

Appendix for the SAR Test Report

Dosimetric Assessment of the Portable Device Datalogic Joya X2 PLUS

(FCC ID: U4GJX2WB / IC: 3862E-JX2WB)

According to the FCC Requirements SAR Distribution Plots

November 20, 2014

IMST GmbH
Carl-Friedrich-Gauß-Str. 2 - 4
D-47475 Kamp-Lintfort

Customer
7layers AG
Borsigstrasse 11
D-40880 Ratingen

The test results only relate to the items tested.
This report shall not be reproduced except in full without the written approval of the testing laboratory.

Compliance Statement

The Datalogic Joya X2 PLUS handheld is in compliance with the following standards for uncontrolled exposure:

- 47 CFR § 2.1093 [47CFR],
- IEEE Std. C95.1 - 1999 [C95.1-1999],
- The latest version of all relevant FCC OET KDB Procedures

SAR assessment in body worn configuration was conducted with a closest distance of 0 mm between the housing of the device and the flat phantom.

According to manufacturer information the assessed Datalogic Joya X2 PLUS (FCC: U4GJX2WB / IC: 3862E-JX2WB) is technical identical with the Joya X2 (FCC: U4GJX2W / IC: 3862E-JX2W) except of the integrated Bluetooth module.

Both device variants use identical motherboards but in case of Datalogic Joya X2 PLUS the components related to Bluetooth are assembled and in case of Joya X2 not. Accordingly the Datalogic Joya X2 PLUS was selected as worst case hardware configuration. Since the output power for Bluetooth module is below the threshold, SAR assessment for Bluetooth is not applicable. Therefore, it is deemed that the Joya X2 is also in compliance with the above mentioned measurements standards.

1 SAR Distribution Plots

Test Laboratory: Imst GmbH, DASY Yellow (II); **File Name:** [Joya_088_ywhm_b_CH6_front.da4](#)

DUT: Datalogic; **Type:** Joya X2 PLUS; **Serial:** Z14P00088

Program Name: IEEE 802.11 b

Communication System: WLAN 2450; **Frequency:** 2437 MHz; **Duty Cycle:** 1:1

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3860; ConvF(7.47, 7.47, 7.47); Calibrated: 29.07.2013
- 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 Worn/Area Scan (11x15x1): 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 = 2.27 V/m; Power Drift = -0.108 dB

