

P03 WCDMA II_RMC12.2K_Right Cheek_Ch9262**DUT: 180412W003**

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

Medium: H1900_0418 Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.395$ S/m; $\epsilon_r = 39.935$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.0 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(8.37, 8.37, 8.37); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

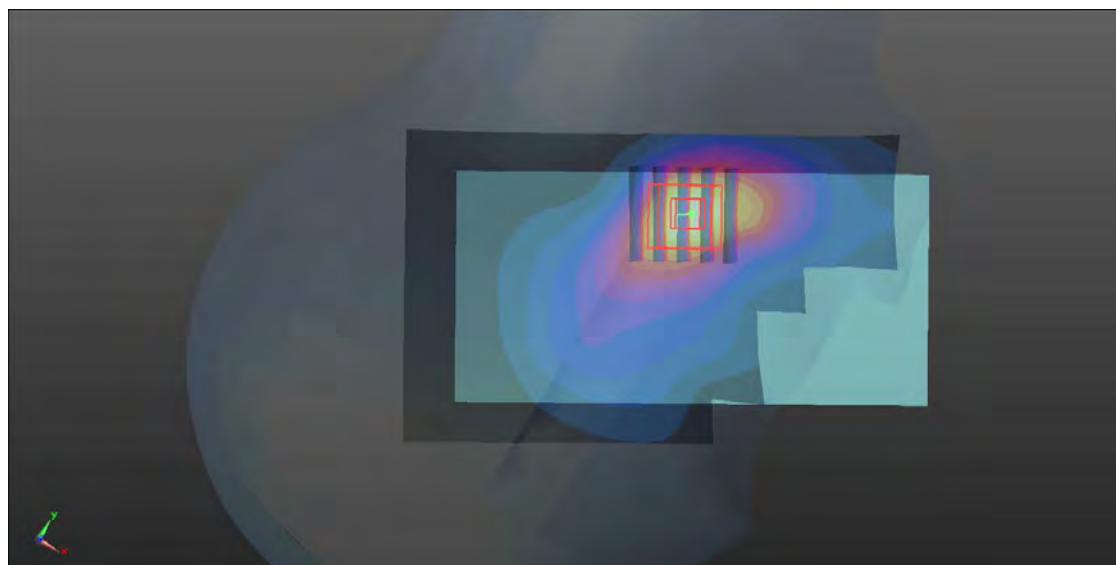
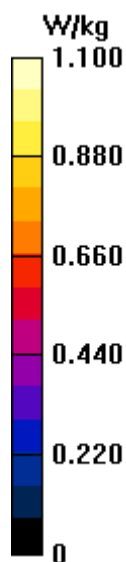
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.262 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.19 W/kg

SAR(1 g) = 0.771 W/kg; SAR(10 g) = 0.479 W/kg

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



P04 WCDMA IV_RMC12.2K_Right Cheek_Ch1513**DUT: 180412W003**

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

Medium: H1750_0419 Medium parameters used: $f = 1753$ MHz; $\sigma = 1.35$ S/m; $\epsilon_r = 39.493$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(8.62, 8.62, 8.62); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

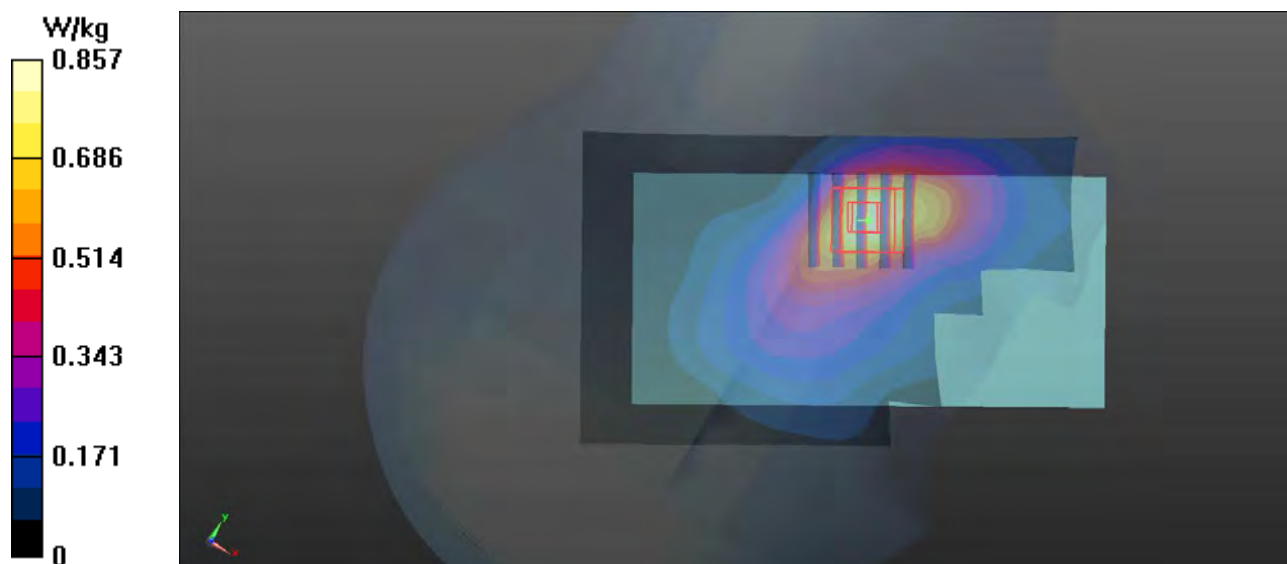
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.582 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.909 W/kg

SAR(1 g) = 0.626 W/kg; SAR(10 g) = 0.408 W/kg

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



P05 WCDMA V_RMC12.2K_Left Cheek_Ch4182**DUT: 180412W003**

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

Medium: H835_0421 Medium parameters used: $f = 836.4$ MHz; $\sigma = 0.891$ S/m; $\epsilon_r = 41.391$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.74, 9.74, 9.74); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x121x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.354 W/kg

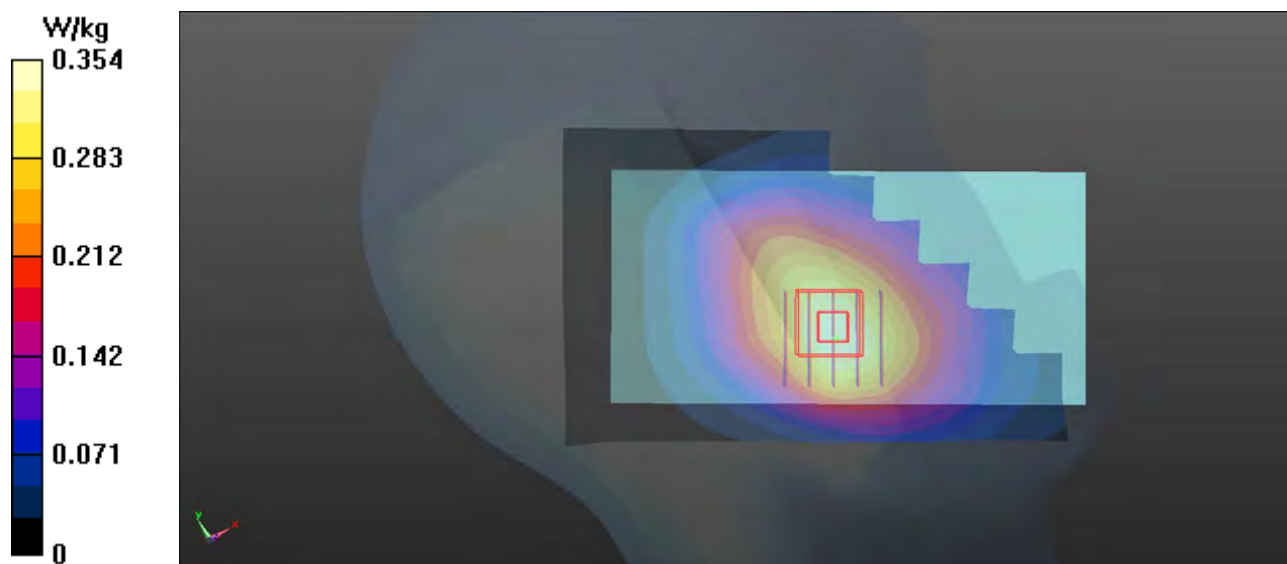
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 5.300 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.369 W/kg

SAR(1 g) = 0.298 W/kg; SAR(10 g) = 0.230 W/kg

Maximum value of SAR (measured) = 0.346 W/kg



P06 LTE 2_QPSK20M_Right Cheek_Ch18700_1RB_OS0**DUT: 180412W003**

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

Medium: H1900_0418 Medium parameters used: $f = 1860$ MHz; $\sigma = 1.403$ S/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.0 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(8.37, 8.37, 8.37); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.790 W/kg

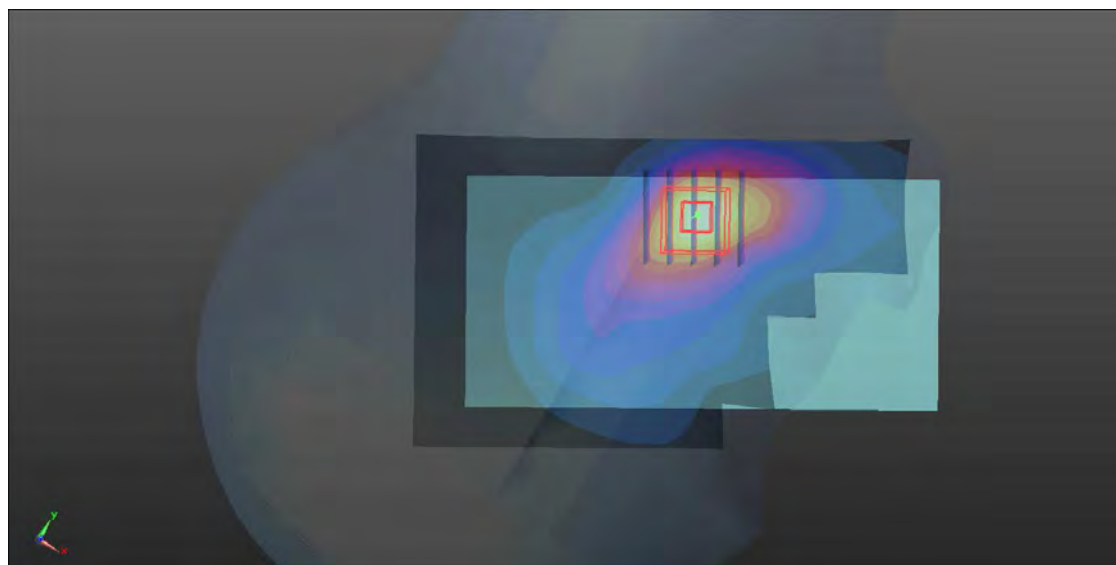
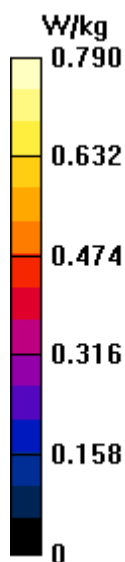
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.641 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.871 W/kg

SAR(1 g) = 0.561 W/kg; SAR(10 g) = 0.349 W/kg

Maximum value of SAR (measured) = 0.765 W/kg



P07 LTE 4_QPSK20M_Right Cheek_Ch20050_1RB_OS0**DUT: 180412W003**

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

Medium: H1750_0419 Medium parameters used: $f = 1720$ MHz; $\sigma = 1.317$ S/m; $\epsilon_r = 39.609$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(8.62, 8.62, 8.62); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x121x1):** Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.646 W/kg

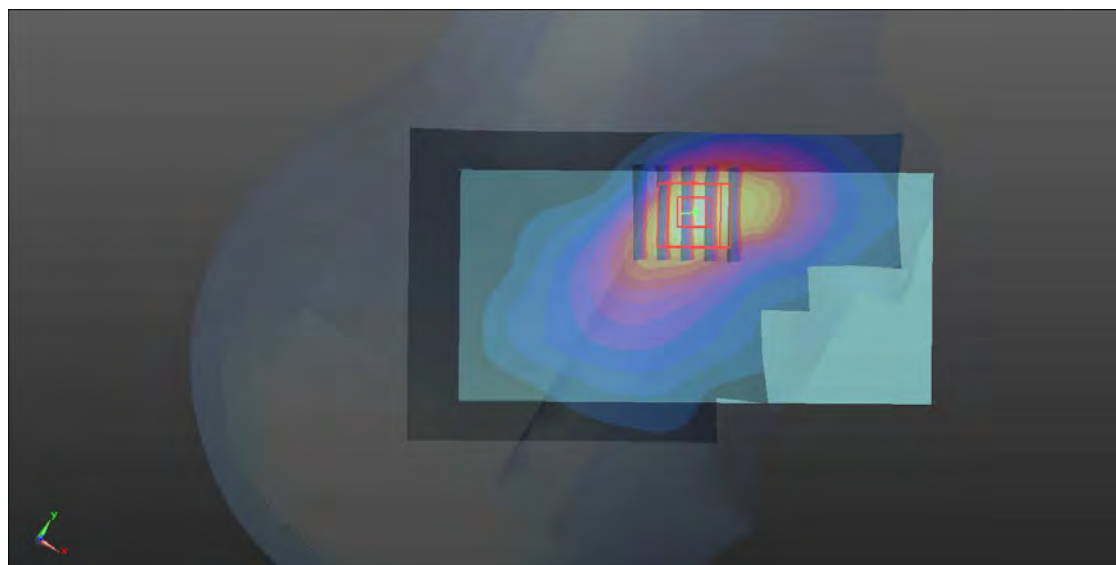
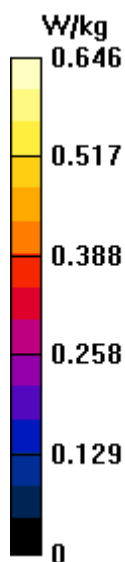
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 4.471 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.686 W/kg

SAR(1 g) = 0.475 W/kg; SAR(10 g) = 0.312 W/kg

Maximum value of SAR (measured) = 0.614 W/kg



P08 LTE 5_QPSK10M_Left Cheek_Ch20525_1RB_OS0**DUT: 180412W003**

Communication System: LTE; Frequency: 829 MHz; Duty Cycle: 1:1

Medium: H835_0421 Medium parameters used: $f = 829$ MHz; $\sigma = 0.884$ S/m; $\epsilon_r = 41.491$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.74, 9.74, 9.74); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x121x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.248 W/kg

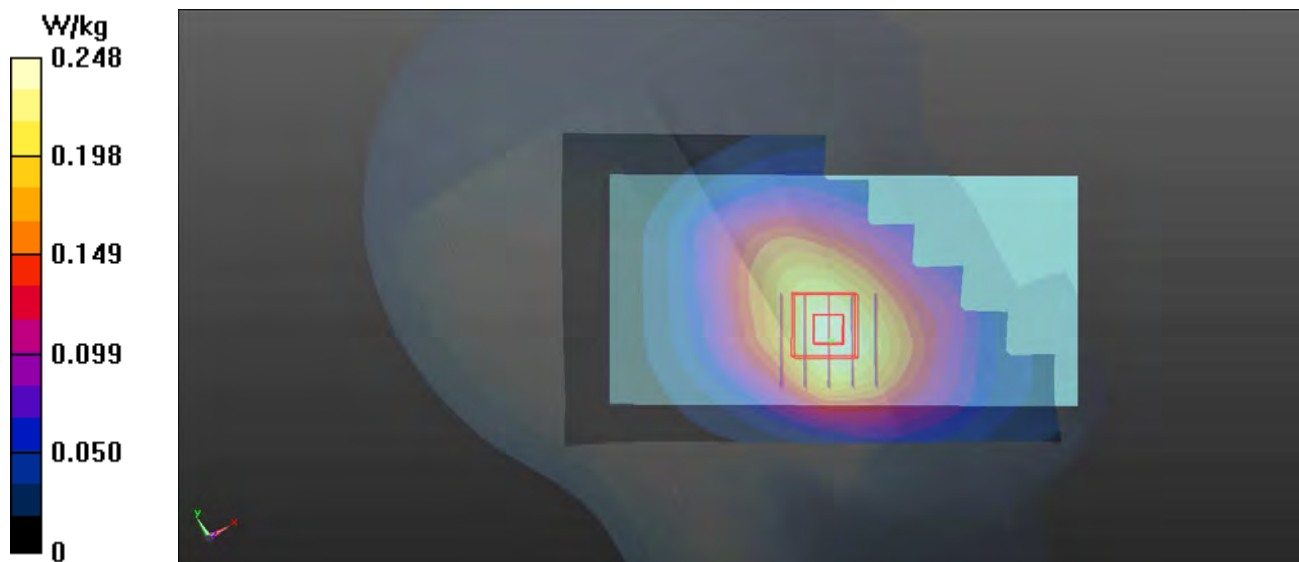
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.384 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.258 W/kg

SAR(1 g) = 0.208 W/kg; SAR(10 g) = 0.161 W/kg

Maximum value of SAR (measured) = 0.242 W/kg



P09 LTE 7_QPSK20M_Left Cheek_Ch21350_1RB_OS0**DUT: 180412W003**

Communication System: LTE; Frequency: 2560 MHz; Duty Cycle: 1:1

Medium: H2600_0423 Medium parameters used: $f = 2560$ MHz; $\sigma = 1.995$ S/m; $\epsilon_r = 39.075$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.17, 7.17, 7.17); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.544 W/kg

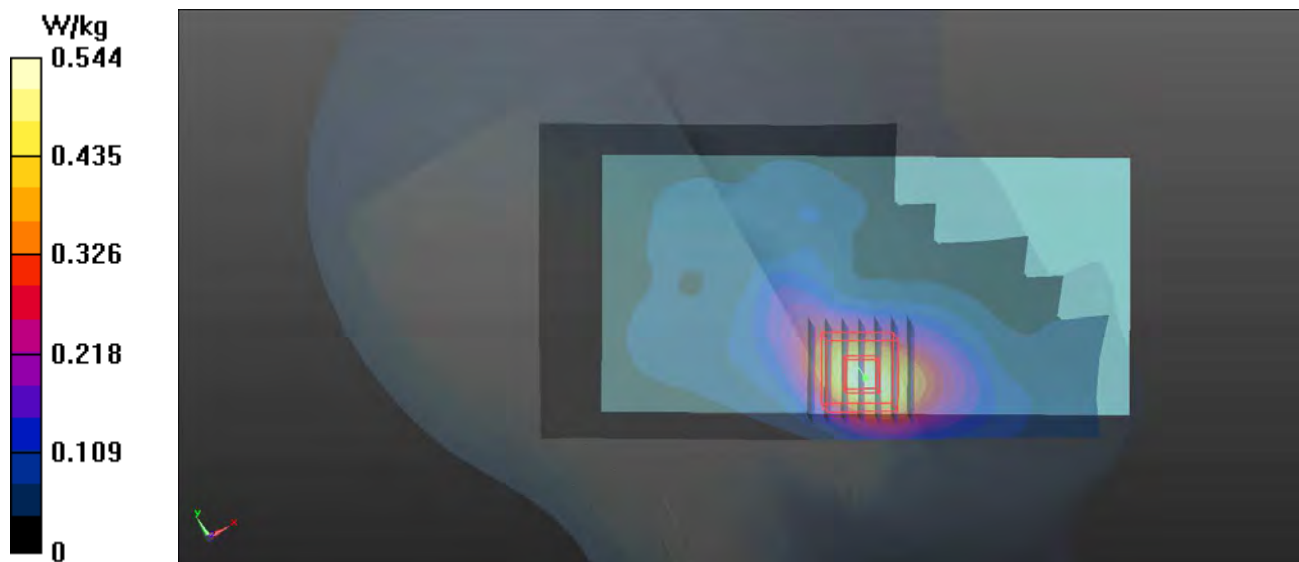
- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.398 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.696 W/kg

SAR(1 g) = 0.365 W/kg; SAR(10 g) = 0.186 W/kg

Maximum value of SAR (measured) = 0.574 W/kg



P10 LTE 12_QPSK10M_Left Cheek_Ch23130_1RB_OS0**DUT: 180412W003**

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

Medium: H750_0420 Medium parameters used: $f = 711$ MHz; $\sigma = 0.859$ S/m; $\epsilon_r = 41.196$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(10.08, 10.08, 10.08); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x121x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.195 W/kg

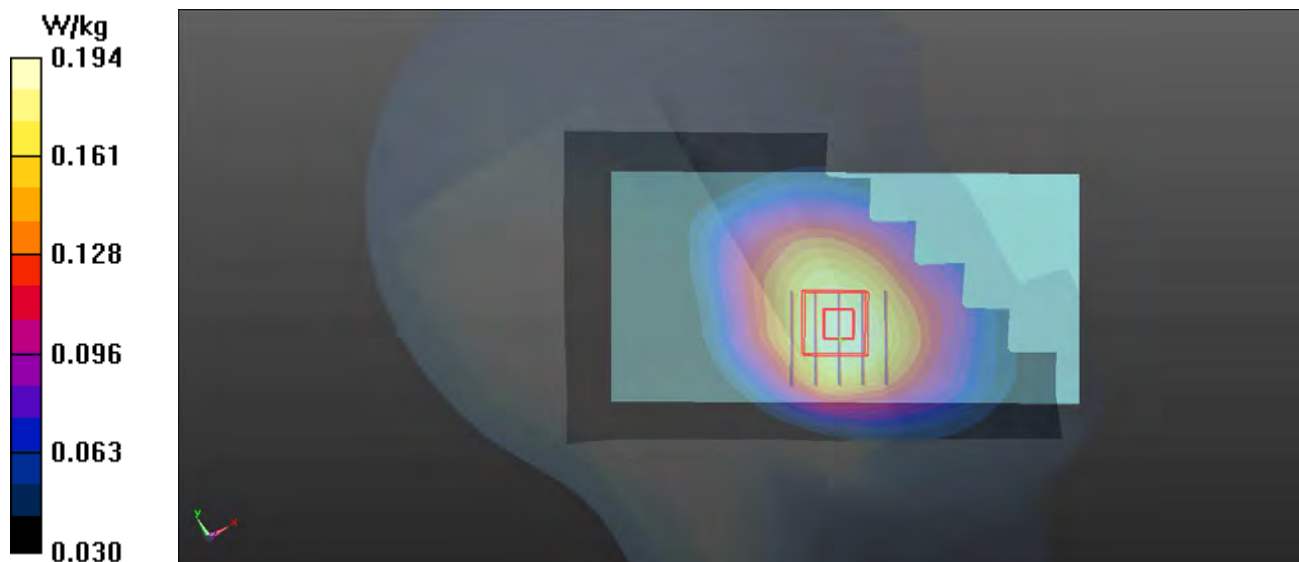
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.844 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.204 W/kg

