

# **Appendix for the Report**

## **Dosimetric Assessment of the Tracking Device Smart Tag from buddi Limited (FCC ID: ZDLST1)**

### **According to the FCC Requirements**

### **SAR Distribution Plots**

July 11, 2014

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The test results only relate to the items tested.  
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# 1 SAR Distribution Plots

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [ST\\_325\\_bahl\\_3\\_bottom\\_bat.da4](#)

DUT: Buddi; Type: Smart Tag; Serial: 352964058217325

Program Name: GPRS850 (Class 10)

Communication System: GPRS 850; Frequency: 824.2 MHz; Duty Cycle: 1:4

Medium parameters used:  $f = 824.2$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 56.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.25, 6.25, 6.25); Calibrated: 28.01.2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 23.01.2014
- Phantom: SAM Sugar 1059; Type: Speag; Serial: 1059
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Body/Area Scan (8x8x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.692 mW/g

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

Reference Value = 25.3 V/m; Power Drift = 0.099 dB

Peak SAR (extrapolated) = 1.14 W/kg

**SAR(1 g) = 0.733 mW/g; SAR(10 g) = 0.493 mW/g**

Maximum value of SAR (measured) = 0.796 mW/g

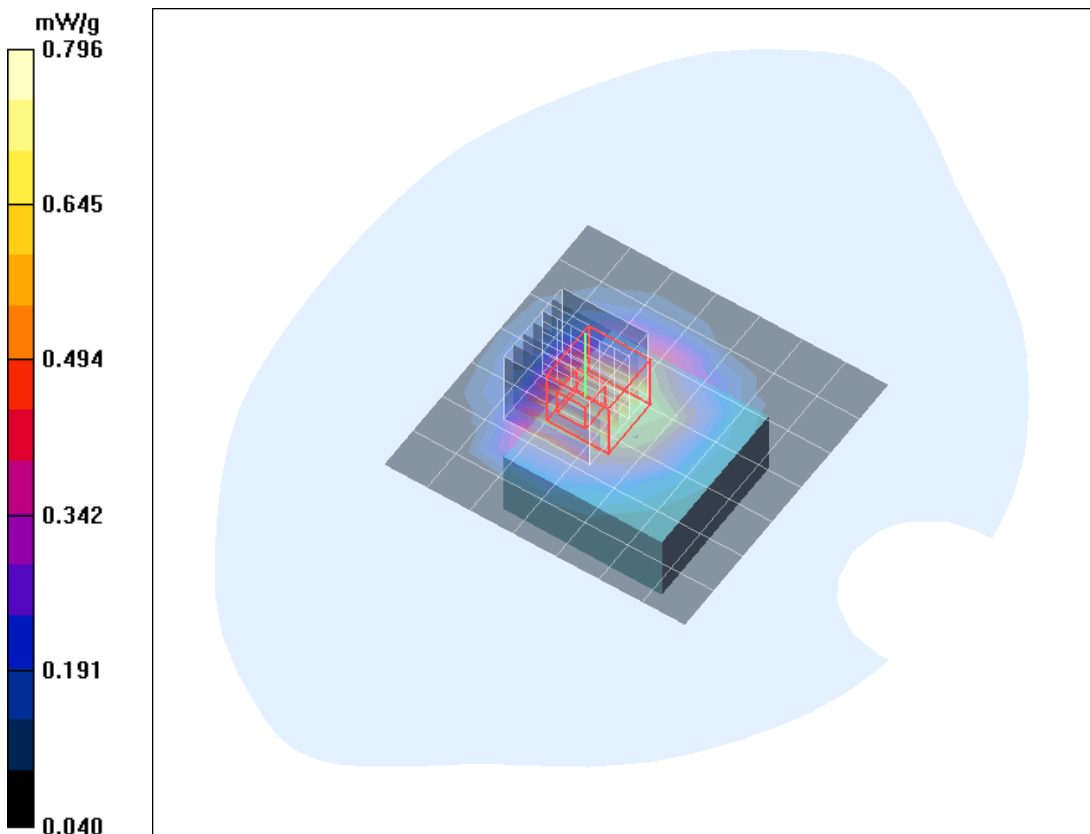


Fig. 1: SAR distribution for GPRS 850 (2TX), channel 128, back side, 0 mm (July 04, 2014)

