

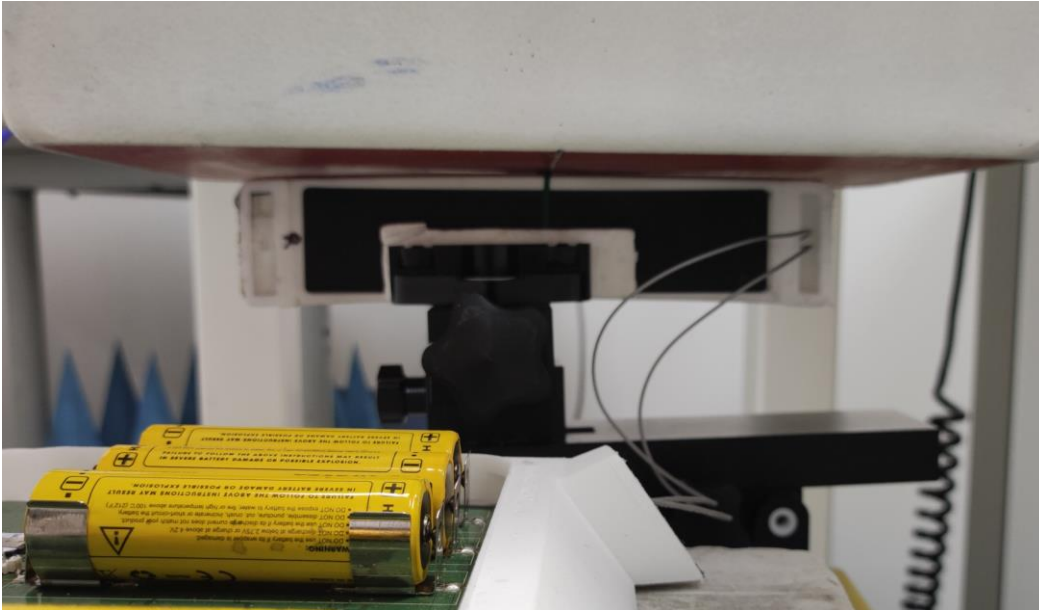


Figure 3 Front test position, 0mm separation distance

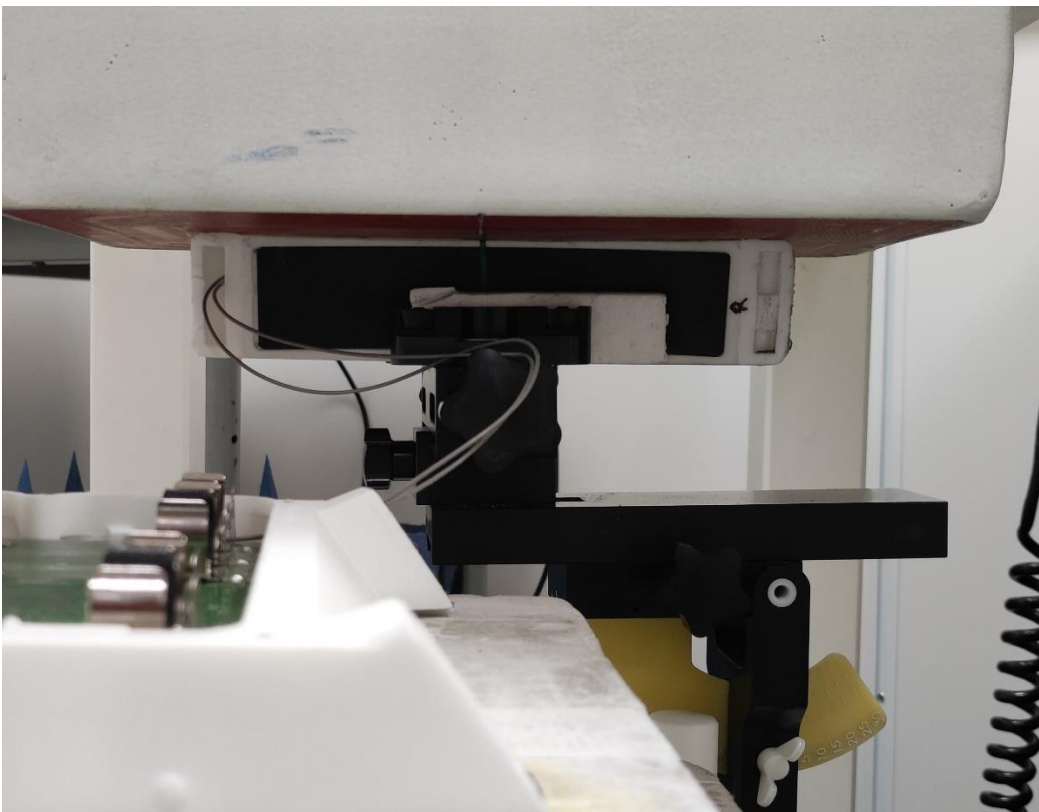


Figure 4 Back test position, 0mm separation distance

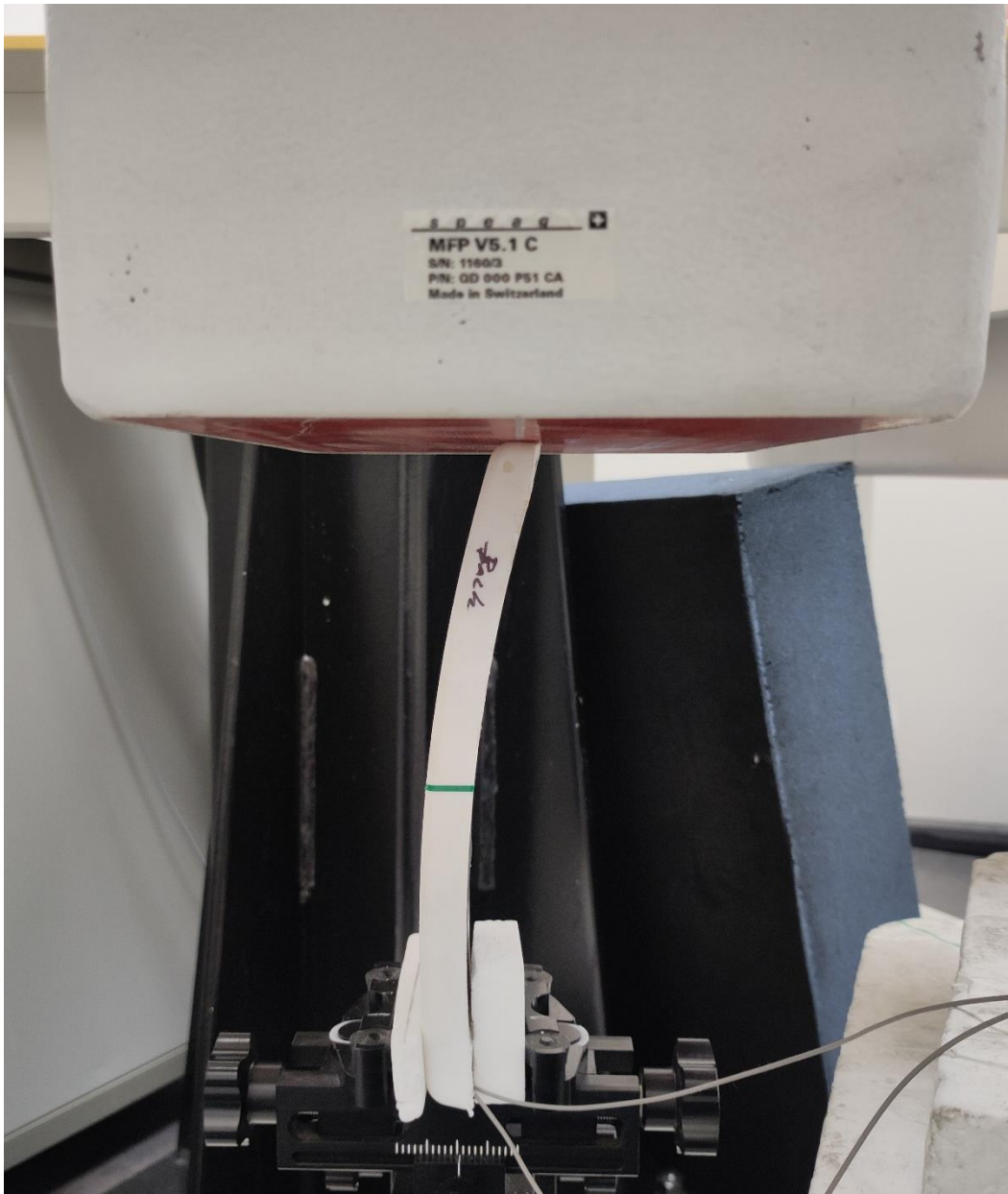


Figure 5 Bottom test position, 0mm separation distance

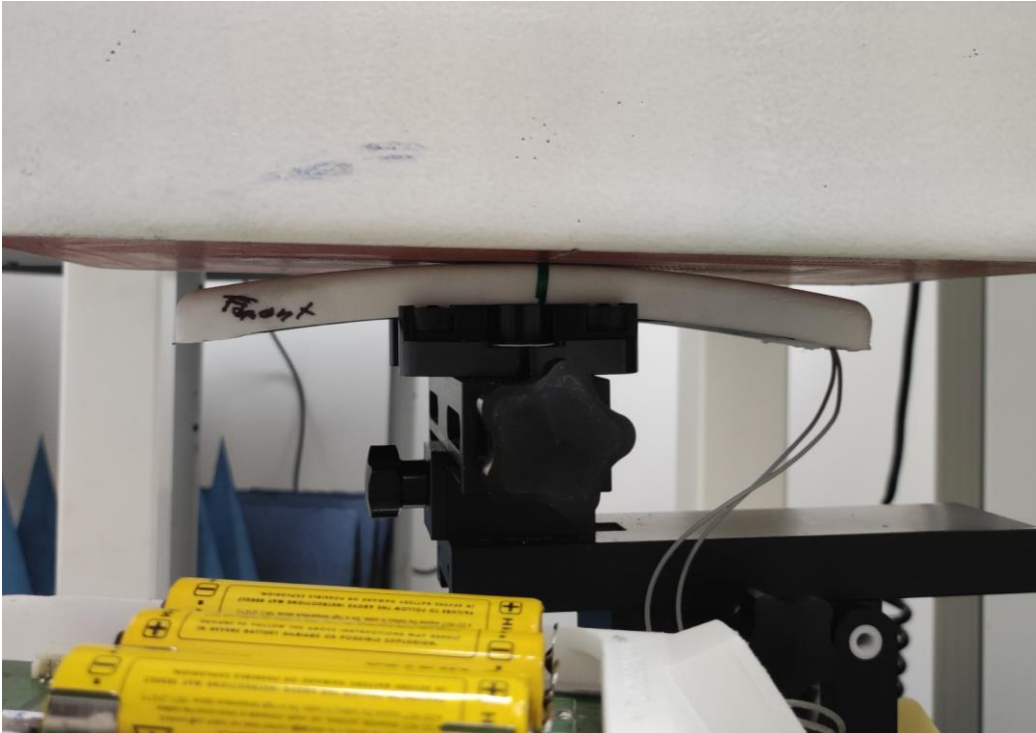


Figure 6 Left test position, 0mm separation distance



Figure 7 Right test position, 0mm separation distance

APPENDIX B: SYSTEM CHECK SCAN

Plot 1

Date/Time: 11.4.2022 14:58:09

Test Laboratory: Verkotan Oy

DUT: Dipole 835 MHz D835V2; Type: D835V2; Serial: D835V2 - SN:448

Communication System: UID 0, CW (0); Communication System Band: D835 (835.0 MHz); Frequency: 835 MHz; Communication System
PAR: 0 dB; PMF: 1
Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.846 \text{ S/m}$; $\epsilon_r = 39.97$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Center Section
Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(9.9, 9.9, 9.9) @ 835 MHz; Calibrated: 28.2.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = 31.0, -4.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.2.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASYS2 52.10.4(1527); SEMCAD X 14.6.14(7483)

