DAkkS Deutsche Akkreditierungsstelle D-PL-12139-01-00

The Testcenter facility 'Dosimetric Test Lab' within IMST GmbH is accredited by the German National 'Deutsche Akkreditierungsstelle GmbH (DAkkS)' for testing according to the scope as listed in the accreditation certificate: D-PL-12139-01-00.

Appendix for SAR Test Report

Dosimetric Assessment of the Spectrometer Bravo Duo from Bruker Optik GmbH

(FCC ID: 2AD88-BRAVO-01)

According to the FCC Requirements

SAR Distribution Plots

April 16, 2015

IMST GmbH

Carl-Friedrich-Gauß-Str. 2 - 4

47475 Kamp-Lintfort

Germany

Customer

Bruker Optik GmbH

Rudolf-Plank-straße 27

76275 Ettlingen

Germany

1 SAR Distribution Plots for Body Exposure for IEEE 802.11 b

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: Bravo_bwhm_b_ch6_front_0mm.da4

DUT: Bruker; Type: Bravo Duo; Serial: N.A.
Program Name: IEEE 802.11 b

Communication System: WLAN 2450; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.98 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.34, 7.34, 7.34); Calibrated: 24.07.2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 23.07.2014
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn/Area Scan (9x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.056 mW/g
Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.41 V/m; Power Drift = 0.134 dB
Peak SAR (extrapolated) = 0.100 W/kg
SAR(1 g) = 0.054 mW/g; SAR(10 g) = 0.030 mW/g
Maximum value of SAR (measured) = 0.058 mW/g

