Deutscher Akkreditierungs Rat

DAT-P-152/98-01

Appendix for the Report

Dosimetric Assessment of the Portable Device

Field tablet PC (JLT 8404) from JLT Mobile Computer AB (FCC ID: VGX8404)

According to the FCC Requirements

SAR Distribution Plots

February 26, 2008

IMST GmbH
Carl-Friedrich-Gauß-Str. 2
D-47475 Kamp-Lintfort

Customer
JLT Mobile Computer AB
Isbjörnsvägen 3
35245 Växjö, Sweden

Table of Contents

1 SAR Distribution Plots, 2.450 MHz range, Bluetooth

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: 8404_bbthm_1.da4

DUT: JLT; Type: 8404; Serial: 0017253A00728
Program Name: System Performance Check at 2450 MHz

Communication System: Bluetooth; Frequency: 2441 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2441 MHz; σ = 2 mho/m; ε_r = 51.5; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.46, 7.46, 7.46); Calibrated: 18.09.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 08.02.2008
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=250mW/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.060 mW/g
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.36 V/m; Power Drift = 0.071 dB
Peak SAR (extrapolated) = 0.126 W/kg
SAR(1 g) = 0.057 mW/g; SAR(10 g) = 0.027 mW/g
Maximum value of SAR (measured) = 0.069 mW/g
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.36 V/m; Power Drift = 0.071 dB
Peak SAR (extrapolated) = 0.104 W/kg
SAR(1 g) = 0.037 mW/g; SAR(10 g) = 0.016 mW/g
Maximum value of SAR (measured) = 0.055 mW/g

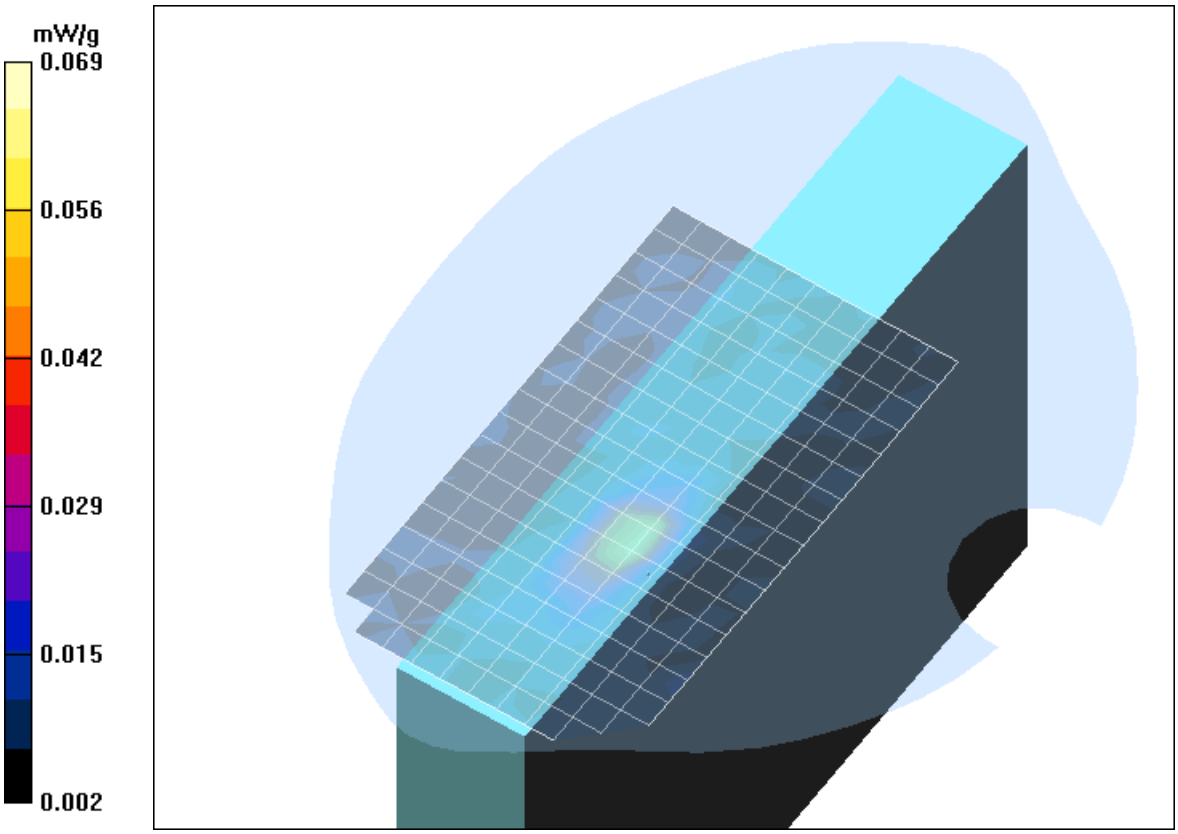

Fig. 1: Worst SAR distribution for the JLT 8404, Bluetooth, channel 39, bottom edge touching the phantom (February 22, 2008; Ambient Temperature: 22.0°C; Liquid Temperature: 21.0°C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: 8404_bbthm_3.da4

DUT: JLT; Type: 8404; Serial: 0017253A00728
Program Name: System Performance Check at 2450 MHz

Communication System: Bluetooth; Frequency: 2441 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2441 MHz; σ = 2 mho/m; ε_r = 51.5; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.46, 7.46, 7.46); Calibrated: 18.09.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 08.02.2008
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=250mW/Area Scan (11x17x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.027 mW/g
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.70 V/m; Power Drift = 0.151 dB
Peak SAR (extrapolated) = 0.104 W/kg
SAR(1 g) = 0.020 mW/g; SAR(10 g) = 0.00976 mW/g
Maximum value of SAR (measured) = 0.043 mW/g
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.70 V/m; Power Drift = 0.151 dB
Peak SAR (extrapolated) = 0.052 W/kg
SAR(1 g) = 0.019 mW/g; SAR(10 g) = 0.016 mW/g
Maximum value of SAR (measured) = 0.038 mW/g