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

Reference Value = 56.99 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 3.18 W/kg

SAR(1 g) = 2.23 W/kg; SAR(10 g) = 1.46 W/kg (SAR corrected for target medium)

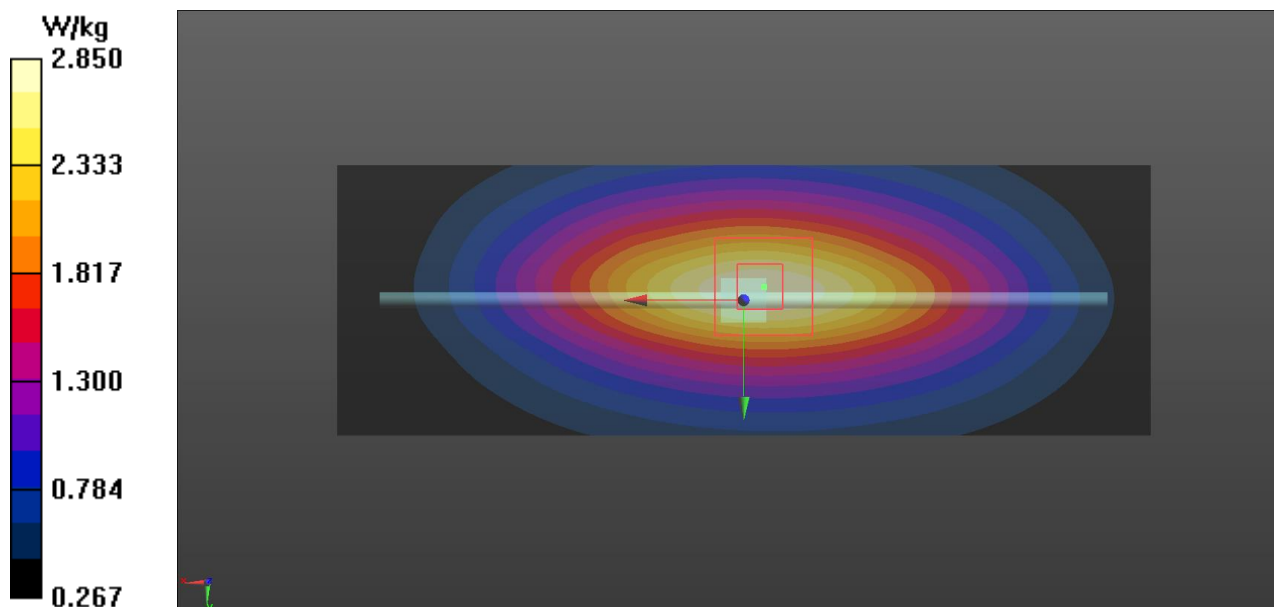
Smallest distance from peaks to all points 3 dB below = 19.2 mm

Ratio of SAR at M2 to SAR at M1 = 67.5%

Maximum value of SAR (measured) = 2.85 W/kg

System check/Area Scan (121x41x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 2.83 W/kg



Plot 2

Date/Time: 12.4.2022 15:50:48

Test Laboratory: Verkotan Oy

DUT: Dipole 750 MHz D750V3; Type: D750V3; Serial: D750V3 - SN:635

Communication System: UID 0, CW (0); Communication System Band: D750 (750.0 MHz); Frequency: 750 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.87 \text{ S/m}$; $\epsilon_r = 44.517$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(10.39, 10.39, 10.39) @ 750 MHz; Calibrated: 28.2.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = 31.0, -4.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.2.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASYS2 52.10.4(1527); SEMCAD X 14.6.14(7483)

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

Reference Value = 54.45 V/m; Power Drift = -0.20 dB

Peak SAR (extrapolated) = 2.95 W/kg

SAR(1 g) = 2.03 W/kg; SAR(10 g) = 1.34 W/kg (SAR corrected for target medium)

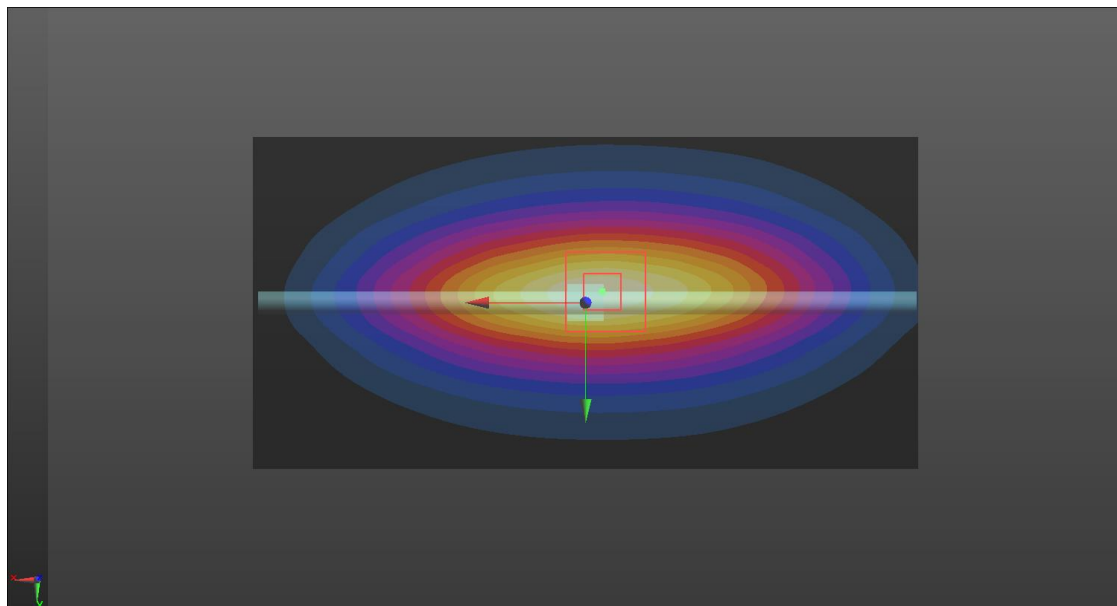
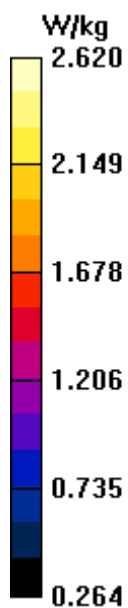
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 66.7%

Maximum value of SAR (measured) = 2.62 W/kg

System check/Area Scan (121x61x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 2.60 W/kg



Plot 3

Date/Time: 13.4.2022 13:07:28

Test Laboratory: Verkotan Oy

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2; Serial: D1900V2 - SN:511

Communication System: UID 0, CW (0); Communication System Band: D1900 (1900.0 MHz); Frequency: 1900 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.394$ S/m; $\epsilon_r = 41.15$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(8.13, 8.13, 8.13) @ 1900 MHz; Calibrated: 28.2.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = 31.0, -4.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.2.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASYS2 52.10.4(1527); SEMCAD X 14.6.14(7483)

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

Reference Value = 96.78 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 16.8 W/kg

SAR(1 g) = 9.29 W/kg; SAR(10 g) = 4.87 W/kg (SAR corrected for target medium)

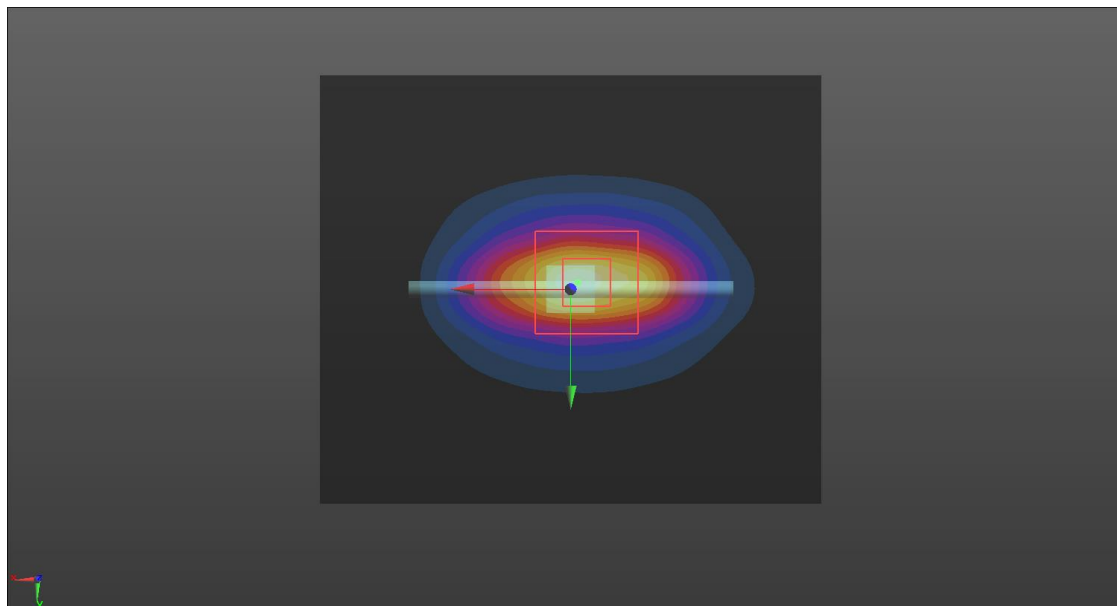
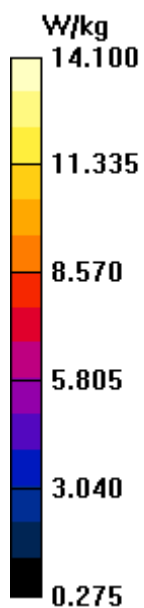
Smallest distance from peaks to all points 3 dB below = 10 mm

Ratio of SAR at M2 to SAR at M1 = 55.2%

Maximum value of SAR (measured) = 14.1 W/kg

System check/Area Scan (71x61x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 14.8 W/kg



Plot 4

Date/Time: 14.4.2022 7:56:25

Test Laboratory: Verkotan Oy

DUT: Dipole 1800 MHz D1800V2; Type: D1800V2; Serial: D1800V2 - SN:2d075

Communication System: UID 0, CW (0); Communication System Band: D1800 (1800.0 MHz); Frequency: 1800 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.338$ S/m; $\epsilon_r = 41.315$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(8.42, 8.42, 8.42) @ 1800 MHz; Calibrated: 28.2.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = 31.0, -4.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.2.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASYS2 52.10.4(1527); SEMCAD X 14.6.14(7483)

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

Reference Value = 97.85 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 16.6 W/kg

SAR(1 g) = 9.38 W/kg; SAR(10 g) = 4.91 W/kg (SAR corrected for target medium)