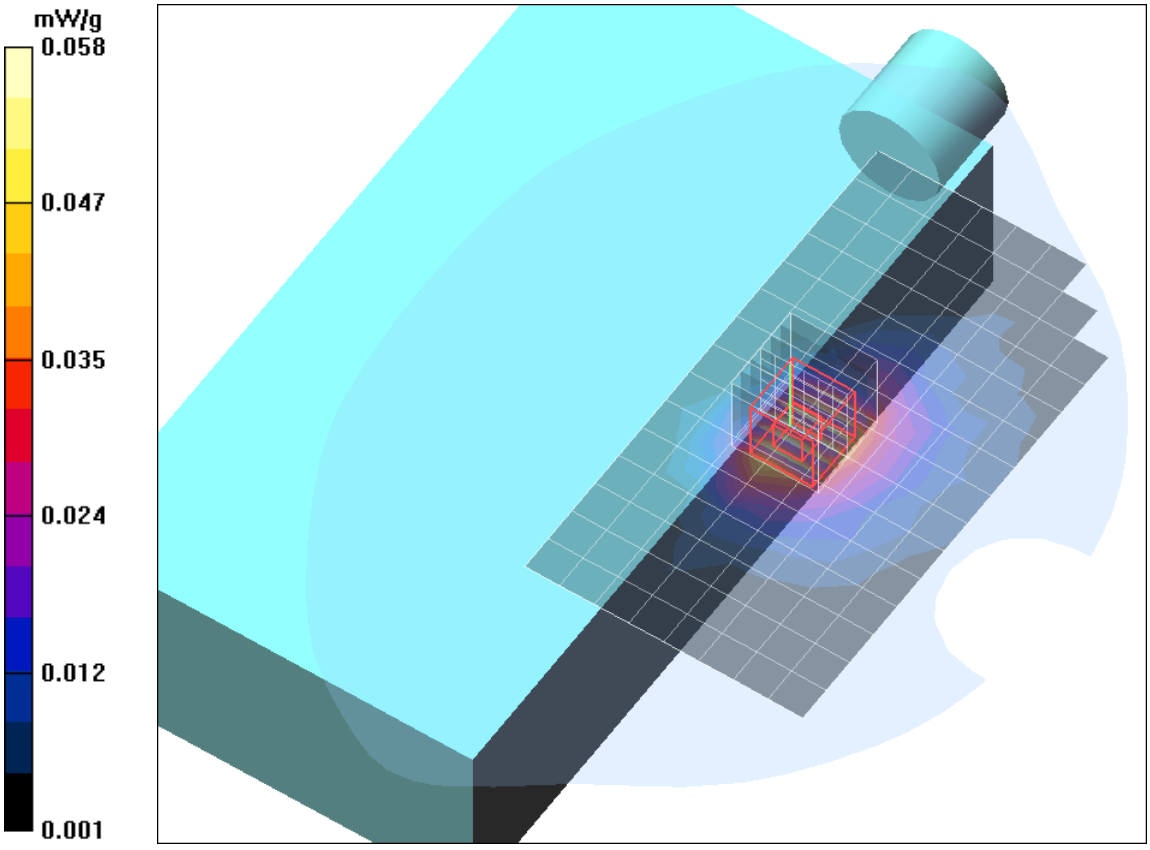

Fig. 1: SAR distribution for IEEE 802.11 b, channel 6, front side towards the phantom, 0 mm distance.

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: Bravo_bwhm_b_ch6_back_0mm.da4

DUT: Bruker; Type: Bravo Duo; Serial: N.A.
Program Name: IEEE 802.11 b

Communication System: WLAN 2450; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.98 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.34, 7.34, 7.34); Calibrated: 24.07.2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 23.07.2014
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn/Area Scan (9x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.090 mW/g
Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.68 V/m; Power Drift = 0.116 dB
Peak SAR (extrapolated) = 0.169 W/kg
SAR(1 g) = 0.090 mW/g; SAR(10 g) = 0.047 mW/g
Maximum value of SAR (measured) = 0.099 mW/g

