
Appendix for the Report

Dosimetric Assessment of the MSA EVOLUTION 5000 Transmitter (FCC ID: RPNE5KTX1004634) According to the FCC Requirements

SAR Distribution Plots

January 22, 2004
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The test results only relate to the items tested.
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SAR Distribution Plots

Test Laboratory: IMST; File Name: [hl_1.da4](#)

DUT: Evolution 5000;

Program: Unnamed Program

Communication System: 2450; Frequency: 2458 MHz; Duty Cycle: 1:1

Medium: Body 2450 MHz ($\sigma = 2.01$ mho/m, $\epsilon_r = 50.7$, $\rho = 1000$ kg/m³)

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; ;

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Unnamed procedure/Area Scan (15x11x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 2.76 V/m

Power Drift = 0.1 dB

Maximum value of SAR = 0.546 mW/g

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

Peak SAR (extrapolated) = 0.927 W/kg

SAR(1 g) = 0.496 mW/g; SAR(10 g) = 0.275 mW/g

Reference Value = 2.76 V/m

Power Drift = 0.1 dB

Maximum value of SAR = 0.521 mW/g

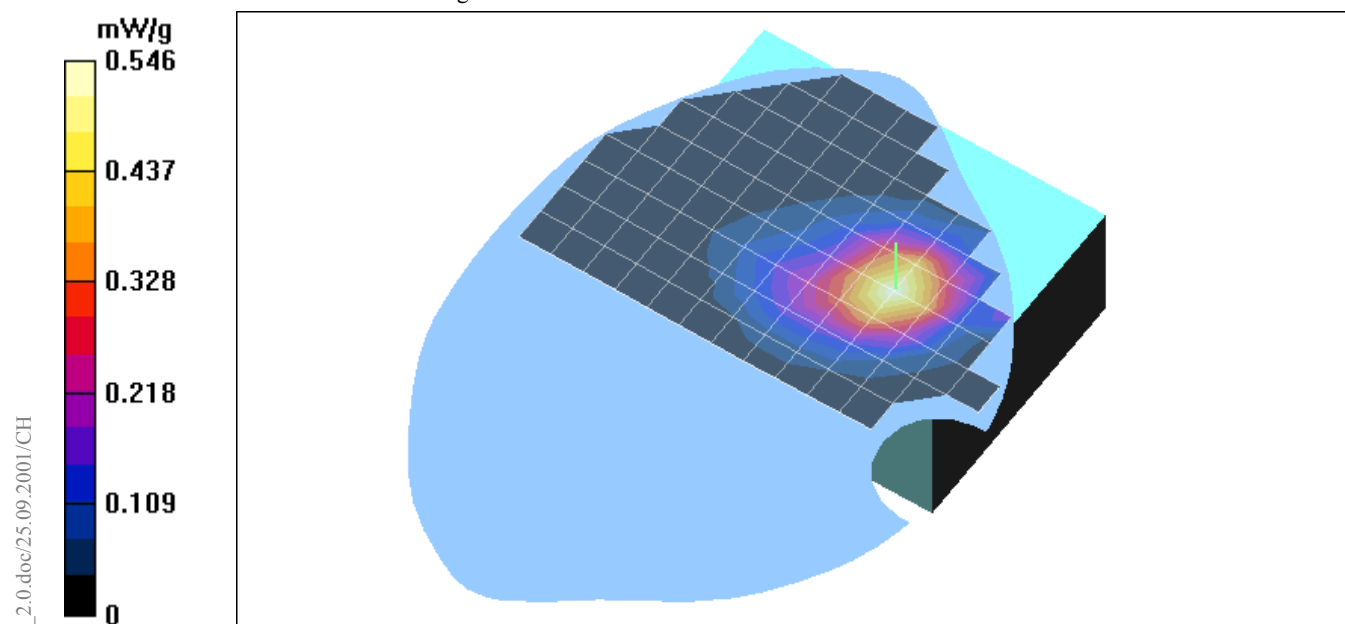


Fig. 1: SAR distribution, 2458 MHz, Position 1, (November 07; 2003; Ambient Temperature: 22.5 °C; Liquid Temperature: 21.7 °C).

