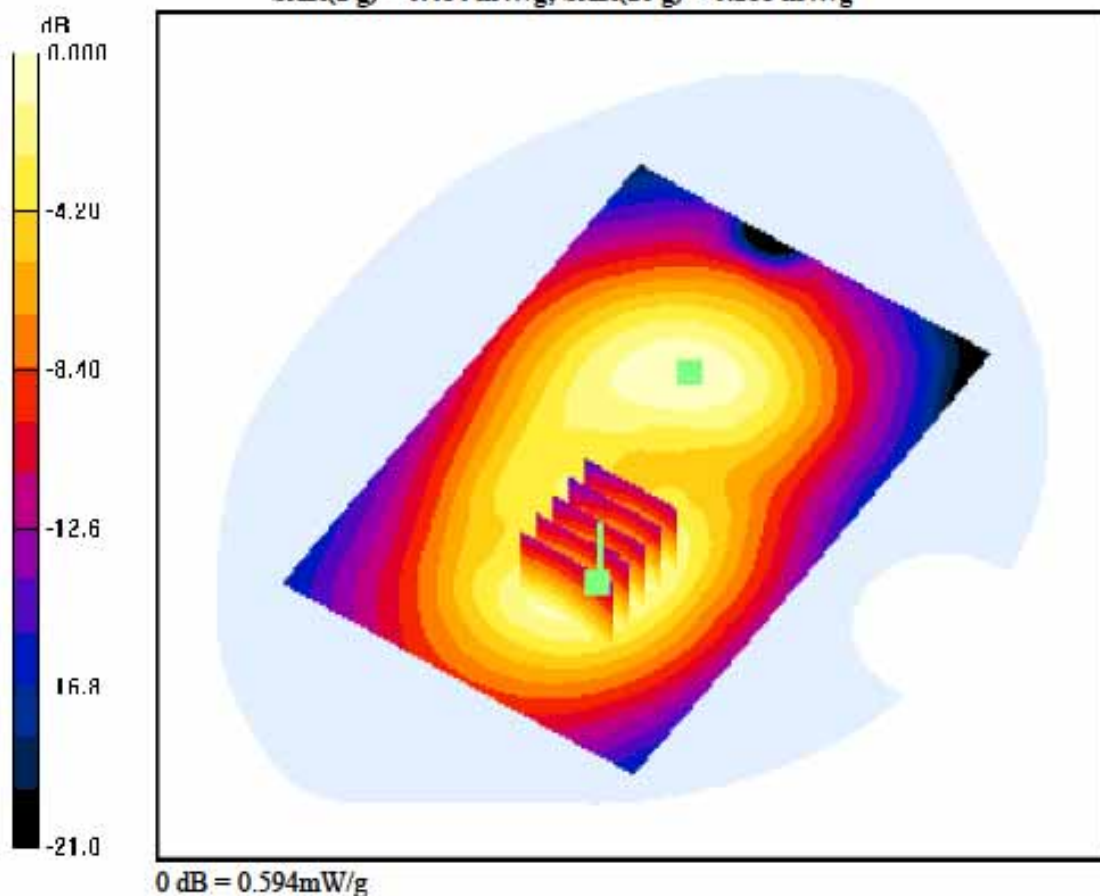
Area Scan (81x121x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Power Drift = -0.039 dB

Peak SAR (extrapolated) = 0.745 W/kg

SAR(1 g) = 0.484 mW/g; SAR(10 g) = 0.288 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:2.075
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.57 \text{ mho/m}$; $\epsilon_r = 53.4$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3643; ConvF(7.19, 7.19, 7.19); Calibrated: 2011-01-24; Electronics: DAE3 Sn519
Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-11; Ambient Temp: 22.5; Tissue Temp: 22.8

2cm space from Body, Front, PCS1900 GPRS Class 12 Ch. 661, Ant Internal

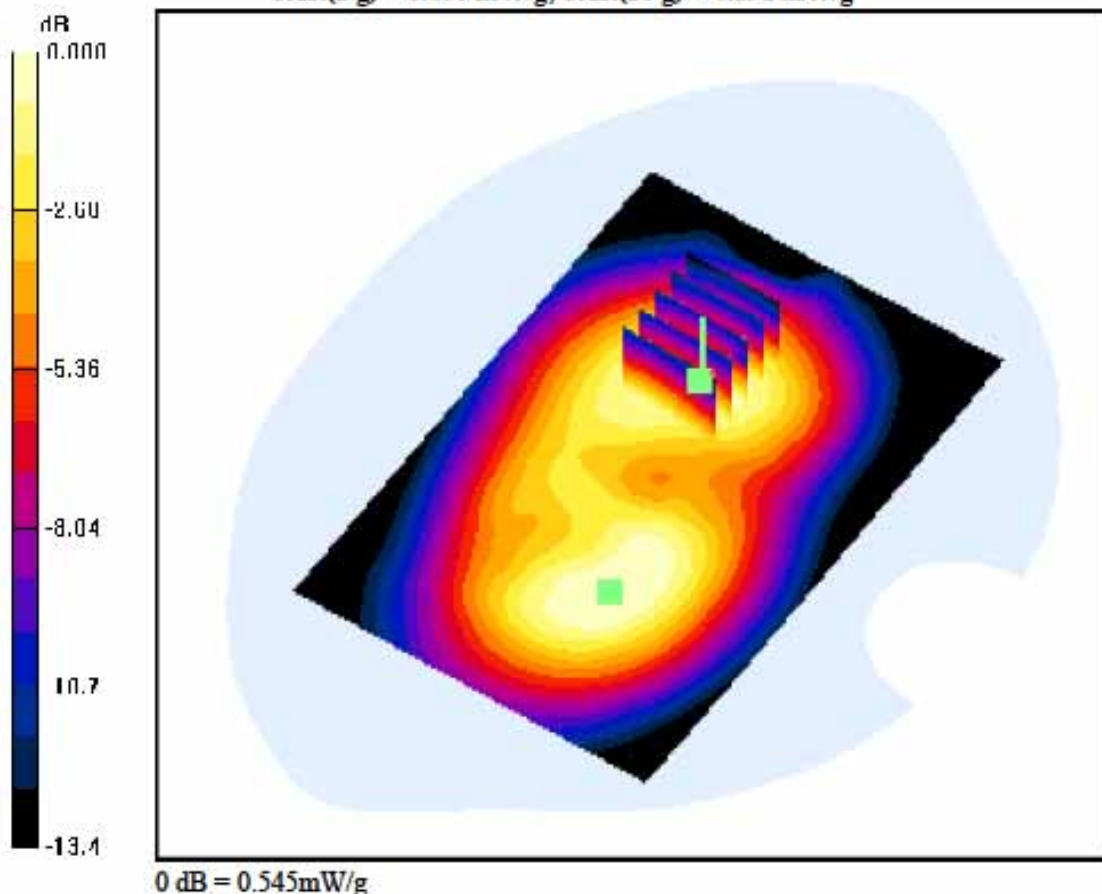
Area Scan (81x121x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 1: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Power Drift = -0.039 dB