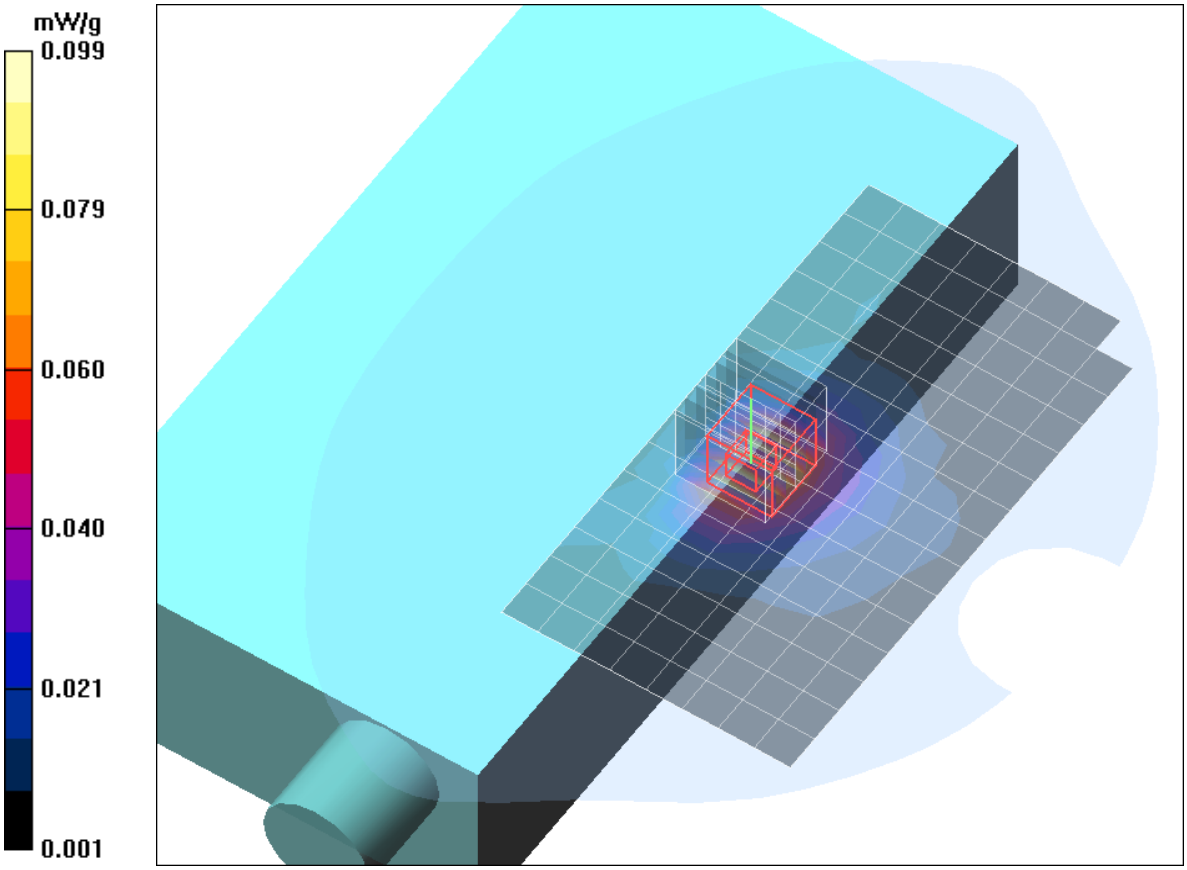

Fig. 2: SAR distribution for IEEE 802.11 b, channel 6, back side towards the phantom, 0 mm distance.

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: Bravo_bwhm_b_ch6_right_0mm.da4

DUT: Bruker; Type: Bravo Duo; Serial: N.A.
Program Name: IEEE 802.11 b

Communication System: WLAN 2450; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.98 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.34, 7.34, 7.34); Calibrated: 24.07.2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 23.07.2014
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn/Area Scan (9x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.605 mW/g
Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.5 V/m; Power Drift = 0.036 dB
Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.618 mW/g; SAR(10 g) = 0.290 mW/g
Maximum value of SAR (measured) = 0.785 mW/g

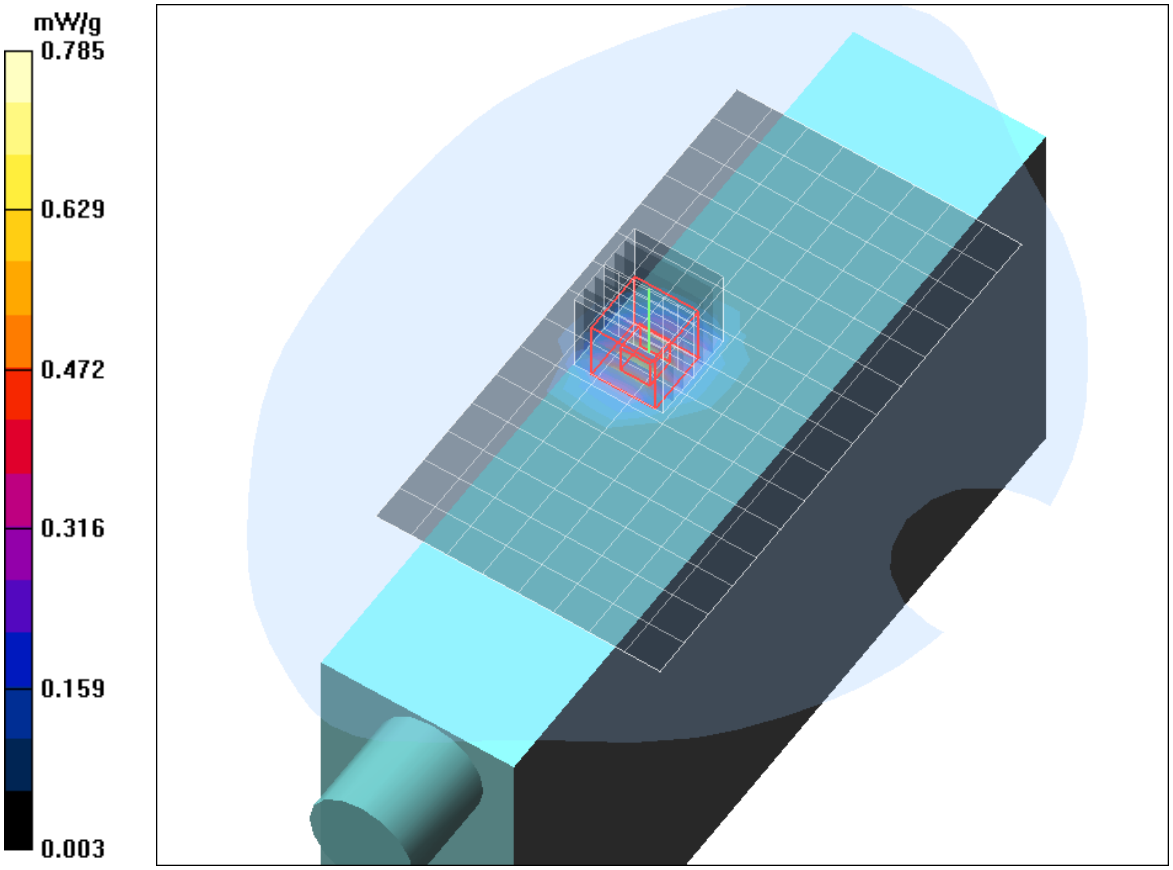

Fig. 3: SAR distribution for IEEE 802.11 b, channel 6, right side towards the phantom, 0 mm distance.

