

Appendix A. SAR PLOTS

Test Laboratory: KTL

835MHz Validation – D835V2; SN:481

***Test Date : 6th /October/2009**

Measured Liquid Temperature(°C) : 22.1, Ambient Temperature(°C) : 22.0

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

Medium: HSL835 Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.91 \text{ mho/m}$; $\epsilon_r = 40.9$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3020; ConvF(6.24, 6.24, 6.24); Calibrated: 2009-07-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn559; Calibrated: 2009-05-22
- Phantom: SAM Twin Phantom_835MHz; Type: SAM; Serial: TP-1276
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Area Scan (61x91x1): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$

Maximum value of SAR (interpolated) = 2.65 mW/g

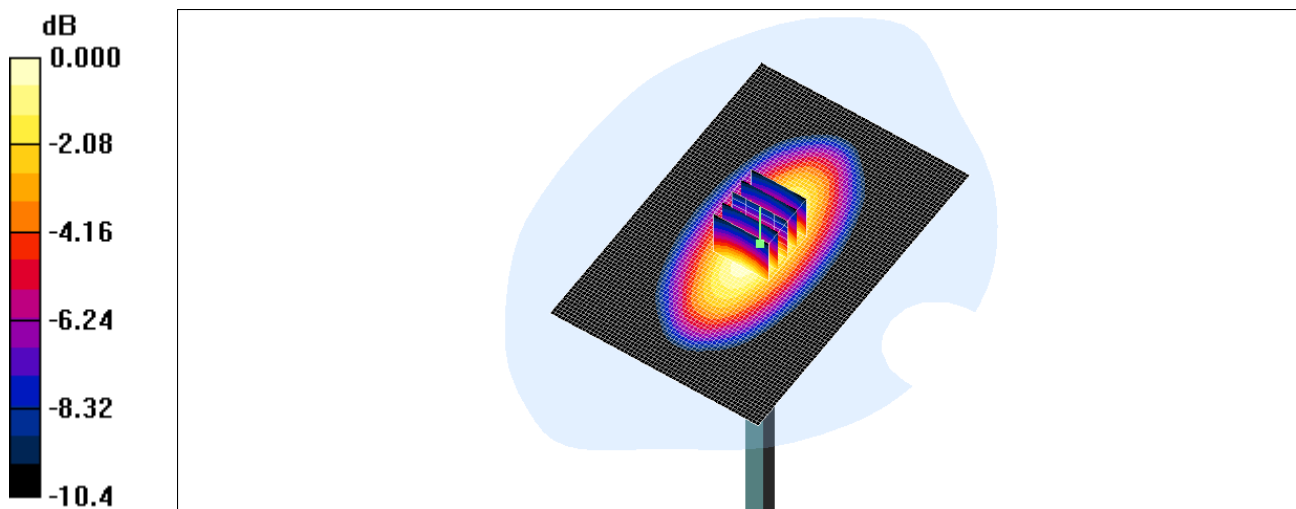
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 54.6 V/m; Power Drift = -0.029 dB

Peak SAR (extrapolated) = 3.52 W/kg

SAR(1 g) = 2.42 mW/g; SAR(10 g) = 1.59 mW/g

Maximum value of SAR (measured) = 2.61 mW/g



0 dB = 2.61mW/g

Test Laboratory: KTL

Flex7000 GPRS850 BODY 190CH Front facing phantom_1.5cm(1slot)

***Test Date : 6th /October/2009**

Measured Liquid Temperature(°C) : 22.2, Ambient Temperature(°C) : 22.0

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

Medium: HSL835 Medium parameters used: $f = 836.6 \text{ MHz}$; $\sigma = 0.97 \text{ mho/m}$; $\epsilon_r = 54.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3020; ConvF(6.12, 6.12, 6.12); Calibrated: 2009-07-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn559; Calibrated: 2009-05-22
- Phantom: SAM Twin Phantom_835MHz; Type: SAM; Serial: TP-1276
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Area Scan (51x91x1): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$

Maximum value of SAR (interpolated) = 0.052 mW/g

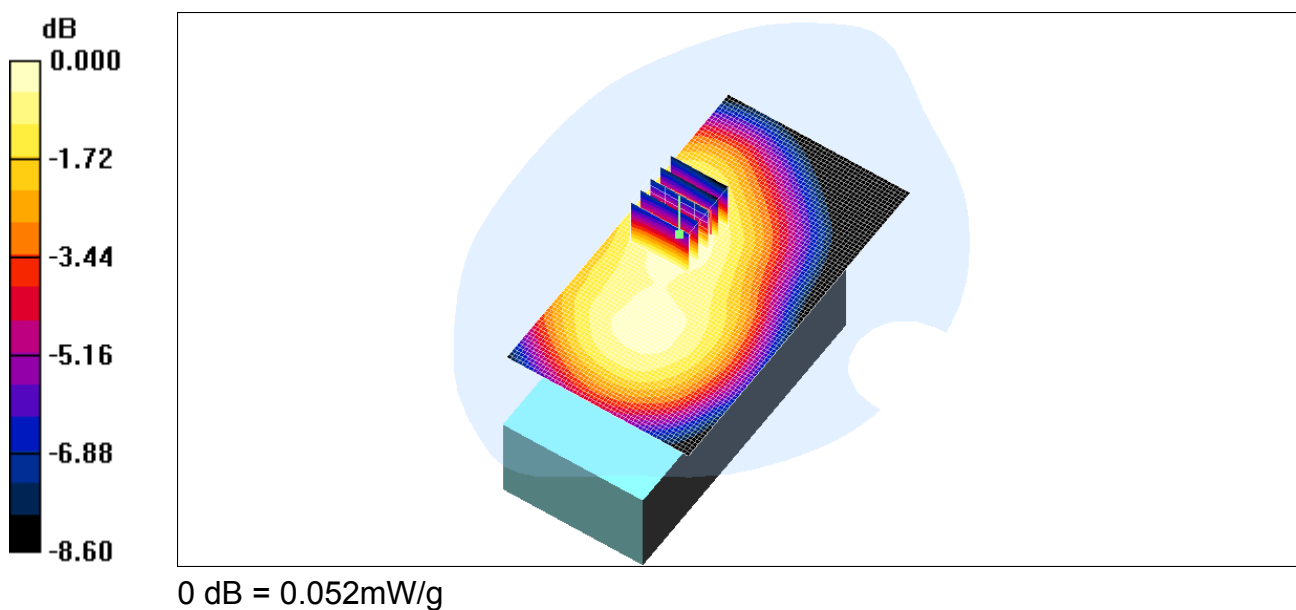
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 6.65 V/m ; Power Drift = 0.004 dB

