

Appendix A. SAR System Check Data

Test Laboratory: DEKRA

Date/Time: 2018/07/17

SystemPerformanceCheck-750MHz_Body

DUT: Dipole 750 MHz; Type: D750V3

Communication System: UID 0, CW; Frequency: 750 MHz;

Communication System PAR: 0 dB

Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.95 \text{ S/m}$; $\epsilon_r = 57.17$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient Temperature ($^{\circ}\text{C}$) : 21.8, Liquid Temperature ($^{\circ}\text{C}$) : 20.9

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

- Probe: EX3DV4 - SN3698; ConvF(9.17, 9.17, 9.17); Calibrated: 2017/07/22;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1207; Calibrated: 2017/11/16
- Phantom: SAM with right table; Type: SAM;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Configuration/750MHz_Body/Area Scan (7x9x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 2.40 W/kg

Configuration/750MHz_Body/Zoom Scan (7x7x7) (7x7x7)/Cube 0:

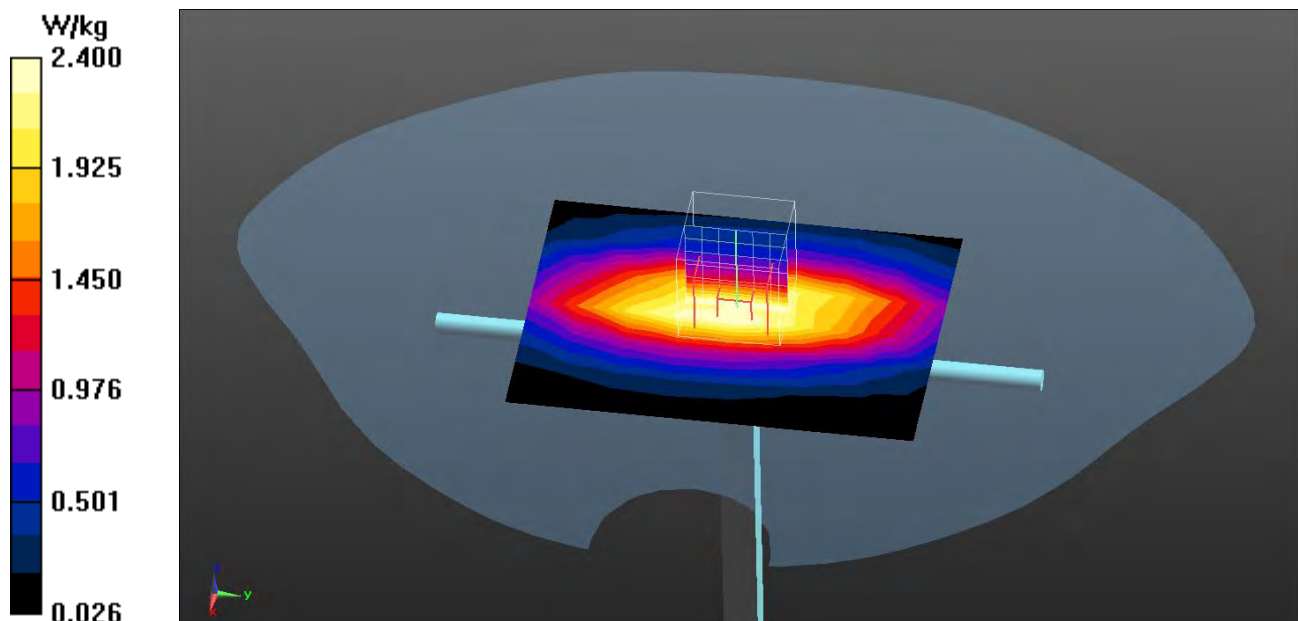
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 52.81 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 3.45 W/kg

