Deutscher Akkreditierungs Rat

TTI-P-G 158

Appendix for the Report

Dosimetric Assessment of theBang & Olufsen BeoCom 1 (FCC ID: BV5BEOCOM1) According to the FCC Requirements

SAR Distribution Plots

September 01, 2003

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Table of Contents

1 SAR Distribution Plots, 2450 MHz Head

Test Laboratory: IMST

File Name: Comulm_1.da4

DUT: BeoCom 1; Type: BeoCom 1; Serial: 17330250

Communication System: 2.4 GHz Cordless Phone; Frequency: 2450 MHz;Duty Cycle: 1:16

Medium: Head 2450 (σ = 1.86 mho/m, ε_r = 37.9, ρ = 1000 kg/m^3)

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1579; ConvF(4.8, 4.8, 4.8); Calibrated: 15.05.2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 05.05.2003
- Phantom: SAM TP:1176; Type: SAM 4.0; Serial: 1176
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

cheek left/Area Scan (6x12x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 3.96 V/m

Power Drift = -0.08 dB

Maximum value of SAR = 0.0679 mW/g

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

Peak SAR (extrapolated) = 0.164 W/kg

SAR(1 g) = 0.0704 mW/g; SAR(10 g) = 0.0329 mW/g

Reference Value = 3.96 V/m

Power Drift = -0.08 dB

Maximum value of SAR = 0.0734 mW/g

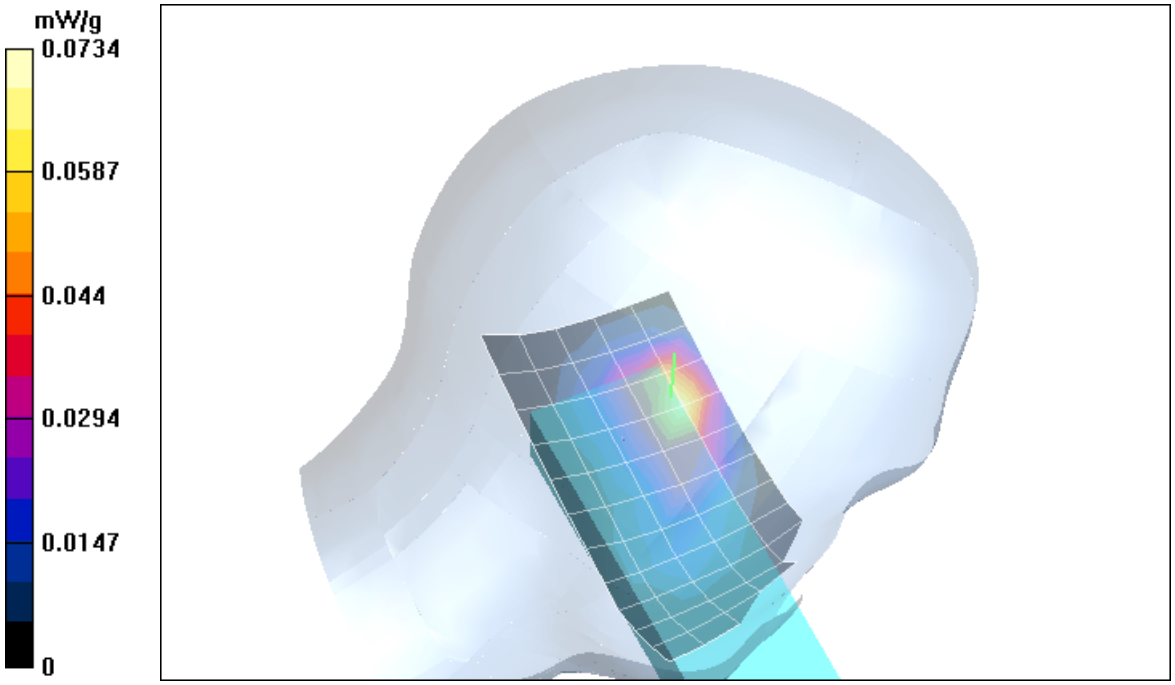

Fig. 1: SAR distribution for 2450 MHz, channel 041, cheek position, left side of head. (02.07.2003; Ambient Temperature: 21.3° C; Liquid Temperature: 19.3° C).

Test Laboratory: IMST

File Name: Comulm_2.da4

DUT: BeoCom 1; Type: BeoCom 1; Serial: 17330250

Communication System: 2.4 GHz Cordless Phone; Frequency: 2450 MHz;Duty Cycle: 1:16

Medium: Head 2450 (σ = 1.86 mho/m, ε_r = 37.9, ρ = 1000 kg/m^3)

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1579; ConvF(4.8, 4.8, 4.8); Calibrated: 15.05.2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 05.05.2003
- Phantom: SAM TP:1176; Type: SAM 4.0; Serial: 1176
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

tilted left/Area Scan (6x12x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 4.36 V/m