Peak SAR (extrapolated) = 0.065 W/kg

SAR(1 g) = 0.050 mW/g ; SAR(10 g) = 0.036 mW/g

Maximum value of SAR (measured) = 0.052 mW/g



Test Laboratory: KTL

Flex7000 GPRS850 BODY 190CH Rear facing phantom_1.5cm(1slot)

***Test Date : 6th /October/2009**

Measured Liquid Temperature(°C) : 22.2, Ambient Temperature(°C) : 22.0

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

Medium: HSL835 Medium parameters used: $f = 836.6 \text{ MHz}$; $\sigma = 0.97 \text{ mho/m}$; $\epsilon_r = 54.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3020; ConvF(6.12, 6.12, 6.12); Calibrated: 2009-07-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn559; Calibrated: 2009-05-22
- Phantom: SAM Twin Phantom_835MHz; Type: SAM; Serial: TP-1276
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Area Scan (51x91x1): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$

Maximum value of SAR (interpolated) = 0.179 mW/g

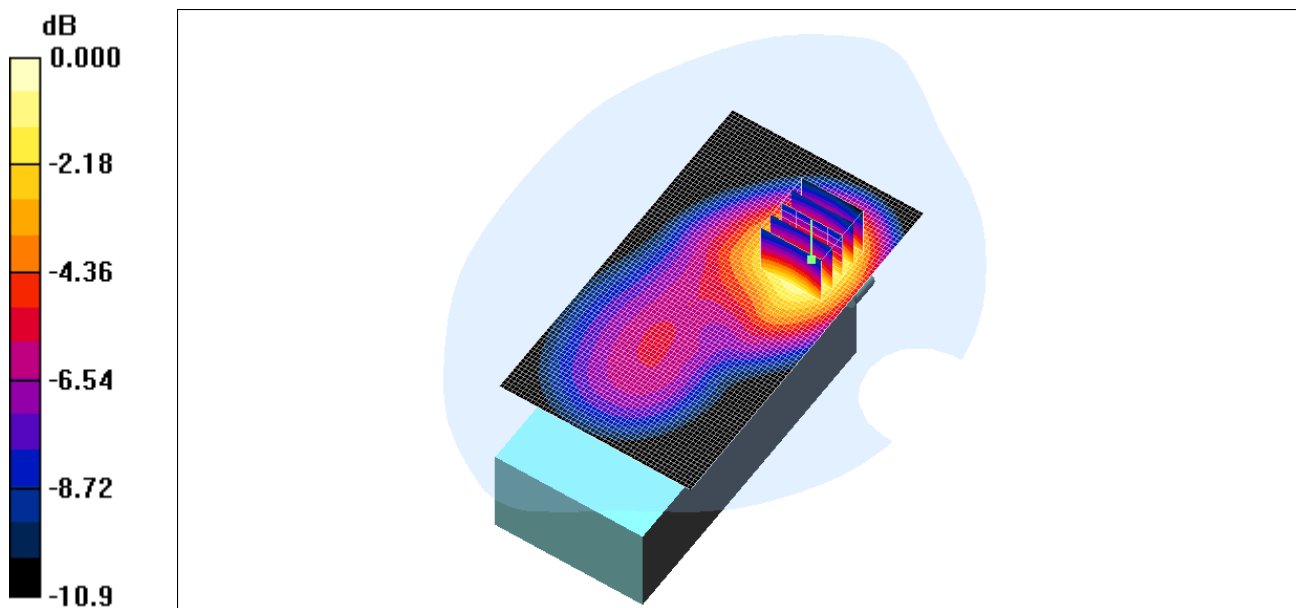
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 7.47 V/m; Power Drift = 0.012 dB

Peak SAR (extrapolated) = 0.232 W/kg

SAR(1 g) = 0.163 mW/g; SAR(10 g) = 0.110 mW/g

Maximum value of SAR (measured) = 0.176 mW/g



0 dB = 0.176mW/g

Test Laboratory: KTL

Flex7000 GPRS850 BODY 190CH Rear facing phantom_1.5cm(2slots)

***Test Date : 6th /October/2009**

Measured Liquid Temperature(°C) : 22.2, Ambient Temperature(°C) : 22.0

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:4.15

Medium: HSL835 Medium parameters used: $f = 836.6 \text{ MHz}$; $\sigma = 0.97 \text{ mho/m}$; $\epsilon_r = 54.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3020; ConvF(6.12, 6.12, 6.12); Calibrated: 2009-07-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn559; Calibrated: 2009-05-22
- Phantom: SAM Twin Phantom_835MHz; Type: SAM; Serial: TP-1276
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Area Scan (51x91x1): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$