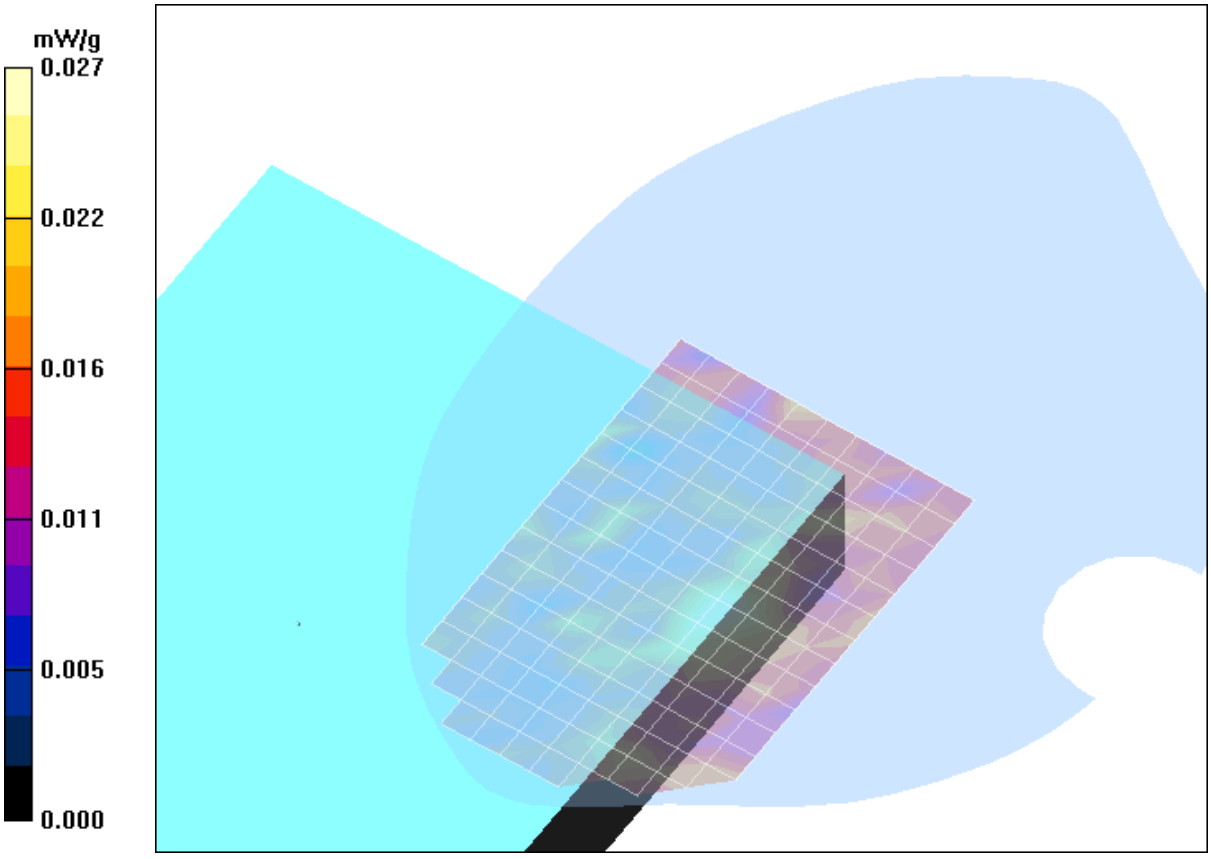

Fig. 2: Worst case SAR distribution the JLT 8404, Bluetooth, channel 39, Lap held position (February 22, 2008; Ambient Temperature: 22.0° C; Liquid Temperature : 21.0° C).

2 SAR Distribution Plots, 2.450 MHz range, Wlan b/g mode

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: 8404_wbhh_1_B.da4

DUT: JLT; Type: 8404; Serial: 0017253A00728
Program Name: System Performance Check at 2450 MHz

Communication System: 2.4 GHz; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (extrapolated): f = 2462 MHz; σ = 2.03 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.46, 7.46, 7.46); Calibrated: 18.09.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 08.02.2008
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=250mW/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.250 mW/g
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.36 V/m; Power Drift = 0.152 dB
Peak SAR (extrapolated) = 0.479 W/kg
SAR(1 g) = 0.218 mW/g; SAR(10 g) = 0.087 mW/g
Maximum value of SAR (measured) = 0.255 mW/g

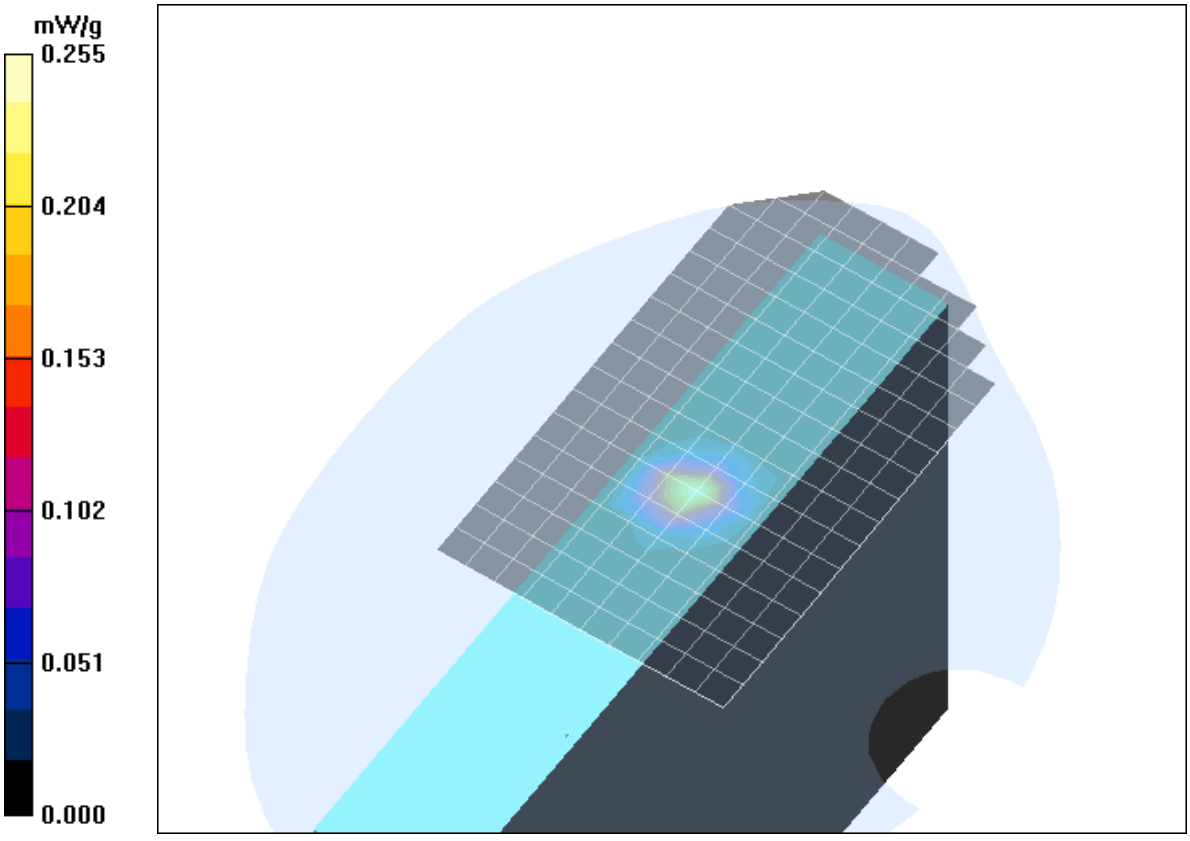

Fig. 3: Worst case SAR distribution the JLT 8404, Antenna B, b-mode, channel 11, upper edge touching the phantom (February 20, 2008; Ambient Temperature: 21.5 C; Liquid Temperature: 20.7° C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: 8404_wbhh_3_B.da4

DUT: JLT; Type: 8404; Serial: 0017253A00728
Program Name: System Performance Check at 2450 MHz

