

45_Bluetooth_DH5 1Mbps_Back_10mm_Ch39

Communication System: UID 0, Bluetooth (0); Frequency: 2441 MHz; Duty Cycle: 1:1.301
Medium: HSL_2450_190731 Medium parameters used: $f = 2441$ MHz; $\sigma = 1.744$ S/m; $\epsilon_r = 40.407$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.8 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3935; ConvF(7.69, 7.69, 7.69); Calibrated: 2018.11.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1303; Calibrated: 2019.01.03
- Phantom: Twin-SAM1(P1aP2a20); Type: QD 000 P40 CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

Ch39/Area Scan (81x151x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.116 W/kg

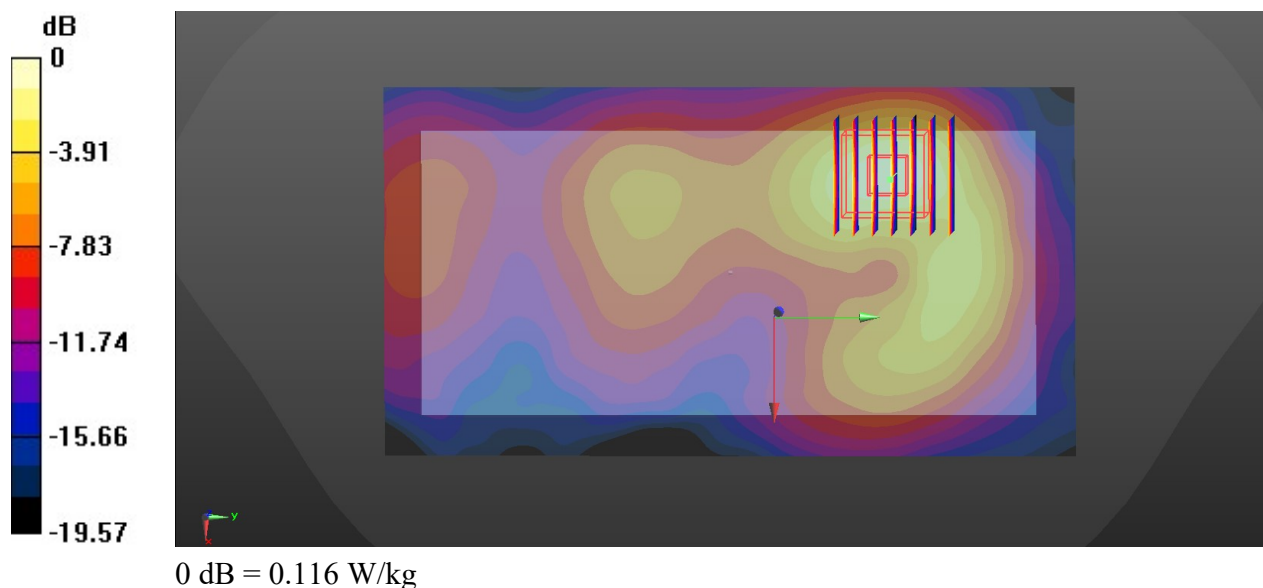
Ch39/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.923 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 0.153 W/kg

SAR(1 g) = 0.078 W/kg; SAR(10 g) = 0.037 W/kg

Maximum value of SAR (measured) = 0.116 W/kg



46_WLAN5GHz_802.11n-HT40 MCS0_Back_10mm_Ch46

Communication System: UID 0, WIFI (0); Frequency: 5230 MHz; Duty Cycle: 1:1.038
Medium: HSL_5250_190802 Medium parameters used: $f = 5230$ MHz; $\sigma = 4.617$ S/m; $\epsilon_r = 37.129$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.7 °C; Liquid Temperature : 22.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(5.07, 5.07, 5.07); Calibrated: 2019.03.01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch46/Area Scan (101x181x1): Interpolated grid: dx=10mm, dy=10mm