Peak SAR (extrapolated) = 0.110 W/kg

SAR(1 g) = 0.057 mW/g; SAR(10 g) = 0.033 mW/g

Maximum value of SAR (measured) = 0.061 mW/g

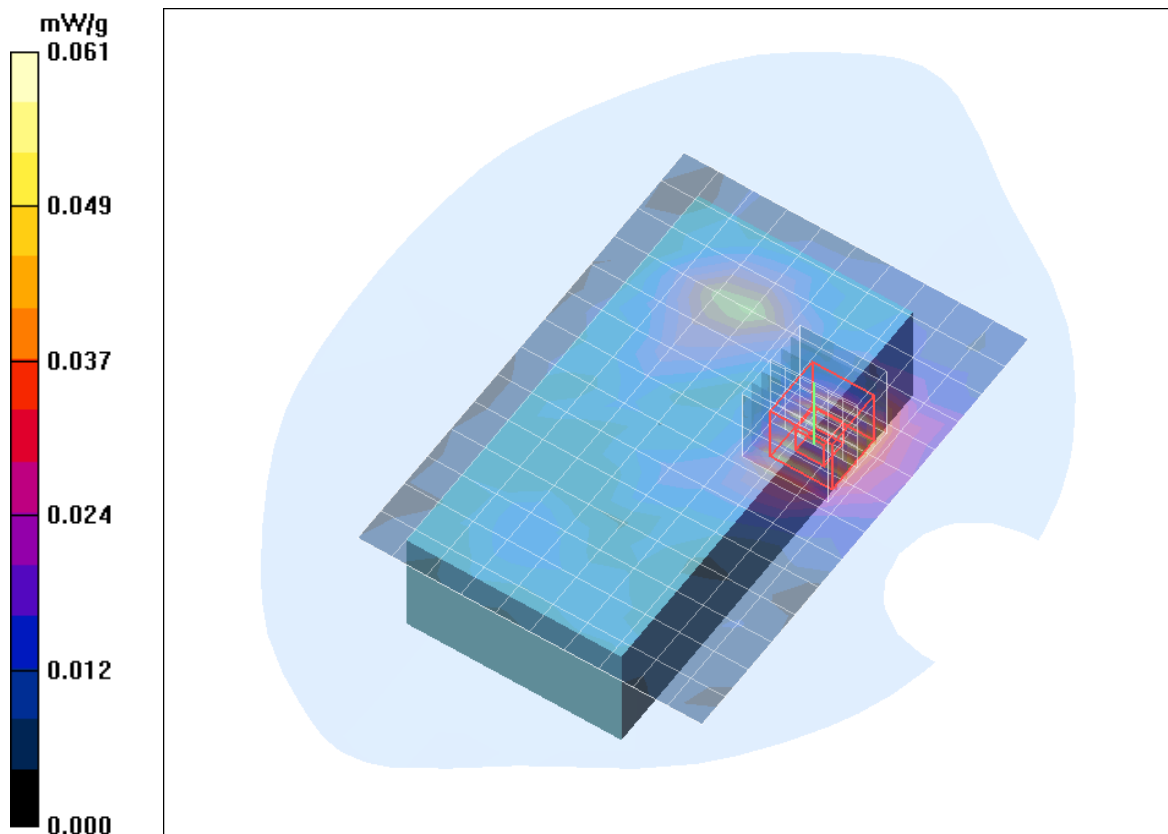


Fig. 1: SAR distribution plot for Datalogic Joya X2 PLUS for IEEE 802.11 b, channel 6, position 1.

Test Laboratory: Imst GmbH, DASY Yellow (II); **File Name:** [Joya_088_ywhm_b_CH6_back.da4](#)

DUT: Datalogic; **Type:** Joya X2 PLUS; **Serial:** Z14P00088

Program Name: IEEE 802.11 b

Communication System: WLAN 2450; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3860; ConvF(7.47, 7.47, 7.47); Calibrated: 29.07.2013
- 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 Worn/Area Scan (11x15x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.147 mW/g

