
Appendix for the Report

Dosimetric Assessment of the Portable Device NP-Q1u from Samsung (FCC ID: A3L-NP-Q1U)

According to the FCC Requirements

SAR Distribution Plots

September 10, 2007
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The test results only relate to the items tested.
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1 SAR Distribution Plots, Lap Held Position, GPRS 850 Body

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [Q1_73M_bahm_2.da4](#)

DUT: Samsung; Type: Sens Q1 Ultra; Serial: 686W93BP500073M

Program Name: Body Worn

Communication System: GPRS 850; Frequency: 836.6 MHz; Duty Cycle: 1:2.66

Medium parameters used: $f = 836.6 \text{ MHz}$; $\sigma = 0.95 \text{ mho/m}$; $\epsilon_r = 55.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(9.94, 9.94, 9.94); Calibrated: 27.09.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 09.02.2007
- Phantom: SAM Sugar 1059; Type: Speag; Serial: 1059
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Worn/Area Scan (11x10x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.676 mW/g

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

Reference Value = 13.4 V/m; Power Drift = -0.003 dB

Peak SAR (extrapolated) = 1.00 W/kg

SAR(1 g) = 0.615 mW/g; SAR(10 g) = 0.389 mW/g

Maximum value of SAR (measured) = 0.686 mW/g

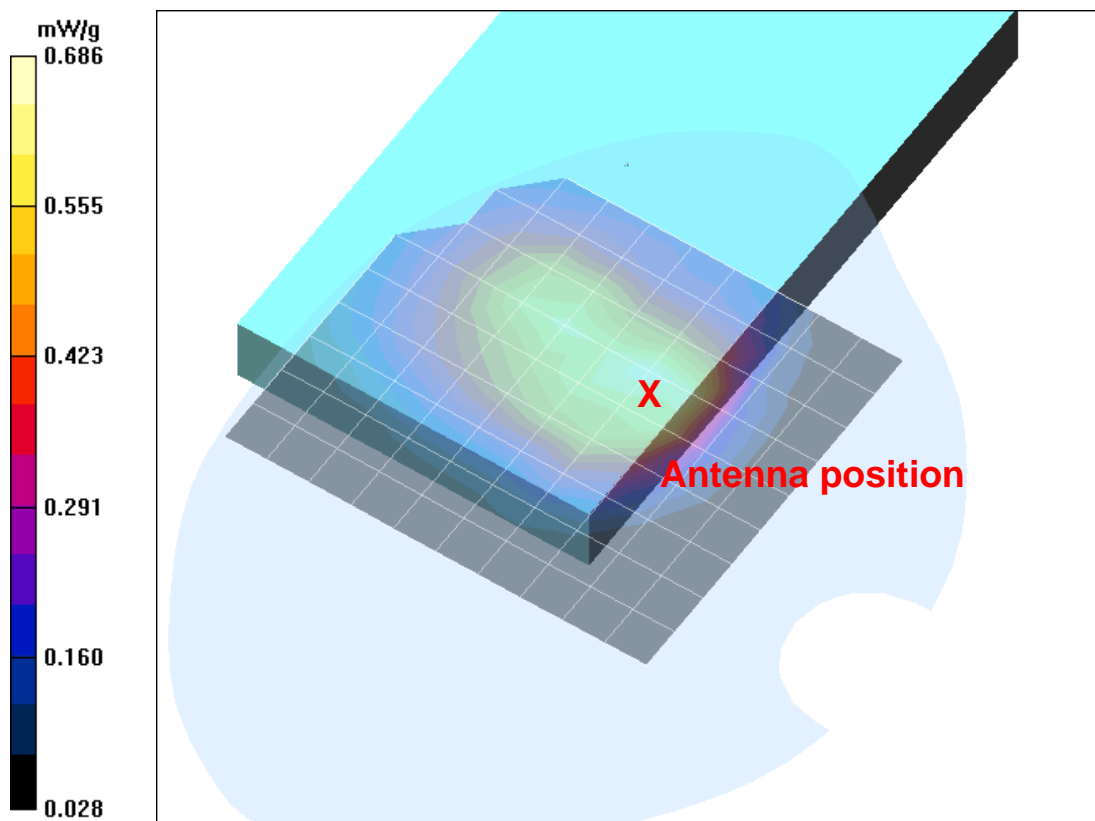


Fig. 1: SAR distribution for GPRS 850 (Class 11), channel 190, (September 03, 2007; Ambient Temperature: 22.3°C; Liquid Temperature: 21.3°C).