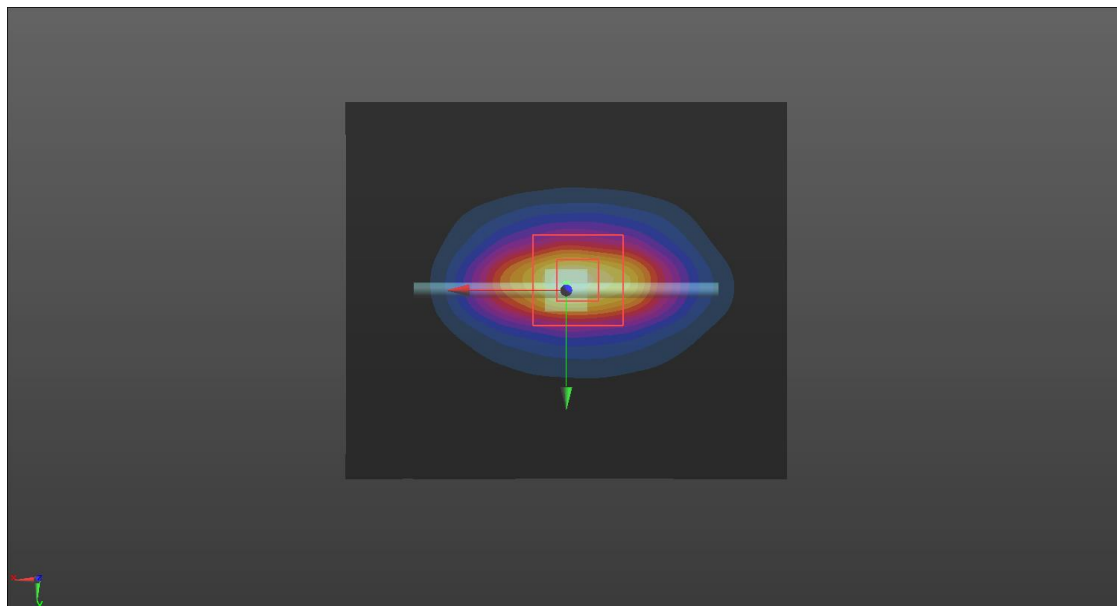
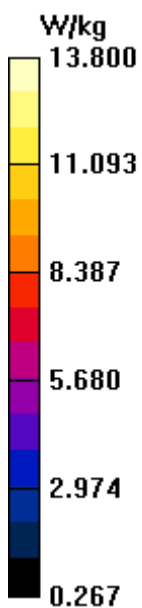
Smallest distance from peaks to all points 3 dB below = 10 mm

Ratio of SAR at M2 to SAR at M1 = 55%

Maximum value of SAR (measured) = 13.8 W/kg

System check/Area Scan (71x61x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 14.5 W/kg



Plot 5

Date/Time: 19.4.2022 10:28:47

Test Laboratory: Verkotan Oy

DUT: Dipole 750 MHz D750V3; Type: D750V3; Serial: D750V3 - SN:635

Communication System: UID 0, CW (0); Communication System Band: D750 (750.0 MHz); Frequency: 750 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.845 \text{ S/m}$; $\epsilon_r = 43.242$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(10.39, 10.39, 10.39) @ 750 MHz; Calibrated: 28.2.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = 31.0, -4.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.2.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

System check 2 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 54.15 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 2.93 W/kg

SAR(1 g) = 2.02 W/kg; SAR(10 g) = 1.33 W/kg (SAR corrected for target medium)

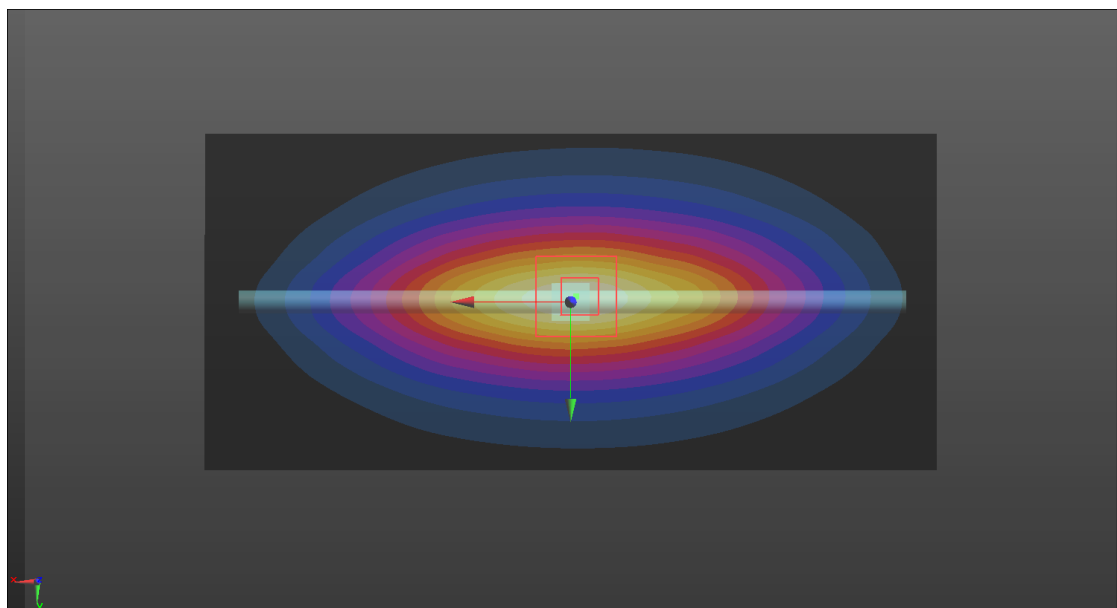
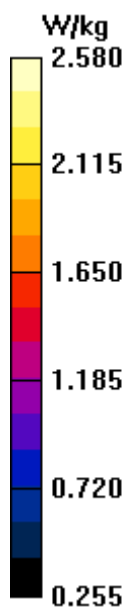
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 65.9%

Maximum value of SAR (measured) = 2.58 W/kg

System check 2 2/Area Scan (131x61x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 2.59 W/kg



Plot 6

Date/Time: 20.4.2022 18:49:04

Test Laboratory: Verkotan Oy

DUT: Dipole 835 MHz D835V2; Type: D835V2; Serial: D835V2 - SN:448

Communication System: UID 0, CW (0); Communication System Band: D835 (835.0 MHz); Frequency: 835 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.893 \text{ S/m}$; $\epsilon_r = 42.941$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(9.9, 9.9, 9.9) @ 835 MHz; Calibrated: 28.2.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = 31.0, -4.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.2.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASYS2 52.10.4(1527); SEMCAD X 14.6.14(7483)

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

Reference Value = 57.29 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 3.37 W/kg

SAR(1 g) = 2.3 W/kg; SAR(10 g) = 1.51 W/kg (SAR corrected for target medium)

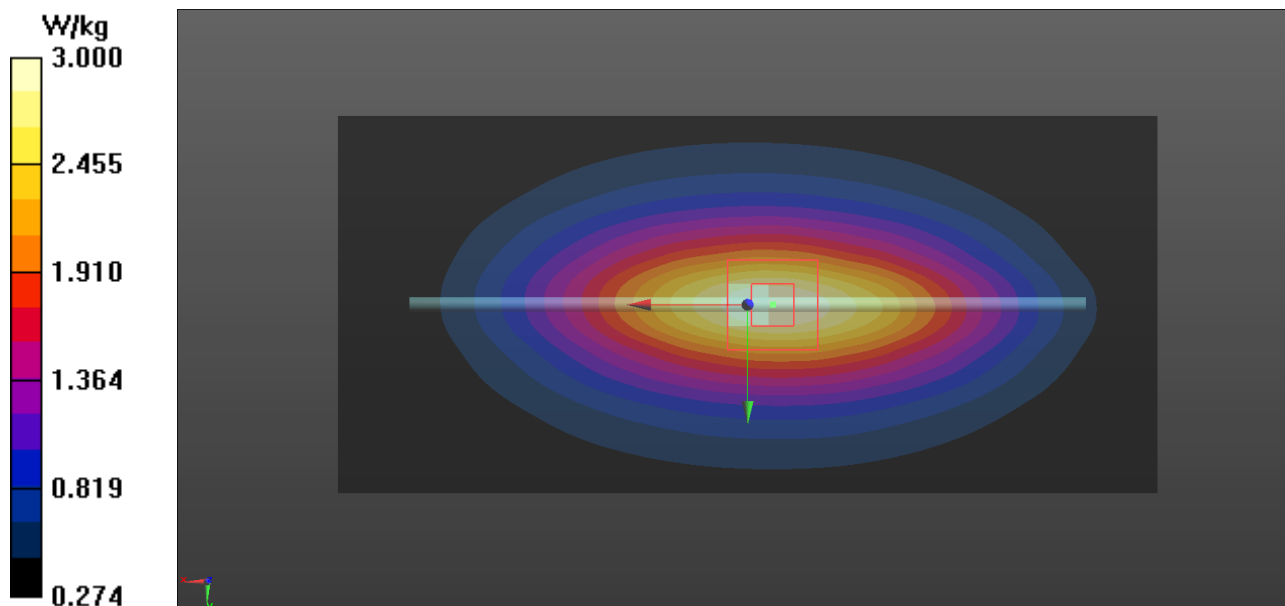
Smallest distance from peaks to all points 3 dB below = 22.7 mm

Ratio of SAR at M2 to SAR at M1 = 66.7%

Maximum value of SAR (measured) = 3.00 W/kg

System check/Area Scan (131x61x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 3.04 W/kg



Plot 7

Date/Time: 21.4.2022 16:24:22

Test Laboratory: Verkotan Oy

DUT: Dipole 1800 MHz D1800V2; Type: D1800V2; Serial: D1800V2 - SN:2d075

Communication System: UID 0, CW (0); Communication System Band: D1800 (1800.0 MHz); Frequency: 1800 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.311$ S/m; $\epsilon_r = 40.041$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(8.42, 8.42, 8.42) @ 1800 MHz; Calibrated: 28.2.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = 31.0, -4.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.2.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASYS2 52.10.4(1527); SEMCAD X 14.6.14(7483)

System check/Zoom Scan (8x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 98.99 V/m; Power Drift = -0.31 dB

Peak SAR (extrapolated) = 16.1 W/kg

SAR(1 g) = 9.22 W/kg; SAR(10 g) = 4.84 W/kg (SAR corrected for target medium)

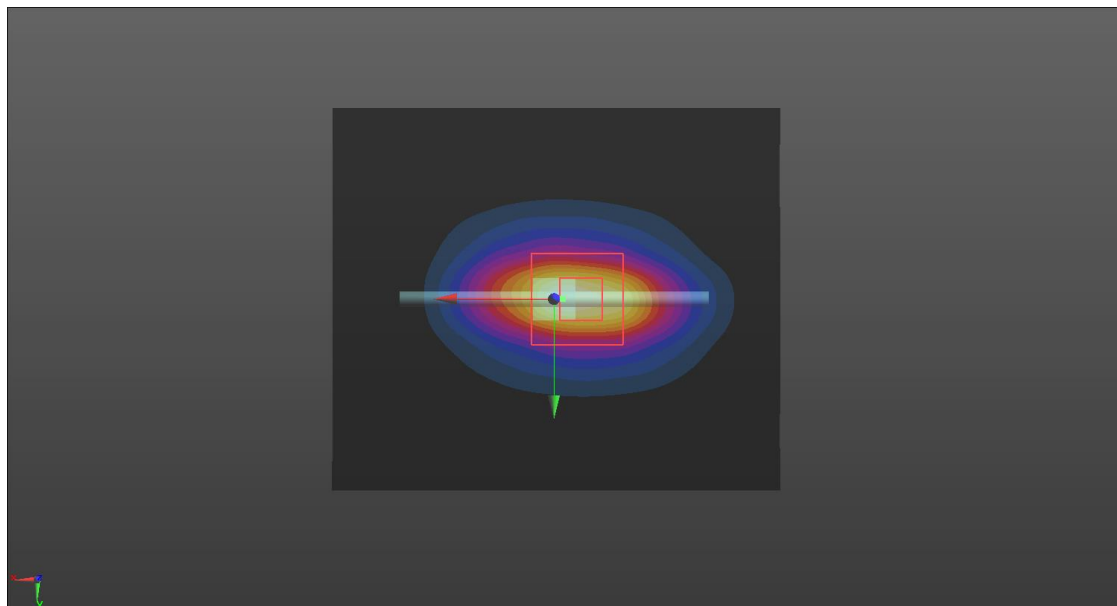
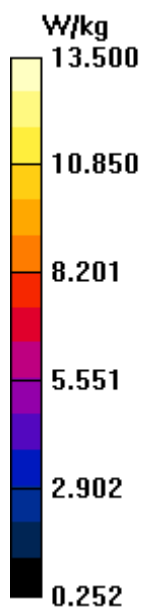
Smallest distance from peaks to all points 3 dB below = 10 mm