Power Drift = 0.04 dB

Maximum value of SAR = 0.0558 mW/g

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

Peak SAR (extrapolated) = 0.132 W/kg

SAR(1 g) = 0.0607 mW/g; SAR(10 g) = 0.0296 mW/g

Reference Value = 4.36 V/m

Power Drift = 0.04 dB

Maximum value of SAR = 0.0647 mW/g

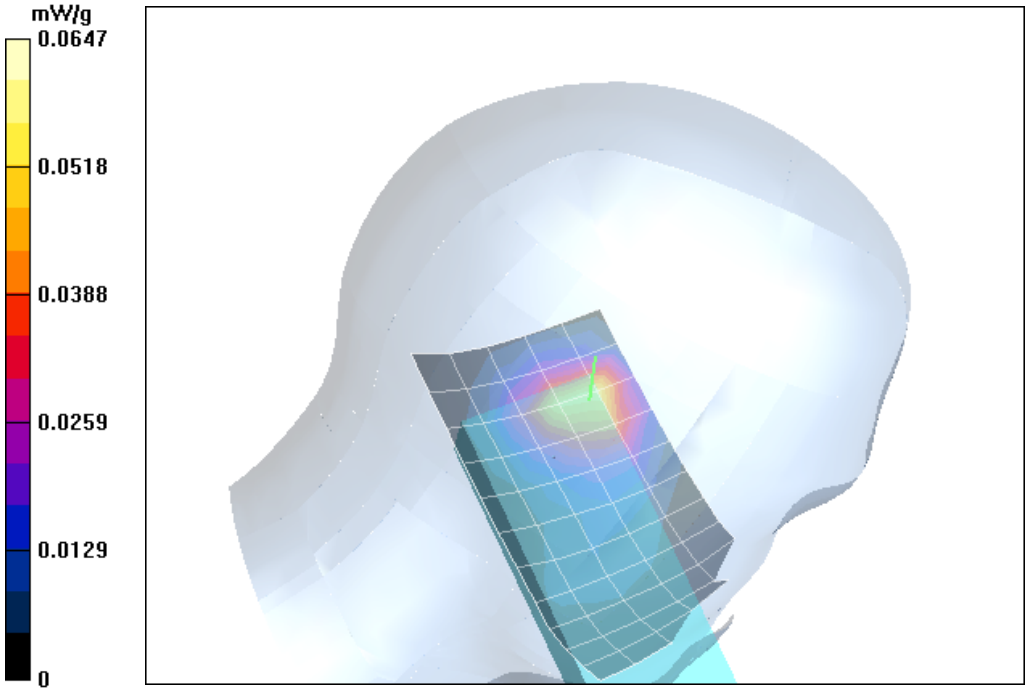

Fig. 2: SAR distribution for 2450 MHz, channel 041, tilted position, left side of head. (02.07.2003; Ambient Temperature: 21.1° C; Liquid Temperature : 19.2° C).

Test Laboratory: IMST

File Name: Comurm_1.da4

DUT: BeoCom 1; Type: BeoCom 1; Serial: 17330250

Program: Measurement

Communication System: 2.4 GHz Cordless Phone; Frequency: 2450 MHz;Duty Cycle: 1:16

Medium: Head 2450 (σ = 1.86 mho/m, ε_r = 37.9, ρ = 1000 kg/m^3)

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1579; ConvF(4.8, 4.8, 4.8); Calibrated: 15.05.2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 05.05.2003
- Phantom: SAM TP:1176; Type: SAM 4.0; Serial: 1176
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

cheek right/Area Scan (6x12x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 4.29 V/m