Communication System: 2.4 GHz; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (extrapolated): f = 2462 MHz; σ = 2.03 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.46, 7.46, 7.46); Calibrated: 18.09.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 08.02.2008
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=250mW/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.060 mW/g
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.06 V/m; Power Drift = 0.165 dB
Peak SAR (extrapolated) = 0.152 W/kg
SAR(1 g) = 0.063 mW/g; SAR(10 g) = 0.031 mW/g
Maximum value of SAR (measured) = 0.070 mW/g

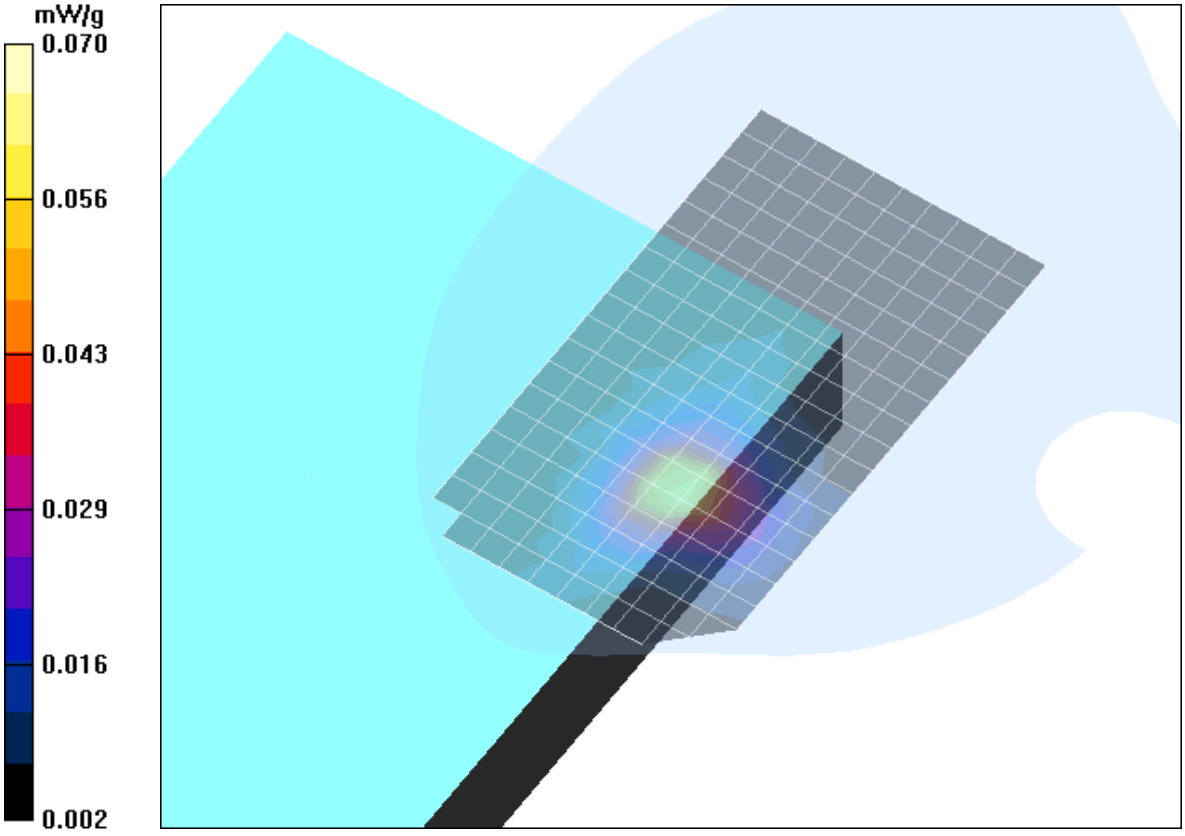

Fig. 4: Worst case SAR distribution the JLT 8404, Antenna B, b-mode channel 11, lap held position (February 20, 2008; Ambient Temperature: 21.5° C; Liquid Temperature : 20.7° C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: 8404_wbhl_1_A.da4

DUT: JLT; Type: 8404; Serial: 0017253A00728

Program Name: System Performance Check at 2450 MHz

Communication System: 2.4 GHz; Frequency: 2412 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 2412 MHz; σ = 1.89 mho/m; ε_r = 51.8; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.46, 7.46, 7.46); Calibrated: 18.09.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 08.02.2008
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=250mW/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 1.52 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.31 V/m; Power Drift = -0.128 dB