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

Reference Value = 5.74 V/m; Power Drift = 0.192 dB

Peak SAR (extrapolated) = 0.259 W/kg

SAR(1 g) = 0.136 mW/g; SAR(10 g) = 0.070 mW/g

Maximum value of SAR (measured) = 0.152 mW/g

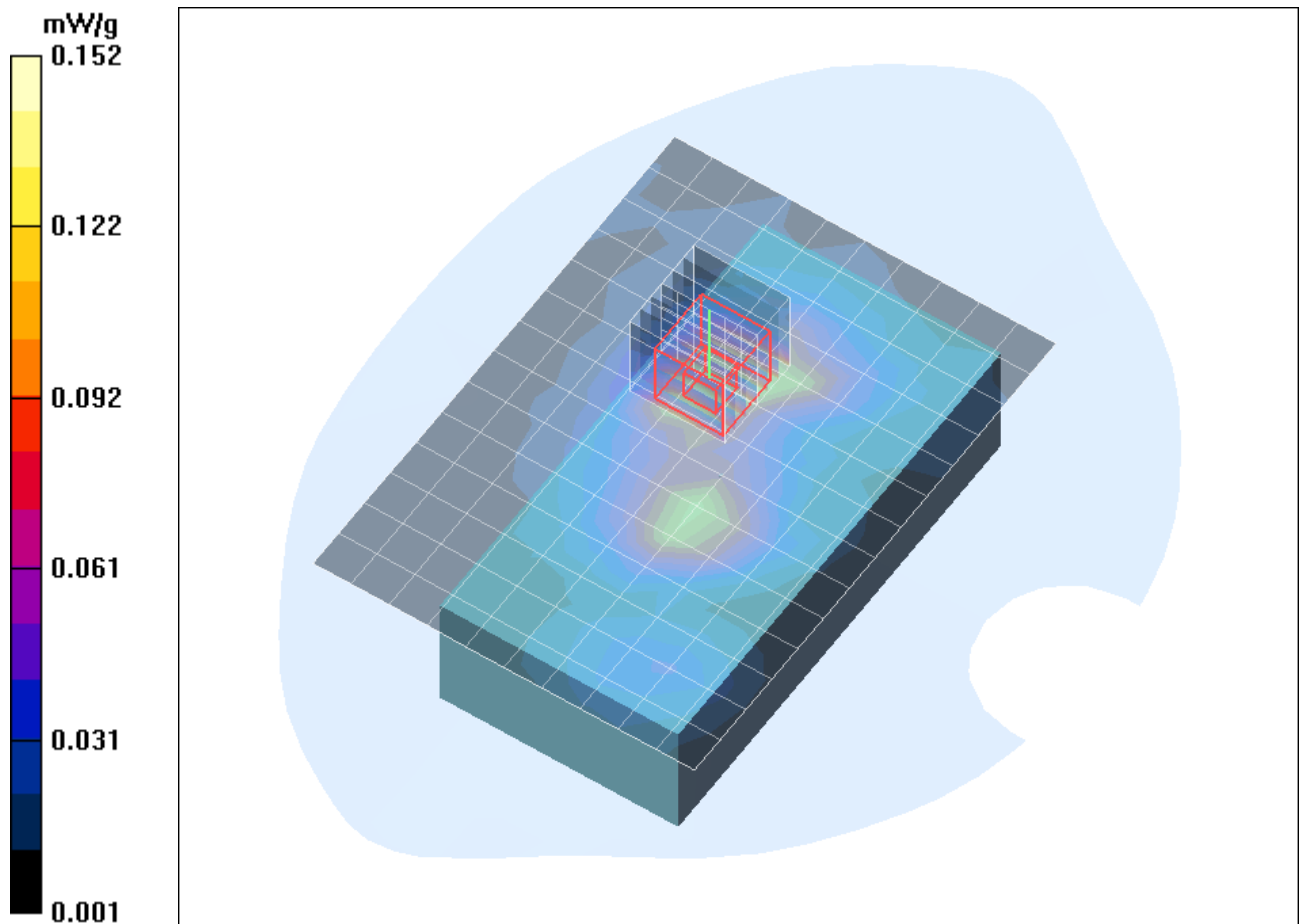


Fig. 2: SAR distribution plot for Datalogic Joya X2 PLUS for IEEE 802.11 b, channel 6, position 2.

Test Laboratory: Imst GmbH, DASY Yellow (II); **File Name:** [Joya_088_ywhm_b_CH6_left.da4](#)

DUT: Datalogic; **Type:** Joya X2 PLUS; **Serial:** Z14P00088

Program Name: IEEE 802.11 b

Communication System: WLAN 2450; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3860; ConvF(7.47, 7.47, 7.47); Calibrated: 29.07.2013
- 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 Worn/Area Scan (7x15x1): Measurement grid: $dx=12$ mm, $dy=12$ mm