Power Drift = -0.05 dB

Maximum value of SAR = 0.0474 mW/g

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

Peak SAR (extrapolated) = 0.108 W/kg

SAR(1 g) = 0.0513 mW/g; SAR(10 g) = 0.0254 mW/g

Reference Value = 4.29 V/m

Power Drift = -0.05 dB

Maximum value of SAR = 0.0539 mW/g

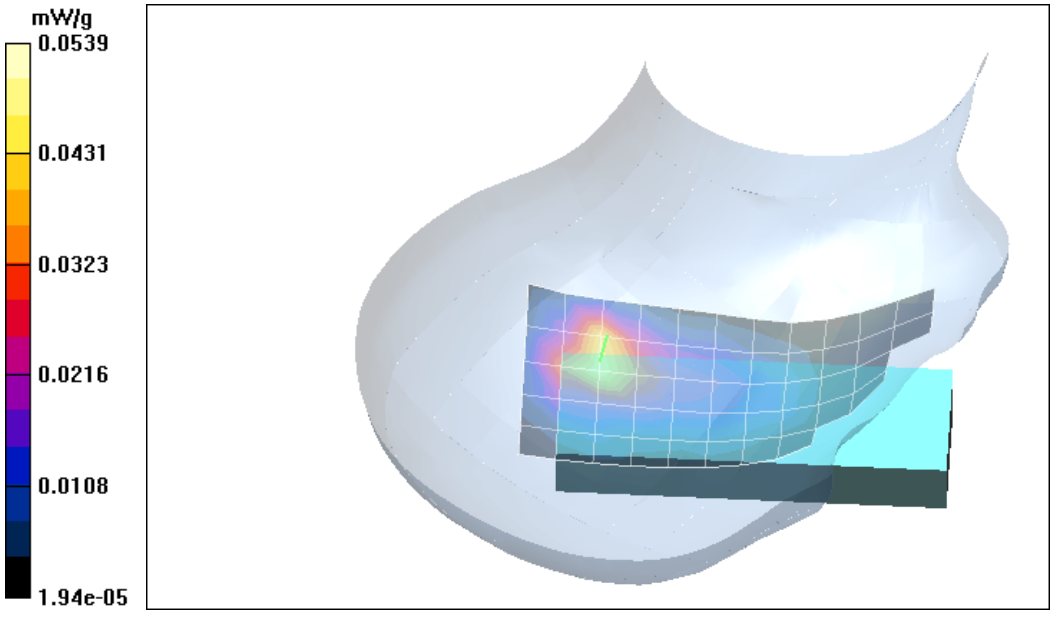

Fig. 3: SAR distribution for 2450 MHz, channel 041, cheek position, right side of head (02.07.2003; Ambient Temperature: 21.1° C; Liquid Temperature : 19.1° C).

Test Laboratory: IMST

File Name: Comurm_2.da4

DUT: BeoCom 1; Type: BeoCom 1; Serial: 17330250

Communication System: 2.4 GHz Cordless Phone; Frequency: 2450 MHz;Duty Cycle: 1:16

Medium: Head 2450 (σ = 1.86 mho/m, ε_r = 37.9, ρ = 1000 kg/m^3)

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1579; ConvF(4.8, 4.8, 4.8); Calibrated: 15.05.2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 05.05.2003
- Phantom: SAM TP:1176; Type: SAM 4.0; Serial: 1176
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

tilted right/Area Scan (6x12x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 3.96 V/m

Power Drift = -0.08 dB

Maximum value of SAR = 0.0496 mW/g

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

Peak SAR (extrapolated) = 0.113 W/kg

SAR(1 g) = 0.0545 mW/g; SAR(10 g) = 0.0268 mW/g

Reference Value = 3.96 V/m

Power Drift = -0.08 dB

Maximum value of SAR = 0.058 mW/g

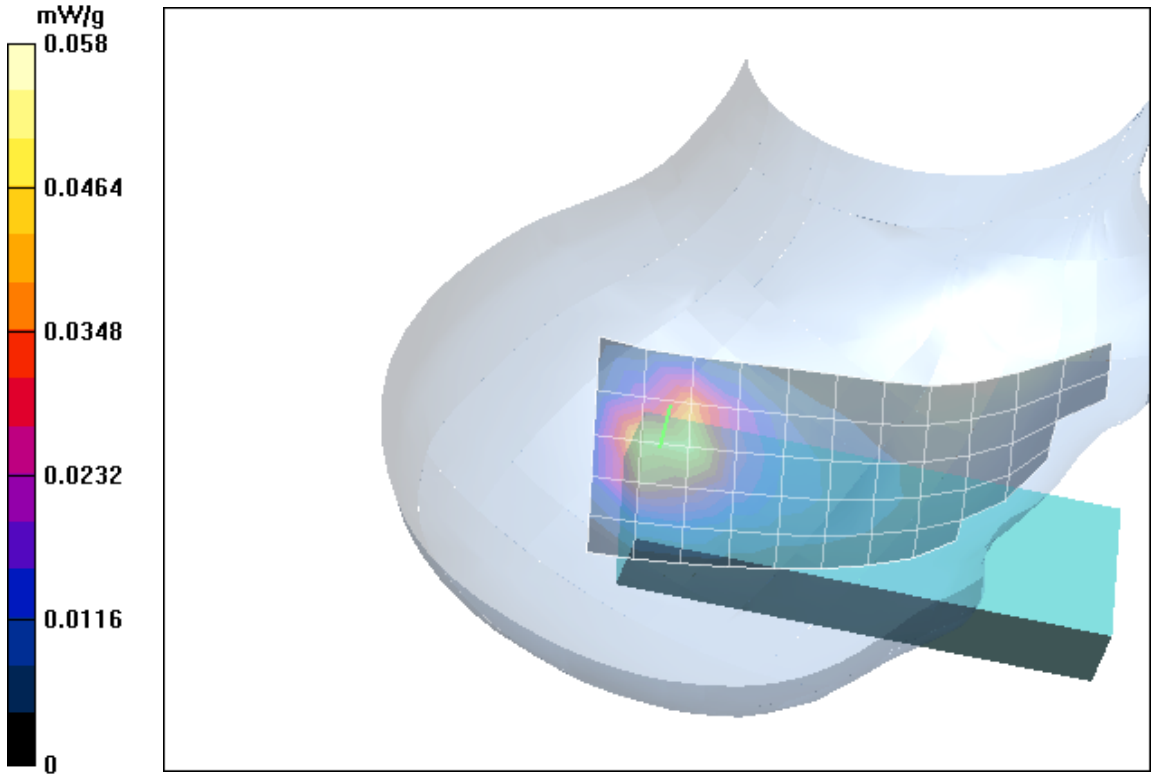

Fig. 4: SAR distribution for 2450 MHz, channel 041, tilted position, right side of head. (02.07.2003; Ambient Temperature: 21.0° C; Liquid Temperature : 18.9° C).