2 SAR Distribution Plots, Lap Held Position, GPRS 1900 Body

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [Q1_73M_bphm_2.da4](#)

DUT: Samsung; Type: Sens Q1 Ultra; Serial: 686W93BP500073M

Program Name: Body Worn

Communication System: GPRS 1900; Frequency: 1880 MHz; Duty Cycle: 1:2

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(4.72, 4.72, 4.72); Calibrated: 15.02.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 09.02.2007
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Worn/Area Scan (11x9x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 1.07 mW/g

Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.7 V/m; Power Drift = -0.088 dB

Peak SAR (extrapolated) = 1.66 W/kg

SAR(1 g) = 0.994 mW/g; SAR(10 g) = 0.597 mW/g

Maximum value of SAR (measured) = 1.08 mW/g

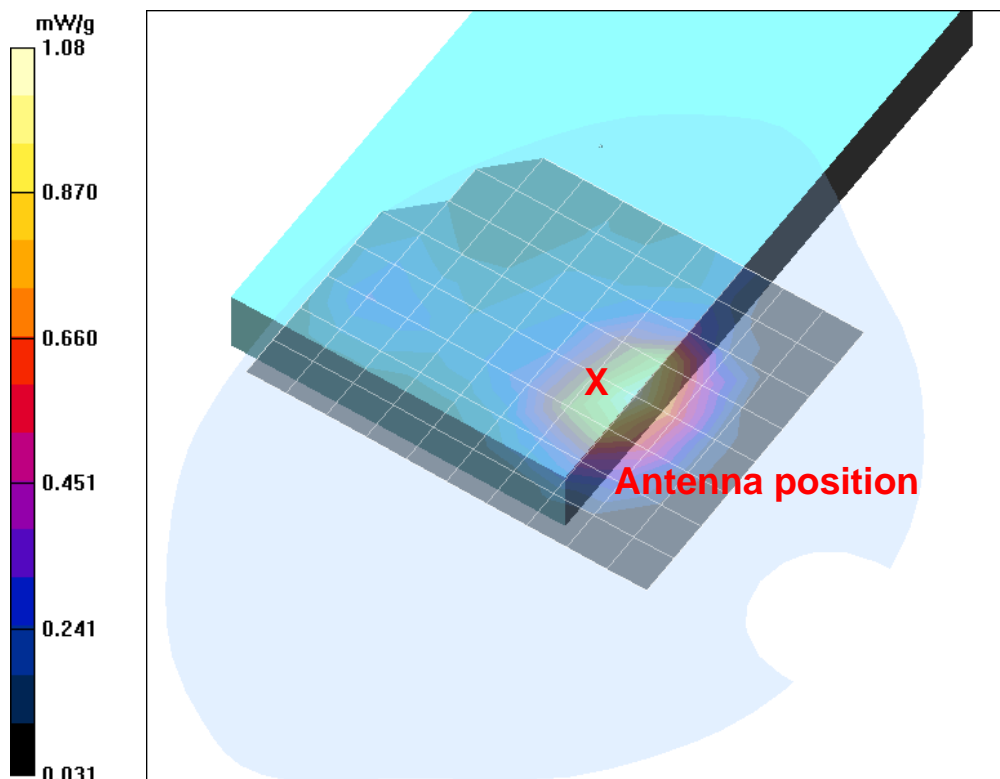


Fig. 2: Worst case SAR distribution for GPRS 1900 (Class 12), channel 661(September 05, 2007; Ambient Temperature: 22.6° C; Liquid Temperature: 21.5 C).

3 SAR Distribution Plots, Lap Held Position, WCDMA II (FDD) Body

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [Q1_73M_bullhm_2.da4](#)

DUT: Samsung; Type: Sens Q1 Ultra; Serial: 686W93BP500073M

Program Name: Body Worn

Communication System: WCDMA FDD Band II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(4.72, 4.72, 4.72); Calibrated: 15.02.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 09.02.2007
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Worn/Area Scan (11x9x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.544 mW/g

Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.7 V/m; Power Drift = 0.124 dB