Ratio of SAR at M2 to SAR at M1 = 55.7%

Maximum value of SAR (measured) = 13.5 W/kg

System check/Area Scan (71x61x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 14.4 W/kg



Plot 8

Date/Time: 21.4.2022 16:53:06

Test Laboratory: Verkotan Oy

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2; Serial: D1900V2 - SN:511

Communication System: UID 0, CW (0); Communication System Band: D1900 (1900.0 MHz); Frequency: 1900 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.364$ S/m; $\epsilon_r = 39.88$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(8.13, 8.13, 8.13) @ 1900 MHz; Calibrated: 28.2.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = 31.0, -4.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.2.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASYS2 52.10.4(1527); SEMCAD X 14.6.14(7483)

System check/Zoom Scan (8x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 95.42 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 16.5 W/kg

SAR(1 g) = 9.11 W/kg; SAR(10 g) = 4.77 W/kg (SAR corrected for target medium)

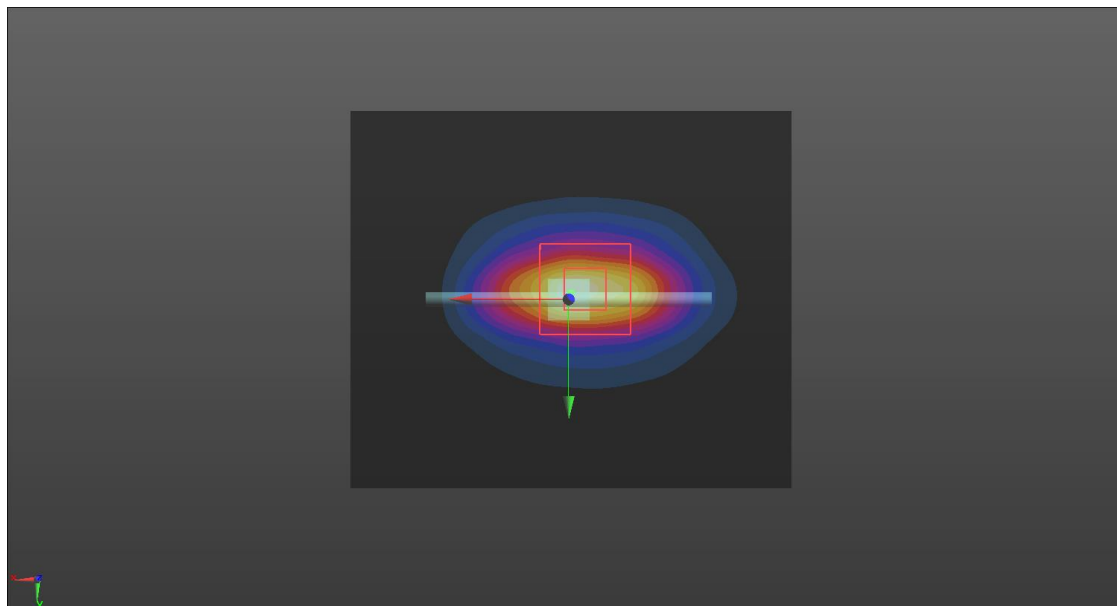
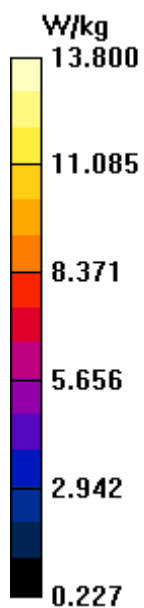
Smallest distance from peaks to all points 3 dB below = 10 mm

Ratio of SAR at M2 to SAR at M1 = 55%

Maximum value of SAR (measured) = 13.8 W/kg

System check/Area Scan (71x61x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 14.6 W/kg



Plot 9

Date/Time: 26.04.2022 10.19.26

Test Laboratory: Verkotan Oy

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:758

Communication System: UID 0, CW (0); Communication System Band: D2450 (2450.0 MHz); Frequency: 2450 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated): $f = 2450$ MHz; $\sigma = 1.742$ S/m; $\epsilon_r = 38.555$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN3892; ConvF(7.66, 7.66, 7.66) @ 2450 MHz; Calibrated: 12.04.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = 31.0, -4.0$
- Electronics: DAE4 Sn705; Calibrated: 12.04.2022
- Phantom: MFP_V5.1C (20deg probe tilt); Type: QD 000 P51 Cx; Serial: xxxx
- DASYS2 52.10.4(1527); SEMCAD X 14.6.14(7483)

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

Reference Value = 107.7 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 26.7 W/kg

SAR(1 g) = 12.8 W/kg; SAR(10 g) = 5.91 W/kg (SAR corrected for target medium)

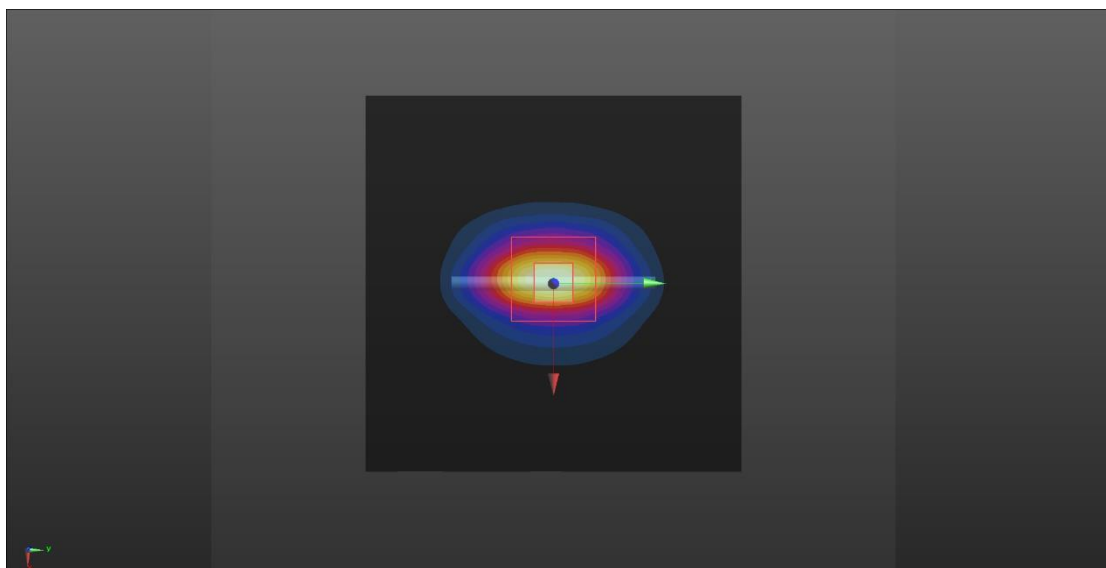
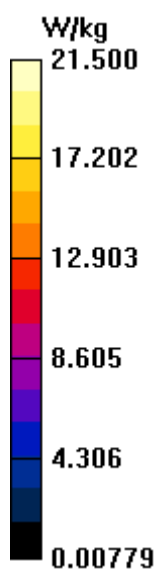
Smallest distance from peaks to all points 3 dB below = 7 mm

Ratio of SAR at M2 to SAR at M1 = 49%

Maximum value of SAR (measured) = 20.9 W/kg

System check/Area Scan (81x81x1): Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 21.5 W/kg



APPENDIX C: MEASUREMENT SCAN

Plot 10

Date/Time: 13.04.2022 0.02.11

Test Laboratory: Verkotan Oy

DUT: Peri InSite Construction Hub

Communication System: UID 0, LTE M1 (0); Communication System Band: Band 12; Frequency: 704 MHz; Communication System PAR: 5.22 dB

Medium parameters used: $f = 704$ MHz; $\sigma = 0.853$ S/m; $\epsilon_r = 44.743$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(10.39, 10.39, 10.39) @ 704 MHz; Calibrated: 28.02.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), Sensor-Surface: 1.4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), $z = 31.0, -4.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.02.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASYS2 52.10.4(1527); SEMCAD X 14.6.14(7483)

FCC Left LTEM1, band 12, QPSK, BW10, RB, offset 5, low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 23.91 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.752 W/kg

SAR(1 g) = 0.493 W/kg; SAR(10 g) = 0.322 W/kg

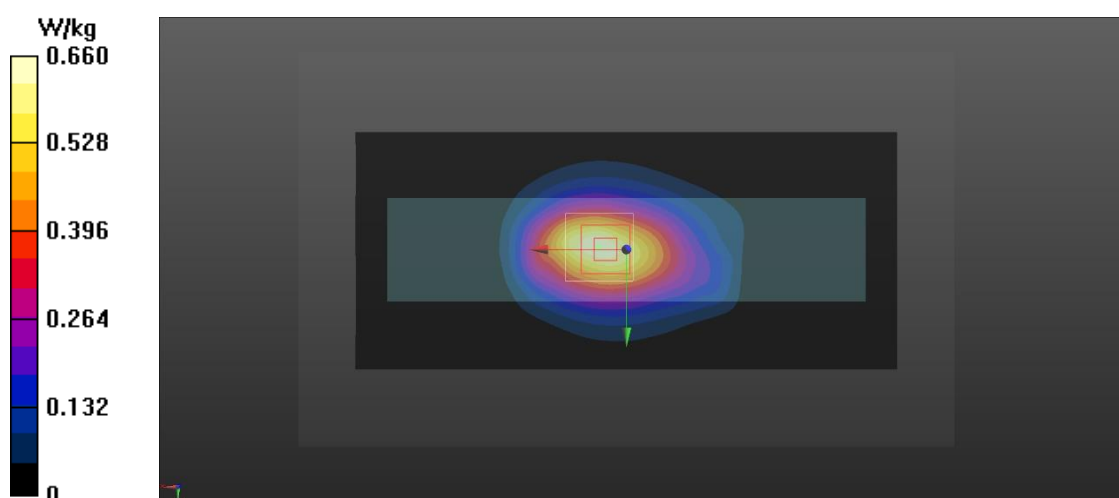
Smallest distance from peaks to all points 3 dB below = 17.6 mm

Ratio of SAR at M2 to SAR at M1 = 65.6%

Maximum value of SAR (measured) = 0.657 W/kg

FCC Left LTEM1, band 12, QPSK, BW10, RB, offset 5, low/Area Scan (161x71x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.660 W/kg



Test Laboratory: Verkotan Oy

DUT: Peri InSite Construction Hub

Communication System: UID 0, LTE M1 (0); Communication System Band: Band 13; Frequency: 784.5 MHz; Communication System PAR: 5.22 dB

Medium parameters used (interpolated): $f = 784.5$ MHz; $\sigma = 0.882$ S/m; $\epsilon_r = 44.333$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(10.39, 10.39, 10.39) @ 784.5 MHz; Calibrated: 28.02.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), Sensor-Surface: 1.4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), $z = 31.0, -4.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.02.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

FCC Left LTEM1, band 13, high, QPSK, BW5, RB1, offset5/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 23.41 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.821 W/kg