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: Bravo_bwhm_b_ch6_left_0mm.da4

DUT: Bruker; Type: Bravo Duo; Serial: N.A.
Program Name: IEEE 802.11 b

Communication System: WLAN 2450; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.98 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.34, 7.34, 7.34); Calibrated: 24.07.2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 23.07.2014
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn/Area Scan (9x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.002 mW/g

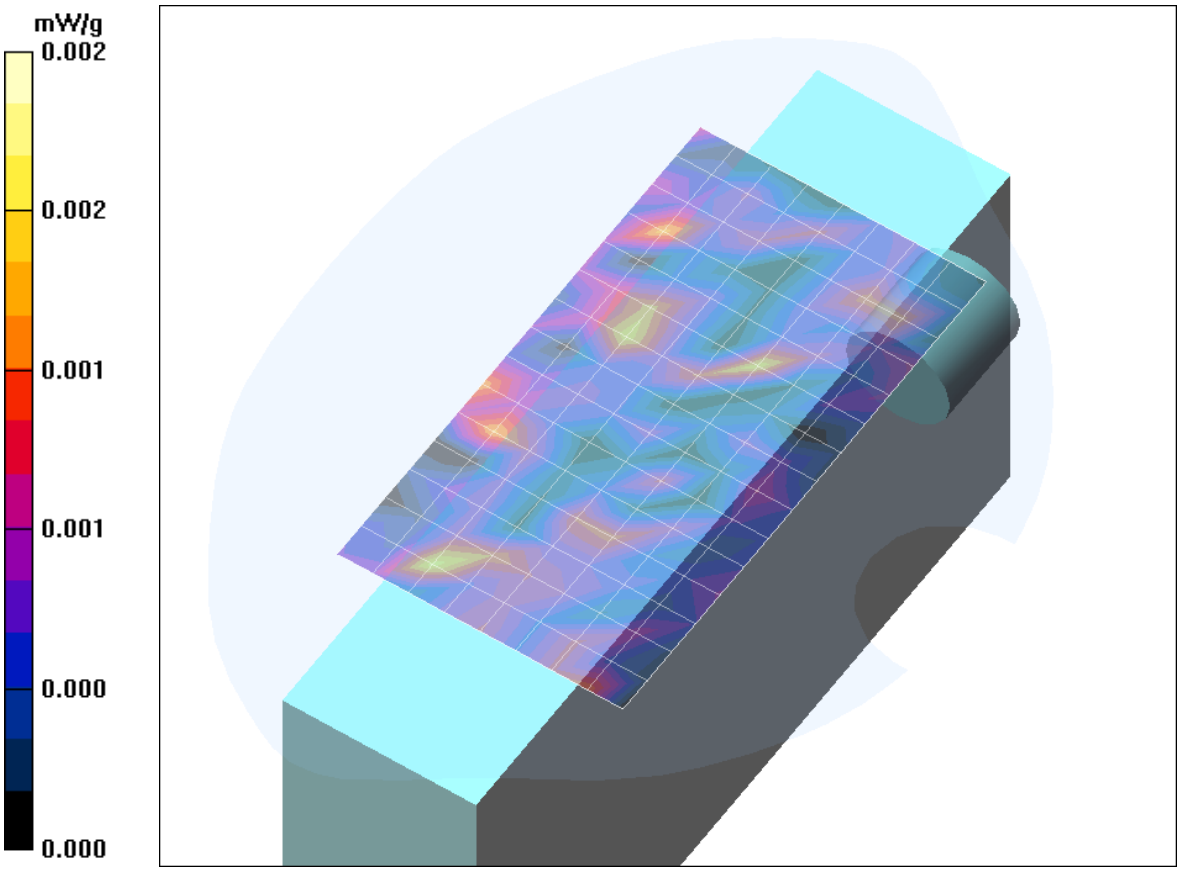

Fig. 4: SAR distribution for IEEE 802.11 b, channel 6, left side towards the phantom, 0 mm distance.