Maximum value of SAR (interpolated) = 0.203 mW/g

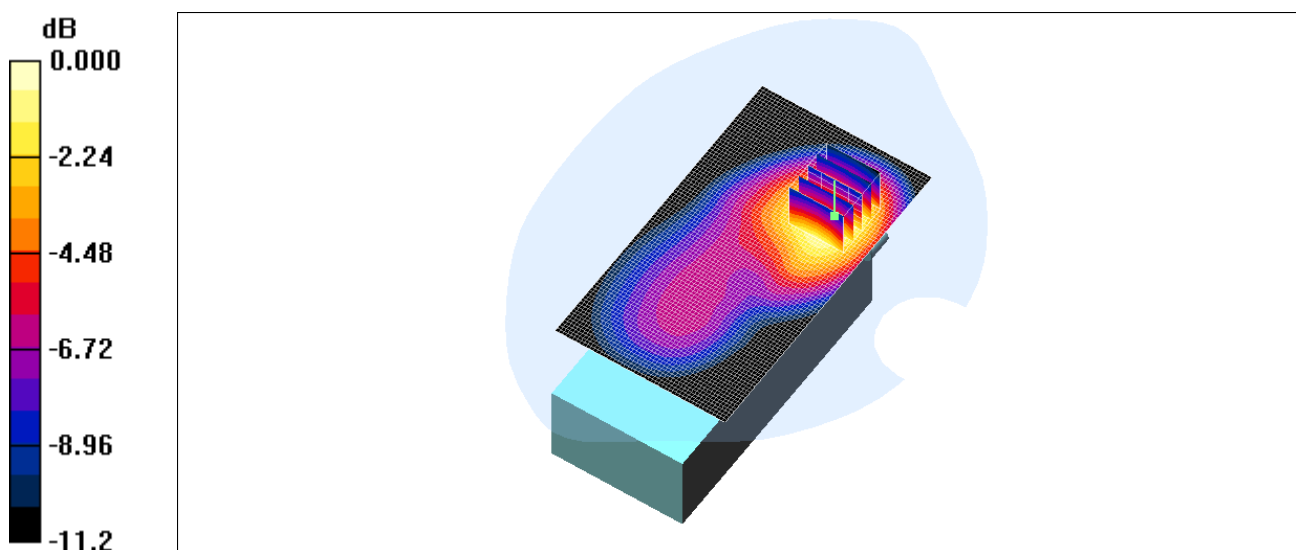
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 7.69 V/m; Power Drift = -0.007 dB

Peak SAR (extrapolated) = 0.264 W/kg

SAR(1 g) = 0.186 mW/g; SAR(10 g) = 0.125 mW/g

Maximum value of SAR (measured) = 0.200 mW/g



0 dB = 0.200mW/g

Test Laboratory: KTL

Flex7000 GPRS850 BODY 128CH Rear facing phantom_1.5cm(2slots)

***Test Date : 6th /October/2009**

Measured Liquid Temperature(°C) : 22.2, Ambient Temperature(°C) : 22.0

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:4.15

Medium: HSL835 Medium parameters used: $f = 824.2 \text{ MHz}$; $\sigma = 0.96 \text{ mho/m}$; $\epsilon_r = 54.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3020; ConvF(6.12, 6.12, 6.12); Calibrated: 2009-07-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn559; Calibrated: 2009-05-22
- Phantom: SAM Twin Phantom_835MHz; Type: SAM; Serial: TP-1276
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Area Scan (51x91x1): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$

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

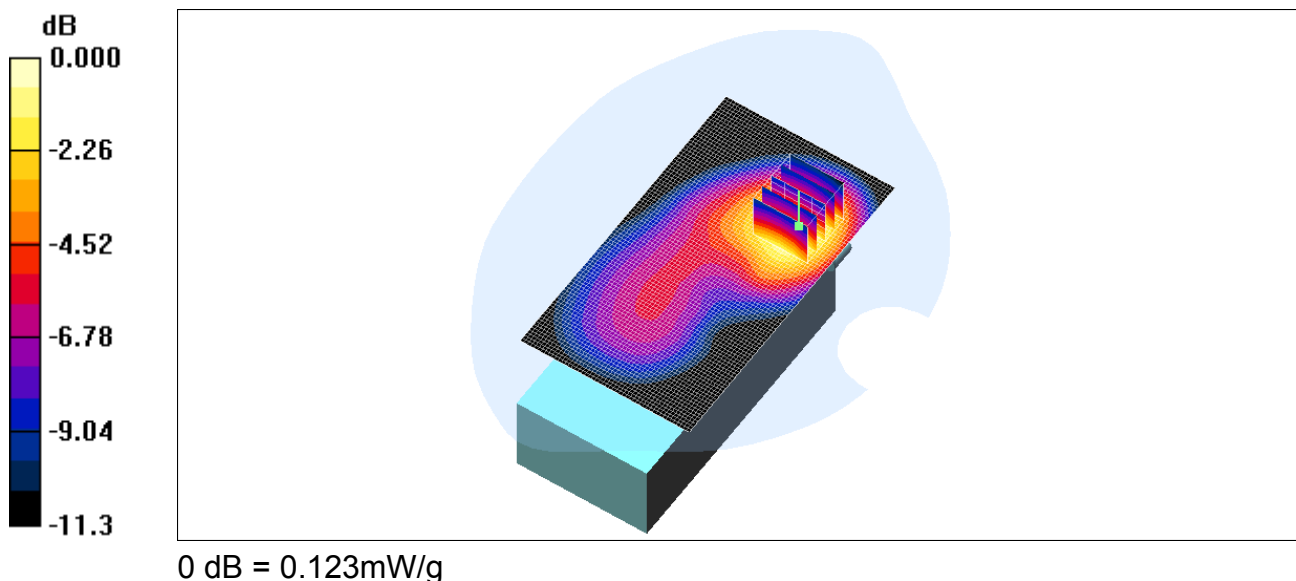
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 6.18 V/m; Power Drift = 0.061 dB

Peak SAR (extrapolated) = 0.162 W/kg

SAR(1 g) = 0.114 mW/g; SAR(10 g) = 0.076 mW/g

Maximum value of SAR (measured) = 0.123 mW/g



Test Laboratory: KTL

Flex7000 GPRS850 BODY 251CH Rear facing phantom_1.5cm(2slots)