Test Laboratory: IMST; File Name: [hh_1.da4](#)

DUT: Evolution 5000;

Program: Unnamed Program

Communication System: 2450; Frequency: 2474 MHz; Duty Cycle: 1:1

Medium: Body 2450 MHz ($\sigma = 2.01$ mho/m, $\epsilon_r = 50.7$, $\rho = 1000$ kg/m³)

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; ;

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Unnamed procedure/Area Scan (15x11x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 2.79 V/m

Power Drift = 0.15 dB

Maximum value of SAR = 0.435 mW/g

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

Peak SAR (extrapolated) = 0.854 W/kg

SAR(1 g) = 0.442 mW/g; SAR(10 g) = 0.243 mW/g

Reference Value = 2.79 V/m

Power Drift = 0.15 dB

Maximum value of SAR = 0.457 mW/g

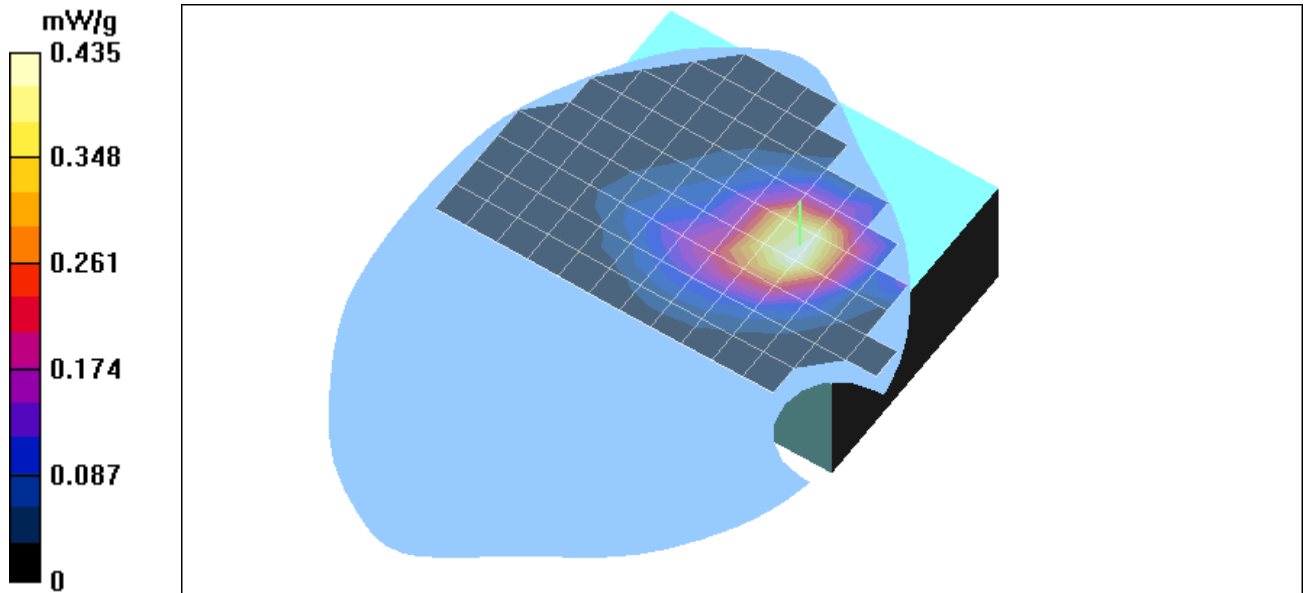


Fig. 2: SAR distribution, 2474 MHz, Position 1, (November 07; 2003; Ambient Temperature: 22.5 °C; Liquid Temperature: 21.7 °C).