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [ST 325 bahm 3 bottom bat.da4](#)

DUT: Buddi; Type: Smart Tag; Serial: 352964058217325

Program Name: GPRS850 (Class 10)

Communication System: GPRS 850; Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used:  $f = 836.6$  MHz;  $\sigma = 0.95$  mho/m;  $\epsilon_r = 56.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.25, 6.25, 6.25); Calibrated: 28.01.2014

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn335; Calibrated: 23.01.2014

- Phantom: SAM Sugar 1059; Type: Speag; Serial: 1059

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Body/Area Scan (8x8x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 1.15 mW/g

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

Reference Value = 32.9 V/m; Power Drift = 0.185 dB

Peak SAR (extrapolated) = 1.92 W/kg

**SAR(1 g) = 1.19 mW/g; SAR(10 g) = 0.787 mW/g**

Maximum value of SAR (measured) = 1.30 mW/g

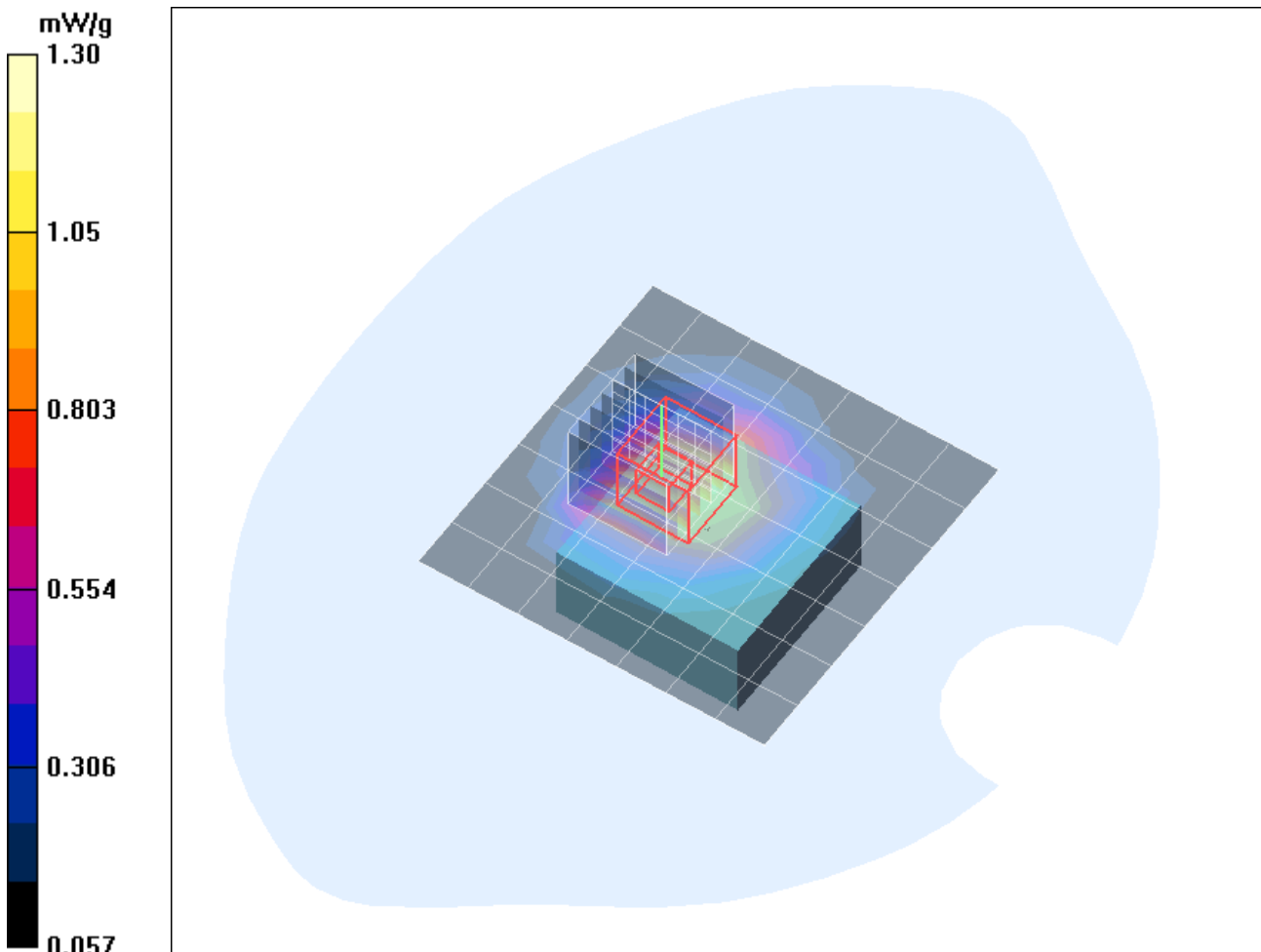


Fig. 2: SAR distribution for GPRS 850 (2TX), channel 190, back side, 0 mm (July 04, 2014)

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [ST 325 bahh 3 bottom bat.da4](#)

DUT: Buddi; Type: Smart Tag; Serial: 352964058217325

Program Name: GPRS850 (Class 10)

Communication System: GPRS 850; Frequency: 848.8 MHz; Duty Cycle: 1:4

Medium parameters used:  $f = 848.8$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 56.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.25, 6.25, 6.25); Calibrated: 28.01.2014

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn335; Calibrated: 23.01.2014

- Phantom: SAM Sugar 1059; Type: Speag; Serial: 1059

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Body/Area Scan (8x8x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.785 mW/g