***Test Date : 6th /October/2009**

Measured Liquid Temperature(°C) : 22.2, Ambient Temperature(°C) : 22.0

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:4.15

Medium: HSL835 Medium parameters used: $f = 848.8 \text{ MHz}$; $\sigma = 0.98 \text{ mho/m}$; $\epsilon_r = 54.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3020; ConvF(6.12, 6.12, 6.12); Calibrated: 2009-07-22
- Sensor-Surface: 4mm (Mechanical Surface Detection) Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn559; Calibrated: 2009-05-22
- Phantom: SAM Twin Phantom_835MHz; Type: SAM; Serial: TP-1276
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Area Scan (51x91x1): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$

Maximum value of SAR (interpolated) = 0.220 mW/g

Z Scan (1x1x16): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$, $dz=20\text{mm}$

Maximum value of SAR (interpolated) = 0.055 mW/g

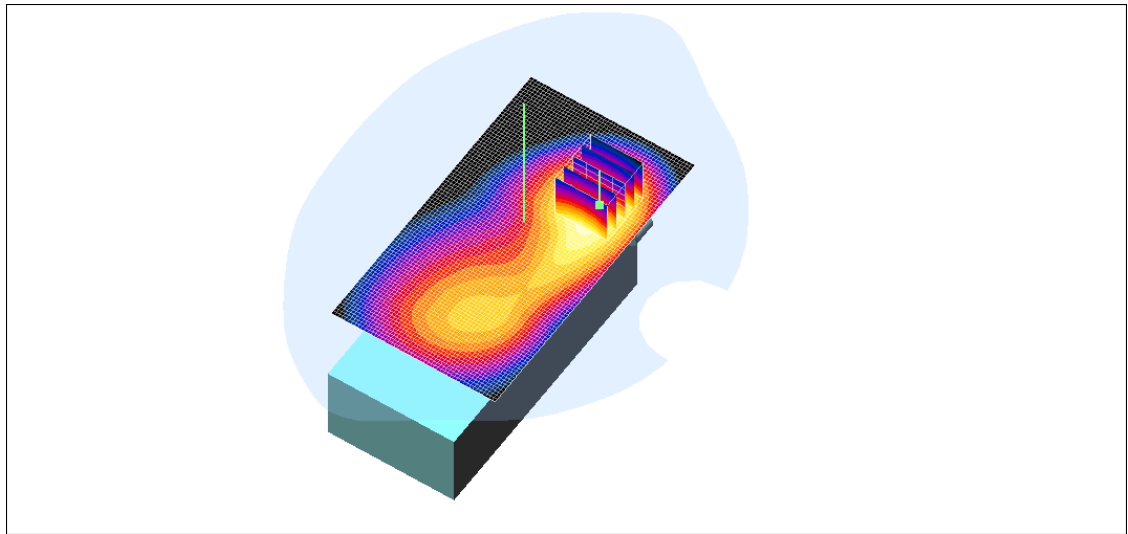
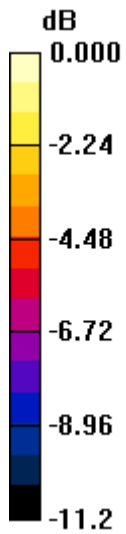
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 8.13 V/m; Power Drift = -0.013 dB

