
Appendix for the Report

Dosimetric Assessment of the O2XM (FCC ID: S3YO2XM) from FL Telecom ApS

According to the FCC Requirements

SAR Distribution Plots

March 18, 2005
IMST GmbH
Carl-Friedrich-Gauß-Str. 2
D-47475 Kamp-Lintfort

Customer
7layers AG
Borsigstrasse 11
D-40880 Ratingen

The test results only relate to the items tested.
This report shall not be reproduced except in full without the written
approval of the testing laboratory.

Table of Contents

1	SAR DISTRIBUTION PLOTS, PCS 1900 HEAD	3
2	SAR DISTRIBUTION PLOTS, PCS 1900 BODY WORN (GAP = 15 MM)	7
3	SAR Z-AXIS SCANS (VALIDATION)	10
4	SAR Z-AXIS SCANS (MEASUREMENTS).....	11

1 SAR Distribution Plots, PCS 1900 head

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [196bplm_1.da4](#)

DUT: O2 XM; Type: O2 XM; Serial: 35596100004196

Program Name: Cheek Left

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

Medium parameters used: $\sigma = 1.4$ mho/m, $\epsilon_r = 38.4$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(5.11, 5.11, 5.11); Calibrated: 13.01.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn489; Calibrated: 03.09.2004
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Cheek Left/Area Scan (6x14x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.552 mW/g

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

Reference Value = 5.77 V/m; Power Drift = 0.018 dB

Peak SAR (extrapolated) = 0.835 W/kg

SAR(1 g) = 0.530 mW/g; SAR(10 g) = 0.315 mW/g

Maximum value of SAR (measured) = 0.575 mW/g

Cheek Left/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.77 V/m; Power Drift = 0.018 dB

Peak SAR (extrapolated) = 0.613 W/kg

SAR(1 g) = 0.439 mW/g; SAR(10 g) = 0.277 mW/g

Maximum value of SAR (measured) = 0.470 mW/g

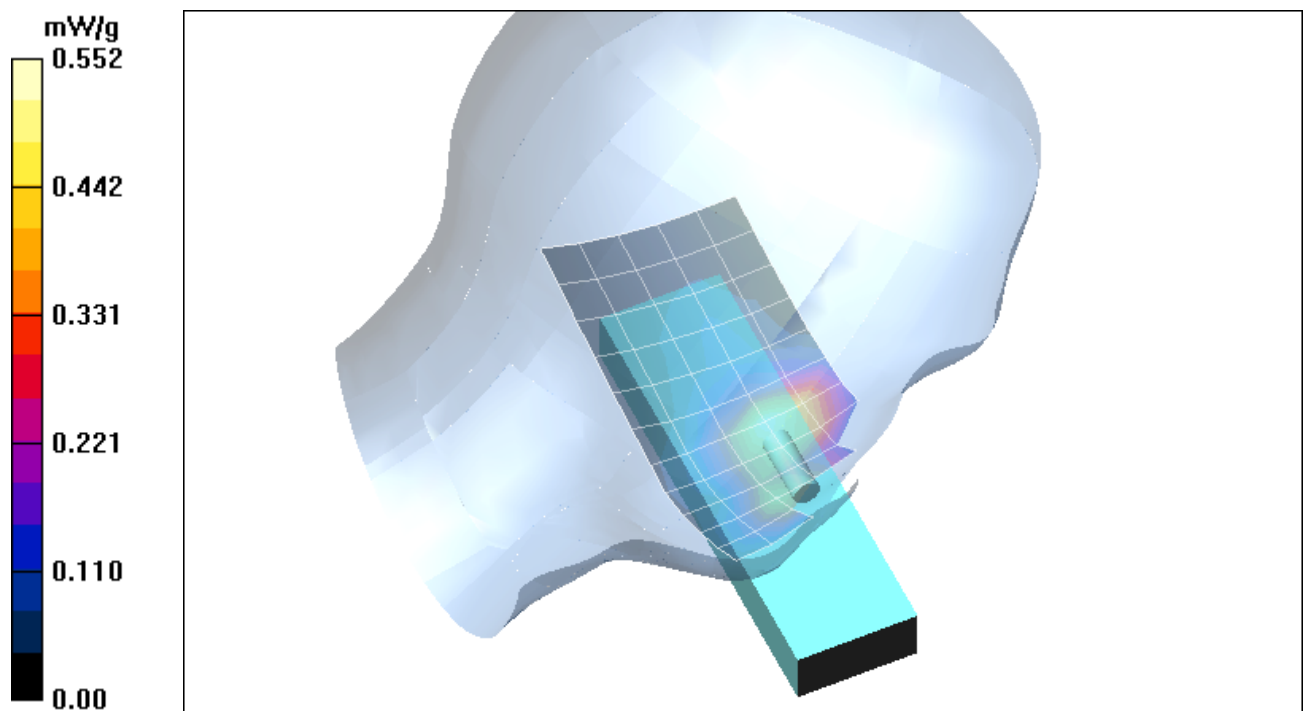


Fig. 1: SAR distribution for PCS 1900, channel 661, cheek position, left side of head (16.03.2005; Ambient Temperature: 21.2° C; Liquid Temperature: 20.2° C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [196bplm 2.da4](#)