SAR(1 g) = 0.173 W/kg; SAR(10 g) = 0.138 W/kg

Maximum value of SAR (measured) = 0.194 W/kg



P11 LTE 13_QPSK10M_Left Cheek_Ch23230_1RB_OS0**DUT: 180412W003**

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

Medium: H750_0420 Medium parameters used: $f = 782$ MHz; $\sigma = 0.917$ S/m; $\epsilon_r = 40.431$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(10.08, 10.08, 10.08); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.210 W/kg

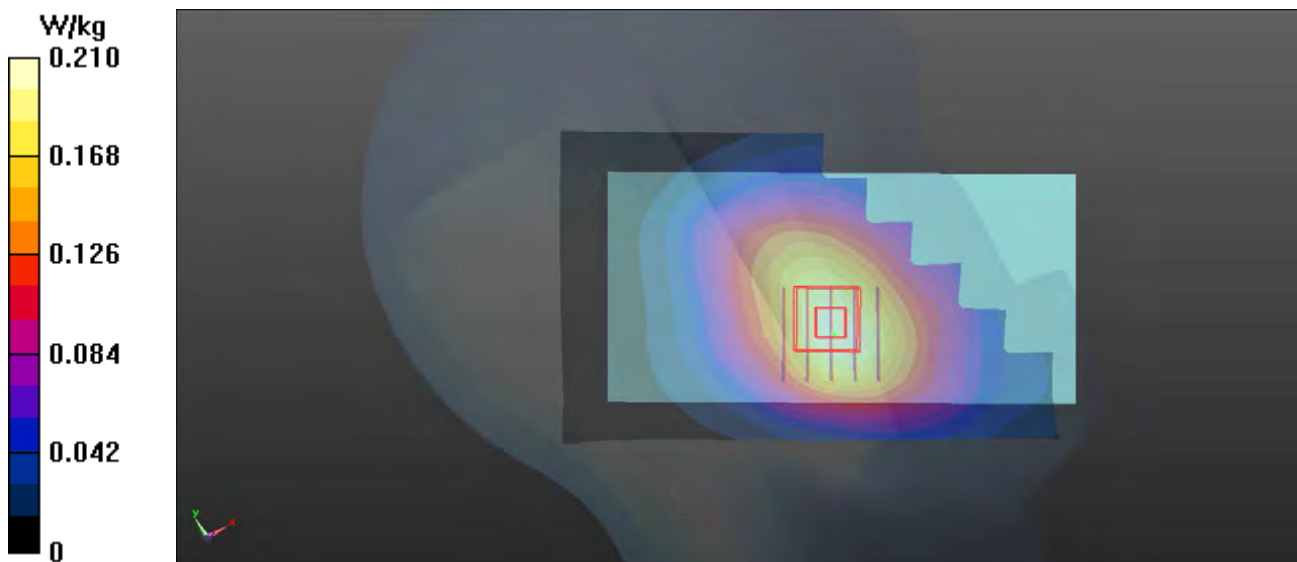
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.089 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.216 W/kg

SAR(1 g) = 0.181 W/kg; SAR(10 g) = 0.142 W/kg

Maximum value of SAR (measured) = 0.206 W/kg



P12 LTE 14_QPSK10M_Left Cheek_Ch23330_1RB_OS0**DUT: 180412W003**

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

Medium: H750_0420 Medium parameters used: $f = 793$ MHz; $\sigma = 0.928$ S/m; $\epsilon_r = 40.287$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(10.08, 10.08, 10.08); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.200 W/kg

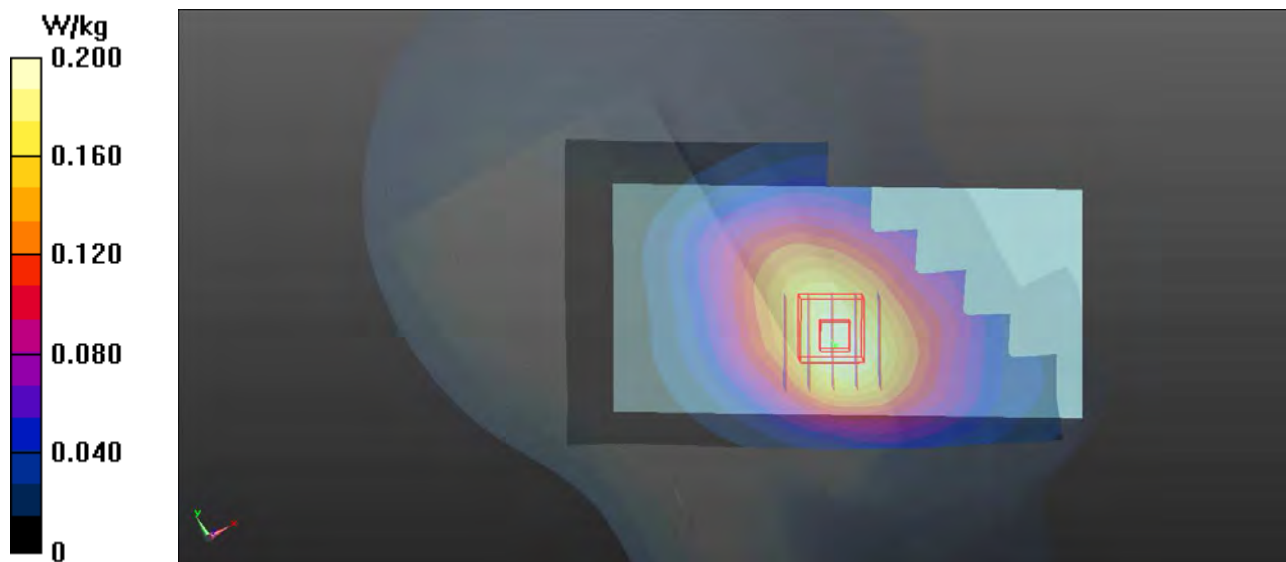
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.780 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.205 W/kg

SAR(1 g) = 0.169 W/kg; SAR(10 g) = 0.133 W/kg

Maximum value of SAR (measured) = 0.193 W/kg



P13 LTE 25_QPSK20M_Right Cheek_Ch26365_1RB_OS0**DUT: 180412W003**

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

Medium: H1900_0418 Medium parameters used: $f = 1882.5$ MHz; $\sigma = 1.425$ S/m; $\epsilon_r = 39.797$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.0 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(8.37, 8.37, 8.37); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.760 W/kg

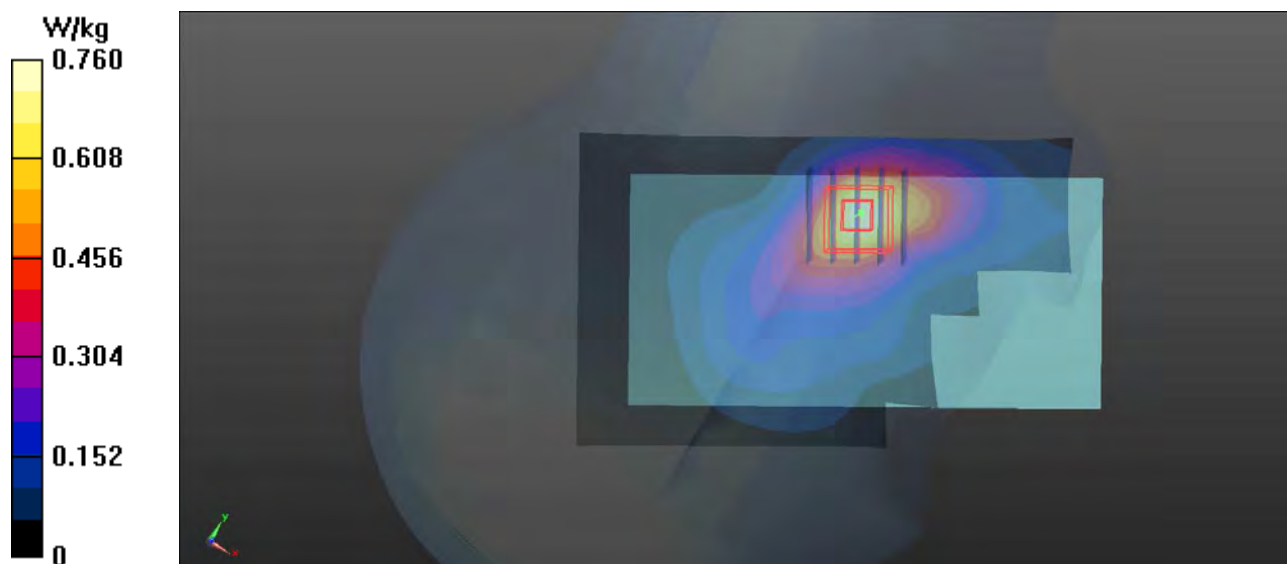
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.622 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.834 W/kg

SAR(1 g) = 0.533 W/kg; SAR(10 g) = 0.327 W/kg

Maximum value of SAR (measured) = 0.734 W/kg



P14 LTE 26_QPSK15M_Left Cheek_Ch26865_1RB_OS0**DUT: 180412W003**

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

Medium: H835_0421 Medium parameters used: $f = 831.5$ MHz; $\sigma = 0.886$ S/m; $\epsilon_r = 41.456$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.74, 9.74, 9.74); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.274 W/kg

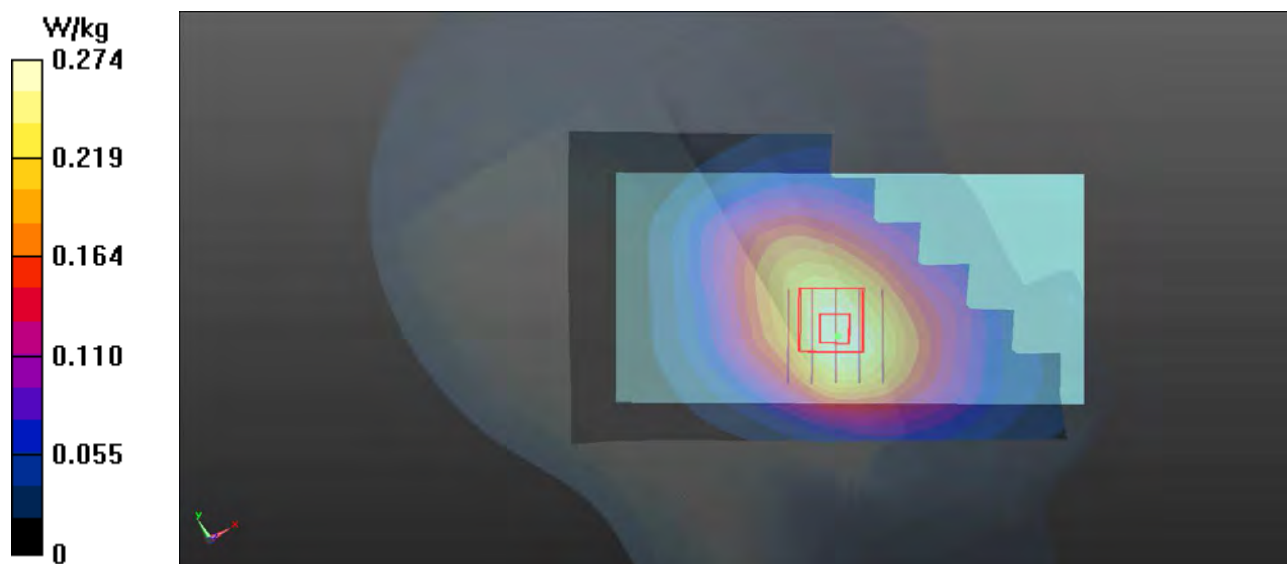
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.182 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.286 W/kg

SAR(1 g) = 0.230 W/kg; SAR(10 g) = 0.178 W/kg

Maximum value of SAR (measured) = 0.269 W/kg



P15 LTE 30_QPSK10M_Left Cheek_Ch27710_1RB_OS0**DUT: 180412W003**

Communication System: LTE; Frequency: 2310 MHz; Duty Cycle: 1:1

Medium: H2300_0425 Medium parameters used: $f = 2310$ MHz; $\sigma = 1.675$ S/m; $\epsilon_r = 38.989$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C ; Liquid Temperature : 22.0 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.85, 7.85, 7.85); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (91x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.465 W/kg

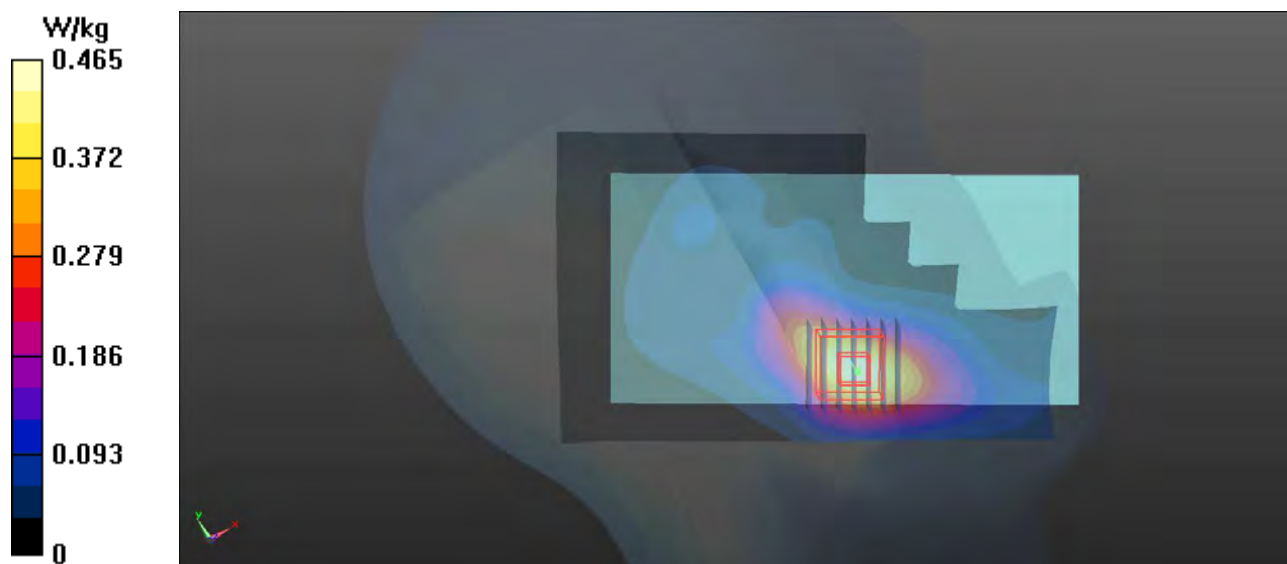
- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.345 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.629 W/kg

SAR(1 g) = 0.352 W/kg; SAR(10 g) = 0.189 W/kg

Maximum value of SAR (measured) = 0.530 W/kg



P16 LTE 38_QPSK20M_Left Cheek_Ch38150_1RB_OS0**DUT: 180412W003**

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

Medium: H2600_0423 Medium parameters used: $f = 2610$ MHz; $\sigma = 2.05$ S/m; $\epsilon_r = 38.892$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.17, 7.17, 7.17); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (91x151x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.352 W/kg

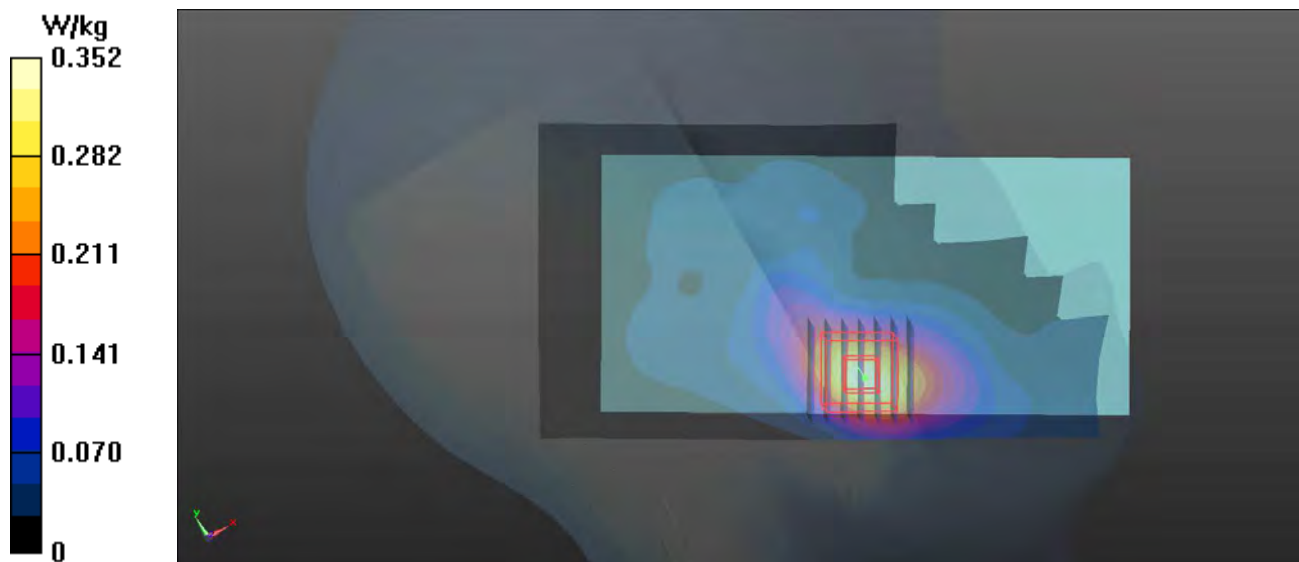
- **Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.835 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.411 W/kg

SAR(1 g) = 0.217 W/kg; SAR(10 g) = 0.111 W/kg

Maximum value of SAR (measured) = 0.330 W/kg



P17 LTE 40_QPSK10M_Left Cheek_Ch38750_1RB_OS0**DUT: 180412W003**

Communication System: LTE; Frequency: 2310 MHz; Duty Cycle: 1:1.58

Medium: H2300_0425 Medium parameters used: $f = 2310$ MHz; $\sigma = 1.724$ S/m; $\epsilon_r = 38.877$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.0 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.85, 7.85, 7.85); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.335 W/kg

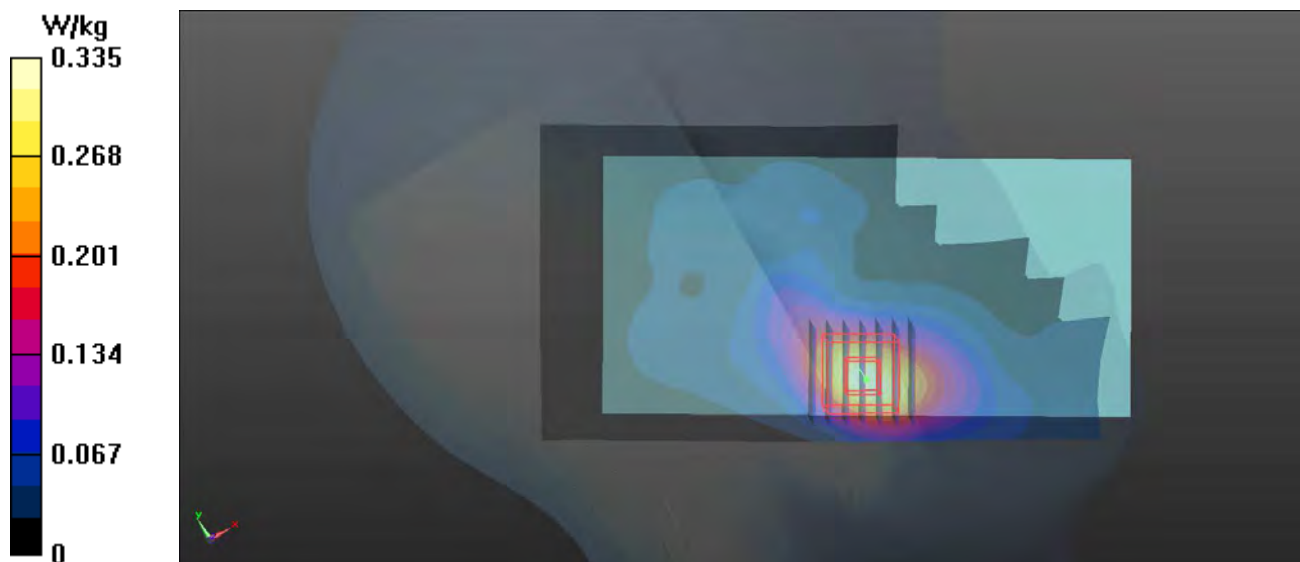
- **Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.949 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.382 W/kg

SAR(1 g) = 0.210 W/kg; SAR(10 g) = 0.111 W/kg

Maximum value of SAR (measured) = 0.321 W/kg



P18 LTE 41_QPSK20M_Left Cheek_Ch41490_1RB_OS0**DUT: 180412W003**

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

Medium: H2600_0423 Medium parameters used: $f = 2680$ MHz; $\sigma = 2.129$ S/m; $\epsilon_r = 38.628$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.17, 7.17, 7.17); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (91x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