SAR(1 g) = 2.29 W/kg; SAR(10 g) = 1.52 W/kg

Maximum value of SAR (measured) = 2.67 W/kg



Test Laboratory: DEKRA

Date/Time: 2018/07/16

SystemPerformanceCheck-835MHz_Body**DUT: Dipole 835 MHz; Type: ALS-D-835**

Communication System: UID 10000, CW; Frequency: 835 MHz;

Communication System PAR: 0 dB

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 1.01 \text{ S/m}$; $\epsilon_r = 56.18$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient Temperature ($^{\circ}\text{C}$) : 22.1, Liquid Temperature ($^{\circ}\text{C}$) : 20.8

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

- Probe: EX3DV4 - SN3698; ConvF(8.87, 8.87, 8.87); Calibrated: 2017/11/22;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1207; Calibrated: 2017/11/16
- Phantom: SAM with right table; Type: SAM;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Configuration/835MHz_Body/Area Scan (7x9x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 2.69 W/kg

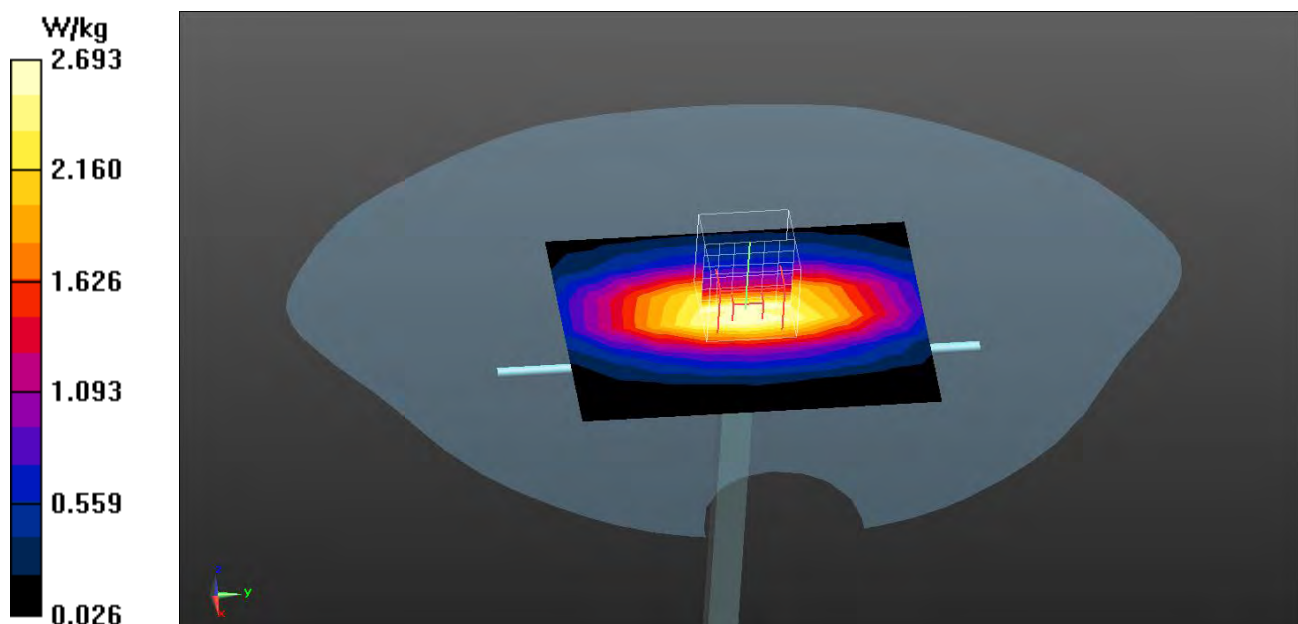
Configuration/835MHz_Body/Zoom Scan (7x7x7) (7x7x7)/Cube 0:Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 55.21 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 3.90 W/kg