DUT: O2 XM; **Type:** O2 XM; **Serial:** 35596100004196

Program Name: Tilted Left

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

Medium parameters used: $\sigma = 1.4$ mho/m, $\epsilon_r = 38.4$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(5.11, 5.11, 5.11); Calibrated: 13.01.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn489; Calibrated: 03.09.2004
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilted Left/Area Scan (6x14x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.143 mW/g

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

Reference Value = 7.92 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 0.192 W/kg

SAR(1 g) = 0.134 mW/g; SAR(10 g) = 0.081 mW/g

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

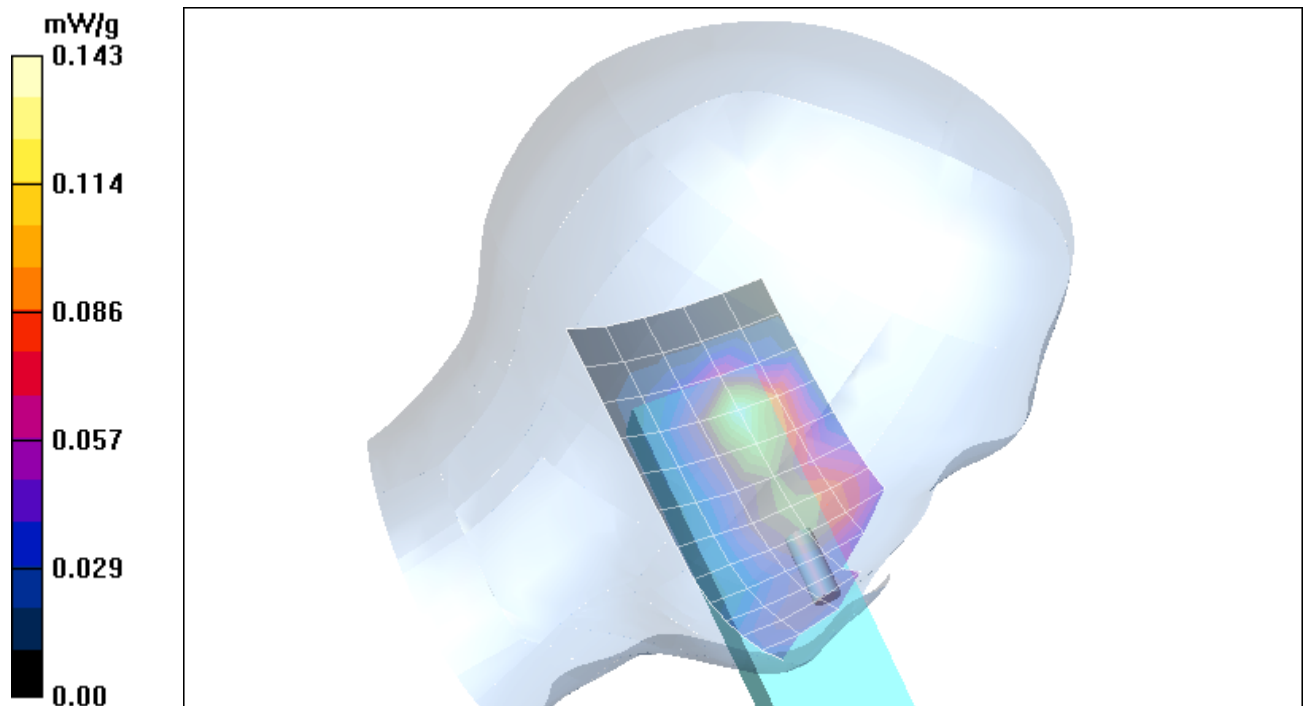


Fig. 2: SAR distribution for PCS 1900, channel 661, tilted position, left side of head (16.03.2005; Ambient Temperature: 21.2° C; Liquid Temperature : 20.2° C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [196bprm_1.da4](#)

DUT: O2 XM; **Type:** O2 XM; **Serial:** 35596100004196

Program Name: Cheek Right

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

Medium parameters used: $\sigma = 1.4$ mho/m, $\epsilon_r = 38.4$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(5.11, 5.11, 5.11); Calibrated: 13.01.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn489; Calibrated: 03.09.2004
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Cheek Right/Area Scan (6x14x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.507 mW/g

