

Appendix for the SAR Test Report

Dosimetric Assessment of the Trex Device Communicator from R. Stahl HMI Systems GmbH (FCC ID: 2AIM6-GC667032 / IC: 21553-20122901X)

According to the FCC Requirements SAR Distribution Plots

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The test results only relate to the items tested.

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SAR Distribution Plots

Test Laboratory: IMST GmbH, DASY Blue (I); File Name:
[RS_529_b_wlan_b_ch6_5b5_pwl18_front_0mm.da4](#)

DUT: RS_529; Type: RStahl HMI System; Serial: 01452529
 Program Name: IEEE 802.11 b

Communication System: WLAN 2450; Frequency: 2437 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.97$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³
 Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3860; ConvF(7.52, 7.52, 7.52); Calibrated: 18.09.2015
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 16.09.2015
- 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 (14x19x1): Measurement grid: $dx=12$ mm, $dy=12$ mm

Maximum value of SAR (measured) = 1.07 mW/g

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

Reference Value = 23.2 V/m; Power Drift = -0.022 dB

Peak SAR (extrapolated) = 2.00 W/kg

SAR(1 g) = 0.898 mW/g; SAR(10 g) = 0.374 mW/g

Maximum value of SAR (measured) = 1.02 mW/g

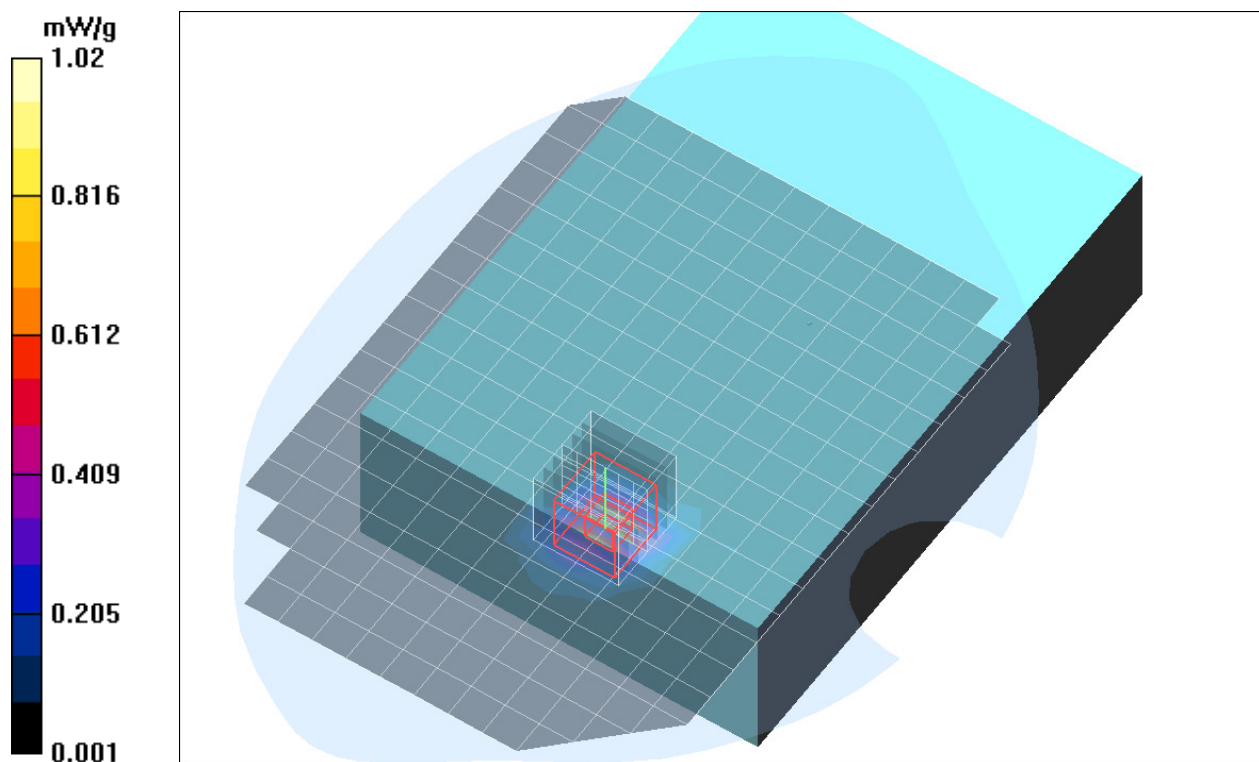


Fig. 1: SAR distribution for IEEE802.11 b (5.5MBit/s), channel 6, front side of the device towards the phantom, 0mm distance