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

Reference Value = 27.5 V/m; Power Drift = 0.146 dB

Peak SAR (extrapolated) = 1.27 W/kg

**SAR(1 g) = 0.816 mW/g; SAR(10 g) = 0.547 mW/g**

Maximum value of SAR (measured) = 0.888 mW/g

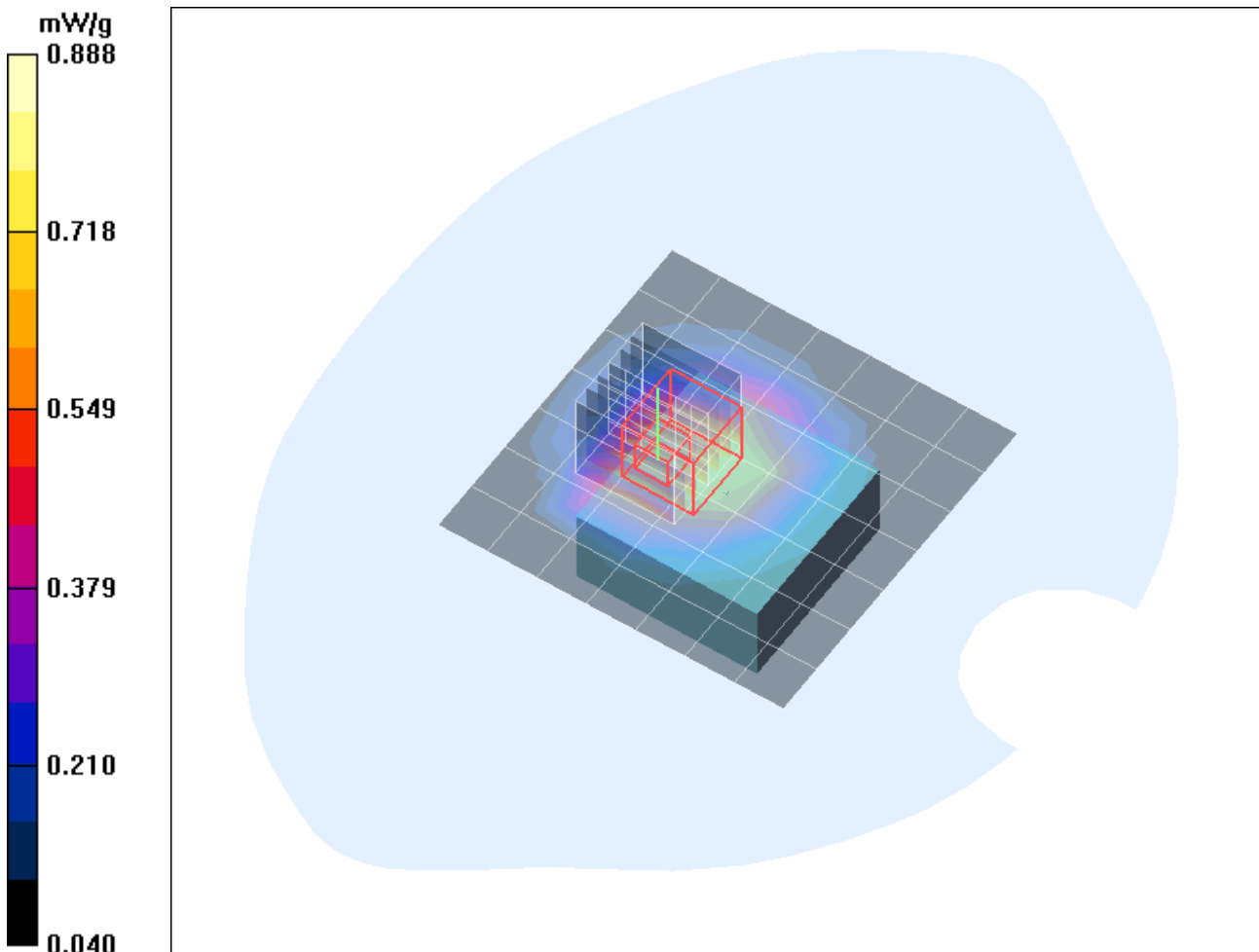


Fig. 3: SAR distribution for GPRS 850 (2TX), channel 251, back side, 0 mm (July 04, 2014)

Test Laboratory: Imst GmbH, DASY Yellow (II); File Name: [ST\\_325\\_yphl\\_3\\_bottom\\_bat.da4](#)

DUT: Buddi; Type: Smart Tag; Serial: 352964058217325

Program Name: GPRS1900 (Class 10)

Communication System: GPRS 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4

Medium parameters used:  $f = 1850.2$  MHz;  $\sigma = 1.47$  mho/m;  $\epsilon_r = 53.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(4.49, 4.49, 4.49); Calibrated: 28.01.2014

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn631; Calibrated: 23.09.2013

- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Body/Area Scan (8x8x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 1.60 mW/g