Peak SAR (extrapolated) = 0.964 W/kg

SAR(1 g) = 0.589 mW/g; SAR(10 g) = 0.353 mW/g

Maximum value of SAR (measured) = 0.638 mW/g

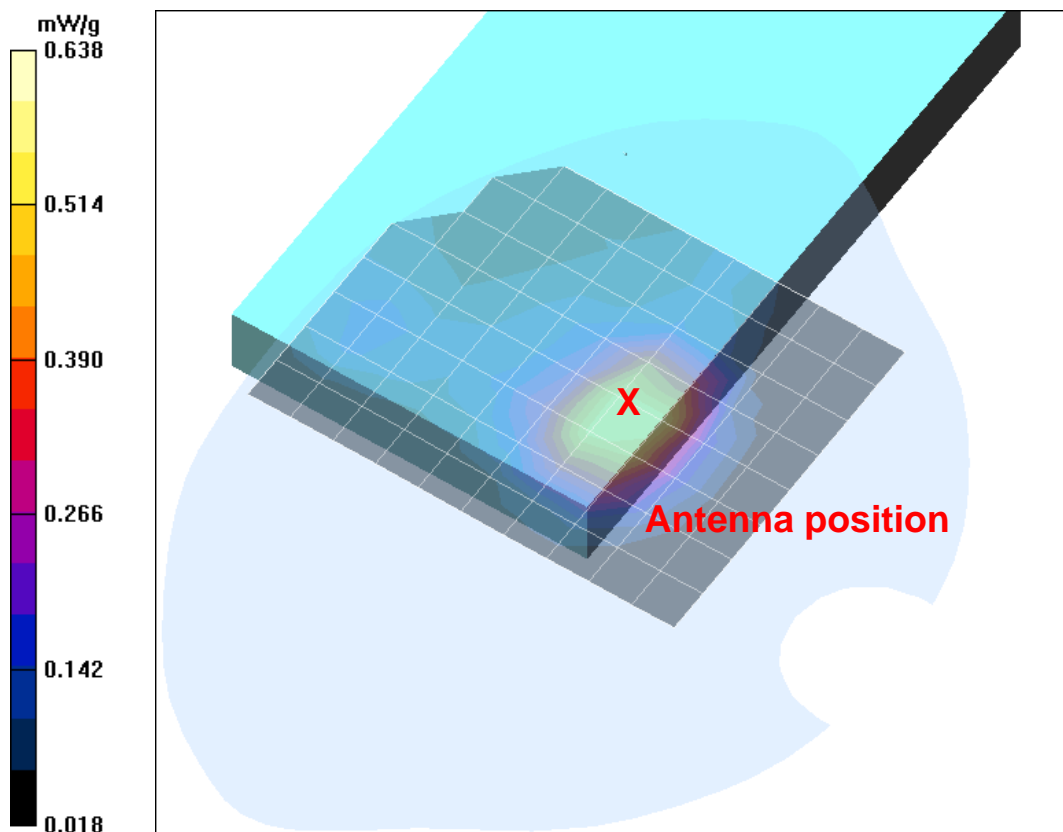


Fig. 3: SAR distribution for WCDMA II (FDD), channel 9400, (September 05, 2007; Ambient Temperature: 22.6° C; Liquid Temperature: 21.5° C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [Q1_73M_bullhm_2_HSDPA.da4](#)

DUT: Samsung; Type: Sens Q1 Ultra; Serial: 686W93BP500073M

Program Name: Body Worn

Communication System: WCDMA FDD Band II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(4.72, 4.72, 4.72); Calibrated: 15.02.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 09.02.2007
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Worn/Area Scan (11x9x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.428 mW/g

Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.0 V/m; Power Drift = 0.132 dB

Peak SAR (extrapolated) = 0.818 W/kg

SAR(1 g) = 0.470 mW/g; SAR(10 g) = 0.278 mW/g

Maximum value of SAR (measured) = 0.521 mW/g

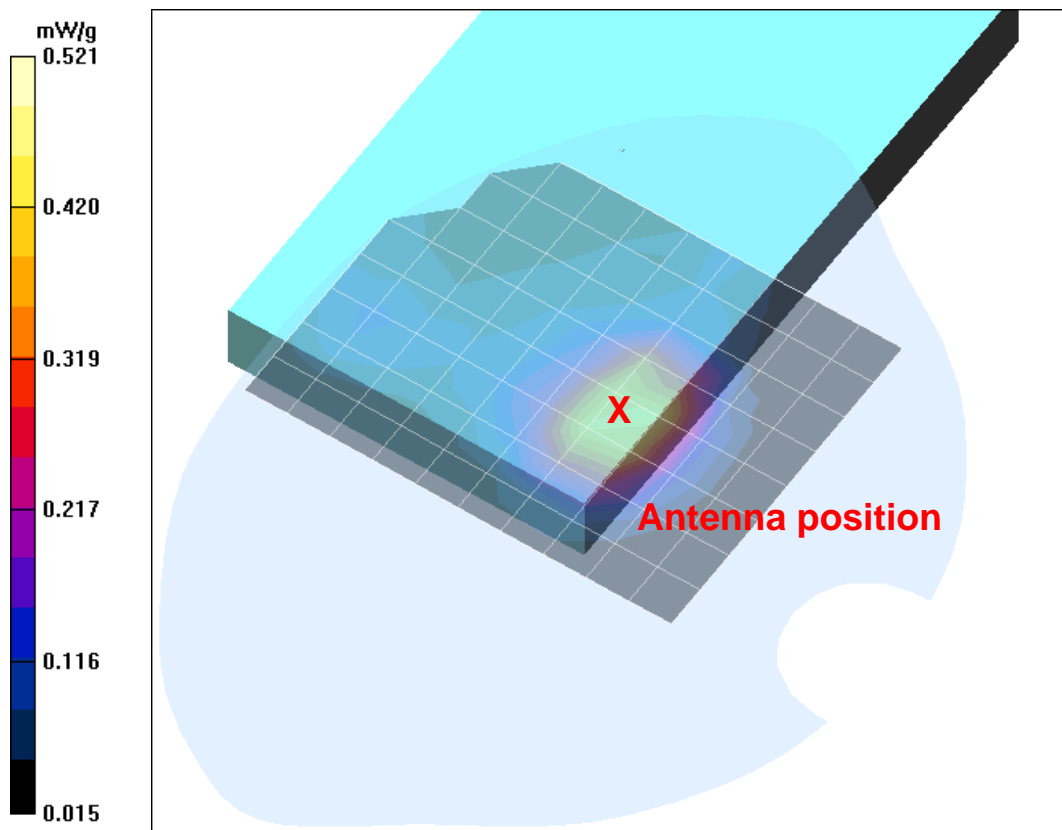


Fig. 4: SAR distribution for WCDMA II (FDD), HSDPA, channel 9400, (September 05, 2007; Ambient Temperature: 22.6° C; Liquid Temperature: 21.5° C).