Test Laboratory: IMST GmbH, DASY Blue (I); File Name:
[RS_529_b_wlan_b_ch6_5b5_pwl18_back_0mm.da4](#)

DUT: RS_529; Type: RStahl HMI System; Serial: 01452529
Program Name: IEEE 802.11 b

Communication System: WLAN 2450; Frequency: 2437 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.97$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³
 Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3860; ConvF(7.52, 7.52, 7.52); Calibrated: 18.09.2015
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 16.09.2015
- 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 (13x19x1): Measurement grid: $dx=12$ mm, $dy=12$ mm

Maximum value of SAR (measured) = 0.114 mW/g

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

Reference Value = 7.37 V/m; Power Drift = 0.049 dB

Peak SAR (extrapolated) = 0.205 W/kg

SAR(1 g) = 0.106 mW/g; SAR(10 g) = 0.054 mW/g

Maximum value of SAR (measured) = 0.115 mW/g

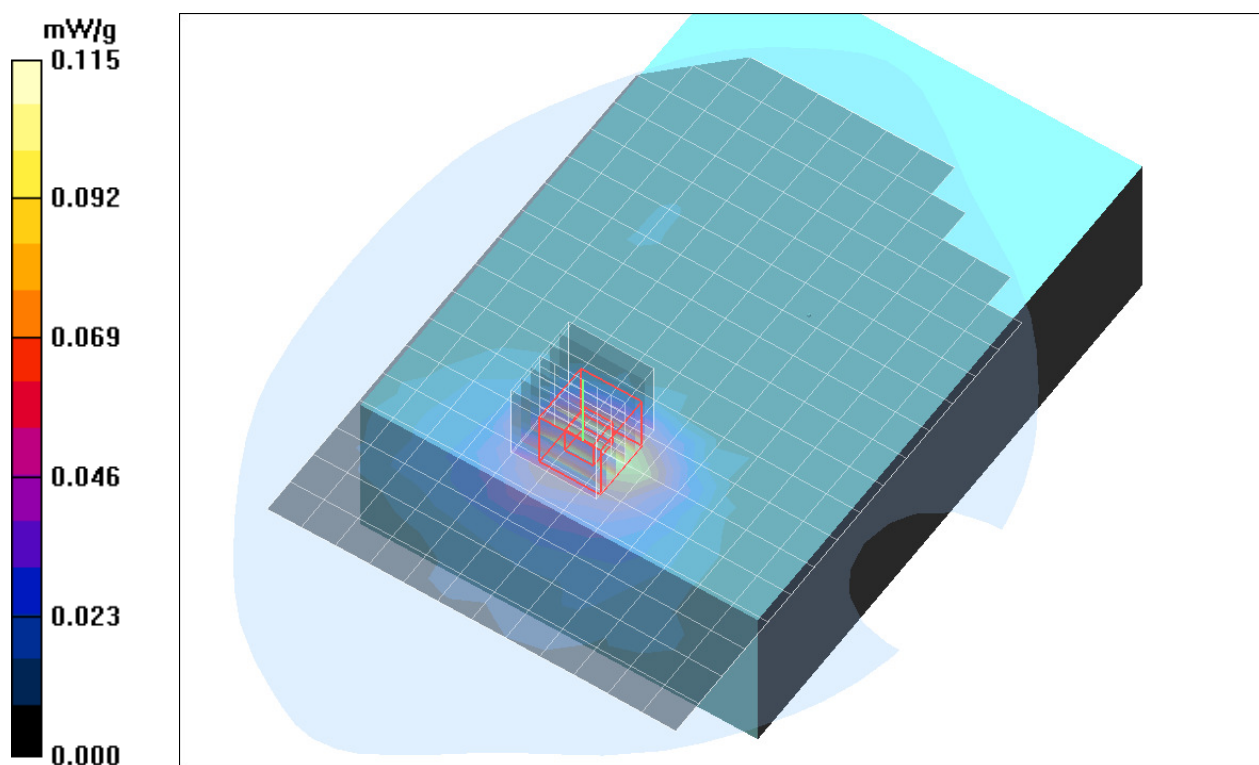


Fig. 2: SAR distribution for IEEE802.11 b (5.5MBit/s), channel 6, back side of the device towards the phantom, 0mm distance