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

Reference Value = 7.59 V/m; Power Drift = -0.2 dB

Peak SAR (extrapolated) = 0.780 W/kg

SAR(1 g) = 0.498 mW/g; SAR(10 g) = 0.298 mW/g

Maximum value of SAR (measured) = 0.541 mW/g

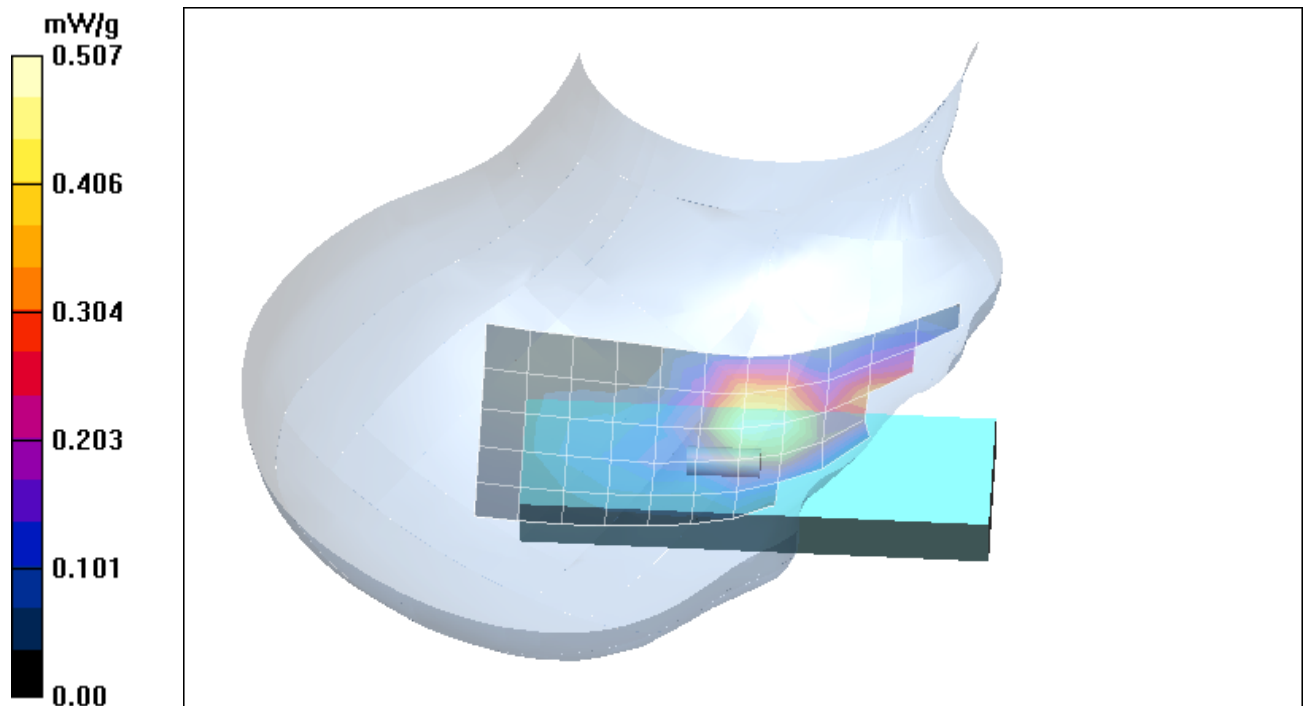


Fig. 3: SAR distribution for PCS 1900, channel 661, cheek position, right side of head (16.03.2005; Ambient Temperature: 21.2° C; Liquid Temperature : 20.2° C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [196bprm 2.da4](#)

DUT: O2 XM; Type: O2 XM; Serial: 35596100004196

Program Name: Tilted Right

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

Medium parameters used: $\sigma = 1.4$ mho/m, $\epsilon_r = 38.4$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(5.11, 5.11, 5.11); Calibrated: 13.01.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn489; Calibrated: 03.09.2004
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilted Right/Area Scan (6x14x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.120 mW/g