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: Bravo_bwhl_b_ch1_right_0mm.da4

DUT: Bruker; Type: Bravo Duo; Serial: N.A.
Program Name: IEEE 802.11 b

Communication System: WLAN 2450; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2412 MHz; σ = 1.94 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.34, 7.34, 7.34); Calibrated: 24.07.2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 23.07.2014
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn/Area Scan (9x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.823 mW/g
Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.6 V/m; Power Drift = 0.115 dB
Peak SAR (extrapolated) = 1.71 W/kg
SAR(1 g) = 0.880 mW/g; SAR(10 g) = 0.412 mW/g
Maximum value of SAR (measured) = 0.999 mW/g

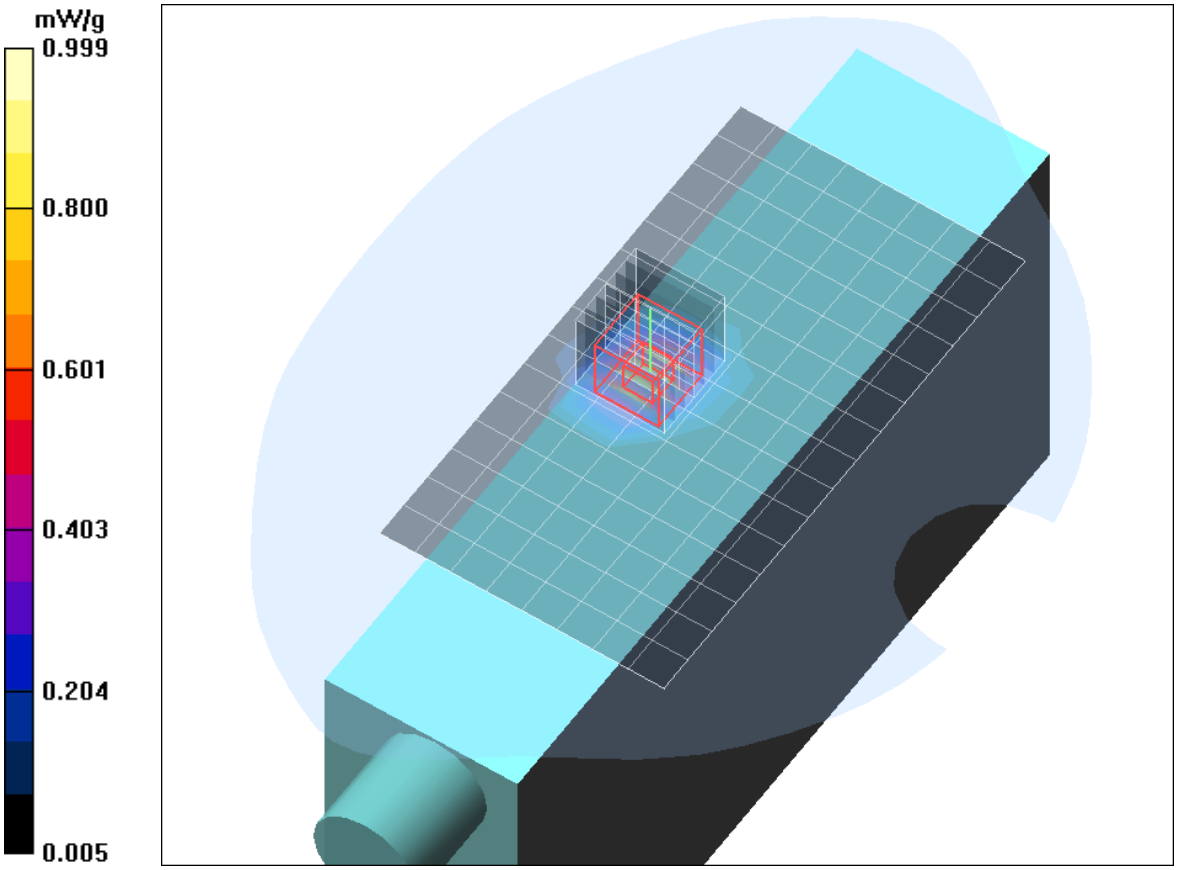

Fig. 5: SAR distribution for IEEE 802.11 b, channel 1, right side towards the phantom, 0 mm distance.