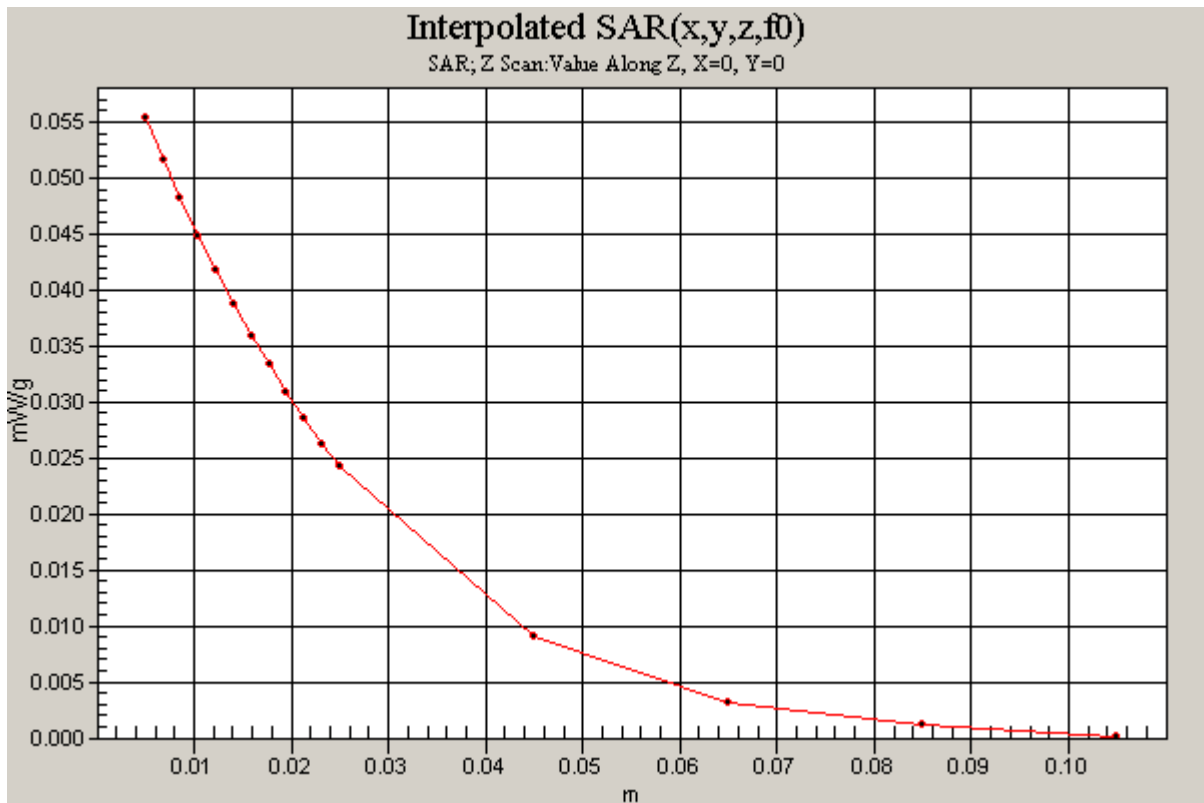
Peak SAR (extrapolated) = 0.281 W/kg

SAR(1 g) = 0.201 mW/g; SAR(10 g) = 0.136 mW/g

Maximum value of SAR (measured) = 0.215 mW/g



0 dB = 0.215mW/g



Test Laboratory: KTL

1900MHz Validation – D1900V2; SN:5d038

***Test Date : 7th /October/2009**

Measured Liquid Temperature(°C) : 22.3, Ambient Temperature(°C) : 22.0

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900 Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.42 \text{ mho/m}$; $\epsilon_r = 39.5$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3020; ConvF(4.92, 4.92, 4.92); Calibrated: 2009-07-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn559; Calibrated: 2009-05-22
- Phantom: SAM Twin Phantom_1800MHz; Type: SAM; Serial: TP-1433
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Area Scan (61x71x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

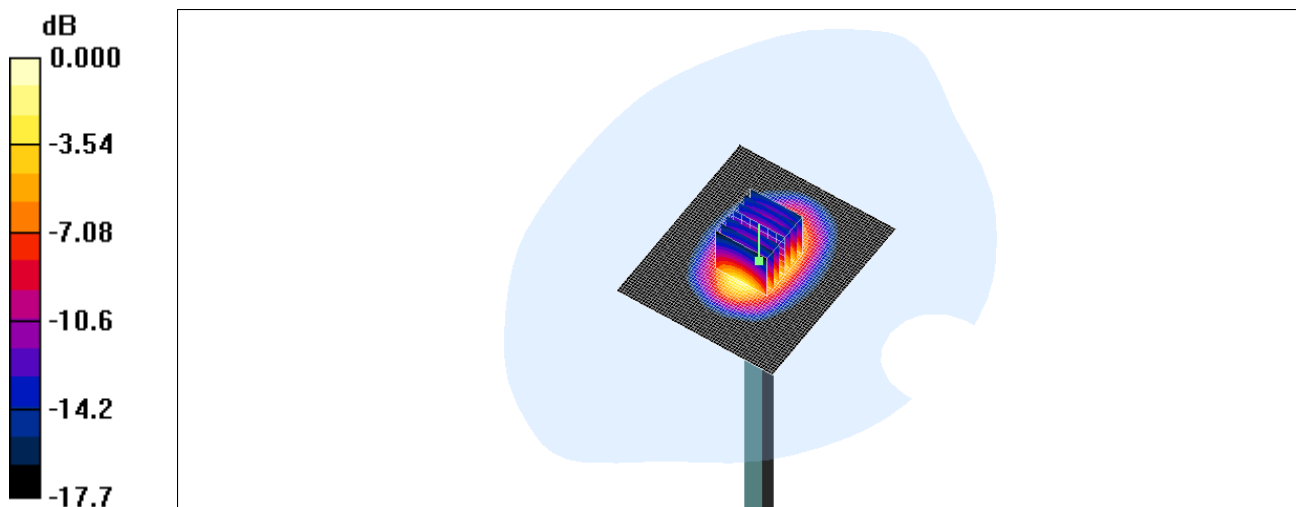
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 91.7 V/m; Power Drift = 0.017 dB

Peak SAR (extrapolated) = 19.0 W/kg

SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.38 mW/g

Maximum value of SAR (measured) = 11.6 mW/g



0 dB = 11.6mW/g

Test Laboratory: KTL

Flex7000 GPRS1900 BODY 661CH Front facing phantom_1.5cm(1slot)

***Test Date : 7th /October/2009**

Measured Liquid Temperature(°C) : 22.2, Ambient Temperature(°C) : 22.0

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

Medium: MSL1900 Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 52.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3020; ConvF(4.46, 4.46, 4.46); Calibrated: 2009-07-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn559; Calibrated: 2009-05-22
- Phantom: SAM Twin Phantom_1800MHz; Type: SAM; Serial: TP-1433
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Area Scan (51x91x1): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$

Maximum value of SAR (interpolated) = 0.039 mW/g

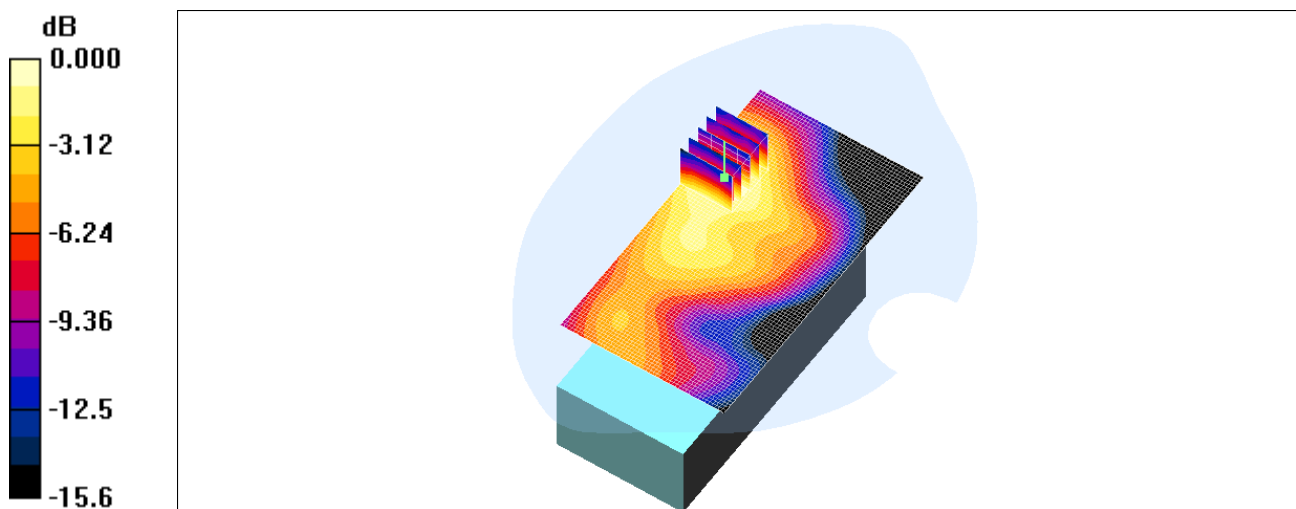
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 3.16 V/m; Power Drift = 0.072 dB