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

Reference Value = 8.90 V/m; Power Drift = -0.066 dB

Peak SAR (extrapolated) = 0.161 W/kg

SAR(1 g) = 0.119 mW/g; SAR(10 g) = 0.075 mW/g

Maximum value of SAR (measured) = 0.130 mW/g

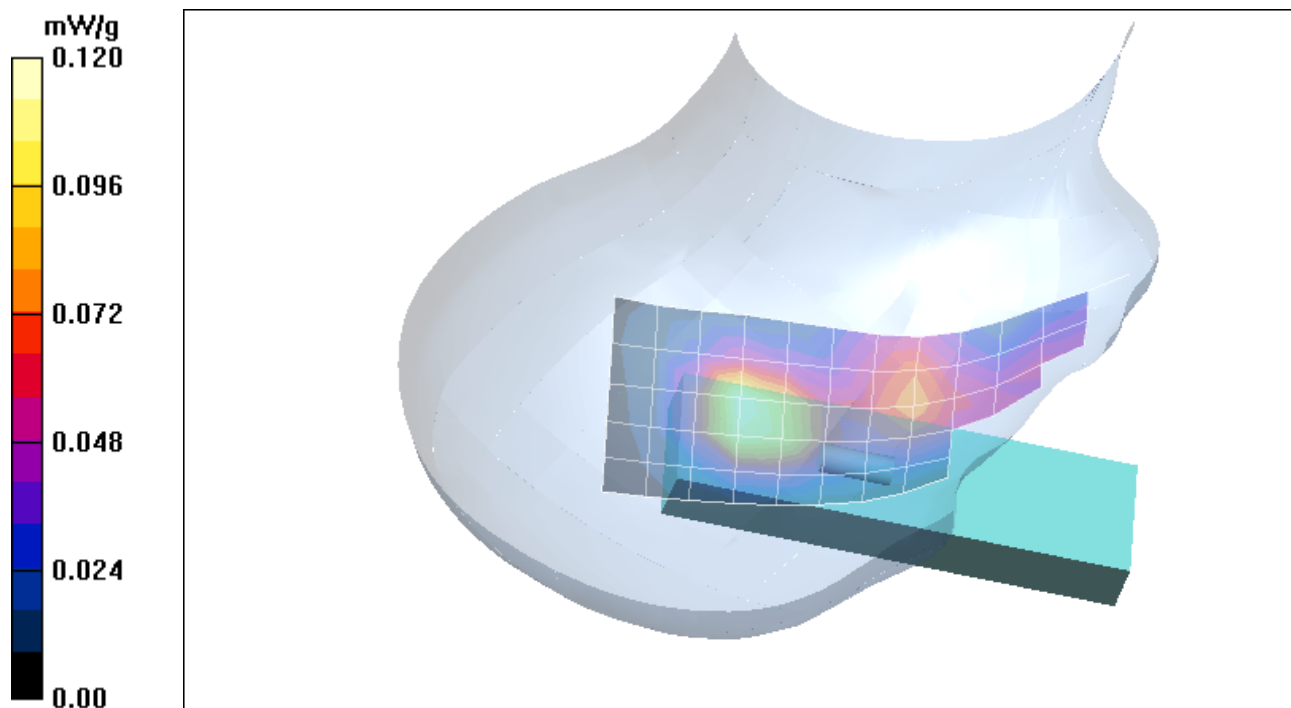


Fig. 4: SAR distribution for PCS 1900, channel 661, tilted position, right side of head (16.03.2005; Ambient Temperature: 21.1° C; Liquid Temperature : 20.2° C).

2 SAR Distribution Plots, PCS 1900 Body worn (gap = 15 mm)

Test Laboratory: IMST GmbH, DASY Yellow (II); File Name: [196yphm_3.da4](#)

DUT: O2 XM; Type: O2 XM; Serial: 35596100004196

Program Name: Cheek Left

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

Medium parameters used: $\sigma = 1.52$ mho/m, $\epsilon_r = 51.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.54, 7.54, 7.54); Calibrated: 27.08.2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 23.07.2004
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Body 1900/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

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

Body 1900/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.6 V/m; Power Drift = -0.133 dB

Peak SAR (extrapolated) = 0.682 W/kg

SAR(1 g) = 0.426 mW/g; SAR(10 g) = 0.249 mW/g

Maximum value of SAR (measured) = 0.467 mW/g

Body 1900/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.6 V/m; Power Drift = -0.133 dB