4 SAR Distribution Plots, Lap Held Position, WCDMA V (FDD) Body

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [Q1_73M_buVhm_2.da4](#)

DUT: Samsung; Type: Sens Q1 Ultra; Serial: 686W93BP500073M

Program Name: Body Worn

Communication System: WCDMA (FDD) Band V; Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 836.5 \text{ MHz}$; $\sigma = 0.95 \text{ mho/m}$; $\epsilon_r = 55.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(9.94, 9.94, 9.94); Calibrated: 27.09.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 09.02.2007
- Phantom: SAM Sugar 1059; Type: Speag; Serial: 1059
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Worn/Area Scan (11x10x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.465 mW/g

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

Reference Value = 14.6 V/m; Power Drift = 0.175 dB

Peak SAR (extrapolated) = 0.745 W/kg

SAR(1 g) = 0.457 mW/g; SAR(10 g) = 0.288 mW/g

Maximum value of SAR (measured) = 0.493 mW/g

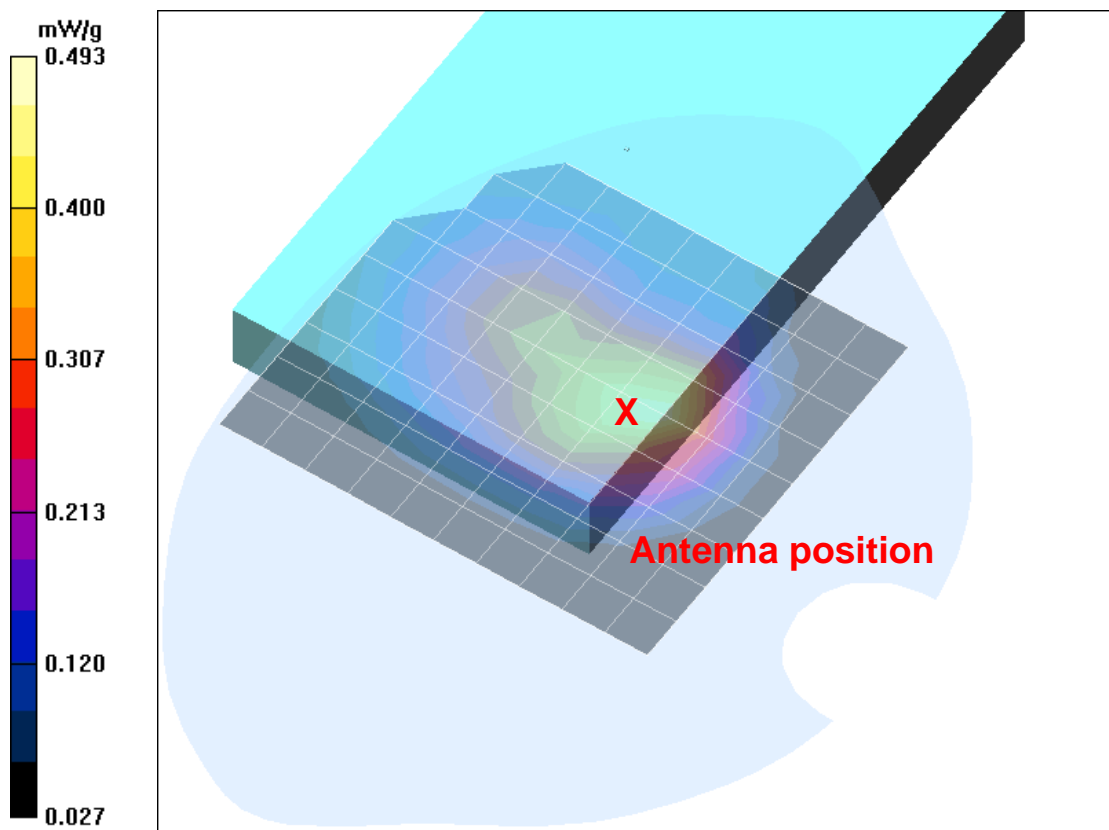


Fig. 5: SAR distribution for WCDMA V (FDD), channel 4183, (September 03, 2007; Ambient Temperature: 22.3°C; Liquid Temperature: 21.3°C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [Q1_73M_buVhm_2_HSDPA.da4](#)

DUT: Samsung; Type: Sens Q1 Ultra; Serial: 686W93BP500073M

Program Name: Body Worn

Communication System: WCDMA (FDD) Band V; Frequency: 836.5 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 836.5 \text{ MHz}$; $\sigma = 0.95 \text{ mho/m}$; $\epsilon_r = 55.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(9.94, 9.94, 9.94); Calibrated: 27.09.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 09.02.2007
- Phantom: SAM Sugar 1059; Type: Speag; Serial: 1059
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Worn/Area Scan (11x10x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.371 mW/g