Peak SAR (extrapolated) = 2.82 W/kg

SAR(1 g) = 1.34 mW/g; SAR(10 g) = 0.556 mW/g

Maximum value of SAR (measured) = 1.57 mW/g

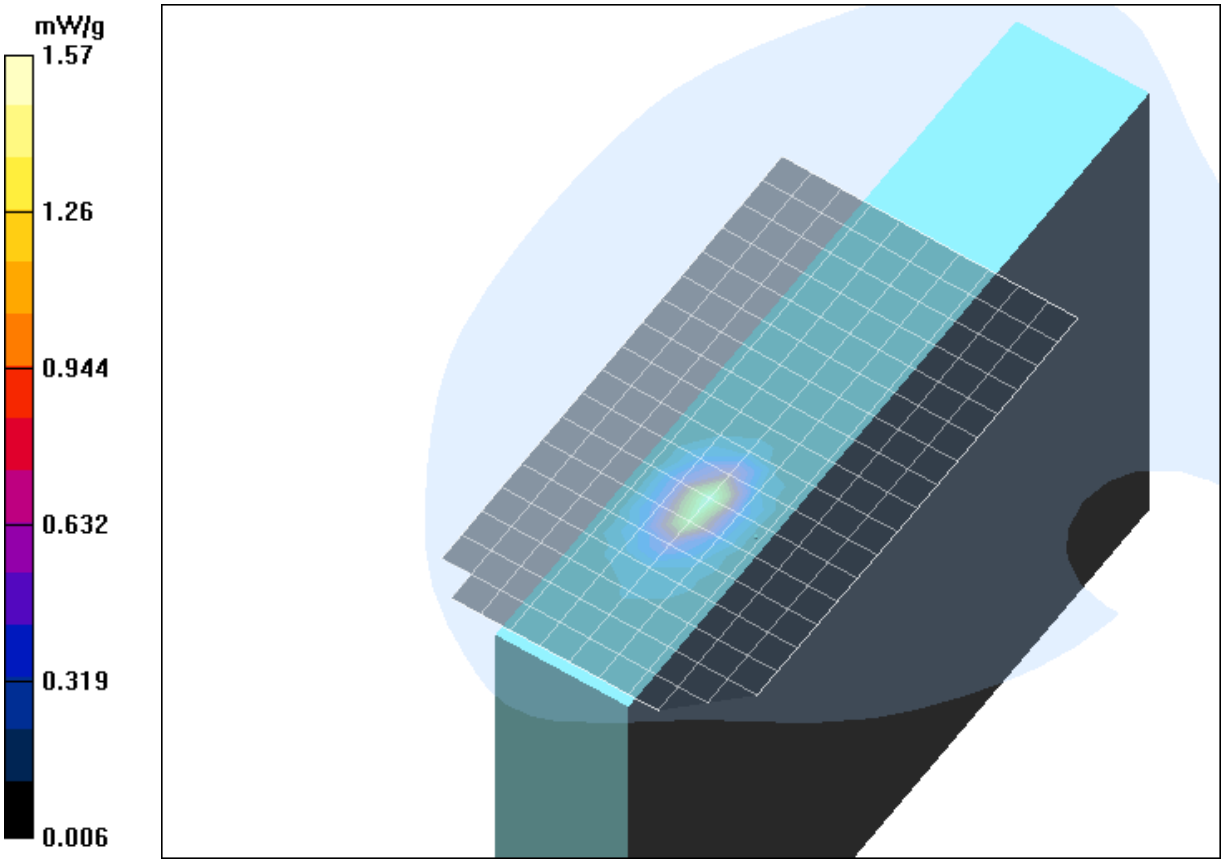

Fig. 5: Worst case SAR distribution the JLT 8404, Antenna A, b-mode channel 1, bottom edge touching the phantom (February 20, 2008; Ambient Temperature: 21.5° C; Liquid Temperature : 20.7° C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: 8404_wbhl_3_A.da4

DUT: JLT; Type: 8404; Serial: 0017253A00728

Program Name: System Performance Check at 2450 MHz

Communication System: 2.4 GHz; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2412 MHz; σ = 1.89 mho/m; ε_r = 51.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.46, 7.46, 7.46); Calibrated: 18.09.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 08.02.2008
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=250mW/Area Scan (11x17x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.289 mW/g
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.10 V/m; Power Drift = -0.189 dB
Peak SAR (extrapolated) = 0.698 W/kg
SAR(1 g) = 0.311 mW/g; SAR(10 g) = 0.144 mW/g
Maximum value of SAR (measured) = 0.350 mW/g

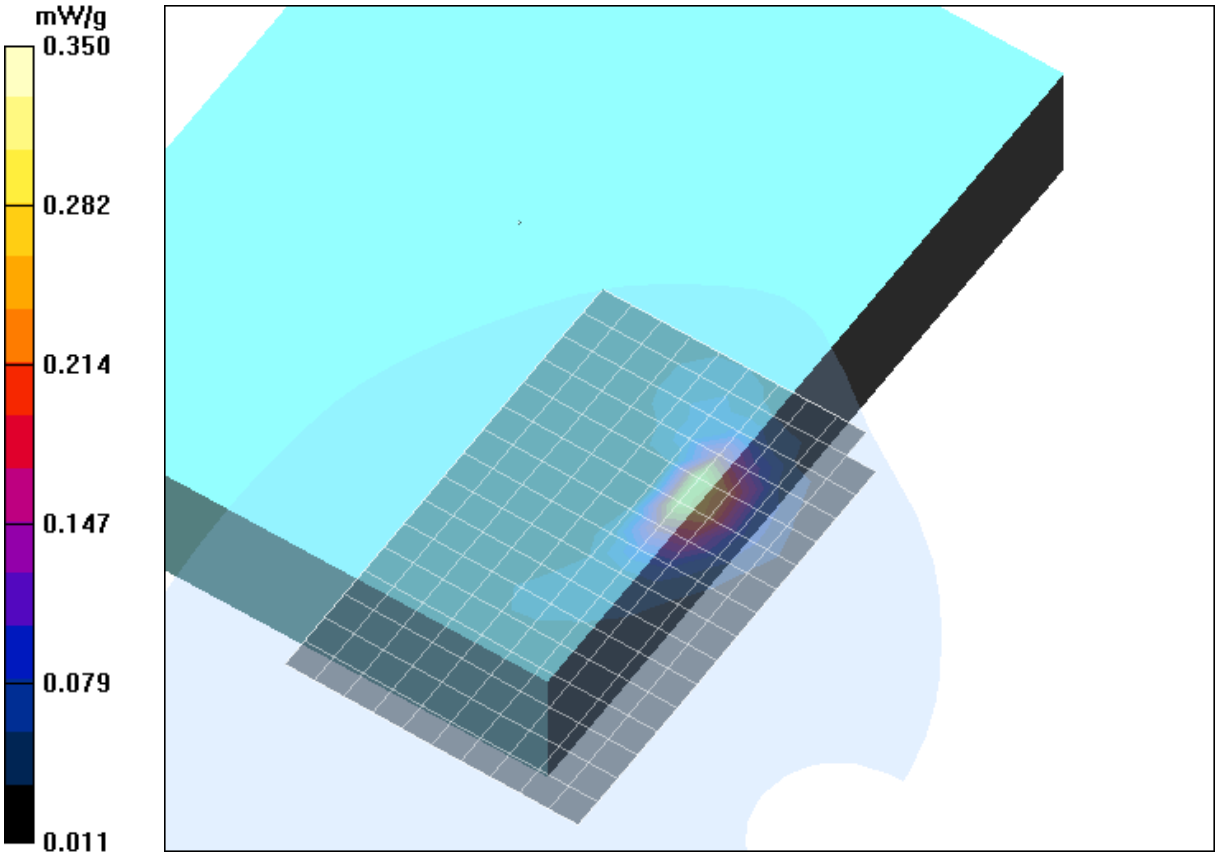

Fig. 6: SAR distribution the JLT 8404, Antenna A, b-mode channel 1, lap held position (February 20, 2008; Ambient Temperature: 21.5° C; Liquid Temperature : 20.7° C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: 8404_wghm_1_B.da4

DUT: JLT; Type: 8404; Serial: 0017253A00728

Program Name: Body Worn

Communication System: 2.4 GHz; Frequency: 2437 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 2437 MHz; σ = 1.96 mho/m; ε_r = 51.8; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.46, 7.46, 7.46); Calibrated: 18.09.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 08.02.2008
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=250mW/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.181 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.24 V/m; Power Drift = 0.124 dB