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: Bravo_bwhl_b_ch1_right_0mm_wdh.da4

DUT: Bruker; Type: Bravo Duo; Serial: N.A.
Program Name: IEEE 802.11 b

Communication System: WLAN 2450; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2412 MHz; σ = 1.94 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.34, 7.34, 7.34); Calibrated: 24.07.2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 23.07.2014
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn/Area Scan (9x9x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.784 mW/g
Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.5 V/m; Power Drift = 0.196 dB
Peak SAR (extrapolated) = 1.70 W/kg
SAR(1 g) = 0.877 mW/g; SAR(10 g) = 0.412 mW/g
Maximum value of SAR (measured) = 0.993 mW/g

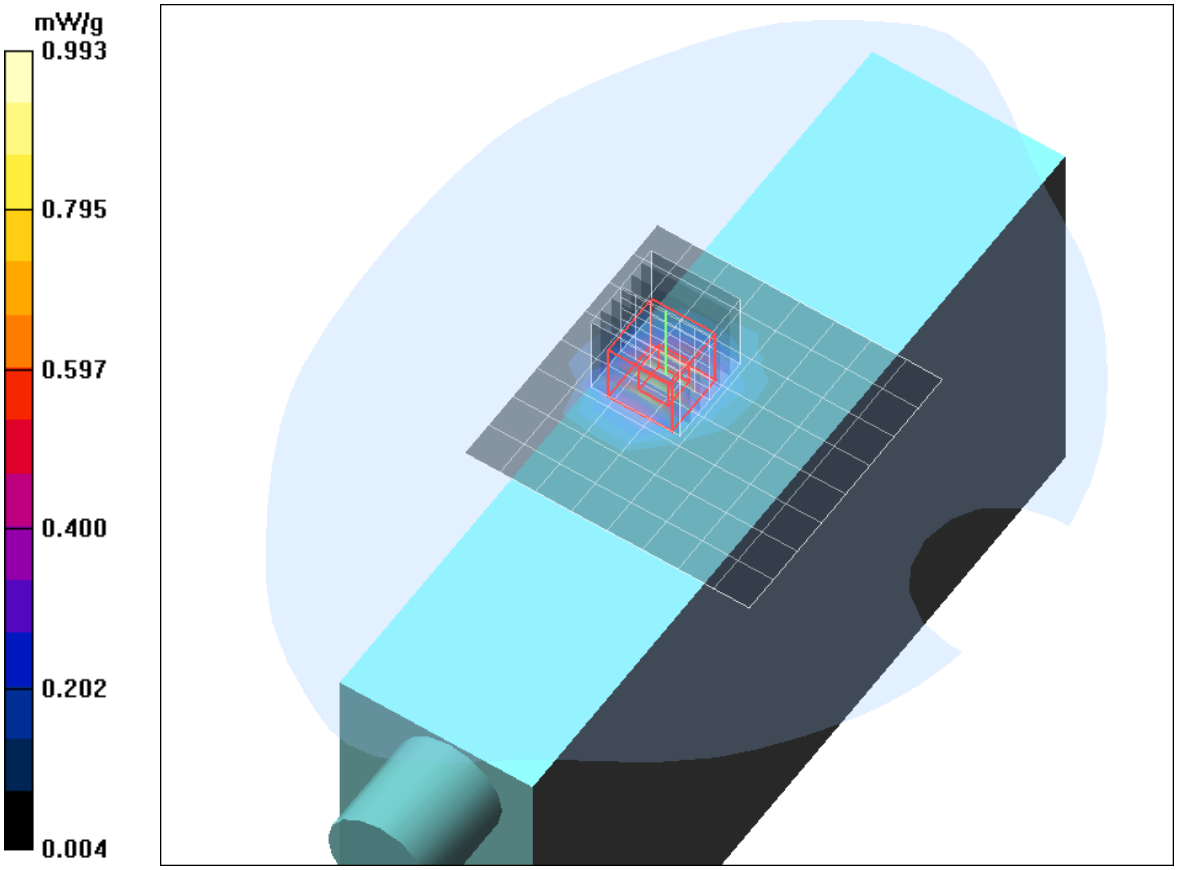

Fig. 6: SAR distribution for IEEE 802.11 b, channel 1, right side towards the phantom, 0 mm distance, measurement variability.