Test Laboratory: IMST; File Name: [hl_2.da4](#)

DUT: Evolution 5000;

Program: Unnamed Program

Communication System: 2450; Frequency: 2458 MHz; Duty Cycle: 1:1

Medium: Body 2450 MHz ($\sigma = 2.01$ mho/m, $\epsilon_r = 50.7$, $\rho = 1000$ kg/m³)

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; ;

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Unnamed procedure/Area Scan (15x14x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 1.9 V/m

Power Drift = -0.18 dB

Maximum value of SAR = 0.329 mW/g

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

Peak SAR (extrapolated) = 0.732 W/kg

SAR(1 g) = 0.351 mW/g; SAR(10 g) = 0.187 mW/g

Reference Value = 1.9 V/m

Power Drift = -0.18 dB

Maximum value of SAR = 0.361 mW/g

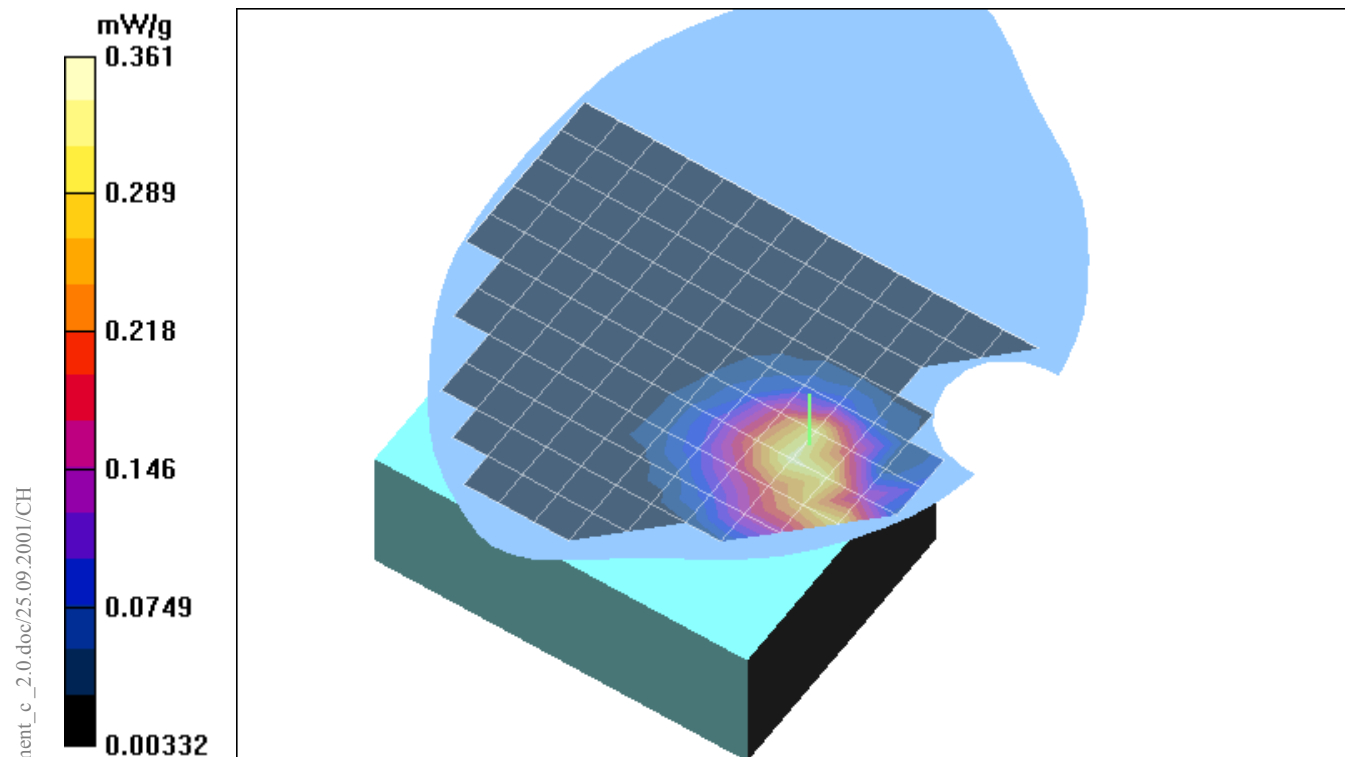


Fig. 3: SAR distribution, 2458 MHz, Position 2, (November 07; 2003; Ambient Temperature: 22.6 °C; Liquid Temperature: 21.7 °C).