Peak SAR (extrapolated) = 0.342 W/kg

SAR(1 g) = 0.159 mW/g; SAR(10 g) = 0.067 mW/g

Maximum value of SAR (measured) = 0.182 mW/g

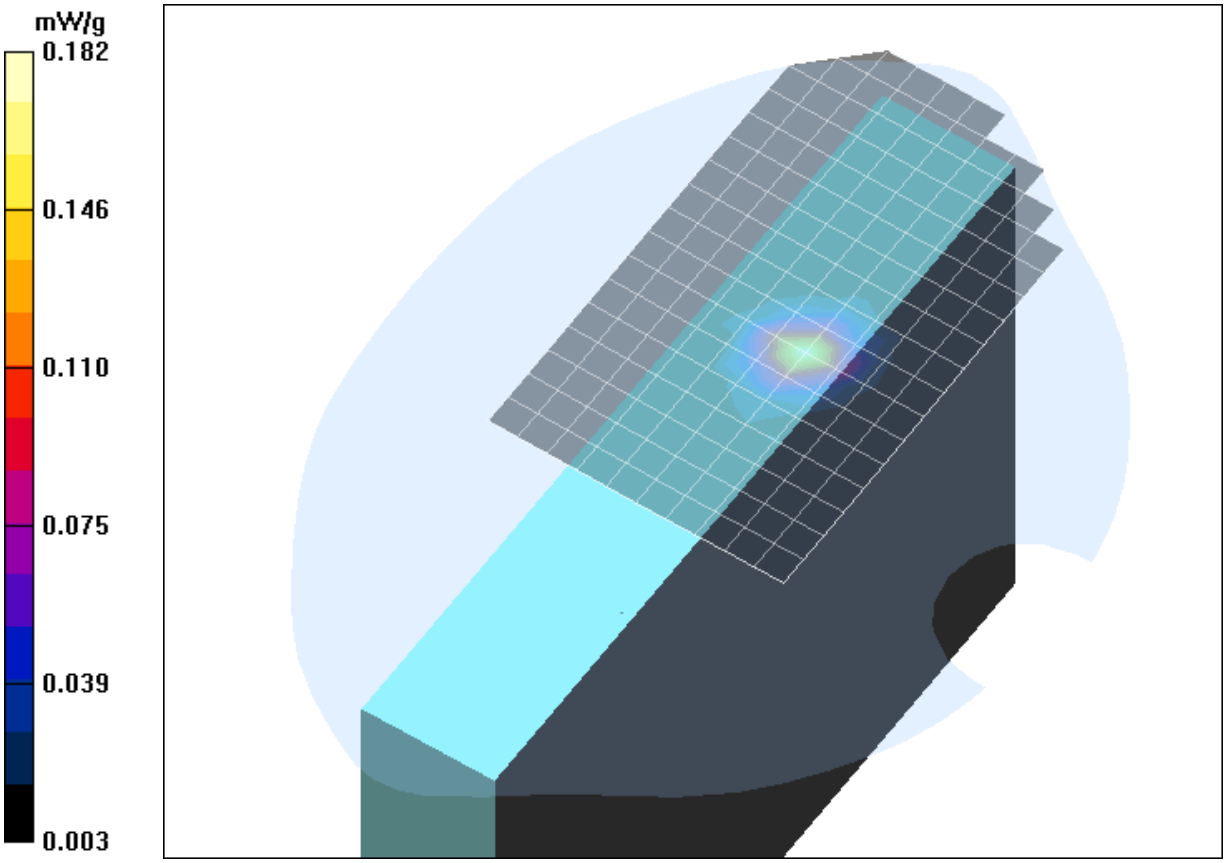

Fig. 7: SAR distribution the JLT 8404, Antenna B, g-mode channel 6, upper edge touching the phantom (February 20, 2008; Ambient Temperature: 21.7° C; Liquid Temperature : 20.8° C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: 8404_wghh_3_B.da4

DUT: JLT; Type: 8404; Serial: 0017253A00728

Program Name: System Performance Check at 2450 MHz

Communication System: 2.4 GHz; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (extrapolated): f = 2462 MHz; σ = 2.03 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.46, 7.46, 7.46); Calibrated: 18.09.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 08.02.2008
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=250mW/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.069 mW/g
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.86 V/m; Power Drift = -0.158 dB
Peak SAR (extrapolated) = 0.167 W/kg
SAR(1 g) = 0.066 mW/g; SAR(10 g) = 0.038 mW/g
Maximum value of SAR (measured) = 0.071 mW/g

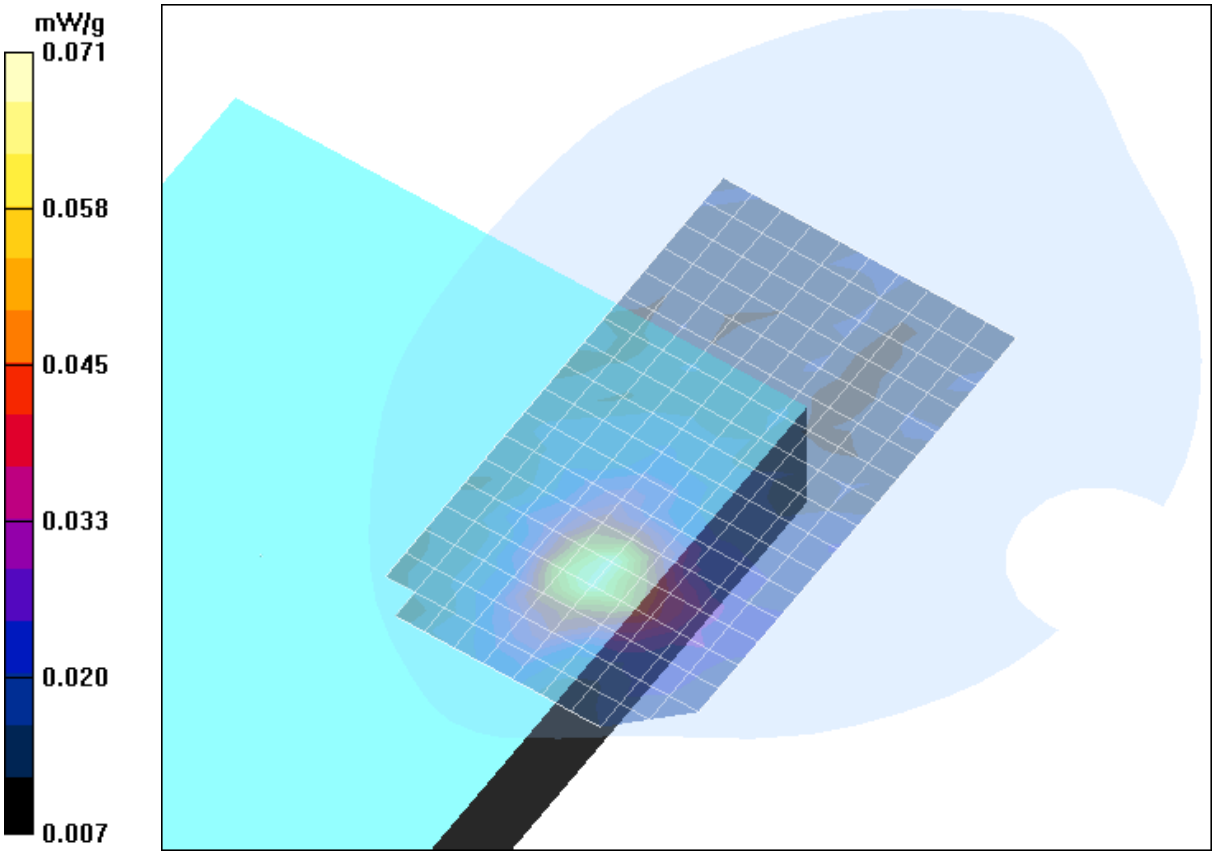

Fig. 8: SAR distribution the JLT 8404, Antenna B, g-mode channel 11, lap held position (February 20, 2008; Ambient Temperature: 21.7° C; Liquid Temperature: 20.8° C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: 8404_wghl_1_A.da4

DUT: JLT; Type: 8404; Serial: 0017253A00728

Program Name: Body Worn

Communication System: 2.4 GHz; Frequency: 2412 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 2412 MHz; σ = 1.89 mho/m; ε_r = 51.8; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.46, 7.46, 7.46); Calibrated: 18.09.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 08.02.2008
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=250mW/Area Scan (10x16x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 1.22 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.34 V/m; Power Drift = 0.022 dB