Test Laboratory: IMST GmbH, DASY Blue (I); File Name:
[RS_529_b_wlan_b_ch6_5b5_pwl18_front_0mm_mv.da4](#)

DUT: RS_529; Type: RStahl HMI System; Serial: 01452529
Program Name: IEEE 802.11 b

Communication System: WLAN 2450; Frequency: 2437 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 2437 \text{ MHz}$; $\sigma = 1.97 \text{ mho/m}$; $\epsilon_r = 51.5$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3860; ConvF(7.52, 7.52, 7.52); Calibrated: 18.09.2015
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 16.09.2015
- 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 (14x19x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

Maximum value of SAR (measured) = 0.978 mW/g

Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 21.9 V/m; Power Drift = -0.122 dB

Peak SAR (extrapolated) = 2.06 W/kg

SAR(1 g) = 0.931 mW/g; SAR(10 g) = 0.417 mW/g

Maximum value of SAR (measured) = 1.08 mW/g

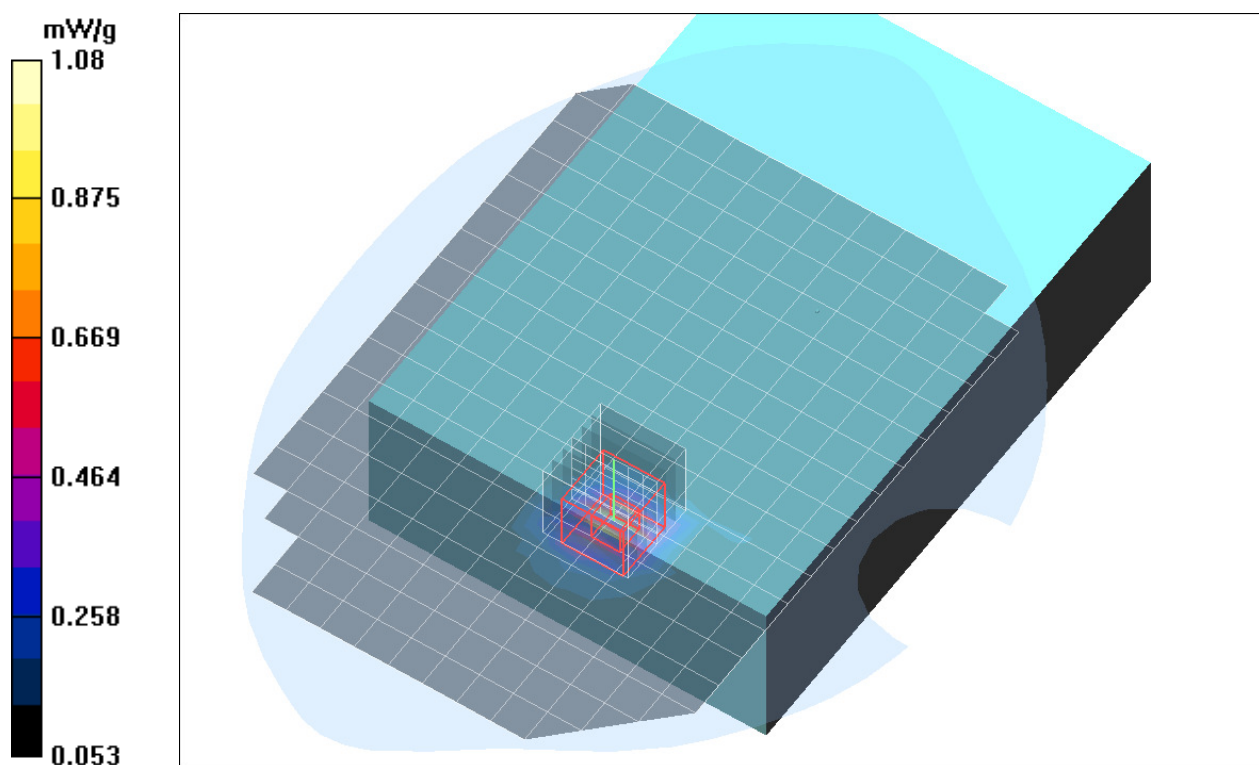


Fig. 3: SAR distribution for IEEE802.11 b (5.5MBit/s), channel 6, front side of the device towards the phantom, 0mm distance, measurement variability