SAR(1 g) = 0.524 W/kg; SAR(10 g) = 0.338 W/kg

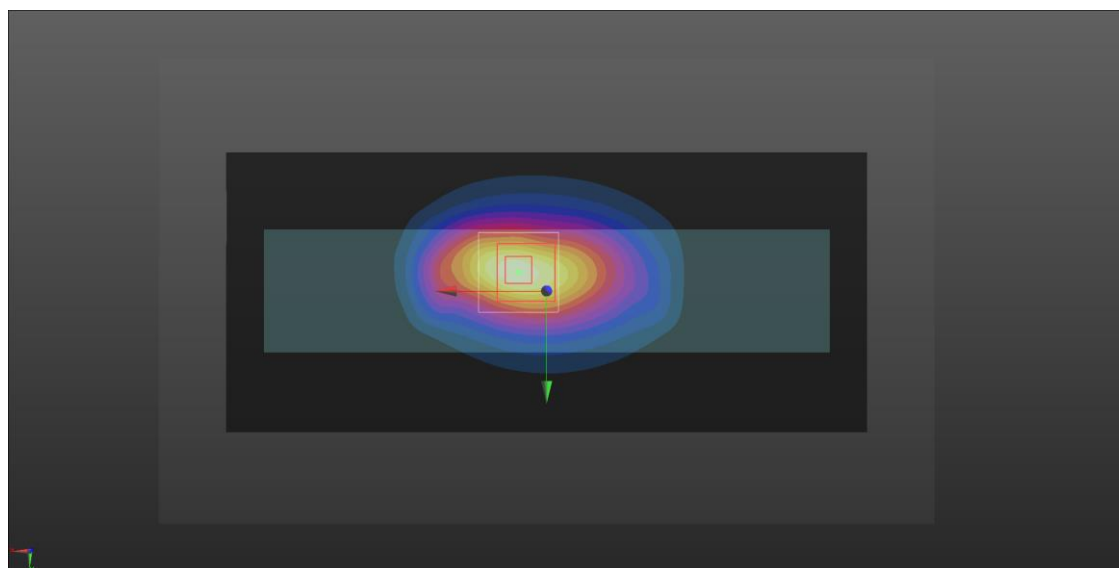
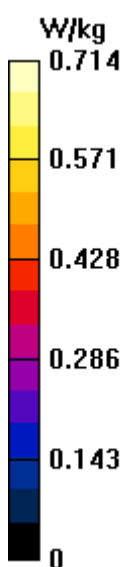
Smallest distance from peaks to all points 3 dB below = 16.2 mm

Ratio of SAR at M2 to SAR at M1 = 66.1%

Maximum value of SAR (measured) = 0.698 W/kg

FCC Left LTEM1, band 13, high, QPSK, BW5, RB1, offset5/Area Scan (161x71x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.714 W/kg



Plot 12

Date/Time: 13.04.2022 19.37.10

Test Laboratory: Verkotan Oy

DUT: Peri InSite Construction Hub

Communication System: UID 0, LTE M1 (0); Communication System Band: Band 25; Frequency: 1905 MHz; Communication System PAR: 5.22 dB

Medium parameters used (interpolated): $f = 1905$ MHz; $\sigma = 1.397$ S/m; $\epsilon_r = 41.135$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(8.13, 8.13, 8.13) @ 1905 MHz; Calibrated: 28.02.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = 31.0, -4.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.02.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

FCC Left LTEM1, band 25, QPSK, BW20, RB3, offset 3/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 18.15 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.15 W/kg

SAR(1 g) = 0.660 W/kg; SAR(10 g) = 0.350 W/kg

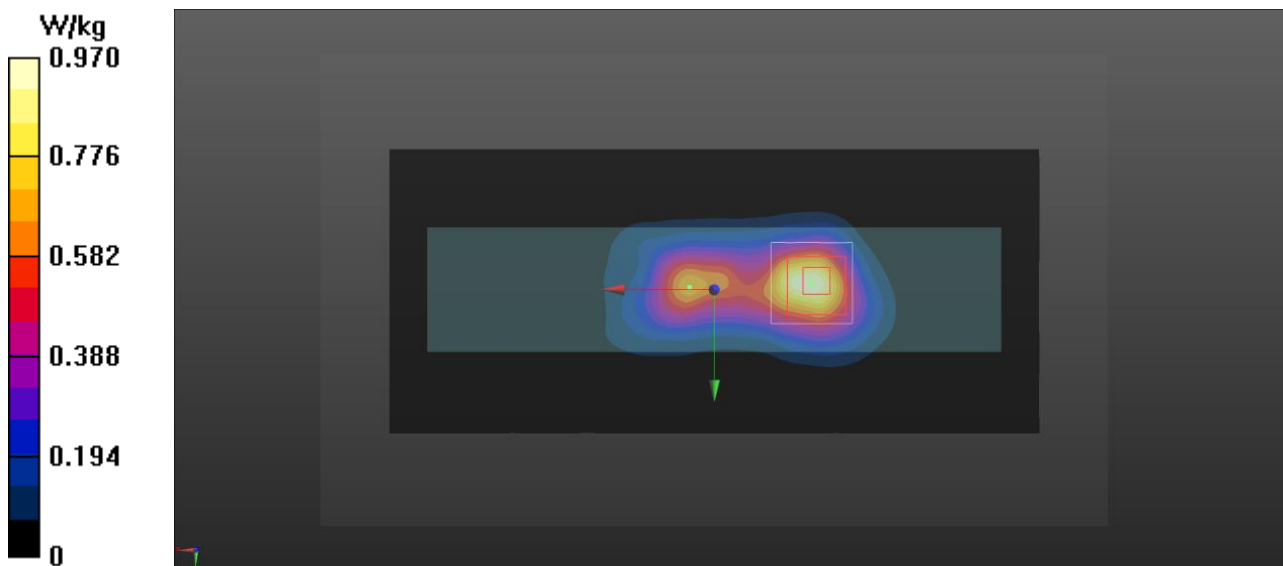
Smallest distance from peaks to all points 3 dB below = 12.7 mm

Ratio of SAR at M2 to SAR at M1 = 59.2%

Maximum value of SAR (measured) = 0.990 W/kg

FCC Left LTEM1, band 25, QPSK, BW20, RB3, offset 3/Area Scan (161x71x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.970 W/kg



Plot 13

Date/Time: 13.04.2022 0.27.46

Test Laboratory: Verkotan Oy

DUT: Peri InSite Construction Hub

Communication System: UID 0, LTE M1 (0); Communication System Band: Band 26; Frequency: 821.5 MHz; Communication System PAR: 5.22 dB

Medium parameters used (interpolated): $f = 821.5$ MHz; $\sigma = 0.895$ S/m; $\epsilon_r = 44.204$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(9.9, 9.9, 9.9) @ 821.5 MHz; Calibrated: 28.02.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = -4.0, 31.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.02.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

FCC Left LTEM1, band 26, QPSK, BW15, RB1, offset 5, low/Area Scan (161x71x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.319 W/kg

FCC Left LTEM1, band 26, QPSK, BW15, RB1, offset 5, low/Zoom Scan (6x6x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 16.86 V/m; Power Drift = -0.09 dB

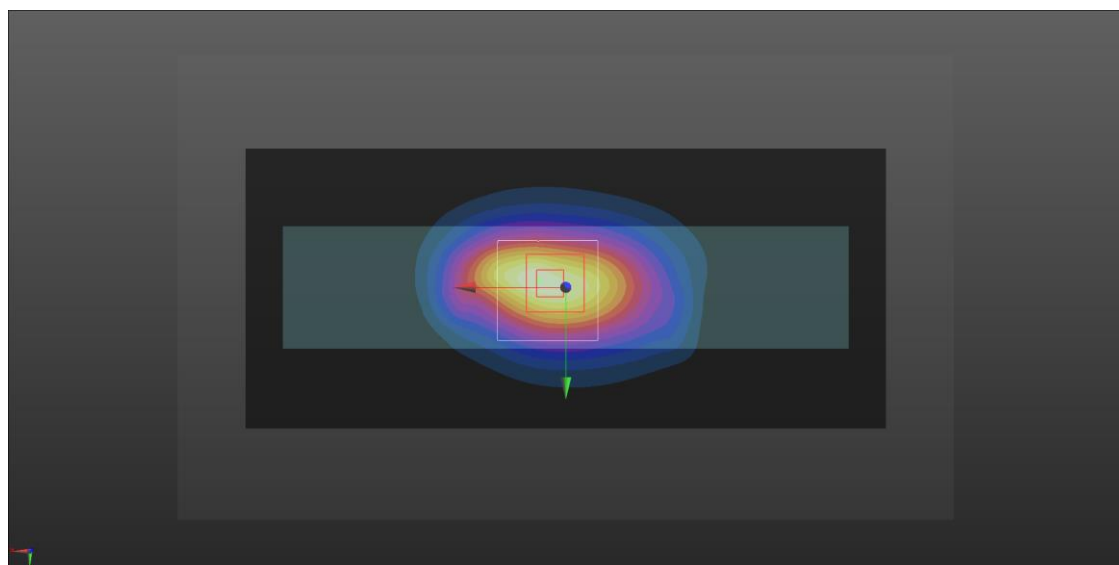
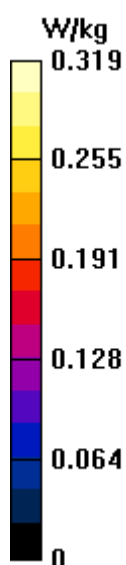
Peak SAR (extrapolated) = 0.359 W/kg

SAR(1 g) = 0.240 W/kg; SAR(10 g) = 0.157 W/kg

Smallest distance from peaks to all points 3 dB below = 17.1 mm

Ratio of SAR at M2 to SAR at M1 = 66.1%

Maximum value of SAR (measured) = 0.317 W/kg



Test Laboratory: Verkotan Oy

DUT: Peri InSite Construction Hub

Communication System: UID 0, LTE M1 (0); Communication System Band: Band 66; Frequency: 1770 MHz; Communication System PAR: 5.22 dB

Medium parameters used: $f = 1770$ MHz; $\sigma = 1.32$ S/m; $\epsilon_r = 41.389$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(8.42, 8.42, 8.42) @ 1770 MHz; Calibrated: 28.02.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), Sensor-Surface: 1.4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), $z = 31.0, -4.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.02.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

FCC Left LTEM1, band 66, QPSK, BW20, RB3, offset 3/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 21.54 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 1.33 W/kg

SAR(1 g) = 0.831 W/kg; SAR(10 g) = 0.458 W/kg (SAR corrected for target medium)

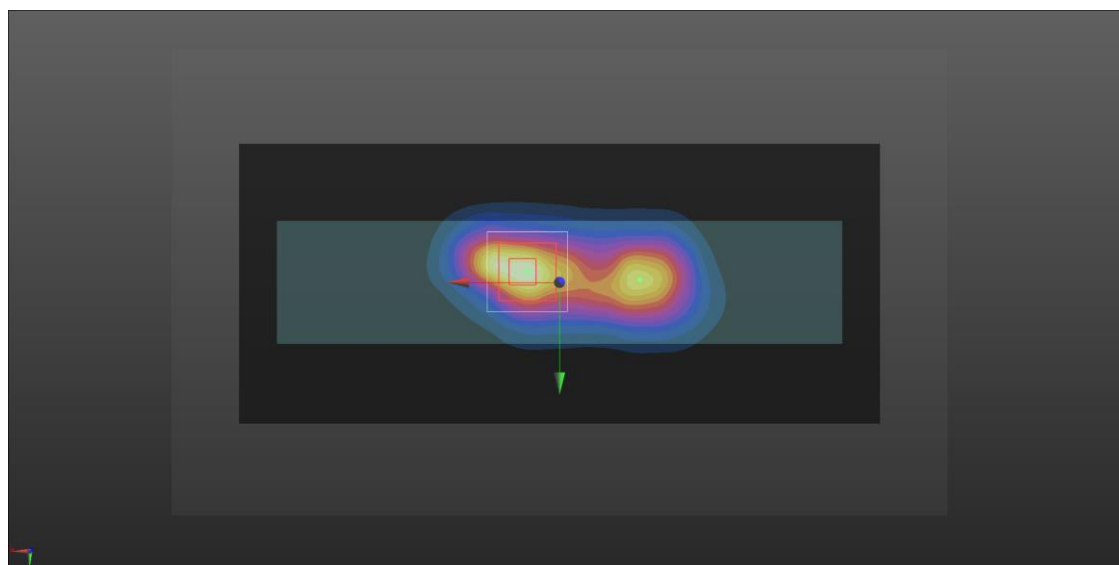
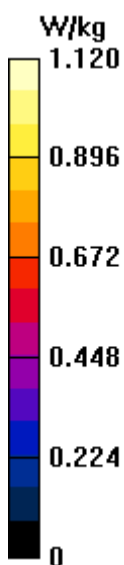
Smallest distance from peaks to all points 3 dB below = 11.4 mm