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

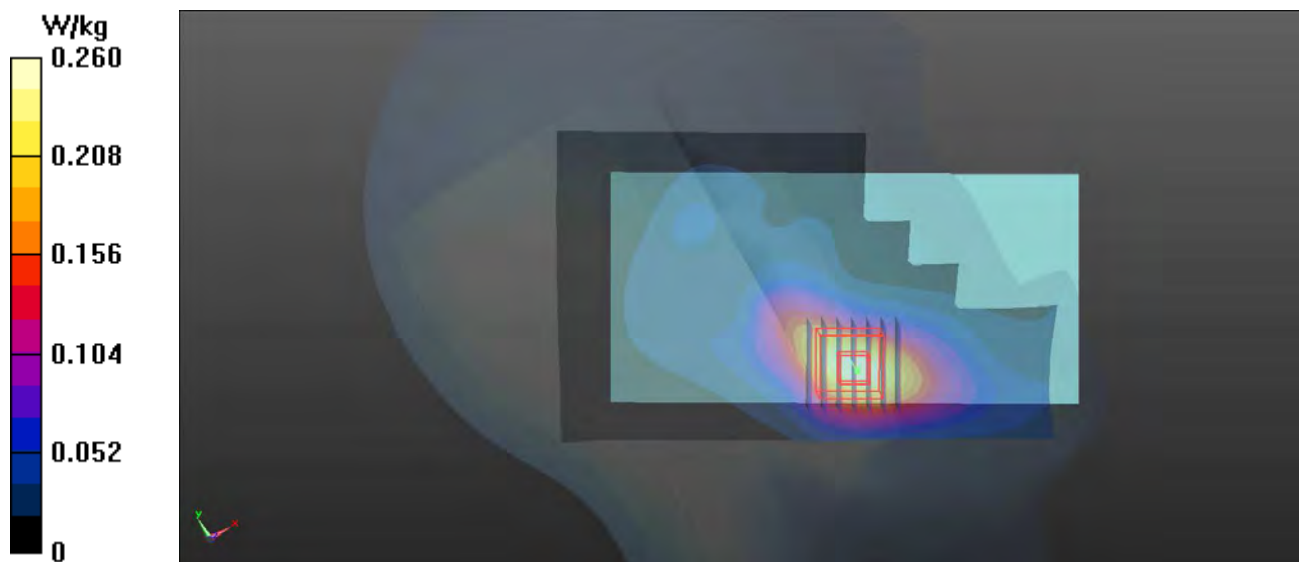
- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.310 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.359 W/kg

SAR(1 g) = 0.181 W/kg; SAR(10 g) = 0.090 W/kg

Maximum value of SAR (measured) = 0.292 W/kg



P19 LTE 66_QPSK20M_Right Cheek_Ch132572_1RB_OS0**DUT: 180412W003**

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

Medium: H1750_0419 Medium parameters used: $f = 1770$ MHz; $\sigma = 1.367$ S/m; $\epsilon_r = 39.429$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(8.62, 8.62, 8.62); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x121x1):** Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.717 W/kg

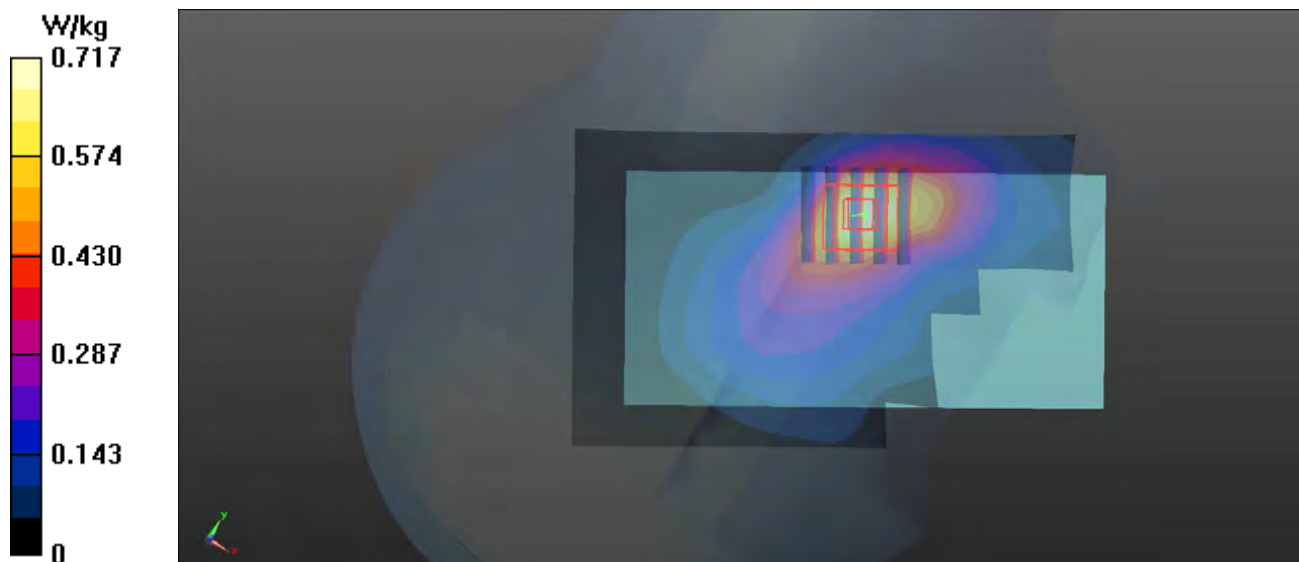
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 4.658 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.770 W/kg

SAR(1 g) = 0.523 W/kg; SAR(10 g) = 0.336 W/kg

Maximum value of SAR (measured) = 0.688 W/kg



P20 802.11b_Right Cheek_Ch1**DUT: 180412W003**

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

Medium: H2450_0424 Medium parameters used: $f = 2412$ MHz; $\sigma = 1.755$ S/m; $\epsilon_r = 38.974$; $\rho = 1000$ kg/m³

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.36, 7.36, 7.36); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.768 W/kg

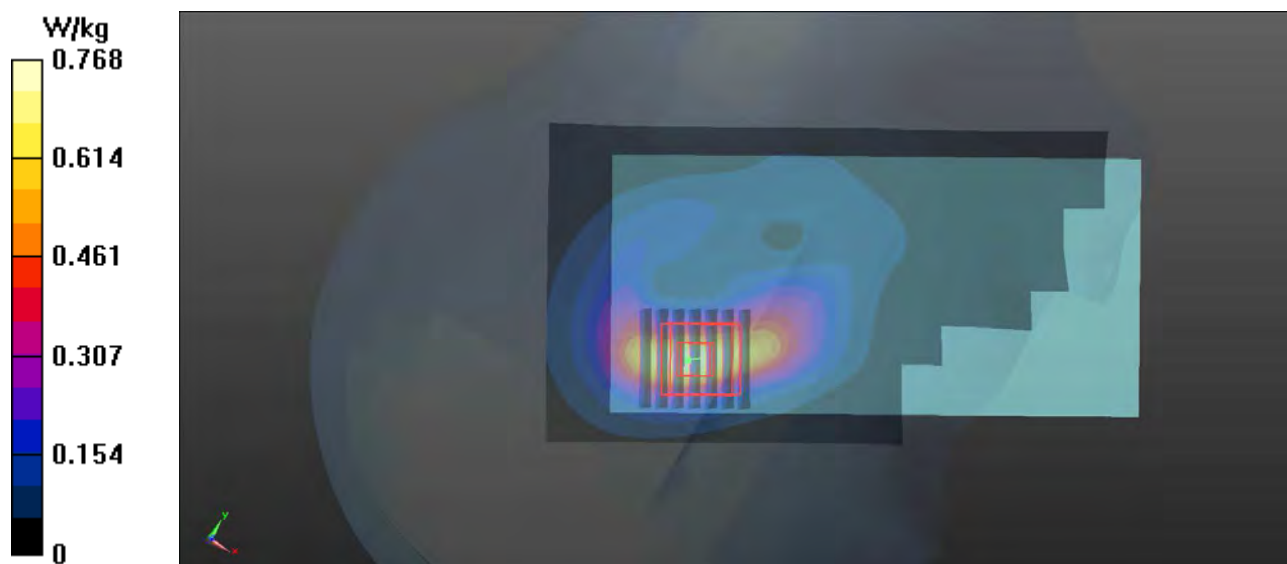
- **Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.138 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.921 W/kg

SAR(1 g) = 0.463 W/kg; SAR(10 g) = 0.224 W/kg

Maximum value of SAR (measured) = 0.752 W/kg



P22 802.11n_HT20_Right Cheek_Ch60**DUT: 180412W003**

Communication System: 802.11n; Frequency: 5300 MHz; Duty Cycle: 1:1

Medium: H5G_0426 Medium parameters used: $f = 5300$ MHz; $\sigma = 4.743$ S/m; $\epsilon_r = 35.249$; $\rho = 1000$ kg/m³

Ambient Temperature : 22.9 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(5.04, 5.04, 5.04); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (101x181x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 2.18 W/kg

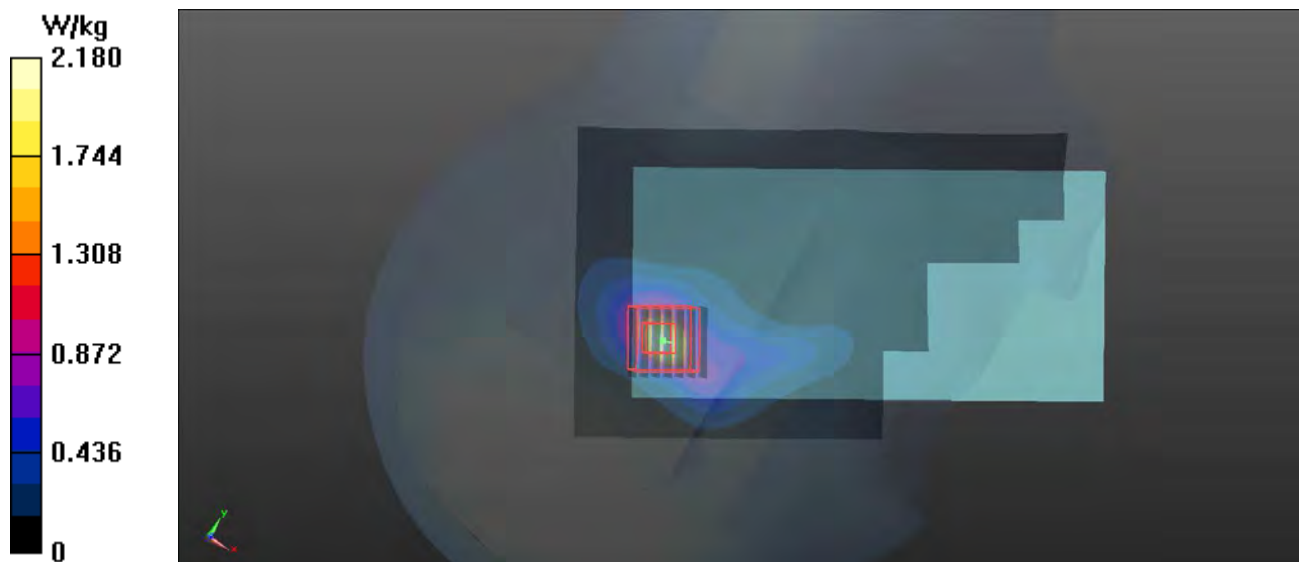
- Zoom Scan (7x7x12)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 5.630 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 3.68 W/kg

SAR(1 g) = 0.980 W/kg; SAR(10 g) = 0.332 W/kg

Maximum value of SAR (measured) = 2.26 W/kg



P23 802.11n_HT40_Right Cheek_Ch134**DUT: 180412W003**

Communication System: 802.11n; Frequency: 5670 MHz; Duty Cycle: 1:1

Medium: H5G_0426 Medium parameters used: $f = 5670$ MHz; $\sigma = 5.109$ S/m; $\epsilon_r = 34.727$; $\rho = 1000$ kg/m³

Ambient Temperature : 22.9 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(4.66, 4.66, 4.66); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (101x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

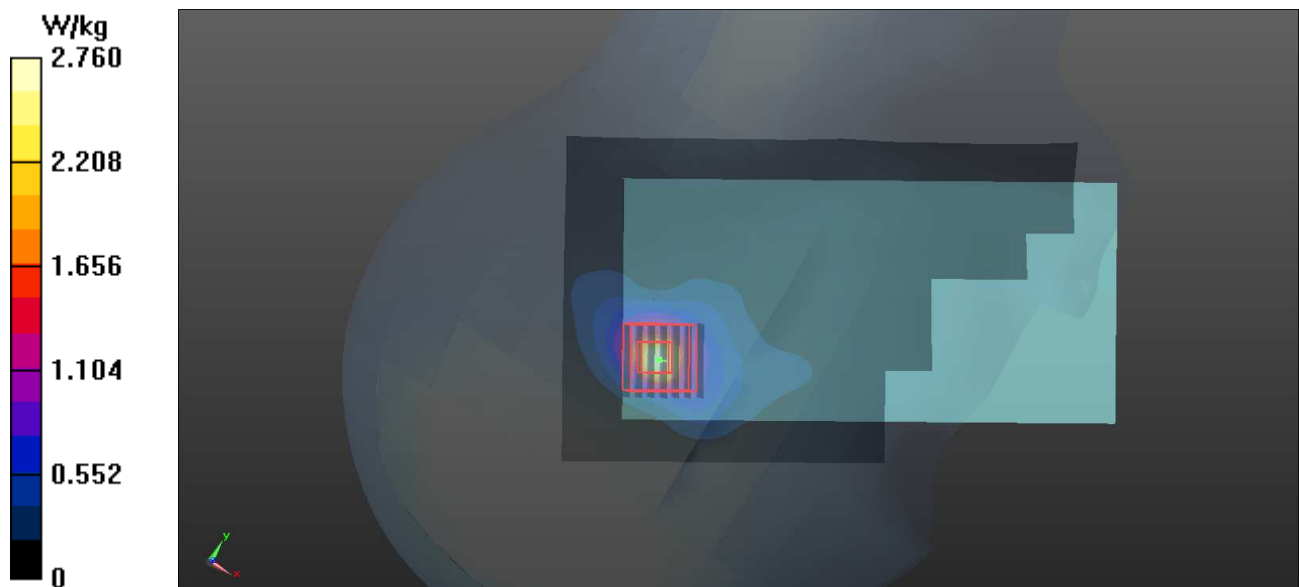
- Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 5.615 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 4.43 W/kg

SAR(1 g) = 0.939 W/kg; SAR(10 g) = 0.316 W/kg

Maximum value of SAR (measured) = 2.64 W/kg



P24 802.11n_HT40_Right Cheek_Ch159**DUT: 180412W003**

Communication System: 802.11n; Frequency: 5795 MHz; Duty Cycle: 1:1

Medium: H5G_0426 Medium parameters used: $f = 5795$ MHz; $\sigma = 5.243$ S/m; $\epsilon_r = 34.544$; $\rho = 1000$ kg/m³

Ambient Temperature : 22.9 °C; Liquid Temperature : 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(4.7, 4.7, 4.7); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (101x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 2.51 W/kg

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

Reference Value = 4.569 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 4.12 W/kg

SAR(1 g) = 1.03 W/kg; SAR(10 g) = 0.347 W/kg

Maximum value of SAR (measured) = 2.41 W/kg



P25 BT_GFSK_Right Cheek_Ch39**DUT: 180412W003**

Communication System: BT; Frequency: 2441 MHz; Duty Cycle: 1:1.12

Medium: H2450_0424 Medium parameters used: $f = 2441$ MHz; $\sigma = 1.785$ S/m; $\epsilon_r = 38.856$; $\rho = 1000$ kg/m³

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.36, 7.36, 7.36); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.365 W/kg

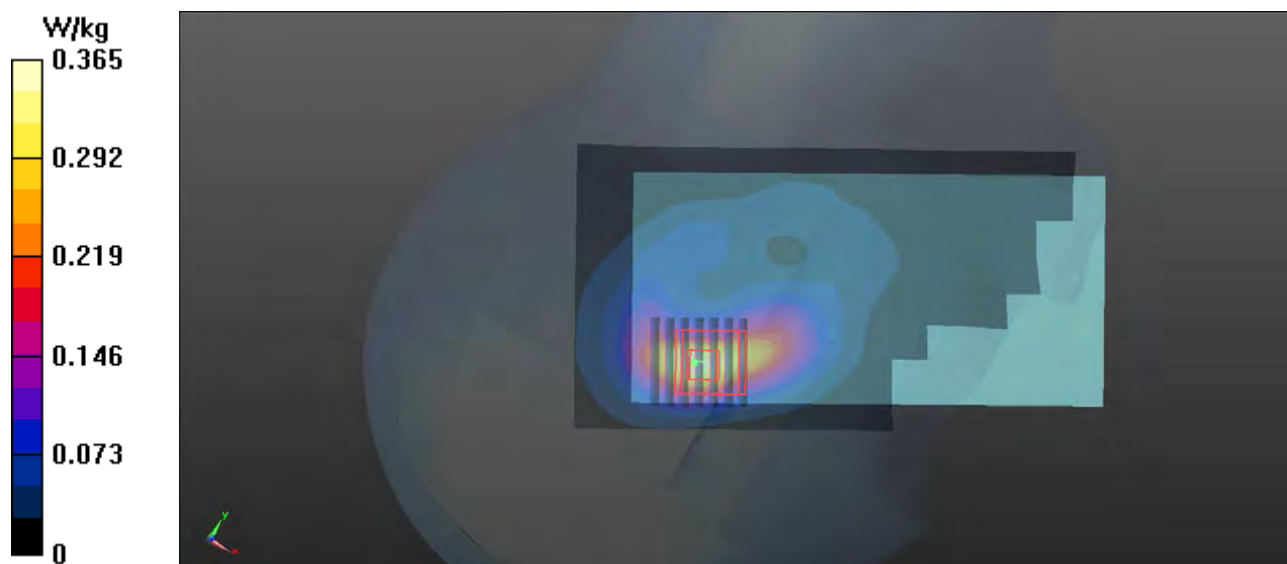
- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.033 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.441 W/kg

SAR(1 g) = 0.219 W/kg; SAR(10 g) = 0.107 W/kg

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



P26 LTE 30_QPSK10M_Rear Face_1cm_Ch27710_1RB_OS0**DUT: 180412W003**

Communication System: LTE; Frequency: 2310 MHz; Duty Cycle: 1:1

Medium: B2300_0425 Medium parameters used: $f = 2310$ MHz; $\sigma = 1.812$ S/m; $\epsilon_r = 52.616$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.0 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.56, 7.56, 7.56); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.535 W/kg

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

Reference Value = 7.646 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.625 W/kg

SAR(1 g) = 0.354 W/kg; SAR(10 g) = 0.195 W/kg

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

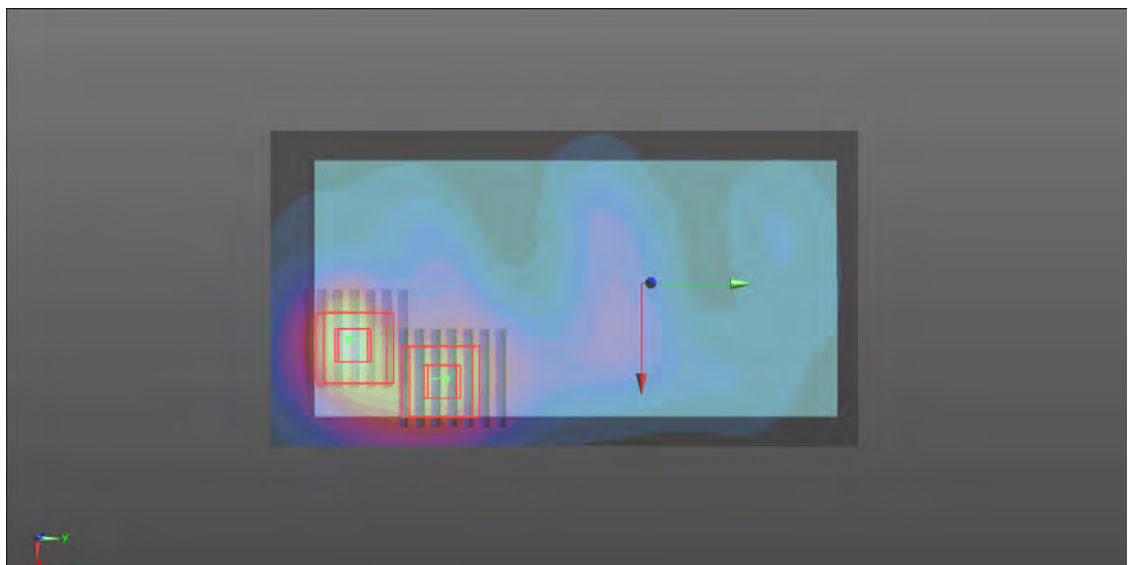
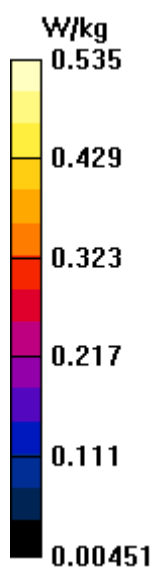
- Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.646 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.492 W/kg

SAR(1 g) = 0.281 W/kg; SAR(10 g) = 0.162 W/kg

Maximum value of SAR (measured) = 0.411 W/kg



P27 LTE 40_QPSK10M_Rear Face_1cm_Ch38750_1RB_OS0**DUT: 180412W003**

Communication System: LTE; Frequency: 2310 MHz; Duty Cycle: 1:1.58

Medium: B2300_0425 Medium parameters used: $f = 2310$ MHz; $\sigma = 1.812$ S/m; $\epsilon_r = 52.616$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.0 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.56, 7.56, 7.56); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.02 W/kg