2 SAR Distribution Plots, 2450 MHz Body

Test Laboratory: IMST
File Name: comuhm_1.da4

DUT: BeoCom 1; Type: BeoCom 1; Serial: 17330250
Communication System: 2.4 GHz Cordless Phone; Frequency: 2450 MHz;Duty Cycle: 1:16
Medium: Body 2450 MHz (σ = 1.95 mho/m, ε_r = 50.4, ρ = 1000 kg/m^3)
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1579; ConvF(4.4, 4.4, 4.4); Calibrated: 15.05.2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 05.05.2003
- Phantom: SAM TP:1176; Type: SAM;
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115
Unnamed procedure/Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 3.36 V/m
Power Drift = 0.12 dB
Maximum value of SAR = 0.0314 mW/g
Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.0662 W/kg
SAR(1 g) = 0.0306 mW/g; SAR(10 g) = 0.0159 mW/g
Reference Value = 3.36 V/m
Power Drift = 0.12 dB
Maximum value of SAR = 0.0322 mW/g
Unnamed procedure/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.0612 W/kg
SAR(1 g) = 0.028 mW/g; SAR(10 g) = 0.0155 mW/g
Reference Value = 3.36 V/m
Power Drift = 0.12 dB
Maximum value of SAR = 0.0288 mW/g

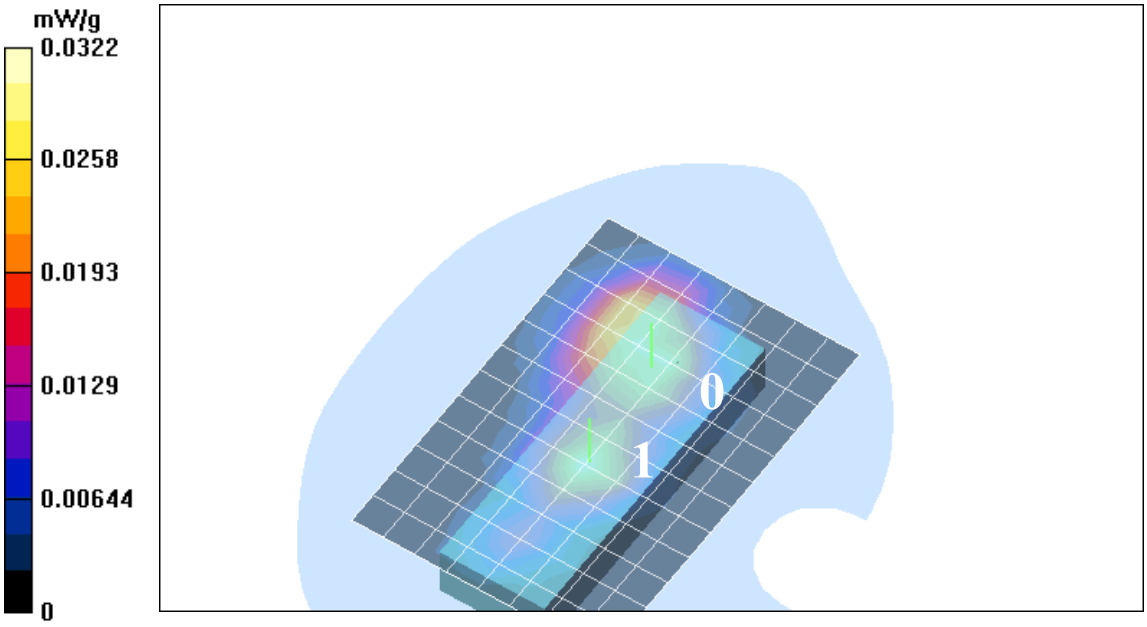

Fig. 5: SAR distribution for belt clip with headset, 2450 MHz, channel 041, display towards the ground. (03.07.2003; Ambient Temperature: 21.0° C; Liquid Temperature : 20.3° C).