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

Reference Value = 11.5 V/m; Power Drift = 0.127 dB

Peak SAR (extrapolated) = 0.592 W/kg

SAR(1 g) = 0.370 mW/g; SAR(10 g) = 0.239 mW/g

Maximum value of SAR (measured) = 0.401 mW/g

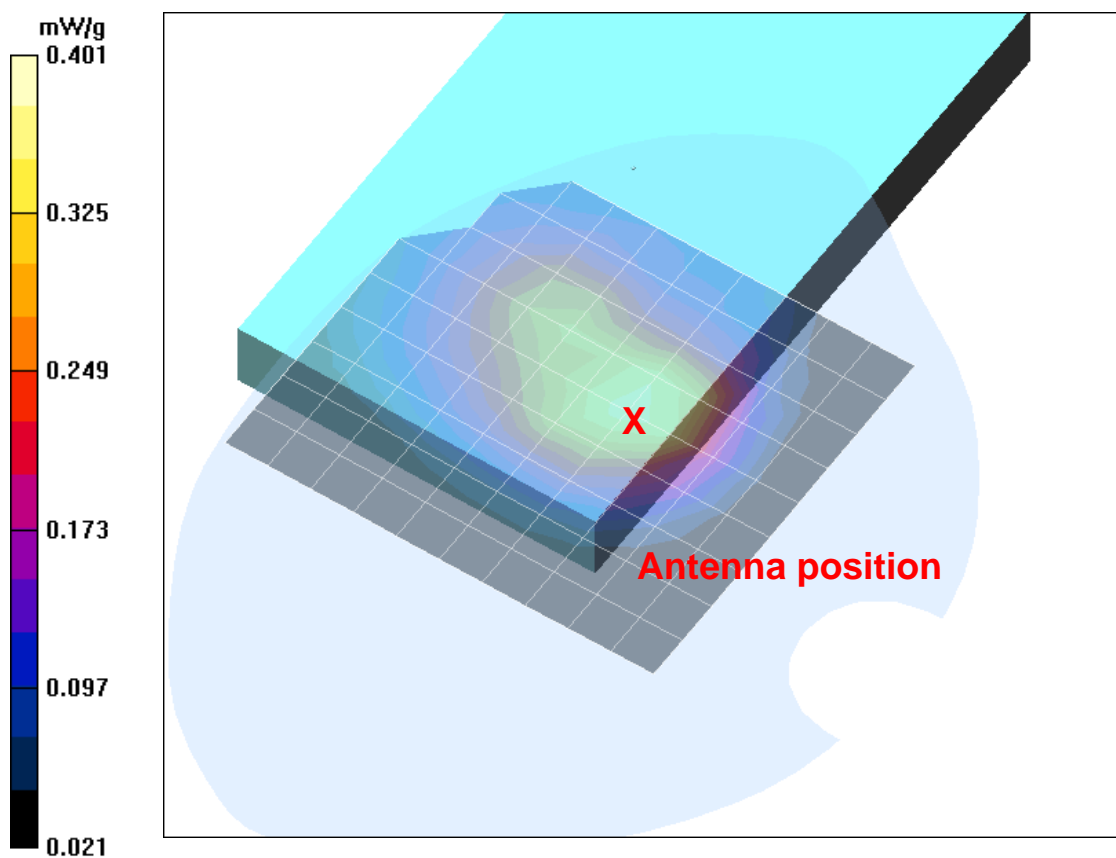


Fig. 6: SAR distribution for WCDMA V (FDD), HSDPA, channel 4183 (September 03, 2007; Ambient Temperature: 22.3°C; Liquid Temperature: 21.3°C).

5 SAR z-axis scans (Validation)

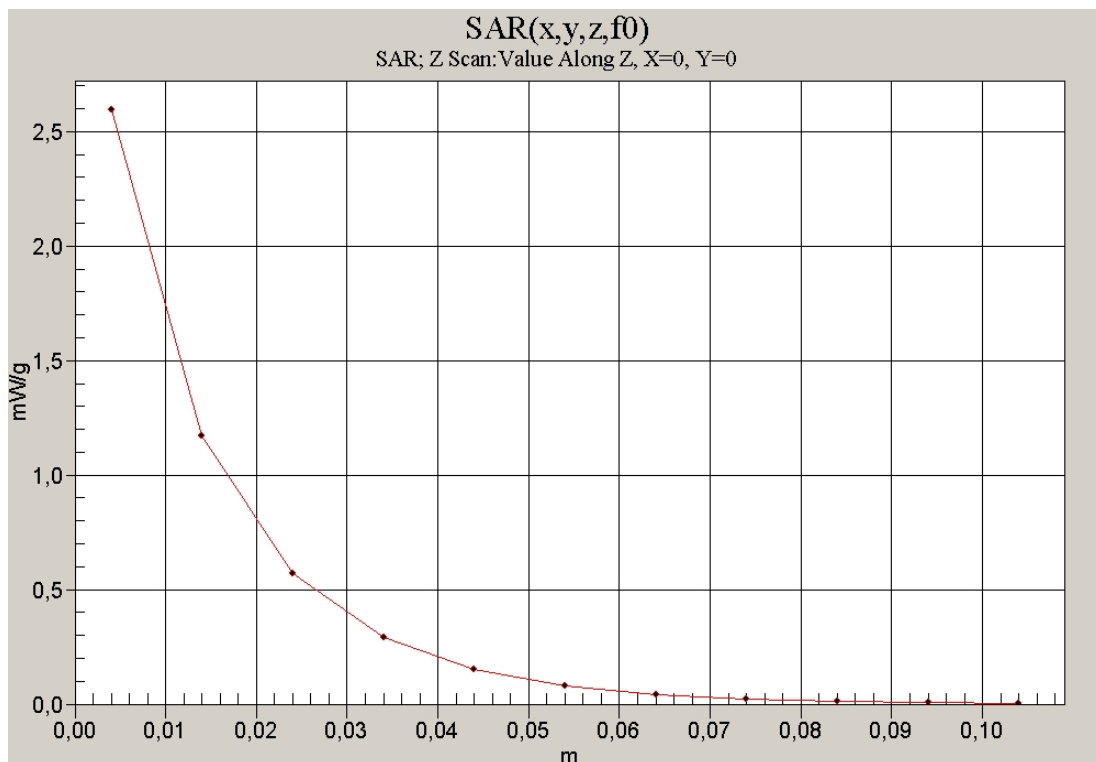


Fig. 7: SAR versus liquid depth, 835 MHz body (September 03, 2007; Ambient Temperature: 22.5° C; Liquid Temperature : 21.4° C).