Peak SAR (extrapolated) = 0.673 W/kg

SAR(1 g) = 0.450 mW/g; SAR(10 g) = 0.291 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:2.77
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.57$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section**DASY4 Configuration:**

Probe: EX3DV4 - SN3643; ConvF(7.19, 7.19, 7.19); Calibrated: 2011-01-24; Electronics: DAE3 Sn519

Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-11; Ambient Temp: 22.5; Tissue Temp: 22.8

2cm space from Body, Rear, PCS1900 EDGE Class 11 Ch. 661, Ant Internal

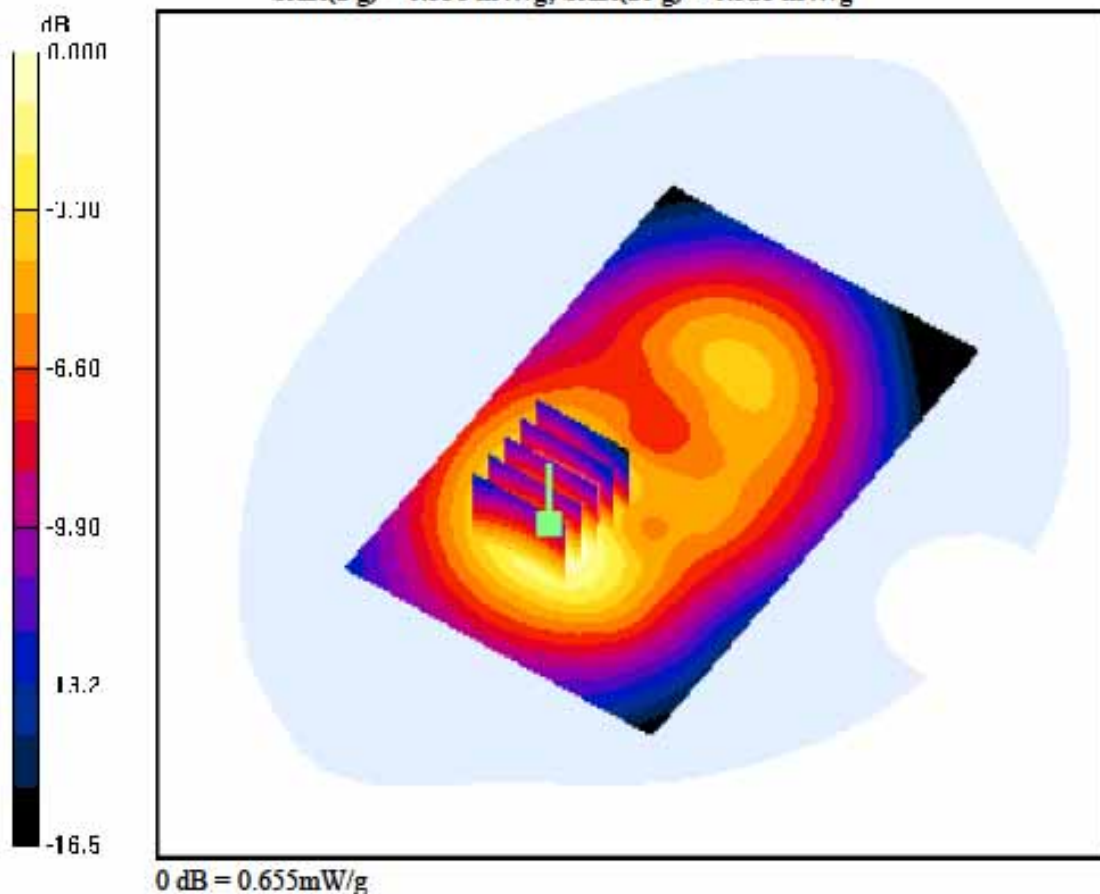
Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Power Drift = 0.036 dB

Peak SAR (extrapolated) = 0.825 W/kg

SAR(1 g) = 0.536 mW/g; SAR(10 g) = 0.328 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:2.075
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.57$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3643; ConvF(7.19, 7.19, 7.19); Calibrated: 2011-01-24; Electronics: DAE3 Sn519
Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-11; Ambient Temp: 22.5; Tissue Temp: 22.8

2cm space from Body, Rear, PCS1900 EDGE Class 12 Ch. 661, Ant Internal

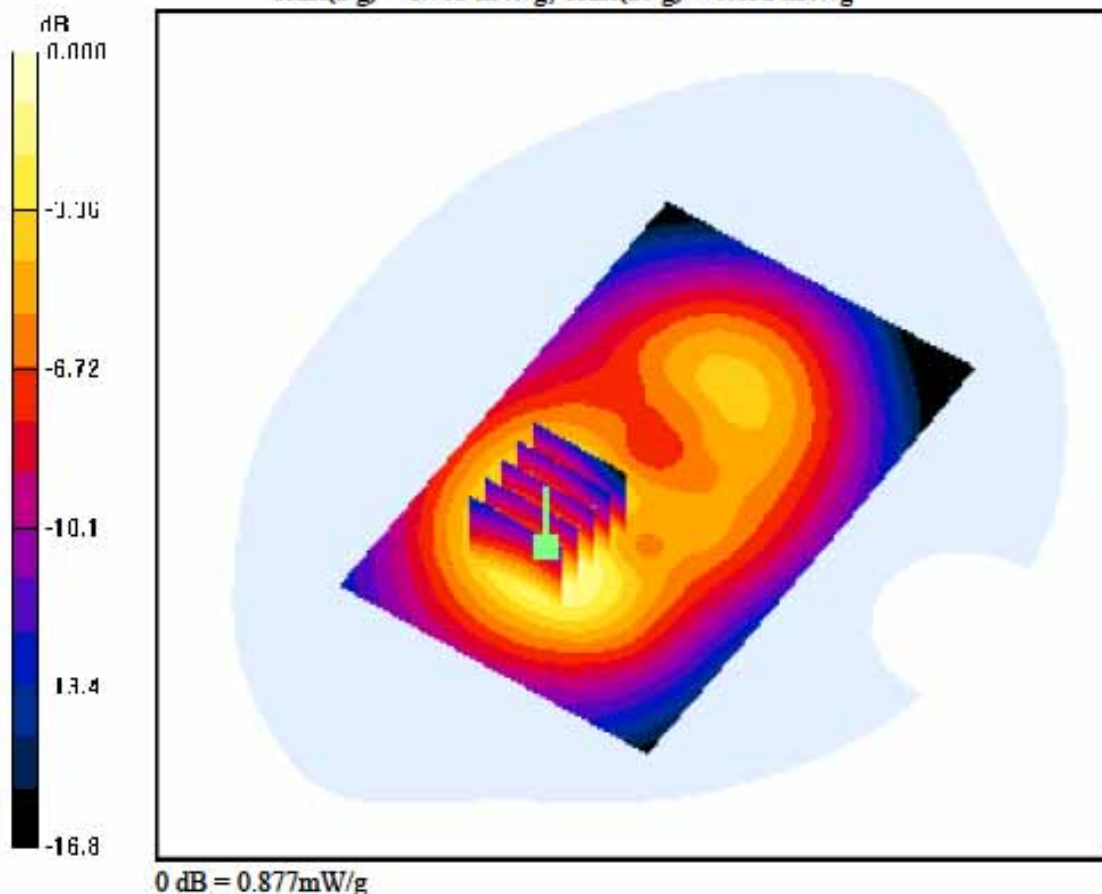
Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Power Drift = -0.066 dB