Maximum value of SAR (measured) = 0.046 mW/g

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

Reference Value = 4.57 V/m; Power Drift = 0.002 dB

Peak SAR (extrapolated) = 0.106 W/kg

SAR(1 g) = 0.047 mW/g; SAR(10 g) = 0.024 mW/g

Maximum value of SAR (measured) = 0.052 mW/g

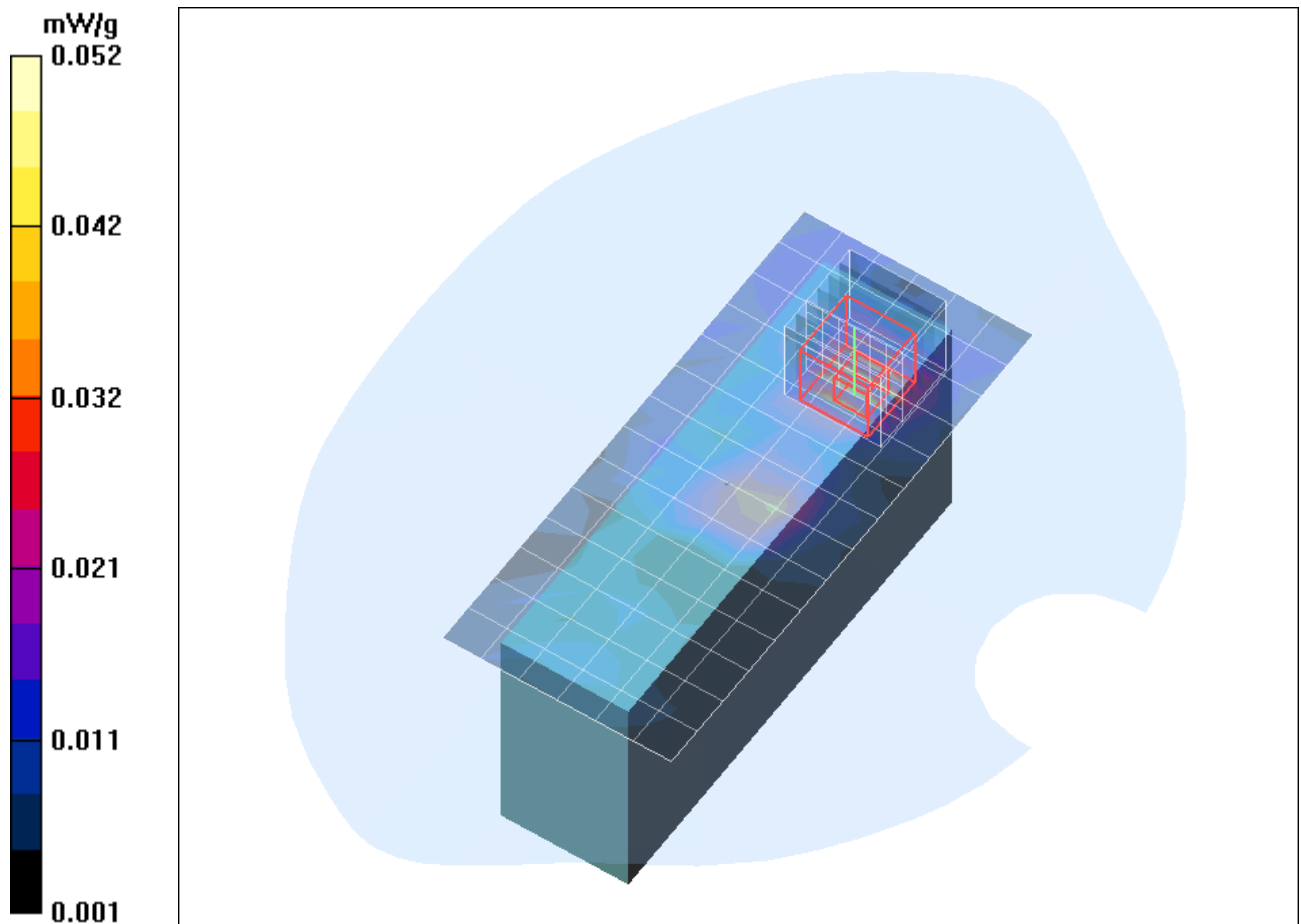


Fig. 3: SAR distribution plot for Datalogic Joya X2 PLUS for IEEE 802.11 b, channel 6, position 3.

Test Laboratory: Imst GmbH, DASY Yellow (II); **File Name:** [Joya_088_ywhm_b_CH6_right.da4](#)

DUT: Datalogic; **Type:** Joya X2 PLUS; **Serial:** Z14P00088

Program Name: IEEE 802.11 b

Communication System: WLAN 2450; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3860; ConvF(7.47, 7.47, 7.47); Calibrated: 29.07.2013
- 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 Worn/Area Scan (7x15x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.675 mW/g