SAR(1 g) = 2.54 W/kg; SAR(10 g) = 1.65 W/kg

Maximum value of SAR (measured) = 2.98 W/kg



Test Laboratory: DEKRA

Date/Time: 2018/07/04

System Performance Check_1800MHz-Body**DUT: Dipole 1800 MHz; Type: ALS-D-1800**

Communication System: UID 10000, CW; Frequency: 1800 MHz;

Communication System PAR: 0 dB

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.52$ S/m; $\epsilon_r = 54.75$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature (°C) : 21.7, Liquid Temperature (°C) : 20.5

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

- Probe: EX3DV4 - SN3698; ConvF(7.41, 7.41, 7.41); Calibrated: 2017/11/22;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1207; Calibrated: 2017/11/16
- Phantom: SAM with right table; Type: SAM;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Configuration/1800MHz_Body/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 7.52 W/kg

Configuration/1800MHz_Body/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

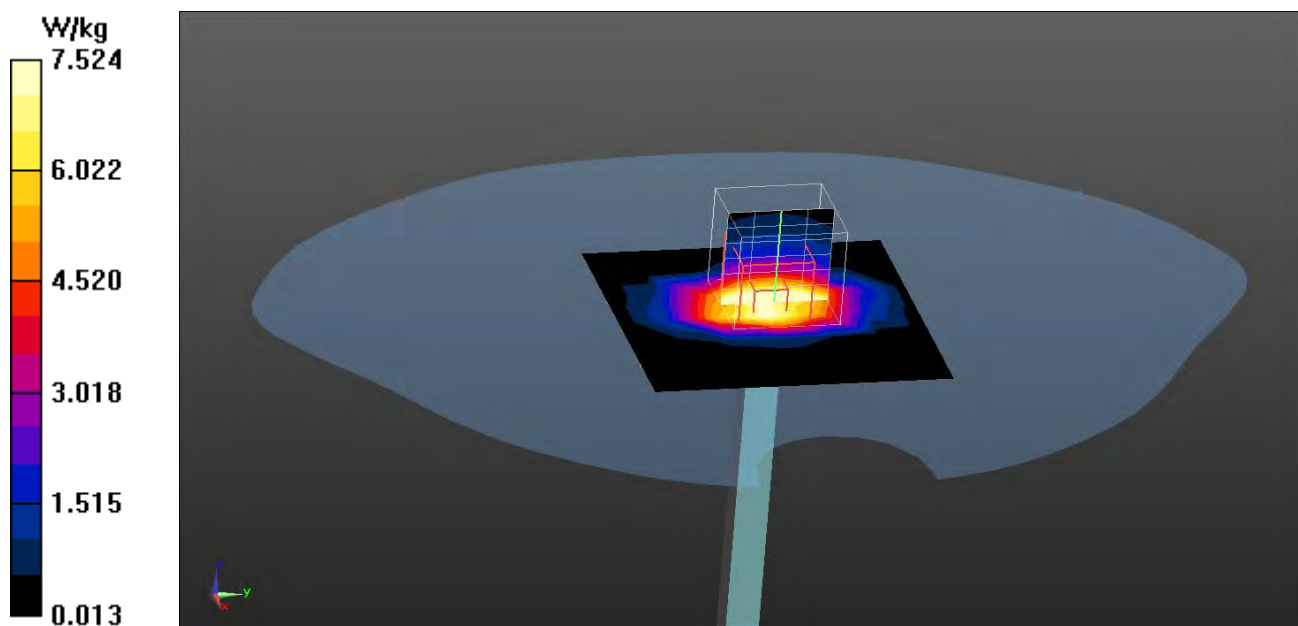
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 85.83 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 16.0 W/kg

SAR(1 g) = 9.7 W/kg; SAR(10 g) = 5.1 W/kg

Maximum value of SAR (measured) = 11.0 W/kg



Test Laboratory: DEKRA

Date/Time: 2018/07/05

System Performance Check_1900MHz-Body**DUT: Dipole 1900 MHz; Type: ALS-D-1900**

Communication System: UID 10000, CW; Frequency: 1900 MHz;