Peak SAR (extrapolated) = 1.10 W/kg

SAR(1 g) = 0.703 mW/g; SAR(10 g) = 0.431 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: Bluetooth; Frequency: 2402 MHz; Duty Cycle: 1:1.29
Medium parameters used: $f = 2402$ MHz; $\sigma = 1.93$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3643; ConvF(7.03, 7.03, 7.03); Calibrated: 2011-01-24; Electronics: DAE3 Sn519
Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-12; Ambient Temp: 22.3; Tissue Temp: 22.7

2cm space from Body, Rear, Bluetooth 1Mbps Ch. 2402 Mhz(Low), Ant Internal

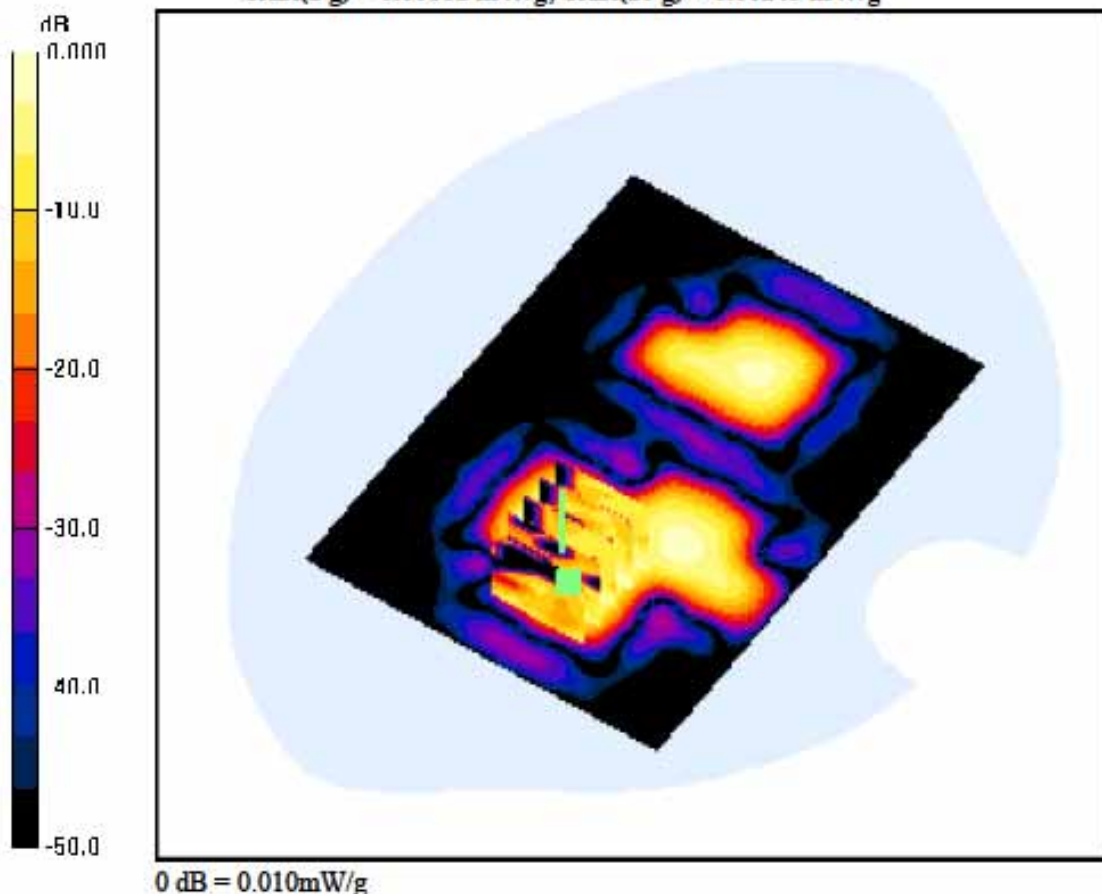
Area Scan (81x111x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Power Drift = 0.199 dB

Peak SAR (extrapolated) = 0.028 W/kg

SAR(1 g) = 0.00661 mW/g; SAR(10 g) = 0.00245 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.29
Medium parameters used: $f = 2441$ MHz; $\sigma = 1.97$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3643; ConvF(7.03, 7.03, 7.03); Calibrated: 2011-01-24; Electronics: DAE3 Sn519

Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-12; Ambient Temp: 22.3; Tissue Temp: 22.7