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

Reference Value = 12.6 V/m; Power Drift = -0.192 dB

Peak SAR (extrapolated) = 1.70 W/kg

SAR(1 g) = 0.649 mW/g; SAR(10 g) = 0.275 mW/g

Maximum value of SAR (measured) = 0.717 mW/g

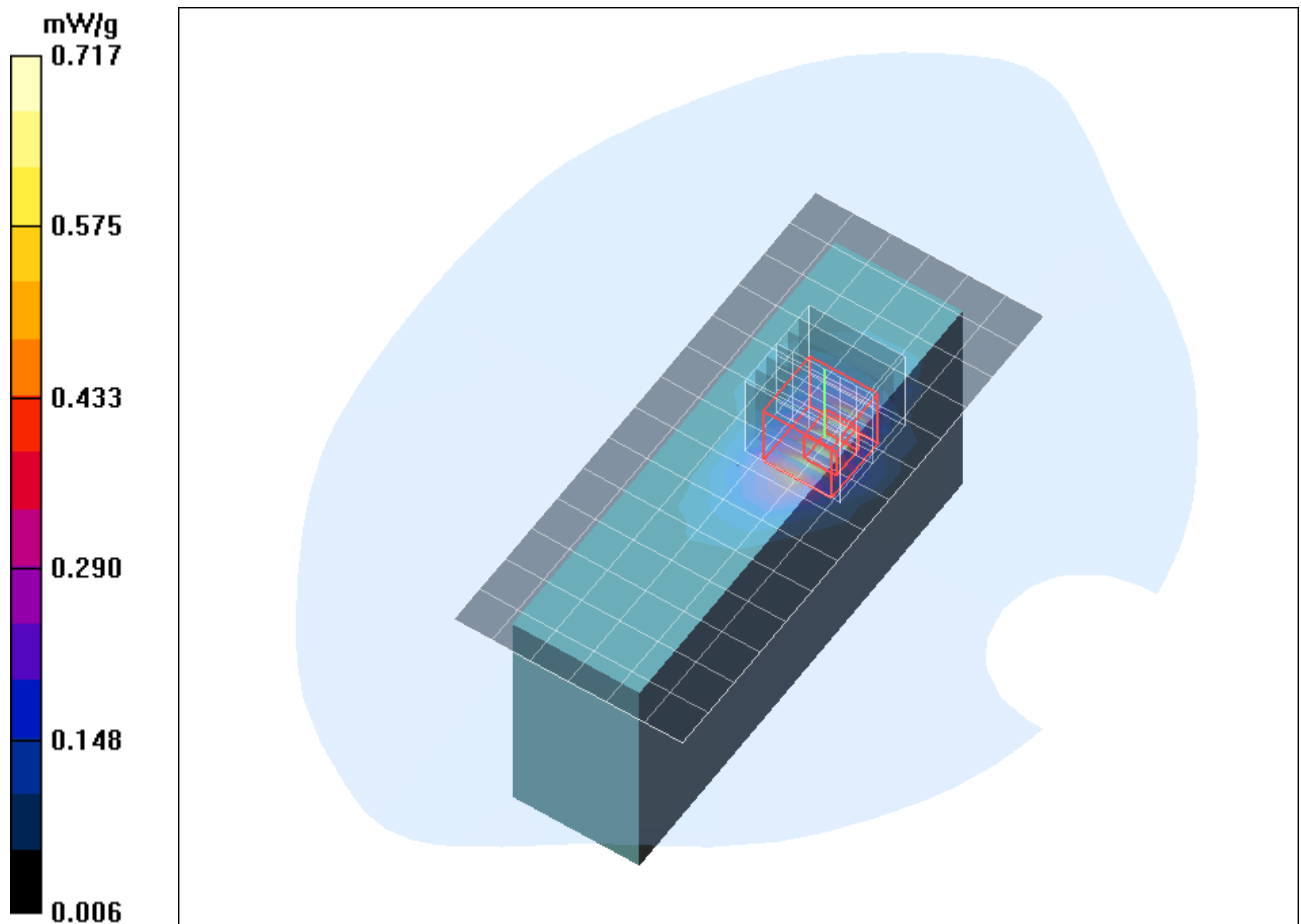


Fig. 4: SAR distribution plot for Datalogic Joya X2 PLUS for IEEE 802.11 b, channel 6, position 4.

Test Laboratory: Imst GmbH, DASY Yellow (II); **File Name:** [Joya_088_ywhl_b_CH1_right.da4](#)

DUT: Datalogic; **Type:** Joya X2 PLUS; **Serial:** Z14P00088

Program Name: IEEE 802.11 b

Communication System: WLAN 2450; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2412$ MHz; $\sigma = 1.89$ mho/m; $\epsilon_r = 52.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3860; ConvF(7.47, 7.47, 7.47); Calibrated: 29.07.2013
- 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 Worn/Area Scan (7x15x1): Measurement grid: $dx=12$ mm, $dy=12$ mm