Test Laboratory: IMST

File Name: comuhm_2.da4

DUT: BeoCom 1; Type: BeoCom 1; Serial: 17330250

Communication System: 2.4 GHz Cordless Phone; Frequency: 2450 MHz;Duty Cycle: 1:16

Medium: Body 2450 MHz (σ = 1.95 mho/m, ε_r = 50.4, ρ = 1000 kg/m^3)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1579; ConvF(4.4, 4.4, 4.4); Calibrated: 15.05.2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 05.05.2003
- Phantom: SAM TP:1176; Type: SAM;
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Unnamed procedure/Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 2.23 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.0786 mW/g

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

Peak SAR (extrapolated) = 0.191 W/kg

SAR(1 g) = 0.0815 mW/g; SAR(10 g) = 0.0395 mW/g

Reference Value = 2.23 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.0856 mW/g

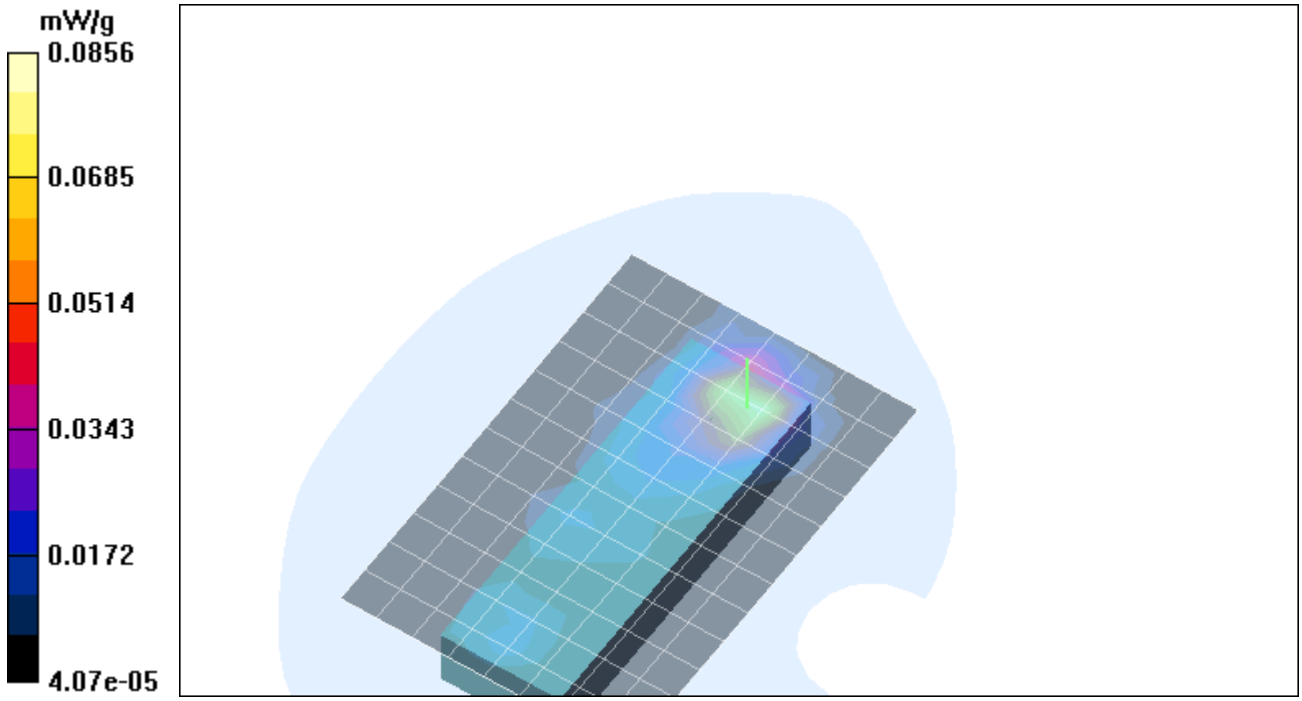

Fig. 6: SAR distribution for belt clip with headset, 2450 MHz, channel 041, display towards the phantom. (03.07.2003; Ambient Temperature: 21.1° C; Liquid Temperature : 20.3° C).

3 SAR z-axis scans (Validation)

The following pictures show the z-axis scan for the worst case values.

