

**P13 LTE 13\_QPSK10M\_Right Cheek\_Ch23230\_1RB\_OS24****DUT: 180829W002**

Communication System: LTE; Frequency: 782 MHz; Duty Cycle: 1:1

Medium: HSL750\_1011 Medium parameters used:  $f = 782$  MHz;  $\sigma = 0.916$  S/m;  $\epsilon_r = 40.134$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.67, 9.67, 9.67); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (71x151x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.739 W/kg

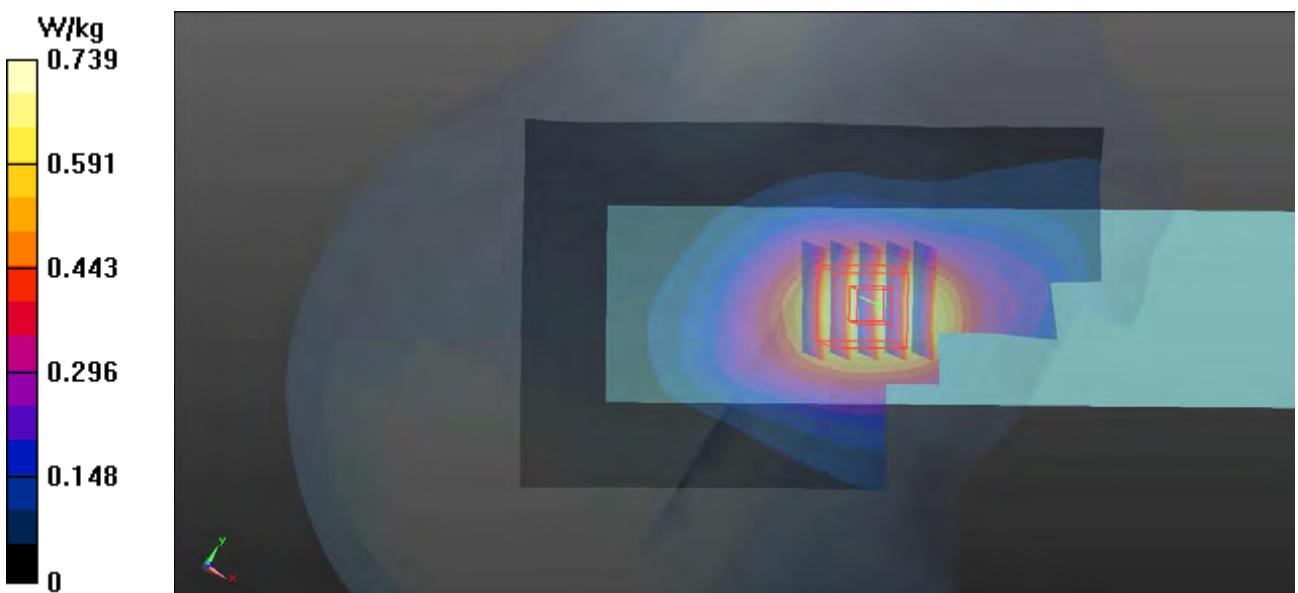
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.410 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 0.779 W/kg

**SAR(1 g) = 0.606 W/kg; SAR(10 g) = 0.441 W/kg**

Maximum value of SAR (measured) = 0.707 W/kg



**P14 LTE 14\_QPSK10M\_Right Cheek\_Ch23330\_1RB\_OS24****DUT: 180829W002**

Communication System: LTE; Frequency: 793 MHz; Duty Cycle: 1:1

Medium: HSL750\_1011 Medium parameters used:  $f = 793$  MHz;  $\sigma = 0.921$  S/m;  $\epsilon_r = 40.024$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.67, 9.67, 9.67); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (71x151x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

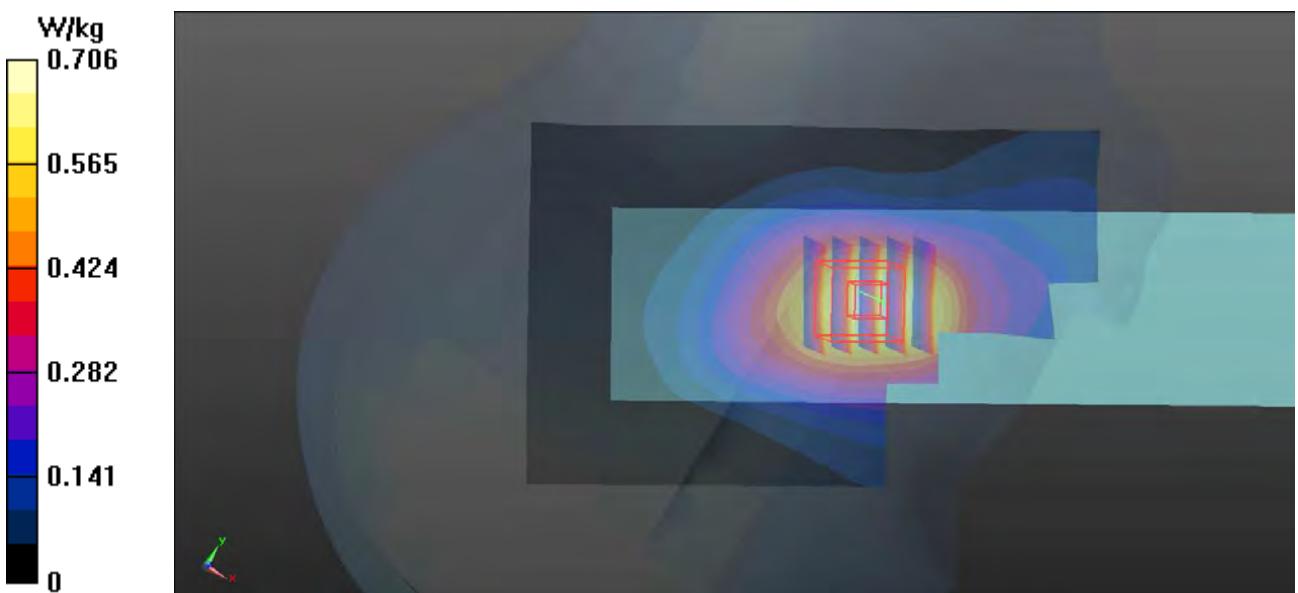
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.563 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.756 W/kg

**SAR(1 g) = 0.593 W/kg; SAR(10 g) = 0.436 W/kg**

Maximum value of SAR (measured) = 0.686 W/kg



**P15 LTE 25\_QPSK20M\_Left Cheek\_Ch26365\_1RB\_OS0****DUT: 180829W002**

Communication System: LTE; Frequency: 1882.5 MHz; Duty Cycle: 1:1

Medium: HSL1900\_1014 Medium parameters used:  $f = 1882.5 \text{ MHz}$ ;  $\sigma = 1.384 \text{ S/m}$ ;  $\epsilon_r = 39.616$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 22.9 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(8.12, 8.12, 8.12); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Front Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1695
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (81x151x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.260 W/kg

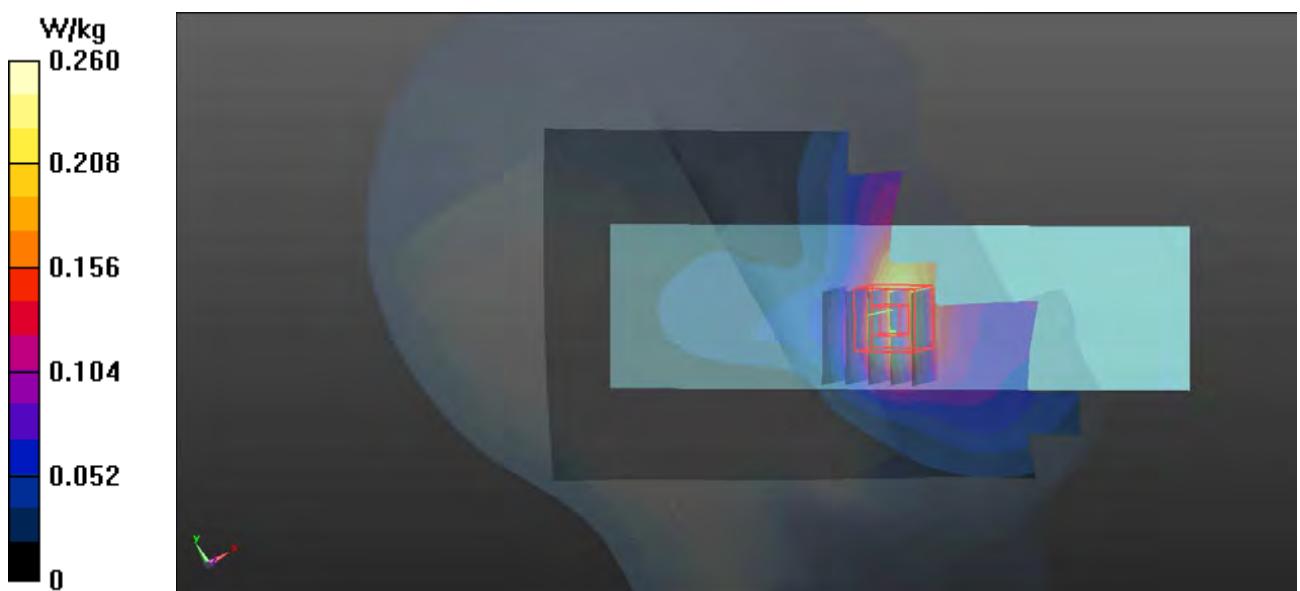
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 3.103 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.301 W/kg

**SAR(1 g) = 0.198 W/kg; SAR(10 g) = 0.126 W/kg**

Maximum value of SAR (measured) = 0.249 W/kg



**P16 LTE 26\_QPSK15M\_Right Cheek\_Ch26865\_1RB\_OS37****DUT: 180829W002**

Communication System: LTE; Frequency: 831.5 MHz; Duty Cycle: 1:1

Medium: HSL835\_1012 Medium parameters used:  $f = 831.5 \text{ MHz}$ ;  $\sigma = 0.886 \text{ S/m}$ ;  $\epsilon_r = 42.316$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.2 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.69, 9.69, 9.69); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (71x151x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.04 W/kg

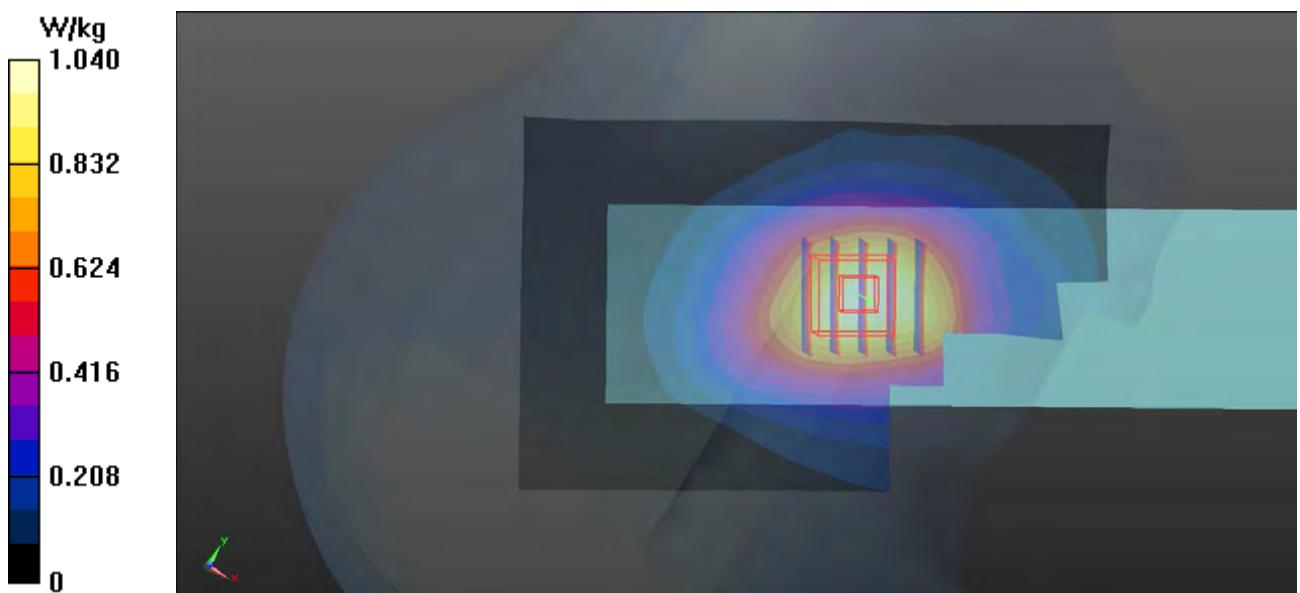
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.601 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.17 W/kg

**SAR(1 g) = 0.901 W/kg; SAR(10 g) = 0.652 W/kg**

Maximum value of SAR (measured) = 1.04 W/kg



**P17 LTE 38\_QPSK20M\_Right Cheek\_Ch37850\_1RB\_OS50****DUT: 180829W002**

Communication System: LTE; Frequency: 2580 MHz; Duty Cycle: 1:1.58

Medium: HSL2600\_1023 Medium parameters used:  $f = 2580 \text{ MHz}$ ;  $\sigma = 2.017 \text{ S/m}$ ;  $\epsilon_r = 39.008$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.11, 7.11, 7.11); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Front Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1695
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (91x191x1):** Interpolated grid:  $dx=1.200 \text{ mm}$ ,  $dy=1.200 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.598 W/kg

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

Reference Value = 3.052 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 1.03 W/kg

**SAR(1 g) = 0.471 W/kg; SAR(10 g) = 0.193 W/kg**

Maximum value of SAR (measured) = 0.615 W/kg



**P18 LTE 41\_QPSK20M\_Right Cheek\_Ch41490\_1RB\_OS50****DUT: 180829W002**

Communication System: LTE; Frequency: 2680 MHz; Duty Cycle: 1:1.58

Medium: HSL2600\_1023 Medium parameters used:  $f = 2680 \text{ MHz}$ ;  $\sigma = 2.129 \text{ S/m}$ ;  $\epsilon_r = 38.628$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.11, 7.11, 7.11); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Front Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1695
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (91x191x1):** Interpolated grid:  $dx=1.200 \text{ mm}$ ,  $dy=1.200 \text{ mm}$ 

Maximum value of SAR (interpolated) = 1.66 W/kg

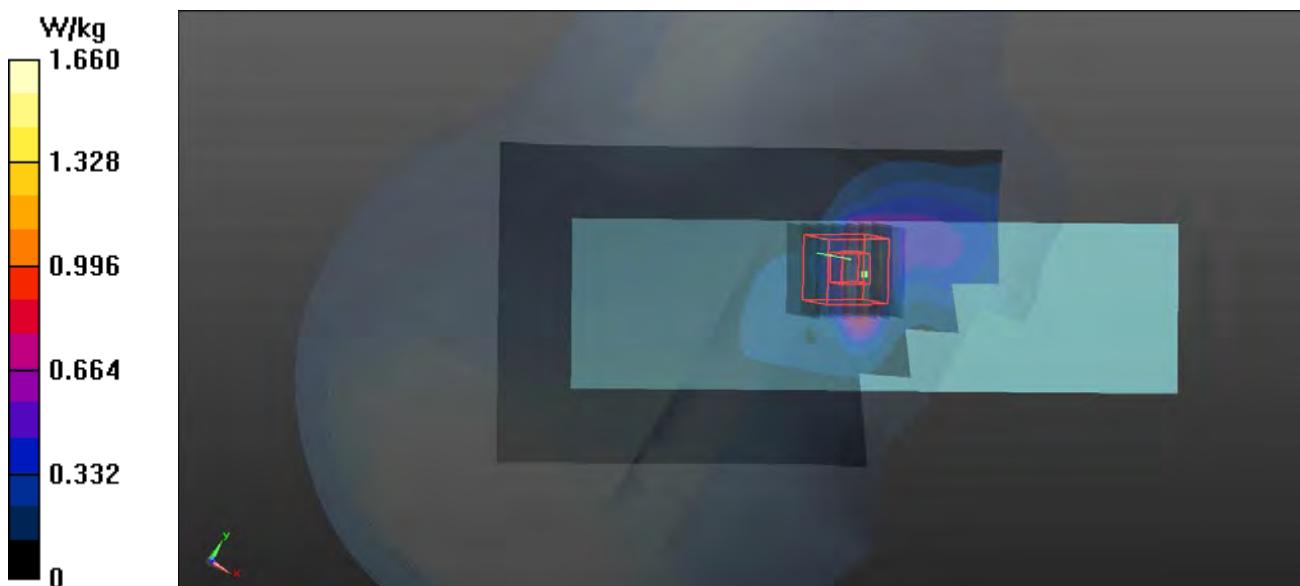
**- Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 3.053 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 2.56 W/kg

**SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.465 W/kg**

Maximum value of SAR (measured) = 1.49 W/kg



**P19 LTE 66\_QPSK20M\_Right Cheek\_Ch132572\_1RB\_OS0****DUT: 180829W002**

Communication System: LTE; Frequency: 1770 MHz; Duty Cycle: 1:1

Medium: HSL1750\_1013 Medium parameters used:  $f = 1770 \text{ MHz}$ ;  $\sigma = 1.367 \text{ S/m}$ ;  $\epsilon_r = 39.429$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 22.8 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(8.39, 8.39, 8.39); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Front Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1695
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (81x151x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.421 W/kg

**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 1.482 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.457 W/kg

**SAR(1 g) = 0.306 W/kg; SAR(10 g) = 0.205 W/kg**

Maximum value of SAR (measured) = 0.373 W/kg



**P20 802.11b\_Right Cheek\_Ch1****DUT: 180829W002**

Communication System: 802.11b; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: HSL2450\_1026 Medium parameters used:  $f = 2412 \text{ MHz}$ ;  $\sigma = 1.804 \text{ S/m}$ ;  $\epsilon_r = 39.561$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.19, 7.19, 7.19); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Front Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1695
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (101x191x1):** Interpolated grid:  $dx=1.200 \text{ mm}$ ,  $dy=1.200 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.0299 W/kg

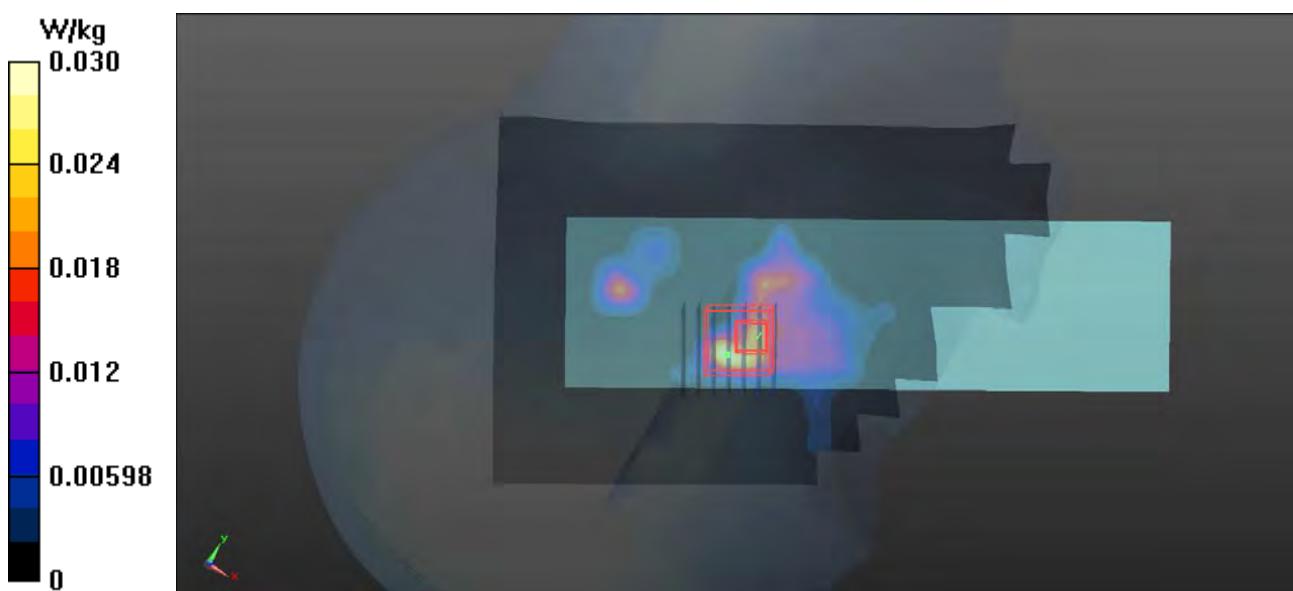
**- Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 1.253 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.0280 W/kg

**SAR(1 g) = 0.014 W/kg; SAR(10 g) = 0.00714 W/kg**

Maximum value of SAR (measured) = 0.0203 W/kg



**P21 802.11a\_Left Cheek\_Ch40****DUT: 180829W002**

Communication System: 802.11a; Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: HSL5G\_1018 Medium parameters used:  $f = 5200 \text{ MHz}$ ;  $\sigma = 4.642 \text{ S/m}$ ;  $\epsilon_r = 35.413$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(4.9, 4.9, 4.9); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (121x221x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.255 W/kg

**- Zoom Scan (7x7x12)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=2\text{mm}$ 

Reference Value = 0.4460 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.444 W/kg

**SAR(1 g) = 0.141 W/kg; SAR(10 g) = 0.056 W/kg**

Maximum value of SAR (measured) = 0.250 W/kg



**P22 802.11a\_Left Cheek\_Ch140****DUT: 180829W002**

Communication System: 802.11a; Frequency: 5700 MHz; Duty Cycle: 1:1

Medium: HSL5G\_1018 Medium parameters used:  $f = 5700 \text{ MHz}$ ;  $\sigma = 5.146 \text{ S/m}$ ;  $\epsilon_r = 34.682$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(4.56, 4.56, 4.56); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (121x221x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.332 W/kg

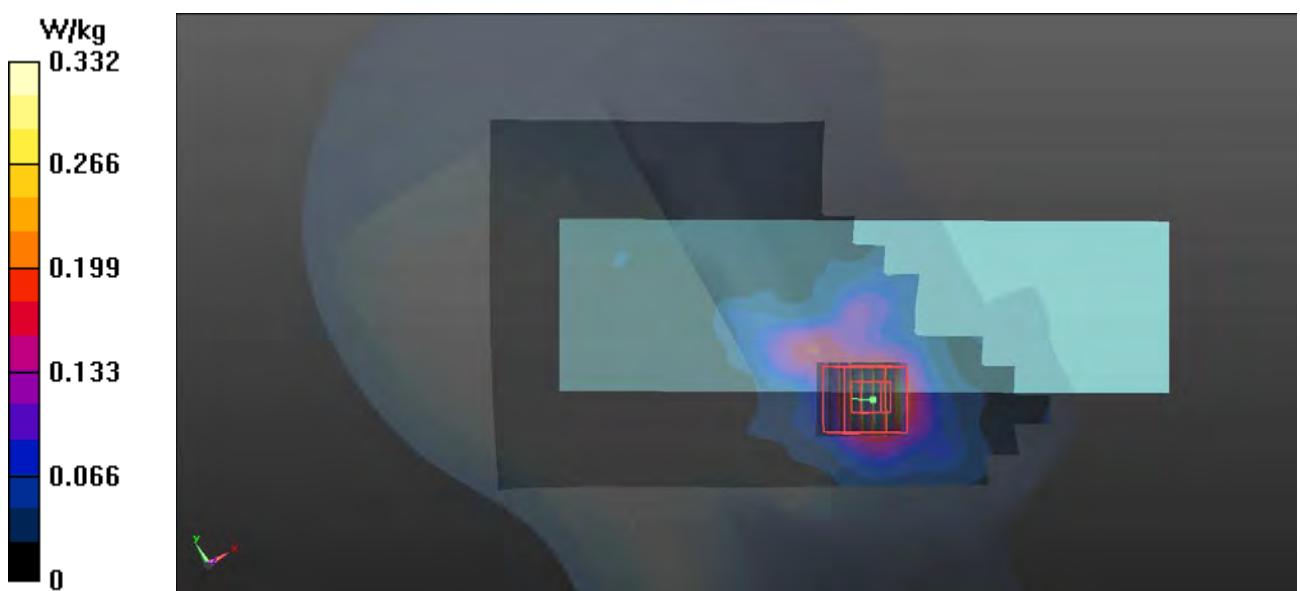
**- Zoom Scan (7x7x12)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=2\text{mm}$ 