Peak SAR (extrapolated) = 0.432 W/kg

SAR(1 g) = 0.298 mW/g; SAR(10 g) = 0.197 mW/g

Maximum value of SAR (measured) = 0.323 mW/g

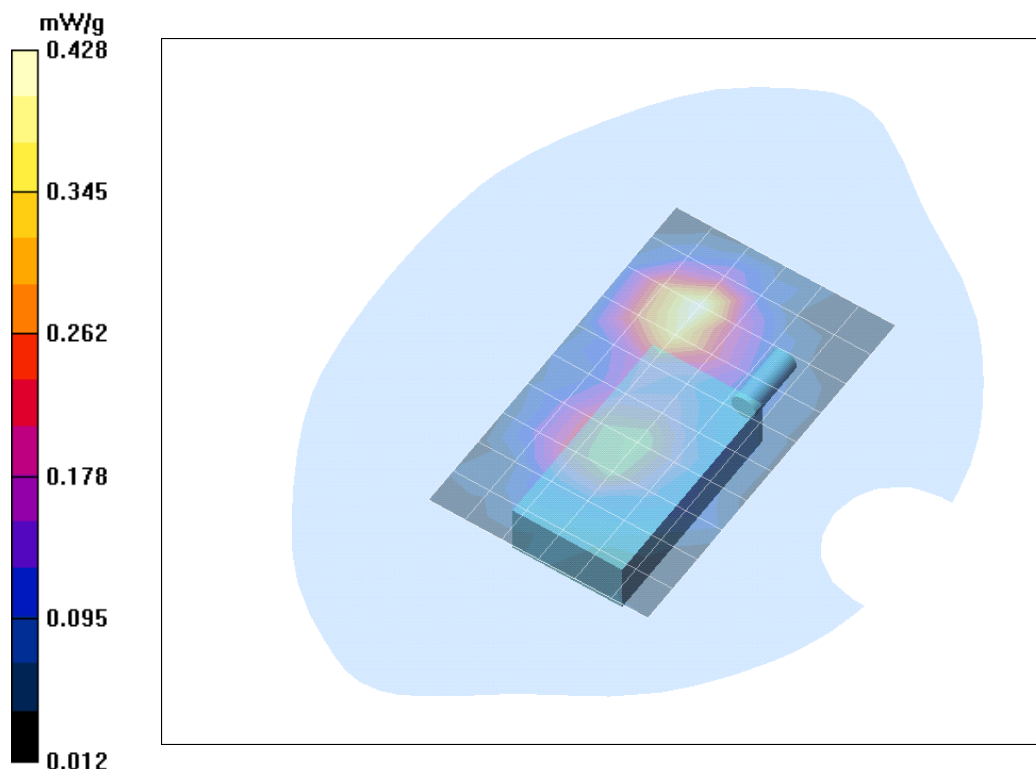


Fig. 5: SAR distribution for PCS 1900, channel 661, antenna towards the phantom, GPRS Class 8 with headset, (17.03.2005; Ambient Temperature: 22.0° C; Liquid Temperature : 21.0° C).

Test Laboratory: IMST GmbH, DASY Yellow (II); **File Name:** [196yphm_1.da4](#)

DUT: O2 XM; **Type:** O2 XM; **Serial:** 35596100004196

Program Name: Cheek Left

Communication System: GPRS 1900; Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $\sigma = 1.52$ mho/m, $\epsilon_r = 51.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.54, 7.54, 7.54); Calibrated: 27.08.2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 23.07.2004
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Body 1900/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.877 mW/g

Body 1900/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.9 V/m; Power Drift = -0.071 dB

Peak SAR (extrapolated) = 1.35 W/kg

SAR(1 g) = 0.871 mW/g; SAR(10 g) = 0.512 mW/g

Maximum value of SAR (measured) = 0.968 mW/g

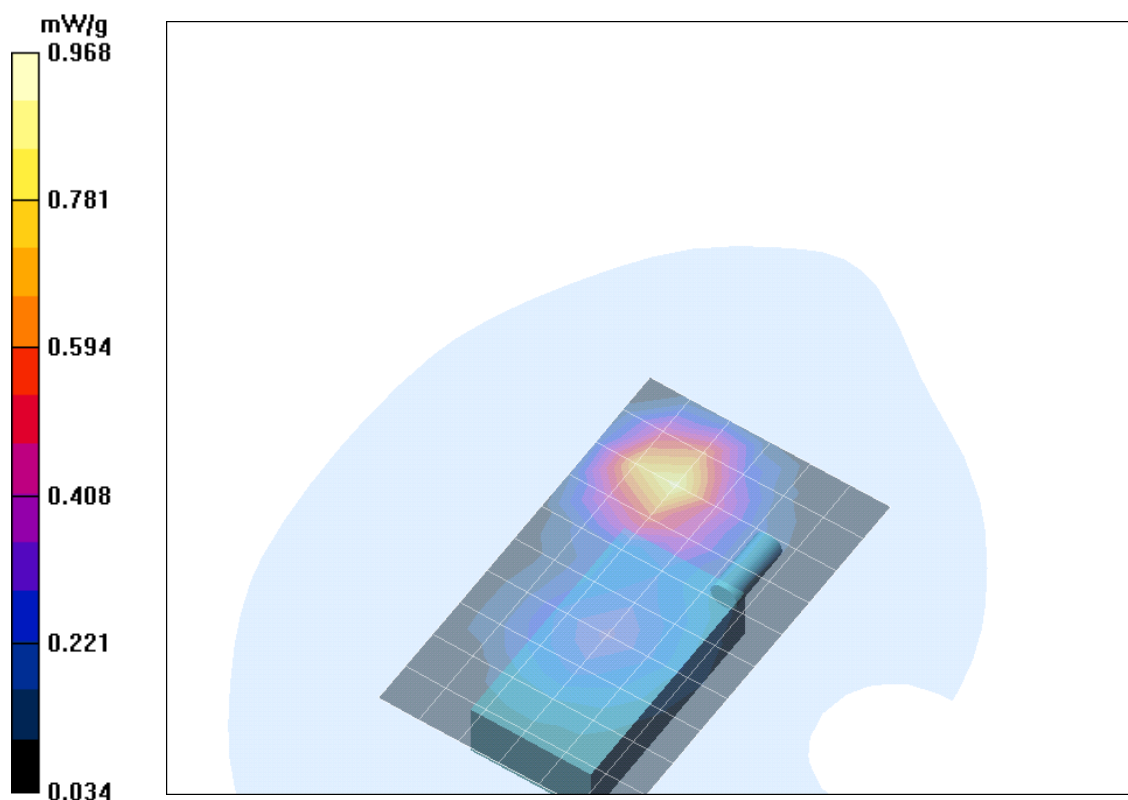


Fig. 6: Worst case SAR distribution for PCS 1900, channel 661, antenna towards the phantom, GPRS Class 10, (17.03.2005; Ambient Temperature: 22.0° C; Liquid Temperature : 21.0° C).