Test Laboratory: IMST; File Name: [hh_2.da4](#)

DUT: Evolution 5000;

Program: Unnamed Program

Communication System: 2450; Frequency: 2474 MHz; Duty Cycle: 1:1

Medium: Body 2450 MHz ($\sigma = 2.01$ mho/m, $\epsilon_r = 50.7$, $\rho = 1000$ kg/m³)

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; ;

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Unnamed procedure/Area Scan (12x13x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 1.67 V/m

Power Drift = 0.2 dB

Maximum value of SAR = 0.351 mW/g

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

Peak SAR (extrapolated) = 0.773 W/kg

SAR(1 g) = 0.368 mW/g; SAR(10 g) = 0.193 mW/g

Reference Value = 1.67 V/m

Power Drift = 0.2 dB

Maximum value of SAR = 0.385 mW/g

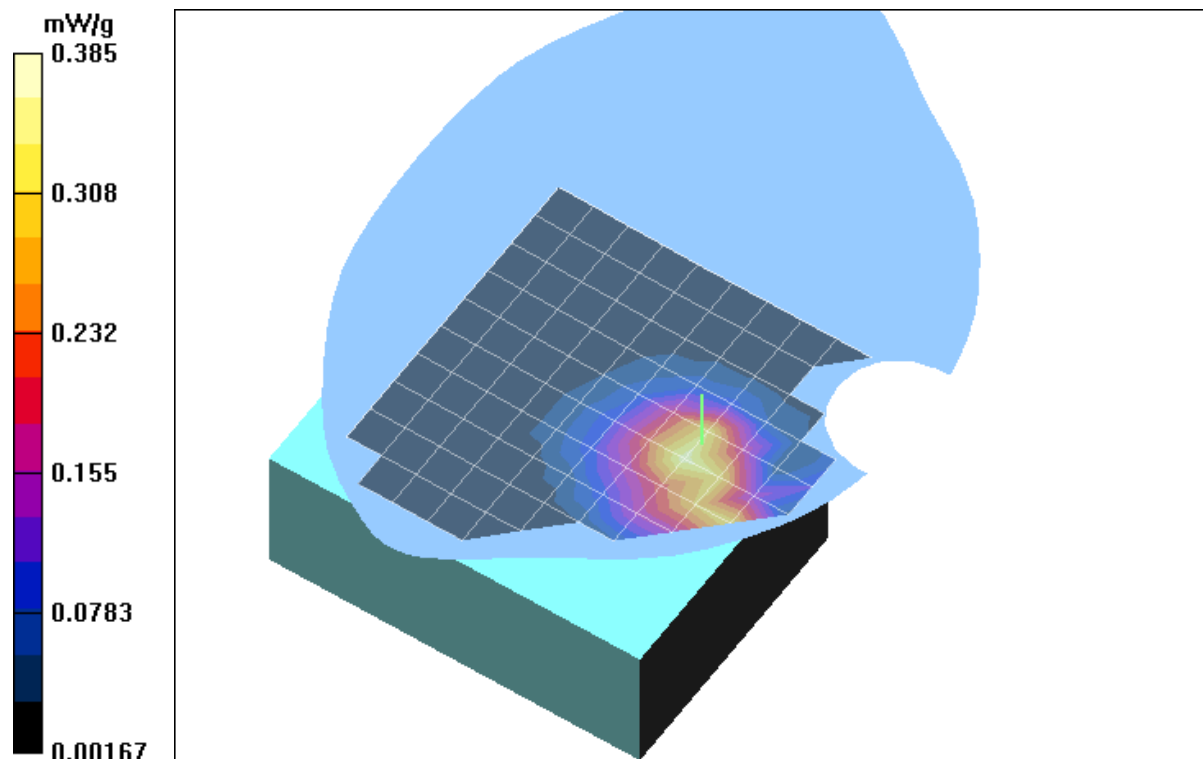


Fig. 4: SAR distribution, 2474 MHz, Position 2, (November 07; 2003; Ambient Temperature: 22.7 °C; Liquid Temperature: 21.7 °C).