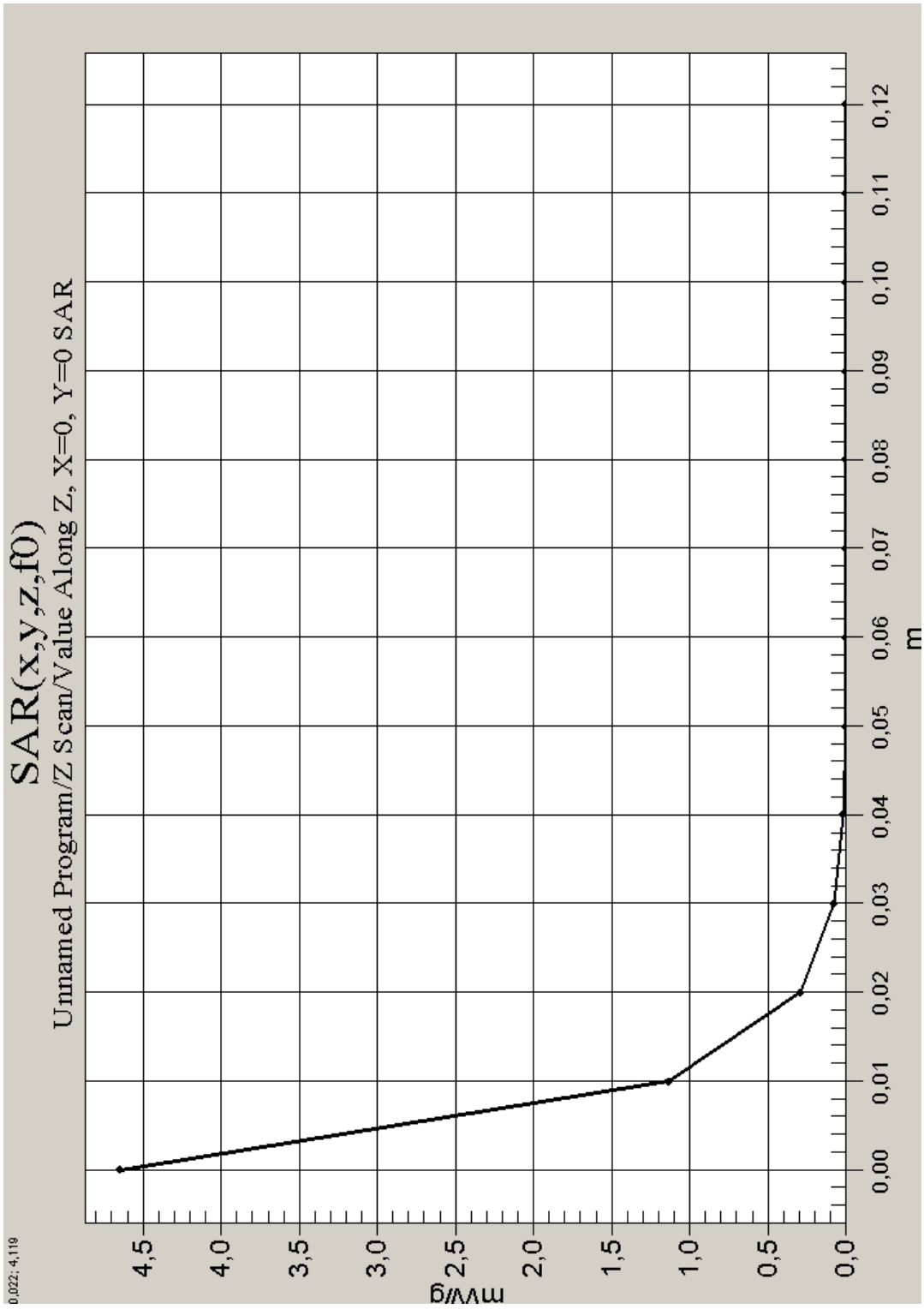

Fig. 7: Validation measurement 2450 MHz Head (02.07.2003), coarse grid. Ambient Temperature: 21.1° C, Liquid Temperature: 20.50° C.