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

Reference Value = 33.1 V/m; Power Drift = -0.139 dB

Peak SAR (extrapolated) = 2.74 W/kg

**SAR(1 g) = 1.48 mW/g; SAR(10 g) = 0.833 mW/g**

Maximum value of SAR (measured) = 1.70 mW/g

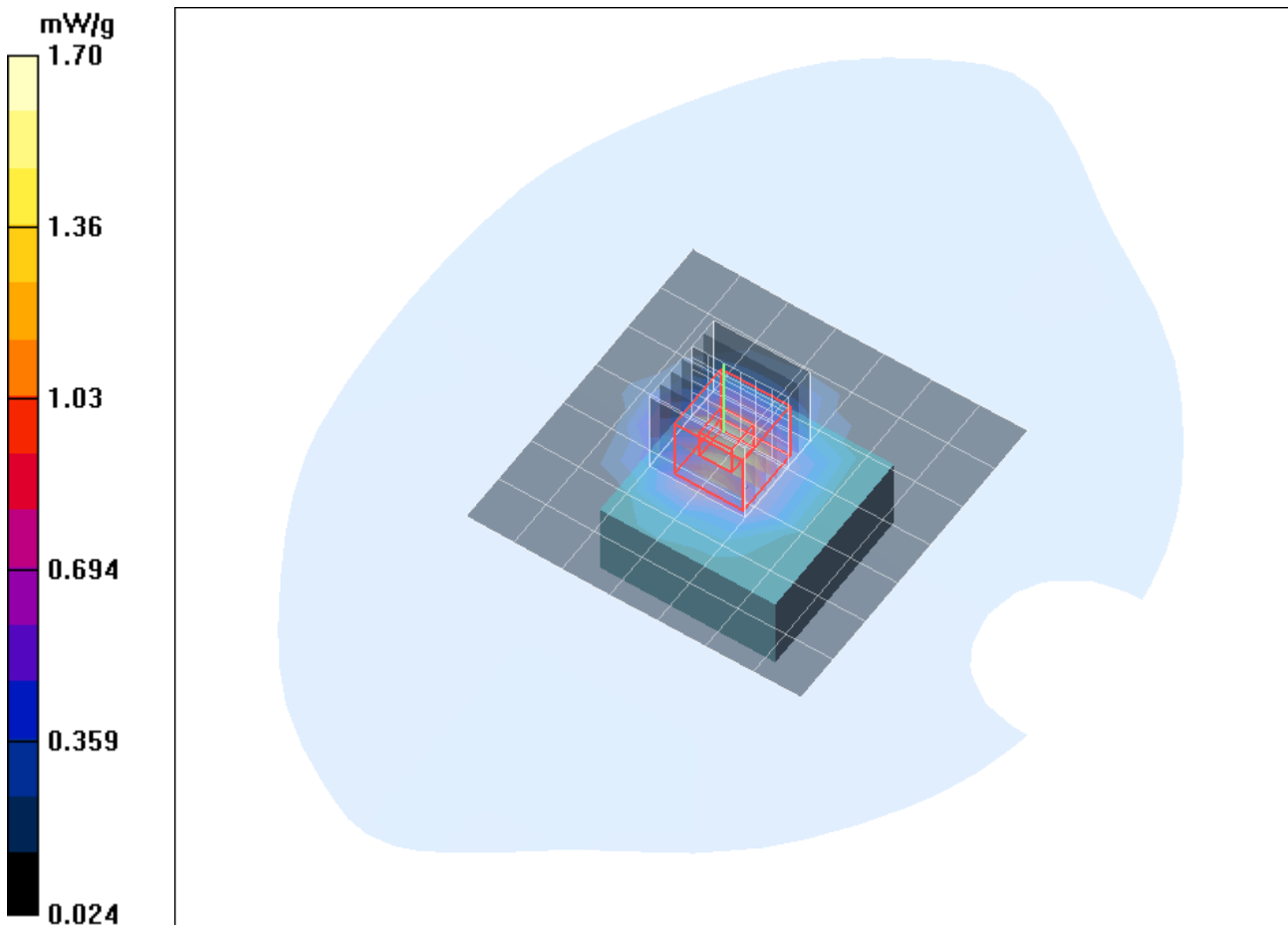


Fig. 4: SAR distribution for GPRS 1900 (2TX), channel 512, back side, 0 mm (July 10, 2014)

Test Laboratory: Imst GmbH, DASY Yellow (II); File Name: [ST\\_325\\_yphl\\_3\\_bottom\\_bat.da4](#)

DUT: Buddi; Type: Smart Tag; Serial: 352964058217325

Program Name: GPRS1900 (Class 10)

Communication System: GPRS 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4

Medium parameters used:  $f = 1850.2$  MHz;  $\sigma = 1.47$  mho/m;  $\epsilon_r = 53.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(4.49, 4.49, 4.49); Calibrated: 28.01.2014

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn631; Calibrated: 23.09.2013

- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Body/Area Scan (8x8x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 1.60 mW/g