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

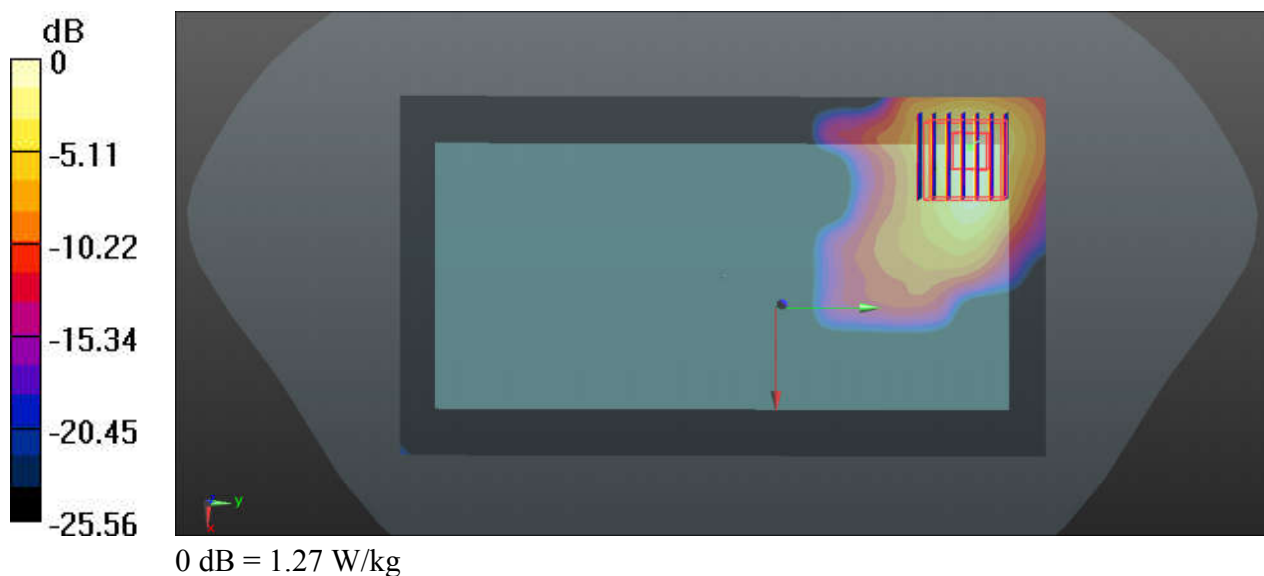
Ch46/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 0 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 2.06 W/kg

SAR(1 g) = 0.538 W/kg; SAR(10 g) = 0.203 W/kg

Maximum value of SAR (measured) = 1.27 W/kg



47_WLAN5GHz_802.11n-HT40 MCS0_Back_10mm_Ch159

Communication System: UID 0, WIFI (0); Frequency: 5795 MHz; Duty Cycle: 1:1.038
Medium: HSL_5750_190804 Medium parameters used: $f = 5795$ MHz; $\sigma = 5.268$ S/m; $\epsilon_r = 36.208$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.6 °C ; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(4.77, 4.77, 4.77); Calibrated: 2019.03.01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch159/Area Scan (101x181x1): Interpolated grid: dx=10mm, dy=10mm