Peak SAR (extrapolated) = 2.37 W/kg

SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.447 mW/g

Maximum value of SAR (measured) = 1.24 mW/g

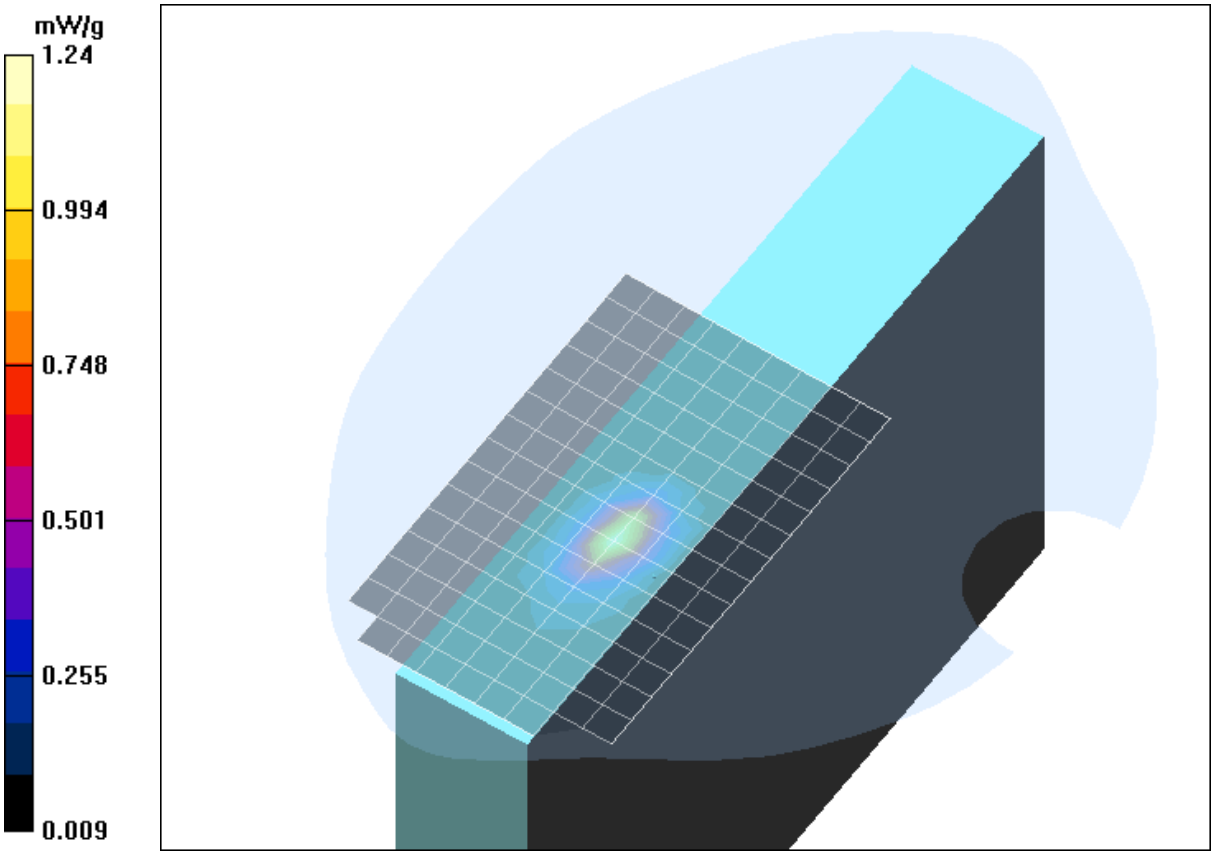

Fig. 9: SAR distribution the JLT 8404, Antenna A, g-mode channel 1, bottom edge touching the phantom (February 20, 2008; Ambient Temperature: 21.7° C; Liquid Temperature : 20.8° C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: 8404_wghl_3_A.da4

DUT: JLT; Type: 8404; Serial: 0017253A00728
Program Name: Body Worn

Communication System: 2.4 GHz; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2412 MHz; σ = 1.89 mho/m; ε_r = 51.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.46, 7.46, 7.46); Calibrated: 18.09.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 08.02.2008
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=250mW/Area Scan (11x16x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.259 mW/g
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.86 V/m; Power Drift = 0.058 dB
Peak SAR (extrapolated) = 0.504 W/kg
SAR(1 g) = 0.242 mW/g; SAR(10 g) = 0.106 mW/g
Maximum value of SAR (measured) = 0.276 mW/g