2cm space from Body, Rear, Bluetooth 1Mbps Ch. 2441 Mhz(Mid), Ant Internal

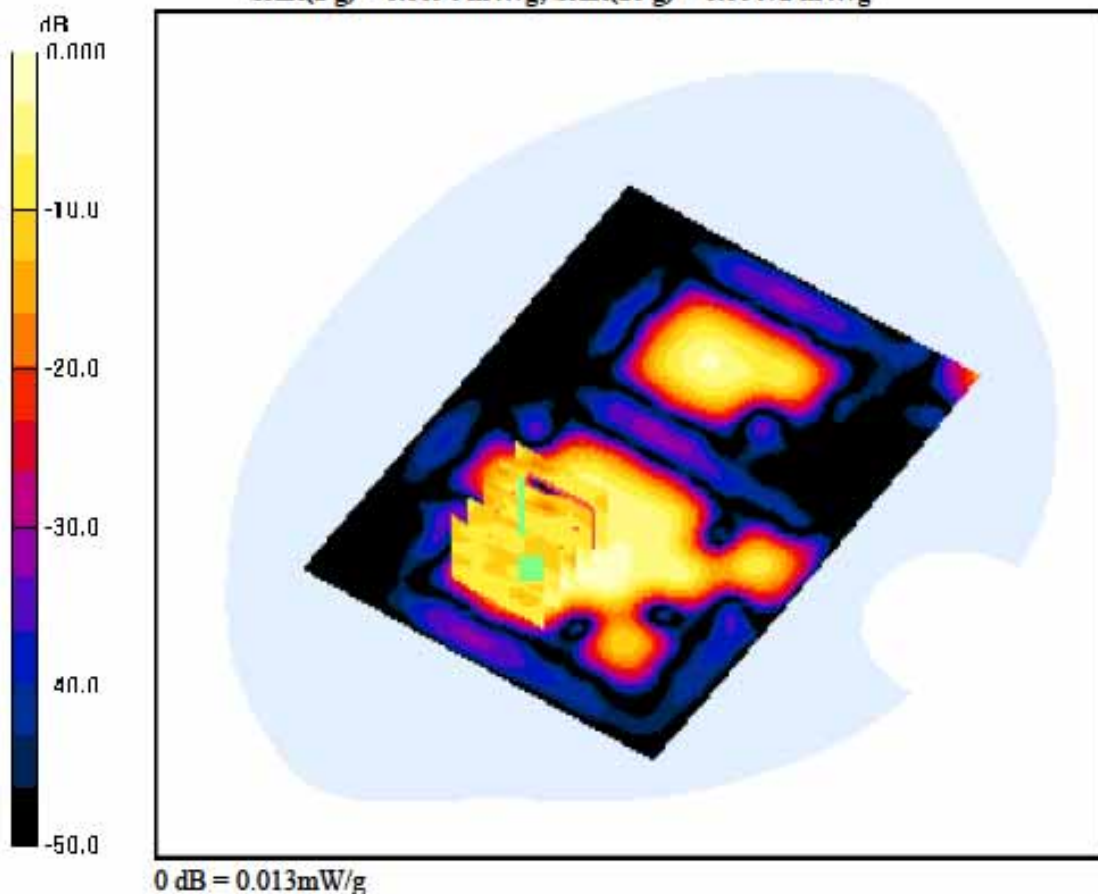
Area Scan (81x111x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Power Drift = -0.341 dB

Peak SAR (extrapolated) = 0.018 W/kg

SAR(1 g) = 0.0094 mW/g; SAR(10 g) = 0.00472 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.29
Medium parameters used: $f = 2480$ MHz; $\sigma = 2.02$ mho/m; $\epsilon_r = 53.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section**DASY4 Configuration:**

Probe: EX3DV4 - SN3643; ConvF(7.03, 7.03, 7.03); Calibrated: 2011-01-24; Electronics: DAE3 Sn519

Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-12; Ambient Temp: 22.3; Tissue Temp: 22.7

2cm space from Body, Rear, Bluetooth 1Mbps Ch. 2480 Mhz(High), Ant Internal

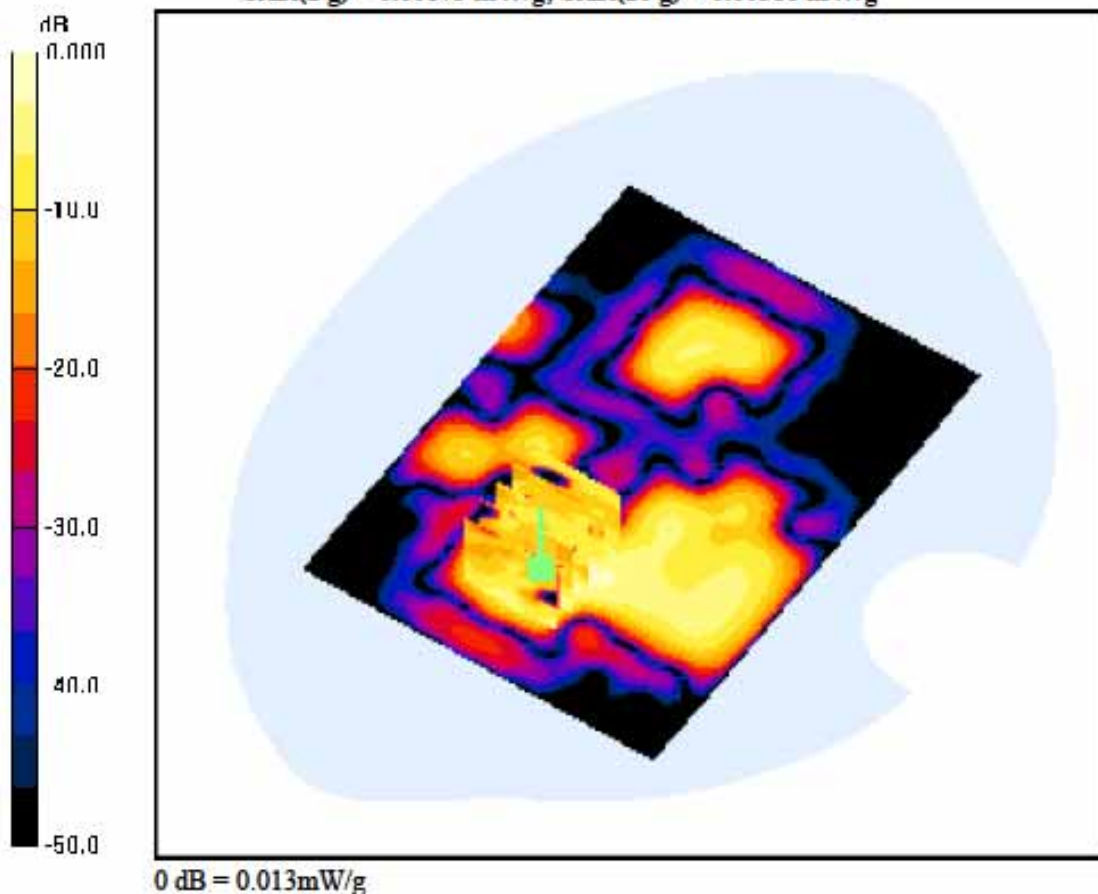
Area Scan (81x111x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Power Drift = 0.235 dB

Peak SAR (extrapolated) = 0.018 W/kg

SAR(1 g) = 0.00873 mW/g; SAR(10 g) = 0.00386 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.29
Medium parameters used: $f = 2441$ MHz; $\sigma = 1.97$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3643; ConvF(7.03, 7.03, 7.03); Calibrated: 2011-01-24; Electronics: DAE3 Sn519

Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-12; Ambient Temp: 22.3; Tissue Temp: 22.7