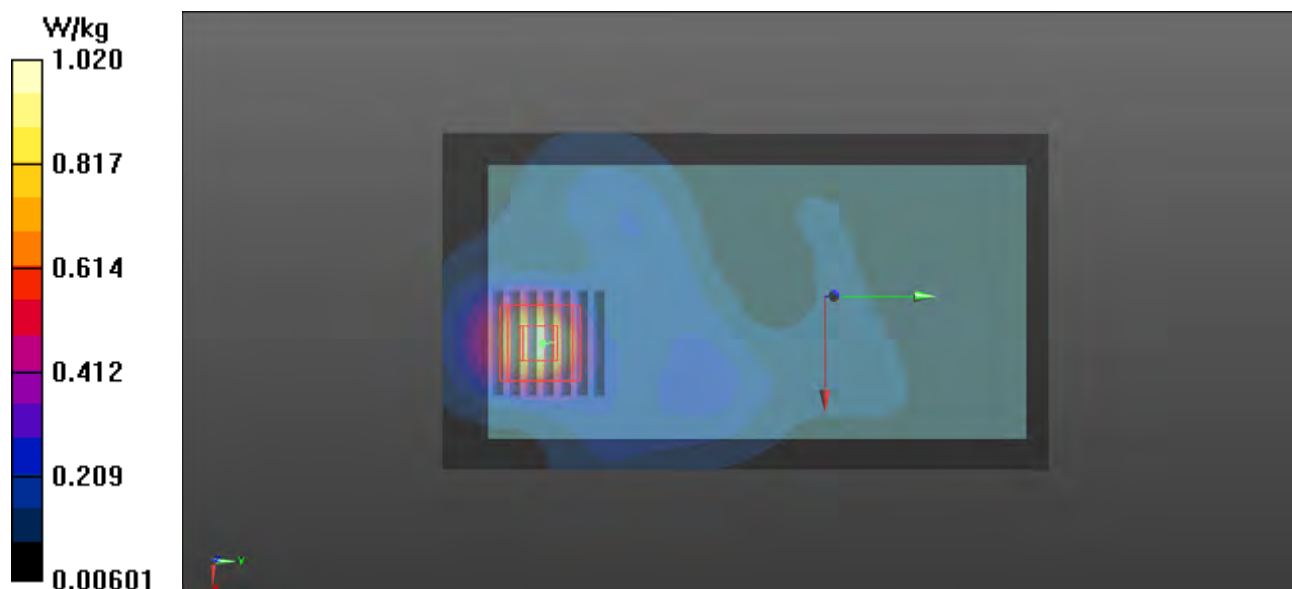
- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.142 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.02 W/kg

SAR(1 g) = 0.323 W/kg; SAR(10 g) = 0.178 W/kg

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



P28 802.11n_HT20_Rear Face_1cm_Ch64**DUT: 180412W003**

Communication System: 802.11n; Frequency: 5320 MHz; Duty Cycle: 1:1

Medium: B5G_0502 Medium parameters used: $f = 5320$ MHz; $\sigma = 5.346$ S/m; $\epsilon_r = 50.82$; $\rho = 1000$ kg/m³

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(4.61, 4.61, 4.61); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (101x191x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.710 W/kg

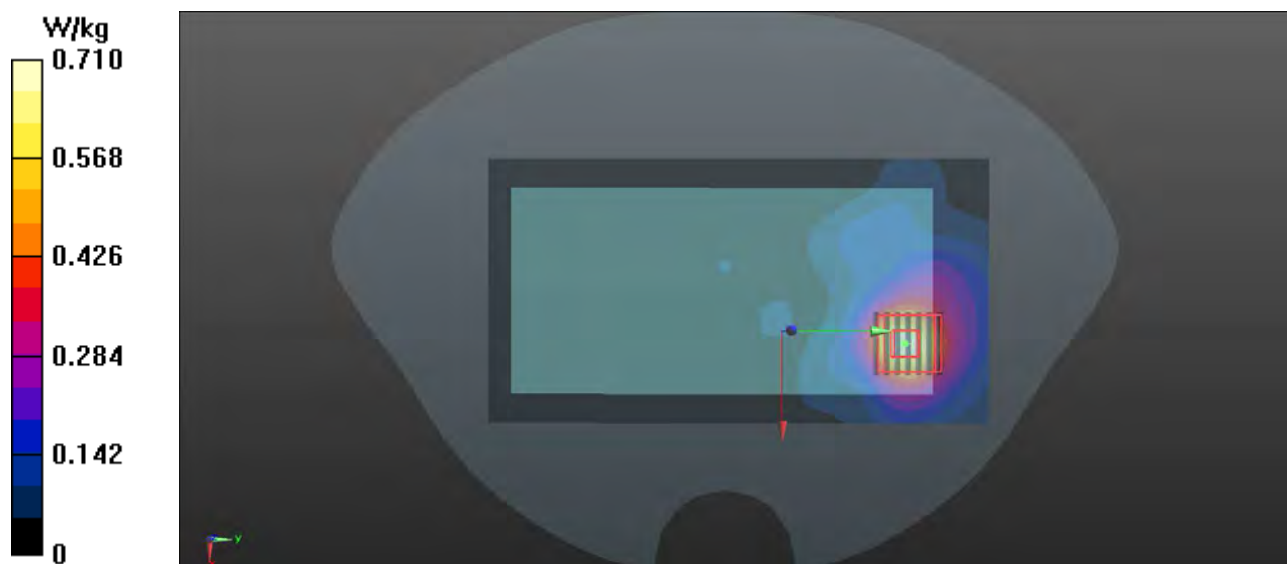
- Zoom Scan (7x7x12)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 1.540 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 1.22 W/kg

SAR(1 g) = 0.331 W/kg; SAR(10 g) = 0.137 W/kg

Maximum value of SAR (measured) = 0.729 W/kg



P29 802.11n_HT40_Rear Face_1cm_Ch134**DUT: 180412W003**

Communication System: 802.11n; Frequency: 5670 MHz; Duty Cycle: 1:1

Medium: B5G_0502 Medium parameters used: $f = 5670$ MHz; $\sigma = 5.915$ S/m; $\epsilon_r = 50.126$; $\rho = 1000$ kg/m³

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(3.9, 3.9, 3.9); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (101x191x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.603 W/kg

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

Reference Value = 1.778 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.279 W/kg; SAR(10 g) = 0.112 W/kg

Maximum value of SAR (measured) = 0.622 W/kg



P30 GSM850_GPRS12_Rear Face_1cm_Ch128**DUT: 180412W003**

Communication System: GPRS12; Frequency: 824.2 MHz; Duty Cycle: 1:2

Medium: B835_0421 Medium parameters used: $f = 824.2$ MHz; $\sigma = 0.982$ S/m; $\epsilon_r = 55.725$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C ; Liquid Temperature : 22.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.62, 9.62, 9.62); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.663 W/kg

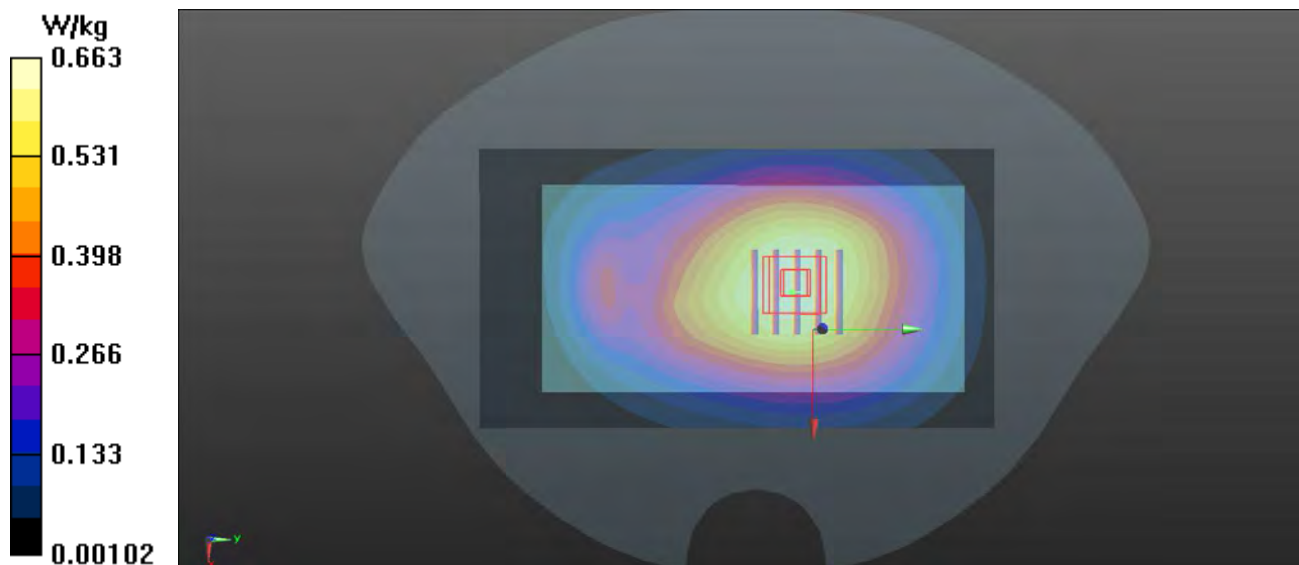
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 23.67 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.701 W/kg

SAR(1 g) = 0.553 W/kg; SAR(10 g) = 0.425 W/kg

Maximum value of SAR (measured) = 0.652 W/kg



P31 GSM1900_GPRS12_Rear Face_1cm_Ch512**DUT: 180412W003**

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

Medium: B1900_0418 Medium parameters used: $f = 1850.2$ MHz; $\sigma = 1.502$ S/m; $\epsilon_r = 54.945$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C ; Liquid Temperature : 22.0 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.77, 7.77, 7.77); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

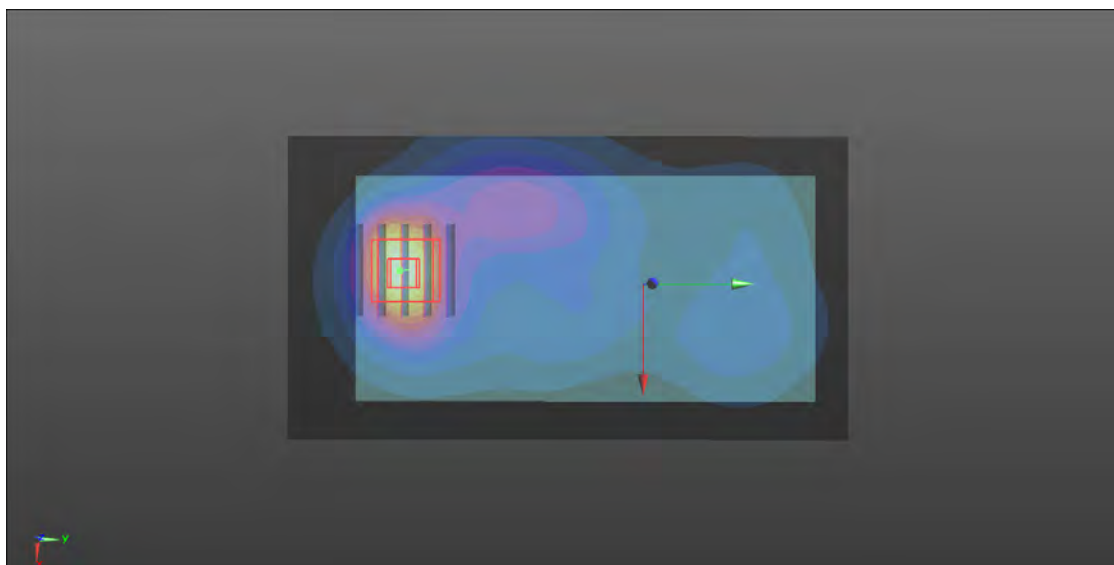
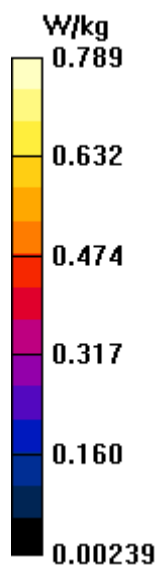
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.044 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.927 W/kg

SAR(1 g) = 0.549 W/kg; SAR(10 g) = 0.308 W/kg

Maximum value of SAR (measured) = 0.815 W/kg



P32 WCDMA II_RMC12.2K_Rear Face_1cm_Ch9262**DUT: 180412W003**

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

Medium: B1900_0418 Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.504$ S/m; $\epsilon_r = 54.937$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.0 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.77, 7.77, 7.77); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 1.98 W/kg

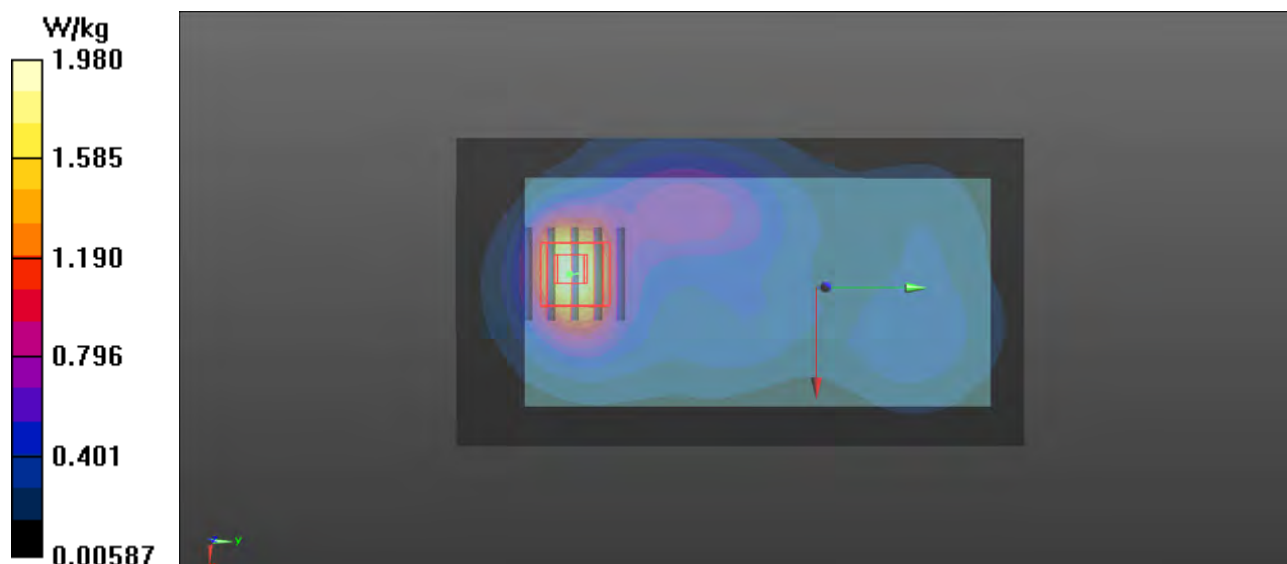
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 14.41 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 2.42 W/kg

SAR(1 g) = 1.41 W/kg; SAR(10 g) = 0.781 W/kg

Maximum value of SAR (measured) = 2.05 W/kg



P33 WCDMA IV_RMC12.2K_Rear Face_1cm_Ch1513**DUT: 180412W003**

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

Medium: B1750_0419 Medium parameters used: $f = 1753$ MHz; $\sigma = 1.483$ S/m; $\epsilon_r = 52.373$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(8.04, 8.04, 8.04); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.63 W/kg

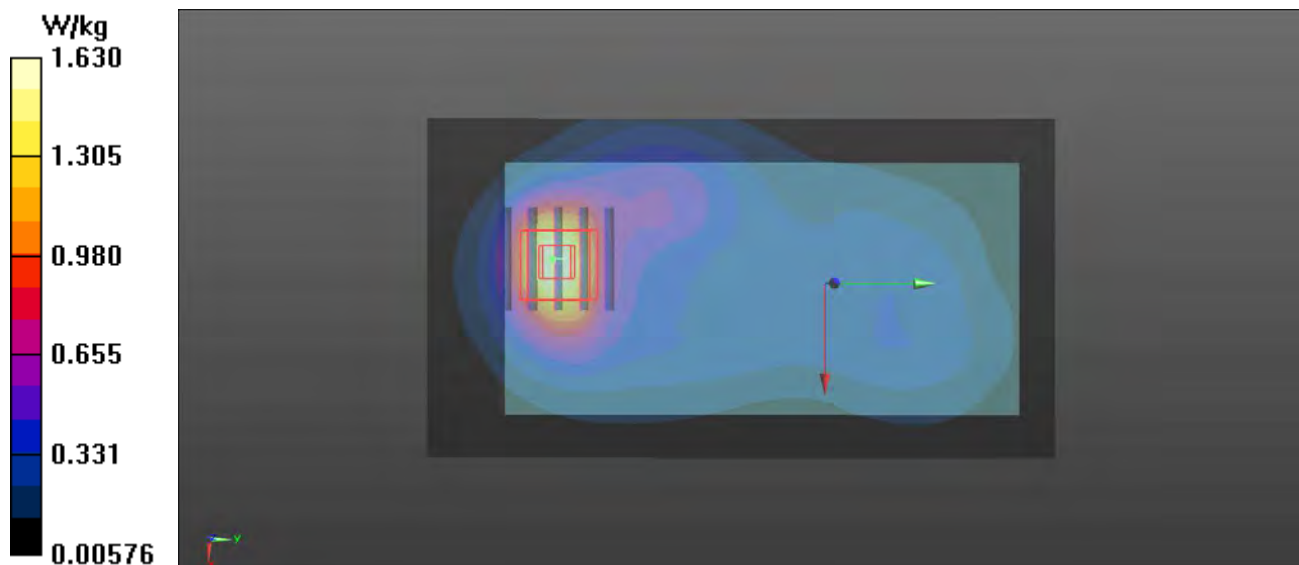
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.03 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.98 W/kg

SAR(1 g) = 1.18 W/kg; SAR(10 g) = 0.674 W/kg

Maximum value of SAR (measured) = 1.70 W/kg



P34 WCDMA V_RMC12.2K_Rear Face_1cm_Ch4132**DUT: 180412W003**

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

Medium: B835_0421 Medium parameters used: $f = 826.4$ MHz; $\sigma = 0.984$ S/m; $\epsilon_r = 55.703$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.62, 9.62, 9.62); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.603 W/kg

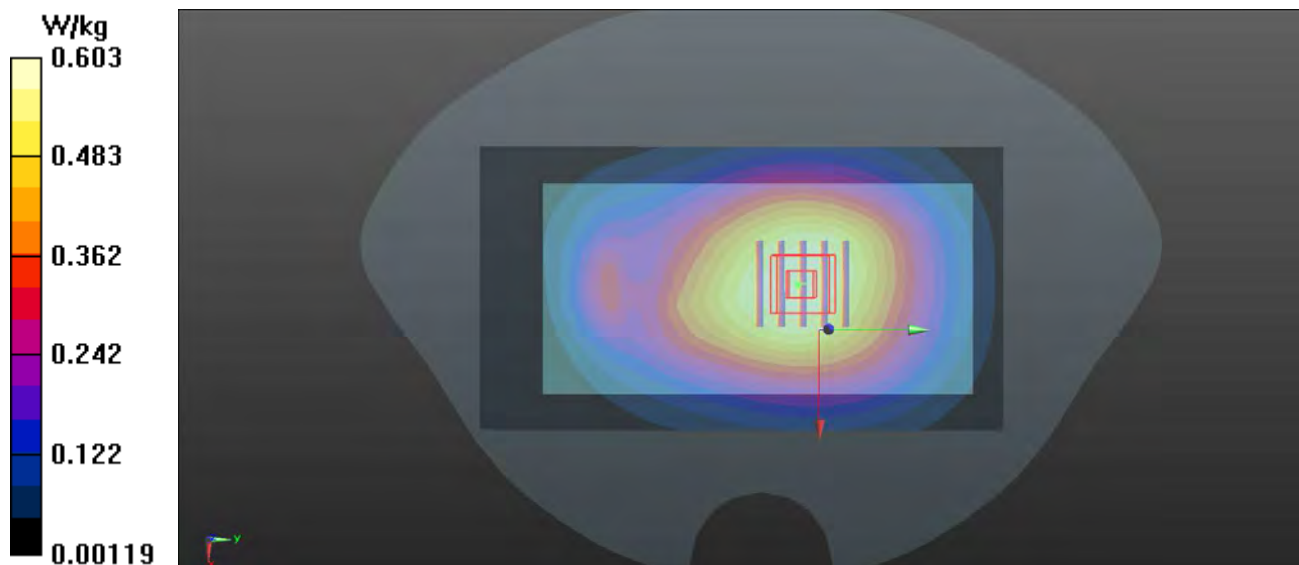
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 22.47 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.651 W/kg

SAR(1 g) = 0.508 W/kg; SAR(10 g) = 0.388 W/kg

Maximum value of SAR (measured) = 0.605 W/kg



P35 LTE 2_QPSK20M_Rear Face_1cm_Ch19100_1RB_OS0**DUT: 180412W003**

Communication System: LTE; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: B1900_0418 Medium parameters used: $f = 1900$ MHz; $\sigma = 1.561$ S/m; $\epsilon_r = 54.788$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.0 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.77, 7.77, 7.77); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