Communication System PAR: 0 dB

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.57$ S/m; $\epsilon_r = 54.37$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature (°C) : 21.8, Liquid Temperature (°C) : 20.4

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

- Probe: EX3DV4 - SN3698; ConvF(7.22, 7.22, 7.22); Calibrated: 2017/11/22;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1207; Calibrated: 2017/11/16
- Phantom: SAM with right table; Type: SAM;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Configuration/1900MHz_Body/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 10.3 W/kg

Configuration/1900MHz_Body/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

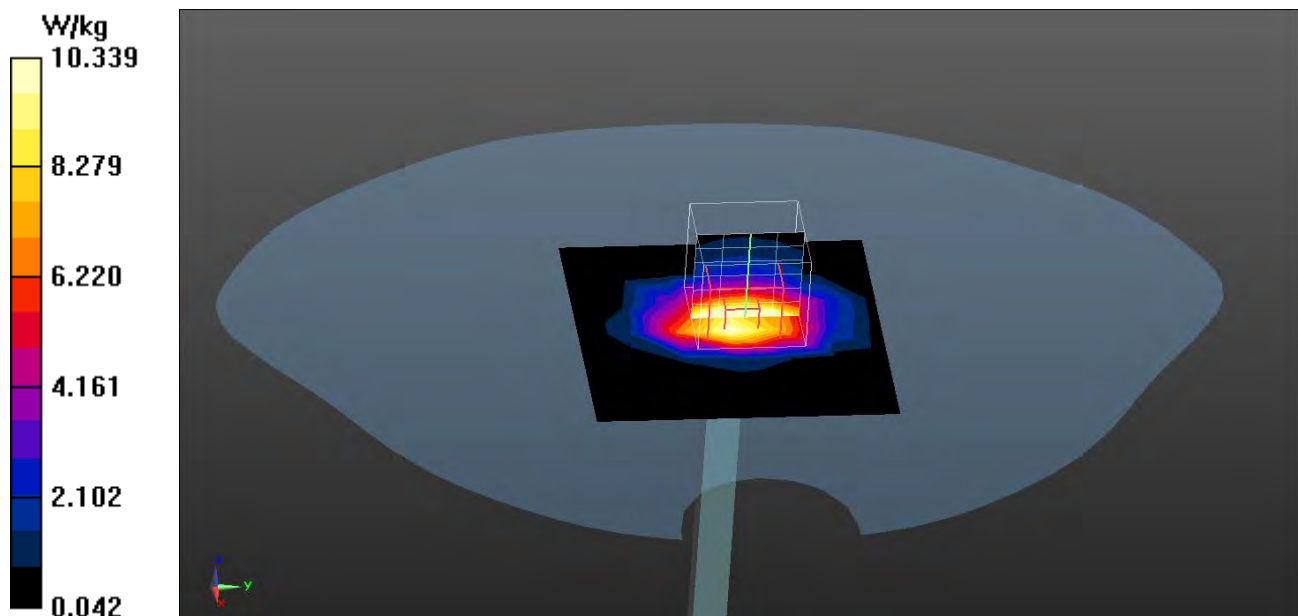
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 93.21 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 19.6 W/kg

SAR(1 g) = 10.3 W/kg; SAR(10 g) = 5.45 W/kg

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



Test Laboratory: DEKRA

Date/Time: 2018/07/19

System Performance Check_2450MHz-Body**DUT: Dipole 2450 MHz; Type: D2450V2**

Communication System: UID 0, CW; Frequency: 2450 MHz;

Communication System PAR: 0 dB

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.96$ S/m; $\epsilon_r = 52.36$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature (°C) : 21.9, Liquid Temperature (°C) : 20.8

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

- Probe: EX3DV4 - SN3698; ConvF(6.92, 6.92, 6.92); Calibrated: 2017/11/22;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1207; Calibrated: 2017/11/16
- Phantom: SAM with left table; Type: SAM;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Configuration/2450MHz Body/Area Scan (9x9x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 15.7 W/kg