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

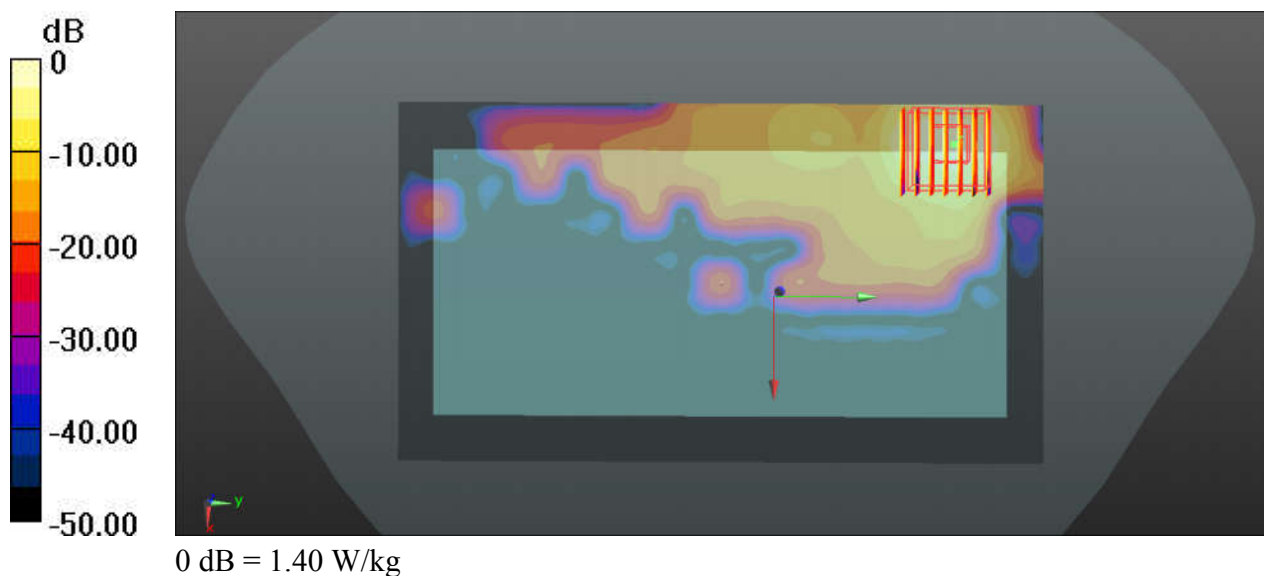
Ch159/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 1.634 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 2.53 W/kg

SAR(1 g) = 0.558 W/kg; SAR(10 g) = 0.160 W/kg

Maximum value of SAR (measured) = 1.40 W/kg



48_GSM850_GPRS(3 Tx slots)_Back_15mm_Ch251

Communication System: UID 0, GPRS/EDGE11 (0); Frequency: 848.8 MHz; Duty Cycle: 1:2.77
Medium: HSL_835_190729 Medium parameters used: $f = 848.8$ MHz; $\sigma = 0.908$ S/m; $\epsilon_r = 40.637$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.4 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(9.57, 9.57, 9.57); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch251/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.558 W/kg

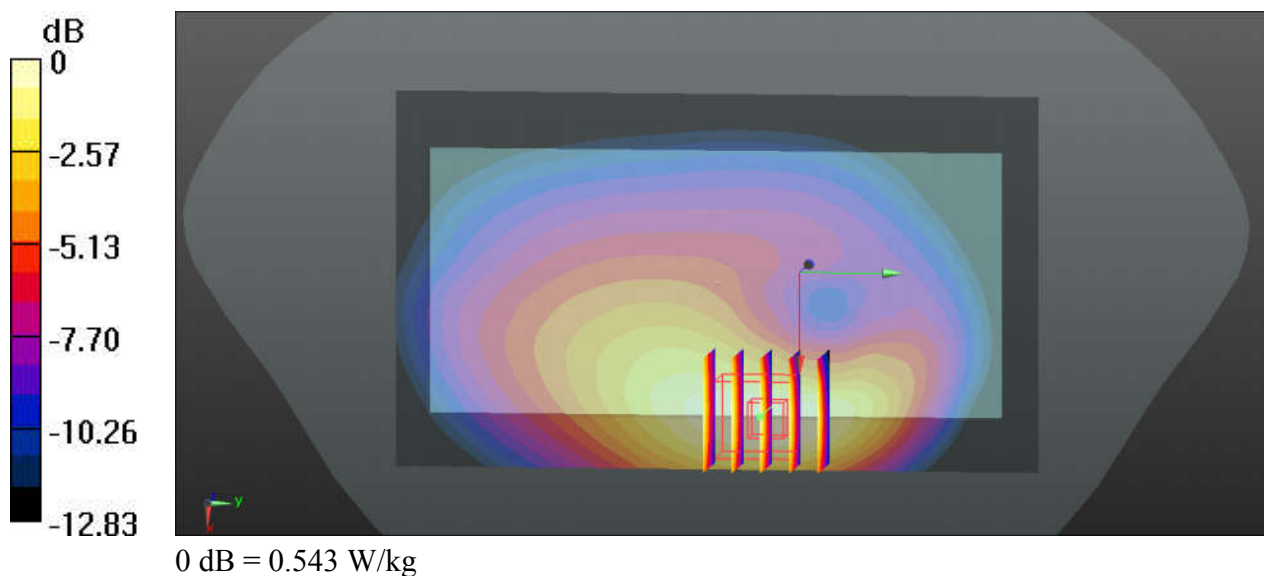
Ch251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.50 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.632 W/kg