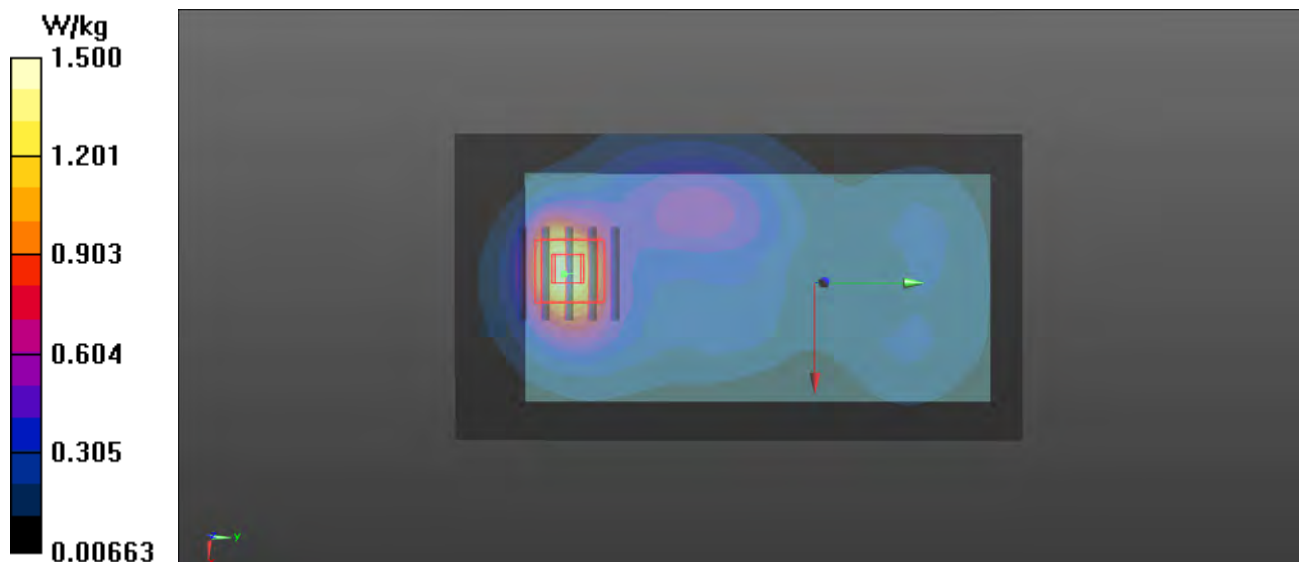
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.74 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.80 W/kg

SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.570 W/kg

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



P36 LTE 4_QPSK20M_Rear Face_1cm_Ch20300_1RB_OS0**DUT: 180412W003**

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

Medium: B1750_0419 Medium parameters used: $f = 1745$ MHz; $\sigma = 1.473$ S/m; $\epsilon_r = 52.395$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(8.04, 8.04, 8.04); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.38 W/kg

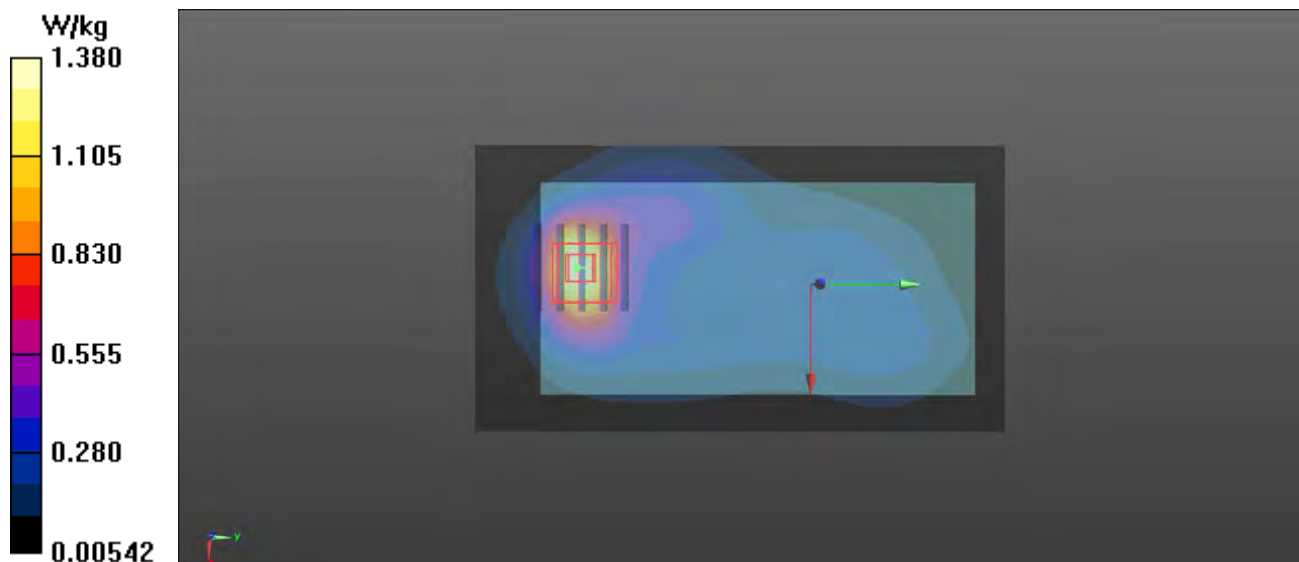
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.28 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.65 W/kg

SAR(1 g) = 0.990 W/kg; SAR(10 g) = 0.565 W/kg

Maximum value of SAR (measured) = 1.41 W/kg



P37 LTE 5_QPSK10M_Rear Face_1cm_Ch20525_1RB_OS0**DUT: 180412W003**

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

Medium: B835_0421 Medium parameters used: $f = 836.5$ MHz; $\sigma = 0.993$ S/m; $\epsilon_r = 55.598$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.62, 9.62, 9.62); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.432 W/kg

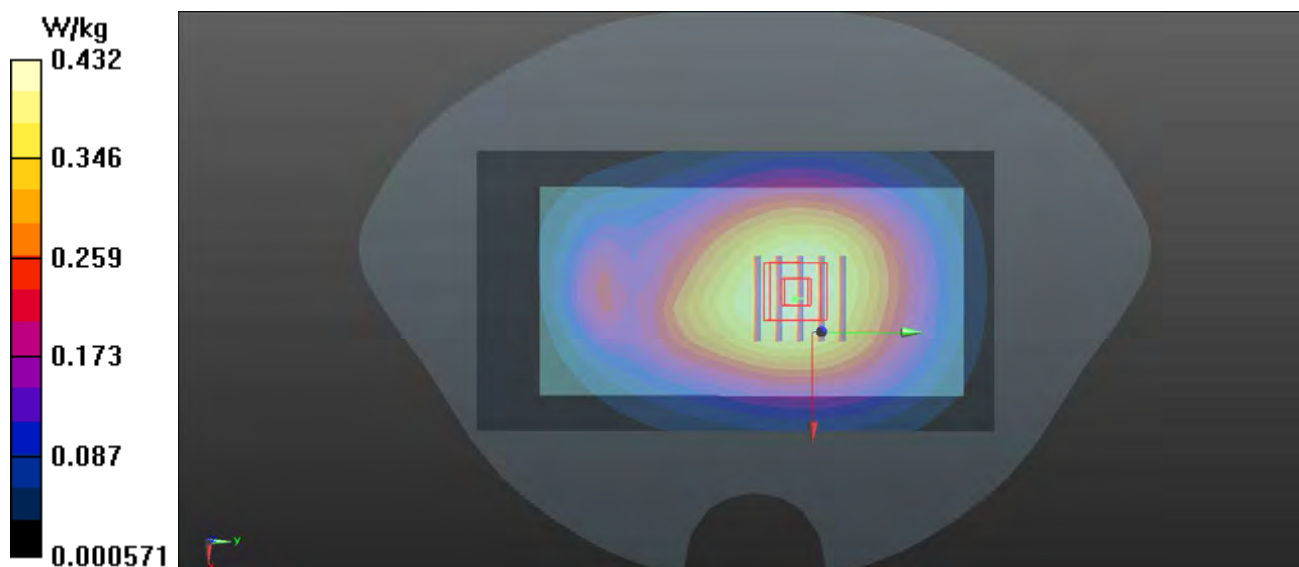
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.77 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.461 W/kg

SAR(1 g) = 0.360 W/kg; SAR(10 g) = 0.275 W/kg

Maximum value of SAR (measured) = 0.428 W/kg



P38 LTE 7_QPSK20M_Rear Face_1cm_Ch21350_1RB_OS0**DUT: 180412W003**

Communication System: LTE; Frequency: 2560 MHz; Duty Cycle: 1:1

Medium: B2600_0423 Medium parameters used: $f = 2560$ MHz; $\sigma = 2.146$ S/m; $\epsilon_r = 52.504$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C ; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.19, 7.19, 7.19); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.45 W/kg

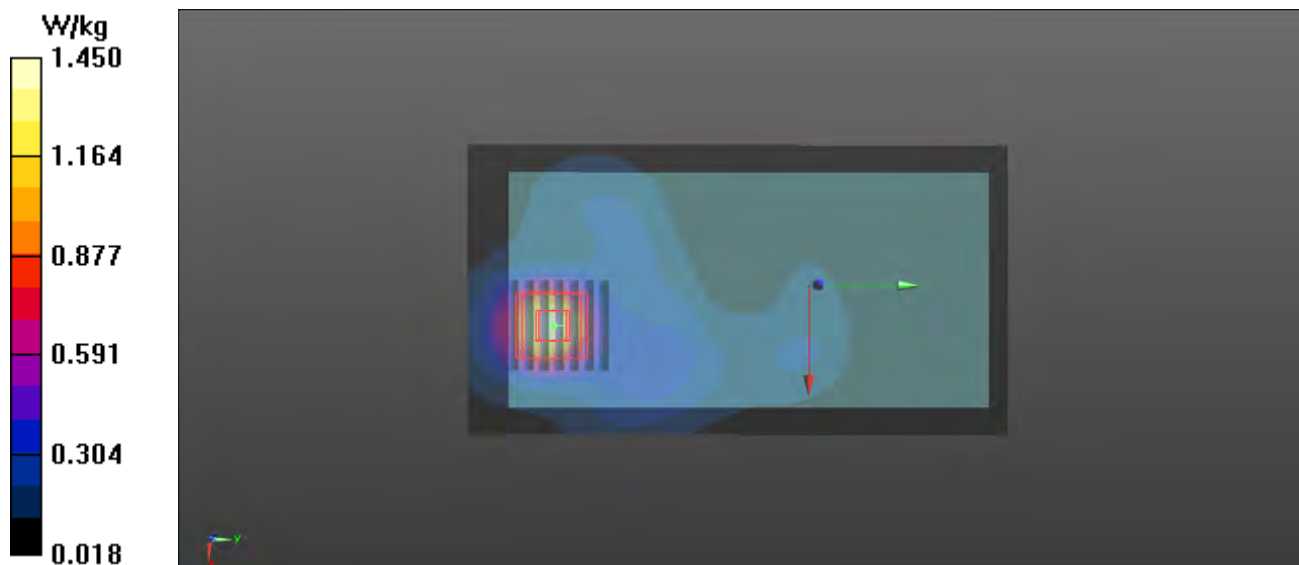
- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.141 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.76 W/kg

SAR(1 g) = 0.908 W/kg; SAR(10 g) = 0.441 W/kg

Maximum value of SAR (measured) = 1.44 W/kg



P39 LTE 12_QPSK10M_Rear Face_1cm_Ch23130_1RB_OS0**DUT: 180412W003**

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

Medium: B750_0420 Medium parameters used: $f = 711$ MHz; $\sigma = 0.922$ S/m; $\epsilon_r = 54.233$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.72, 9.72, 9.72); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.484 W/kg

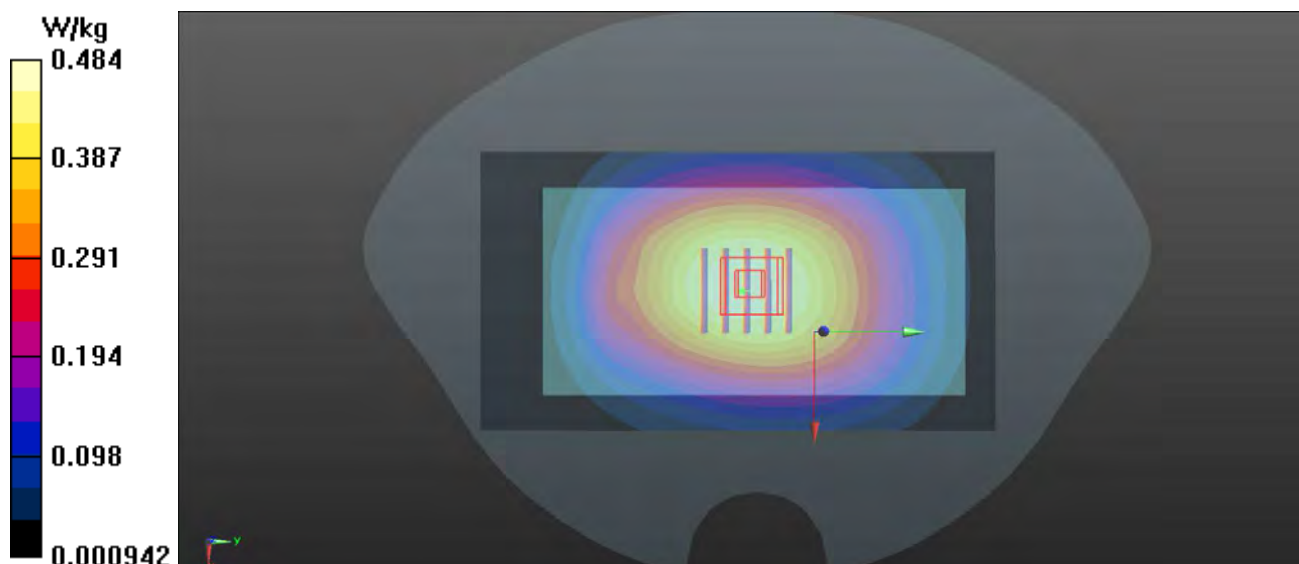
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 21.60 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.517 W/kg

SAR(1 g) = 0.412 W/kg; SAR(10 g) = 0.320 W/kg

Maximum value of SAR (measured) = 0.481 W/kg



P40 LTE 13_QPSK10M_Rear Face_1cm_Ch23230_1RB_OS0**DUT: 180412W003**

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

Medium: B750_0420 Medium parameters used: $f = 782$ MHz; $\sigma = 0.995$ S/m; $\epsilon_r = 53.489$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.72, 9.72, 9.72); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.470 W/kg

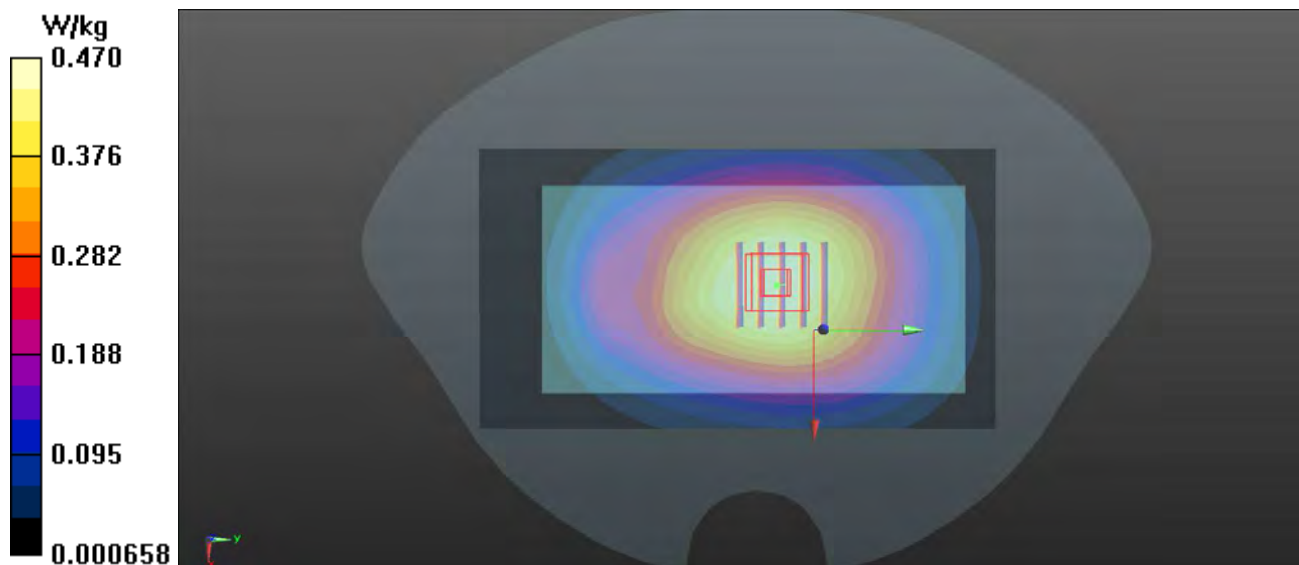
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.30 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.504 W/kg

SAR(1 g) = 0.399 W/kg; SAR(10 g) = 0.307 W/kg

Maximum value of SAR (measured) = 0.470 W/kg



P41 LTE 14_QPSK10M_Rear Face_1cm_Ch23330_1RB_OS0**DUT: 180412W003**

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

Medium: B750_0420 Medium parameters used: $f = 793$ MHz; $\sigma = 1.007$ S/m; $\epsilon_r = 53.363$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.72, 9.72, 9.72); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.437 W/kg

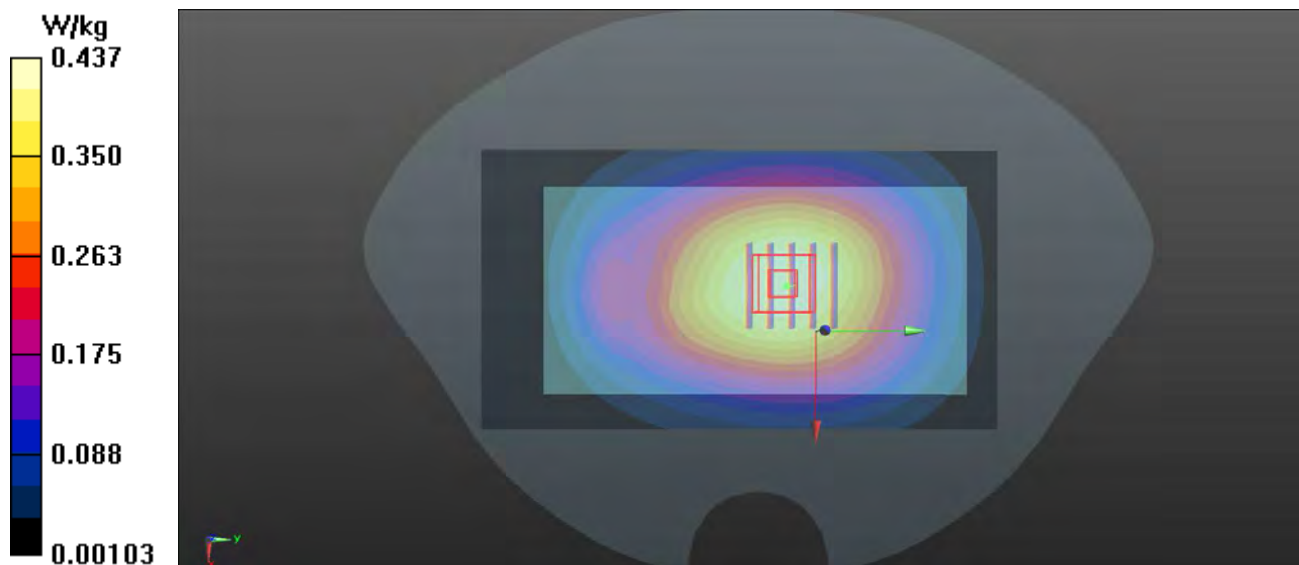
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.33 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.469 W/kg

SAR(1 g) = 0.370 W/kg; SAR(10 g) = 0.285 W/kg

Maximum value of SAR (measured) = 0.438 W/kg



P42 LTE 25_QPSK20M_Rear Face_1cm_Ch26140_1RB_OS0**DUT: 180412W003**

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

Medium: B1900_0418 Medium parameters used: $f = 1860$ MHz; $\sigma = 1.514$ S/m; $\epsilon_r = 54.901$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.0 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.77, 7.77, 7.77); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.56 W/kg

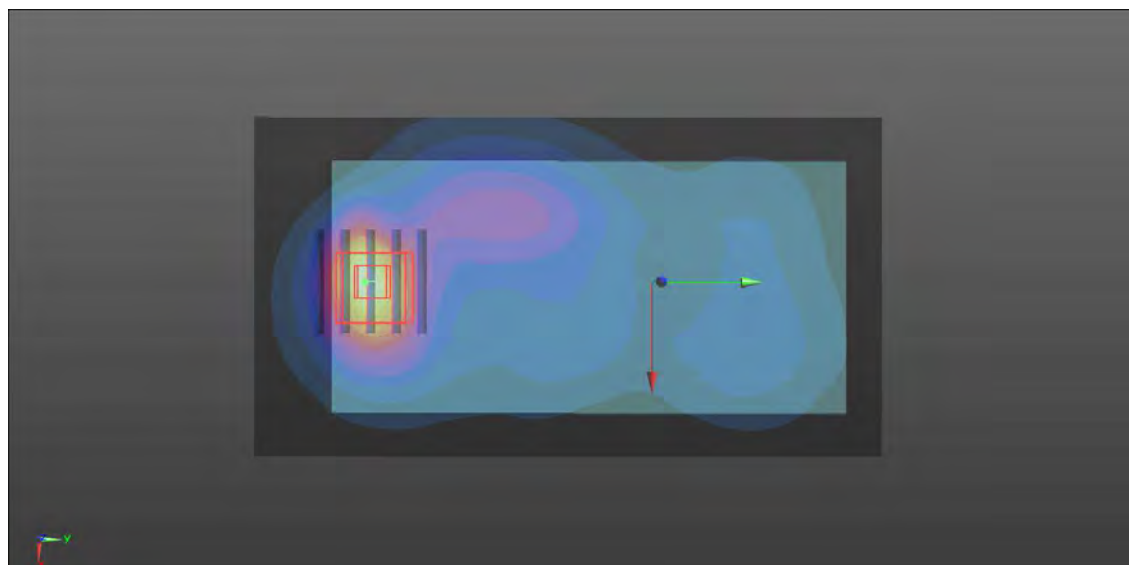
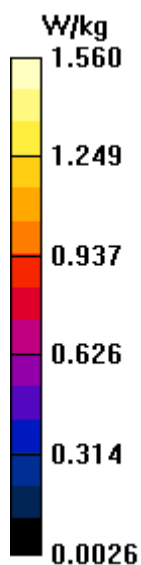
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.42 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.82 W/kg

SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.583 W/kg

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



P43 LTE 26_QPSK15M_Rear Face_1cm_Ch26865_1RB_OS0**DUT: 180412W003**

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

Medium: B835_0421 Medium parameters used: $f = 831.5$ MHz; $\sigma = 0.988$ S/m; $\epsilon_r = 55.65$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(9.62, 9.62, 9.62); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.482 W/kg

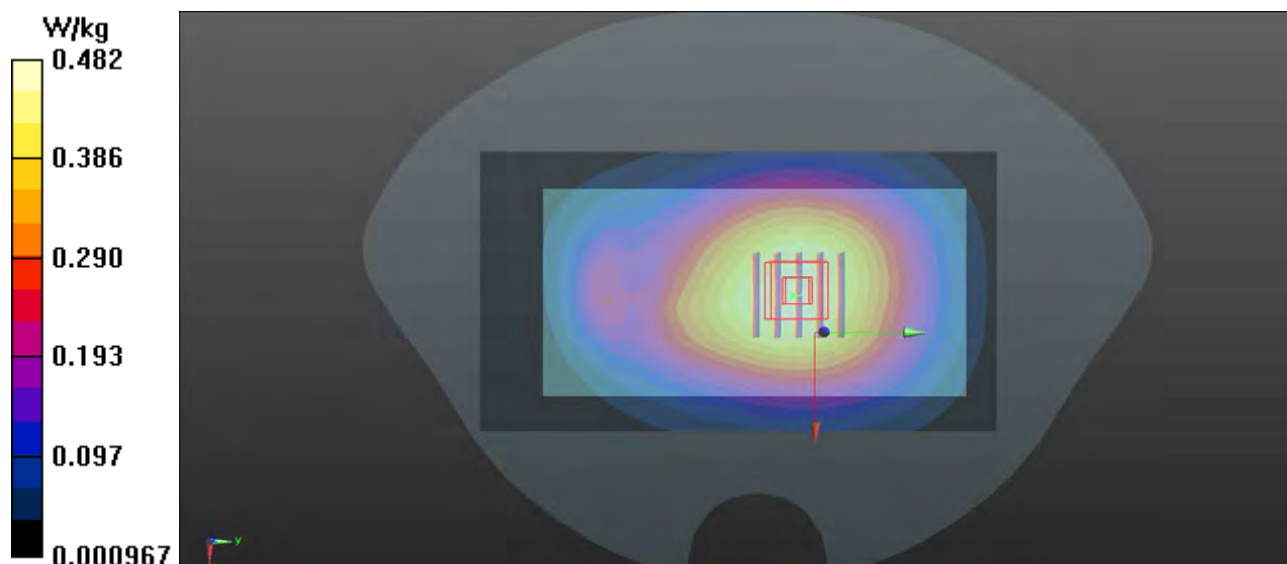
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.13 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.513 W/kg

SAR(1 g) = 0.402 W/kg; SAR(10 g) = 0.308 W/kg

Maximum value of SAR (measured) = 0.477 W/kg



P44 LTE 30_QPSK10M_Bottom Side_1cm_Ch27710_1RB_OS0**DUT: 180412W003**

Communication System: LTE; Frequency: 2310 MHz; Duty Cycle: 1:1

Medium: B2300_0425 Medium parameters used: $f = 2310$ MHz; $\sigma = 1.812$ S/m; $\epsilon_r = 52.616$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C ; Liquid Temperature : 22.0 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.56, 7.56, 7.56); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.506 W/kg

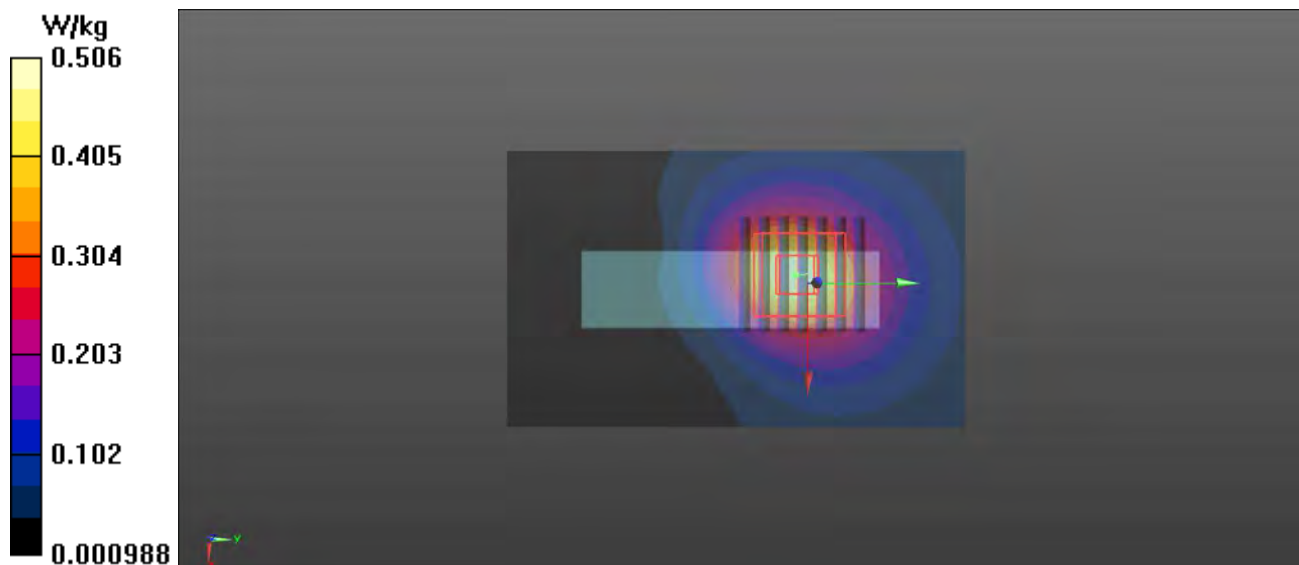
- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.55 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.592 W/kg

SAR(1 g) = 0.332 W/kg; SAR(10 g) = 0.183 W/kg

Maximum value of SAR (measured) = 0.497 W/kg



P45 LTE 38_QPSK20M_Rear Face_1cm_Ch38150_1RB_OS0**DUT: 180412W003**

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

Medium: B2600_0423 Medium parameters used: $f = 2610$ MHz; $\sigma = 2.213$ S/m; $\epsilon_r = 52.32$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C ; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.19, 7.19, 7.19); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.856 W/kg

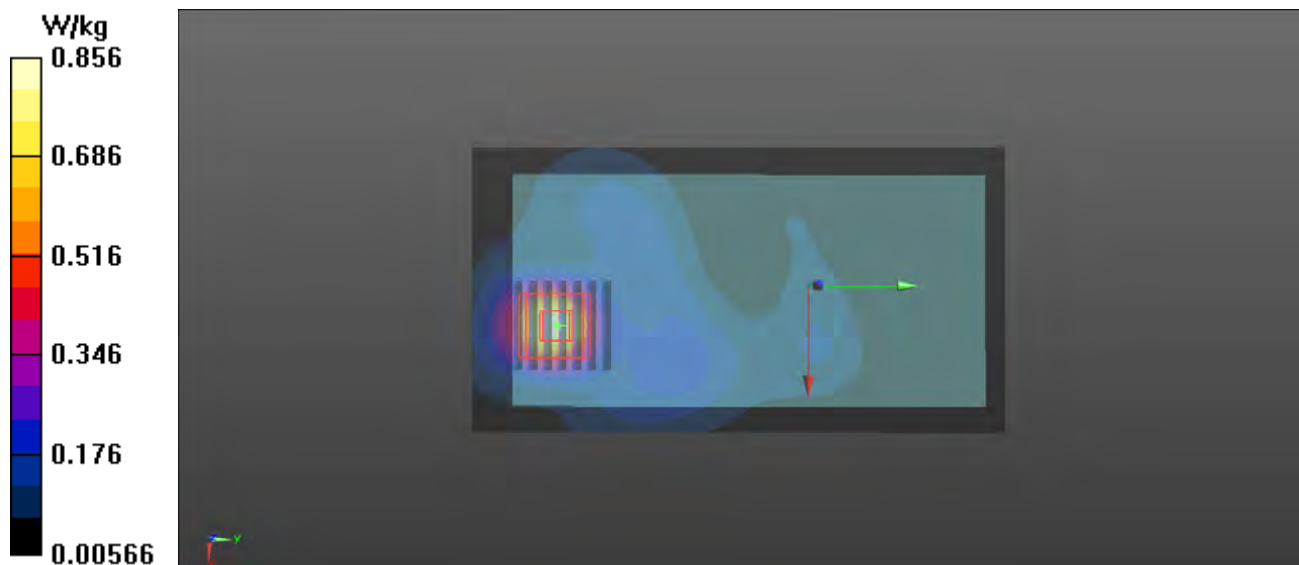
- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.320 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 1.04 W/kg

SAR(1 g) = 0.530 W/kg; SAR(10 g) = 0.254 W/kg

Maximum value of SAR (measured) = 0.849 W/kg



P46 LTE 40_QPSK10M_Bottom Side_1cm_Ch38750_1RB_OS0**DUT: 180412W003**

Communication System: LTE; Frequency: 2310 MHz; Duty Cycle: 1:1.58

Medium: B2300_0425 Medium parameters used: $f = 2310$ MHz; $\sigma = 1.812$ S/m; $\epsilon_r = 52.616$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C ; Liquid Temperature : 22.0 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.56, 7.56, 7.56); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.507 W/kg

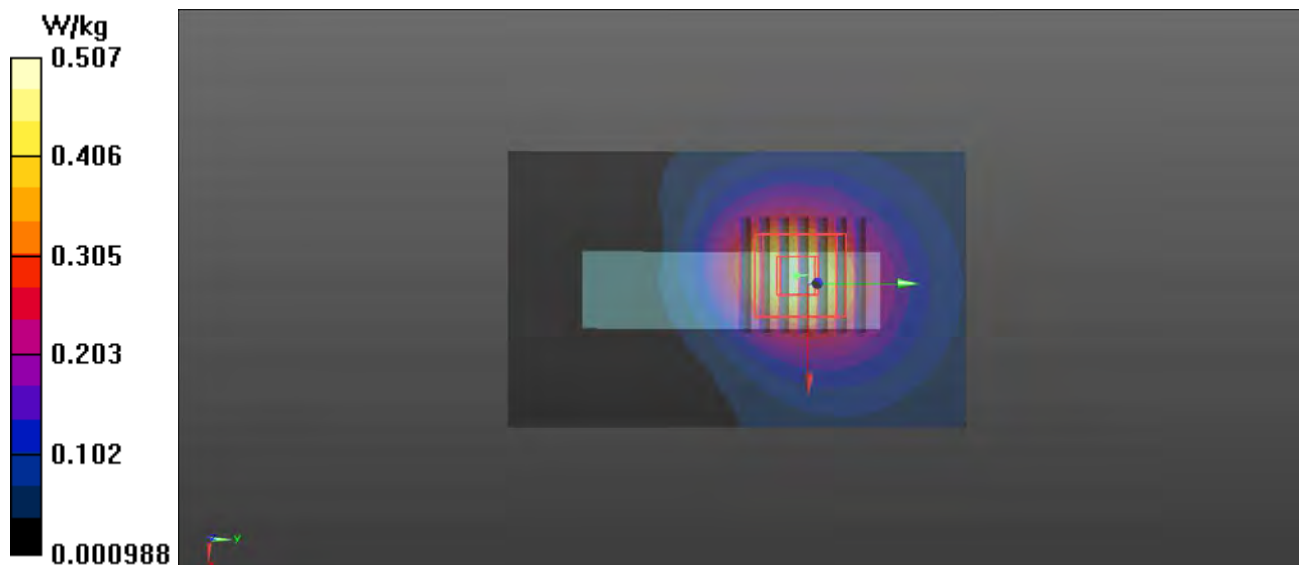
- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.55 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.593 W/kg

SAR(1 g) = 0.333 W/kg; SAR(10 g) = 0.183 W/kg

Maximum value of SAR (measured) = 0.498 W/kg



P47 LTE 41_QPSK20M_Rear Face_1cm_Ch41490_1RB_OS0**DUT: 180412W003**

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

Medium: B2600_0423 Medium parameters used: $f = 2680$ MHz; $\sigma = 2.309$ S/m; $\epsilon_r = 52.122$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.19, 7.19, 7.19); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (81x151x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.780 W/kg

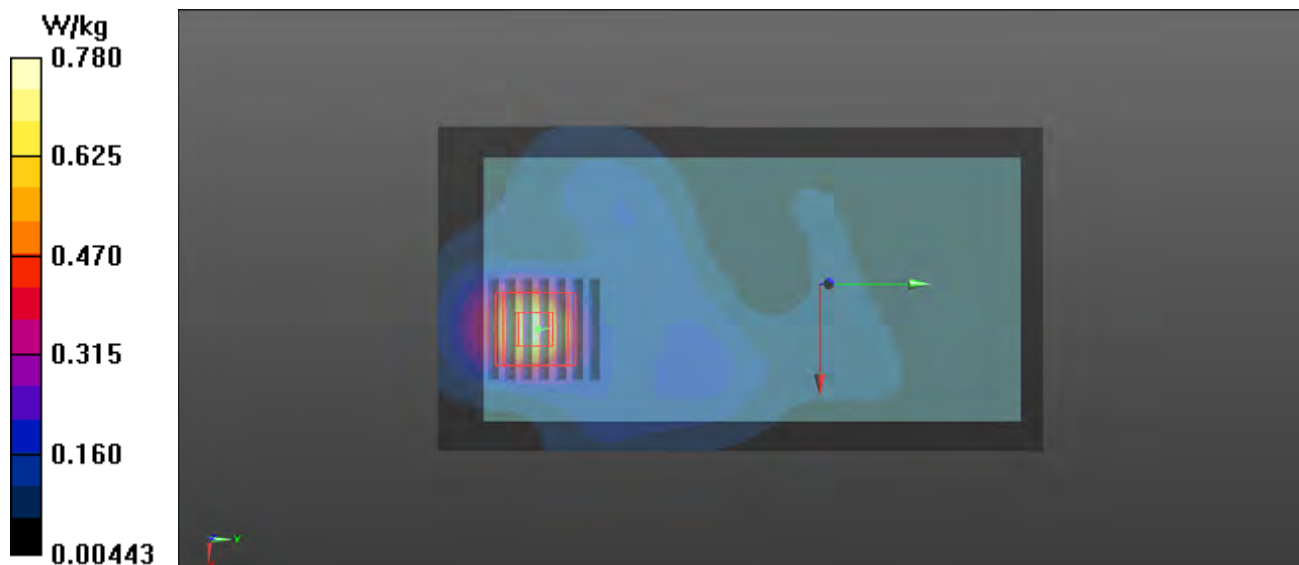
- **Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.349 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.946 W/kg

SAR(1 g) = 0.470 W/kg; SAR(10 g) = 0.223 W/kg

Maximum value of SAR (measured) = 0.759 W/kg



P48 LTE 66_QPSK20M_Rear Face_1cm_Ch132572_1RB_OS0**DUT: 180412W003**

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

Medium: B1750_0419 Medium parameters used: $f = 1770$ MHz; $\sigma = 1.503$ S/m; $\epsilon_r = 52.328$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(8.04, 8.04, 8.04); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

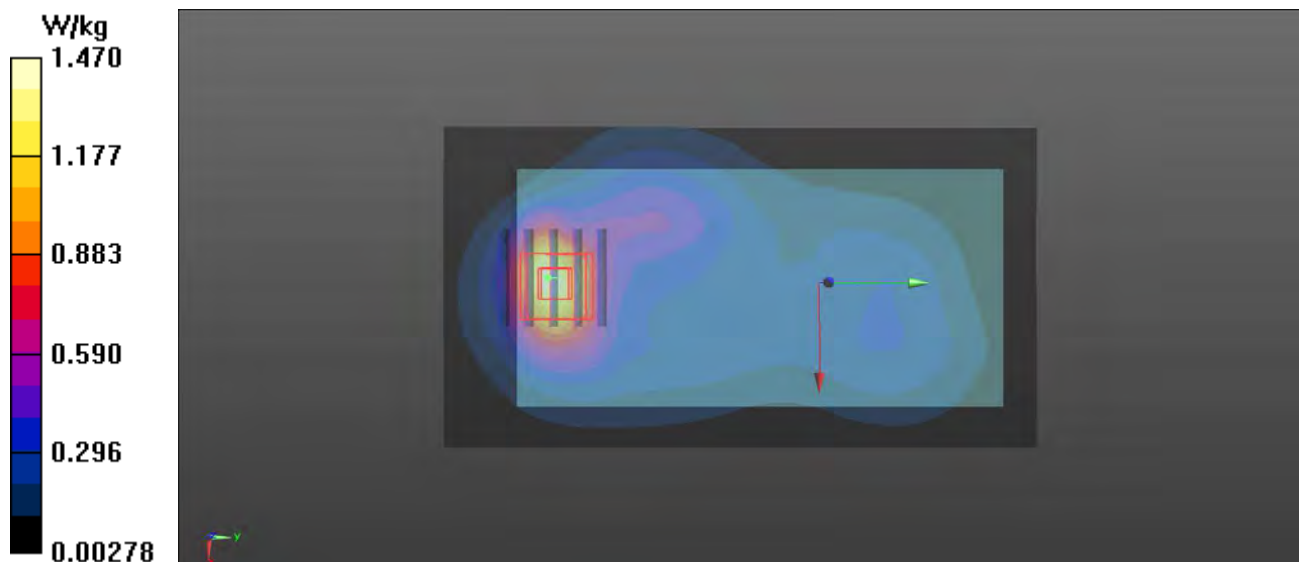
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.90 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 1.69 W/kg

SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.572 W/kg

Maximum value of SAR (measured) = 1.43 W/kg



P49 802.11b_Rear Face_1cm_Ch1**DUT: 180412W003**

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

Medium: B2450_0424 Medium parameters used: $f = 2412$ MHz; $\sigma = 1.88$ S/m; $\epsilon_r = 51.734$; $\rho = 1000$ kg/m³

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.45, 7.45, 7.45); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (81x151x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.245 W/kg

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

Reference Value = 4.641 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.316 W/kg

SAR(1 g) = 0.169 W/kg; SAR(10 g) = 0.097 W/kg

Maximum value of SAR (measured) = 0.258 W/kg

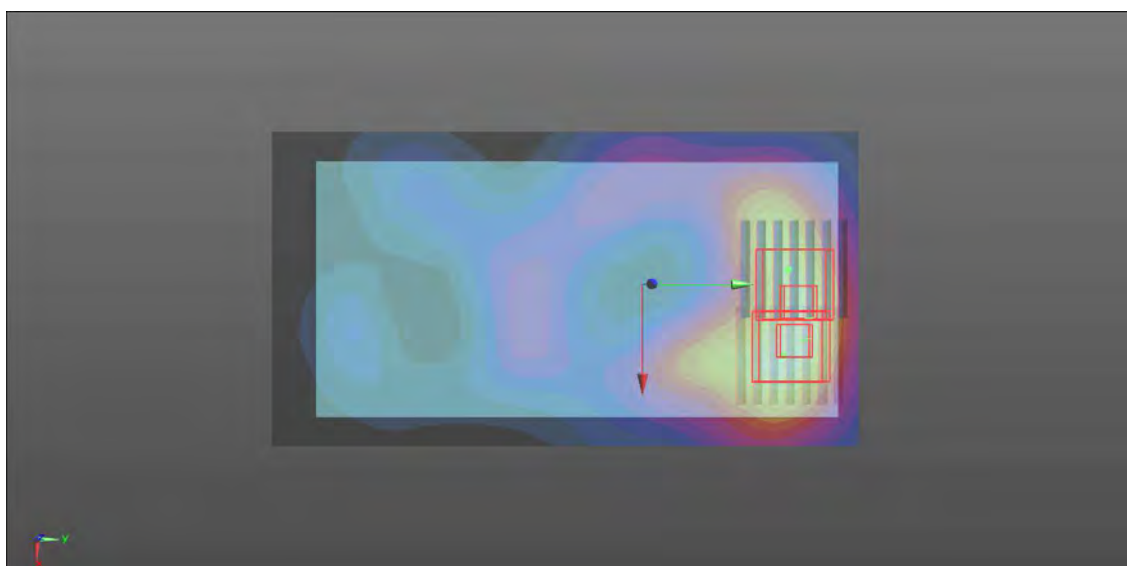
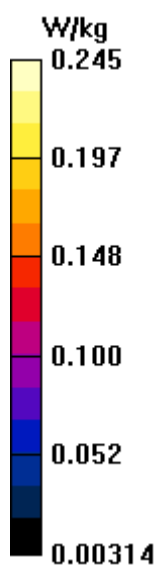
- **Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.641 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.306 W/kg

SAR(1 g) = 0.159 W/kg; SAR(10 g) = 0.090 W/kg

Maximum value of SAR (measured) = 0.247 W/kg



P50 802.11a_Rear Face_1cm_Ch48**DUT: 180412W003**

Communication System: 802.11a; Frequency: 5240 MHz; Duty Cycle: 1:1

Medium: B5G_0502 Medium parameters used: $f = 5240$ MHz; $\sigma = 5.215$ S/m; $\epsilon_r = 50.924$; $\rho = 1000$ kg/m³

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(4.61, 4.61, 4.61); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (101x191x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.514 W/kg