Test Laboratory: IMST GmbH, DASY Yellow (II); **File Name:** [196yphm_2.da4](#)

DUT: O2 XM; **Type:** O2 XM; **Serial:** 35596100004196

Program Name: Cheek Left

Communication System: GPRS 1900; Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $\sigma = 1.52$ mho/m, $\epsilon_r = 51.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.54, 7.54, 7.54); Calibrated: 27.08.2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 23.07.2004
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Body 1900/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.310 mW/g

Body 1900/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.3 V/m; Power Drift = -0.2 dB

Peak SAR (extrapolated) = 0.453 W/kg

SAR(1 g) = 0.305 mW/g; SAR(10 g) = 0.194 mW/g

Maximum value of SAR (measured) = 0.349 mW/g

Body 1900/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.3 V/m; Power Drift = -0.2 dB

Peak SAR (extrapolated) = 0.717 W/kg

SAR(1 g) = 0.228 mW/g; SAR(10 g) = 0.144 mW/g

Maximum value of SAR (measured) = 0.249 mW/g

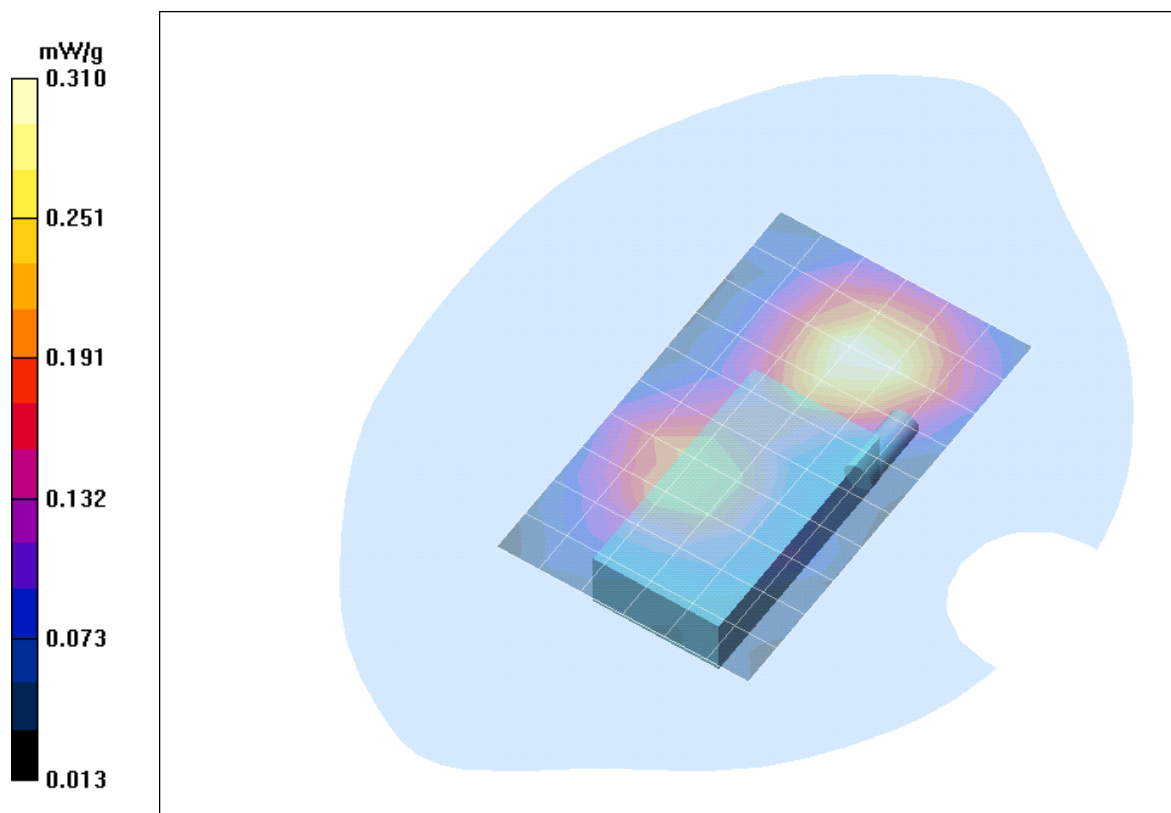


Fig. 7: SAR distribution for PCS 1900, channel 661, antenna towards the ground, GPRS Class 10, (17.03.2005; Ambient Temperature: 22.0° C; Liquid Temperature : 21.1° C).