Maximum value of SAR (measured) = 0.667 mW/g

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

Reference Value = 12.6 V/m; Power Drift = -0.138 dB

Peak SAR (extrapolated) = 1.64 W/kg

SAR(1 g) = 0.627 mW/g; SAR(10 g) = 0.267 mW/g

Maximum value of SAR (measured) = 0.720 mW/g

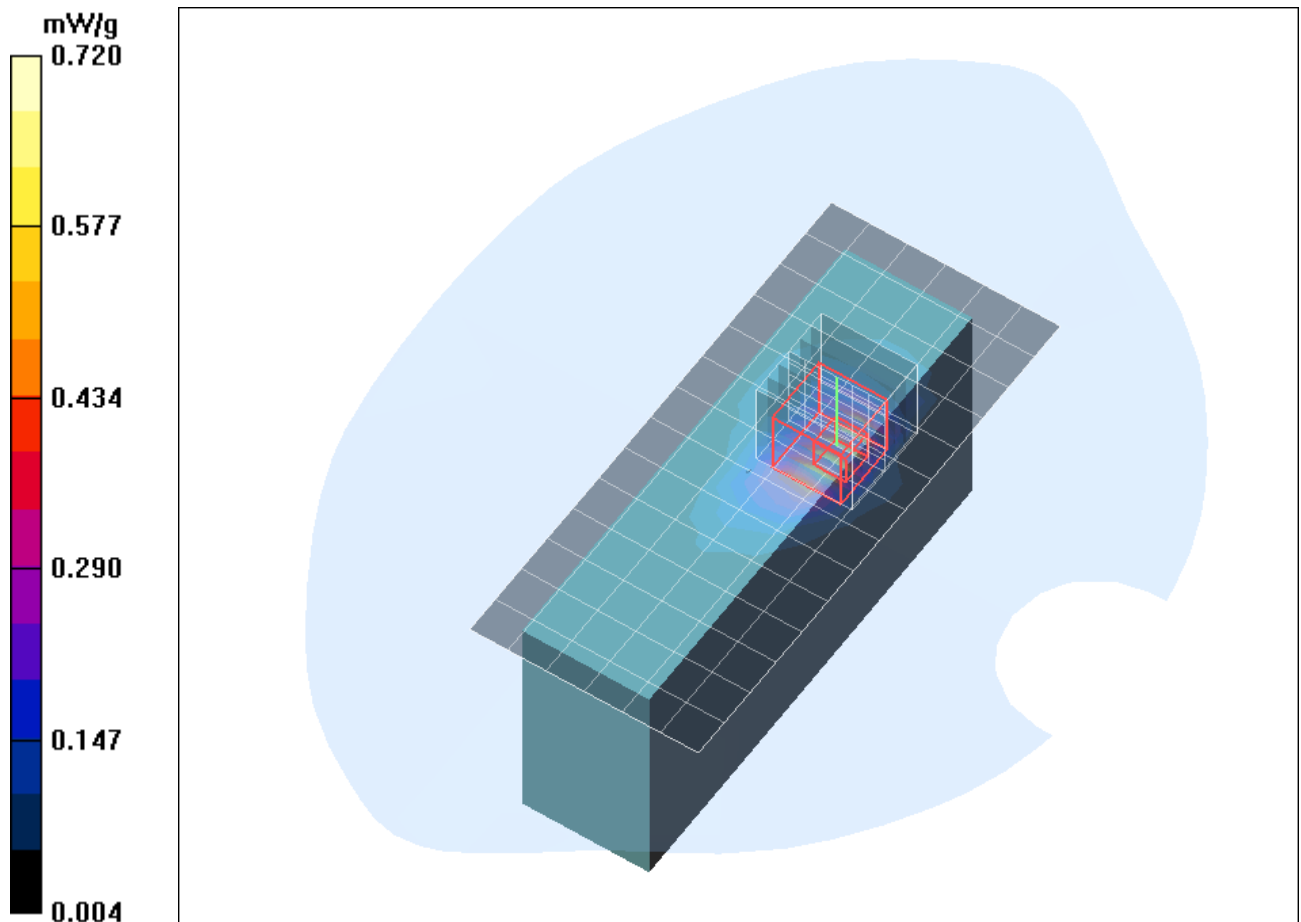


Fig. 5: SAR distribution plot for Datalogic Joya X2 PLUS for IEEE 802.11 b, channel 1, position 4.