Test Laboratory: IMST; File Name: [hl_3.da4](#)

DUT: Evolution 5000;

Program: Unnamed Program

Communication System: 2450; Frequency: 2458 MHz; Duty Cycle: 1:1

Medium: Body 2450 MHz ($\sigma = 2.01$ mho/m, $\epsilon_r = 50.7$, $\rho = 1000$ kg/m³)

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; ;

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Unnamed procedure/Area Scan (11x15x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 8.83 V/m

Power Drift = -0.04 dB

Maximum value of SAR = 0.396 mW/g

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

Peak SAR (extrapolated) = 0.798 W/kg

SAR(1 g) = 0.401 mW/g; SAR(10 g) = 0.223 mW/g

Reference Value = 8.83 V/m

Power Drift = -0.04 dB

Maximum value of SAR = 0.415 mW/g

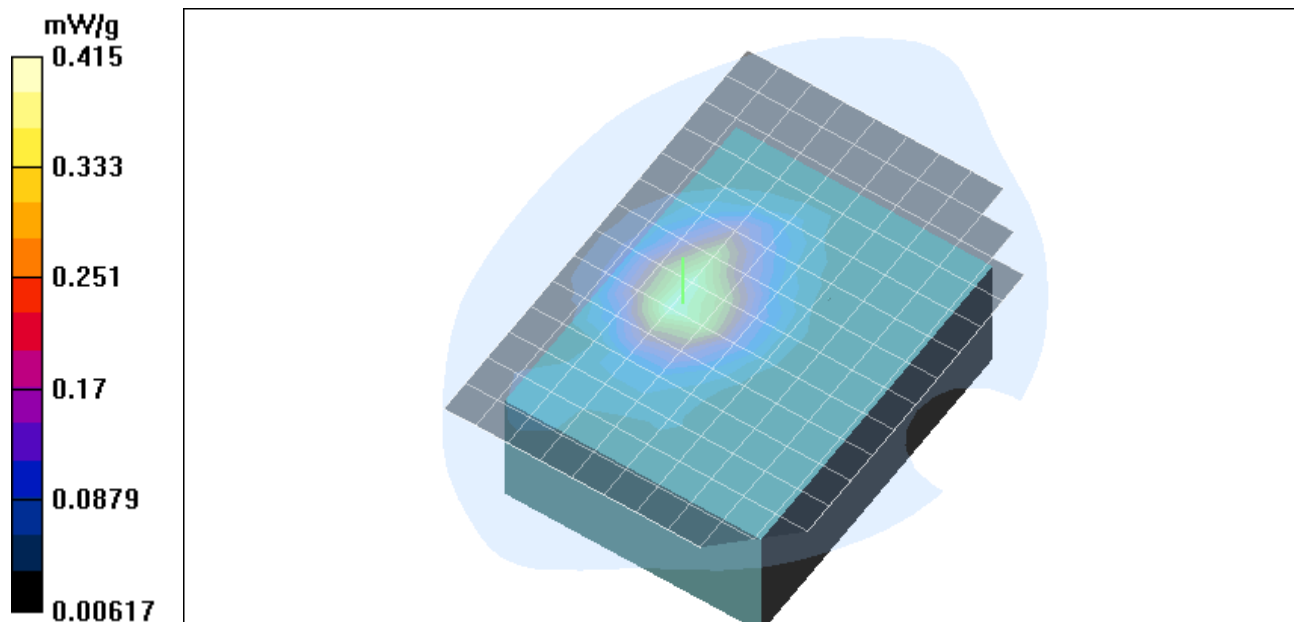


Fig. 5: SAR distribution, 2458 MHz, Position 3, (November 07; 2003; Ambient Temperature: 22.8 °C; Liquid Temperature: 21.7 °C).