2cm space from Body, Front, Bluetooth 1Mbps Ch. 2441 Mhz(Mid), Ant Internal

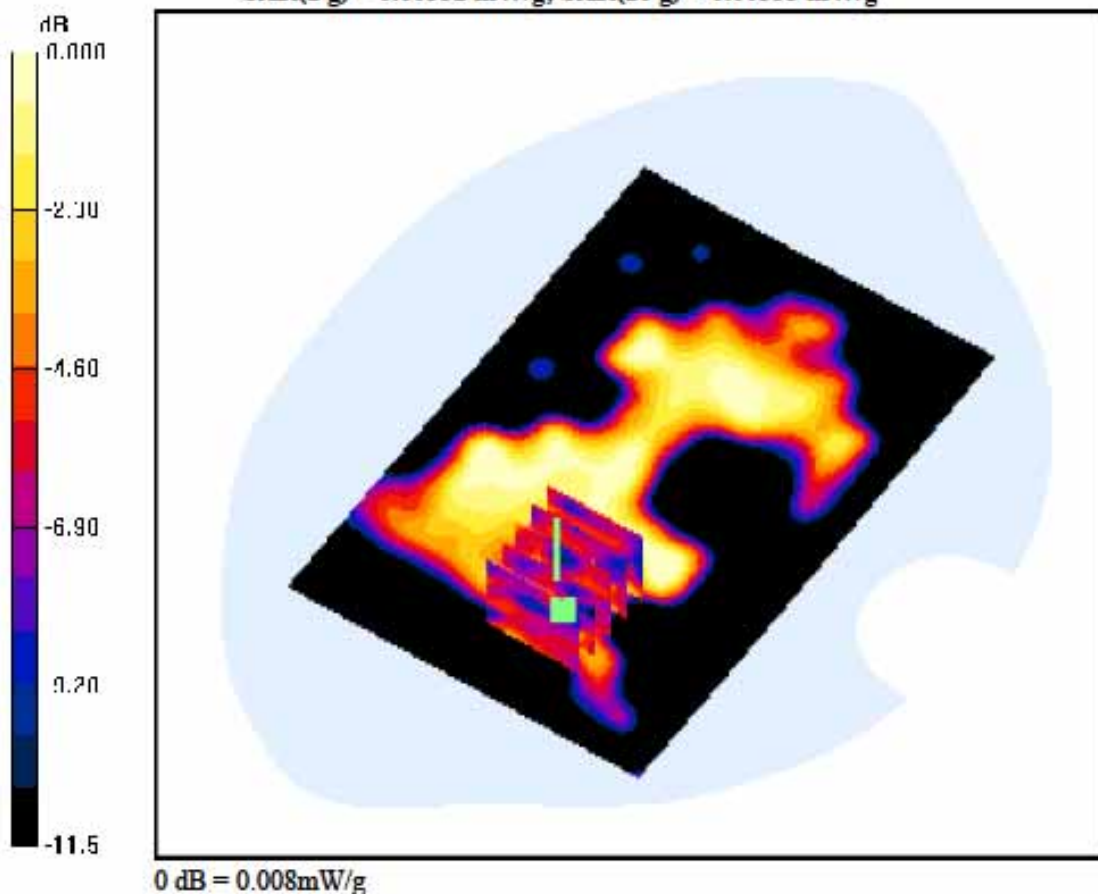
Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Power Drift = 0.385 dB

Peak SAR (extrapolated) = 0.013 W/kg

SAR(1 g) = 0.00552 mW/g; SAR(10 g) = 0.00353 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $f = 848.8 \text{ MHz}$; $\sigma = 0.934 \text{ mho/m}$; $\epsilon_r = 42.5$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 - SN3643; ConvF(8.96, 8.96, 8.96); Calibrated: 2011-01-24; Electronics: DAE3 Sn519
 Phantom: SAM with 835MHz; Type: SAM; Serial: TP-1223
 Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

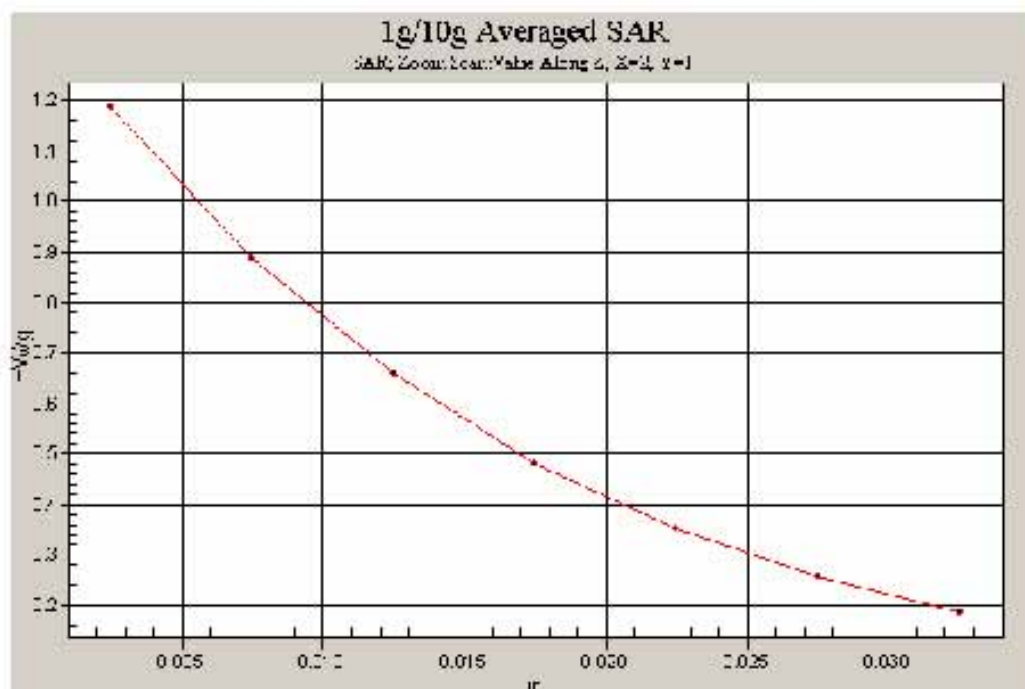
Date: 2011-02-10; Ambient Temp: 22.0; Tissue Temp: 22.5

Right Touch, GSM850 Ch. 251, Ant Internal, Standard Battery**Area Scan (81x111x1):** Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$ **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Power Drift = 0.063 dB

Peak SAR (extrapolated) = 1.41 W/kg

SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.720 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: PCS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $f = 1850.2$ MHz; $\sigma = 1.37$ mho/m; $\epsilon_r = 40.3$; $\rho = 1000$ kg/m³
 Phantom section: Left Section