Peak SAR (extrapolated) = 0.050 W/kg

SAR(1 g) = 0.036 mW/g; SAR(10 g) = 0.023 mW/g

Maximum value of SAR (measured) = 0.039 mW/g



0 dB = 0.039mW/g

Test Laboratory: KTL

Flex7000 GPRS1900 BODY 661CH Rear facing phantom_1.5cm(1slot)

***Test Date : 7th /October/2009**

Measured Liquid Temperature(°C) : 22.2, Ambient Temperature(°C) : 22.0

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

Medium: MSL1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3020; ConvF(4.46, 4.46, 4.46); Calibrated: 2009-07-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn559; Calibrated: 2009-05-22
- Phantom: SAM Twin Phantom_1800MHz; Type: SAM; Serial: TP-1433
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Area Scan (51x91x1): Measurement grid: $dx=20$ mm, $dy=20$ mm

Maximum value of SAR (interpolated) = 0.114 mW/g

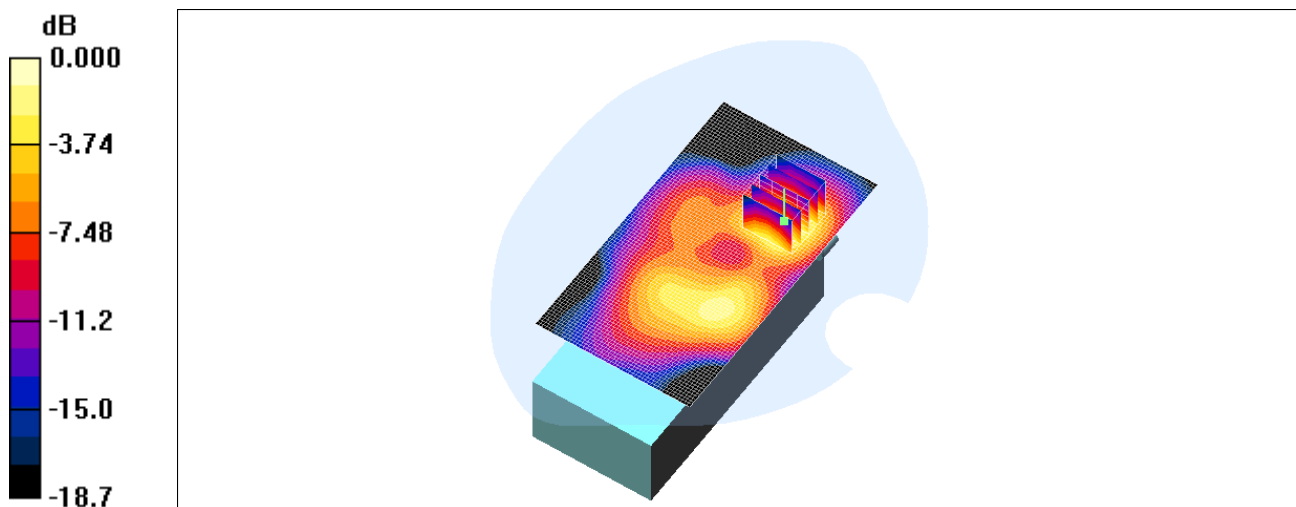
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 3.13 V/m; Power Drift = 0.085 dB

Peak SAR (extrapolated) = 0.149 W/kg

SAR(1 g) = 0.103 mW/g; SAR(10 g) = 0.059 mW/g

Maximum value of SAR (measured) = 0.113 mW/g



0 dB = 0.113mW/g

Test Laboratory: KTL

Flex7000 GPRS1900 BODY 661CH Rear facing phantom_1.5cm(2slots)

***Test Date : 7th /October/2009**

Measured Liquid Temperature(°C) : 22.2, Ambient Temperature(°C) : 22.0

Communication System: DCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:4.15

Medium: MSL1900 Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 52.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3020; ConvF(4.46, 4.46, 4.46); Calibrated: 2009-07-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn559; Calibrated: 2009-05-22
- Phantom: SAM Twin Phantom_1800MHz; Type: SAM; Serial: TP-1433
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Area Scan (51x91x1): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$