Reference Value = 0.6770 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.851 W/kg

**SAR(1 g) = 0.204 W/kg; SAR(10 g) = 0.076 W/kg**

Maximum value of SAR (measured) = 0.355 W/kg



**P23 802.11a\_Left Cheek\_Ch157****DUT: 180829W002**

Communication System: 802.11a; Frequency: 5785 MHz; Duty Cycle: 1:1

Medium: HSL5G\_1018 Medium parameters used:  $f = 5785 \text{ MHz}$ ;  $\sigma = 5.229 \text{ S/m}$ ;  $\epsilon_r = 34.562$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(4.6, 4.6, 4.6); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (121x221x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.291 W/kg

**- Zoom Scan (7x7x12)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=2\text{mm}$ 

Reference Value = 0.7690 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.551 W/kg

**SAR(1 g) = 0.150 W/kg; SAR(10 g) = 0.062 W/kg**

Maximum value of SAR (measured) = 0.277 W/kg

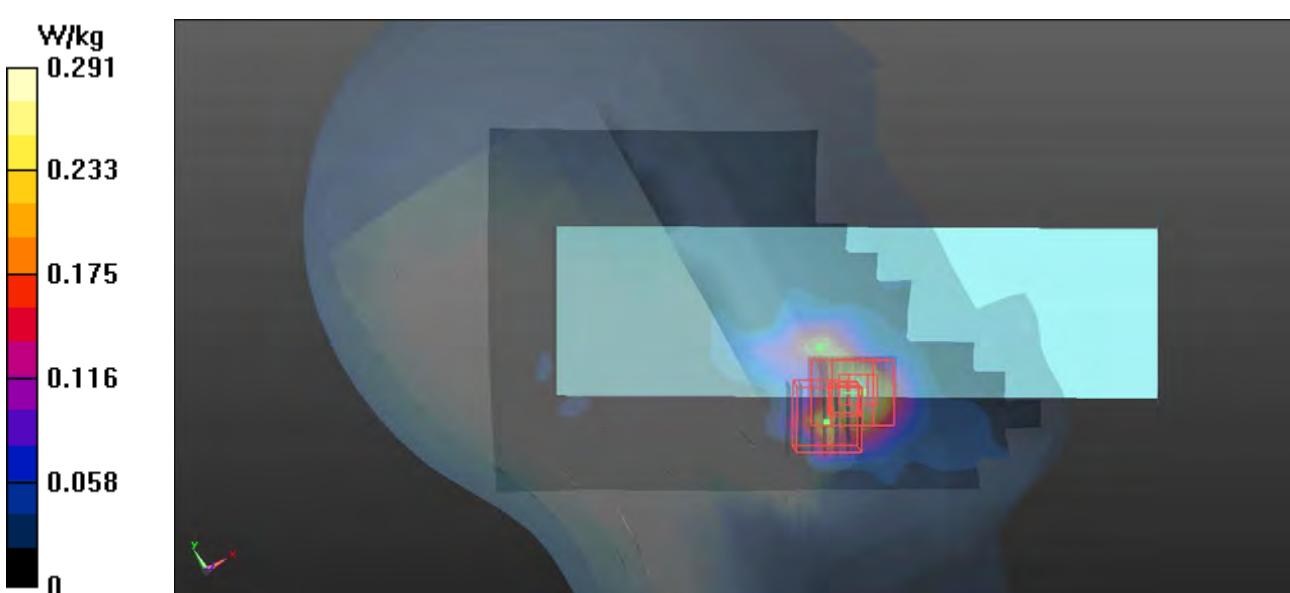
**- Zoom Scan (7x7x12)/Cube 1:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=2\text{mm}$ 

Reference Value = 0.7690 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.519 W/kg

**SAR(1 g) = 0.137 W/kg; SAR(10 g) = 0.041 W/kg**

Maximum value of SAR (measured) = 0.275 W/kg



**P24 GSM850\_GPRS11\_Rear Face\_1.5cm\_Ch251****DUT: 180829W002**

Communication System: GPRS11; Frequency: 848.8 MHz; Duty Cycle: 1:2.67

Medium: MSL835\_0927 Medium parameters used:  $f = 849$  MHz;  $\sigma = 1.006$  S/m;  $\epsilon_r = 55.471$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.49, 9.49, 9.49); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.608 W/kg

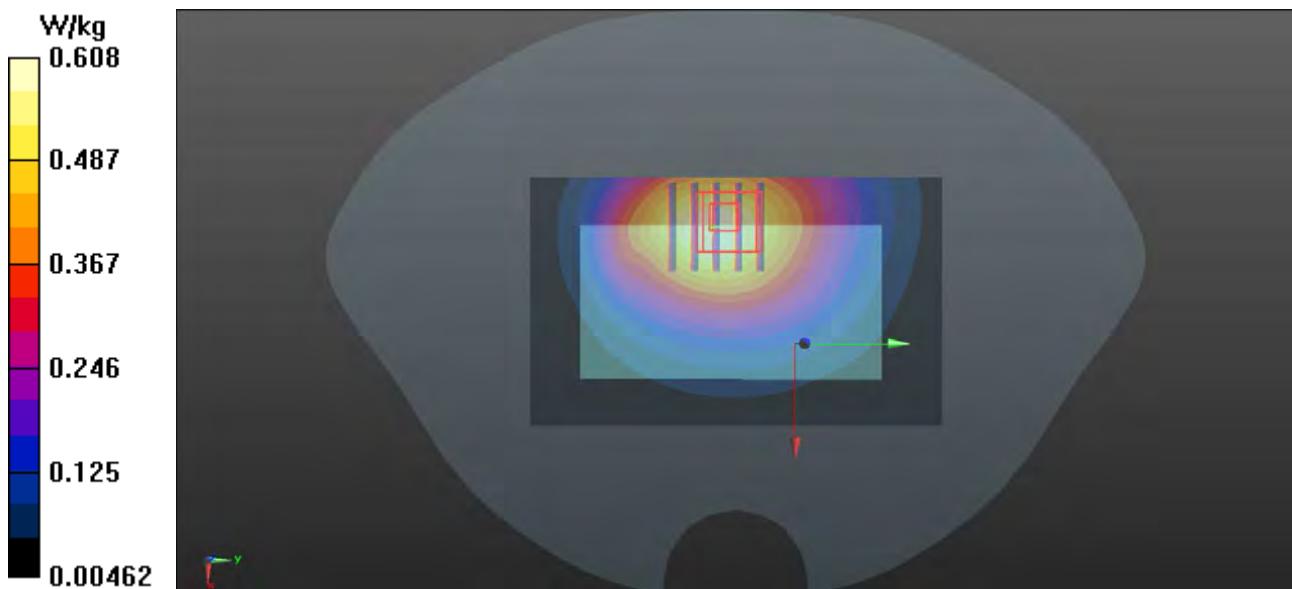
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.54 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.30 W/kg

**SAR(1 g) = 0.482 W/kg; SAR(10 g) = 0.339 W/kg**

Maximum value of SAR (measured) = 0.616 W/kg



**P25 GSM1900\_GPRS12\_Rear Face\_1.5cm\_Ch661****DUT: 180829W002**

Communication System: GPRS12; Frequency: 1880 MHz; Duty Cycle: 1:2

Medium: MSL1900\_1008 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.539 \text{ S/m}$ ;  $\epsilon_r = 54.827$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 22.8 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.61, 7.61, 7.61); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Front Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1695
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x91x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.843 W/kg

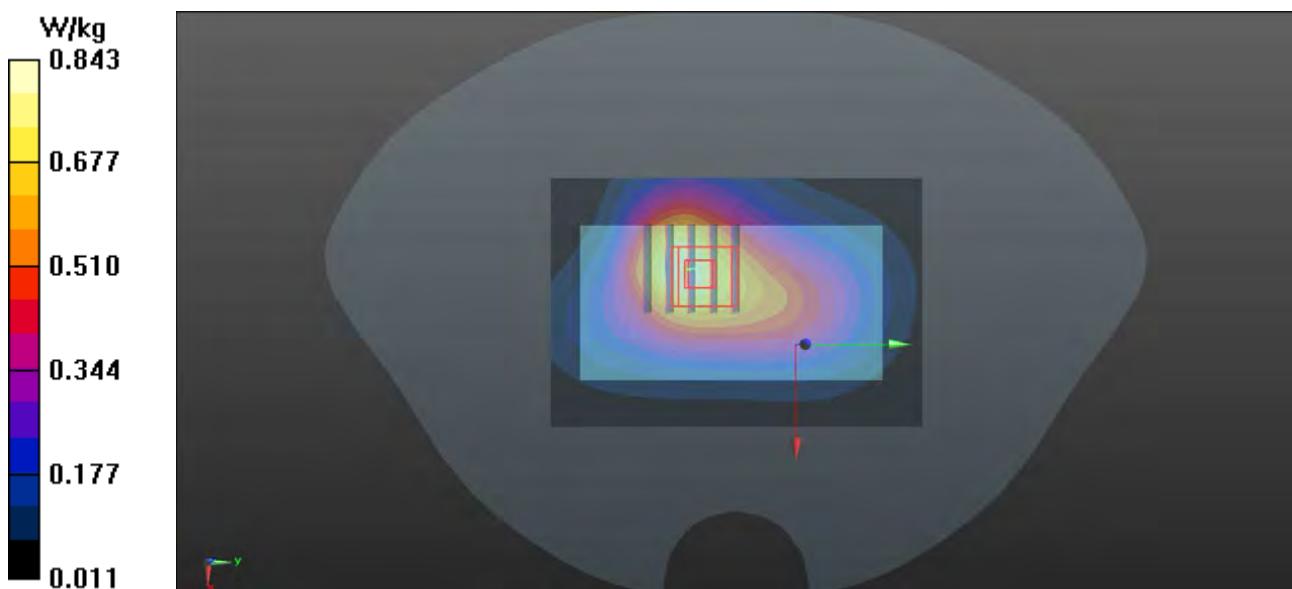
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 18.28 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 1.15 W/kg

**SAR(1 g) = 0.575 W/kg; SAR(10 g) = 0.362 W/kg**

Maximum value of SAR (measured) = 0.800 W/kg



**P26 WCDMA II\_RMC12.2K\_Rear Face\_1.5cm\_Ch9538****DUT: 180829W002**

Communication System: WCDMA; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium: MSL1900\_1008 Medium parameters used:  $f = 1908 \text{ MHz}$ ;  $\sigma = 1.568 \text{ S/m}$ ;  $\epsilon_r = 54.776$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 22.8 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.61, 7.61, 7.61); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Front Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1695
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x91x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.700 W/kg

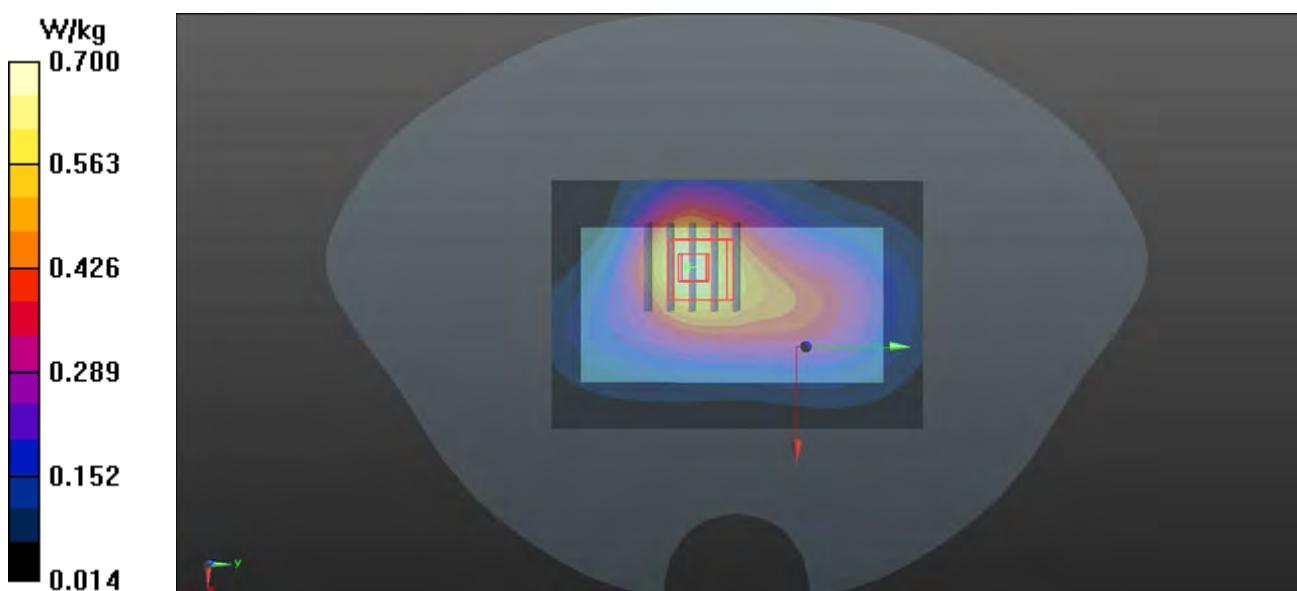
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 16.11 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.780 W/kg

**SAR(1 g) = 0.488 W/kg; SAR(10 g) = 0.306 W/kg**

Maximum value of SAR (measured) = 0.675 W/kg



**P27 WCDMA IV\_RMC12.2K\_Rear Face\_1.5cm\_Ch1513****DUT: 180829W002**

Communication System: WCDMA; Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium: MSL1750\_1010 Medium parameters used:  $f = 1753$  MHz;  $\sigma = 1.442$  S/m;  $\epsilon_r = 54.042$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.9 °C; Liquid Temperature : 21.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.8, 7.8, 7.8); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Front Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1695
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.786 W/kg

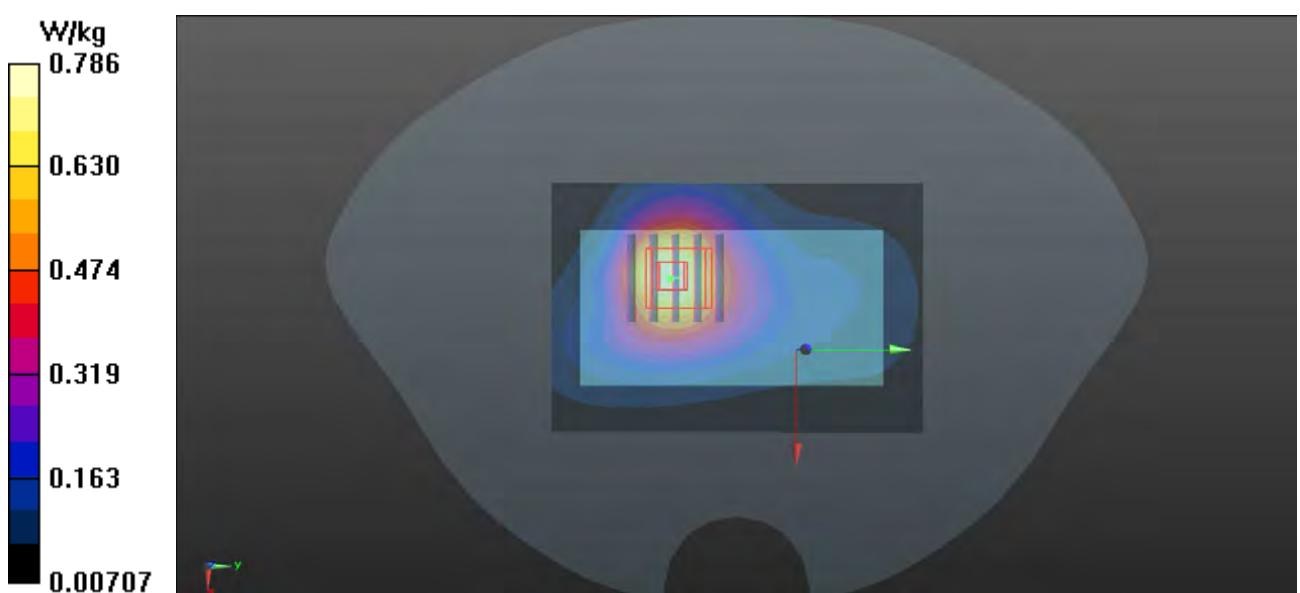
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.19 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.873 W/kg

**SAR(1 g) = 0.563 W/kg; SAR(10 g) = 0.350 W/kg**

Maximum value of SAR (measured) = 0.762 W/kg



**P28 WCDMA V\_RMC12.2K\_Rear Face\_1.5cm\_Ch4132****DUT: 180829W002**

Communication System: WCDMA; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: MSL835\_0927 Medium parameters used:  $f = 826.4 \text{ MHz}$ ;  $\sigma = 0.984 \text{ S/m}$ ;  $\epsilon_r = 55.703$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.49, 9.49, 9.49); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.987 W/kg

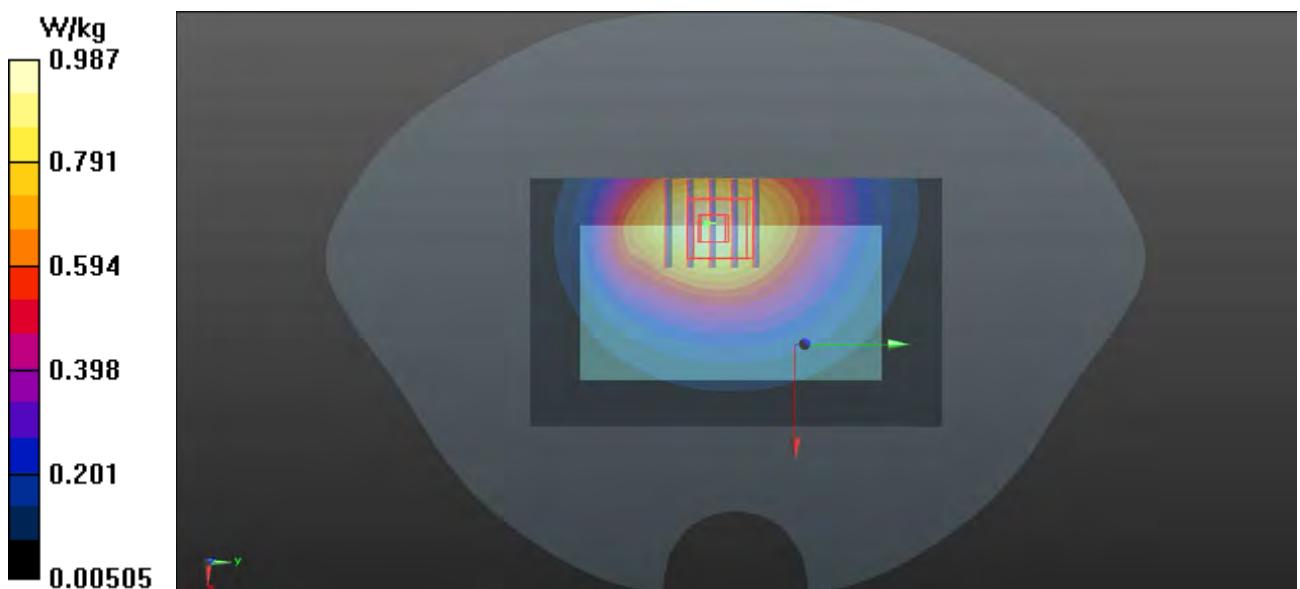
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.77 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 1.10 W/kg

**SAR(1 g) = 0.806 W/kg; SAR(10 g) = 0.578 W/kg**

Maximum value of SAR (measured) = 1.01 W/kg



**P29 CDMA BC0\_RC3+SO32\_Rear Face\_1.5cm\_Ch384****DUT: 180829W002**

Communication System: CDMA2000; Frequency: 835.52 MHz; Duty Cycle: 1:1

Medium: MSL835\_0927 Medium parameters used:  $f = 836 \text{ MHz}$ ;  $\sigma = 0.993 \text{ S/m}$ ;  $\epsilon_r = 55.603$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.49, 9.49, 9.49); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

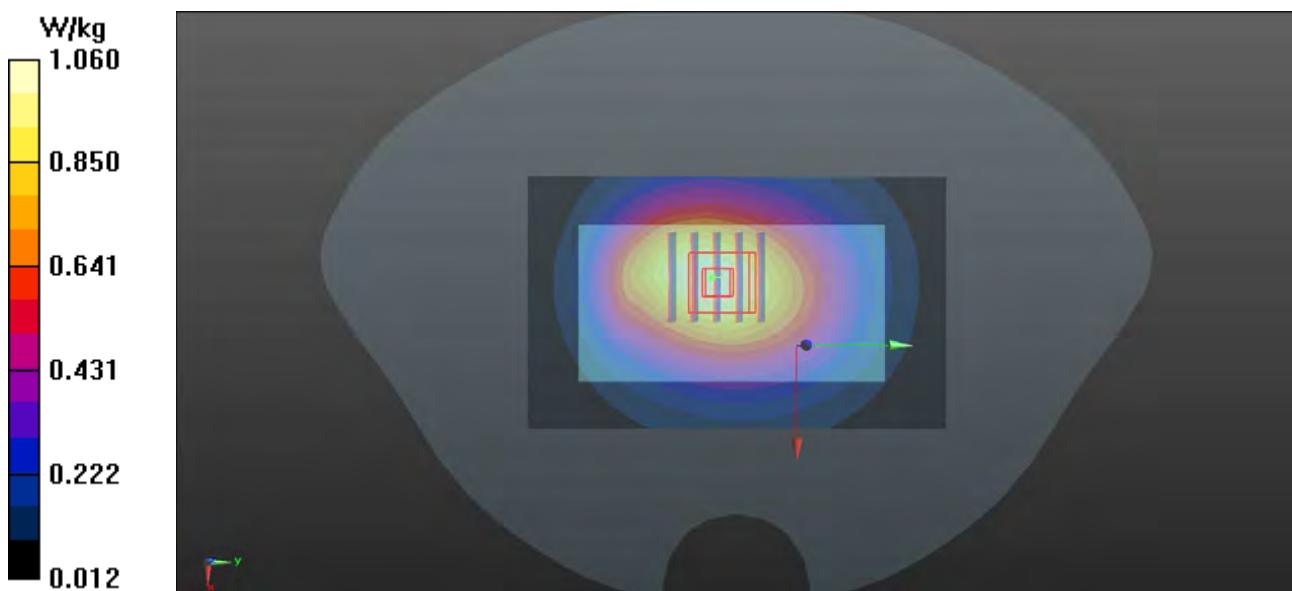
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.59 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 1.17 W/kg