SAR(1 g) = 0.433 W/kg; SAR(10 g) = 0.283 W/kg

Maximum value of SAR (measured) = 0.543 W/kg



49_GSM1900_GPRS(3 Tx slots)_Back_15mm_Ch512

Communication System: UID 0, GPRS/EDGE11 (0); Frequency: 1850.2 MHz; Duty Cycle: 1:2.77
Medium: HSL_1900_190725 Medium parameters used: $f = 1850.2$ MHz; $\sigma = 1.393$ S/m; $\epsilon_r = 39.209$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.6 °C; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(8.27, 8.27, 8.27); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch512/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.314 W/kg

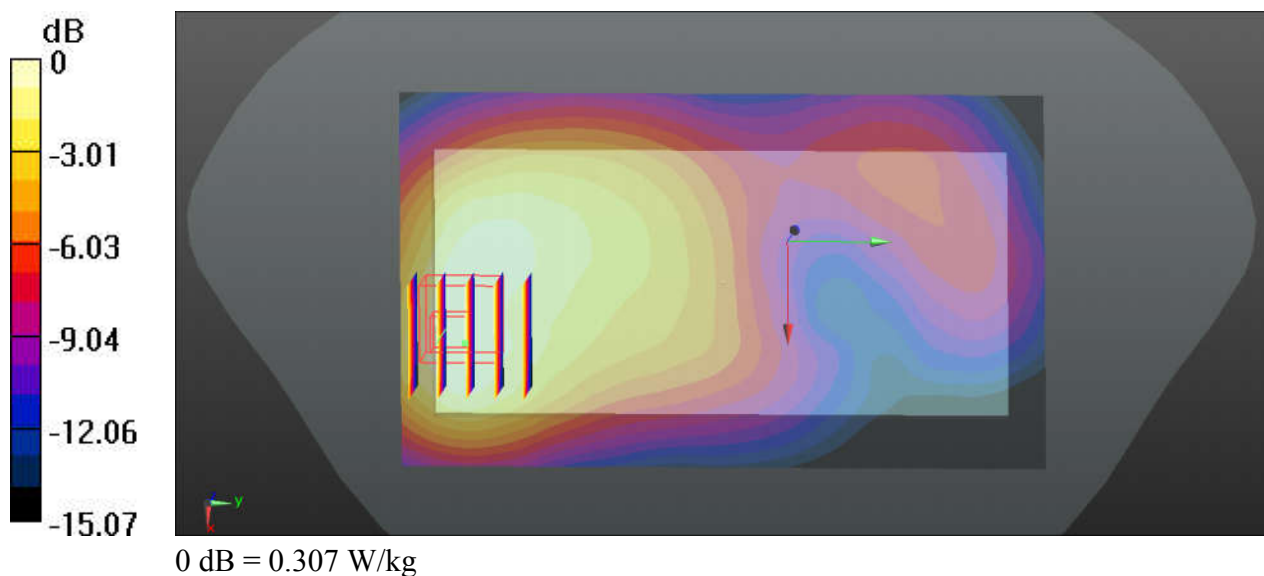
Ch512/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.397 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.390 W/kg

SAR(1 g) = 0.231 W/kg; SAR(10 g) = 0.141 W/kg

Maximum value of SAR (measured) = 0.307 W/kg



50_WCDMA V_RMC 12.2Kbps_Back_15mm_Ch4182

Communication System: UID 0, UMTS (0); Frequency: 836.4 MHz; Duty Cycle: 1:1
Medium: HSL_835_190729 Medium parameters used: $f = 836.4$ MHz; $\sigma = 0.898$ S/m; $\epsilon_r = 40.771$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.4 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(9.57, 9.57, 9.57); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch4182/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.730 W/kg