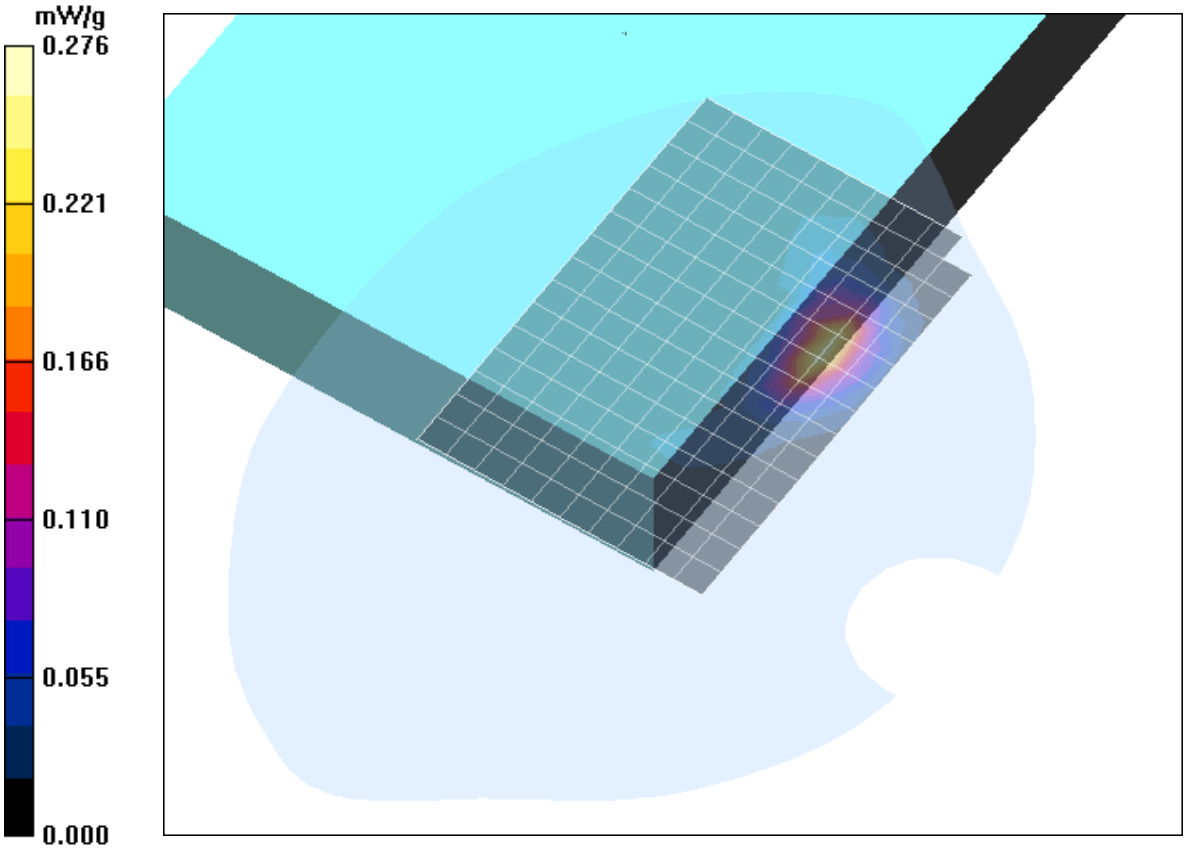

Fig. 10: SAR distribution the JLT 8404, Antenna A, g-mode channel 1, lap held position (February 20, 2008; Ambient Temperature: 21.7° C; Liquid Temperature : 20.8° C).

3 SAR z-axis scans (Validation)

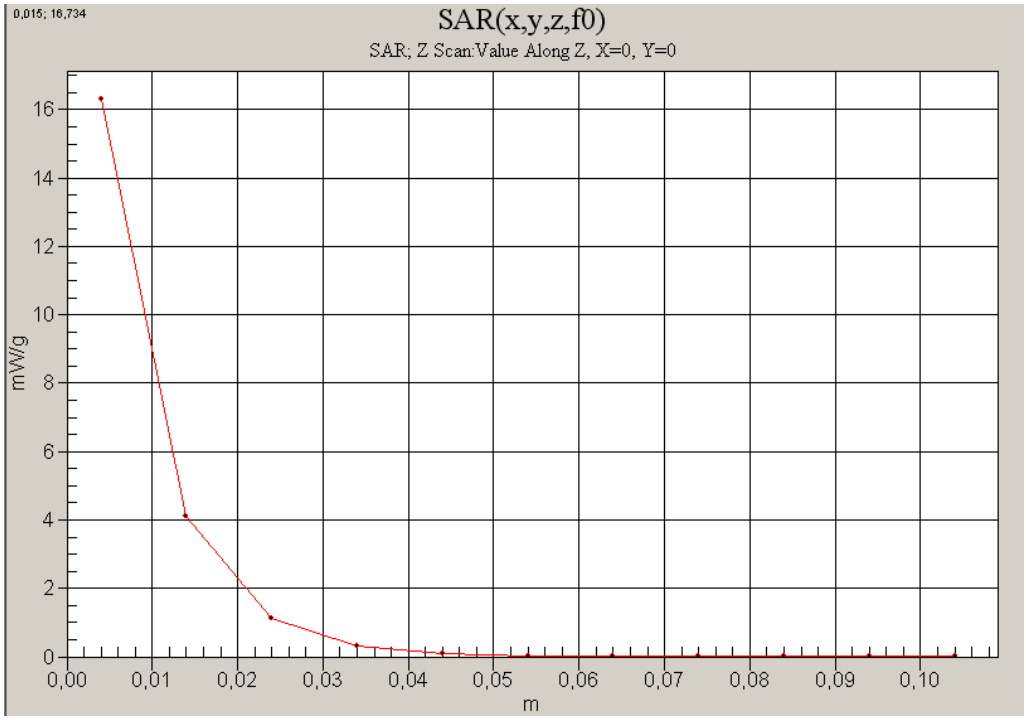

Fig. 11: SAR versus liquid depth, 2450 MHz Body (Wlan b/g-mode) (February 20, 2008; Ambient Temperature: 21.5° C; Liquid Temperature : 20.7° C).

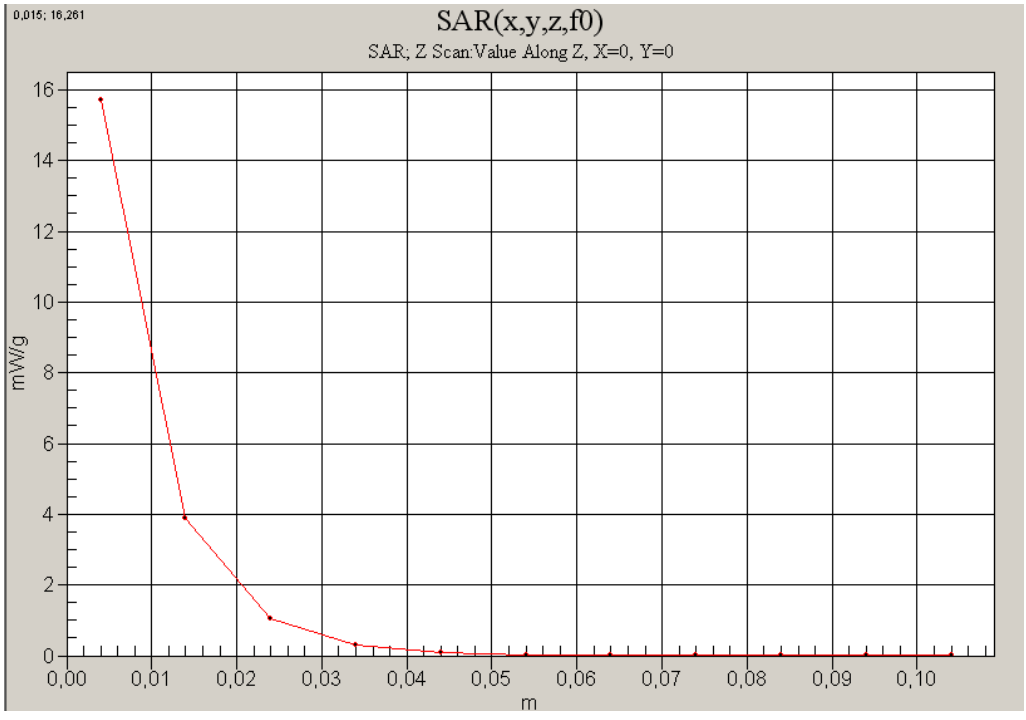

Fig. 12: SAR versus liquid depth, 2450 MHz Body (Bluetooth) (February 22, 2008; Ambient Temperature: 22.0° C; Liquid Temperature : 21.0° C).