**SAR(1 g) = 0.860 W/kg; SAR(10 g) = 0.619 W/kg**

Maximum value of SAR (measured) = 1.07 W/kg



**P30 CDMA BC1\_RC3+SO32\_Rear Face\_1.5cm\_Ch600****DUT: 180829W002**

Communication System: CDMA2000; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: MSL1900\_1008 Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.539$  S/m;  $\epsilon_r = 54.827$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.8 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.61, 7.61, 7.61); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Front Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1695
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.15 W/kg

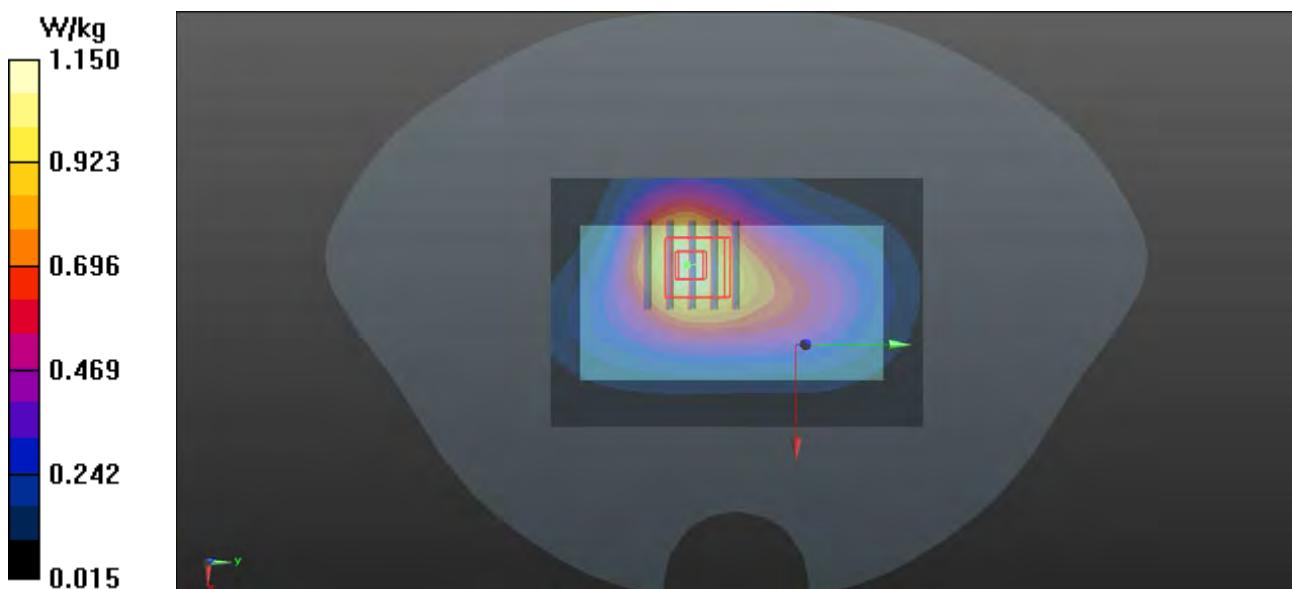
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.70 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.27 W/kg

**SAR(1 g) = 0.810 W/kg; SAR(10 g) = 0.513 W/kg**

Maximum value of SAR (measured) = 1.11 W/kg



**P31 CDMA BC10\_RC3+SO32\_Rear Face\_1.5cm\_Ch684****DUT: 180829W002**

Communication System: CDMA2000; Frequency: 823.1 MHz; Duty Cycle: 1:1

Medium: MSL835\_0927 Medium parameters used:  $f = 823.1 \text{ MHz}$ ;  $\sigma = 0.98 \text{ S/m}$ ;  $\epsilon_r = 55.736$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.49, 9.49, 9.49); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.09 W/kg

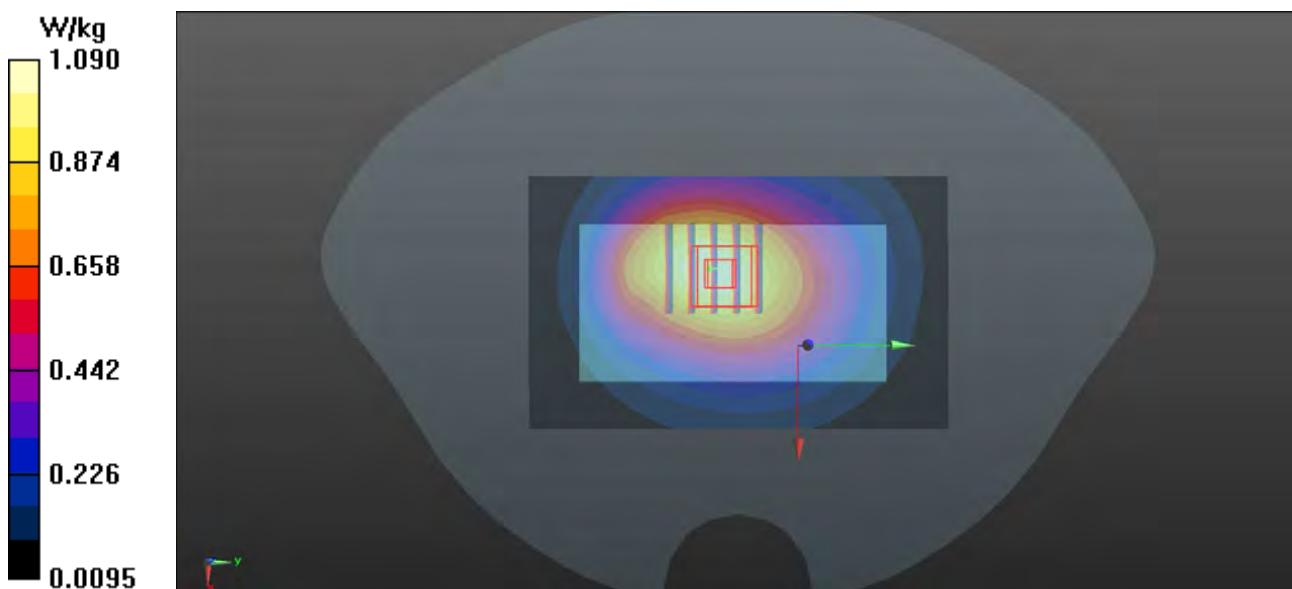
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.98 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.21 W/kg

**SAR(1 g) = 0.888 W/kg; SAR(10 g) = 0.641 W/kg**

Maximum value of SAR (measured) = 1.10 W/kg



**P32 LTE 2\_QPSK20M\_Rear Face\_1.5cm\_Ch18900\_1RB\_OS0****DUT: 180829W002**

Communication System: LTE; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: MSL1900\_1008 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.539 \text{ S/m}$ ;  $\epsilon_r = 54.827$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 22.8 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.61, 7.61, 7.61); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Front Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1695
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x91x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.844 W/kg

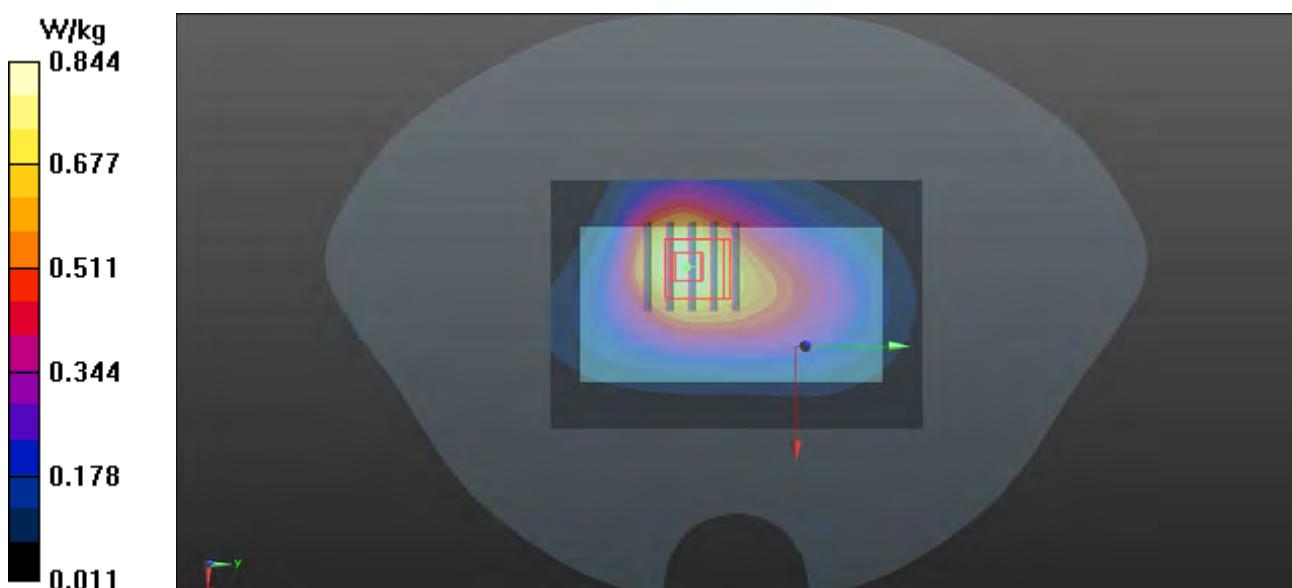
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 17.53 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.928 W/kg

**SAR(1 g) = 0.590 W/kg; SAR(10 g) = 0.377 W/kg**

Maximum value of SAR (measured) = 0.805 W/kg



**P33 LTE 4\_QPSK20M\_Rear Face\_1.5cm\_Ch20300\_1RB\_OS0****DUT: 180829W002**

Communication System: LTE; Frequency: 1745 MHz; Duty Cycle: 1:1

Medium: MSL1750\_1010 Medium parameters used:  $f = 1745 \text{ MHz}$ ;  $\sigma = 1.435 \text{ S/m}$ ;  $\epsilon_r = 54.063$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 22.9 °C; Liquid Temperature : 21.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(8.39, 8.39, 8.39); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Front Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1695
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x91x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.774 W/kg

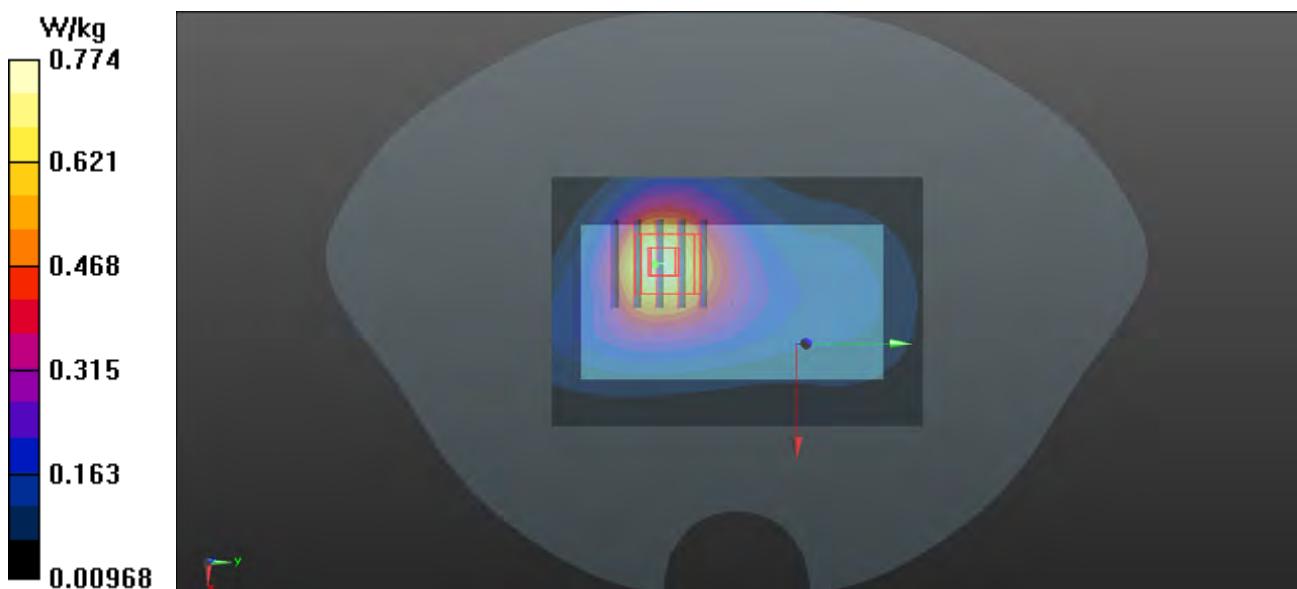
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 13.82 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.832 W/kg

**SAR(1 g) = 0.533 W/kg; SAR(10 g) = 0.334 W/kg**

Maximum value of SAR (measured) = 0.715 W/kg



**P34 LTE 5\_QPSK10M\_Rear Face\_1.5cm\_Ch20525\_1RB\_OS24****DUT: 180829W002**

Communication System: LTE; Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium: MSL835\_0927 Medium parameters used:  $f = 836.5$  MHz;  $\sigma = 0.993$  S/m;  $\epsilon_r = 55.598$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.49, 9.49, 9.49); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.797 W/kg

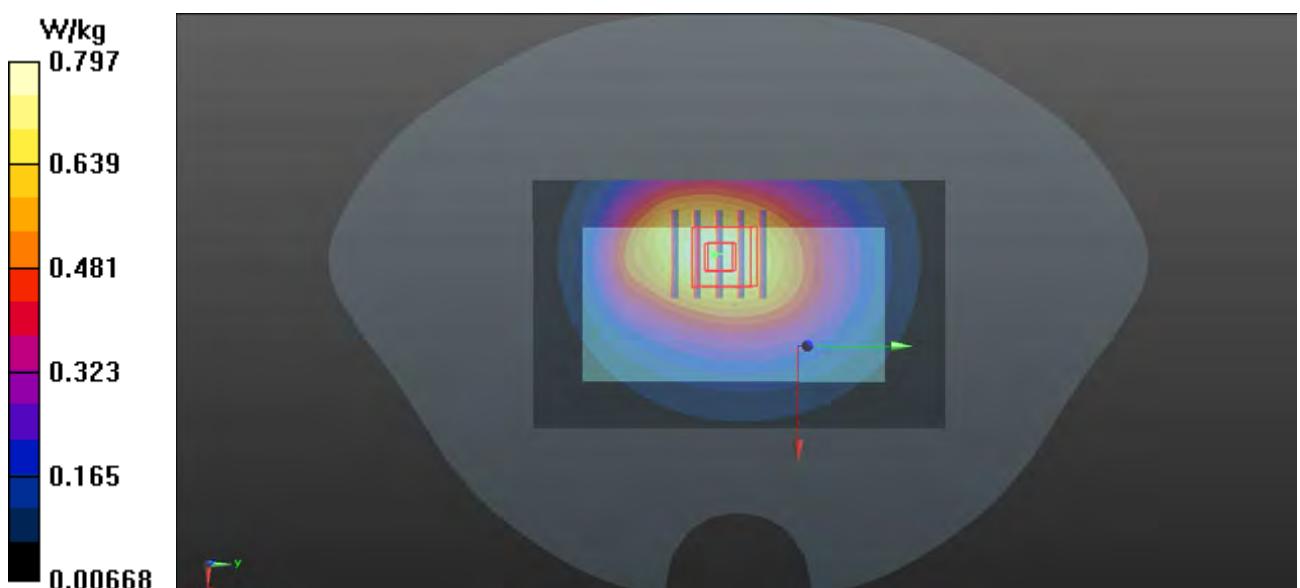
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 22.73 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.894 W/kg

**SAR(1 g) = 0.654 W/kg; SAR(10 g) = 0.466 W/kg**

Maximum value of SAR (measured) = 0.817 W/kg



**P35 LTE 12\_QPSK10M\_Rear Face\_1.5cm\_Ch23130\_1RB\_OS24****DUT: 180829W002**

Communication System: LTE; Frequency: 711 MHz; Duty Cycle: 1:1

Medium: MSL750\_0926 Medium parameters used:  $f = 711 \text{ MHz}$ ;  $\sigma = 0.943 \text{ S/m}$ ;  $\epsilon_r = 56.462$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.67, 9.67, 9.67); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x101x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.662 W/kg

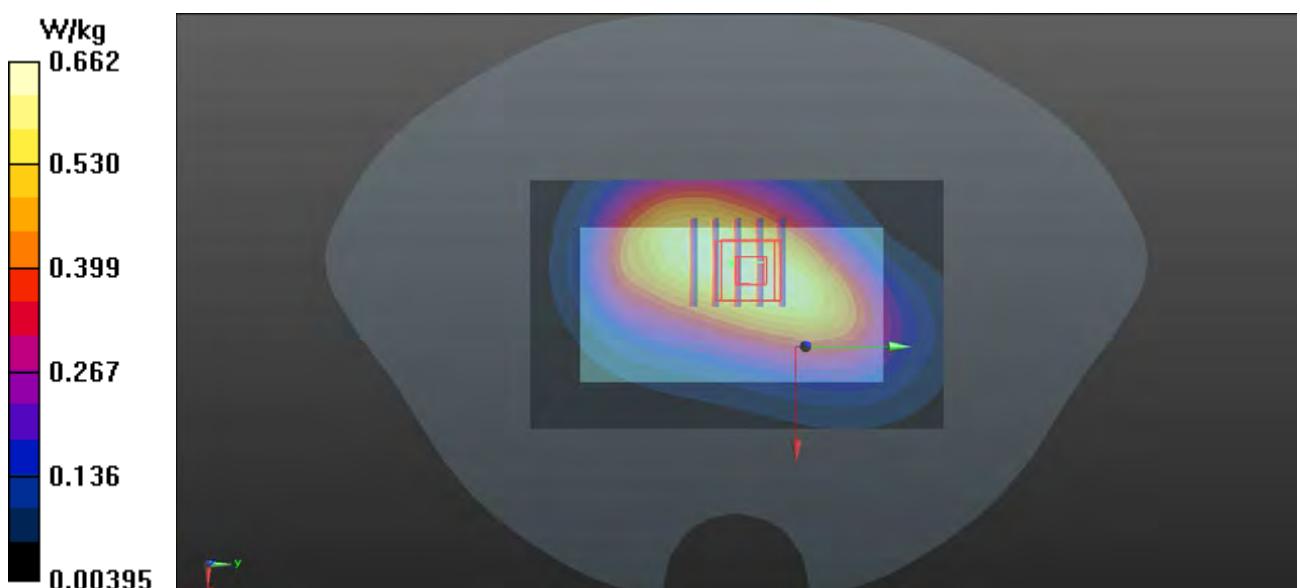
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 21.91 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.716 W/kg

**SAR(1 g) = 0.538 W/kg; SAR(10 g) = 0.402 W/kg**

Maximum value of SAR (measured) = 0.651 W/kg



**P36 LTE 13\_QPSK10M\_Rear Face\_1.5cm\_Ch23230\_1RB\_OS24****DUT: 180829W002**

Communication System: LTE; Frequency: 782 MHz; Duty Cycle: 1:1

Medium: MSL750\_0926 Medium parameters used:  $f = 782 \text{ MHz}$ ;  $\sigma = 1.001 \text{ S/m}$ ;  $\epsilon_r = 55.856$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.67, 9.67, 9.67); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

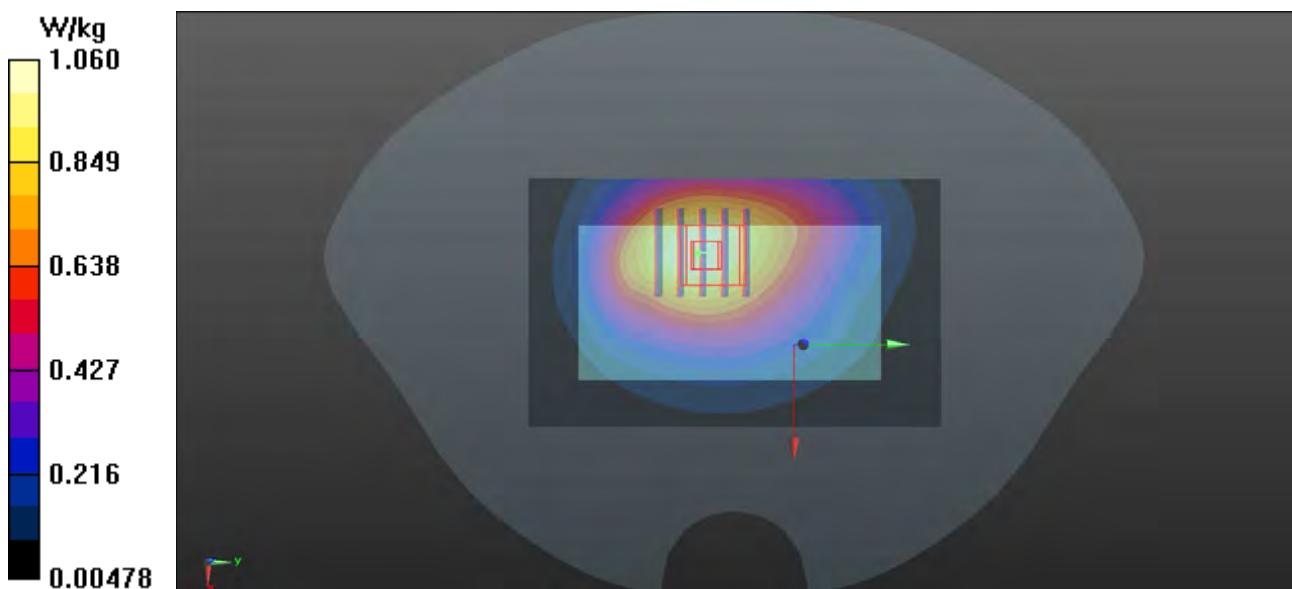
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.03 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.16 W/kg

**SAR(1 g) = 0.846 W/kg; SAR(10 g) = 0.606 W/kg**

Maximum value of SAR (measured) = 1.05 W/kg



**P37 LTE 14\_QPSK10M\_Rear Face\_1.5cm\_Ch23330\_1RB\_OS24****DUT: 180829W002**

Communication System: LTE; Frequency: 793 MHz; Duty Cycle: 1:1

Medium: MSL750\_0926 Medium parameters used:  $f = 793 \text{ MHz}$ ;  $\sigma = 1.009 \text{ S/m}$ ;  $\epsilon_r = 55.746$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.67, 9.67, 9.67); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x101x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.884 W/kg