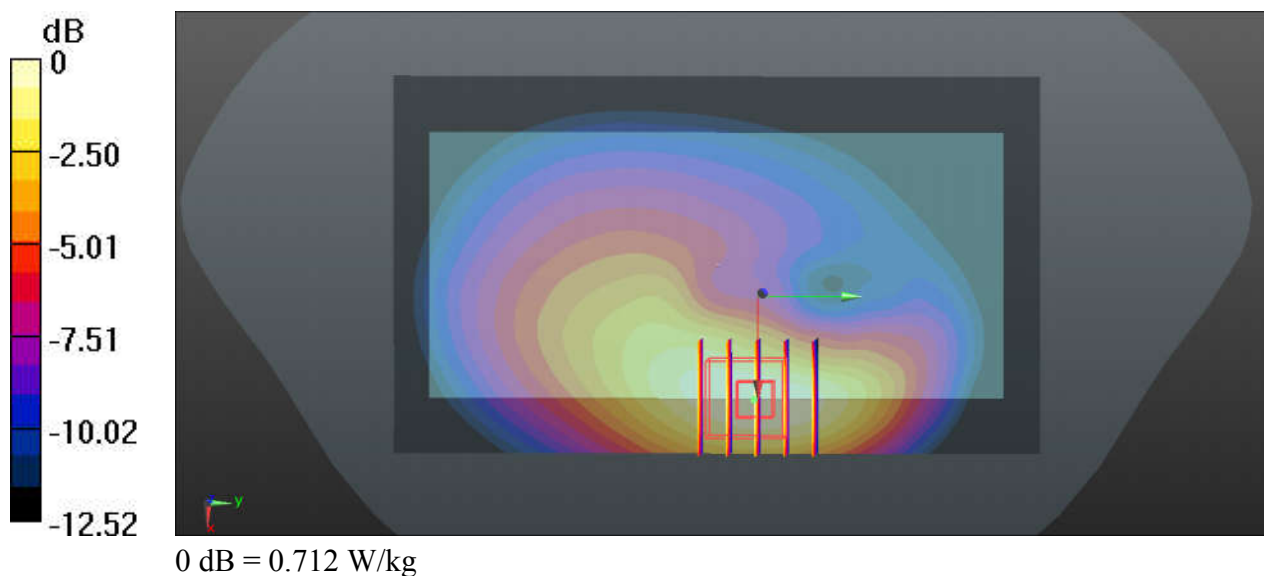
Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.26 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 0.821 W/kg

SAR(1 g) = 0.569 W/kg; SAR(10 g) = 0.374 W/kg

Maximum value of SAR (measured) = 0.712 W/kg



51_WCDMA IV_RMC 12.2Kbps_Back_15mm_Ch1312

Communication System: UID 0, UMTS (0); Frequency: 1712.4 MHz; Duty Cycle: 1:1
Medium: HSL_1750_190726 Medium parameters used: $f = 1712.4$ MHz; $\sigma = 1.358$ S/m; $\epsilon_r = 39.938$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.7 °C; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(8.54, 8.54, 8.54); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch1312/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.501 W/kg