Test Laboratory: Imst GmbH, DASY Yellow (II); **File Name:** [Joya_088_ywhh_b_CH11_right.da4](#)

DUT: Datalogic; **Type:** Joya X2 PLUS; **Serial:** Z14P00088

Program Name: IEEE 802.11 b

Communication System: WLAN 2450; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3860; ConvF(7.47, 7.47, 7.47); Calibrated: 29.07.2013
- 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 Worn/Area Scan (7x15x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.764 mW/g

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

Reference Value = 13.5 V/m; Power Drift = -0.131 dB

Peak SAR (extrapolated) = 1.89 W/kg

SAR(1 g) = 0.714 mW/g; SAR(10 g) = 0.304 mW/g

Maximum value of SAR (measured) = 0.826 mW/g

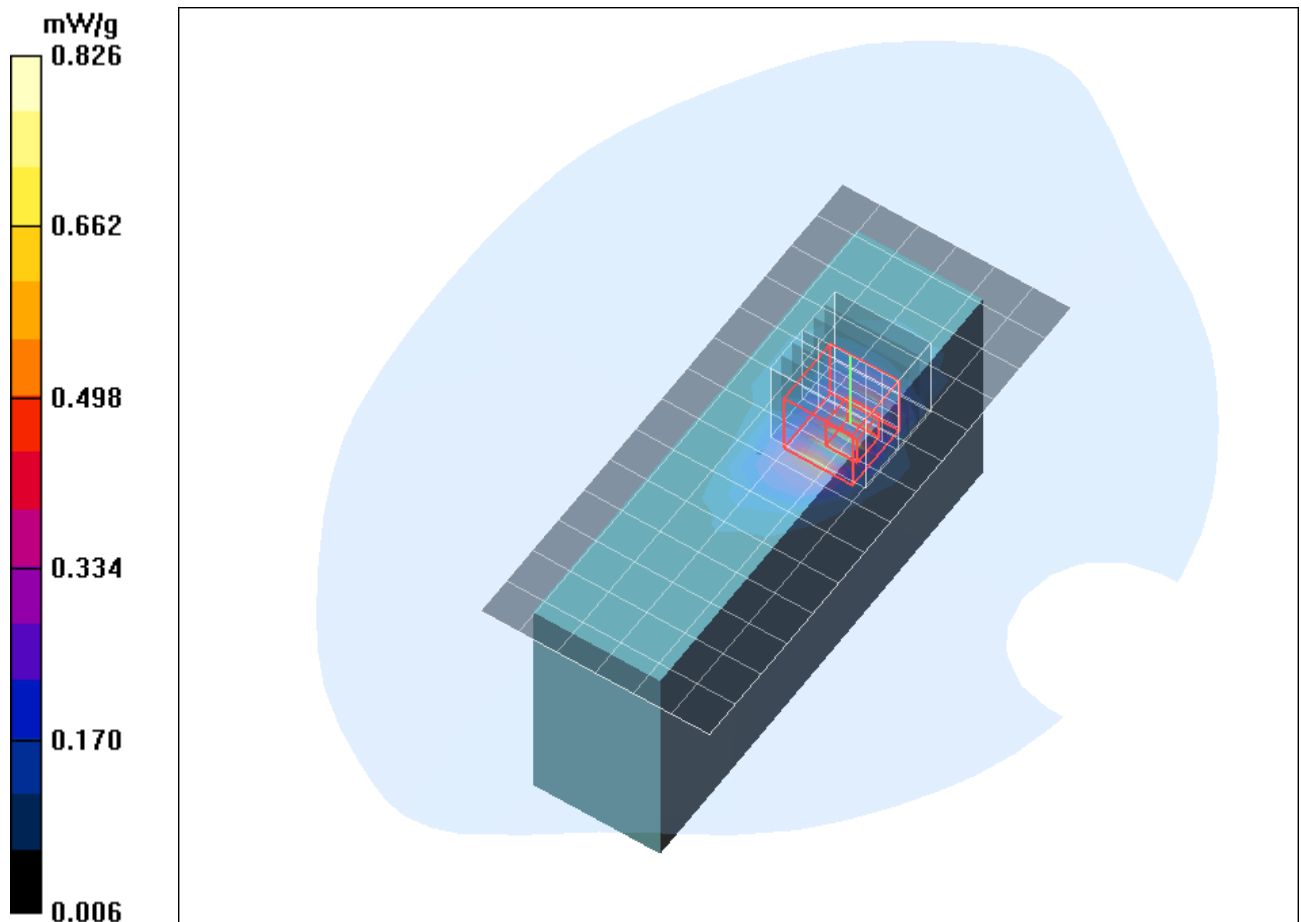


Fig. 6: SAR distribution plot for Datalogic Joya X2 PLUS for IEEE 802.11 b, channel 11, position 4.