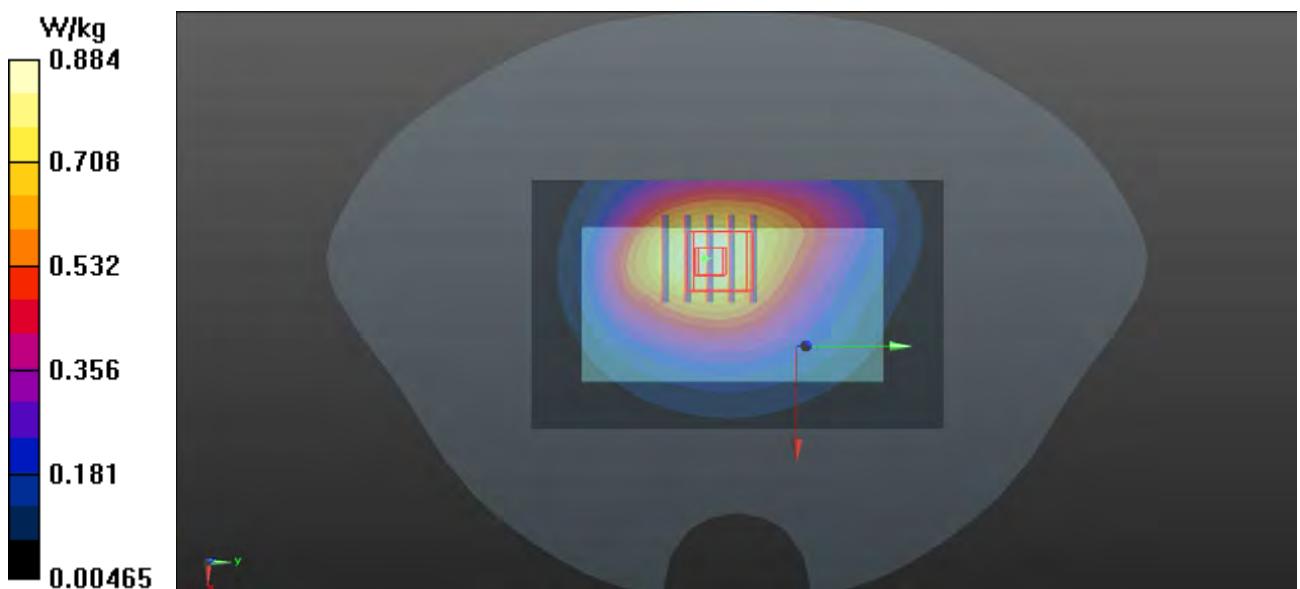
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 23.33 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.960 W/kg

**SAR(1 g) = 0.702 W/kg; SAR(10 g) = 0.506 W/kg**

Maximum value of SAR (measured) = 0.878 W/kg



**P38 LTE 25\_QPSK20M\_Rear Face\_1.5cm\_Ch26365\_1RB\_OS0****DUT: 180829W002**

Communication System: LTE; Frequency: 1882.5 MHz; Duty Cycle: 1:1

Medium: MSL1900\_1008 Medium parameters used:  $f = 1882.5$  MHz;  $\sigma = 1.542$  S/m;  $\epsilon_r = 54.82$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.8 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.61, 7.61, 7.61); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Front Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1695
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.877 W/kg

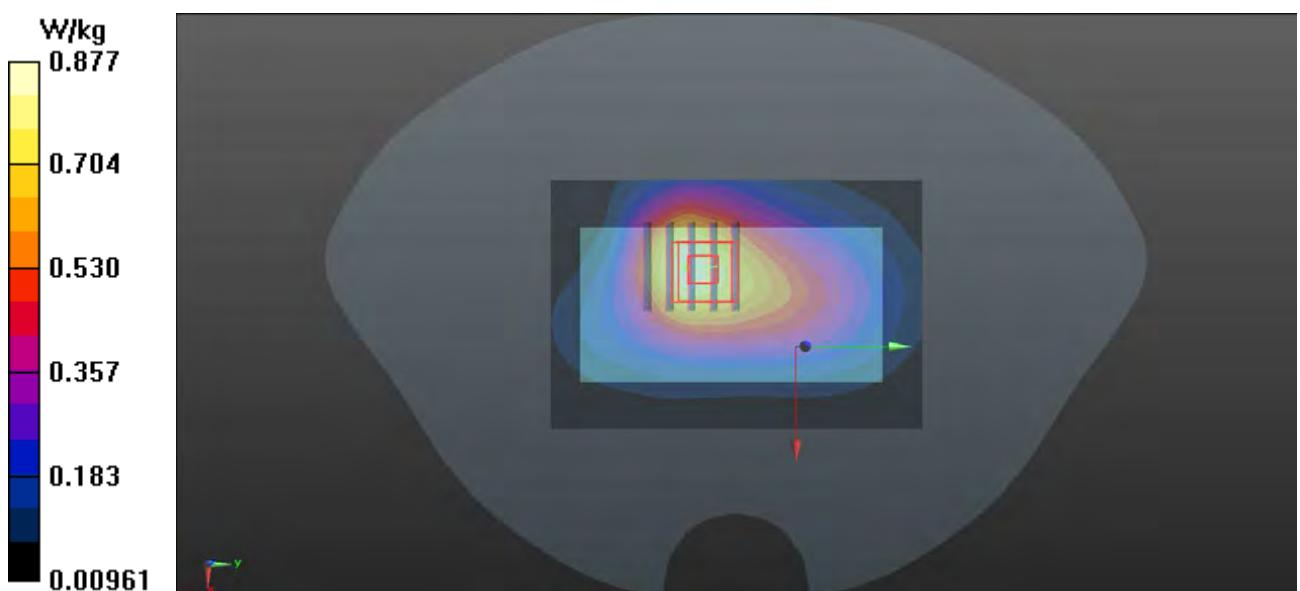
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.22 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.970 W/kg

**SAR(1 g) = 0.612 W/kg; SAR(10 g) = 0.394 W/kg**

Maximum value of SAR (measured) = 0.830 W/kg



**P39 LTE 26\_QPSK15M\_Rear Face\_1.5cm\_Ch26865\_1RB\_OS37****DUT: 180829W002**

Communication System: LTE; Frequency: 831.5 MHz; Duty Cycle: 1:1

Medium: MSL835\_0927 Medium parameters used:  $f = 831.5 \text{ MHz}$ ;  $\sigma = 0.988 \text{ S/m}$ ;  $\epsilon_r = 55.65$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.49, 9.49, 9.49); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x101x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.862 W/kg

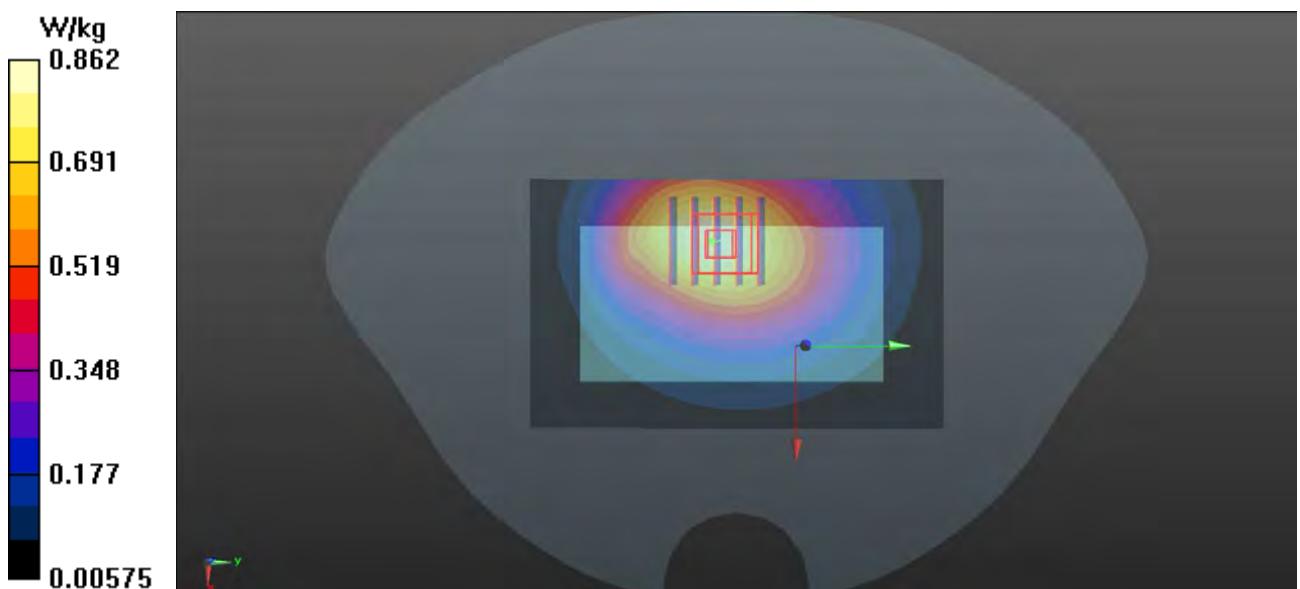
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 21.18 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.933 W/kg

**SAR(1 g) = 0.694 W/kg; SAR(10 g) = 0.500 W/kg**

Maximum value of SAR (measured) = 0.853 W/kg



**P40 LTE 38\_QPSK20M\_Rear Face\_1.5cm\_Ch37850\_1RB\_OS50****DUT: 180829W002**

Communication System: LTE; Frequency: 2580 MHz; Duty Cycle: 1:1.58

Medium: MSL2600\_1025 Medium parameters used:  $f = 2580 \text{ MHz}$ ;  $\sigma = 2.07 \text{ S/m}$ ;  $\epsilon_r = 50.804$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.2 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.28, 7.28, 7.28); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (81x131x1):** Interpolated grid:  $dx=1.200 \text{ mm}$ ,  $dy=1.200 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.391 W/kg

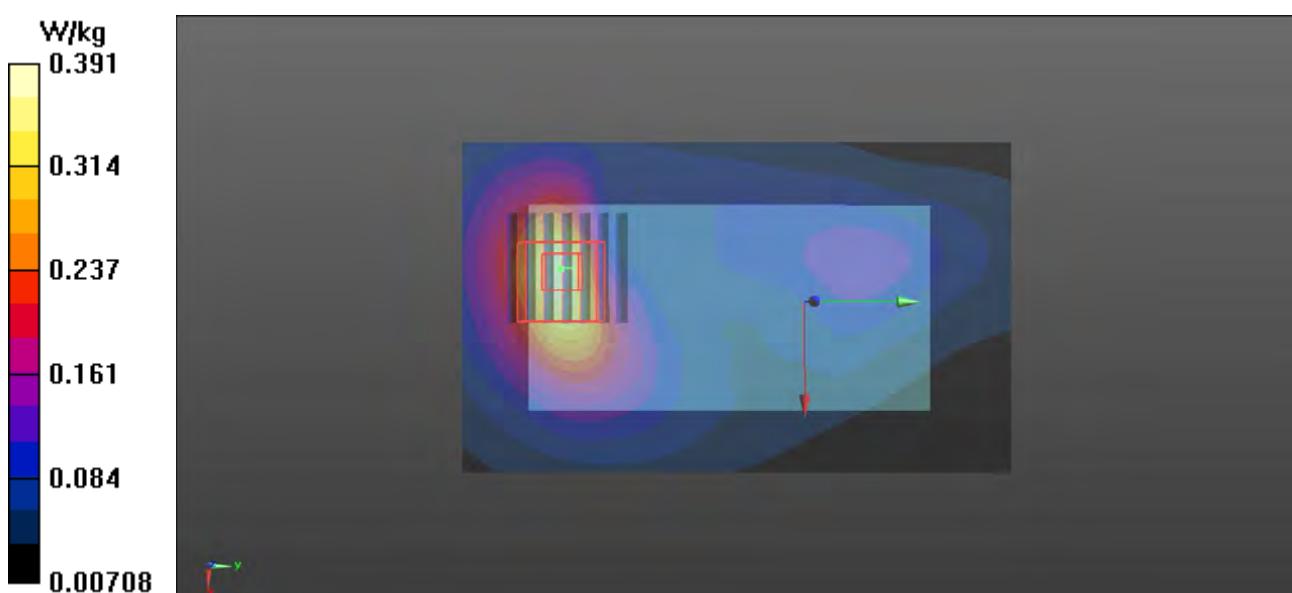
**- Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 4.567 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 0.452 W/kg

**SAR(1 g) = 0.235 W/kg; SAR(10 g) = 0.126 W/kg**

Maximum value of SAR (measured) = 0.366 W/kg



**P41 LTE 41\_QPSK20M\_Rear Face\_1.5cm\_Ch41490\_1RB\_OS50****DUT: 180829W002**

Communication System: LTE; Frequency: 2680 MHz; Duty Cycle: 1:1.58

Medium: MSL2600\_1025 Medium parameters used:  $f = 2680 \text{ MHz}$ ;  $\sigma = 2.191 \text{ S/m}$ ;  $\epsilon_r = 50.511$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.2 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.28, 7.28, 7.28); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (81x131x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.499 W/kg

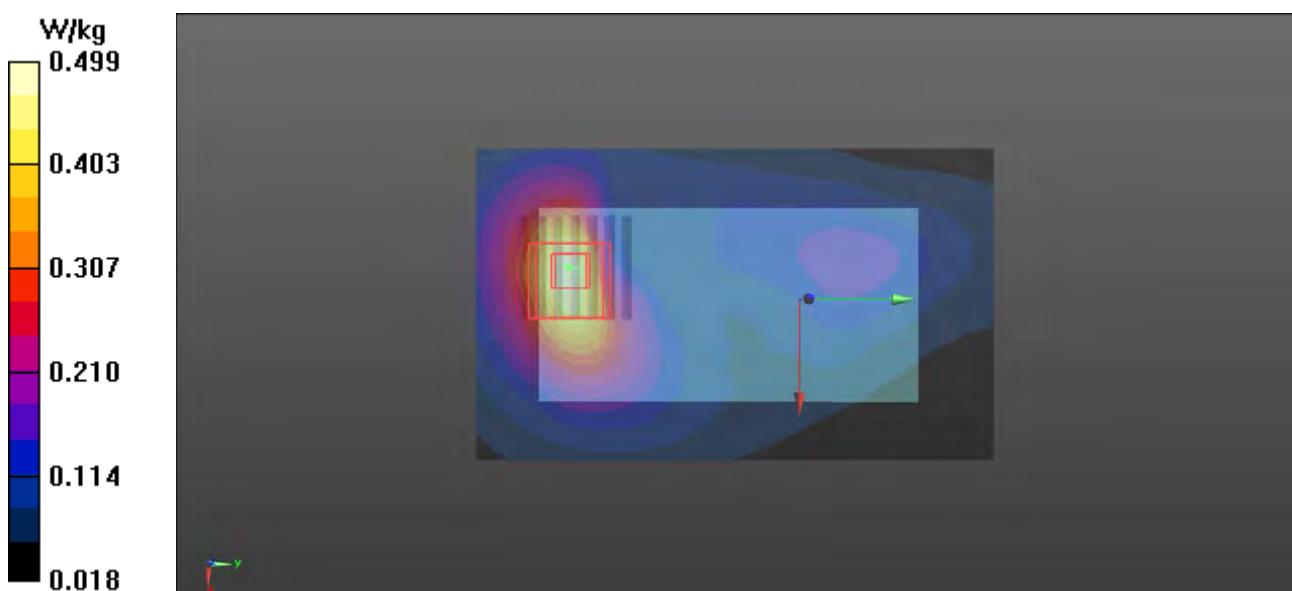
**- Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.853 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.673 W/kg

**SAR(1 g) = 0.326 W/kg; SAR(10 g) = 0.165 W/kg**

Maximum value of SAR (measured) = 0.517 W/kg



**P42 LTE 66\_QPSK20M\_Rear Face\_1.5cm\_Ch132572\_1RB\_OS0****DUT: 180829W002**

Communication System: LTE; Frequency: 1770 MHz; Duty Cycle: 1:1

Medium: MSL1750\_1010 Medium parameters used:  $f = 1770$  MHz;  $\sigma = 1.458$  S/m;  $\epsilon_r = 53.995$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.9 °C; Liquid Temperature : 21.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(8.39, 8.39, 8.39); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Front Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1695
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.560 W/kg

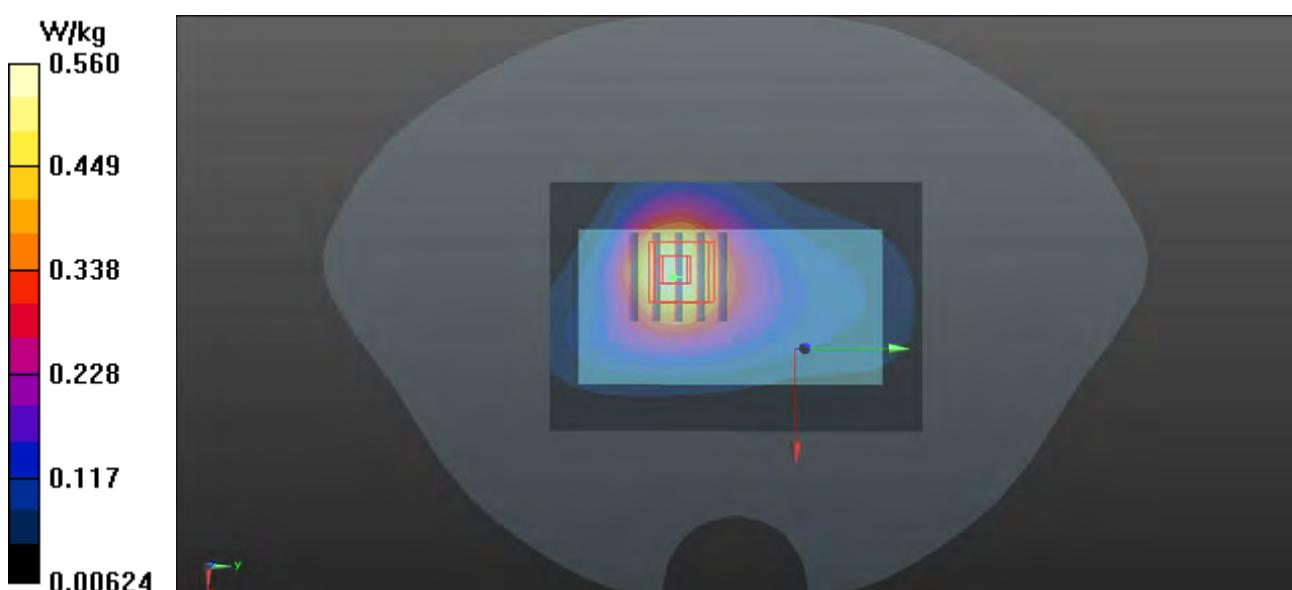
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.34 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.637 W/kg

**SAR(1 g) = 0.402 W/kg; SAR(10 g) = 0.249 W/kg**

Maximum value of SAR (measured) = 0.549 W/kg



## P43 802.11b\_Rear Face\_1.5cm\_Ch1

**DUT: 180829W002**

Communication System: 802.11b; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: MSL2450\_1019 Medium parameters used:  $f = 2412 \text{ MHz}$ ;  $\sigma = 1.917 \text{ S/m}$ ;  $\epsilon_r = 51.716$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.39, 7.39, 7.39); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (91x131x1):** Interpolated grid:  $dx=1.200 \text{ mm}$ ,  $dy=1.200 \text{ mm}$

Maximum value of SAR (interpolated) = 0.0201 W/kg

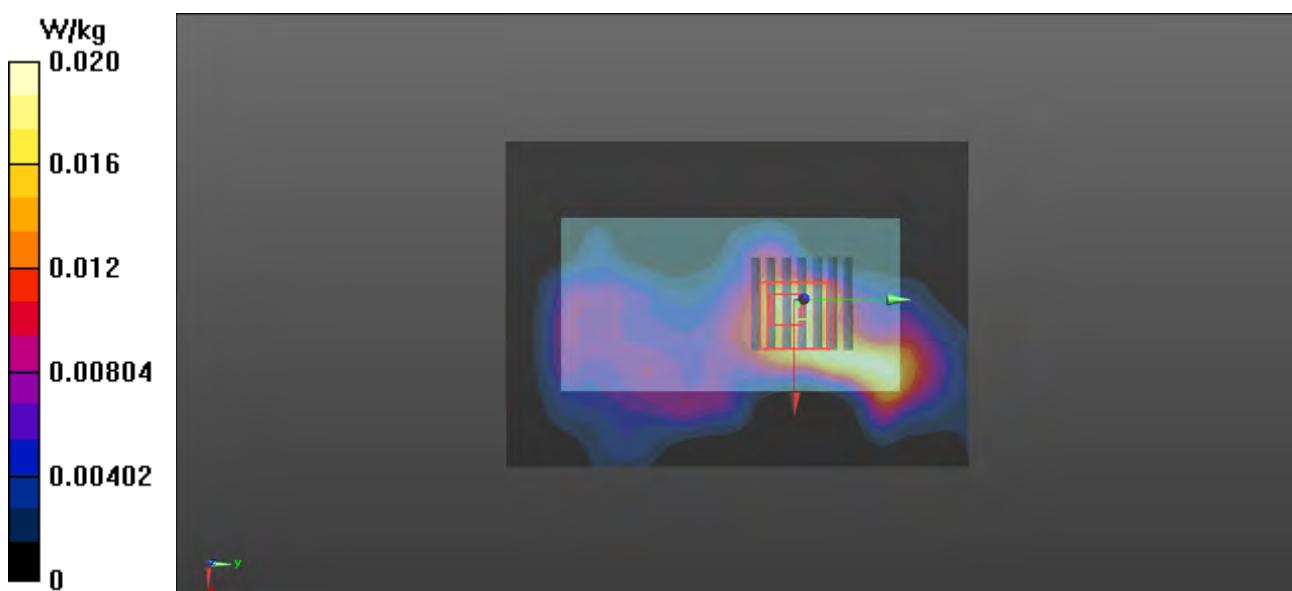
**- Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 1.945 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.0390 W/kg

**SAR(1 g) = 0.011 W/kg; SAR(10 g) = 0.00579 W/kg**

Maximum value of SAR (measured) = 0.0174 W/kg



**P44 802.11a\_Rear Face\_1.5cm\_Ch40****DUT: 180829W002**

Communication System: 802.11a; Frequency: 5200 MHz; Duty Cycle: 1:1  
Medium: MSL5G\_1017 Medium parameters used:  $f = 5200$  MHz;  $\sigma = 5.278$  S/m;  $\epsilon_r = 48.936$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(4.27, 4.27, 4.27); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

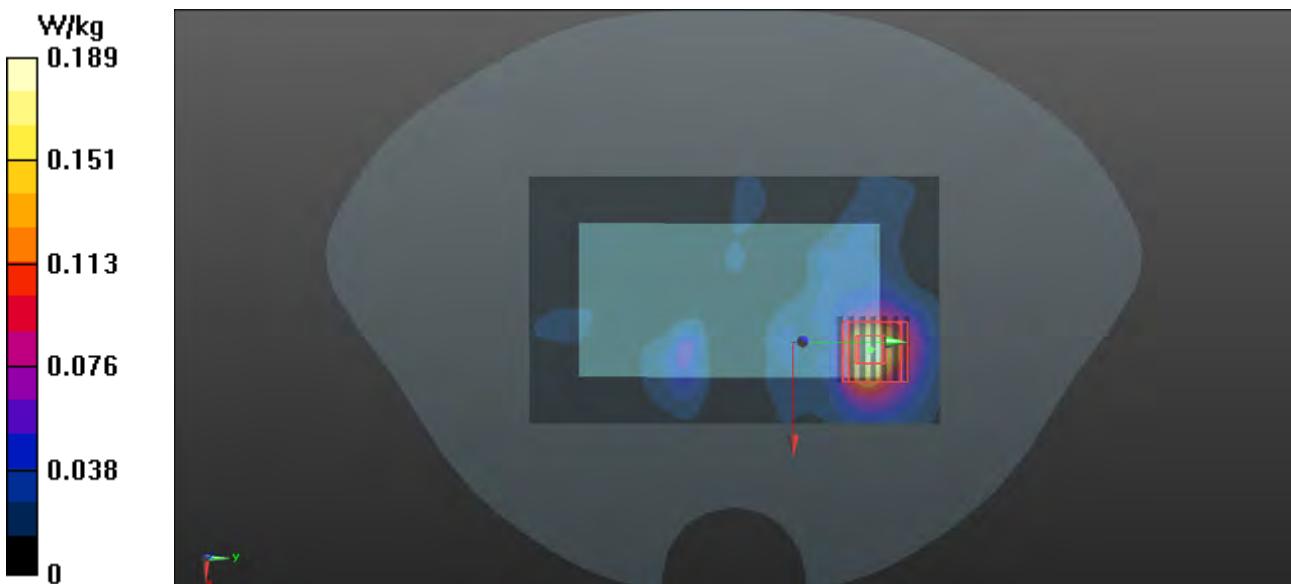
**- Area Scan (91x151x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm  
Maximum value of SAR (interpolated) = 0.189 W/kg

**- Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm  
Reference Value = 1.042 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.246 W/kg

**SAR(1 g) = 0.084 W/kg; SAR(10 g) = 0.034 W/kg**

Maximum value of SAR (measured) = 0.190 W/kg



**P45 802.11a\_Rear Face\_1.5cm\_Ch140****DUT: 180829W002**

Communication System: 802.11a; Frequency: 5700 MHz; Duty Cycle: 1:1

Medium: MSL5G\_1017 Medium parameters used:  $f = 5700$  MHz;  $\sigma = 6.005$  S/m;  $\epsilon_r = 47.917$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(3.77, 3.77, 3.77); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (91x151x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.479 W/kg

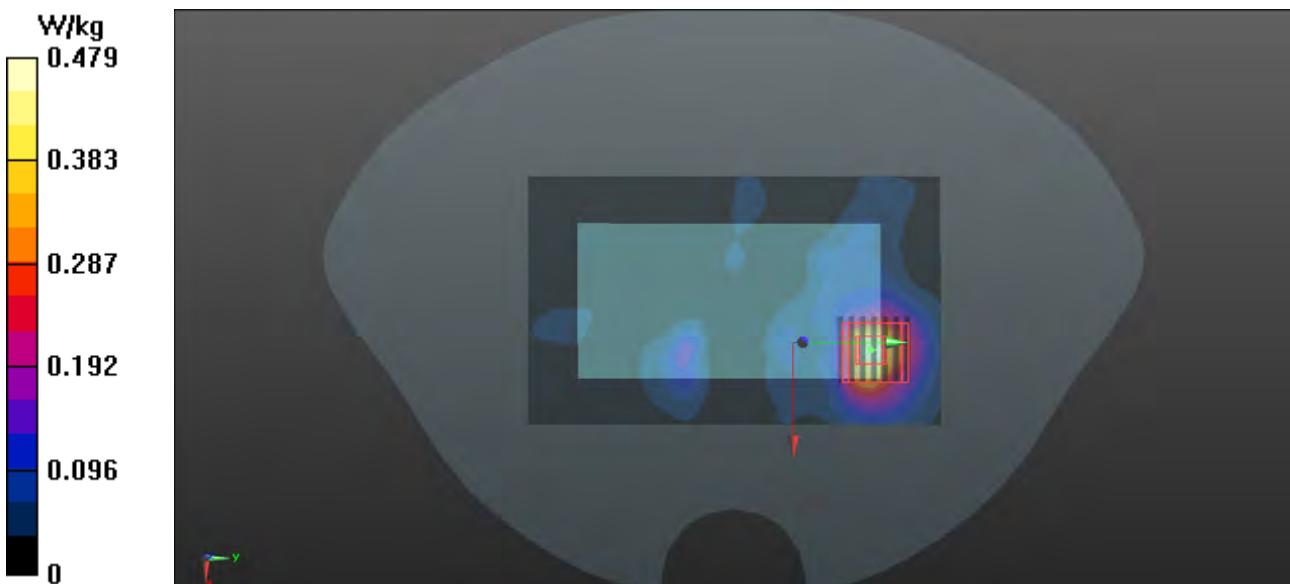
**- Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 1.073 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.777 W/kg

**SAR(1 g) = 0.199 W/kg; SAR(10 g) = 0.074 W/kg**

Maximum value of SAR (measured) = 0.446 W/kg



**P46 802.11a\_Rear Face\_1.5cm\_Ch157****DUT: 180829W002**

Communication System: 802.11a; Frequency: 5785 MHz; Duty Cycle: 1:1

Medium: MSL5G\_1017 Medium parameters used:  $f = 5785$  MHz;  $\sigma = 6.073$  S/m;  $\epsilon_r = 47.741$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(4, 4, 4); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (91x151x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.414 W/kg

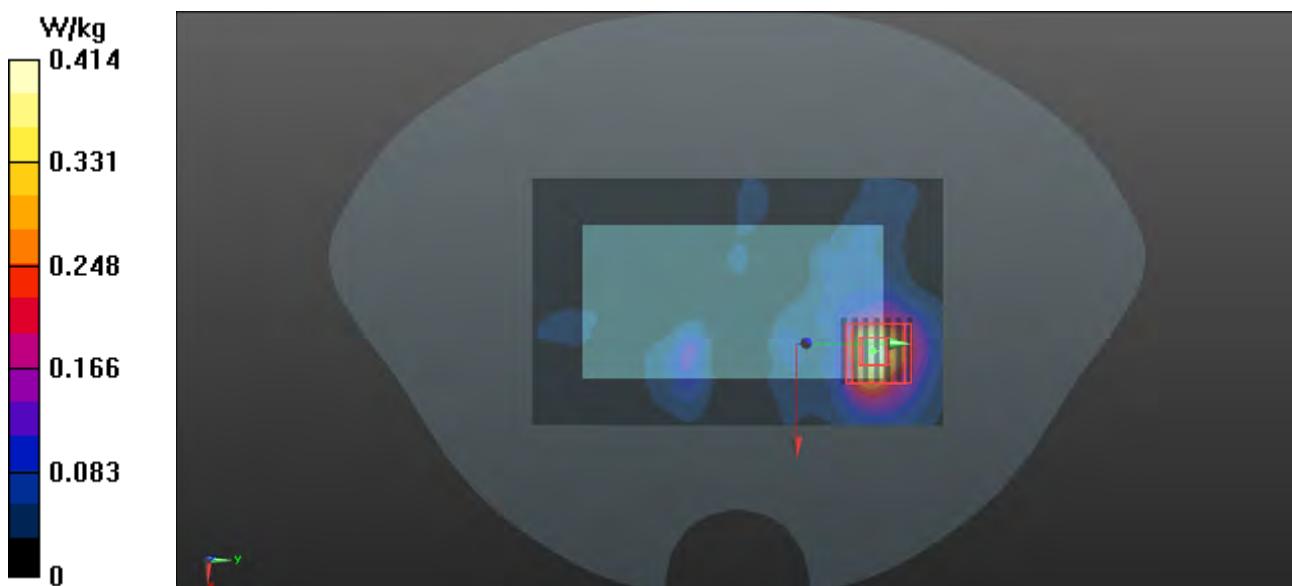
**- Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 1.098 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.647 W/kg

**SAR(1 g) = 0.167 W/kg; SAR(10 g) = 0.062 W/kg**

Maximum value of SAR (measured) = 0.397 W/kg



**P47 GSM850\_GPRS11\_Rear Face\_1cm\_Ch128****DUT: 180829W002**

Communication System: GPRS11; Frequency: 824.2 MHz; Duty Cycle: 1:2.67

Medium: MSL835\_0927 Medium parameters used :  $f = 824.2 \text{ MHz}$ ;  $\sigma = 0.982 \text{ S/m}$ ;  $\epsilon_r = 55.725$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.49, 9.49, 9.49); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (71x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.07 W/kg

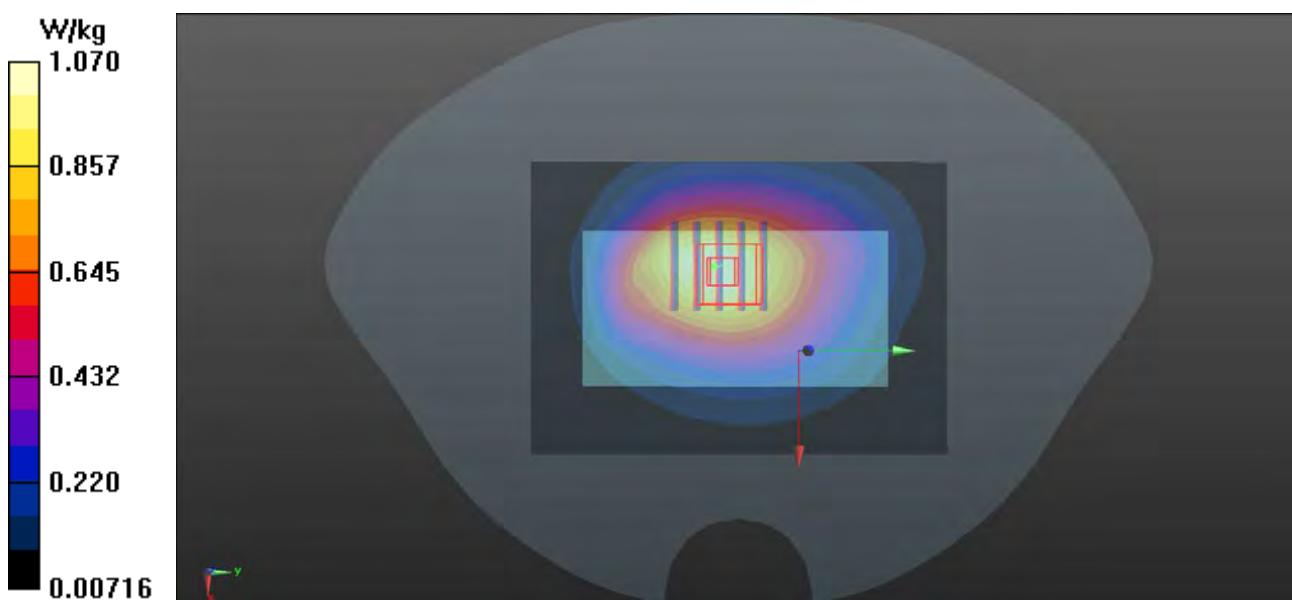
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.73 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.18 W/kg

**SAR(1 g) = 0.865 W/kg; SAR(10 g) = 0.623 W/kg**

Maximum value of SAR (measured) = 1.08 W/kg



**P48 GSM1900\_GPRS12\_Rear Face\_1cm\_Ch512****DUT: 180829W002**

Communication System: GPRS12; Frequency: 1850.2 MHz; Duty Cycle: 1:2

Medium: MSL1900\_1008 Medium parameters used:  $f = 1850.2$  MHz;  $\sigma = 1.502$  S/m;  $\epsilon_r = 54.945$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.8 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

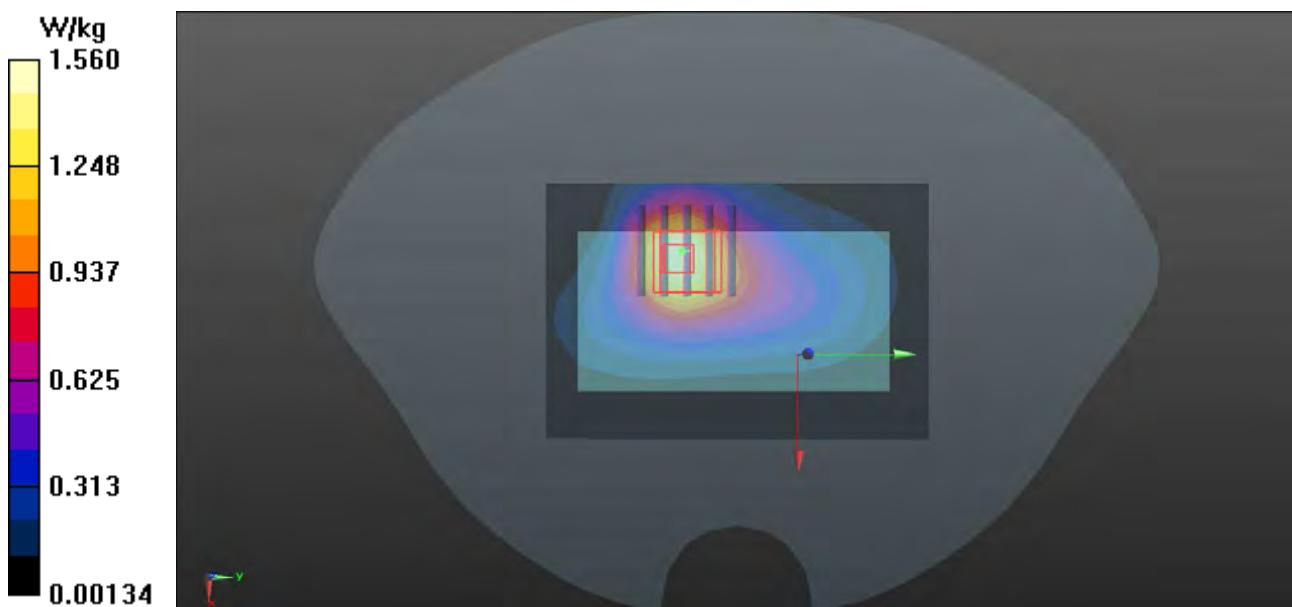
- Probe: EX3DV4 - SN3873; ConvF(7.61, 7.61, 7.61); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Front Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1695
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm  
Maximum value of SAR (interpolated) = 1.56 W/kg**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm  
Reference Value = 19.65 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.73 W/kg

**SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.684 W/kg**

Maximum value of SAR (measured) = 1.48 W/kg



**P49 WCDMA II\_RMC12.2K\_Rear Face\_1cm\_Ch9262****DUT: 180829W002**

Communication System: WCDMA; Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: MSL1900\_1008 Medium parameters used:  $f = 1852.4$  MHz;  $\sigma = 1.504$  S/m;  $\epsilon_r = 54.937$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.8 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.61, 7.61, 7.61); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Front Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1695
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.25 W/kg

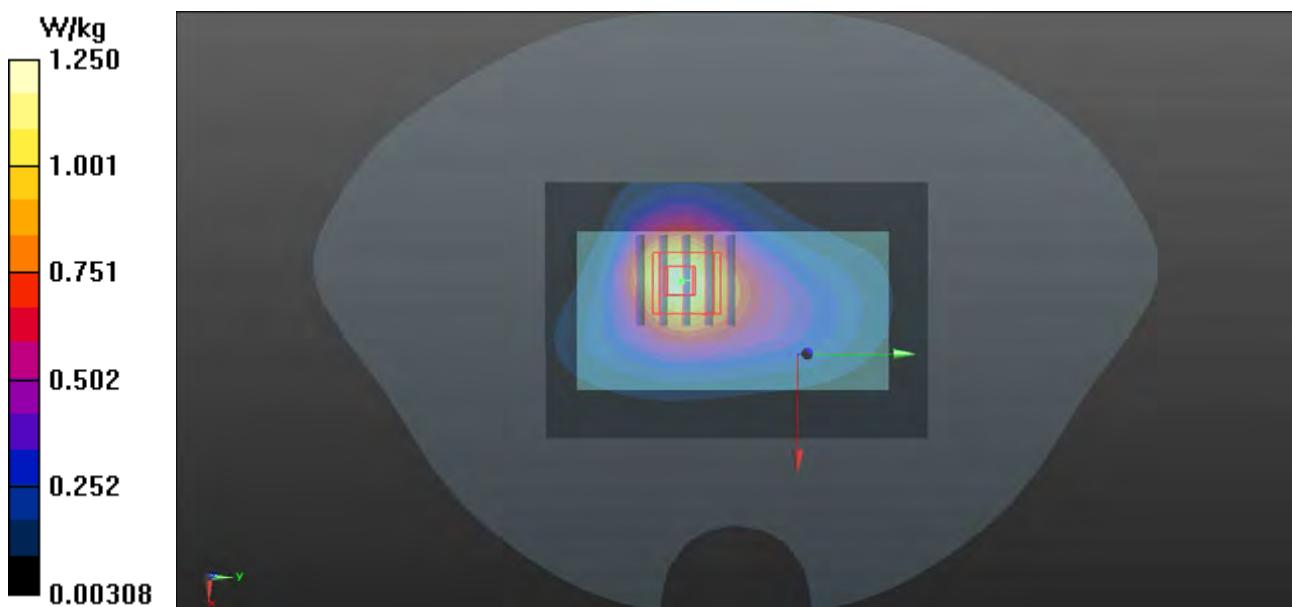
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.85 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 1.34 W/kg

**SAR(1 g) = 0.863 W/kg; SAR(10 g) = 0.541 W/kg**

Maximum value of SAR (measured) = 1.17 W/kg



**P50 WCDMA IV\_RMC12.2K\_Rear Face\_1cm\_Ch1312****DUT: 180829W002**

Communication System: WCDMA; Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium: MSL1750\_1010 Medium parameters used:  $f = 1712.4$  MHz;  $\sigma = 1.407$  S/m;  $\epsilon_r = 54.128$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.9 °C; Liquid Temperature : 21.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.8, 7.8, 7.8); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.50 W/kg

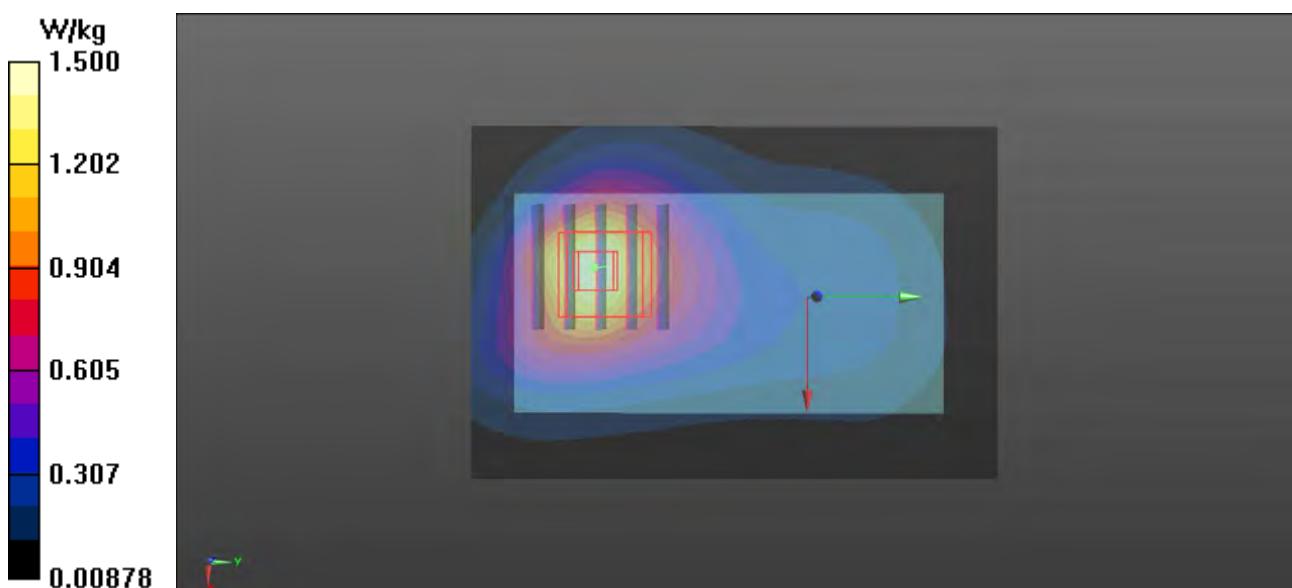
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.82 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 1.61 W/kg

**SAR(1 g) = 1.03 W/kg; SAR(10 g) = 0.630 W/kg**

Maximum value of SAR (measured) = 1.39 W/kg



**P51 WCDMA V\_RMC12.2K\_Rear Face\_1cm\_Ch4182****DUT: 180829W002**

Communication System: WCDMA; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium: MSL835\_0927 Medium parameters used:  $f = 836.4$  MHz;  $\sigma = 0.993$  S/m;  $\epsilon_r = 55.599$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.49, 9.49, 9.49); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (71x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.30 W/kg

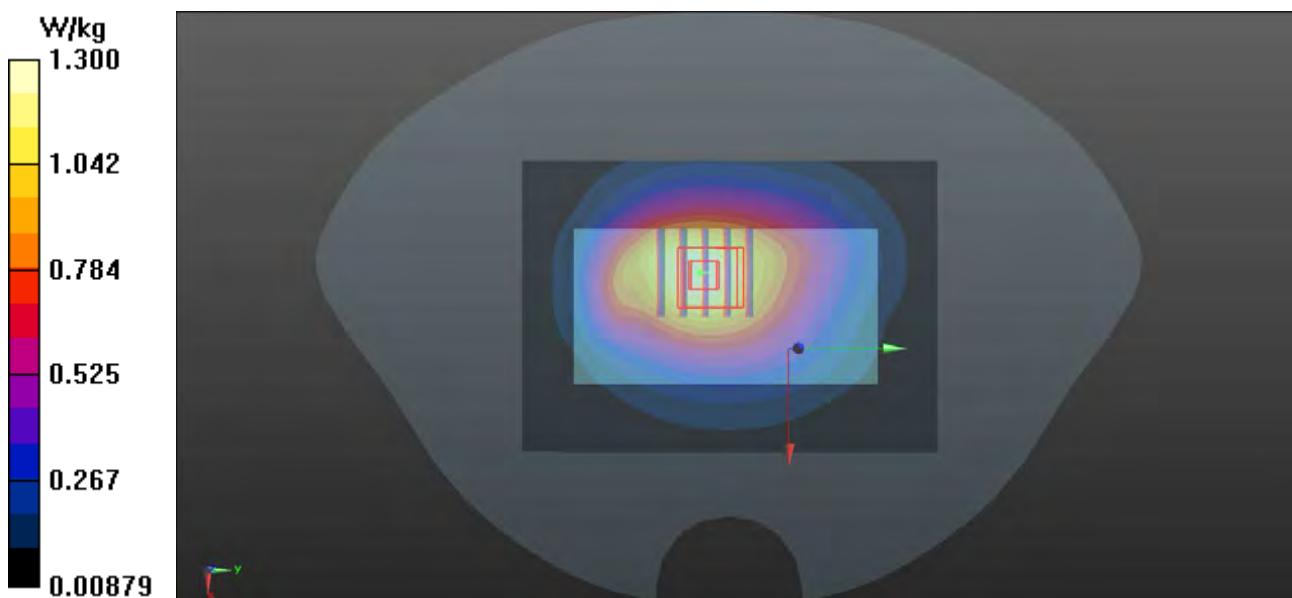
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 30.66 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.44 W/kg

**SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.756 W/kg**

Maximum value of SAR (measured) = 1.31 W/kg



**P52 CDMA BC0\_RTAP 153.6\_Rear Face\_1cm\_Ch1013****DUT: 180829W002**

Communication System: CDMA2000; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium: MSL835\_1219 Medium parameters used:  $f = 825 \text{ MHz}$ ;  $\sigma = 0.978 \text{ S/m}$ ;  $\epsilon_r = 54.751$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.49, 9.49, 9.49); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x101x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.772 W/kg