Configuration/2450MHz Body/Zoom Scan (7x7x7) (7x7x7)/Cube 0:

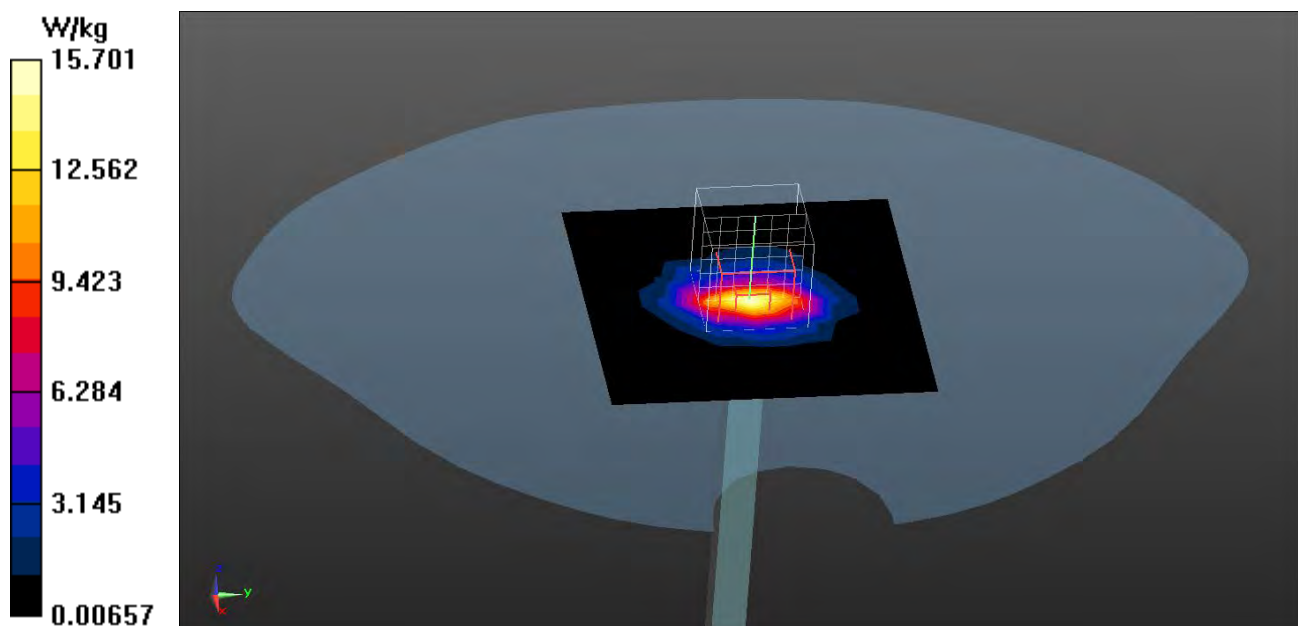
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 88.26 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 27.5 W/kg

SAR(1 g) = 13.4 W/kg; SAR(10 g) = 6.2 W/kg

Maximum value of SAR (measured) = 15.8 W/kg



Test Laboratory: DEKRA

Date/Time: 2018/07/20

System Performance Check_5200MHz-Body**DUT: Dipole 5GHz; Type: D5GHzV2**

Communication System: UID 0, CW; Frequency: 5200 MHz;

Communication System PAR: 0 dB

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.3$ S/m; $\epsilon_r = 49.32$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature (°C) : 21.8, Liquid Temperature (°C) : 20.7

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

- Probe: EX3DV4 - SN3698; ConvF(4.46, 4.46, 4.46); Calibrated: 2017/11/22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1207; Calibrated: 2017/11/16
- Phantom: SAM with left table; Type: SAM;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Configuration/5200MHz-Body/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 12.5 W/kg