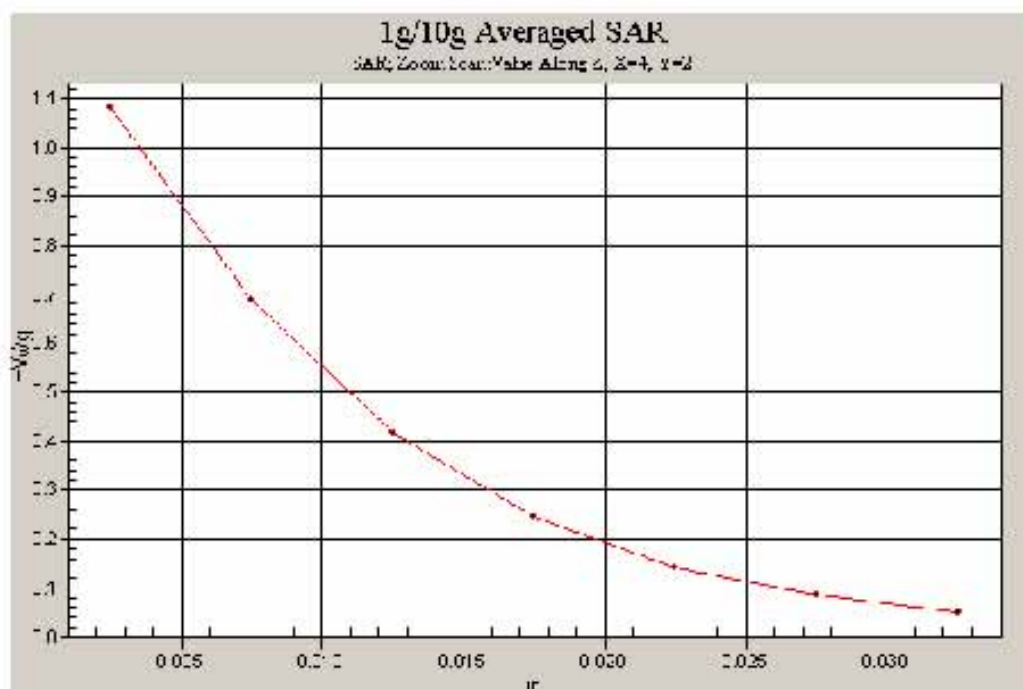
DASY4 Configuration:

Probe: EX3DV4 - SN3643; ConvF(8.26, 8.26, 8.26); Calibrated: 2011-01-24; Electronics: DAE3 Sn519
 Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224
 Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Date: 2011-02-11; Ambient Temp: 22.5; Tissue Temp: 22.8

Left Touch, PCS1900 Ch. 512, Ant Internal, Standard Battery

Area Scan (81x111x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
 Power Drift = -0.006 dB
 Peak SAR (extrapolated) = 1.49 W/kg
 SAR(1 g) = 0.803 mW/g; SAR(10 g) = 0.407 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:4.15
 Medium parameters used: $f = 836.6 \text{ MHz}$; $\sigma = 0.991 \text{ mho/m}$; $\epsilon_r = 55.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section**DASY4 Configuration:**

Probe: EX3DV4 - SN3643; ConvF(8.97, 8.97, 8.97); Calibrated: 2011-01-24; Electronics: DAE3 Sn519

Phantom: SAM with 835MHz; Type: SAM; Serial: TP-1223

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

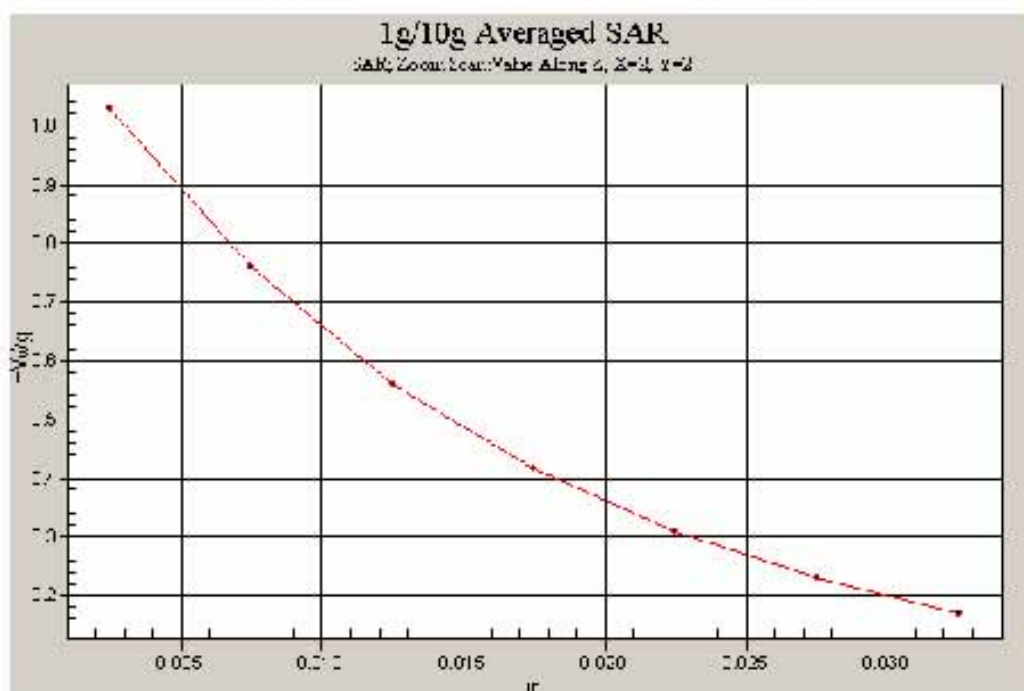
Test Date: 2011-02-10; Ambient Temp: 22.0; Tissue Temp: 22.5

2cm space from Body, Rear, GSM850 GPRS Class 10 Ch. 190, Ant Internal**Area Scan (71x111x1):** Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$ **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Power Drift = -0.154 dB

Peak SAR (extrapolated) = 1.20 W/kg

SAR(1 g) = 0.884 mW/g; SAR(10 g) = 0.630 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: PCS1900; Frequency: 1909.8 MHz; Duty Cycle: 1:2.075
Medium parameters used: $f = 1909.8$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 53.8$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

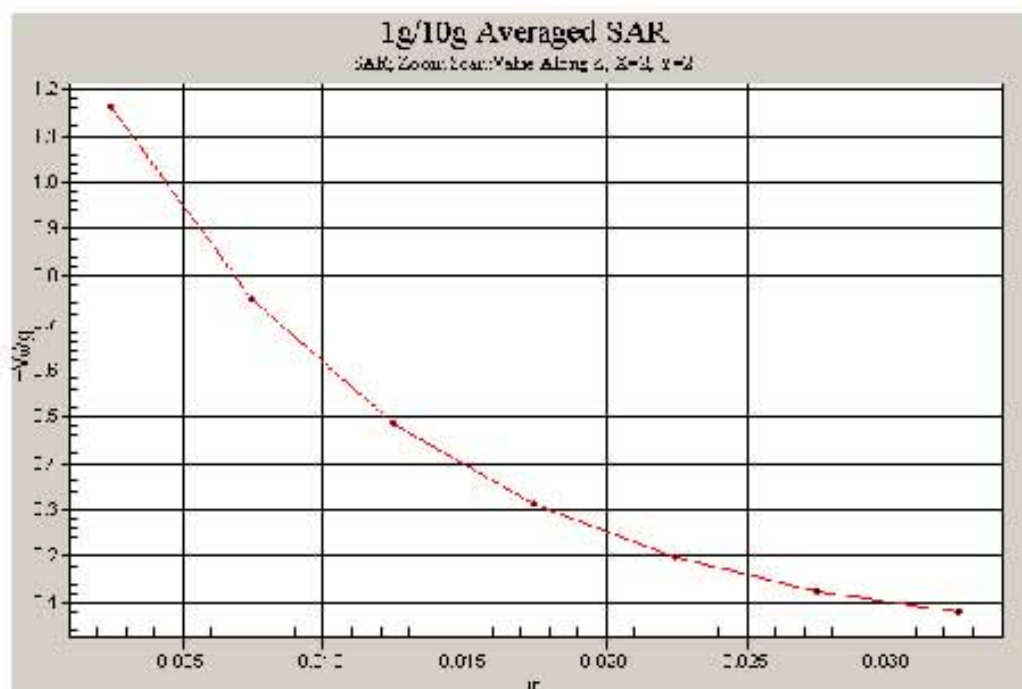
DASY4 Configuration:

Probe: EX3DV4 - SN3643; ConvF(7.19, 7.19, 7.19); Calibrated: 2011-01-24; Electronics: DAE3 Sn519
Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-11; Ambient Temp: 22.5; Tissue Temp: 22.8

2cm space from Body, Rear, PCS1900 GPRS Class 12 Ch. 810, Ant Internal

Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Power Drift = -0.044 dB
Peak SAR (extrapolated) = 1.46 W/kg
SAR(1 g) = 0.940 mW/g; SAR(10 g) = 0.566 mW/g



DIGITAL EMC CO., LTD**DUT: LG-E300; Type: Bar**

Communication System: Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.29
 Medium parameters used: $f = 2441$ MHz; $\sigma = 1.97$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³
 Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3643; ConvF(7.03, 7.03, 7.03); Calibrated: 2011-01-24; Electronics: DAE3 Sn519

Phantom: SAM 1800/1900 MHz; Type: SAM; Serial: TP-1224

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Test Date: 2011-02-12; Ambient Temp: 22.3; Tissue Temp: 22.7

2cm space from Body, Rear, Bluetooth 1Mbps Ch. 2441 Mhz(Mid), Ant Internal

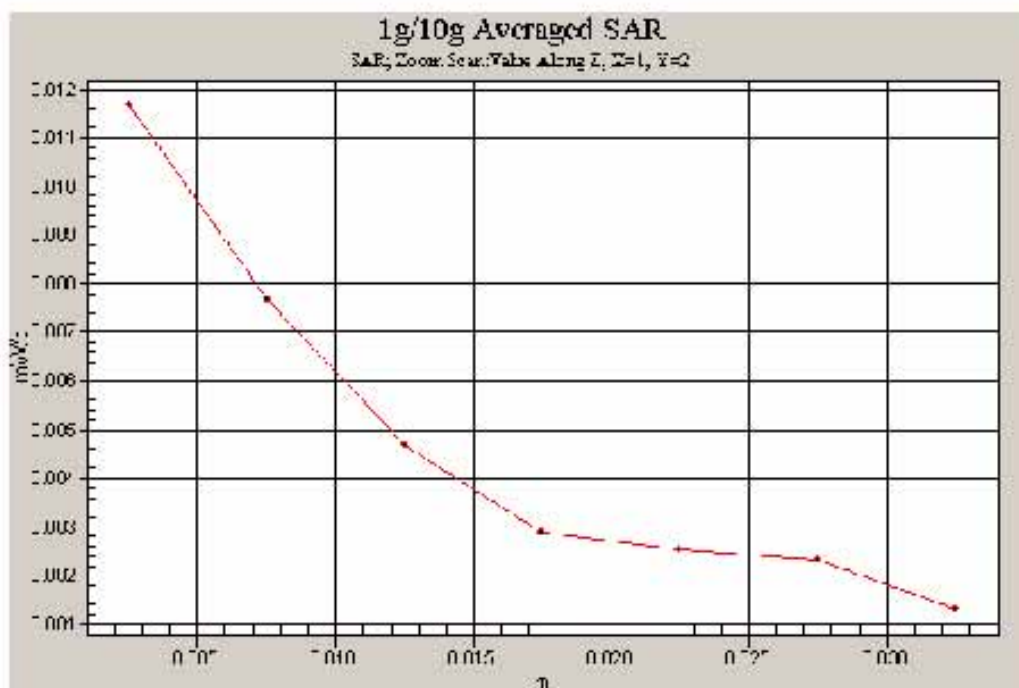
Area Scan (81x111x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Power Drift = -0.341 dB

Peak SAR (extrapolated) = 0.018 W/kg

SAR(1 g) = 0.0094 mW/g; SAR(10 g) = 0.00472 mW/g



Attachment 3. – Probe Calibration Data

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zaughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
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S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Client **Digital EMC (Dymstec)**

Certificate No: **EX3-3643_Jan11**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3643**

Calibration procedure(s) **QA CAL-01.v7, QA CAL-12.v6, QA CAL-14.v3, QA CAL-23.v4 and
QA CAL-25.v3
Calibration procedure for dosimetric E-field probes**

Calibration date: **January 24, 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	GB41293874	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41495277	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41496087	1-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: S5066 (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 8848C	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:	Katja Pokovic	Technical Manager	
Approved by:	Fin Bornhold	R&D Director	

Issued: January 25, 2011

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: EX3-3643_Jan11

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Calibration Laboratory of
Schmid & Partner
Engineering AG
 Zeughausstrasse 43, 8004 Zurich, Switzerland



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C Service suisse d'étalonnage
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Accredited by the Swiss Accreditation Service (SAS)
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 Multilateral Agreement for the recognition of calibration certificates

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., $\theta = 0$ 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 $\theta = 0$ ($f \leq 900$ 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(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.
- 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 $f < 800$ 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.

EX3DV4 SN:3643

January 24, 2011

Probe EX3DV4

SN:3643

Manufactured:	January 8, 2008
Last calibrated:	January 26, 2010
Recalibrated:	January 24, 2011

Calibrated for DASY/EASY Systems

(Note: non-compatible with DASY2 system!)

EX3DV4 SN:3643

January 24, 2011

DASY/EASY - Parameters of Probe: EX3DV4 SN:3643**Basic Calibration Parameters**

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.39	0.42	0.46	± 10.1%
DCP (mV) ^B	96.6	95.4	95.0	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc ^F (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	134.8	± 2.4 %
			Y	0.00	0.00	1.00	128.8	
			Z	0.00	0.00	1.00	145.3	

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-field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^F Uncertainty is determined using the maximum deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

EX3DV4 SN:3643

January 24, 2011

DASY/EASY - Parameters of Probe: EX3DV4 SN:3643**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)
450	± 50 / ± 100	43.5 ± 5%	0.87 ± 5%	9.69	9.69	9.69	0.12	1.00 ± 13.3%
635	± 50 / ± 100	41.5 ± 5%	0.90 ± 5%	8.96	8.96	8.96	0.69	0.64 ± 11.0%
1750	± 50 / ± 100	40.1 ± 5%	1.37 ± 5%	8.58	8.58	8.58	0.63	0.72 ± 11.0%
1900	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	8.26	8.26	8.26	0.64	0.72 ± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	7.40	7.40	7.40	0.52	0.77 ± 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.