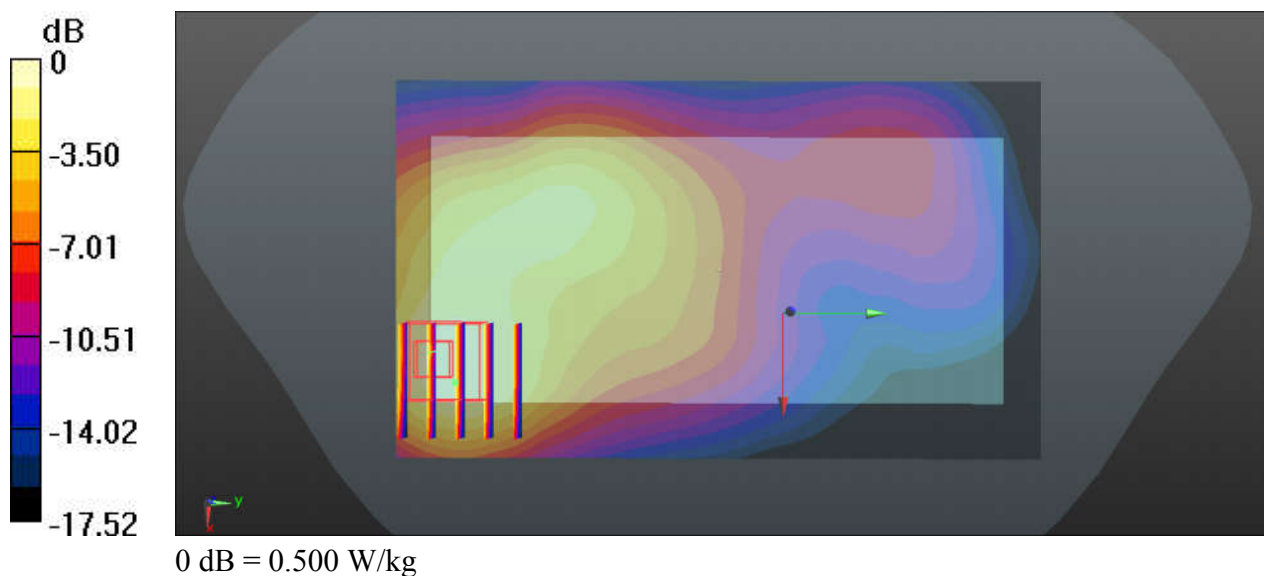
Ch1312/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.16 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.585 W/kg

SAR(1 g) = 0.396 W/kg; SAR(10 g) = 0.258 W/kg

Maximum value of SAR (measured) = 0.500 W/kg



52_WCDMA II_RMC 12.2Kbps_Back_15mm_Ch9538

Communication System: UID 0, UMTS (0); Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: HSL_1900_190725 Medium parameters used: $f = 1907.6$ MHz; $\sigma = 1.456$ S/m; $\epsilon_r = 38.956$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.6 °C ; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(8.27, 8.27, 8.27); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch9538/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.836 W/kg

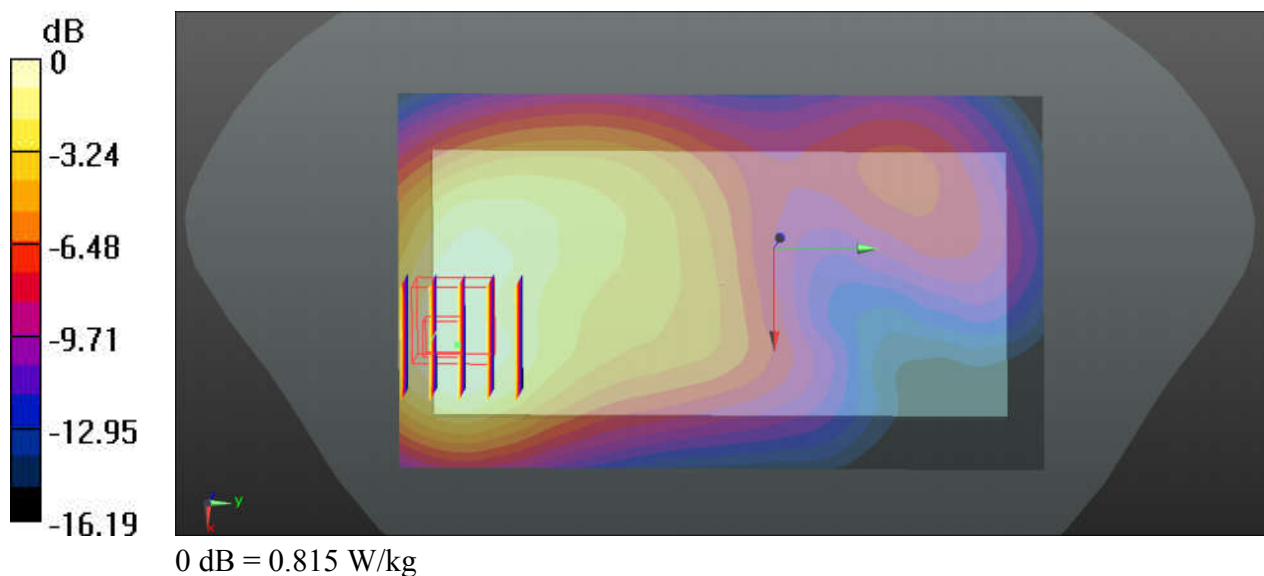
Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.944 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 1.05 W/kg