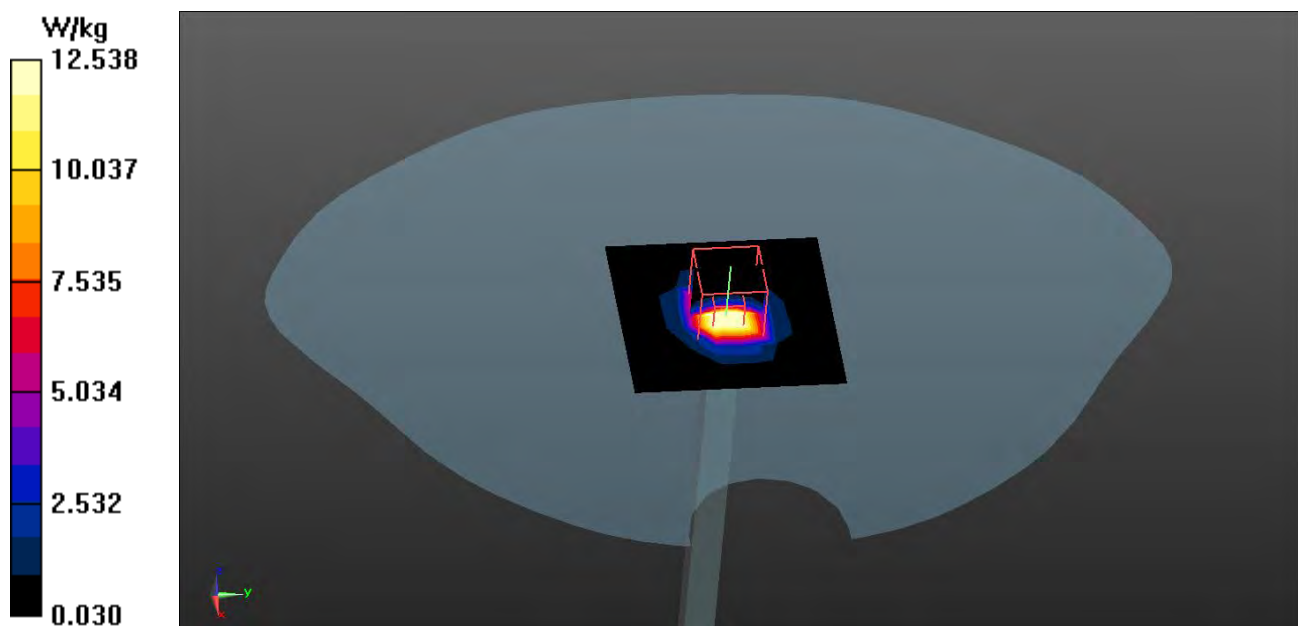
Configuration/5200MHz-Body/Zoom Scan (7x7x12), dist=1.4mm (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 71.72 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 29.2 W/kg

SAR(1 g) = 8.02 W/kg; SAR(10 g) = 2.17 W/kg

Maximum value of SAR (measured) = 22.4 W/kg



Test Laboratory: DEKRA

Date/Time: 2018/07/20

System Performance Check_5300MHz-Body**DUT: Dipole 5GHz; Type: D5GHzV2**

Communication System: UID 0, CW; Frequency: 5300 MHz;

Communication System PAR: 0 dB

Medium parameters used: $f = 5300$ MHz; $\sigma = 5.45$ S/m; $\epsilon_r = 49.05$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature (°C) : 21.8, Liquid Temperature (°C) : 20.7

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

- Probe: EX3DV4 - SN3698; ConvF(4.17, 4.17, 4.17); Calibrated: 2017/11/22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1207; Calibrated: 2017/11/16
- Phantom: SAM with left table; Type: SAM;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Configuration/5300MHz-Body/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 13.2 W/kg