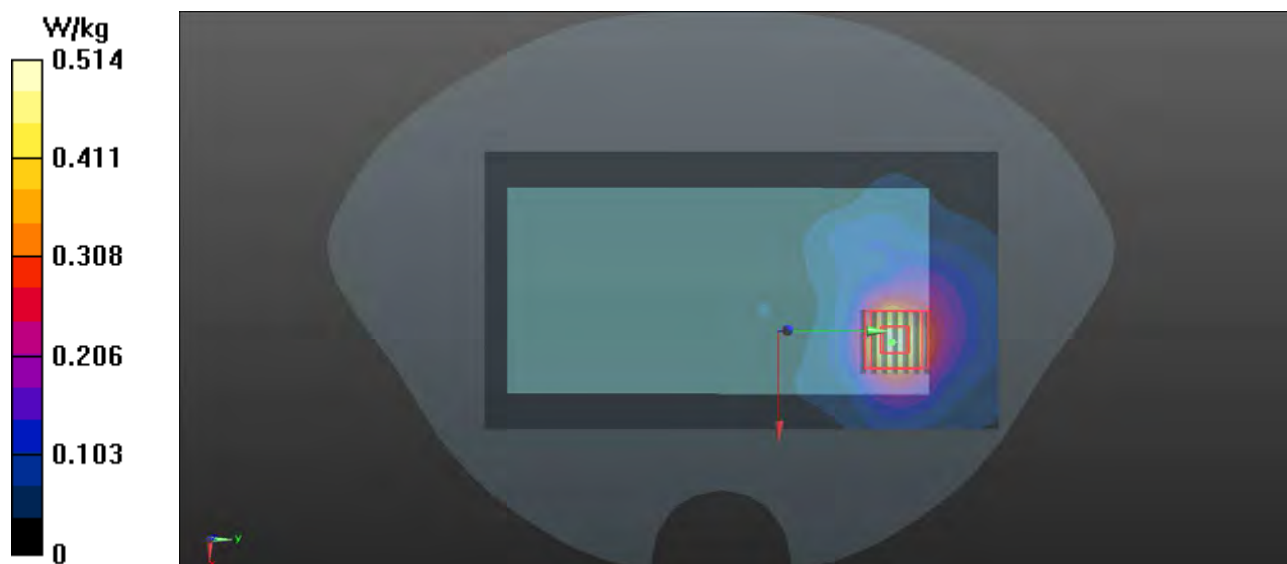
- Zoom Scan (7x7x12)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 1.864 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.862 W/kg

SAR(1 g) = 0.238 W/kg; SAR(10 g) = 0.101 W/kg

Maximum value of SAR (measured) = 0.513 W/kg



P51 802.11n_HT40_Rear Face_1cm_Ch151**DUT: 180412W003**

Communication System: 802.11n; Frequency: 5755 MHz; Duty Cycle: 1:1

Medium: B5G_0502 Medium parameters used: $f = 5755$ MHz; $\sigma = 6.051$ S/m; $\epsilon_r = 49.951$; $\rho = 1000$ kg/m³

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(4.16, 4.16, 4.16); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (101x191x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

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

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

Reference Value = 1.648 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.08 W/kg

SAR(1 g) = 0.270 W/kg; SAR(10 g) = 0.109 W/kg

Maximum value of SAR (measured) = 0.612 W/kg



P52 BT_GFSK_Rear Face_1cm_Ch39**DUT: 180412W003**

Communication System: BT; Frequency: 2441 MHz; Duty Cycle: 1:1.12

Medium: B2450_0424 Medium parameters used: $f = 2441$ MHz; $\sigma = 1.892$ S/m; $\epsilon_r = 51.443$; $\rho = 1000$ kg/m³

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.45, 7.45, 7.45); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.204 W/kg

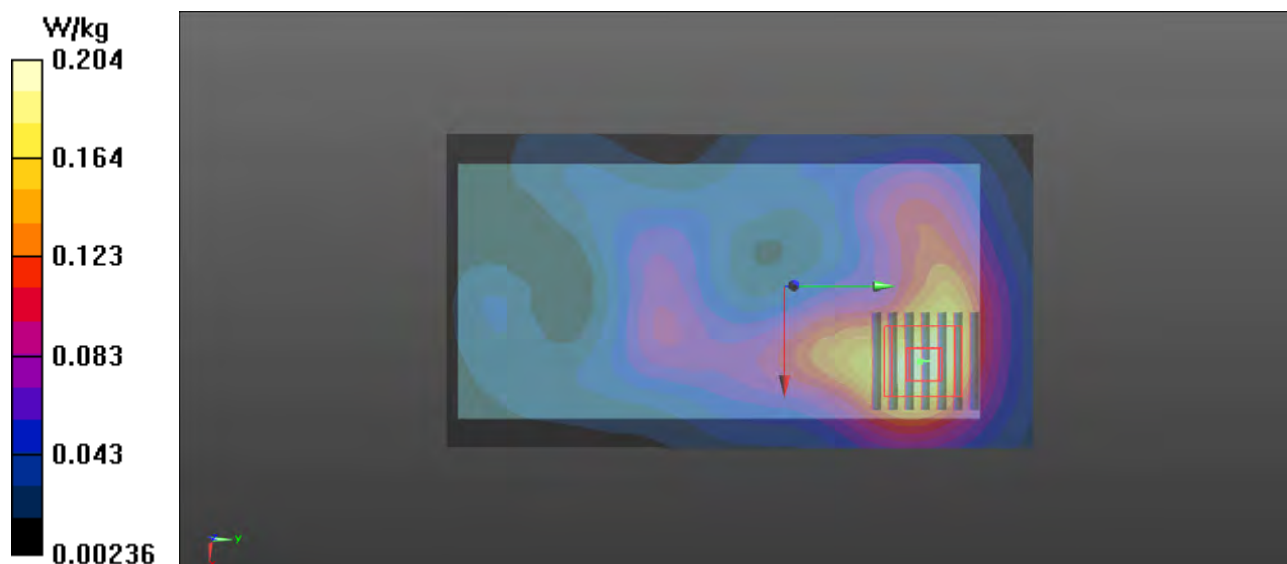
- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.886 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.251 W/kg

SAR(1 g) = 0.134 W/kg; SAR(10 g) = 0.075 W/kg

Maximum value of SAR (measured) = 0.204 W/kg



P53 WCDMA II_RMC12.2K_Rear Face_0cm_Ch9262**DUT: 180412W003**

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

Medium: B1900_0418 Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.473$ S/m; $\epsilon_r = 52.078$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C ; Liquid Temperature : 22.0 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.77, 7.77, 7.77); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 11.1 W/kg

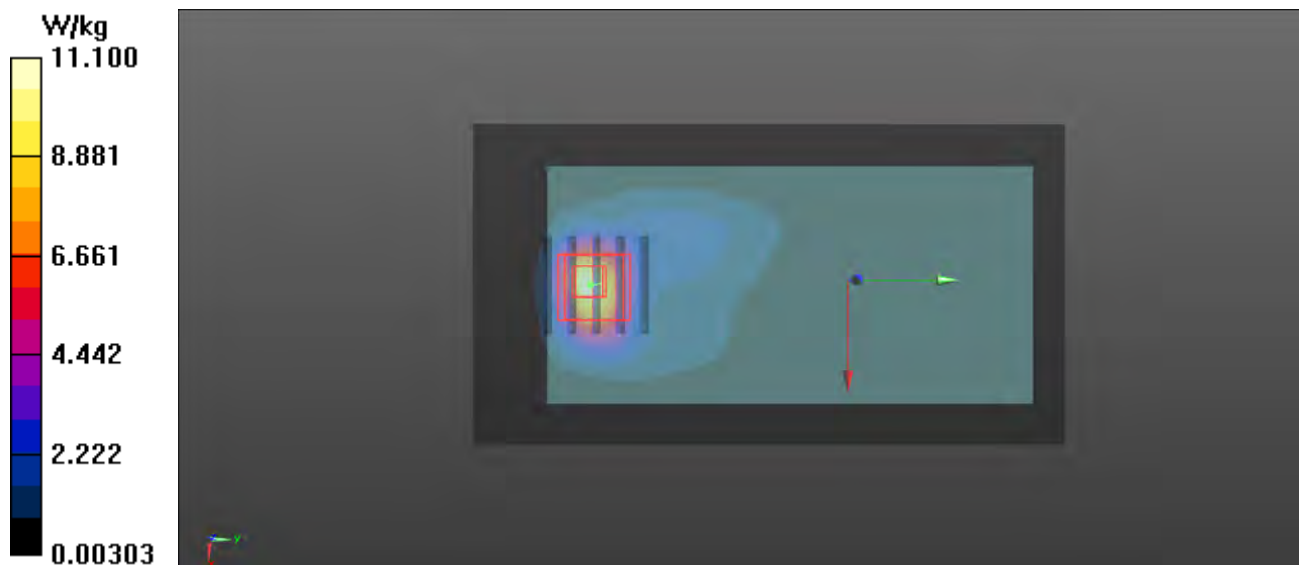
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.25 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 14.9 W/kg

SAR(1 g) = 8.19 W/kg; SAR(10 g) = 3.73 W/kg

Maximum value of SAR (measured) = 12.2 W/kg



P54 WCDMA IV_RMC12.2K_Rear Face_0cm_Ch1513**DUT: 180412W003**

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

Medium: B1750_0419 Medium parameters used: $f = 1753$ MHz; $\sigma = 1.465$ S/m; $\epsilon_r = 54.182$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(8.04, 8.04, 8.04); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 10.1 W/kg

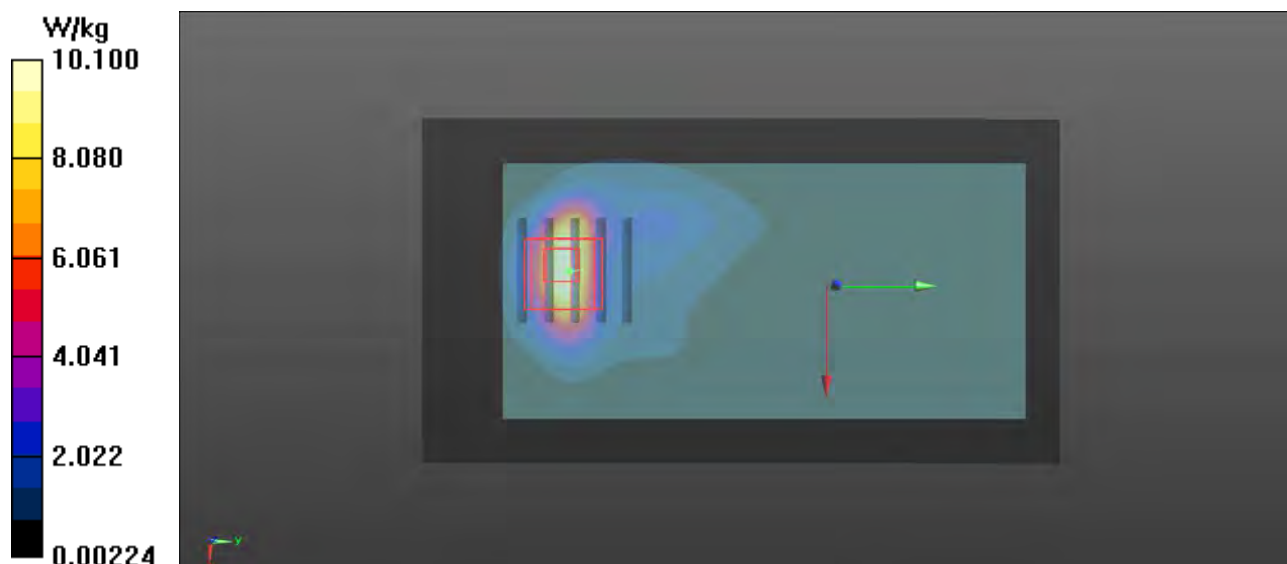
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 14.59 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 13.7 W/kg

SAR(1 g) = 6.94 W/kg; SAR(10 g) = 3.35 W/kg

Maximum value of SAR (measured) = 10.1 W/kg



P55 LTE 4_QPSK20M_Rear Face_0cm_Ch20050_1RB_OS0**DUT: 180412W003**

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

Medium: B1750_0419 Medium parameters used: $f = 1720$ MHz; $\sigma = 1.426$ S/m; $\epsilon_r = 54.336$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(8.04, 8.04, 8.04); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 8.64 W/kg

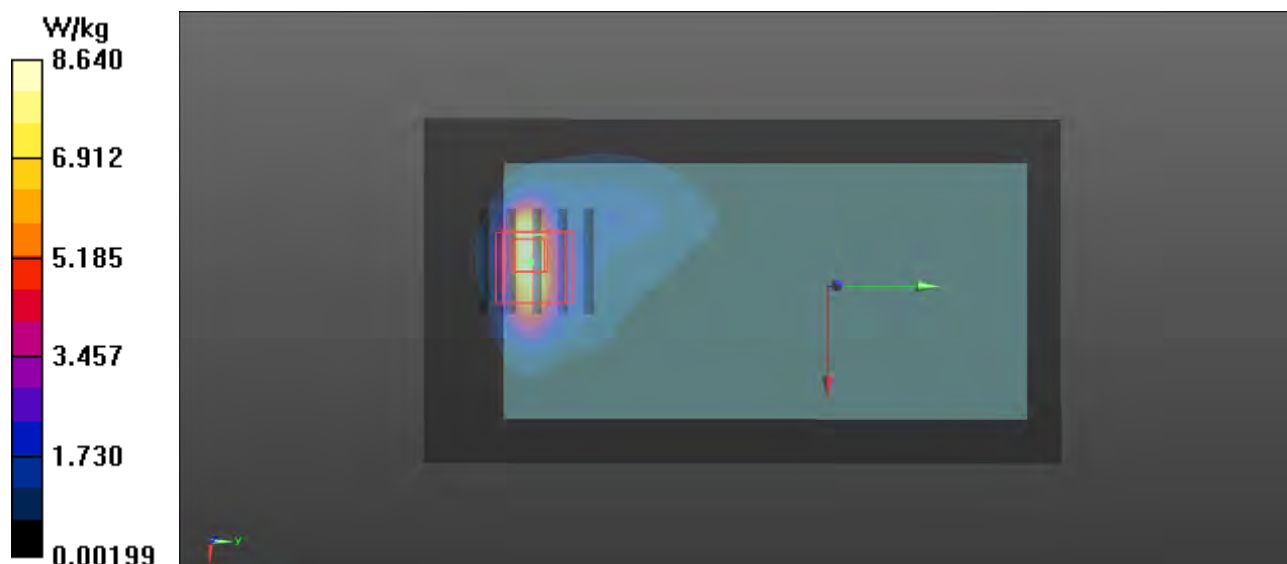
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.71 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 10.8 W/kg

SAR(1 g) = 5.38 W/kg; SAR(10 g) = 2.64 W/kg

Maximum value of SAR (measured) = 8.79 W/kg



P56 LTE 7_QPSK20M_Rear Face_0cm_Ch20850_1RB_OS0**DUT: 180412W003**

Communication System: LTE; Frequency: 2510 MHz; Duty Cycle: 1:1

Medium: B2600_0423 Medium parameters used: $f = 2510$ MHz; $\sigma = 2.081$ S/m; $\epsilon_r = 52.659$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.1 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.19, 7.19, 7.19); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (81x151x1):** Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 3.69 W/kg

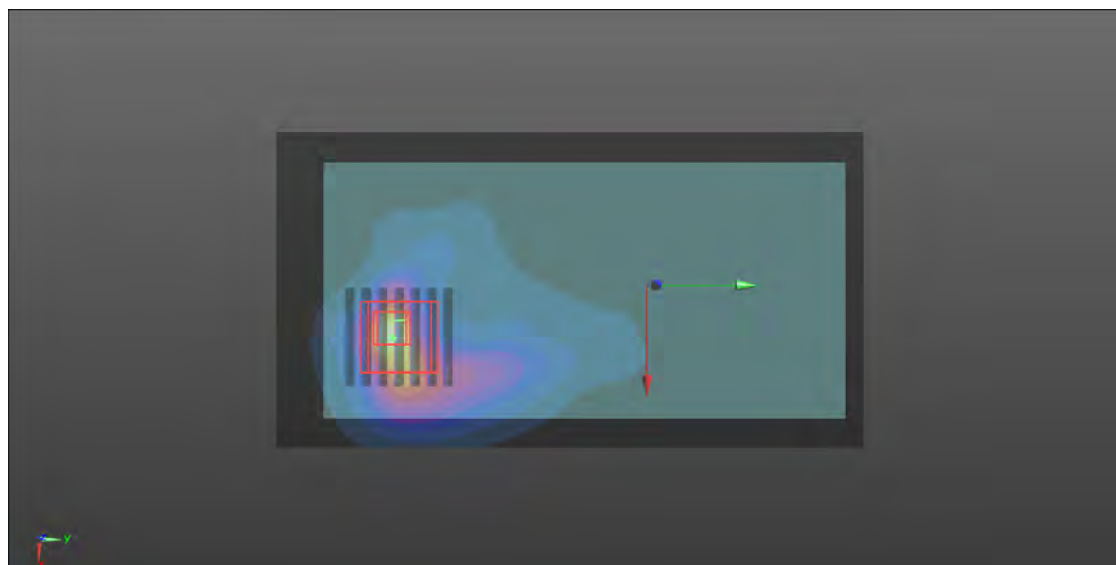
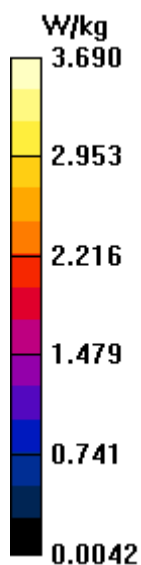
- **Zoom Scan (7x7x7)/Cube 0:** Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 9.174 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 4.61 W/kg

SAR(1 g) = 2.01 W/kg; SAR(10 g) = 0.824 W/kg

Maximum value of SAR (measured) = 3.56 W/kg



P57 LTE 25_QPSK20M_Rear Face_0cm_Ch26590_1RB_OS0**DUT: 180412W003**

Communication System: LTE; Frequency: 1905 MHz; Duty Cycle: 1:1

Medium: B1900_0418 Medium parameters used: $f = 1905$ MHz; $\sigma = 1.538$ S/m; $\epsilon_r = 51.909$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.0 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(7.77, 7.77, 7.77); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1):** Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 9.45 W/kg

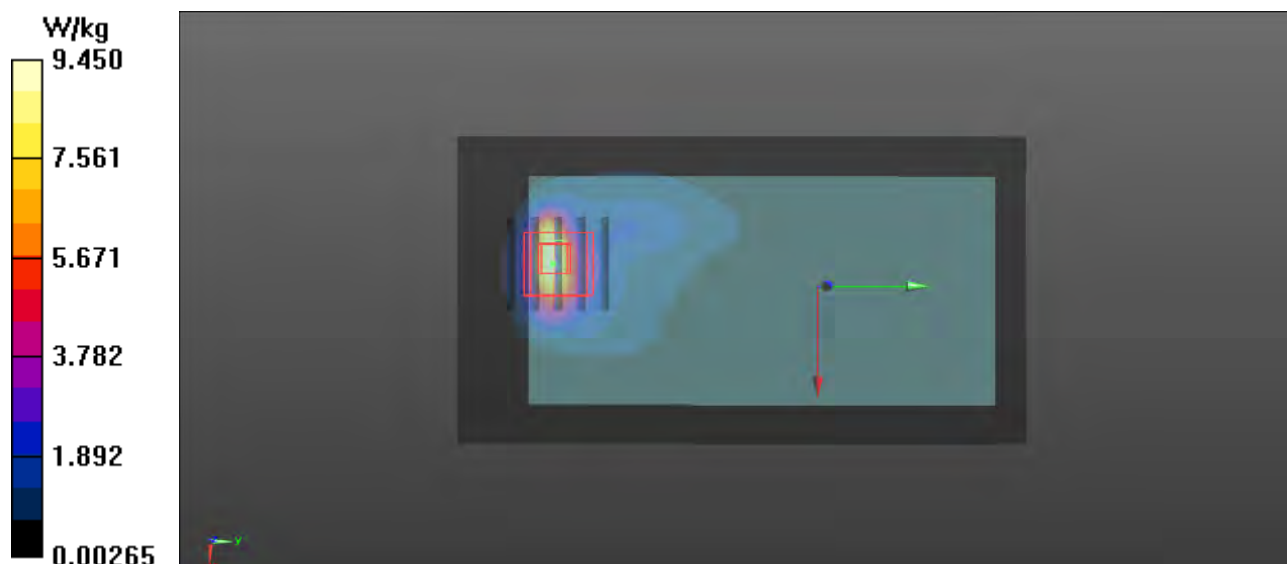
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 11.09 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 12.4 W/kg

SAR(1 g) = 6.12 W/kg; SAR(10 g) = 2.85 W/kg

Maximum value of SAR (measured) = 9.77 W/kg



P58 LTE 66_QPSK20M_Rear Face_0cm_Ch132422_1RB_OS0**DUT: 180412W003**

Communication System: LTE; Frequency: 1755 MHz; Duty Cycle: 1:1

Medium: B1750_0419 Medium parameters used: $f = 1755$ MHz; $\sigma = 1.468$ S/m; $\epsilon_r = 54.179$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(8.04, 8.04, 8.04); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 8.55 W/kg