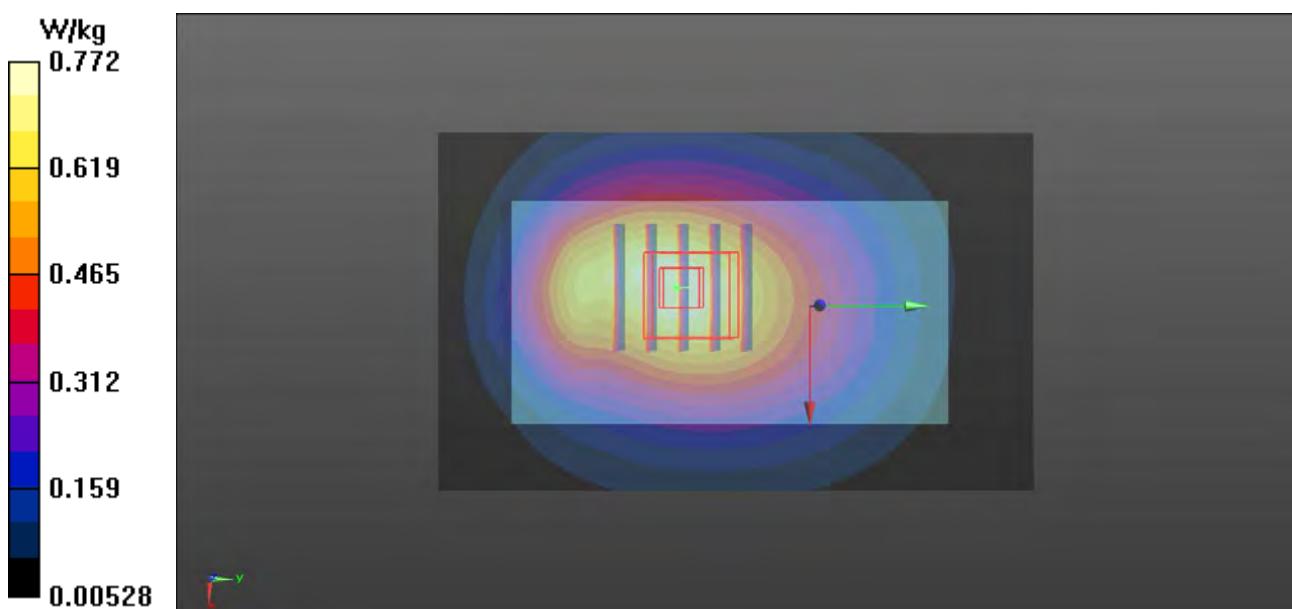
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 23.83 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.861 W/kg

**SAR(1 g) = 0.629 W/kg; SAR(10 g) = 0.447 W/kg**

Maximum value of SAR (measured) = 0.789 W/kg



**P53 CDMA BC1\_RTAP 153.6\_Rear Face\_1cm\_Ch600****DUT: 180829W002**

Communication System: CDMA2000; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: MSL1900\_1221 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.501 \text{ S/m}$ ;  $\epsilon_r = 52.028$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 22.8 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.61, 7.61, 7.61); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (81x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.991 W/kg

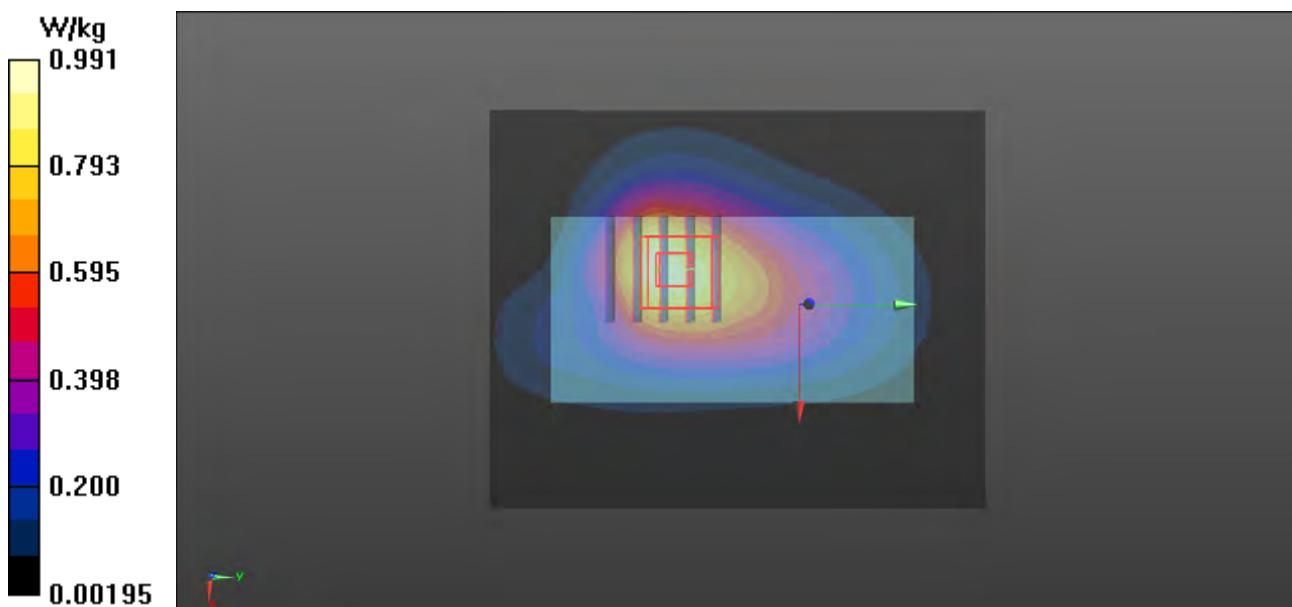
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.75 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.03 W/kg

**SAR(1 g) = 0.670 W/kg; SAR(10 g) = 0.431 W/kg**

Maximum value of SAR (measured) = 0.894 W/kg



**P54 CDMA BC10\_RTAP 153.6\_Rear Face\_1cm\_Ch476****DUT: 180829W002**

Communication System: CDMA2000; Frequency: 817.9 MHz; Duty Cycle: 1:1

Medium: MSL835\_1219 Medium parameters used:  $f = 818 \text{ MHz}$ ;  $\sigma = 0.969 \text{ S/m}$ ;  $\epsilon_r = 54.848$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.49, 9.49, 9.49); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x101x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.796 W/kg

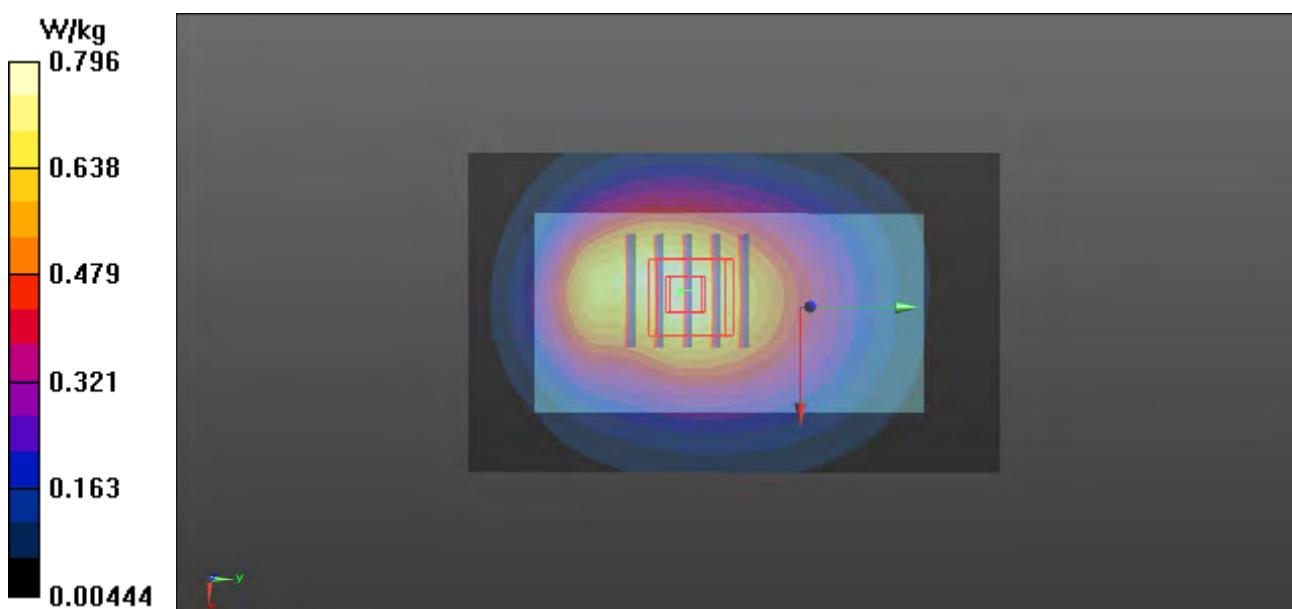
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 24.51 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.881 W/kg

**SAR(1 g) = 0.647 W/kg; SAR(10 g) = 0.461 W/kg**

Maximum value of SAR (measured) = 0.806 W/kg



**P55 LTE 2\_QPSK20M\_Rear Face\_1cm\_Ch18900\_1RB\_OS0****DUT: 180829W002**

Communication System: LTE; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: MSL1900\_1008 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.539 \text{ S/m}$ ;  $\epsilon_r = 54.827$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 22.8 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.61, 7.61, 7.61); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (71x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.53 W/kg

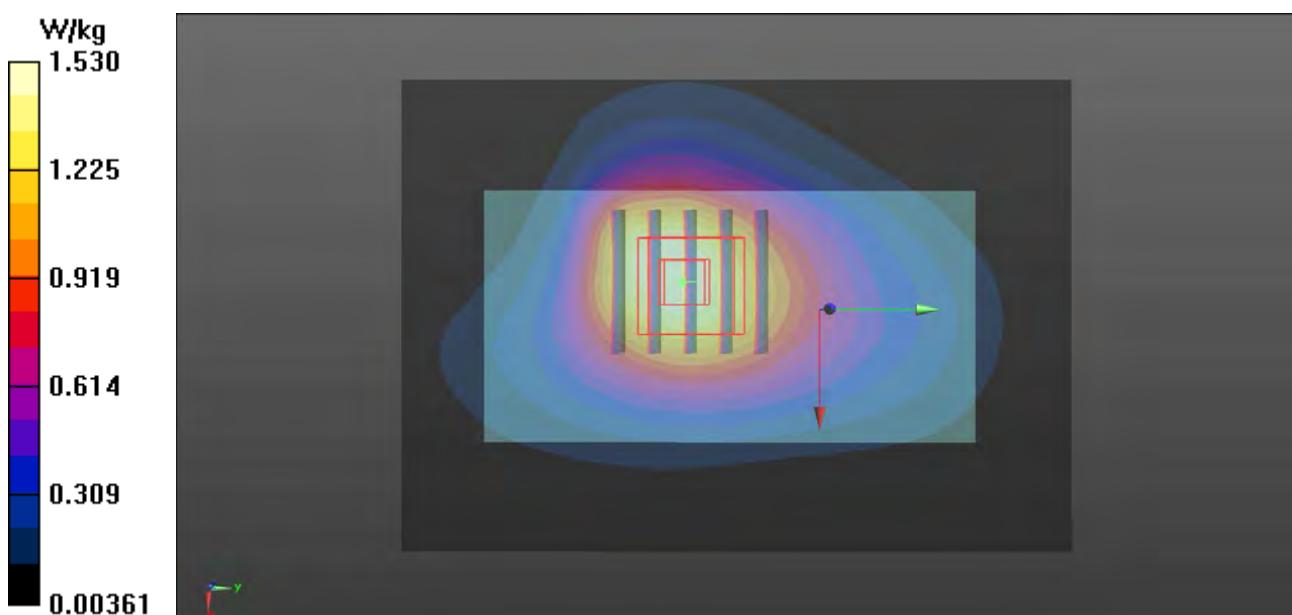
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.10 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 1.80 W/kg

**SAR(1 g) = 1.15 W/kg; SAR(10 g) = 0.724 W/kg**

Maximum value of SAR (measured) = 1.58 W/kg



**P56 LTE 4\_QPSK20M\_Rear Face\_1cm\_Ch20300\_1RB\_OS50****DUT: 180829W002**

Communication System: LTE ; Frequency: 1745 MHz; Duty Cycle: 1:1

Medium: MSL1750\_1220 Medium parameters used:  $f = 1745$  MHz;  $\sigma = 1.463$  S/m;  $\epsilon_r = 53.681$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.9 °C; Liquid Temperature : 21.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.8, 7.8, 7.8); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (71x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.852 W/kg

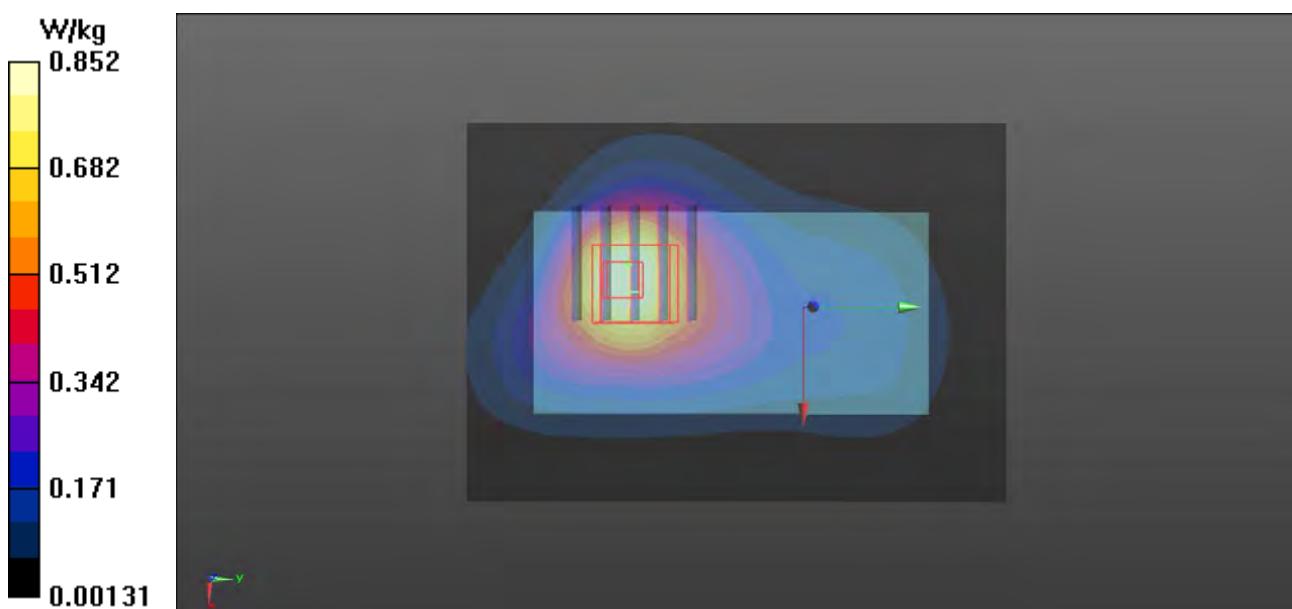
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.68 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 0.992 W/kg

**SAR(1 g) = 0.633 W/kg; SAR(10 g) = 0.390 W/kg**

Maximum value of SAR (measured) = 0.837 W/kg



**P57 LTE 5\_QPSK10M\_Rear Face\_1cm\_Ch20525\_1RB\_OS24****DUT: 180829W002**

Communication System: LTE; Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium: MSL835\_0927 Medium parameters used:  $f = 836.5$  MHz;  $\sigma = 0.993$  S/m;  $\epsilon_r = 55.598$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.49, 9.49, 9.49); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (71x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.16 W/kg

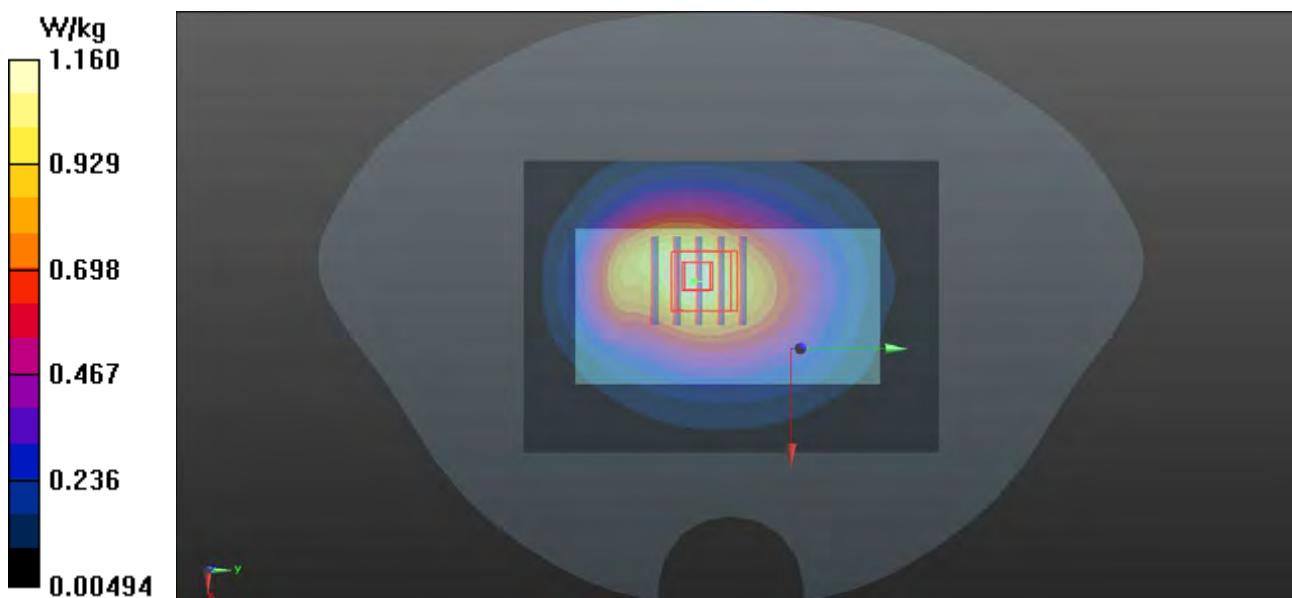
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.00 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.26 W/kg

**SAR(1 g) = 0.921 W/kg; SAR(10 g) = 0.661 W/kg**

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



**P58 LTE 12\_QPSK10M\_Rear Face\_1cm\_Ch23130\_1RB\_OS24****DUT: 180829W002**

Communication System: LTE; Frequency: 711 MHz; Duty Cycle: 1:1

Medium: MSL750\_0926 Medium parameters used:  $f = 711 \text{ MHz}$ ;  $\sigma = 0.943 \text{ S/m}$ ;  $\epsilon_r = 56.462$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.67, 9.67, 9.67); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (71x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.948 W/kg

**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.59 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.06 W/kg

**SAR(1 g) = 0.768 W/kg; SAR(10 g) = 0.563 W/kg**

Maximum value of SAR (measured) = 0.957 W/kg

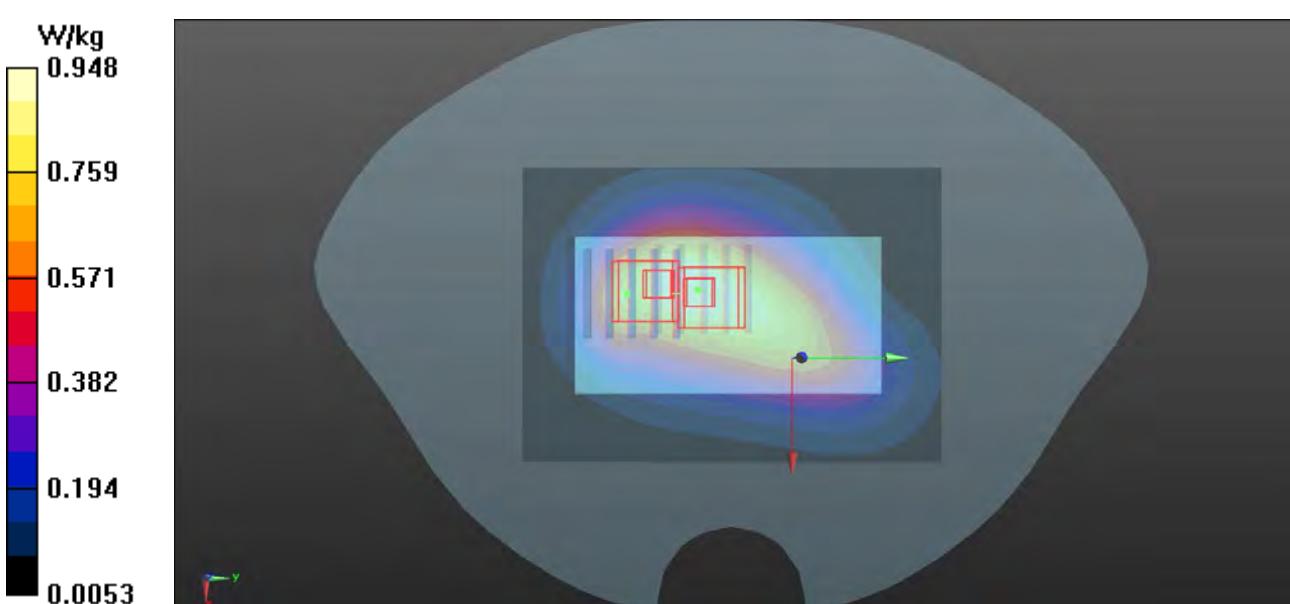
**- Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.59 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.07 W/kg

**SAR(1 g) = 0.714 W/kg; SAR(10 g) = 0.463 W/kg**

Maximum value of SAR (measured) = 0.938 W/kg



**P59 LTE 13\_QPSK10M\_Rear Face\_1cm\_Ch23230\_1RB\_OS24****DUT: 180829W002**

Communication System: LTE; Frequency: 782 MHz; Duty Cycle: 1:1

Medium: MSL750\_0926 Medium parameters used:  $f = 782 \text{ MHz}$ ;  $\sigma = 1.001 \text{ S/m}$ ;  $\epsilon_r = 55.856$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.67, 9.67, 9.67); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (71x101x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$ 