Test Laboratory: IMST; File Name: [hh_4.da4](#)

DUT: Evolution 5000;

Program: Unnamed Program

Communication System: 2450; Frequency: 2474 MHz; Duty Cycle: 1:1

Medium: Body 2450 MHz ($\sigma = 2.01$ mho/m, $\epsilon_r = 50.7$, $\rho = 1000$ kg/m³)

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; ;

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Unnamed procedure/Area Scan (11x15x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 9.75 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.178 mW/g

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

Peak SAR (extrapolated) = 0.351 W/kg

SAR(1 g) = 0.177 mW/g; SAR(10 g) = 0.101 mW/g

Reference Value = 9.75 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.18 mW/g

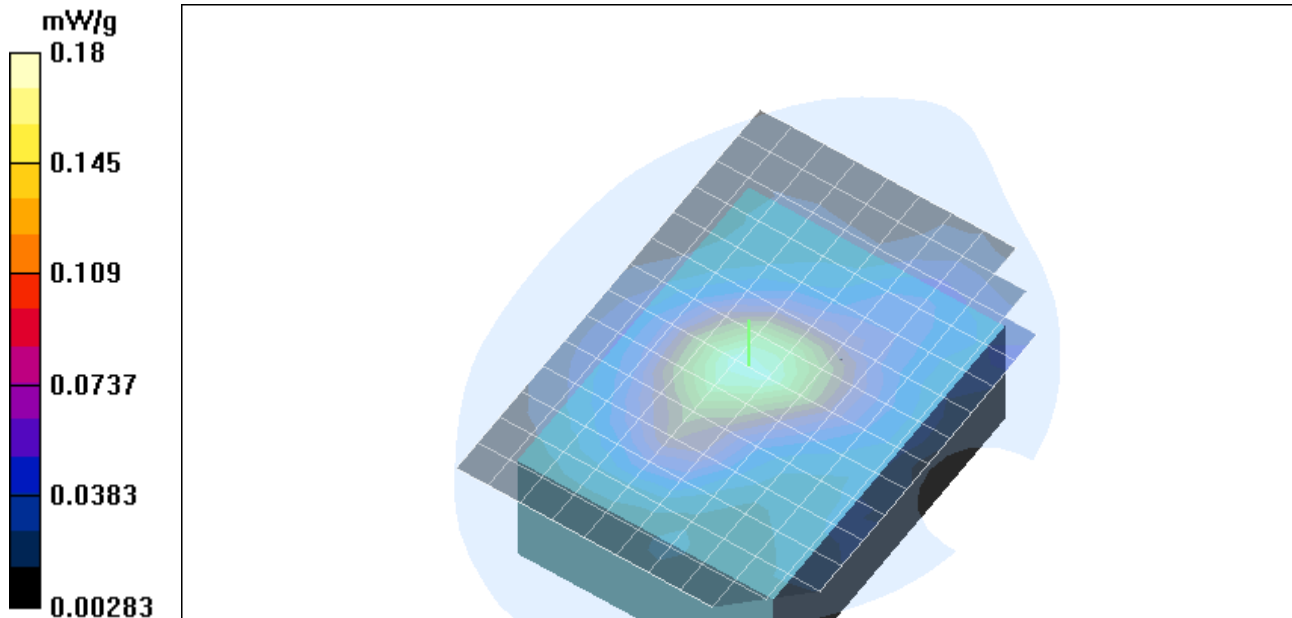


Fig. 6: SAR distribution, 2474 MHz, Position 4, (November 07; 2003; Ambient Temperature: 22.9 °C; Liquid Temperature: 21.7 °C).

SAR z-axis scan

The following pictures show the plots of SAR versus liquid depth.