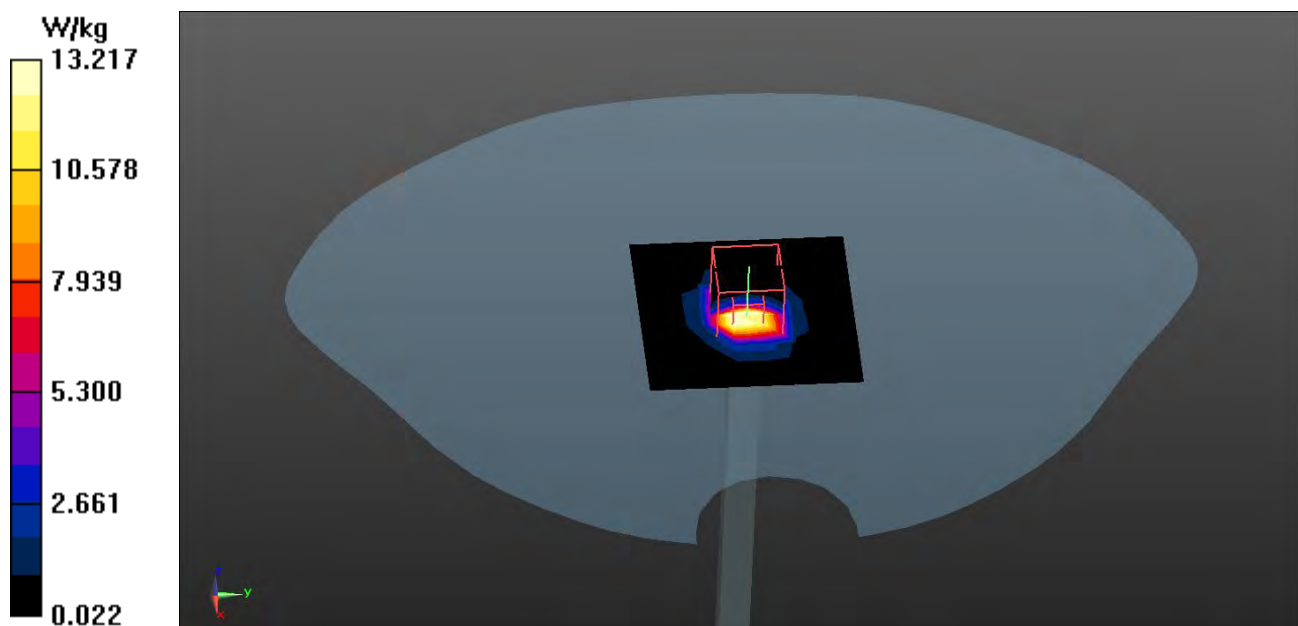
Configuration/5300MHz-Body/Zoom Scan (7x7x12), dist=1.4mm (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 71.89 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 33.9 W/kg

SAR(1 g) = 8.05 W/kg; SAR(10 g) = 2.16 W/kg

Maximum value of SAR (measured) = 22.6 W/kg



Test Laboratory: DEKRA

Date/Time: 2018/07/20

System Performance Check_5600MHz-Body**DUT: Dipole 5GHz; Type: D5GHzV2**

Communication System: UID 0, CW; Frequency: 5600 MHz;

Communication System PAR: 0 dB

Medium parameters used: $f = 5600$ MHz; $\sigma = 5.9$ S/m; $\epsilon_r = 48.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature (°C) : 21.8, Liquid Temperature (°C) : 20.7

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

- Probe: EX3DV4 - SN3698; ConvF(3.8, 3.8, 3.8); Calibrated: 2017/11/22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1207; Calibrated: 2017/11/16
- Phantom: SAM with left table; Type: SAM;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Configuration/5600MHz-Body/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 14.3 W/kg