Maximum value of SAR (interpolated) = 1.50 W/kg

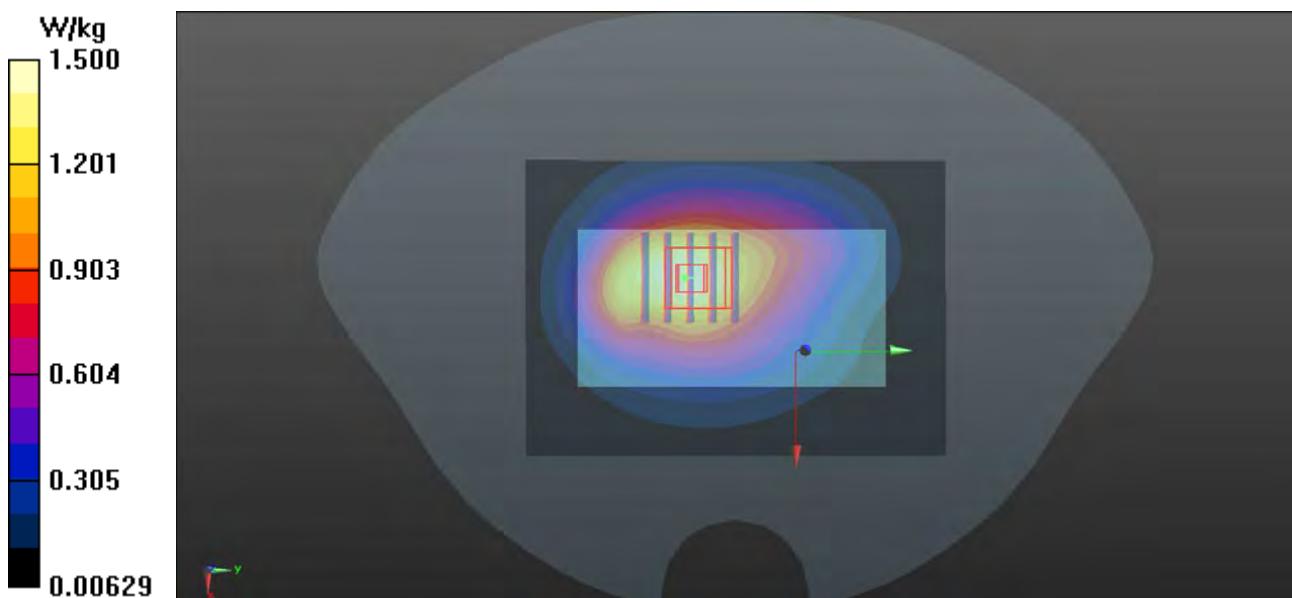
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 30.47 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 1.71 W/kg

**SAR(1 g) = 1.18 W/kg; SAR(10 g) = 0.833 W/kg**

Maximum value of SAR (measured) = 1.55 W/kg



**P60 LTE 14\_QPSK10M\_Rear Face\_1cm\_Ch23330\_1RB\_OS24****DUT: 180829W002**

Communication System: LTE; Frequency: 793 MHz; Duty Cycle: 1:1

Medium: MSL750\_0926 Medium parameters used:  $f = 793 \text{ MHz}$ ;  $\sigma = 1.009 \text{ S/m}$ ;  $\epsilon_r = 55.746$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.67, 9.67, 9.67); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (71x101x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$ 

Maximum value of SAR (interpolated) = 1.16 W/kg

**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 27.76 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.34 W/kg

**SAR(1 g) = 0.954 W/kg; SAR(10 g) = 0.682 W/kg**

Maximum value of SAR (measured) = 1.19 W/kg

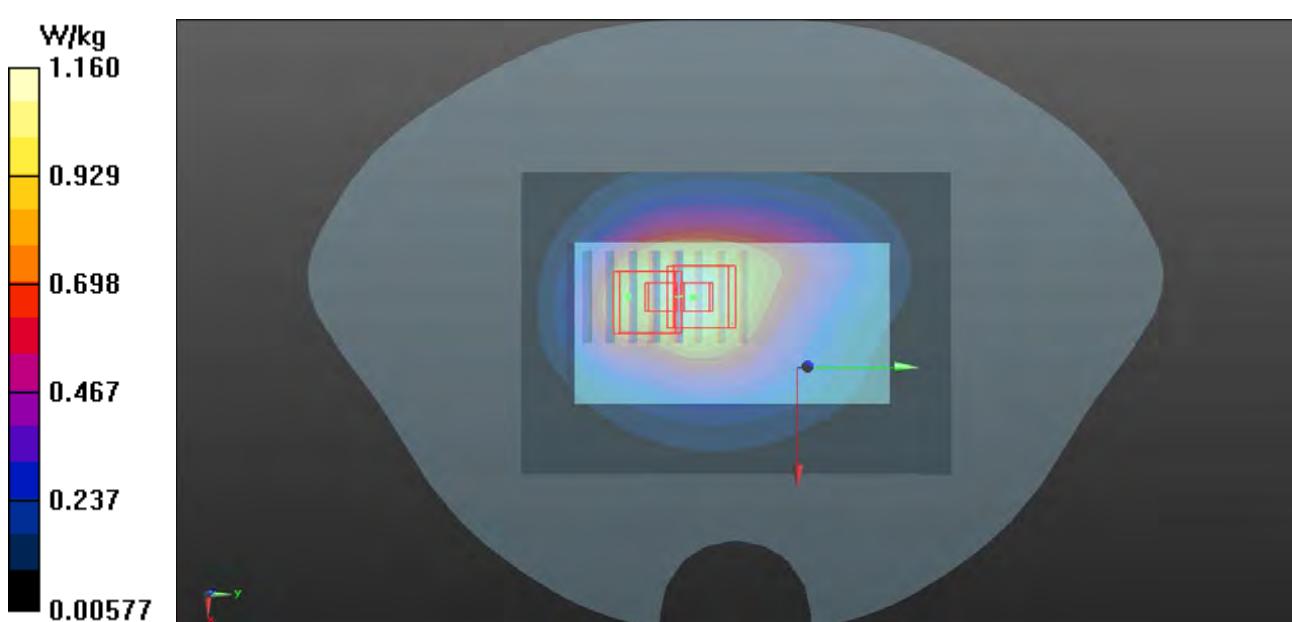
**- Zoom Scan (5x5x7)/Cube 1:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 27.76 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.24 W/kg

**SAR(1 g) = 0.843 W/kg; SAR(10 g) = 0.545 W/kg**

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



**P61 LTE 25\_QPSK20M\_Rear Face\_1cm\_Ch26140\_1RB\_OS0****DUT: 180829W002**

Communication System: LTE; Frequency: 1860 MHz; Duty Cycle: 1:1

Medium: MSL1900\_1008 Medium parameters used:  $f = 1860 \text{ MHz}$ ;  $\sigma = 1.514 \text{ S/m}$ ;  $\epsilon_r = 54.901$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 22.8 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.61, 7.61, 7.61); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (71x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.62 W/kg

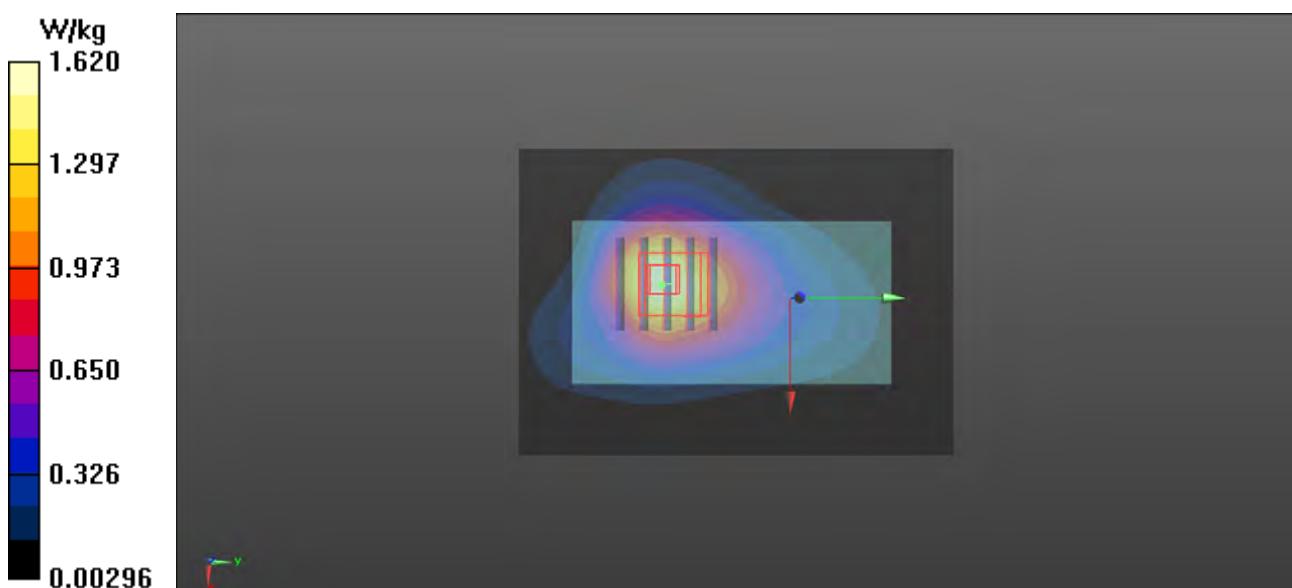
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 21.85 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 1.77 W/kg

**SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.694 W/kg**

Maximum value of SAR (measured) = 1.53 W/kg



**P62 LTE 26\_QPSK15M\_Rear Face\_1cm\_Ch26965\_1RB\_OS37****DUT: 180829W002**

Communication System: LTE; Frequency: 841.5 MHz; Duty Cycle: 1:1

Medium: MSL835\_0927 Medium parameters used:  $f = 841.5 \text{ MHz}$ ;  $\sigma = 0.999 \text{ S/m}$ ;  $\epsilon_r = 55.546$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.49, 9.49, 9.49); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (71x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.15 W/kg

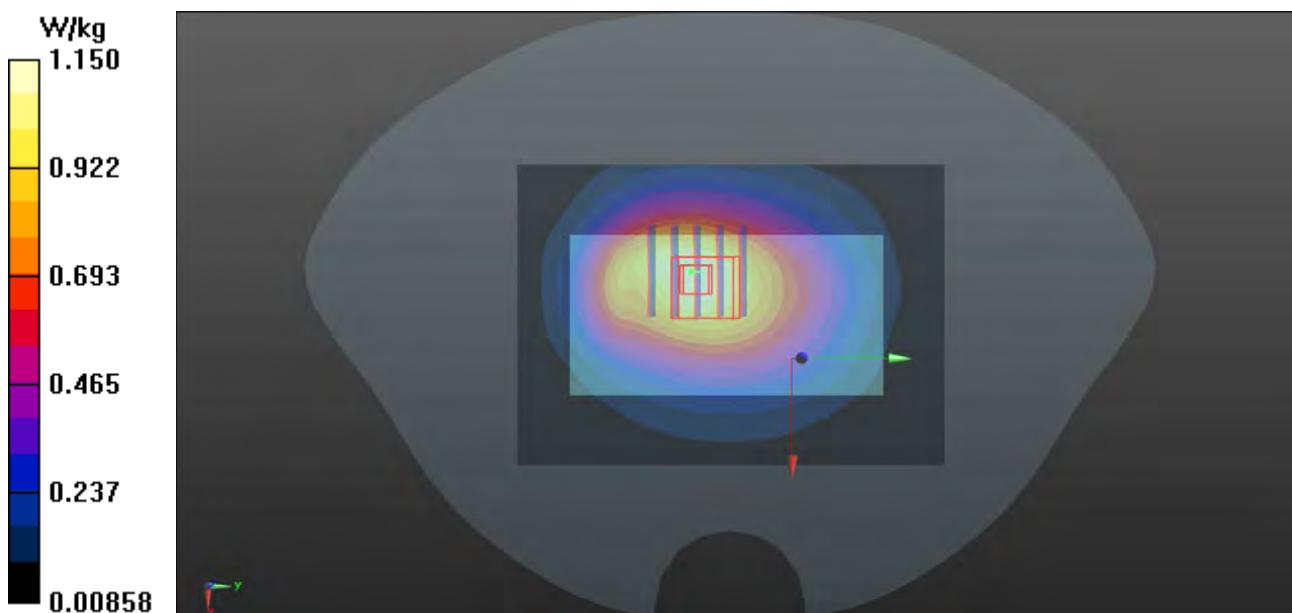
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.76 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.29 W/kg

**SAR(1 g) = 0.929 W/kg; SAR(10 g) = 0.669 W/kg**

Maximum value of SAR (measured) = 1.17 W/kg



**P63 LTE 38\_QPSK20M\_Bottom Side\_1cm\_Ch38150\_1RB\_OS50****DUT: 180829W002**

Communication System: LTE; Frequency: 2610 MHz; Duty Cycle: 1:1.58

Medium: MSL2600\_1025 Medium parameters used:  $f = 2610 \text{ MHz}$ ;  $\sigma = 2.108 \text{ S/m}$ ;  $\epsilon_r = 50.716$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature : 23.2 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.28, 7.28, 7.28); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x111x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.28 W/kg

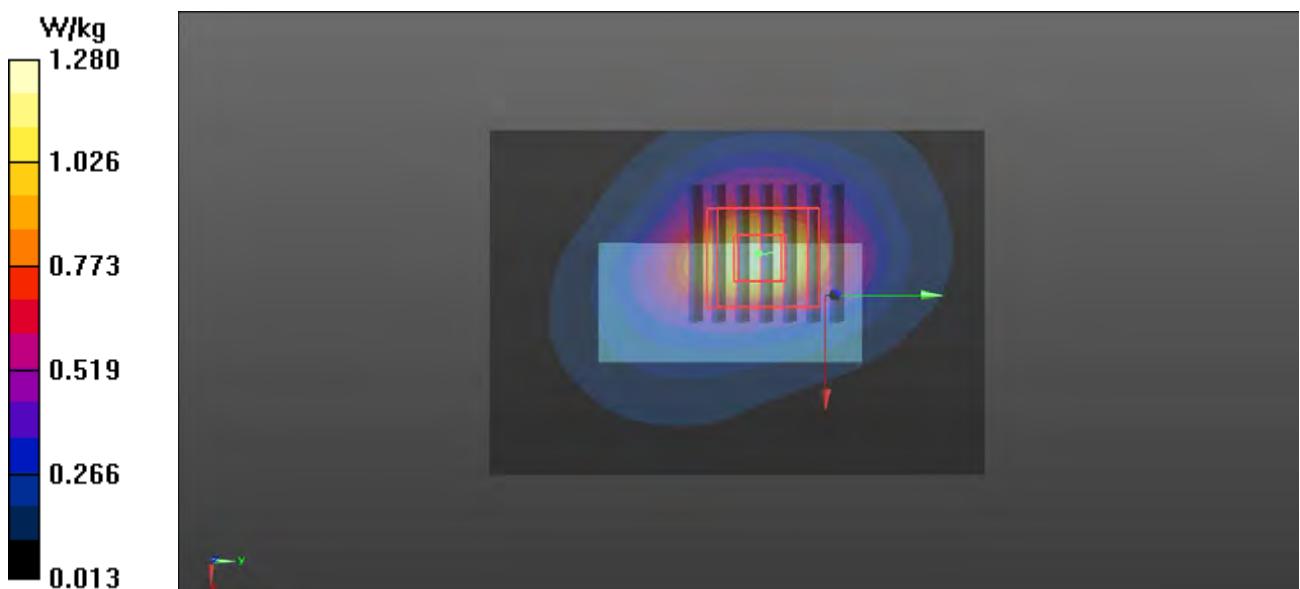
**- Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.13 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 1.67 W/kg

**SAR(1 g) = 0.825 W/kg; SAR(10 g) = 0.411 W/kg**

Maximum value of SAR (measured) = 1.35 W/kg



**P64 LTE 41\_QPSK20M\_Bottom Side\_1cm\_Ch41055\_1RB\_OS50****DUT: 180829W002**

Communication System: LTE; Frequency: 2636.5 MHz; Duty Cycle: 1:1.58

Medium: MSL2600\_1218 Medium parameters used:  $f = 2636.5$  MHz;  $\sigma = 2.250$  S/m;  $\epsilon_r = 52.245$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.2 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.28, 7.28, 7.28); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x111x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.53 W/kg

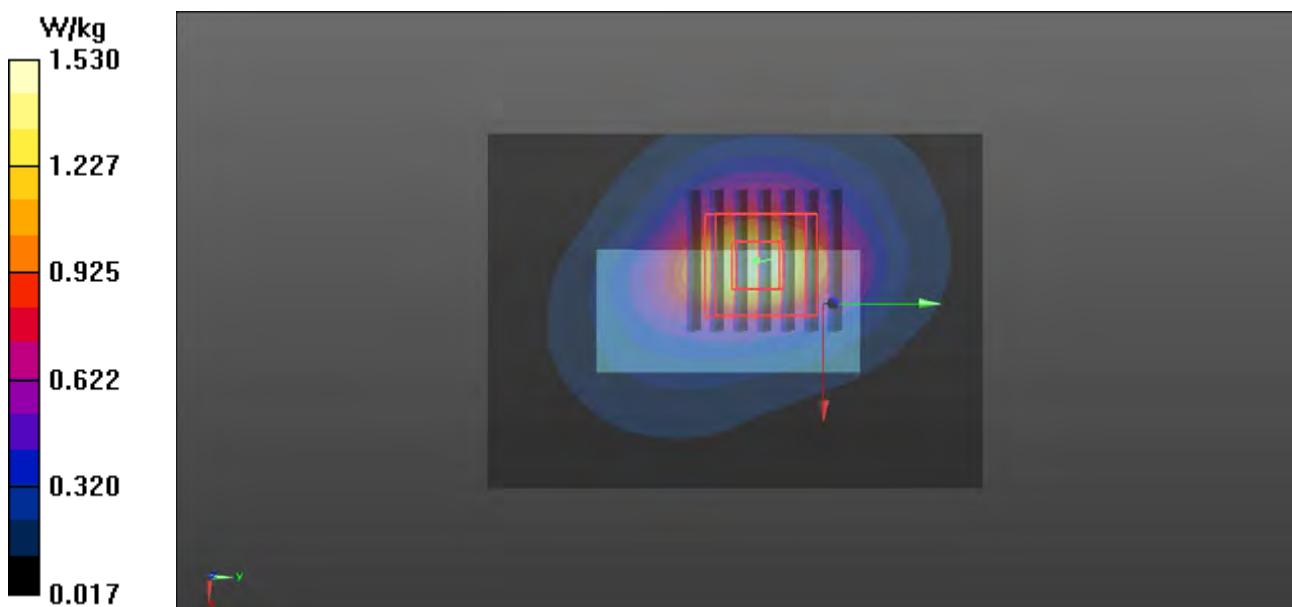
**- Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.16 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.83 W/kg

**SAR(1 g) = 0.925 W/kg; SAR(10 g) = 0.462 W/kg**

Maximum value of SAR (measured) = 1.47 W/kg



**P65 LTE 66\_QPSK20M\_Rear Face\_1cm\_Ch132072\_1RB\_OS0****DUT: 180829W002**

Communication System: LTE; Frequency: 1720 MHz; Duty Cycle: 1:1

Medium: MSL1750\_1220 Medium parameters used:  $f = 1720$  MHz;  $\sigma = 1.437$  S/m;  $\epsilon_r = 53.743$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.9 °C; Liquid Temperature : 21.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.8, 7.8, 7.8); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Front Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1695
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

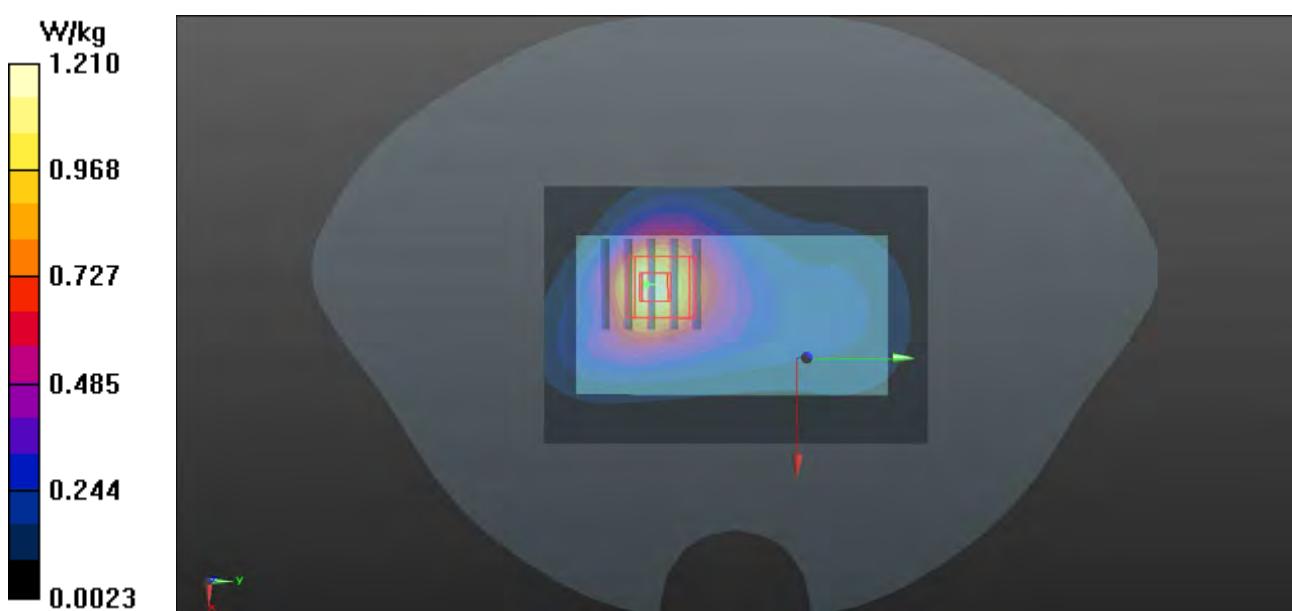
**- Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.57 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.33 W/kg

**SAR(1 g) = 0.852 W/kg; SAR(10 g) = 0.52 W/kg**

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



## P66 802.11b\_Rear Face\_1cm\_Ch1

**DUT: 180829W002**

Communication System: 802.11b; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: MSL2450\_1019 Medium parameters used:  $f = 2412 \text{ MHz}$ ;  $\sigma = 1.917 \text{ S/m}$ ;  $\epsilon_r = 51.716$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.39, 7.39, 7.39); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (91x131x1):** Interpolated grid:  $dx=1.200 \text{ mm}$ ,  $dy=1.200 \text{ mm}$

Maximum value of SAR (interpolated) = 0.0371 W/kg

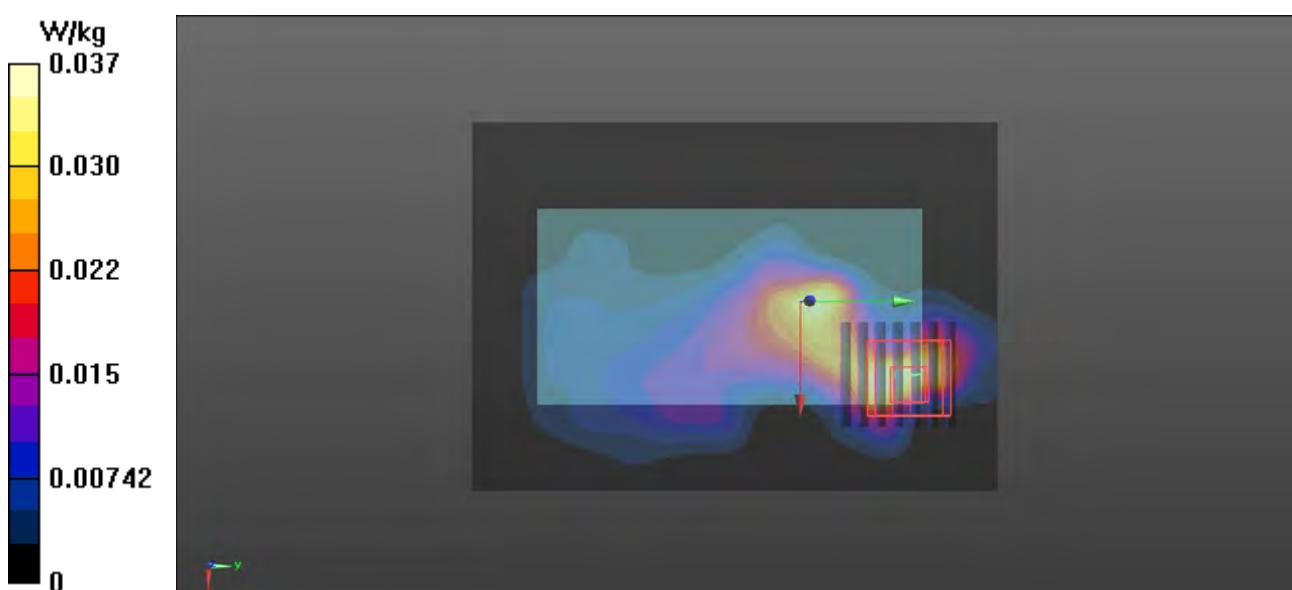
**- Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 2.311 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.0470 W/kg

**SAR(1 g) = 0.024 W/kg; SAR(10 g) = 0.014 W/kg**

Maximum value of SAR (measured) = 0.0362 W/kg



**P67 802.11a\_Rear Face\_1cm\_Ch40****DUT: 180829W002**

Communication System: 802.11a; Frequency: 5200 MHz; Duty Cycle: 1:1  
Medium: MSL5G\_1017 Medium parameters used:  $f = 5200$  MHz;  $\sigma = 5.278$  S/m;  $\epsilon_r = 48.936$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(4.27, 4.27, 4.27); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (91x151x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm  
Maximum value of SAR (interpolated) = 0.302 W/kg

**- Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm  
Reference Value = 1.721 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.535 W/kg

**SAR(1 g) = 0.140 W/kg; SAR(10 g) = 0.053 W/kg**

Maximum value of SAR (measured) = 0.298 W/kg



**P68 802.11a\_Rear Face\_1cm\_Ch157****DUT: 180829W002**

Communication System: 802.11a; Frequency: 5785 MHz; Duty Cycle: 1:1

Medium: MSL5G\_1017 Medium parameters used:  $f = 5785$  MHz;  $\sigma = 6.073$  S/m;  $\epsilon_r = 47.741$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(4, 4, 4); Calibrated: 2018/08/31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2018/08/28
- Phantom: Left Phantom with CRP v5.0; Type: QD000P40CD; Serial: TP:1722
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**- Area Scan (91x151x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.527 W/kg

**- Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 1.309 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.763 W/kg

**SAR(1 g) = 0.197 W/kg; SAR(10 g) = 0.068 W/kg**

Maximum value of SAR (measured) = 0.480 W/kg





## FCC SAR Test Report

### Appendix C. Calibration Certificate for Probe and Dipole

The SPEAG calibration certificates are shown as follows.