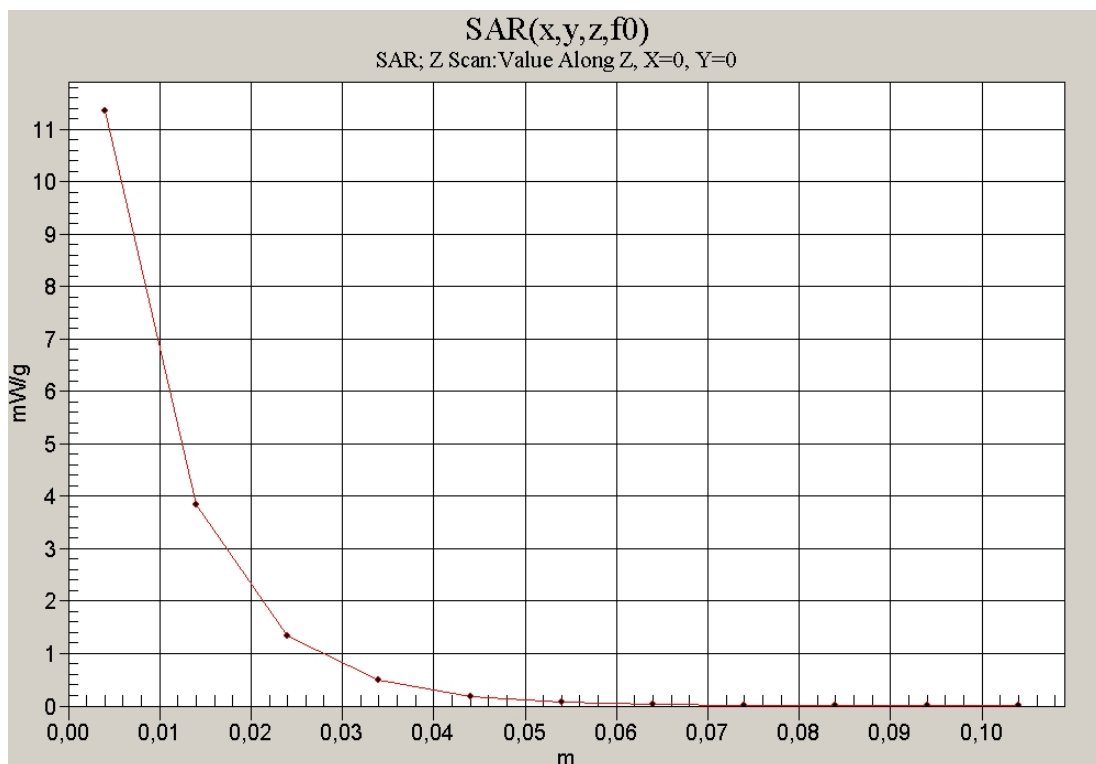


Fig. 8: SAR versus liquid depth, 1900 MHz body (September 05, 2007; Ambient Temperature: 22.6° C; Liquid Temperature : 21.7° C).

6 SAR z-axis scans (Measurements)

The following pictures show the plots of SAR versus liquid depth for the worst case values.