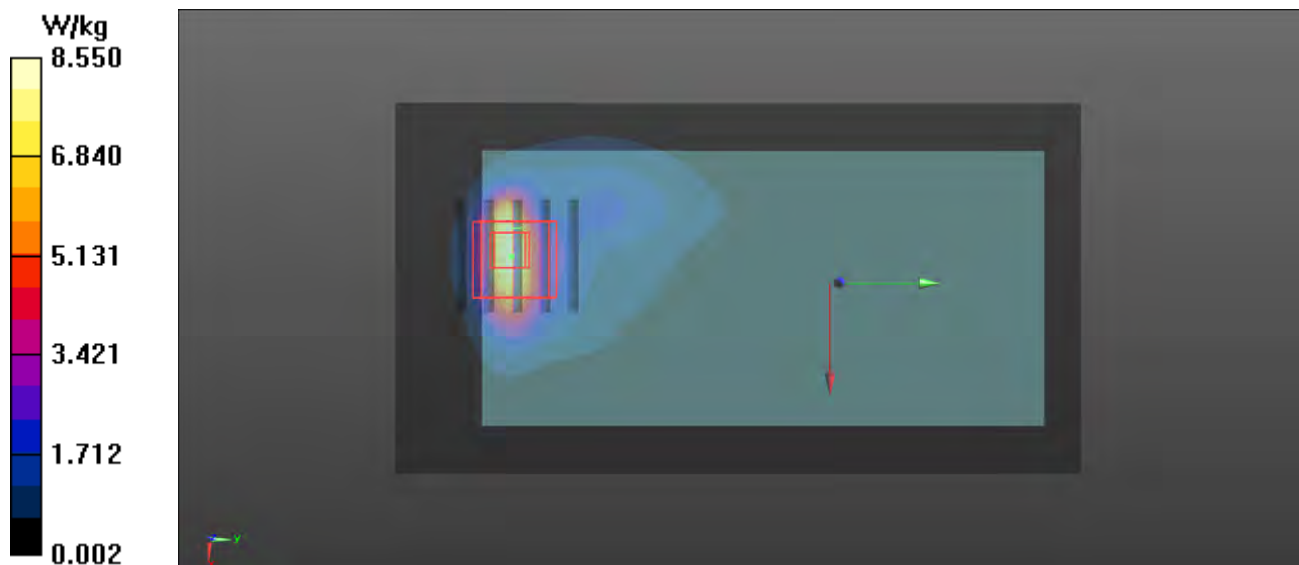
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.02 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 10.7 W/kg

SAR(1 g) = 5.35 W/kg; SAR(10 g) = 2.61 W/kg

Maximum value of SAR (measured) = 8.65 W/kg



P59 802.11n_HT20_Rear Face_0cm_Ch60**DUT: 180412W003**

Communication System: 802.11n; Frequency: 5300 MHz; Duty Cycle: 1:1

Medium: B5G_0502 Medium parameters used: $f = 5300$ MHz; $\sigma = 5.31$ S/m; $\epsilon_r = 50.859$; $\rho = 1000$ kg/m³

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(4.61, 4.61, 4.61); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (101x191x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

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

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

Reference Value = 1.236 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 7.58 W/kg

SAR(1 g) = 1.6 W/kg; SAR(10 g) = 0.466 W/kg

Maximum value of SAR (measured) = 4.07 W/kg



P60 802.11n_HT40_Rear Face_0cm_Ch134**DUT: 180412W003**

Communication System: 802.11n; Frequency: 5670 MHz; Duty Cycle: 1:1

Medium: B5G_0502 Medium parameters used: $f = 5670$ MHz; $\sigma = 5.915$ S/m; $\epsilon_r = 50.126$; $\rho = 1000$ kg/m³

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3873; ConvF(3.9, 3.9, 3.9); Calibrated: 2017/08/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2017/08/23
- 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 (101x191x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 1.70 W/kg

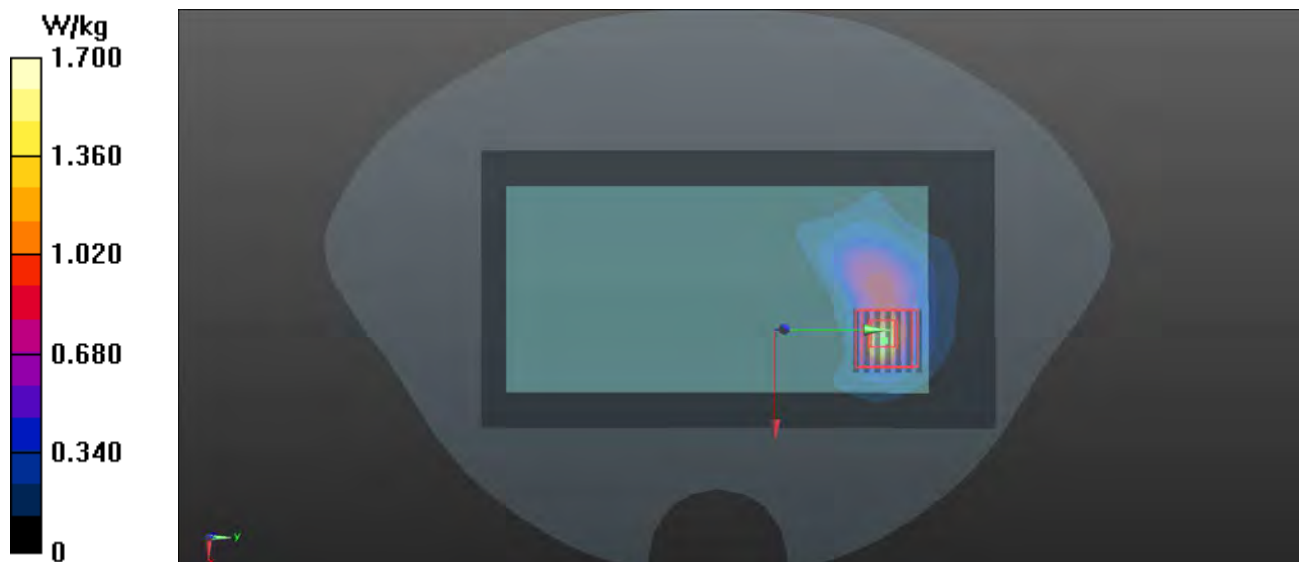
- Zoom Scan (7x7x12)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 1.244 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 4.88 W/kg

SAR(1 g) = 0.993 W/kg; SAR(10 g) = 0.282 W/kg

Maximum value of SAR (measured) = 2.63 W/kg





FCC SAR Test Report

Appendix C. Calibration Certificate for Probe and Dipole

The SPEAG calibration certificates are shown as follows.



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中国认可
国际互认
校准
CALIBRATION
CNAS L0570

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
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E-mail: cttl@chinattl.com http://www.chinattl.cn

Client

ADT_CN

Certificate No: Z17-97117

CALIBRATION CERTIFICATE

Object D750V3 - SN: 1067

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

Calibration date: August 27, 2017

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRVD	102083	22-Sep-16 (CTTL, No.J16X06809)	Sep-17
Power sensor NRV-Z5	100595	22-Sep-16 (CTTL, No.J16X06809)	Sep-17
Reference Probe EX3DV4	SN 3617	23-Jan-17(SPEAG,No.EX3-3617_Jan17)	Jan-18
DAE4	SN 1331	19-Jan-17(CTTL-SPEAG,No.Z17-97015)	Jan-18
Secondary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Signal Generator E4438C	MY49071430	13-Jan-17 (CTTL, No.J17X00286)	Jan-18
Network Analyzer E5071C	MY46110673	13-Jan-17 (CTTL, No.J17X00285)	Jan-18

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

Issued: August 30, 2017

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



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CALIBRATION LABORATORY

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E-mail: cttl@chinattl.com http://www.chinattl.cn

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM _{x,y,z}
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- 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
- 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
- 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
- KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

Additional Documentation:

- 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	52.10.0.1446
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 $\pm$ 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 $\pm$ 0.2) °C	41.7 $\pm$ 6 %	0.89 mho/m $\pm$ 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (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	8.30 mW / g $\pm$ 18.8 % (k=2)
SAR averaged over 10 cm³ (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	1.35 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	5.41 mW / g $\pm$ 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 $\pm$ 0.2) °C	55.7 $\pm$ 6 %	0.95 mho/m $\pm$ 6 %
Body TSL temperature change during test	<1.0 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.16 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	8.70 mW / g $\pm$ 18.8 % (k=2)
SAR averaged over 10 cm³ (10 g) of Body TSL	Condition	
SAR measured	250 mW input power	1.45 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	5.83 mW / g $\pm$ 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	50.5Ω- 4.34jΩ
Return Loss	- 27.2dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.4Ω- 4.65jΩ
Return Loss	- 26.0dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.138 ns
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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: 08.27.2017

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: $f = 750 \text{ MHz}$; $\sigma = 0.886 \text{ S/m}$; $\epsilon_r = 41.66$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: EX3DV4 - SN3617; ConvF(10.05, 10.05, 10.05); Calibrated: 1/23/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1331; Calibrated: 1/19/2017
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: 1161/1
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

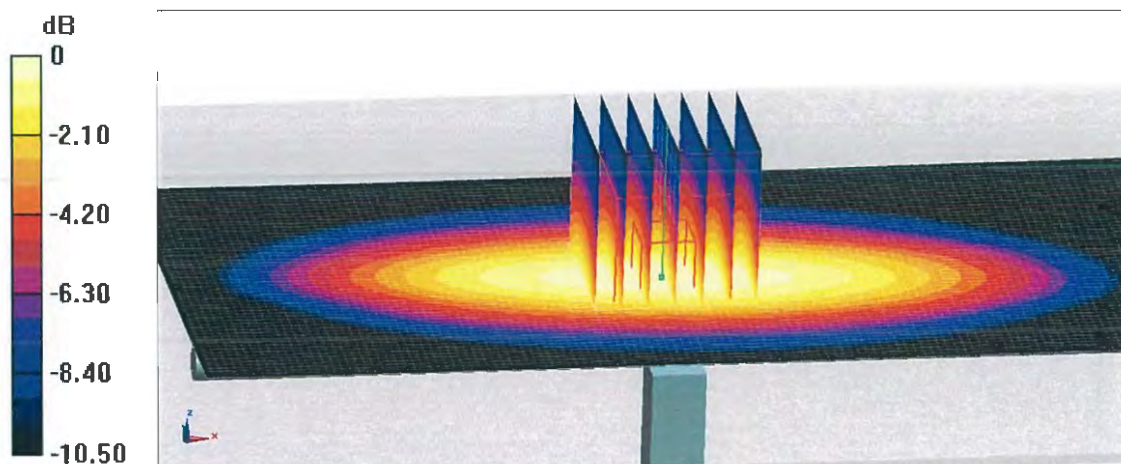
Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 53.94 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 3.20 W/kg

SAR(1 g) = 2.07 W/kg; SAR(10 g) = 1.35 W/kg

Maximum value of SAR (measured) = 2.80 W/kg

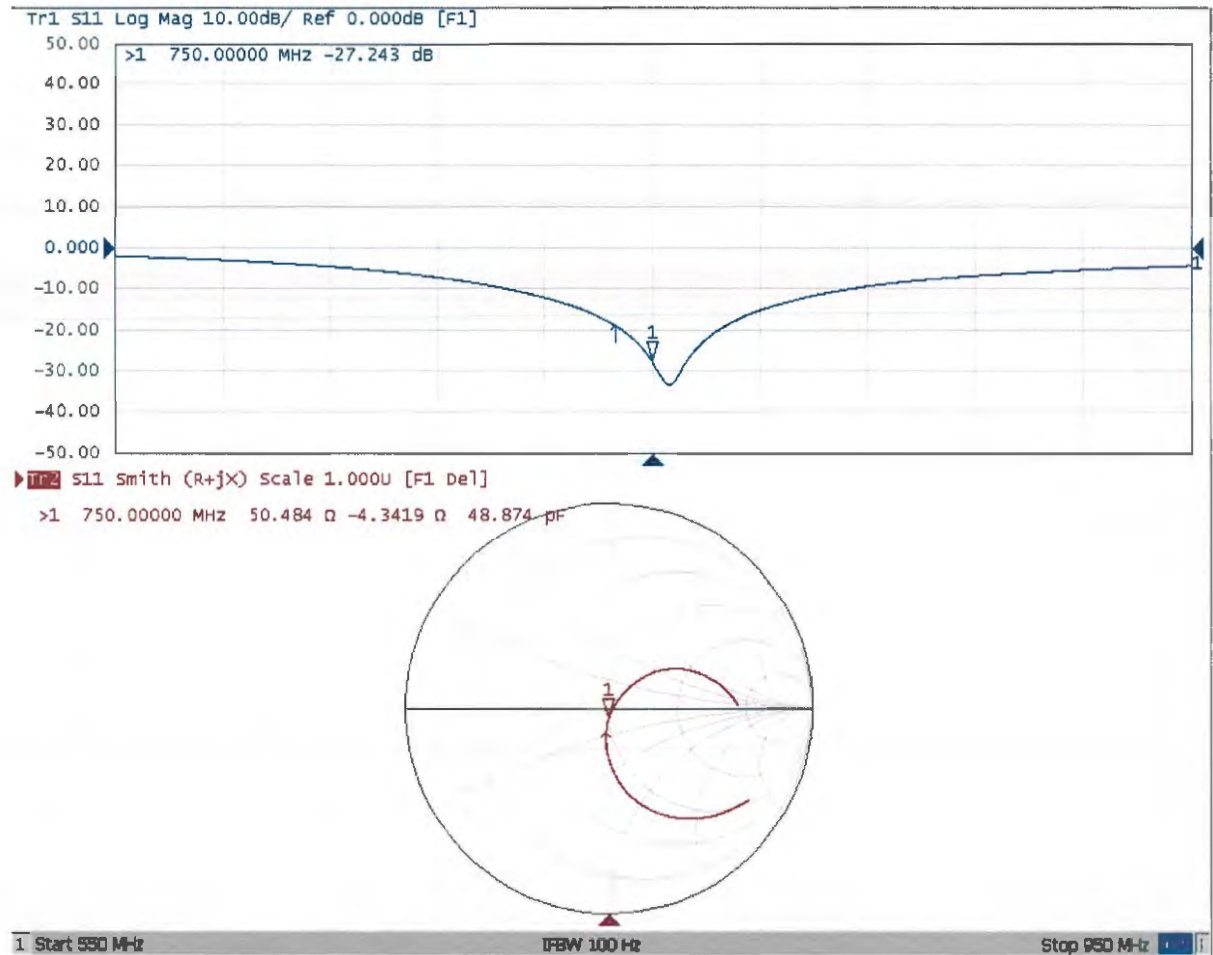


0 dB = 2.80 W/kg = 4.47 dBW/kg



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Impedance Measurement Plot for Head TSL





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DASY5 Validation Report for Body TSL

Date: 08.27.2017

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: $f = 750 \text{ MHz}$; $\sigma = 0.952 \text{ S/m}$; $\epsilon_r = 55.68$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: EX3DV4 - SN3617; ConvF(9.8, 9.8, 9.8); Calibrated: 1/23/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1331; Calibrated: 1/19/2017
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: 1161/1
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

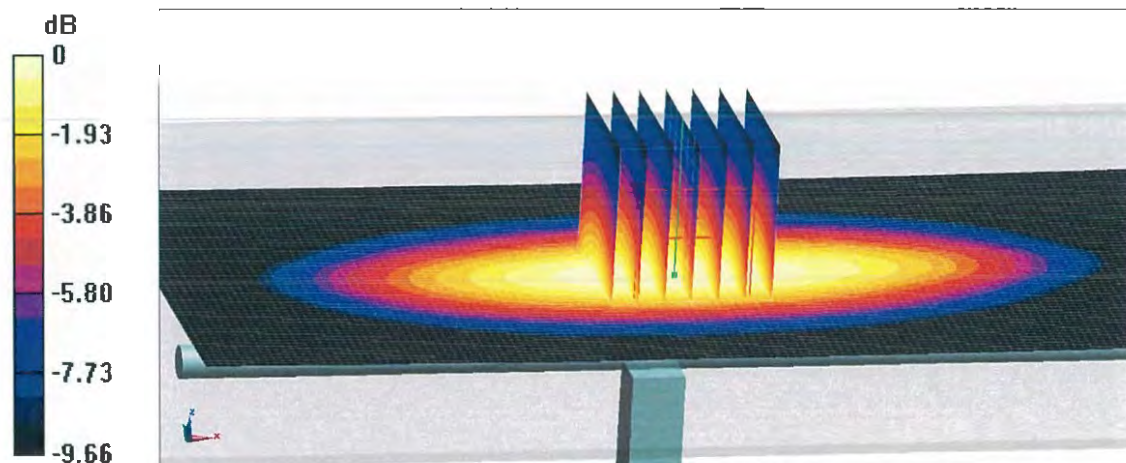
Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 53.96 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 3.21 W/kg

SAR(1 g) = 2.16 W/kg; SAR(10 g) = 1.45 W/kg

Maximum value of SAR (measured) = 2.86 W/kg



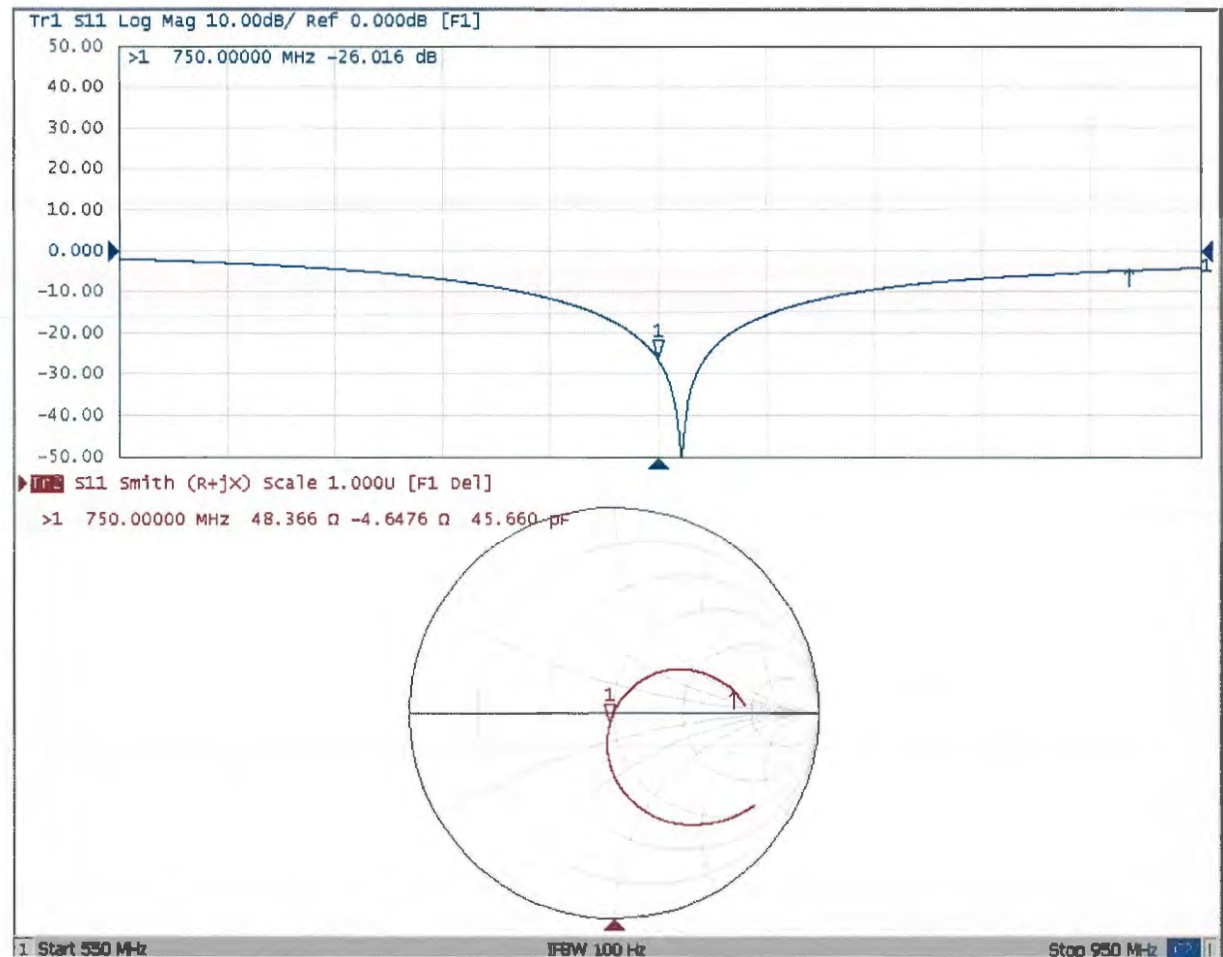
0 dB = 2.86 W/kg = 4.56 dBW/kg



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Impedance Measurement Plot for Body TSL





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Client

ADT_CN

Certificate No: Z17-97118

CALIBRATION CERTIFICATE

Object D835V2 - SN: 4d139

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

Calibration date: August 28, 2017

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

All calibrations have been conducted in the closed laboratory facility: environment temperature(22±3)℃ 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	22-Sep-16 (CTTL, No.J16X06809)	Sep-17
Power sensor NRV-Z5	100595	22-Sep-16 (CTTL, No.J16X06809)	Sep-17
Reference Probe EX3DV4	SN 3617	23-Jan-17(SPEAG,No.EX3-3617_Jan17)	Jan-18
DAE4	SN 1331	19-Jan-17(CTTL-SPEAG,No.Z17-97015)	Jan-18
Secondary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Signal Generator E4438C	MY49071430	13-Jan-17 (CTTL, No.J17X00286)	Jan-18
Network Analyzer E5071C	MY46110673	13-Jan-17 (CTTL, No.J17X00285)	Jan-18

	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: August 31, 2017

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 / NORM _{x,y,z}
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- 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
- 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
- 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
- KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

Additional Documentation:

- 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	52.10.0.1446
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	835 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	41.2 $\pm$ 6 %	0.89 mho/m $\pm$ 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.35 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	9.49 mW / g $\pm$ 18.8 % (k=2)
SAR averaged over 10 cm³ (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	1.52 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	6.13 mW / g $\pm$ 18.7 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 $\pm$ 0.2) °C	55.6 $\pm$ 6 %	0.98 mho/m $\pm$ 6 %
Body TSL temperature change during test	<1.0 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.45 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	9.71 mW / g $\pm$ 18.8 % (k=2)
SAR averaged over 10 cm³ (10 g) of Body TSL	Condition	
SAR measured	250 mW input power	1.61 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	6.39 mW / g $\pm$ 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	48.4Ω- 2.62jΩ
Return Loss	- 30.1dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	45.6Ω- 4.60jΩ
Return Loss	- 23.6dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.497 ns
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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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