Ratio of SAR at M2 to SAR at M1 = 63.7%

Maximum value of SAR (measured) = 1.14 W/kg

FCC Left LTEM1, band 66, QPSK, BW20, RB3, offset 3/Area Scan (161x71x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 1.12 W/kg



Plot 15

Date/Time: 19.04.2022 13.01.40

Test Laboratory: Verkotan Oy

DUT: Peri InSite Construction Hub

Communication System: UID 0, LTE M1 (0); Communication System Band: Band 71; Frequency: 688 MHz; Communication System PAR: 5.22 dB

Medium parameters used: $f = 688 \text{ MHz}$; $\sigma = 0.824 \text{ S/m}$; $\epsilon_r = 43.572$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(10.39, 10.39, 10.39) @ 688 MHz; Calibrated: 28.02.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = -4.0, 31.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.02.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

FCC Left LTEM1, band 71, high, QPSK, BW20, RB3, offset3/Area Scan 2 (161x61x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$
Maximum value of SAR (interpolated) = 0.834 W/kg

FCC Left LTEM1, band 71, high, QPSK, BW20, RB3, offset3/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 27.96 V/m ; Power Drift = -0.08 dB

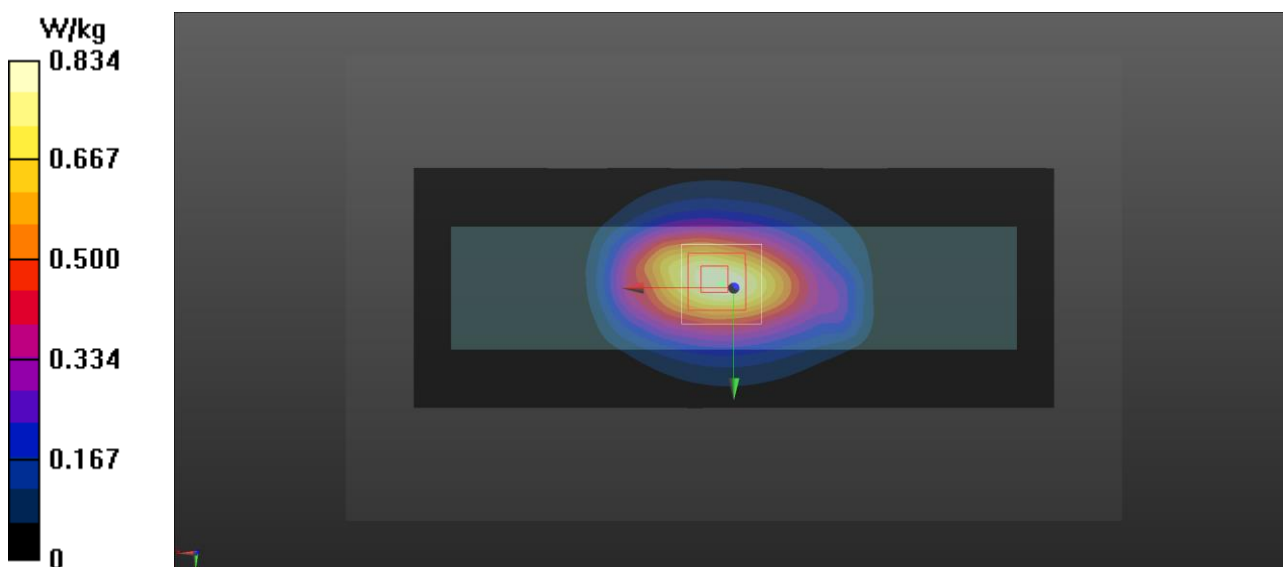
Peak SAR (extrapolated) = 0.984 W/kg

SAR(1 g) = 0.674 W/kg ; SAR(10 g) = 0.429 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 18.6 mm

Ratio of SAR at M2 to SAR at M1 = 64.9%

Maximum value of SAR (measured) = 0.845 W/kg



Test Laboratory: Verkotan Oy

DUT: Peri InSite Construction Hub

Communication System: UID 0, NB-IoT 15kHz (0); Communication System Band: Band 2; Frequency: 1850.1 MHz; Communication System PAR: 5.19 dB

Medium parameters used (interpolated): $f = 1850.1$ MHz; $\sigma = 1.339$ S/m; $\epsilon_r = 39.957$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(8.13, 8.13, 8.13) @ 1850.1 MHz; Calibrated: 28.02.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), Sensor-Surface: 1.4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), $z = 31.0, -4.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.02.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

FCC left NB-IoT, band 2, low, QPSK, SCS15, SC1, SC Start11/Zoom Scan (6x6x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 19.02 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.27 W/kg

SAR(1 g) = 0.798 W/kg; SAR(10 g) = 0.433 W/kg (SAR corrected for target medium)

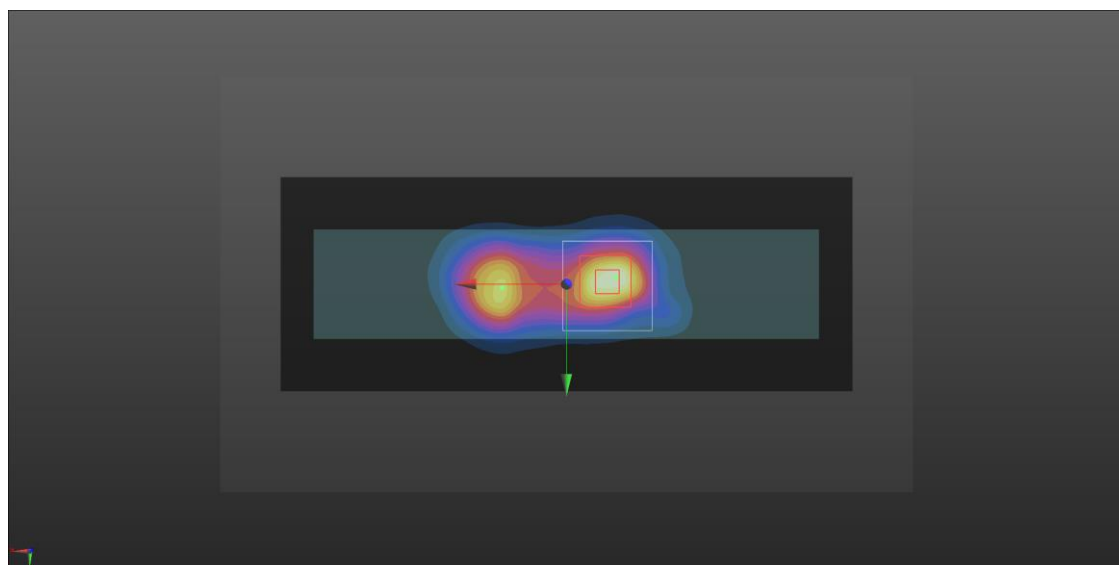
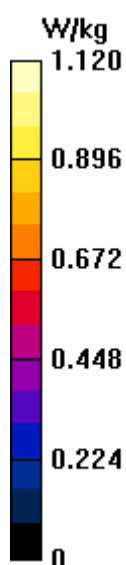
Smallest distance from peaks to all points 3 dB below = 11.4 mm

Ratio of SAR at M2 to SAR at M1 = 65%

Maximum value of SAR (measured) = 1.06 W/kg

FCC left NB-IoT, band 2, low, QPSK, SCS15, SC1, SC Start11/Area Scan (161x61x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 1.12 W/kg



Plot 17

Date/Time: 21.04.2022 12.32.47

Test Laboratory: Verkotan Oy

DUT: Peri InSite Construction Hub

Communication System: UID 0, NB-IoT 15kHz (0); Communication System Band: NB-IoT Band 5; Frequency: 848.9 MHz; Communication System PAR: 5.19 dB

Medium parameters used: $f = 849$ MHz; $\sigma = 0.898$ S/m; $\epsilon_r = 42.894$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(9.9, 9.9, 9.9) @ 848.9 MHz; Calibrated: 28.02.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), Sensor-Surface: 1.4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), $z = 31.0, -4.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.02.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

FCC Left NB-IoT, band 5, high, QPSK, SCS15, SC1, SC Start0 2/Zoom Scan (6x6x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 18.48 V/m; Power Drift = -0.32 dB

Peak SAR (extrapolated) = 0.479 W/kg

SAR(1 g) = 0.299 W/kg; SAR(10 g) = 0.190 W/kg (SAR corrected for target medium)

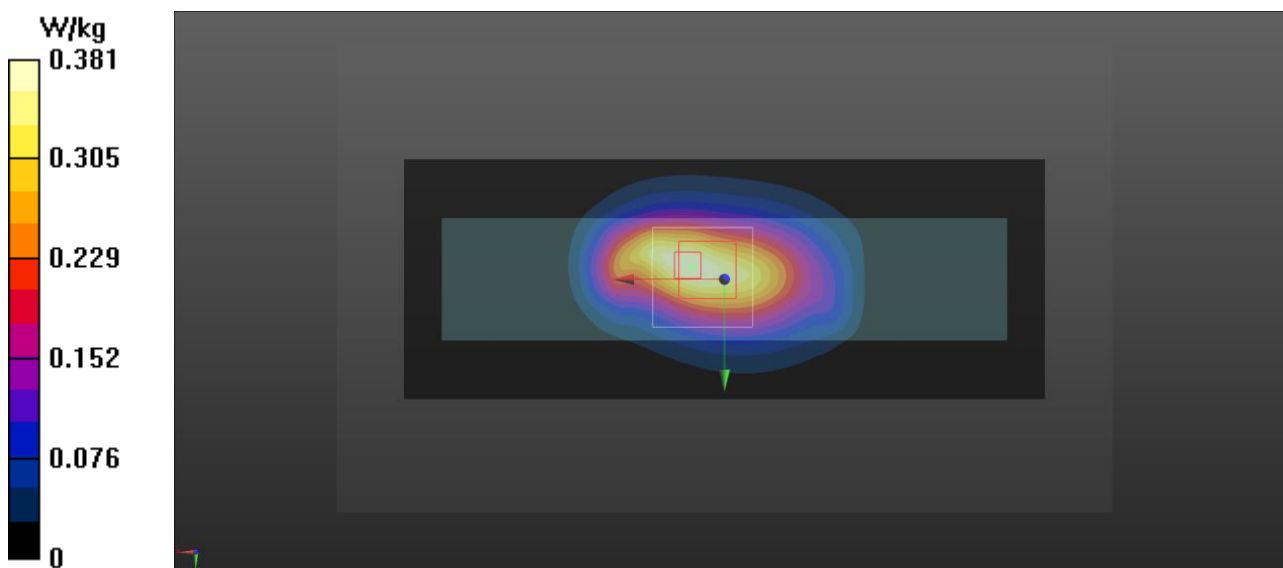
Smallest distance from peaks to all points 3 dB below = 13.4 mm

Ratio of SAR at M2 to SAR at M1 = 60.7%

Maximum value of SAR (measured) = 0.403 W/kg

FCC Left NB-IoT, band 5, high, QPSK, SCS15, SC1, SC Start0 2/Area Scan (161x61x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.381 W/kg