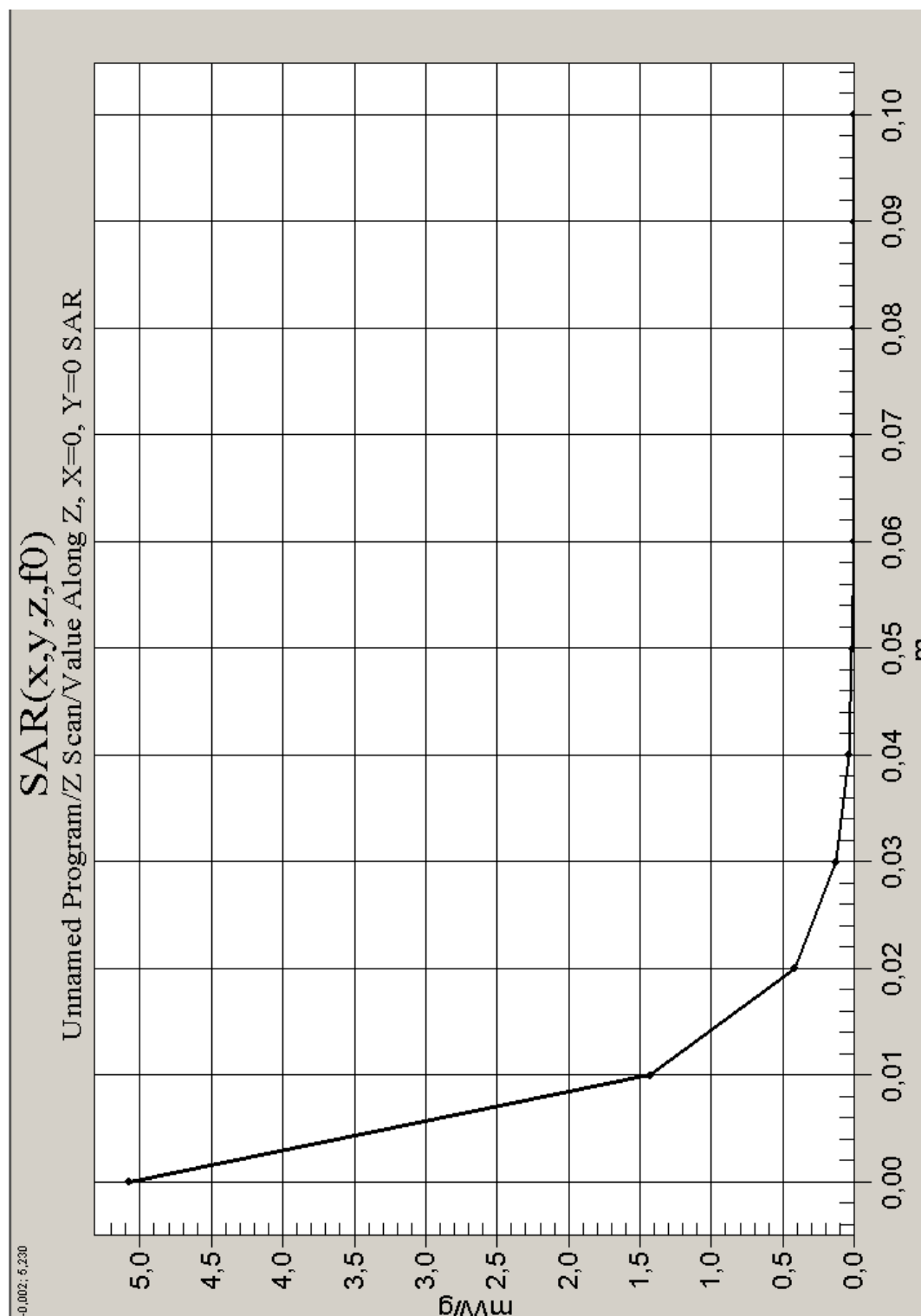


Fig. 7: SAR versus liquid depth, Validation 2450 MHz body, (November 07; 2003; Ambient Temperature: 22.5 °C; Liquid Temperature: 21.7 °C)..