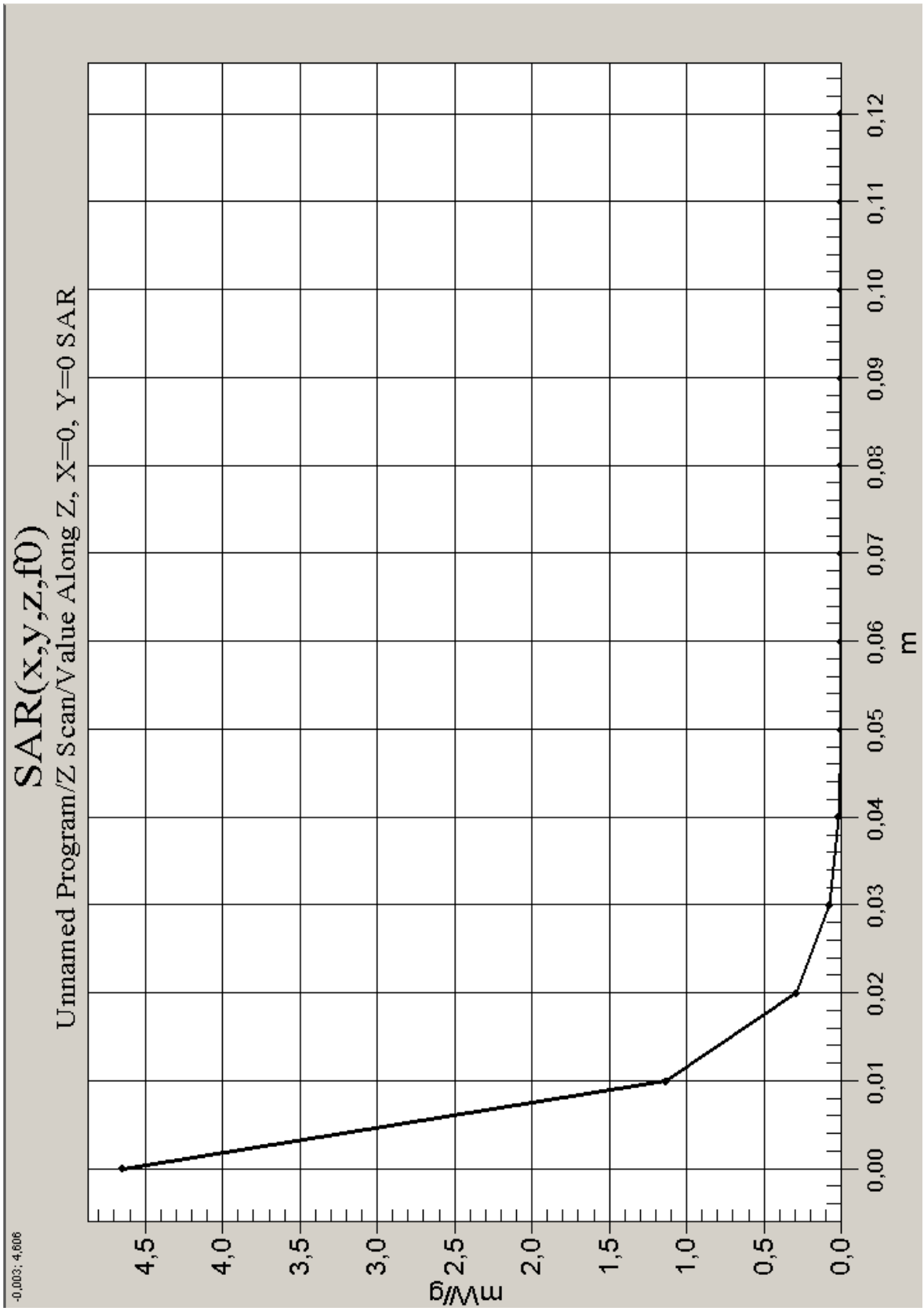

Fig. 8: Validation measurement 2450 MHz body (03.07.2003). Ambient Temperature: 21.0° C, Liquid Temperature: 20.6° C

4 SAR z-axis scans (Measurements)

The following pictures show the z-axis scan for the worst case values.