Maximum value of SAR (interpolated) = 0.116 mW/g

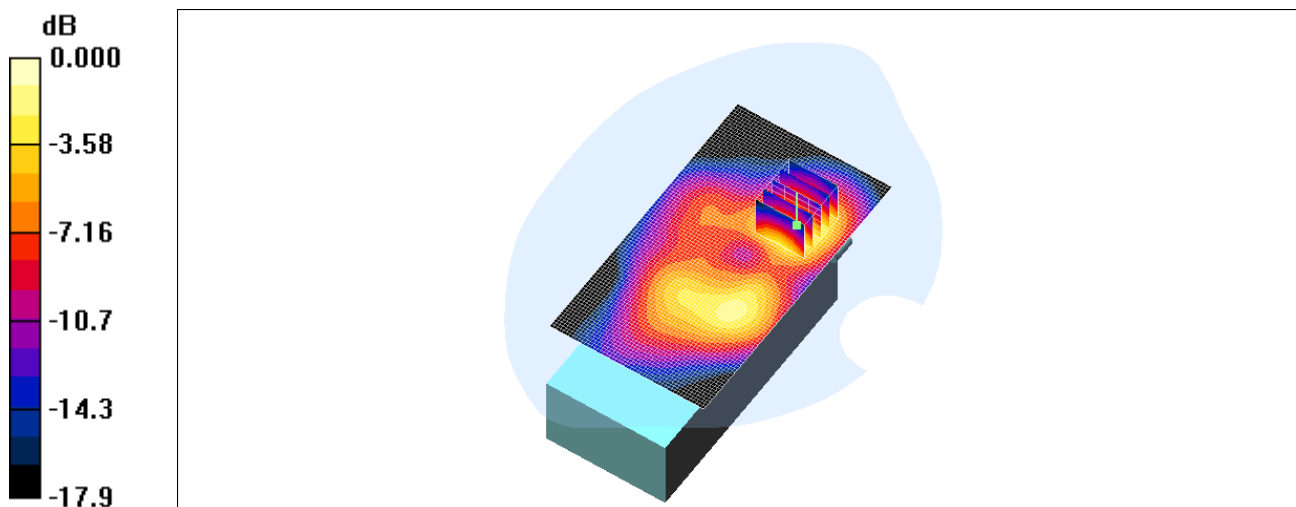
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 3.21 V/m; Power Drift = -0.088 dB

Peak SAR (extrapolated) = 0.156 W/kg

SAR(1 g) = 0.108 mW/g; SAR(10 g) = 0.062 mW/g

Maximum value of SAR (measured) = 0.119 mW/g



0 dB = 0.119mW/g

Test Laboratory: KTL

Flex7000 GPRS1900 BODY 512CH Rear facing phantom_1.5cm(2slots)

***Test Date : 7th /October/2009**

Measured Liquid Temperature(°C) : 22.2, Ambient Temperature(°C) : 22.0

Communication System: DCS 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4.15

Medium: MSL1900 Medium parameters used: $f = 1850.2 \text{ MHz}$; $\sigma = 1.51 \text{ mho/m}$; $\epsilon_r = 52.9$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3020; ConvF(4.46, 4.46, 4.46); Calibrated: 2009-07-22
- Sensor-Surface: 4mm (Mechanical Surface Detection) Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn559; Calibrated: 2009-05-22
- Phantom: SAM Twin Phantom_1800MHz; Type: SAM; Serial: TP-1433
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Area Scan (51x91x1): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$

Maximum value of SAR (interpolated) = 0.149 mW/g

Z Scan (1x1x16): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$, $dz=20\text{mm}$

Maximum value of SAR (interpolated) = 0.009 mW/g

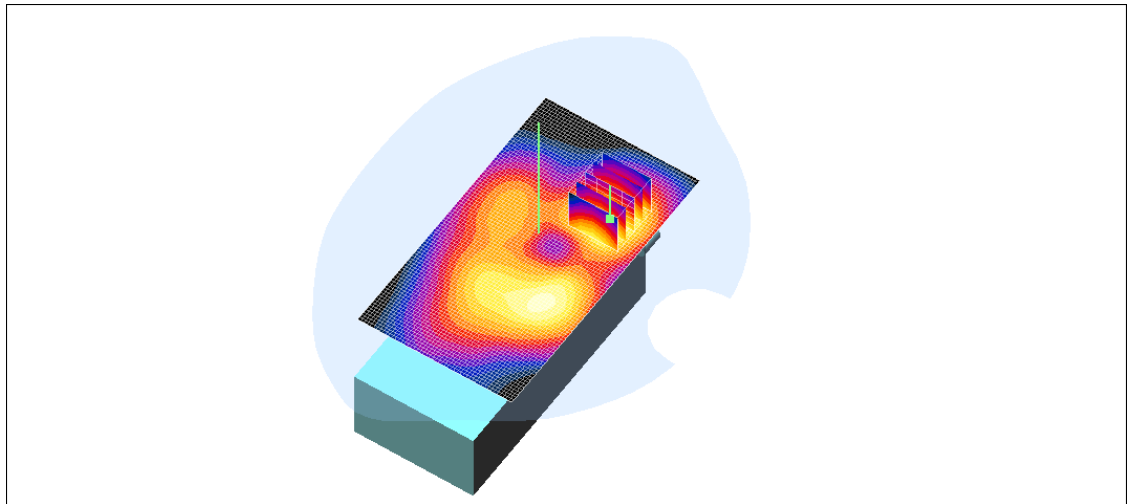
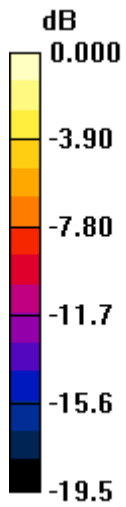
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 3.45 V/m; Power Drift = 0.041 dB