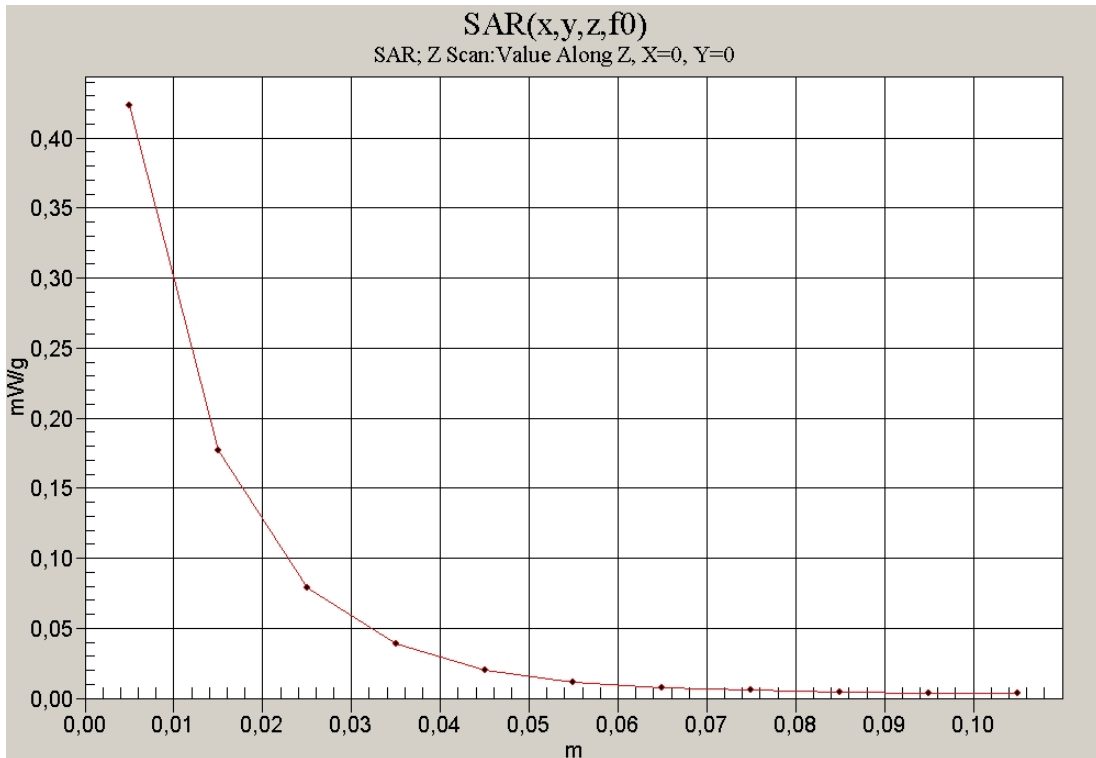


Fig. 9: SAR versus liquid depth, body: GPRS 850, channel 190 (September 03, 2007; Ambient Temperature: 22.3° C; Liquid Temperature: 21.3° C).

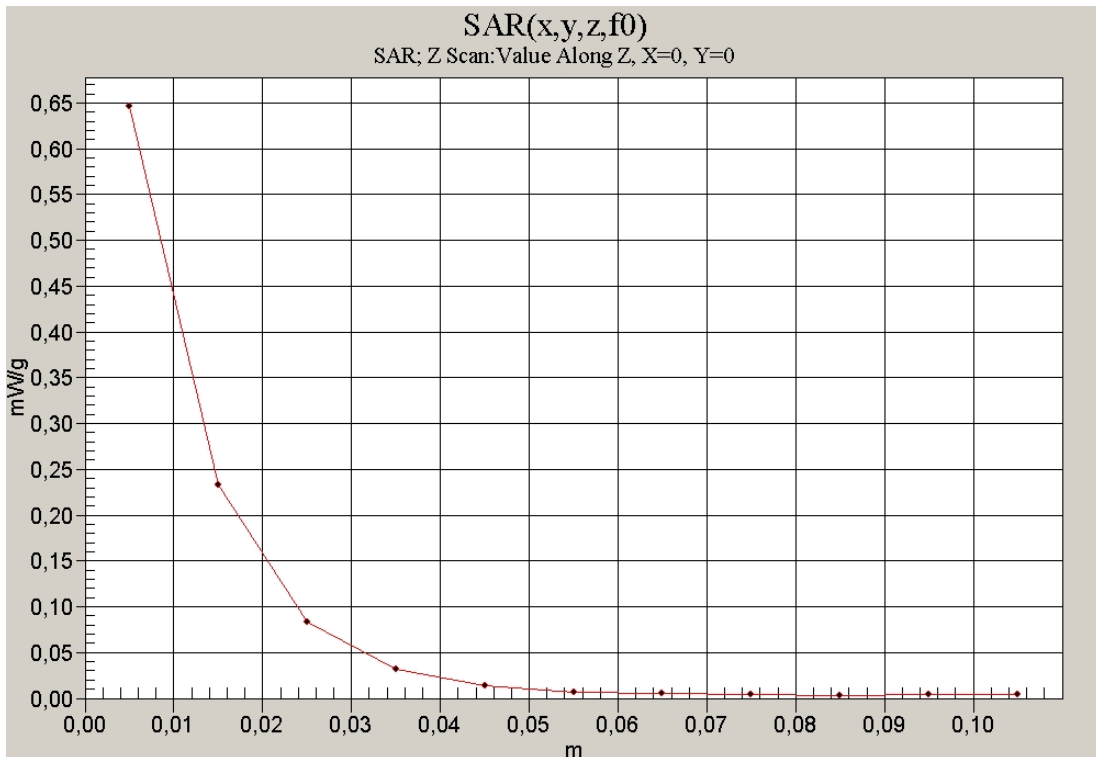


Fig. 10: SAR versus liquid depth, body: GPRS 1900, channel 661 (September 05, 2007; Ambient Temperature: 22.6° C; Liquid Temperature: 21.5° C).