Test Laboratory: IMST GmbH, DASY Blue (I); File Name:
[RS_529_b_wlan_b_ch1_5b5_pwl18_front_0mm.da4](#)

DUT: RS_529; Type: RStahl HMI System; Serial: 01452529
Program Name: IEEE 802.11 b

Communication System: WLAN 2450; Frequency: 2412 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 2412 \text{ MHz}$; $\sigma = 1.93 \text{ mho/m}$; $\epsilon_r = 51.6$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3860; ConvF(7.52, 7.52, 7.52); Calibrated: 18.09.2015
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 16.09.2015
- 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 (13x10x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

Maximum value of SAR (measured) = 0.801 mW/g

Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 20.4 V/m; Power Drift = -0.042 dB

Peak SAR (extrapolated) = 1.73 W/kg

SAR(1 g) = 0.774 mW/g; SAR(10 g) = 0.343 mW/g

Maximum value of SAR (measured) = 0.898 mW/g

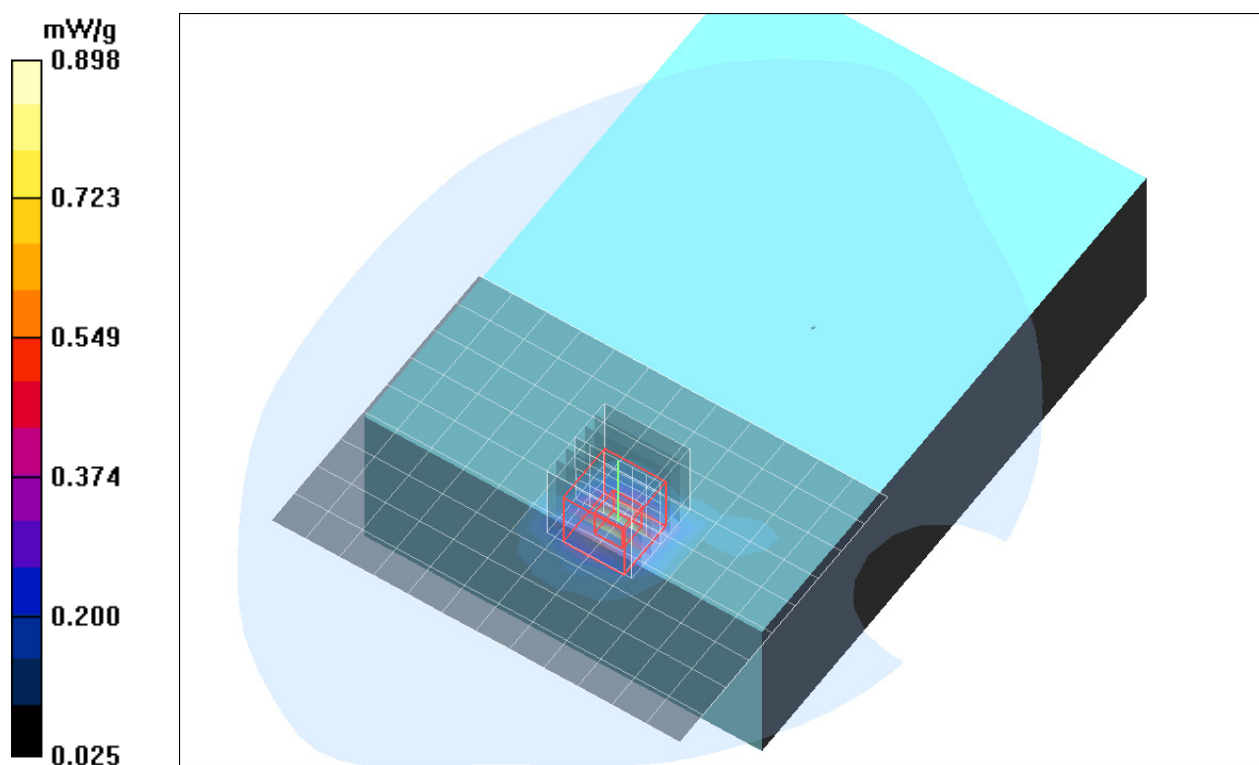


Fig. 4: SAR distribution for IEEE802.11 b (5.5MBit/s), channel 1, front side of the device towards the phantom, 0mm distance