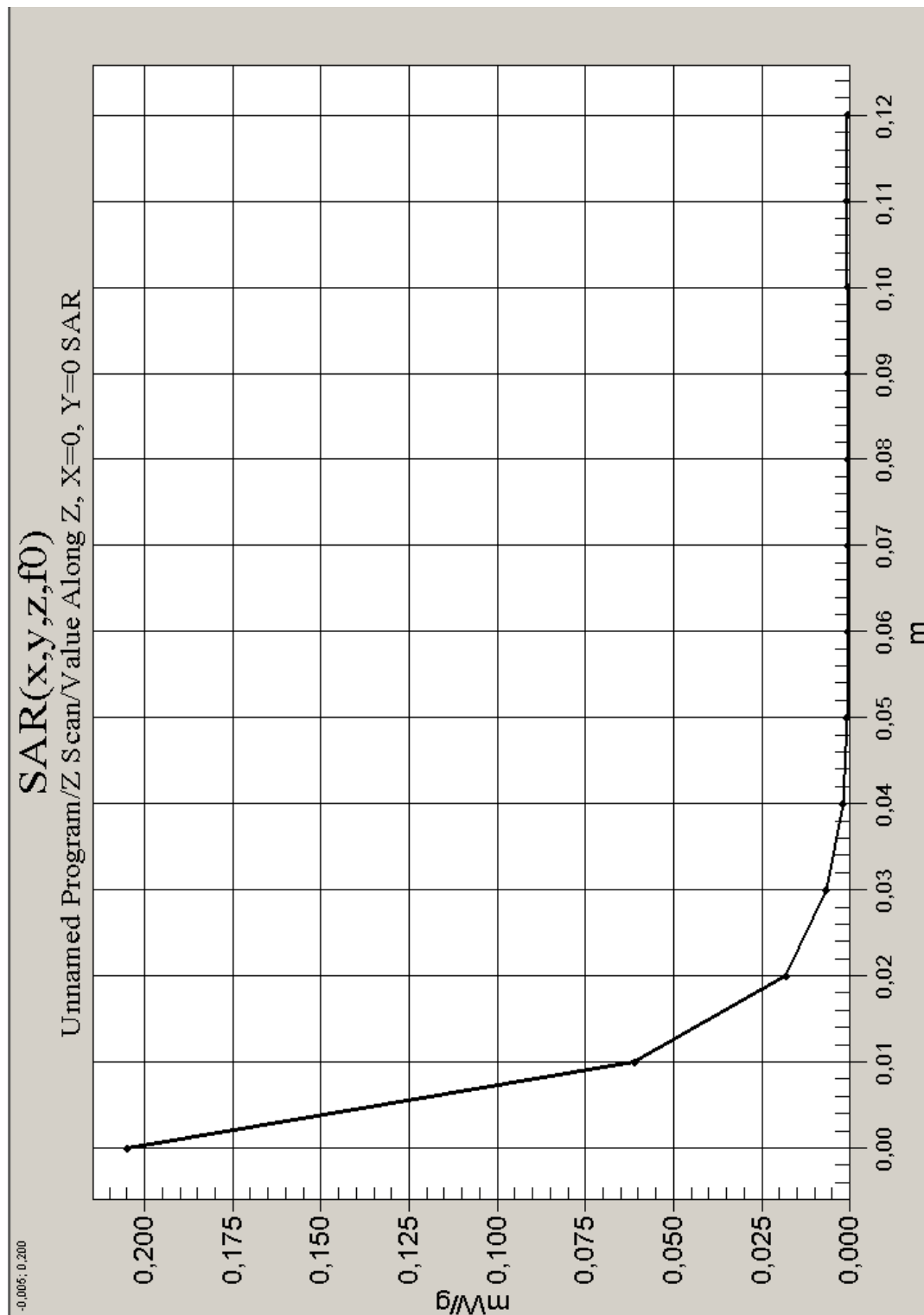


Fig. 8: SAR versus liquid depth, 2458 MHz, Position 1, (November 07; 2003; Ambient Temperature: 22.5 °C; Liquid Temperature: 21.7 °C).