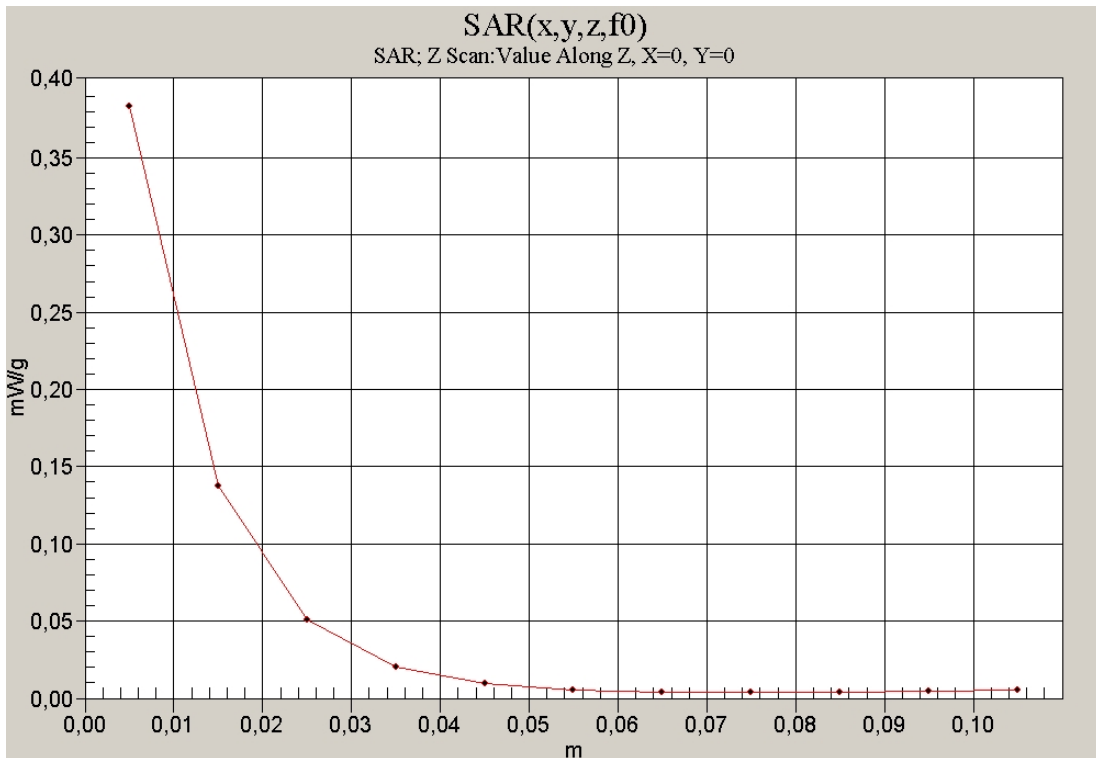


Fig. 11: SAR versus liquid depth, body: WCDMA II (FDD), channel 9400 (September 05, 2007; Ambient Temperature: 22.6° C; Liquid Temperature: 21.5° C).

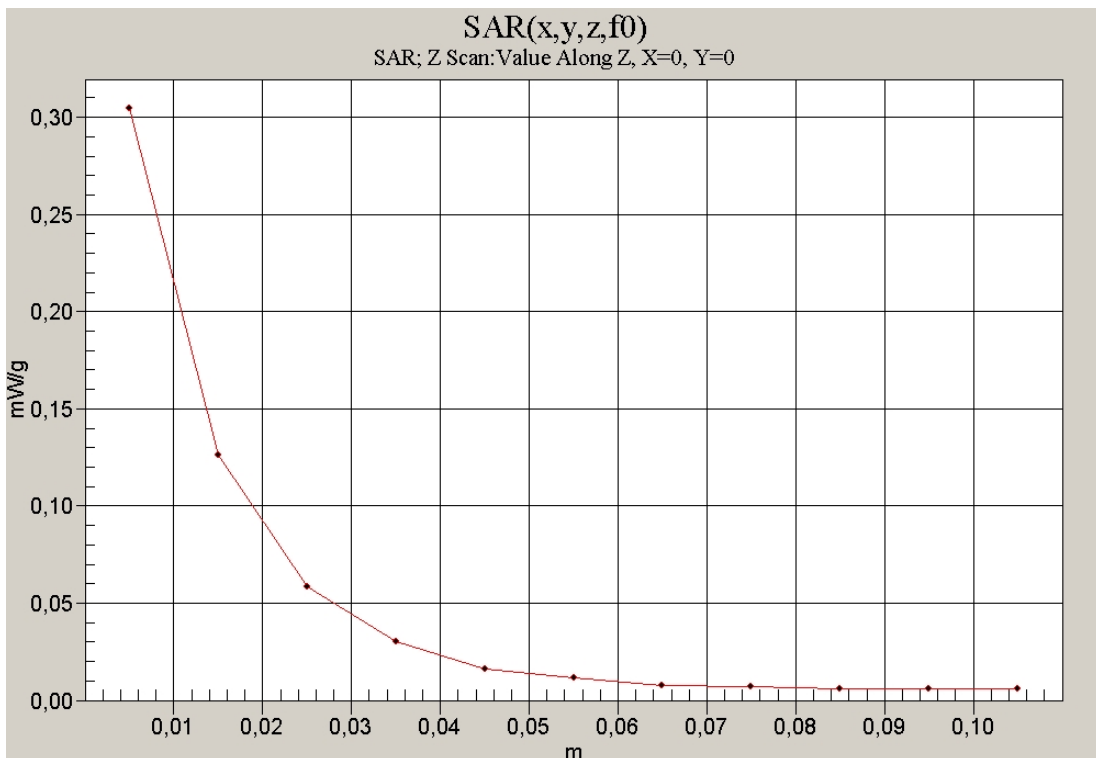


Fig. 12: SAR versus liquid depth, body: WCDMA V (FDD), channel 4183 (September 03, 2007; Ambient Temperature: 22.3° C; Liquid Temperature: 21.3° C).