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

Reference Value = 33.1 V/m; Power Drift = -0.139 dB

Peak SAR (extrapolated) = 2.74 W/kg

**SAR(1 g) = 1.48 mW/g; SAR(10 g) = 0.833 mW/g**

Maximum value of SAR (measured) = 1.70 mW/g

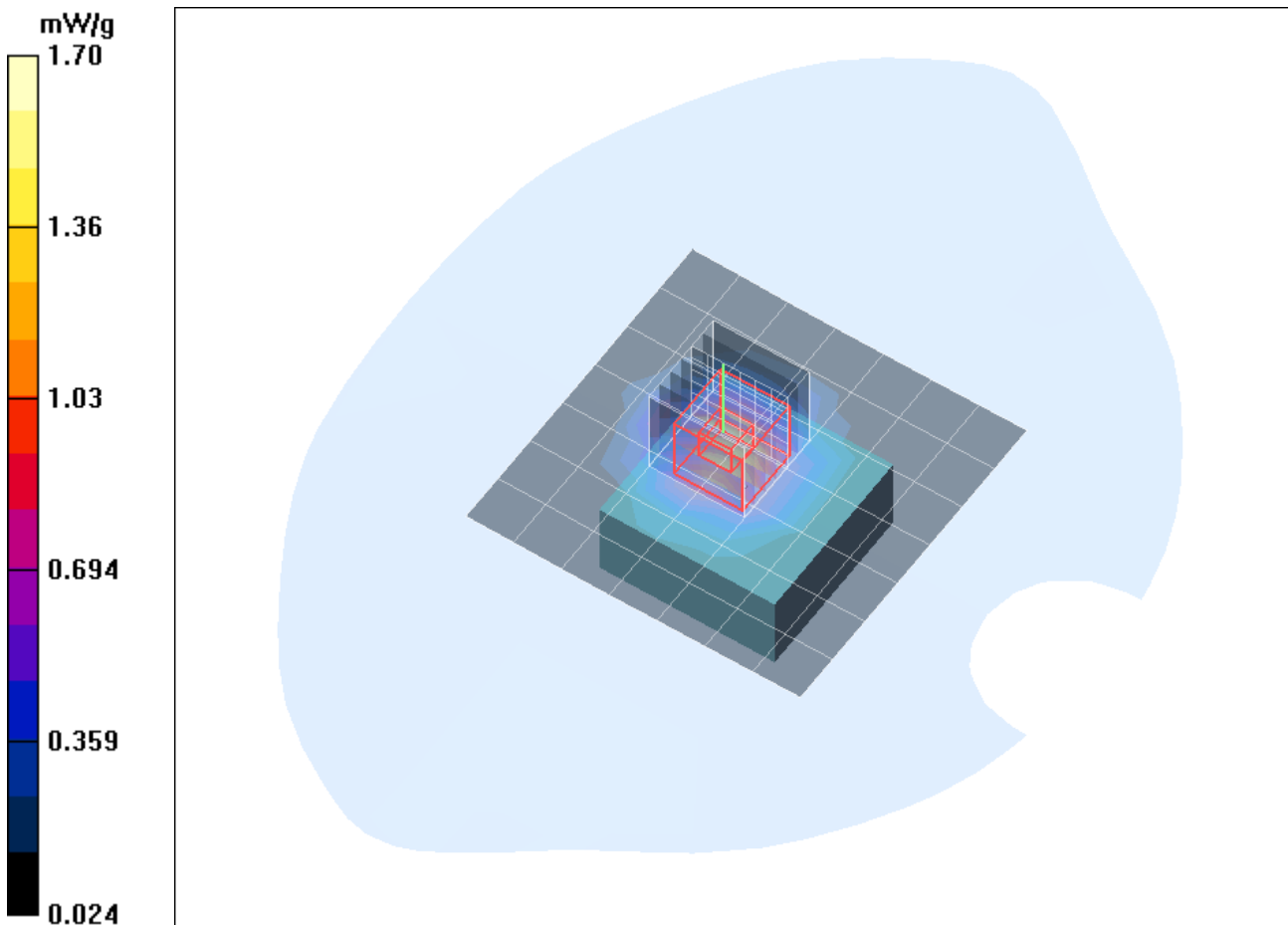


Fig. 5: SAR distribution for GPRS 1900 (2TX), channel 661, back side, 0 mm (July 10, 2014)

Test Laboratory: Imst GmbH, DASY Yellow (II); File Name: [ST\\_325\\_yphh\\_3\\_bottom\\_bat.da4](#)

DUT: Buddi; Type: Smart Tag; Serial: 352964058217325

Program Name: GPRS1900 (Class 10)

Communication System: GPRS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:4

Medium parameters used:  $f = 1909.8$  MHz;  $\sigma = 1.56$  mho/m;  $\epsilon_r = 53.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(4.49, 4.49, 4.49); Calibrated: 28.01.2014

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn631; Calibrated: 23.09.2013

- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Body/Area Scan (8x8x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.40 mW/g