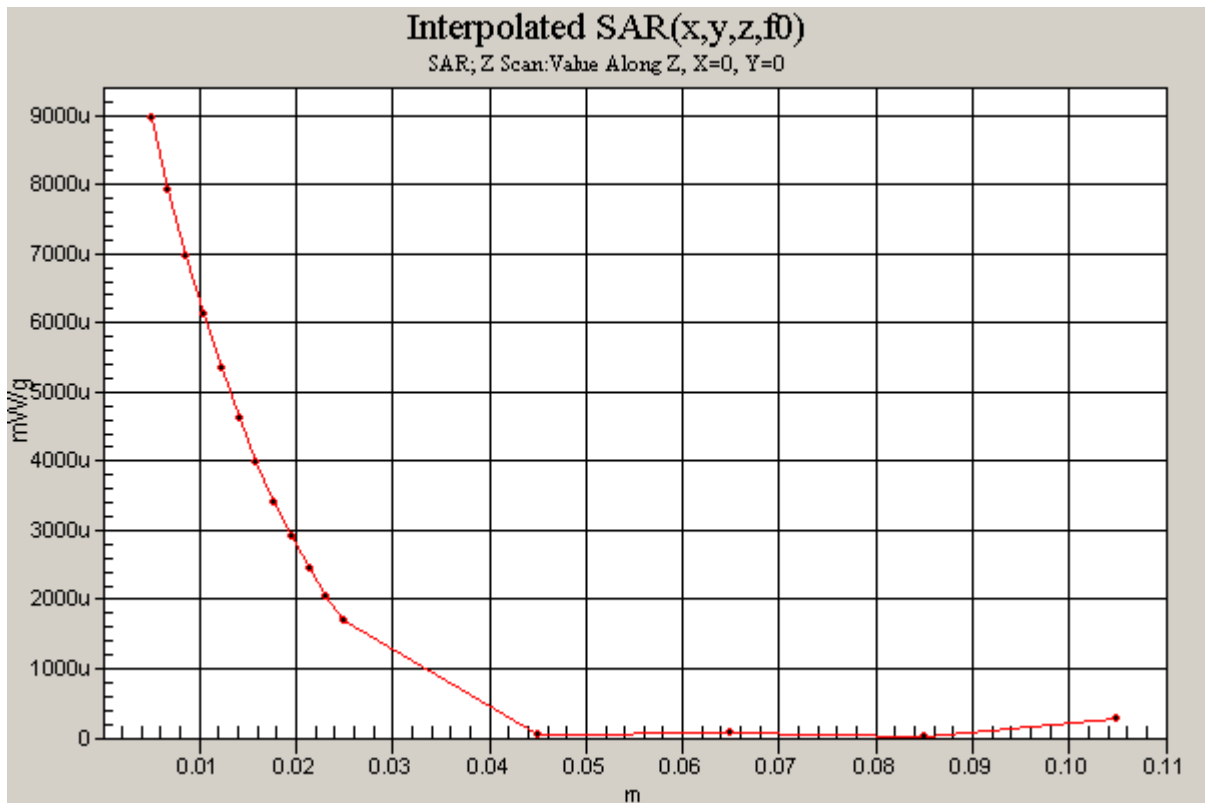
Peak SAR (extrapolated) = 0.193 W/kg

SAR(1 g) = 0.132 mW/g; SAR(10 g) = 0.076 mW/g

Maximum value of SAR (measured) = 0.145 mW/g



0 dB = 0.145mW/g



Test Laboratory: KTL

Flex7000 GPRS1900 BODY 810CH Rear facing phantom_1.5cm(2slots)

***Test Date : 7th /October/2009**

Measured Liquid Temperature(°C) : 22.2, Ambient Temperature(°C) : 22.0

Communication System: DCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:4.15

Medium: MSL1900 Medium parameters used: $f = 1909.8 \text{ MHz}$; $\sigma = 1.57 \text{ mho/m}$; $\epsilon_r = 52.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3020; ConvF(4.46, 4.46, 4.46); Calibrated: 2009-07-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn559; Calibrated: 2009-05-22
- Phantom: SAM Twin Phantom_1800MHz; Type: SAM; Serial: TP-1433
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Area Scan (51x91x1): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$

Maximum value of SAR (interpolated) = 0.108 mW/g

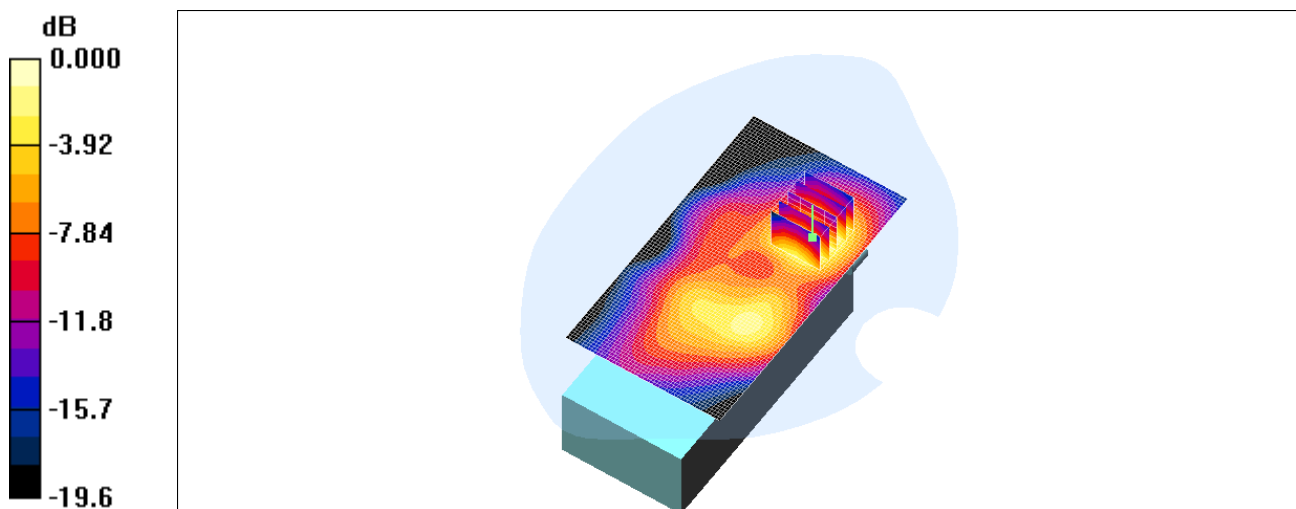
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 2.97 V/m; Power Drift = 0.093 dB

Peak SAR (extrapolated) = 0.139 W/kg

SAR(1 g) = 0.096 mW/g; SAR(10 g) = 0.056 mW/g

Maximum value of SAR (measured) = 0.104 mW/g



0 dB = 0.104mW/g