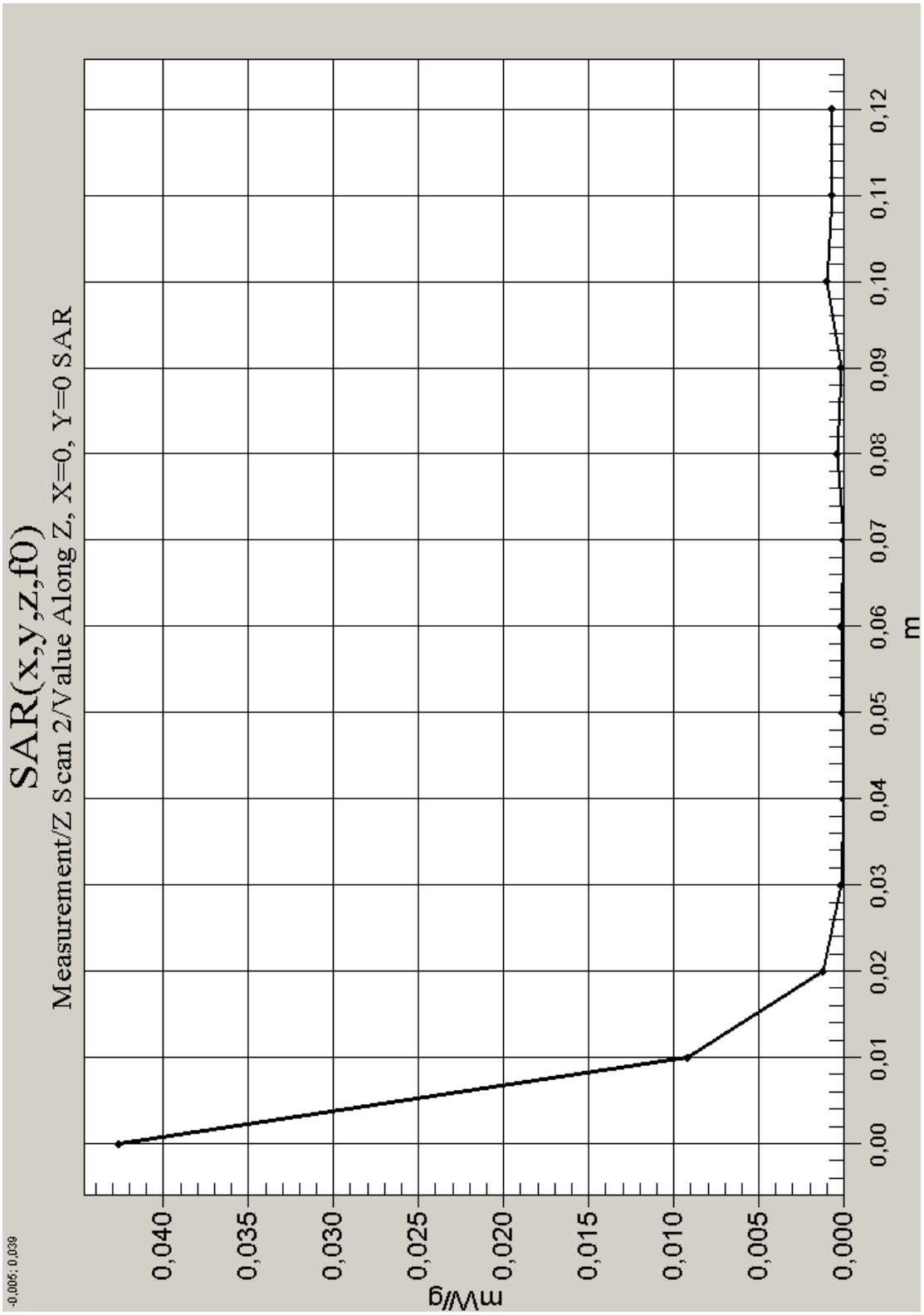

Fig. 9: 2450MHz, cheek position, left side of head, channel 041 (02.07.2003; Ambient Temperature: 21.3° C; Liquid Temperature : 19.3° C).

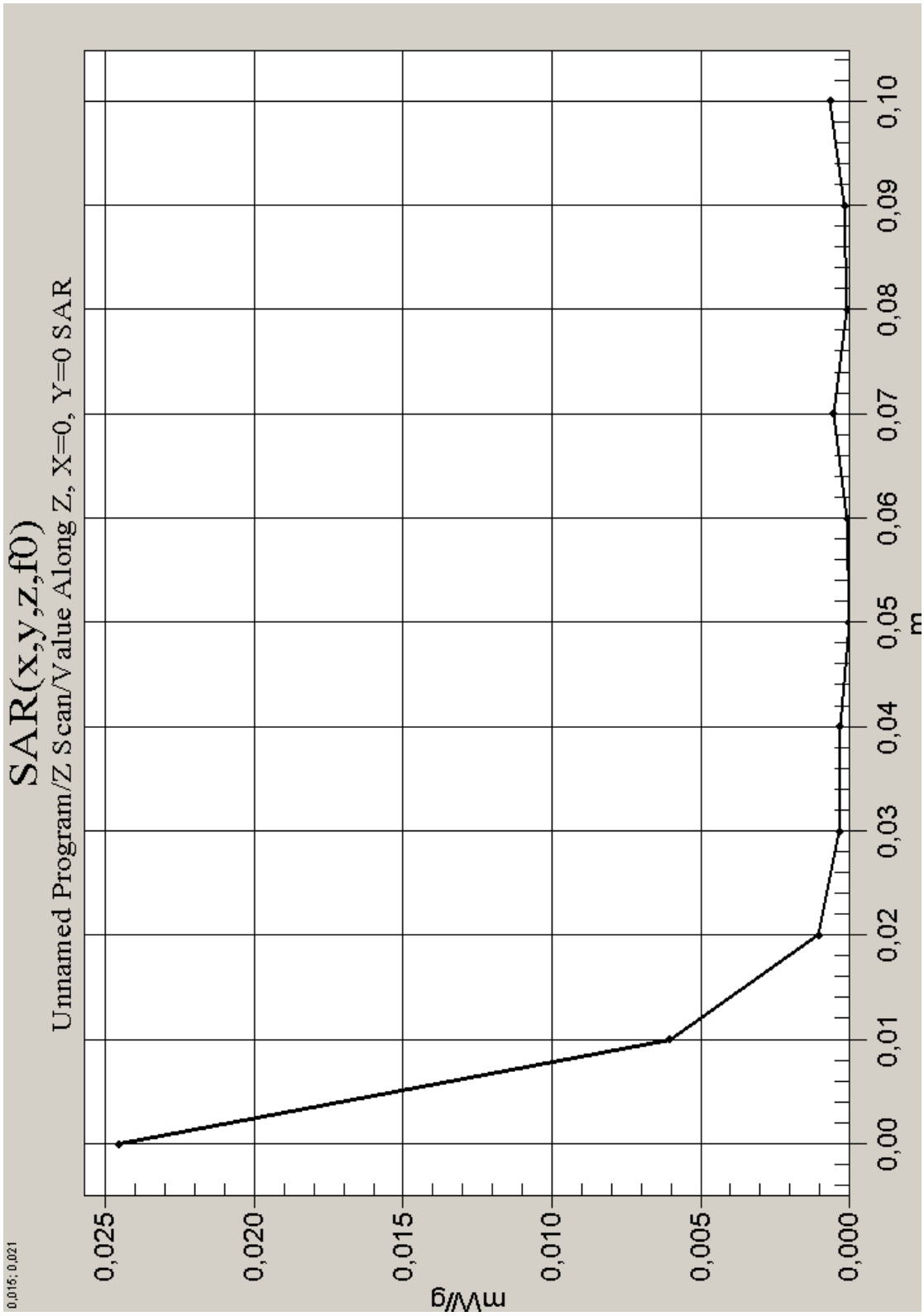

Fig. 10: 2450 MHz, channel 041, body worn configuration with headset and belt clip, display towards the phantom. (03.07.2003; Ambient Temperature: 21.1° C; Liquid Temperature : 20.3° C).