3 SAR z-axis scans (Validation)

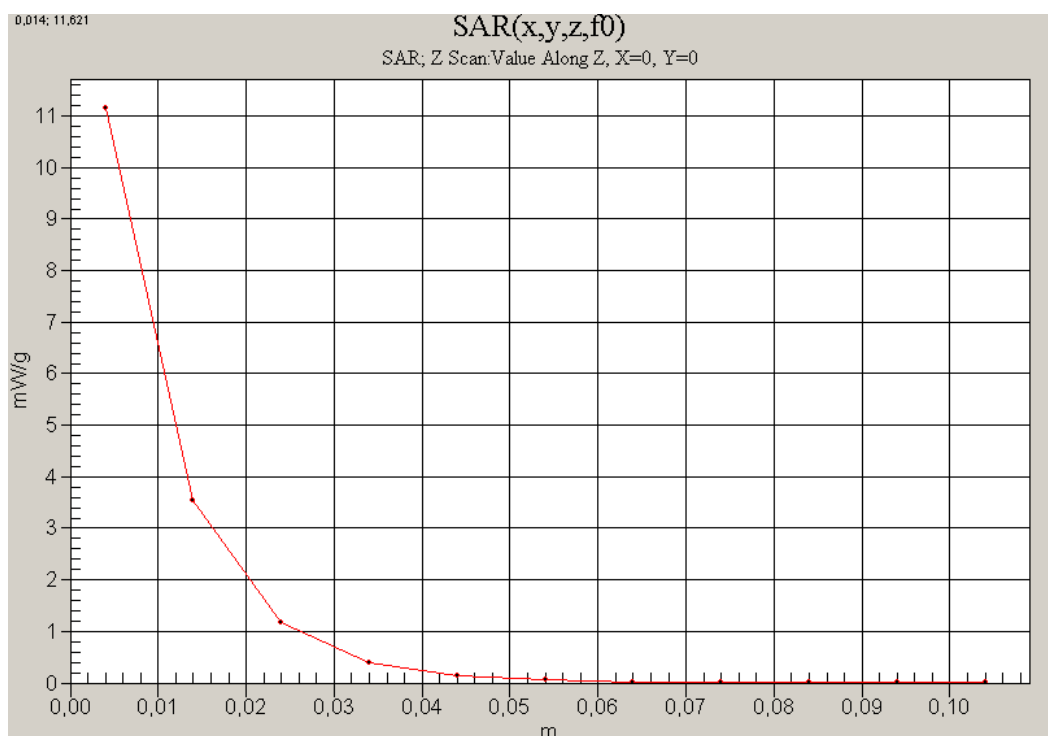


Fig. 8: SAR versus liquid depth, 1900 MHz, head (16.03.2005; Ambient Temperature: 22.0° C; Liquid Temperature : 21.0° C).

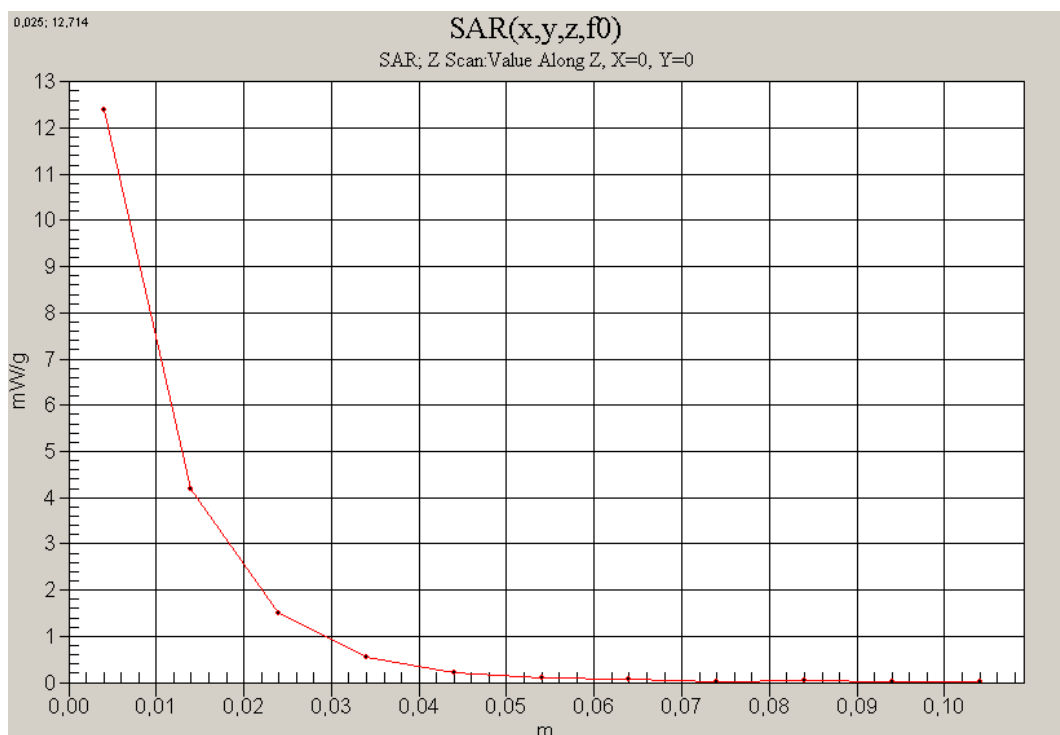


Fig. 9: SAR versus liquid depth, 1900 MHz, body (17.03.2005; Ambient Temperature: 22.0° C; Liquid Temperature : 21.0° C).