In Collaboration with  
**s p e a g**  
 CALIBRATION LABORATORY

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China  
 Tel: +86-10-62304633-2079 Fax: +86-10-62304633-2504  
 E-mail: [ctl@chinattl.com](mailto:ctl@chinattl.com) <http://www.chinattl.cn>



中国认可  
 国际互认  
 校准  
 CALIBRATION  
 CNAS L0570

Client

ADT\_CN

Certificate No: Z18-60310

## CALIBRATION CERTIFICATE

Object D750V3 - SN: 1067

Calibration Procedure(s) FF-Z11-003-01  
 Calibration Procedures for dipole validation kits

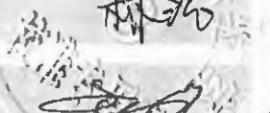
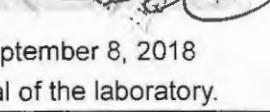
Calibration date: September 5, 2018

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( $22\pm3$ )°C and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRV	102083	01-Nov-17 (CTTL, No.J17X08756)	Oct-18
Power sensor NRV-Z5	100542	01-Nov-17 (CTTL, No.J17X08756)	Oct-18
Reference Probe EX3DV4	SN 7464	12-Sep-17(SPEAG, No.EX3-7464_Sep17)	Sep-18
DAE4	SN 1524	13-Sep-17(SPEAG, No.DAE4-1524_Sep17)	Sep-18
Secondary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Signal Generator E4438C	MY49071430	23-Jan-18 (CTTL, No.J18X00560)	Jan-19
NetworkAnalyzer E5071C	MY46110673	24-Jan-18 (CTTL, No.J18X00561)	Jan-19

	Name	Function	Signature
Calibrated by:	Zhao Jing	SAR Test Engineer	
Reviewed by:	Lin Hao	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: September 8, 2018

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



Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China  
Tel: +86-10-62304633-2079 Fax: +86-10-62304633-2504  
E-mail: [cttl@chinattl.com](mailto:cttl@chinattl.com) http://www.chinattl.cn

### Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORMx,y,z
N/A	not applicable or not measured

### Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016
- c) IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010
- d) KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

### Additional Documentation:

- e) DASY4/5 System Handbook

### Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

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%.



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## Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	52.10.1.1476
Extrapolation	Advanced Extrapolation	
Phantom	Triple Flat Phantom 5.1C	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	750 MHz ± 1 MHz	

## Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	43.1 ± 6 %	0.87 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	---	---

## SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.07 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	8.51 mW /g ± 18.8 % (k=2)
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	1.40 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	5.72 mW /g ± 18.7 % (k=2)

## Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.5	0.96 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	56.8 ± 6 %	0.93 mho/m ± 6 %
Body TSL temperature change during test	<1.0 °C	---	---

## SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.14 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	8.80 mW /g ± 18.8 % (k=2)
SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	Condition	
SAR measured	250 mW input power	1.46 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	5.97 mW /g ± 18.7 % (k=2)



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## Appendix (Additional assessments outside the scope of CNAS L0570)

### Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.7Ω- 2.03jΩ
Return Loss	- 27.8dB

### Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.7Ω- 3.79jΩ
Return Loss	- 27.8dB

### General Antenna Parameters and Design

Electrical Delay (one direction)	0.897 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

### Additional EUT Data

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## DASY5 Validation Report for Head TSL

Date: 09.05.2018

Test Laboratory: CTTL, Beijing, China

**DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1067**

Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 750 \text{ MHz}$ ;  $\sigma = 0.866 \text{ S/m}$ ;  $\epsilon_r = 43.13$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7464; ConvF(10.57, 10.57, 10.57) @ 750 MHz; Calibrated: 9/12/2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1524; Calibrated: 9/13/2017
- Phantom: MFP\_V5.1C ; Type: QD 000 P51CA; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

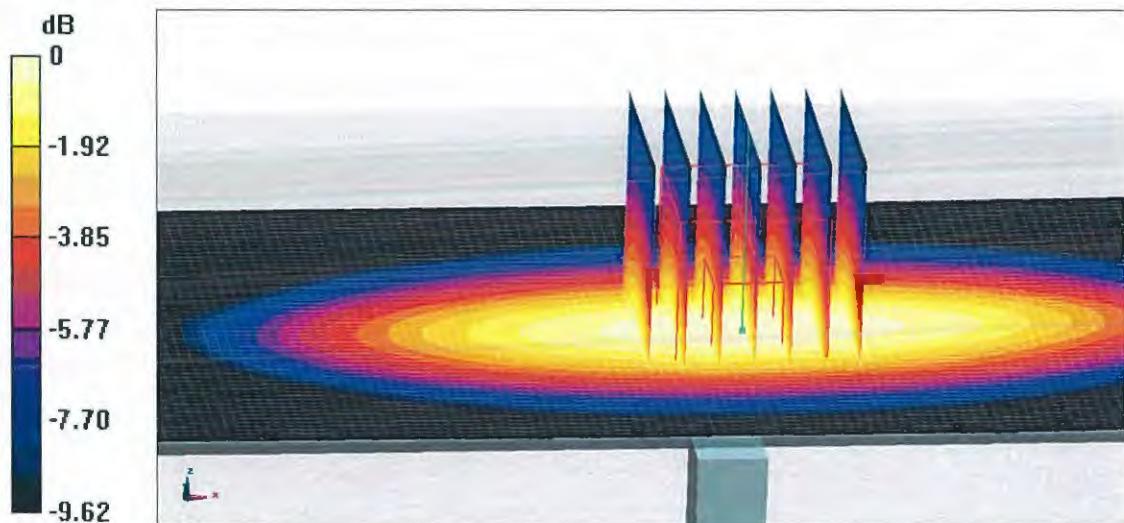
**Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 55.01 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 3.05 W/kg

**SAR(1 g) = 2.07 W/kg; SAR(10 g) = 1.4 W/kg**

Maximum value of SAR (measured) = 2.73 W/kg



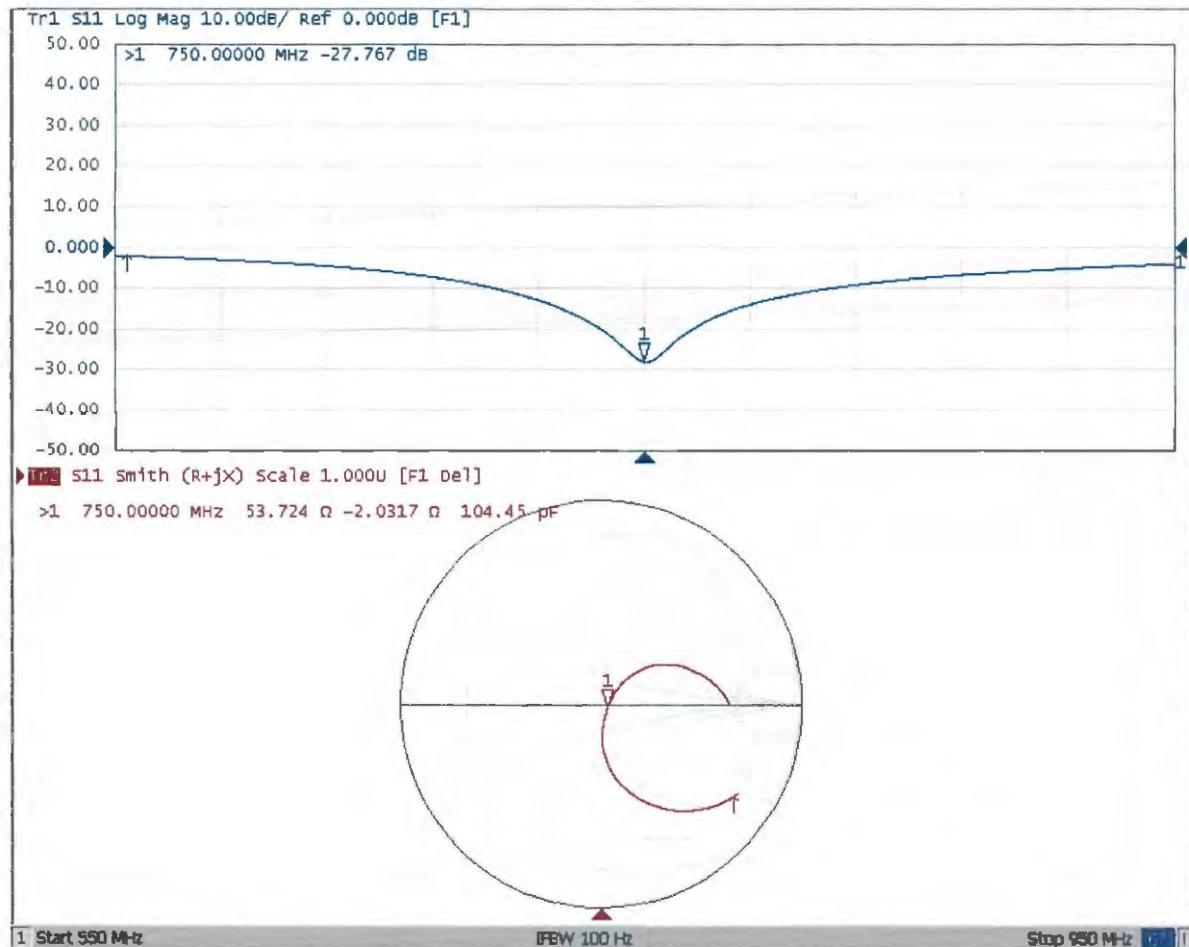
**0 dB = 2.73 W/kg = 4.36 dBW/kg**



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### Impedance Measurement Plot for Head TSL



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**DASY5 Validation Report for Body TSL**

Date: 09.05.2018

Test Laboratory: CTTL, Beijing, China

**DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1067**

Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 750 \text{ MHz}$ ;  $\sigma = 0.932 \text{ S/m}$ ;  $\epsilon_r = 56.82$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Center Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7464; ConvF(10.63, 10.63, 10.63) @ 750 MHz; Calibrated: 9/12/2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1524; Calibrated: 9/13/2017
- Phantom: MFP\_V5.1C ; Type: QD 000 P51CA; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

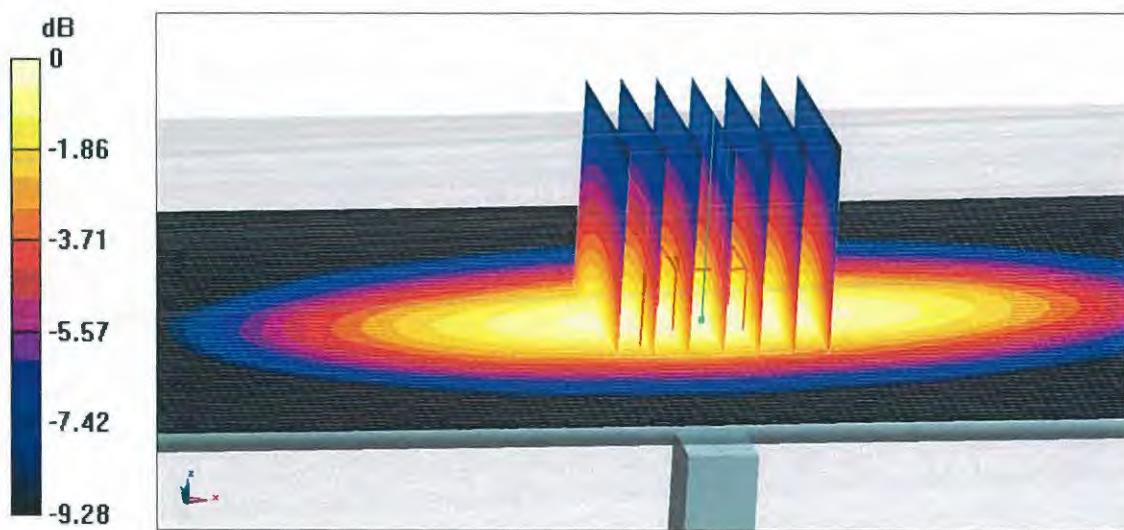
**Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 54.11 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 3.06 W/kg

**SAR(1 g) = 2.14 W/kg; SAR(10 g) = 1.46 W/kg**

Maximum value of SAR (measured) = 2.76 W/kg



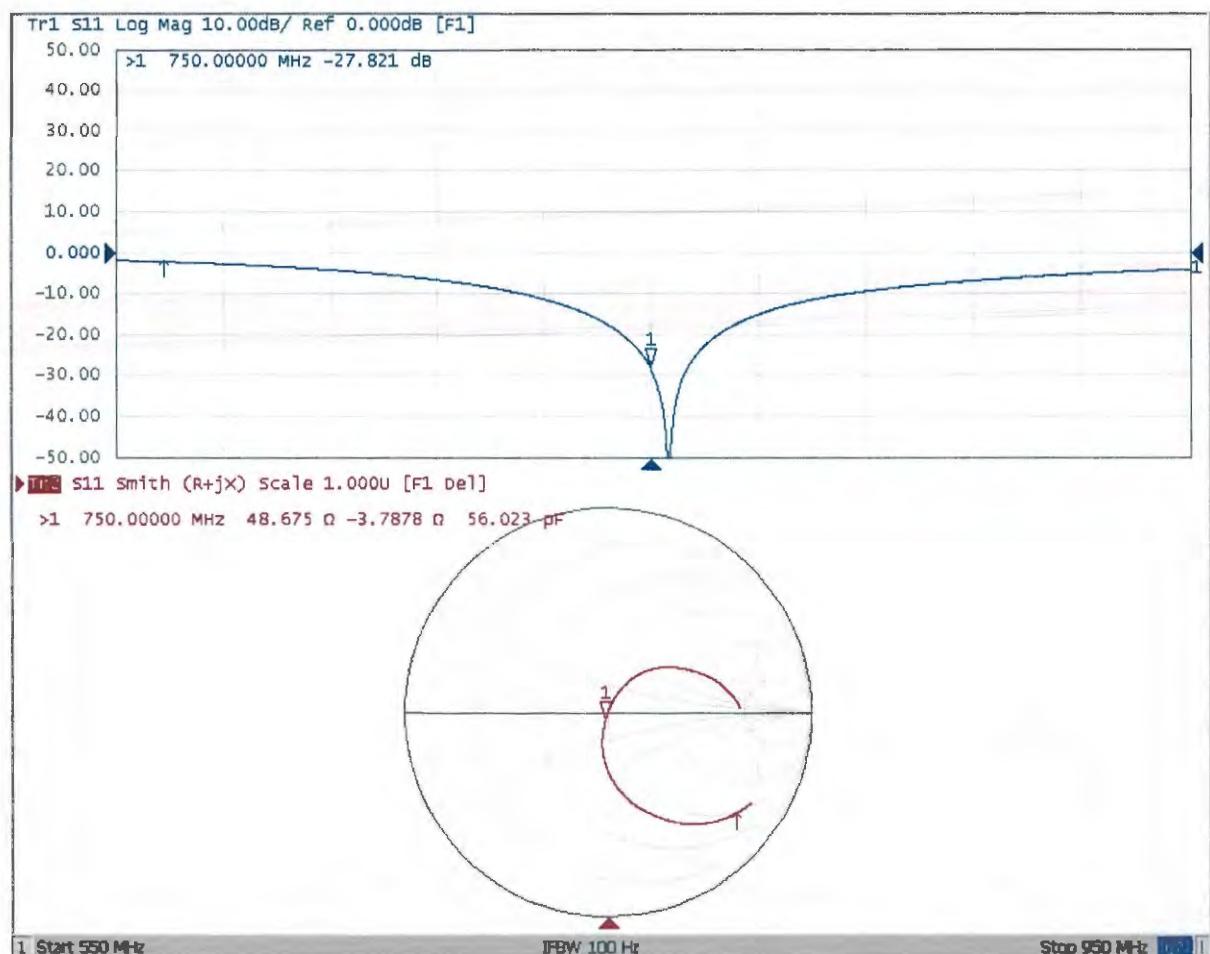
$$0 \text{ dB} = 2.76 \text{ W/kg} = 4.41 \text{ dBW/kg}$$



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### Impedance Measurement Plot for Body TSL





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 CNAS L0570

Client

ADT\_CN

Certificate No: Z18-60311

## CALIBRATION CERTIFICATE

Object D835V2 - SN: 4d139

Calibration Procedure(s) FF-Z11-003-01  
 Calibration Procedures for dipole validation kits

Calibration date: September 6, 2018

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( $22\pm3$ )°C and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRVD	102083	01-Nov-17 (CTTL, No.J17X08756)	Oct-18
Power sensor NRV-Z5	100542	01-Nov-17 (CTTL, No.J17X08756)	Oct-18
Reference Probe EX3DV4	SN 7464	12-Sep-17(SPEAG, No.EX3-7464_Sep17)	Sep-18
DAE4	SN 1524	13-Sep-17(SPEAG, No.DAE4-1524_Sep17)	Sep-18
Secondary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Signal Generator E4438C	MY49071430	23-Jan-18 (CTTL, No.J18X00560)	Jan-19
NetworkAnalyzer E5071C	MY46110673	24-Jan-18 (CTTL, No.J18X00561)	Jan-19

	Name	Function	Signature
Calibrated by:	Zhao Jing	SAR Test Engineer	
Reviewed by:	Lin Hao	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: September 9, 2018

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



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#### Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORMx,y,z
N/A	not applicable or not measured

#### Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016
- c) IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010
- d) KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

#### Additional Documentation:

- e) DASY4/5 System Handbook

#### Methods Applied and Interpretation of Parameters:

- *Measurement Conditions*: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL*: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss*: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay*: One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured*: SAR measured at the stated antenna input power.
- *SAR normalized*: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters*: The measured TSL parameters are used to calculate the nominal SAR result.

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%.



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## Measurement Conditions

DASY system configuration, as far as not given on page 1.

<b>DASY Version</b>	DASY52	52.10.1.1476
<b>Extrapolation</b>	Advanced Extrapolation	
<b>Phantom</b>	Triple Flat Phantom 5.1C	
<b>Distance Dipole Center - TSL</b>	15 mm	with Spacer
<b>Zoom Scan Resolution</b>	dx, dy, dz = 5 mm	
<b>Frequency</b>	835 MHz ± 1 MHz	

## Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
<b>Nominal Head TSL parameters</b>	22.0 °C	41.5	0.90 mho/m
<b>Measured Head TSL parameters</b>	(22.0 ± 0.2) °C	42.7 ± 6 %	0.90 mho/m ± 6 %
<b>Head TSL temperature change during test</b>	<1.0 °C	---	---

## SAR result with Head TSL

<b>SAR averaged over 1 cm<sup>3</sup> (1 g) of Head TSL</b>	Condition	
SAR measured	250 mW input power	2.37 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	9.51 mW /g ± 18.8 % (k=2)
<b>SAR averaged over 10 cm<sup>3</sup> (10 g) of Head TSL</b>	Condition	
SAR measured	250 mW input power	1.56 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	6.25 mW /g ± 18.7 % (k=2)

## Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
<b>Nominal Body TSL parameters</b>	22.0 °C	55.2	0.97 mho/m
<b>Measured Body TSL parameters</b>	(22.0 ± 0.2) °C	56.0 ± 6 %	1.00 mho/m ± 6 %
<b>Body TSL temperature change during test</b>	<1.0 °C	---	---

## SAR result with Body TSL

<b>SAR averaged over 1 cm<sup>3</sup> (1 g) of Body TSL</b>	Condition	
SAR measured	250 mW input power	2.47 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	9.70 mW /g ± 18.8 % (k=2)
<b>SAR averaged over 10 cm<sup>3</sup> (10 g) of Body TSL</b>	Condition	
SAR measured	250 mW input power	1.65 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	6.50 mW /g ± 18.7 % (k=2)



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## Appendix (Additional assessments outside the scope of CNAS L0570)

### Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.5Ω- 3.46jΩ
Return Loss	- 28.6dB

### Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.3Ω- 4.75jΩ
Return Loss	- 25.8dB

### General Antenna Parameters and Design

Electrical Delay (one direction)	1.256 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

### Additional EUT Data

Manufactured by	SPEAG
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## DASY5 Validation Report for Head TSL

Date: 09.04.2018

Test Laboratory: CTTL, Beijing, China

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d139**

Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.904 \text{ S/m}$ ;  $\epsilon_r = 42.71$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7464; ConvF(10.28, 10.28, 10.28) @ 835 MHz; Calibrated: 9/12/2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1524; Calibrated: 9/13/2017
- Phantom: MFP\_V5.1C ; Type: QD 000 P51CA; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

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

Reference Value = 58.15 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 3.58 W/kg

SAR(1 g) = 2.37 W/kg; SAR(10 g) = 1.56 W/kg

Maximum value of SAR (measured) = 3.18 W/kg