EX3DV4 SN:3643

January 24, 2011

DASY/EASY - Parameters of Probe: EX3DV4 SN:3643**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)
450	± 50 / ± 100	56.7 ± 5%	0.94 ± 5%	10.31	10.31	10.31	0.05	1.05 ± 13.3%
835	± 50 / ± 100	55.2 ± 5%	0.97 ± 5%	8.97	8.97	8.97	0.52	0.77 ± 11.0%
1750	± 50 / ± 100	53.4 ± 5%	1.49 ± 5%	7.48	7.48	7.48	0.69	0.65 ± 11.0%
1900	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	7.19	7.19	7.19	0.44	0.83 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	7.03	7.03	7.03	0.51	0.74 ± 11.0%
2600	± 50 / ± 100	52.5 ± 5%	2.16 ± 5%	6.96	6.96	6.96	0.26	1.07 ± 11.0%
3500	± 50 / ± 100	51.3 ± 5%	3.31 ± 5%	6.15	6.15	6.15	0.33	1.30 ± 13.1%
5200	± 50 / ± 100	49.0 ± 5%	5.30 ± 5%	4.32	4.32	4.32	0.45	1.90 ± 13.1%
5300	± 50 / ± 100	48.9 ± 5%	5.42 ± 5%	4.15	4.15	4.15	0.50	1.90 ± 13.1%
5600	± 50 / ± 100	48.5 ± 5%	5.77 ± 5%	3.72	3.72	3.72	0.50	1.90 ± 13.1%
5800	± 50 / ± 100	48.2 ± 5%	6.00 ± 5%	3.86	3.86	3.86	0.60	1.90 ± 13.1%

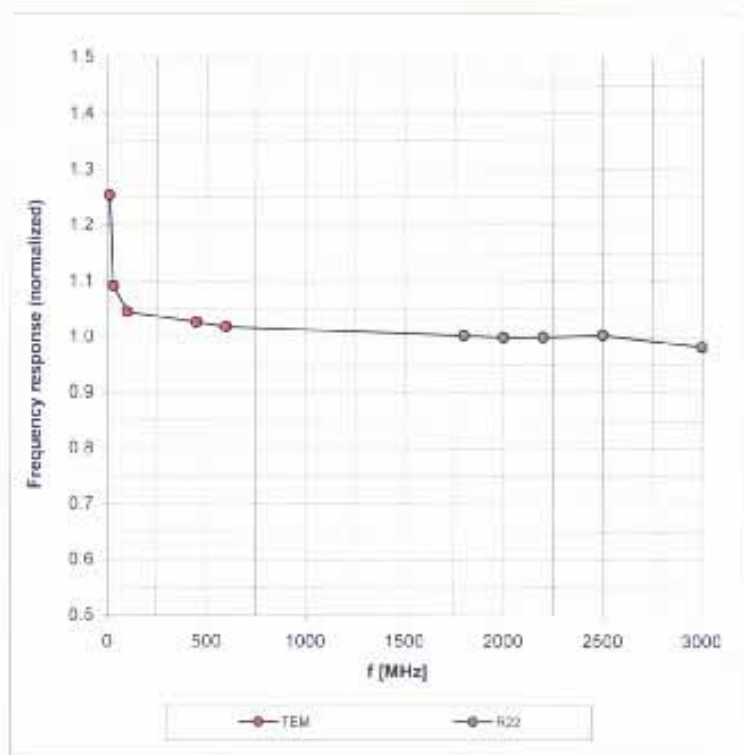
^C The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

EX3DV4 SN:3643

January 24, 2011

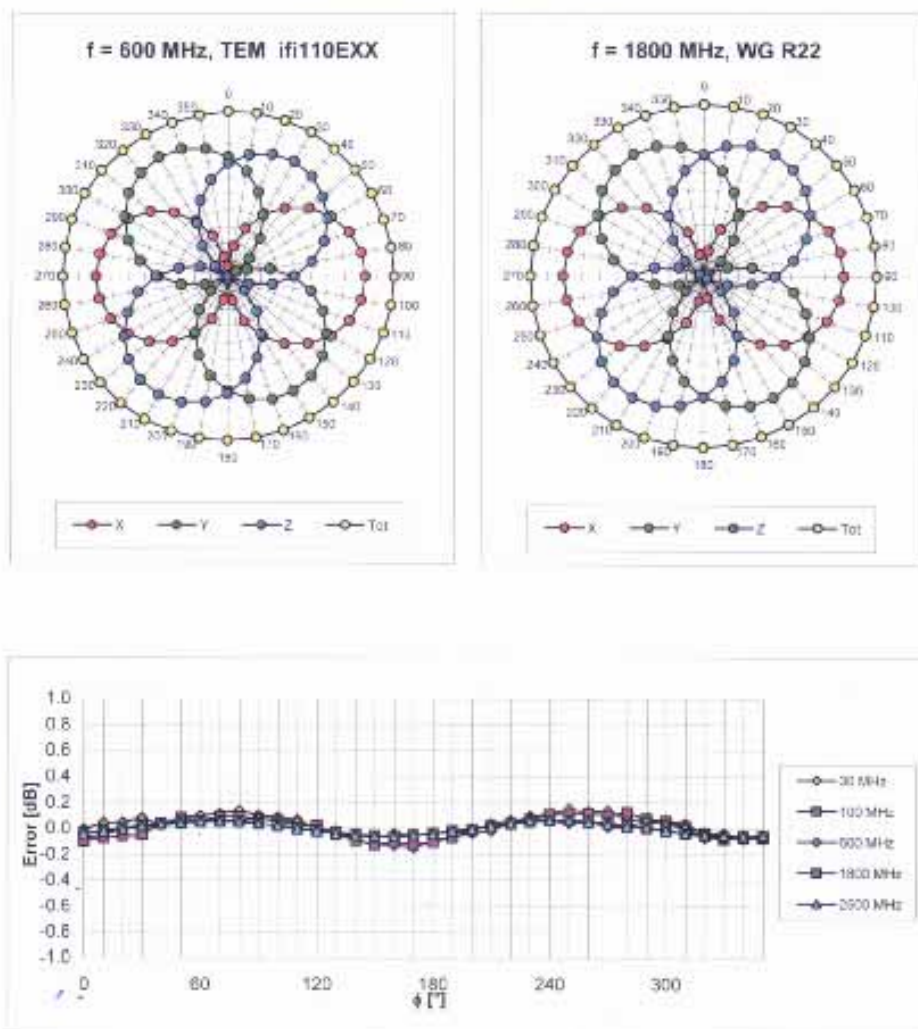
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)

Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

EX3DV4 SN:3643

January 24, 2011

Receiving Pattern (ϕ), $\theta = 0^\circ$ Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)