4 SAR z-axis scans (Measurements)

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

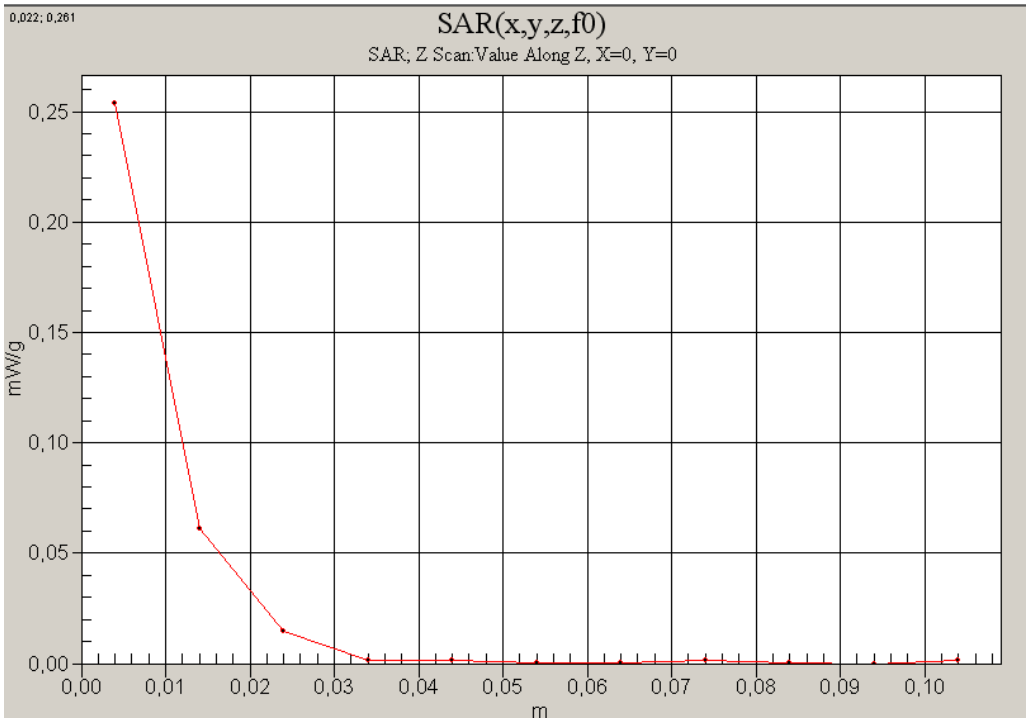

Fig. 13: SAR versus liquid depth, 2450 MHz Body, b-mode, Antenna B (February 20, 2008; Ambient Temperature: 21.5° C; Liquid Temperature : 20.7° C).

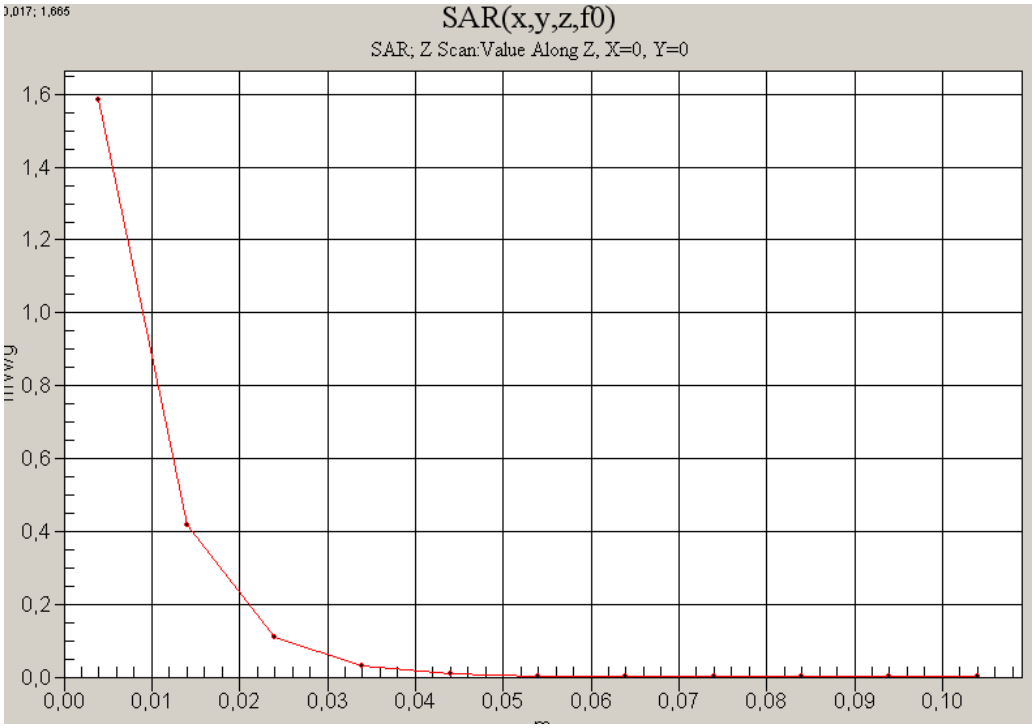

Fig. 14: SAR versus liquid depth, 2450 MHz Body, b-mode, Antenna A (February 20, 2008; Ambient Temperature: 21.5° C; Liquid Temperature : 20.7° C).

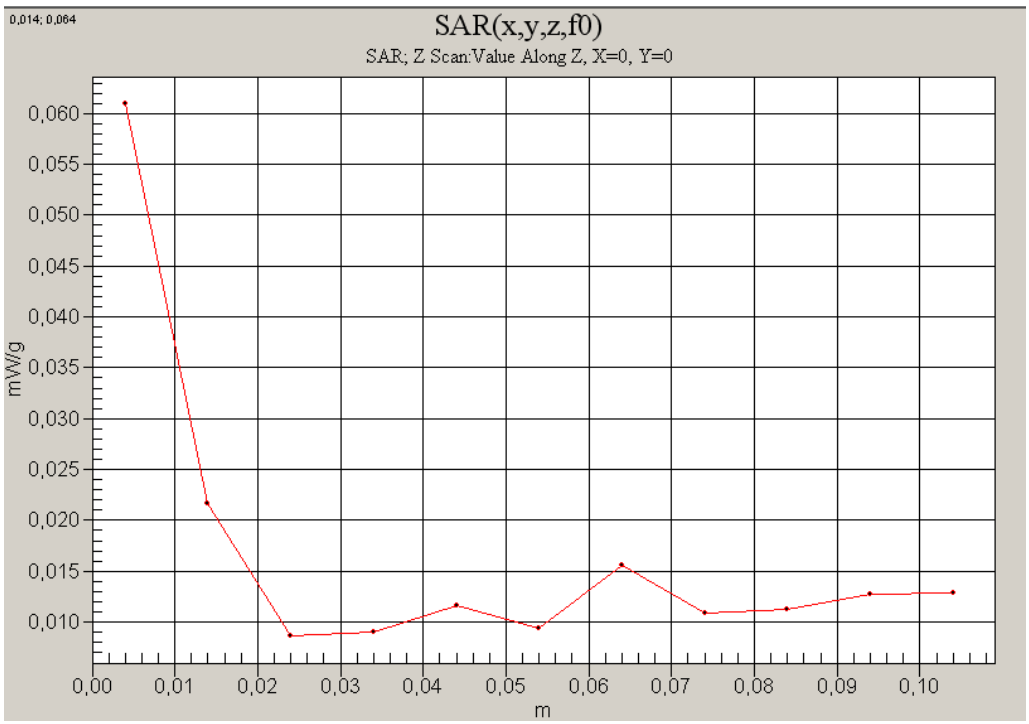

Fig. 15: SAR versus liquid depth, 2450 MHz Body (Bluetooth) (February 22, 2008; Ambient Temperature: 22.0° C; Liquid Temperature : 21.0° C).