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: Bravo_bwhh_b_ch11_right_0mm.da4

DUT: Bruker; Type: Bravo Duo; Serial: N.A.
Program Name: IEEE 802.11 b

Communication System: WLAN 2450; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 2.01 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.34, 7.34, 7.34); Calibrated: 24.07.2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 23.07.2014
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn/Area Scan (9x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.401 mW/g
Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.40 V/m; Power Drift = 0.152 dB
Peak SAR (extrapolated) = 0.824 W/kg
SAR(1 g) = 0.420 mW/g; SAR(10 g) = 0.196 mW/g
Maximum value of SAR (measured) = 0.478 mW/g

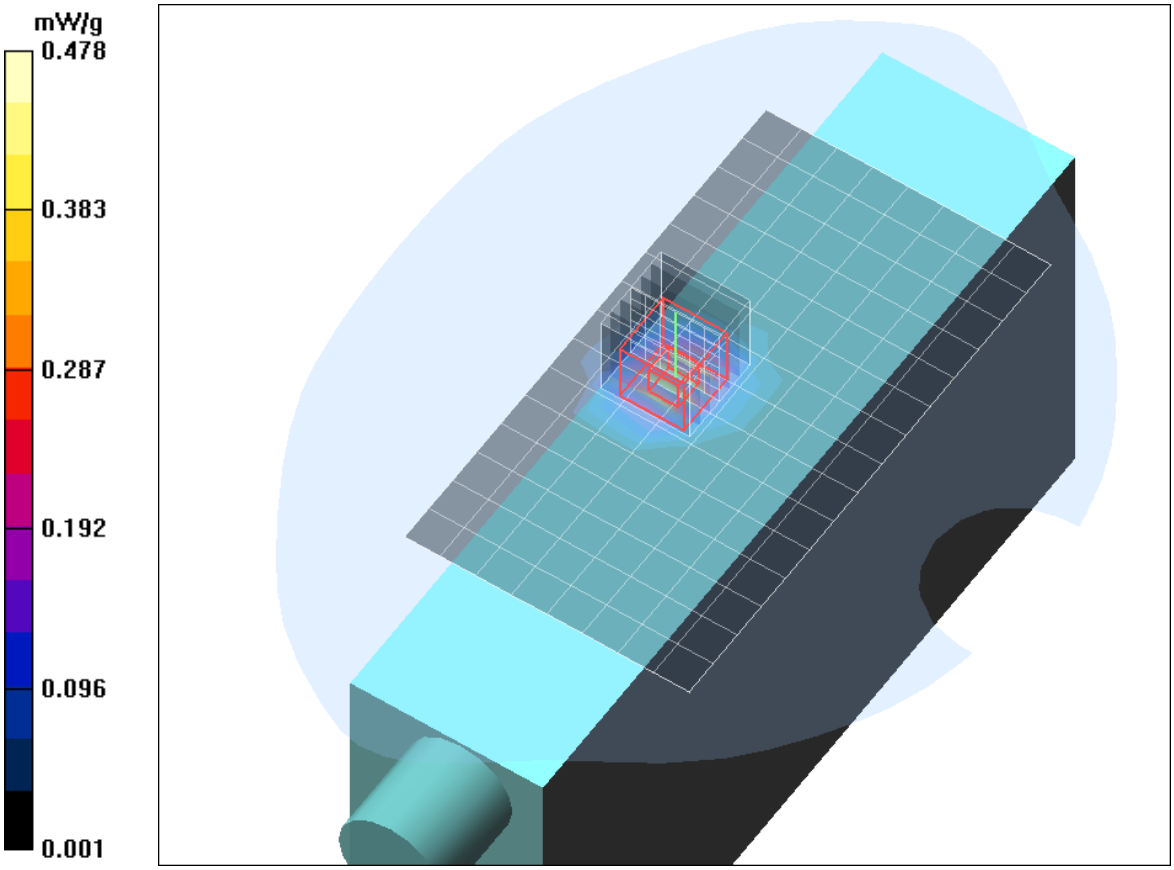

Fig. 7: SAR distribution for IEEE 802.11 b, channel 11, right side towards the phantom, 0 mm distance.