Test Laboratory: IMST GmbH, DASY Blue (I); File Name:
[RS_529_b_wlan_b_ch11_5b5_pwl18_front_0mm.da4](#)

DUT: RS_529; Type: RStahl HMI System; Serial: 01452529
Program Name: IEEE 802.11 b

Communication System: WLAN 2450; Frequency: 2462 MHz; Duty Cycle: 1:1
 Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³
 Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3860; ConvF(7.52, 7.52, 7.52); Calibrated: 18.09.2015
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 16.09.2015
- 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 (13x10x1): Measurement grid: $dx=12$ mm, $dy=12$ mm

Maximum value of SAR (measured) = 0.760 mW/g

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

Reference Value = 19.0 V/m; Power Drift = 0.042 dB

Peak SAR (extrapolated) = 1.93 W/kg

SAR(1 g) = 0.874 mW/g; SAR(10 g) = 0.381 mW/g

Maximum value of SAR (measured) = 1.01 mW/g

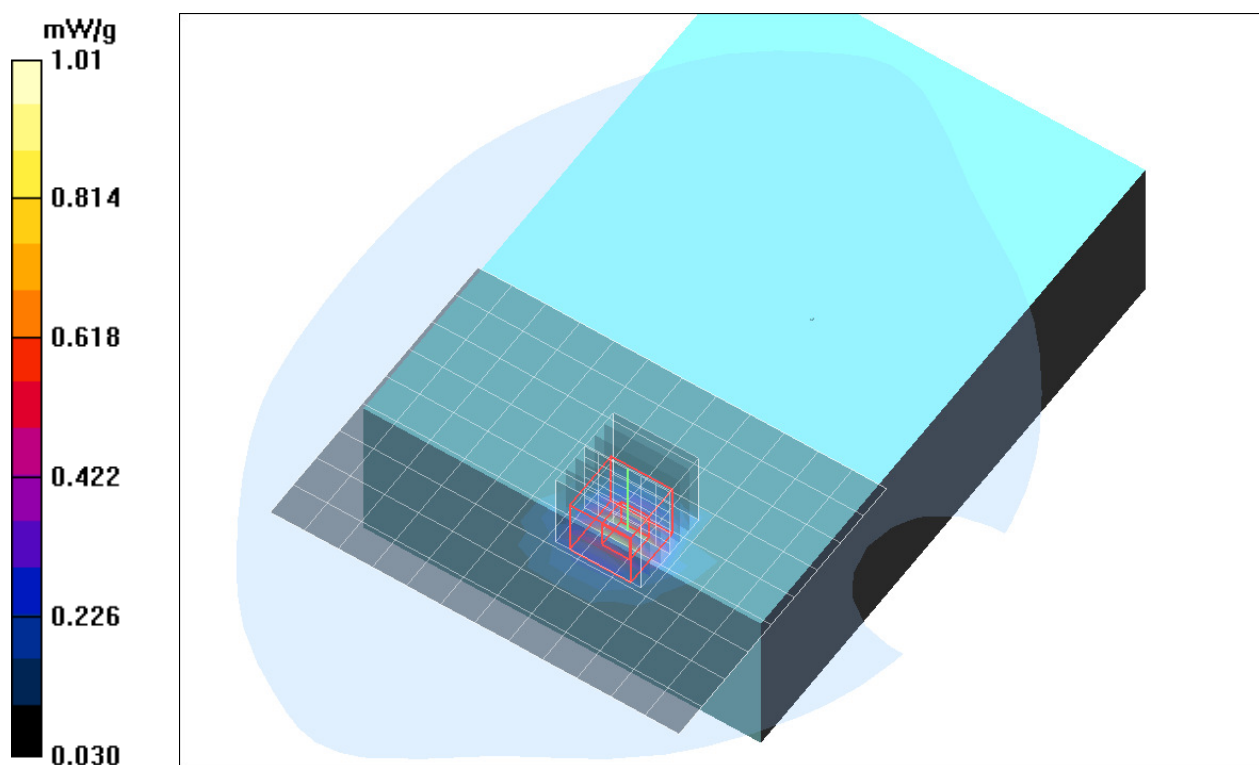


Fig. 5: SAR distribution for IEEE802.11 b (5.5MBit/s), channel 11, front side of the device towards the phantom, 0mm distance