Plot 18

Date/Time: 20.04.2022 15.40.48

Test Laboratory: Verkotan Oy

DUT: Peri InSite Construction Hub

Communication System: UID 0, NB-IoT 15kHz (0); Communication System Band: NB-IoT Band 12; Frequency: 707.5 MHz; Communication System PAR: 5.19 dB

Medium parameters used (interpolated): $f = 707.5$ MHz; $\sigma = 0.83$ S/m; $\epsilon_r = 43.46$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(10.39, 10.39, 10.39) @ 707.5 MHz; Calibrated: 28.02.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = -4.0, 31.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.02.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

FCC Right NB-IoT, band 12, mid, QPSK, SCS15, SC1, SC Start11/Area Scan (81x81x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.706 W/kg

FCC Right NB-IoT, band 12, mid, QPSK, SCS15, SC1, SC Start11/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 22.02 V/m; Power Drift = -0.27 dB

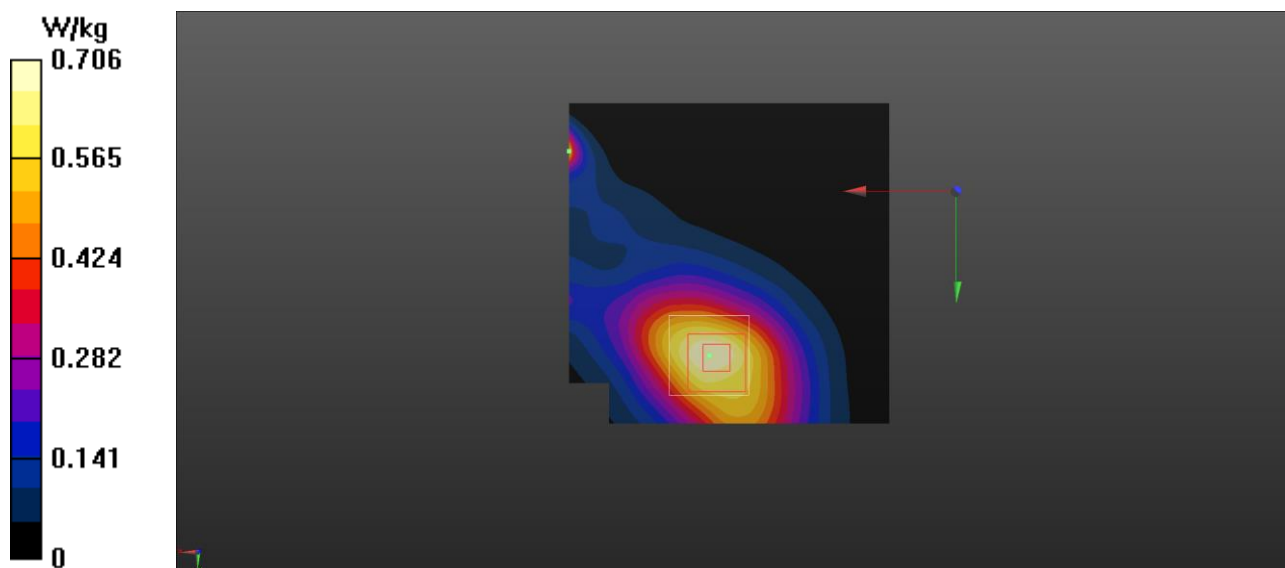
Peak SAR (extrapolated) = 0.763 W/kg

SAR(1 g) = 0.553 W/kg; SAR(10 g) = 0.370 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 19.6 mm

Ratio of SAR at M2 to SAR at M1 = 69%

Maximum value of SAR (measured) = 0.677 W/kg



Test Laboratory: Verkotan Oy

DUT: Peri InSite Construction Hub

Communication System: UID 0, NB-IoT 15kHz (0); Communication System Band: NB-IoT Band 13; Frequency: 782 MHz; Communication System PAR: 5.19 dB

Medium parameters used: $f = 782 \text{ MHz}$; $\sigma = 0.856 \text{ S/m}$; $\epsilon_r = 43.07$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(10.39, 10.39, 10.39) @ 782 MHz; Calibrated: 28.02.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = -4.0, 31.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.02.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

FCC Left NB-IoT, band 13,mid, QPSK, SCS15, SC1, SC Start11/Area Scan (71x61x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.864 W/kg

FCC Left NB-IoT, band 13,mid, QPSK, SCS15, SC1, SC Start11/Zoom Scan (6x6x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 26.87 V/m ; Power Drift = -0.41 dB

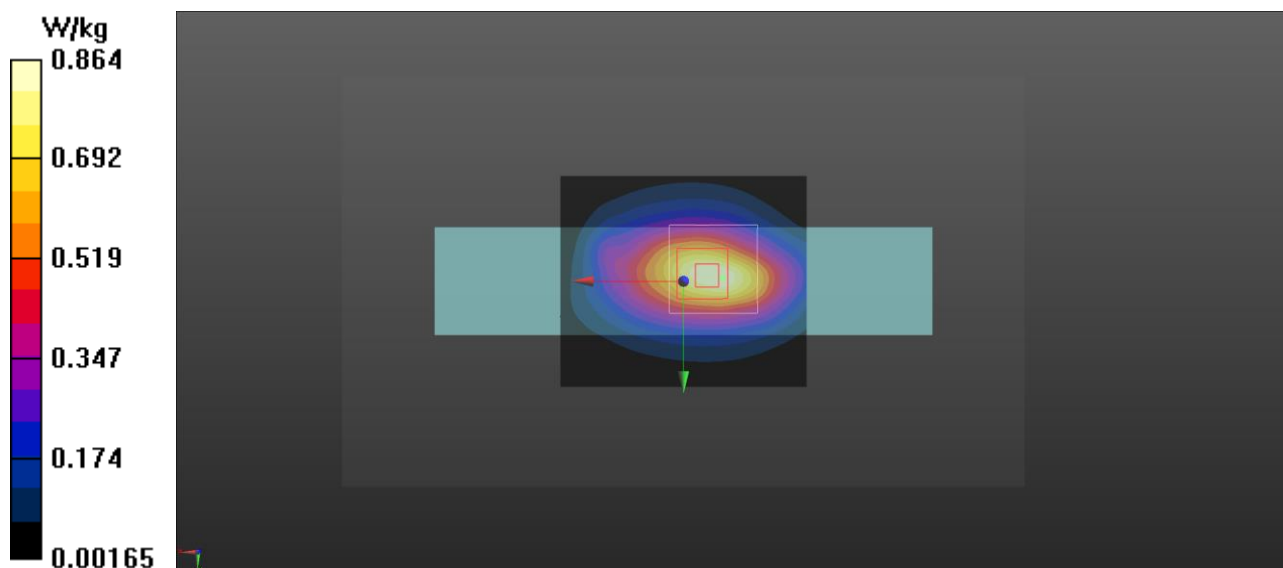
Peak SAR (extrapolated) = 0.926 W/kg

SAR(1 g) = 0.638 W/kg ; SAR(10 g) = 0.413 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 15 mm

Ratio of SAR at M2 to SAR at M1 = 64.3%

Maximum value of SAR (measured) = 0.810 W/kg



Plot 20

Date/Time: 22.04.2022 13.55.43

Test Laboratory: Verkotan Oy

DUT: Peri InSite Construction Hub

Communication System: UID 0, NB-IoT 15kHz (0); Communication System Band: Band 66; Frequency: 1779.9 MHz; Communication System PAR: 5.19 dB

Medium parameters used: $f = 1780$ MHz; $\sigma = 1.301$ S/m; $\epsilon_r = 40.083$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(8.42, 8.42, 8.42) @ 1779.9 MHz; Calibrated: 28.02.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), Sensor-Surface: 1.4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), $z = 31.0, -4.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.02.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

FCC left NB-IoT, band 66, high, QPSK, SCS15, SC1, SC Start11/Zoom Scan (6x6x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 19.96 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.42 W/kg

SAR(1 g) = 0.879 W/kg; SAR(10 g) = 0.486 W/kg (SAR corrected for target medium)

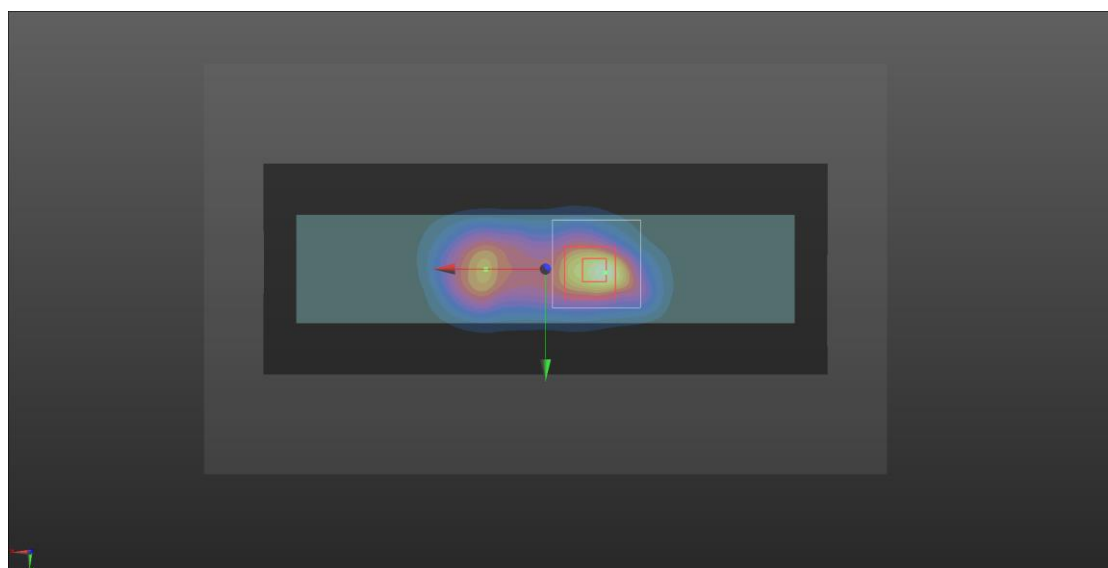
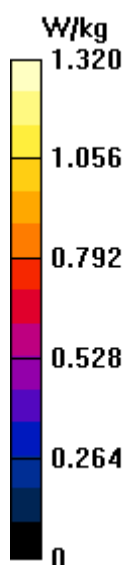
Smallest distance from peaks to all points 3 dB below = 11.4 mm

Ratio of SAR at M2 to SAR at M1 = 58.8%

Maximum value of SAR (measured) = 1.21 W/kg

FCC left NB-IoT, band 66, high, QPSK, SCS15, SC1, SC Start11/Area Scan (161x61x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 1.32 W/kg



Plot 21

Date/Time: 20.04.2022 11.00.22

Test Laboratory: Verkotan Oy

DUT: Peri InSite Construction Hub

Communication System: UID 0, NB-IoT 15kHz (0); Communication System Band: NB-IoT Band 71; Frequency: 697.8 MHz; Communication System PAR: 5.19 dB

Medium parameters used: $f = 698 \text{ MHz}$; $\sigma = 0.827 \text{ S/m}$; $\epsilon_r = 43.522$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN7447; ConvF(10.39, 10.39, 10.39) @ 697.8 MHz; Calibrated: 28.02.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = -4.0, 31.0$
- Electronics: DAE4 Sn1332; Calibrated: 23.02.2022
- Phantom: SAR1_Phantom 1_triple flat; Type: QD 000 P51 Cx; Serial: 28_March_2017
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

FCC Left NB-IoT, band 71, high, QPSK, SCS15, SC1, SC Start11/Area Scan (161x61x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.825 W/kg

FCC Left NB-IoT, band 71, high, QPSK, SCS15, SC1, SC Start11/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 27.12 V/m ; Power Drift = 0.04 dB