4 SAR z-axis scans (Measurements)

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

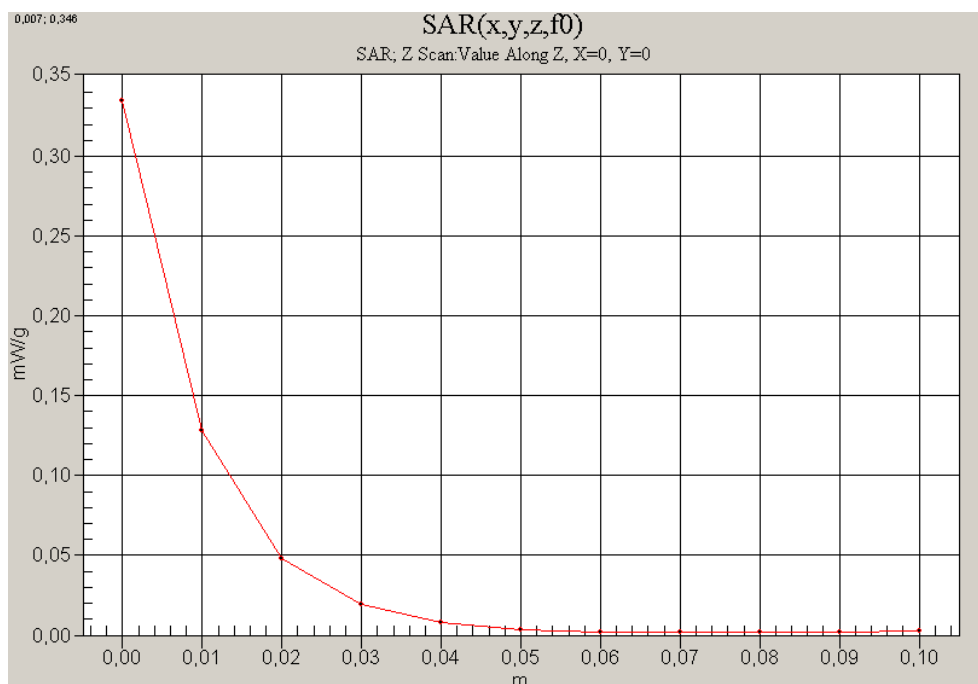


Fig. 10: SAR versus liquid depth, head: PCS 1900, channel 661, cheek position, left side of head (16.03.2005, Ambient Temperature: 21.2° C; Liquid Temperature : 20.2° C).

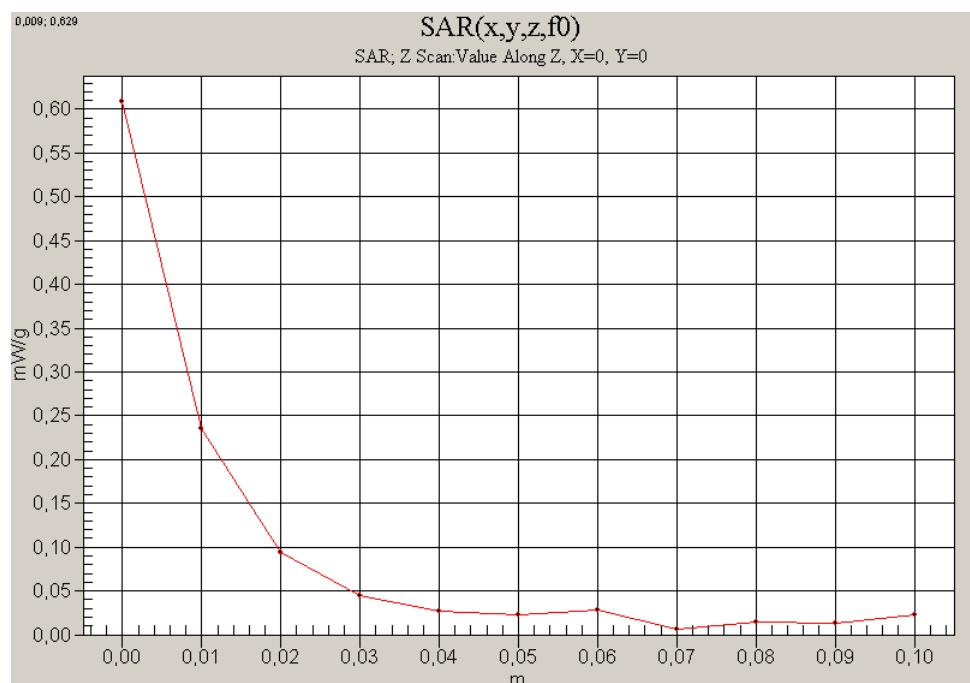


Fig. 11: SAR versus liquid depth, body: PCS 1900, channel 661, antenna towards the phantom, GPRS Class 10 (17.03.2005; Ambient Temperature: 22.0° C; Liquid Temperature : 21.0° C).