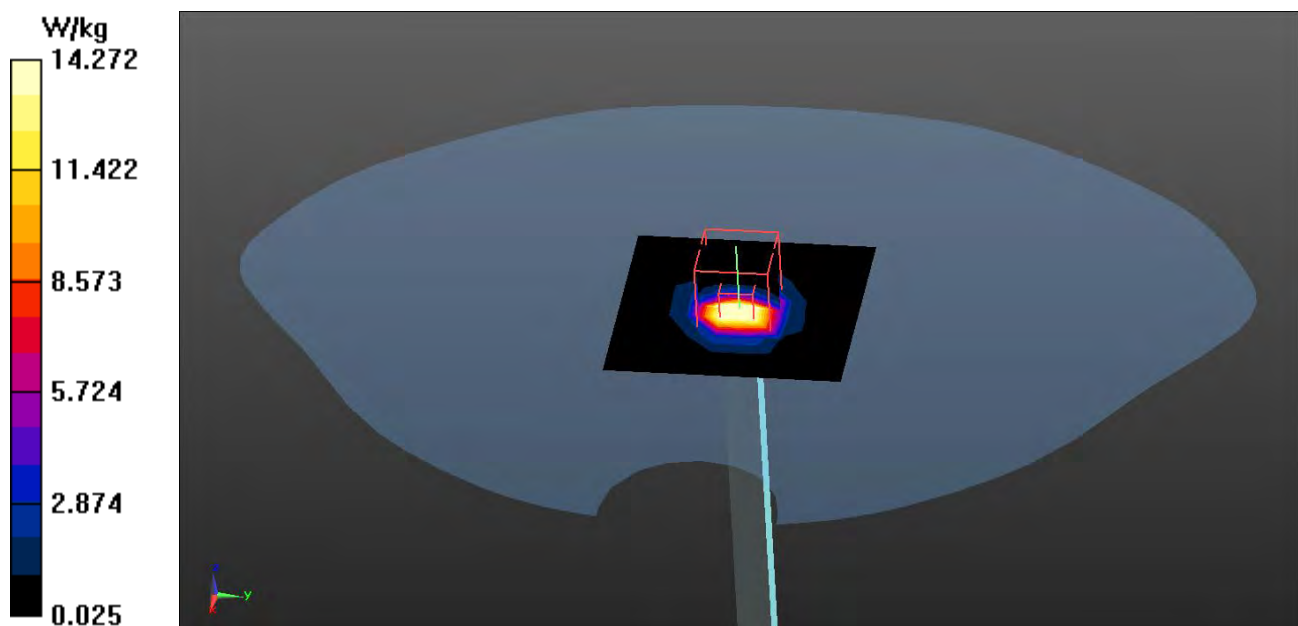
Configuration/5600MHz-Body/Zoom Scan (7x7x12), dist=1.4mm (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 73.45 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 36.1 W/kg

SAR(1 g) = 8.19 W/kg; SAR(10 g) = 2.17 W/kg

Maximum value of SAR (measured) = 25.5 W/kg



Test Laboratory: DEKRA

Date/Time: 2018/07/20

System Performance Check_5800MHz-Body**DUT: Dipole 5GHz; Type: D5GHzV2**

Communication System: UID 0, CW; Frequency: 5800 MHz;

Communication System PAR: 0 dB

Medium parameters used: $f = 5800$ MHz; $\sigma = 6.2$ S/m; $\epsilon_r = 47.73$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature (°C) : 21.8, Liquid Temperature (°C) : 20.7

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

- Probe: EX3DV4 - SN3698; ConvF(3.96, 3.96, 3.96); Calibrated: 2017/11/22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1207; Calibrated: 2017/11/16
- Phantom: SAM with left table; Type: SAM;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Configuration/5800MHz-Body/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 12.4 W/kg

Configuration/5800MHz-Body/Zoom Scan (7x7x12), dist=1.4mm (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 67.10 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 34.9 W/kg

SAR(1 g) = 7.69 W/kg; SAR(10 g) = 2.12 W/kg

Maximum value of SAR (measured) = 21.8 W/kg