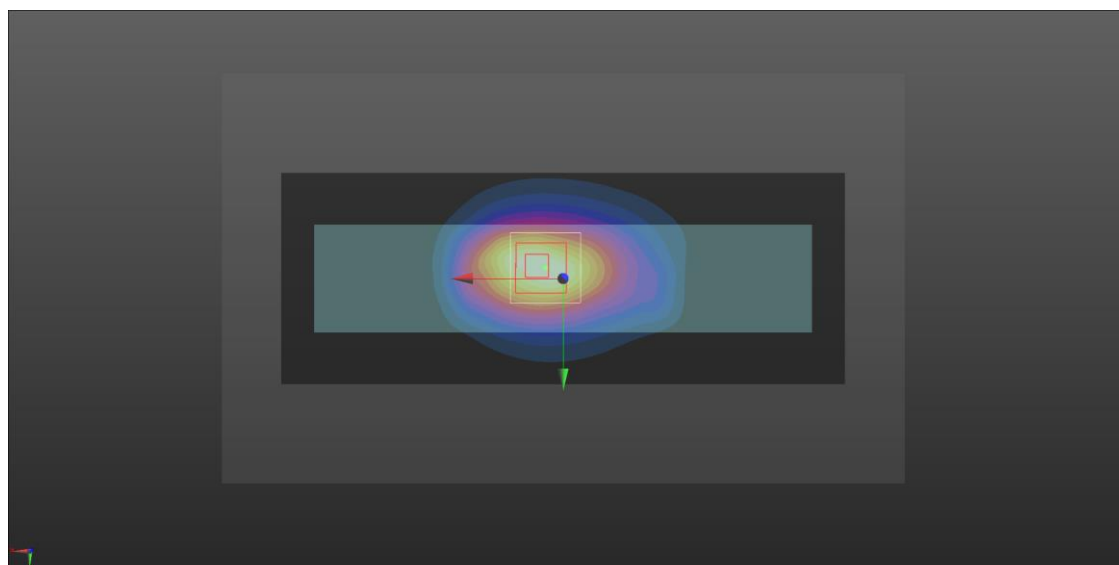
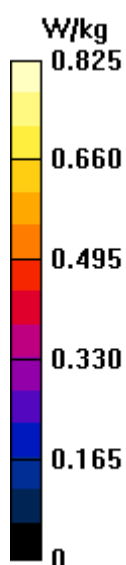
Peak SAR (extrapolated) = 0.981 W/kg

SAR(1 g) = 0.673 W/kg ; SAR(10 g) = 0.432 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 17.5 mm

Ratio of SAR at M2 to SAR at M1 = 64.6%

Maximum value of SAR (measured) = 0.857 W/kg



Plot 22

Date/Time: 26.04.2022 20.56.54

Test Laboratory: Verkotan Oy

DUT: Peri InSite Construction Hub

Communication System: UID 0, WLAN 2.4 (0); Communication System Band: WLAN2.4GHz; Frequency: 2462 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.75$ S/m; $\epsilon_r = 38.536$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASYS (IEEE/IEC)

DASY Configuration:

- Probe: EX3DV4 - SN3892; ConvF(7.66, 7.66, 7.66) @ 2462 MHz; Calibrated: 12.04.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = -4.0, 31.0$
- Electronics: DAE4 Sn705; Calibrated: 12.04.2022
- Phantom: MFP_V5.1C (20deg probe tilt); Type: QD 000 P51 Cx; Serial: xxxx
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

FCC Left WLAN 2.4GHz, 802.11b, 1Mbps, CH 11/Area Scan (201x91x1): Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 4.06 W/kg

FCC Left WLAN 2.4GHz, 802.11b, 1Mbps, CH 11/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 14.01 V/m; Power Drift = -0.03 dB

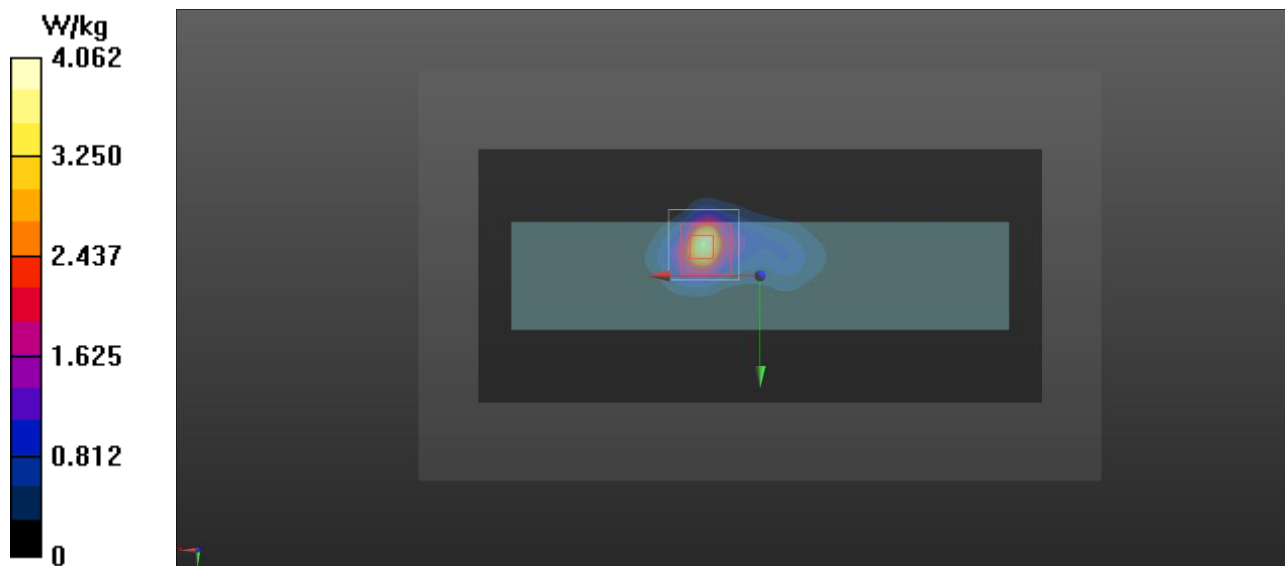
Peak SAR (extrapolated) = 6.14 W/kg

SAR(1 g) = 2.52 W/kg; SAR(10 g) = 1 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 6 mm

Ratio of SAR at M2 to SAR at M1 = 43.8%

Maximum value of SAR (measured) = 4.57 W/kg



APPENDIX D: RELEVANT PAGES FROM PROBE CALIBRATION

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **Verkotan**

Certificate No: **EX3-7447_Feb22**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:7447**

Calibration procedure(s) **QA CAL-01.v9, QA CAL-12.v9, QA CAL-14.v6, QA CAL-23.v5,
QA CAL-25.v7
Calibration procedure for dosimetric E-field probes**

Calibration date: **February 28, 2022**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	09-Apr-21 (No. 217-03291/03292)	Apr-22
Power sensor NRP-Z91	SN: 103244	09-Apr-21 (No. 217-03291)	Apr-22
Power sensor NRP-Z91	SN: 103245	09-Apr-21 (No. 217-03292)	Apr-22
Reference 20 dB Attenuator	SN: CC2552 (20x)	09-Apr-21 (No. 217-03343)	Apr-22
DAE4	SN: 660	13-Oct-21 (No. DAE4-660_Oct21)	Oct-22
Reference Probe ES3DV2	SN: 3013	27-Dec-21 (No. ES3-3013_Dec21)	Dec-22
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-20)	In house check: Jun-22
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22

	Name	Function	Signature
Calibrated by:	Aidonia Georgiadou	Laboratory Technician	
Approved by:	Niels Kuster	Quality Manager	
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Issued: March 1, 2022

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EX3DV4 – SN:7447

February 28, 2022

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7447

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.40	0.43	0.44	$\pm 10.1 \%$
DCP (mV) ^B	93.5	95.0	96.2	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB $\sqrt{\mu\text{V}}$	C	D dB	VR mV	Max dev.	Unc ^E (k=2)
0	CW	X	0.0	0.0	1.0	0.00	155.9	$\pm 2.5 \%$	$\pm 4.7 \%$
		Y	0.0	0.0	1.0		167.3		
		Z	0.0	0.0	1.0		159.8		

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of Norm X,Y,Z do not affect the E^2 -field uncertainty inside TSL (see Page 5).

^B Numerical linearization parameter; uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

EX3DV4– SN:7447

February 28, 2022

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7447

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-138
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

Note: Measurement distance from surface can be increased to 3–4 mm for an *Area Scan* job.

EX3DV4- SN:7447

February 28, 2022

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7447

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^c	Relative Permittivity ^f	Conductivity (S/m) ^f	ConvF X	ConvF Y	ConvF Z	Alpha ^g	Depth ^g (mm)	Unc (k=2)
13	55.0	0.75	15.43	15.43	15.43	0.00	1.00	± 13.3 %
750	41.9	0.89	10.39	10.39	10.39	0.42	0.80	± 12.0 %
900	41.5	0.97	9.90	9.90	9.90	0.45	0.80	± 12.0 %
1750	40.1	1.37	8.42	8.42	8.42	0.28	0.85	± 12.0 %
1950	40.0	1.40	8.13	8.13	8.13	0.26	0.85	± 12.0 %
2150	39.7	1.53	8.14	8.14	8.14	0.25	0.85	± 12.0 %
2300	39.5	1.67	8.09	8.09	8.09	0.21	0.90	± 12.0 %
2450	39.2	1.80	7.77	7.77	7.77	0.15	0.90	± 12.0 %
2600	39.0	1.96	7.61	7.61	7.61	0.24	0.90	± 12.0 %
3300	38.2	2.71	6.85	6.85	6.85	0.30	1.30	± 13.1 %
5250	35.9	4.71	5.20	5.20	5.20	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.50	4.50	4.50	0.40	1.80	± 13.1 %
5750	35.4	5.22	4.60	4.60	4.60	0.40	1.80	± 13.1 %

^c Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

^f At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

^g Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **Verkotan**

Certificate No: **EX3-3892_Apr22**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3892**

Calibration procedure(s) **QA CAL-01.v9, QA CAL-12.v9, QA CAL-14.v6, QA CAL-23.v5,
QA CAL-25.v7
Calibration procedure for dosimetric E-field probes**

Calibration date: **April 12, 2022**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-22 (No. 217-03525/03524)	Apr-23
Power sensor NRP-Z91	SN: 103244	04-Apr-22 (No. 217-03524)	Apr-23
Power sensor NRP-Z91	SN: 103245	04-Apr-22 (No. 217-03525)	Apr-23
Reference 20 dB Attenuator	SN: CC2552 (20x)	04-Apr-22 (No. 217-03527)	Apr-23
DAE4	SN: 660	13-Oct-21 (No. DAE4-660_Oct21)	Oct-22
Reference Probe ES3DV2	SN: 3013	27-Dec-21 (No. ES3-3013_Dec21)	Dec-22
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-20)	In house check: Jun-22
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22

Calibrated by: **Aldonia Georgiadou** Laboratory Technician

Approved by: **Sven Kühn** Deputy Manager

Issued: April 12, 2022

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

EX3DV4 – SN:3892

April 12, 2022

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3892

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.47	0.38	0.47	$\pm 10.1 \%$
DCP (mV) ^B	102.0	105.5	101.6	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB $\sqrt{\mu\text{V}}$	C	D dB	VR mV	Max dev.	Unc ^E (k=2)
0	CW	X	0.0	0.0	1.0	0.00	154.3	$\pm 3.0 \%$	$\pm 4.7 \%$
		Y	0.0	0.0	1.0		165.8		
		Z	0.0	0.0	1.0		158.8		

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of Norm X,Y,Z do not affect the E^2 -field uncertainty inside TSL (see Page 5).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

EX3DV4- SN:3892

April 12, 2022

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3892

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-148.5
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

Note: Measurement distance from surface can be increased to 3-4 mm for an *Area Scan* job.