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

Reference Value = 38.3 V/m; Power Drift = 0.147 dB

Peak SAR (extrapolated) = 4.22 W/kg

**SAR(1 g) = 2.25 mW/g; SAR(10 g) = 1.27 mW/g**

Maximum value of SAR (measured) = 2.58 mW/g

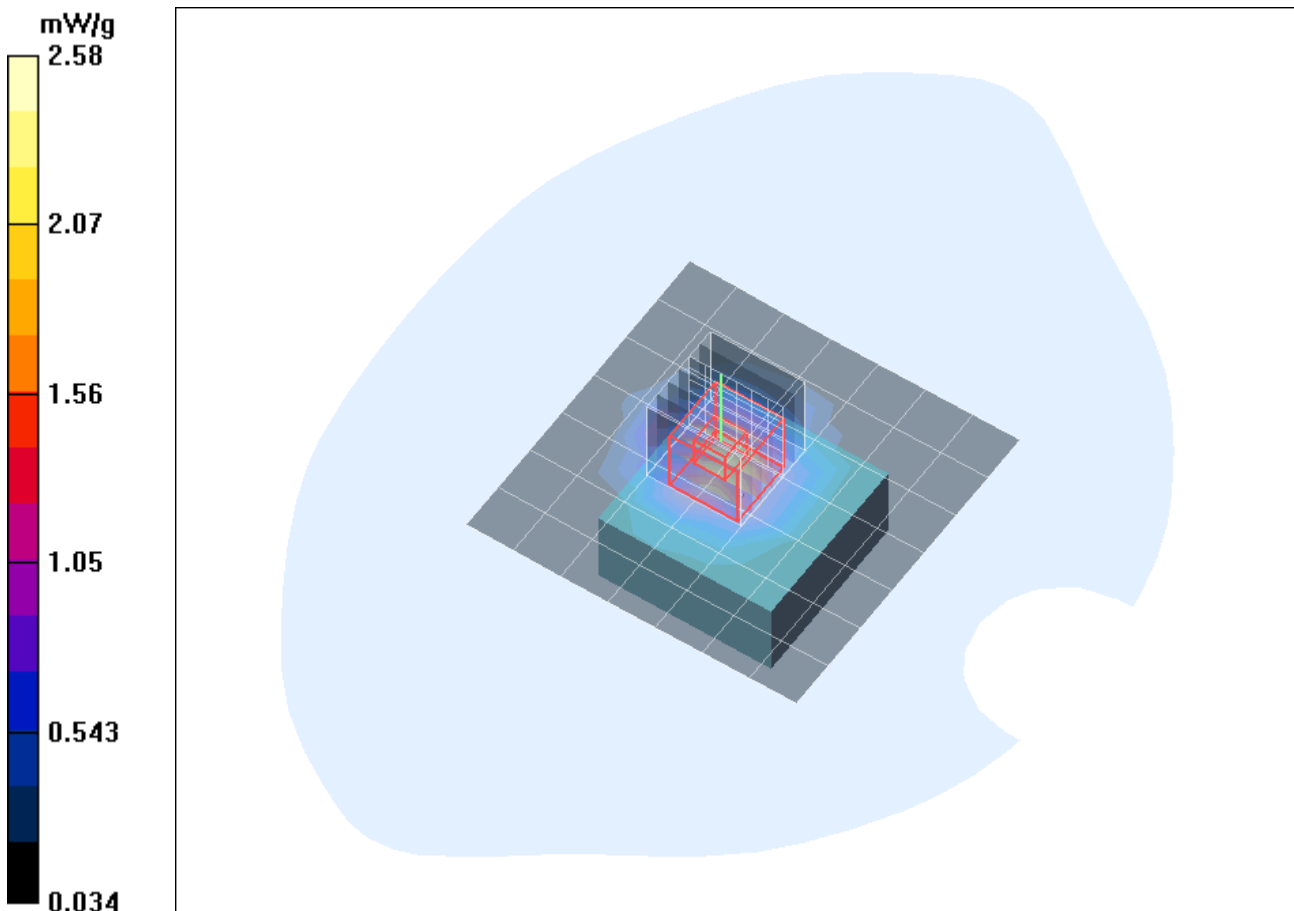


Fig. 6: SAR distribution for GPRS 1900 (2TX), channel 810, back side, 0 mm (July 10, 2014)