SAR(1 g) = 0.611 W/kg; SAR(10 g) = 0.367 W/kg

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



53_CDMA2000 BC0_RC3 SO32 (F+SCH) _Back_15mm_Ch1013

Communication System: UID 0, CDMA2000 (0); Frequency: 824.7 MHz; Duty Cycle: 1:1
Medium: HSL_835_190729 Medium parameters used: $f = 824.7$ MHz; $\sigma = 0.888$ S/m; $\epsilon_r = 40.881$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.4 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(9.57, 9.57, 9.57); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch1013/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.599 W/kg

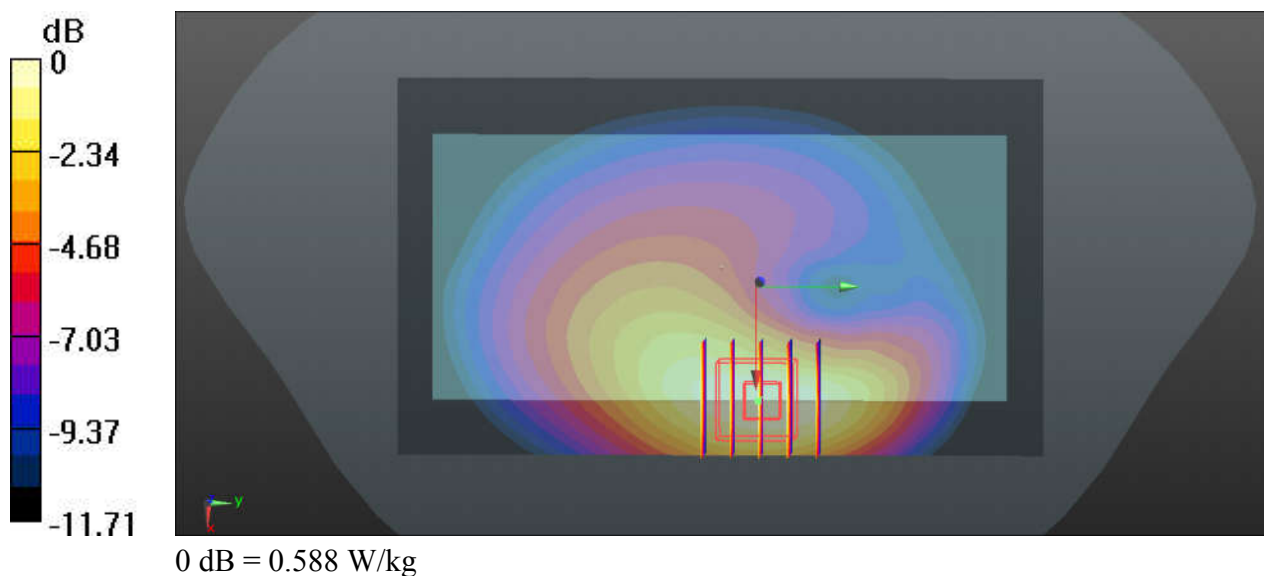
Ch1013/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.66 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.670 W/kg

SAR(1 g) = 0.473 W/kg; SAR(10 g) = 0.314 W/kg

Maximum value of SAR (measured) = 0.588 W/kg



54_CDMA2000 BC10_RC3 SO32 (F+SCH) _Back_15mm_Ch580

Communication System: UID 0, CDMA2000 (0); Frequency: 820.5 MHz; Duty Cycle: 1:1
Medium: HSL_835_190729 Medium parameters used: $f = 820.5$ MHz; $\sigma = 0.884$ S/m; $\epsilon_r = 40.916$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.4 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(9.57, 9.57, 9.57); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch580/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.375 W/kg

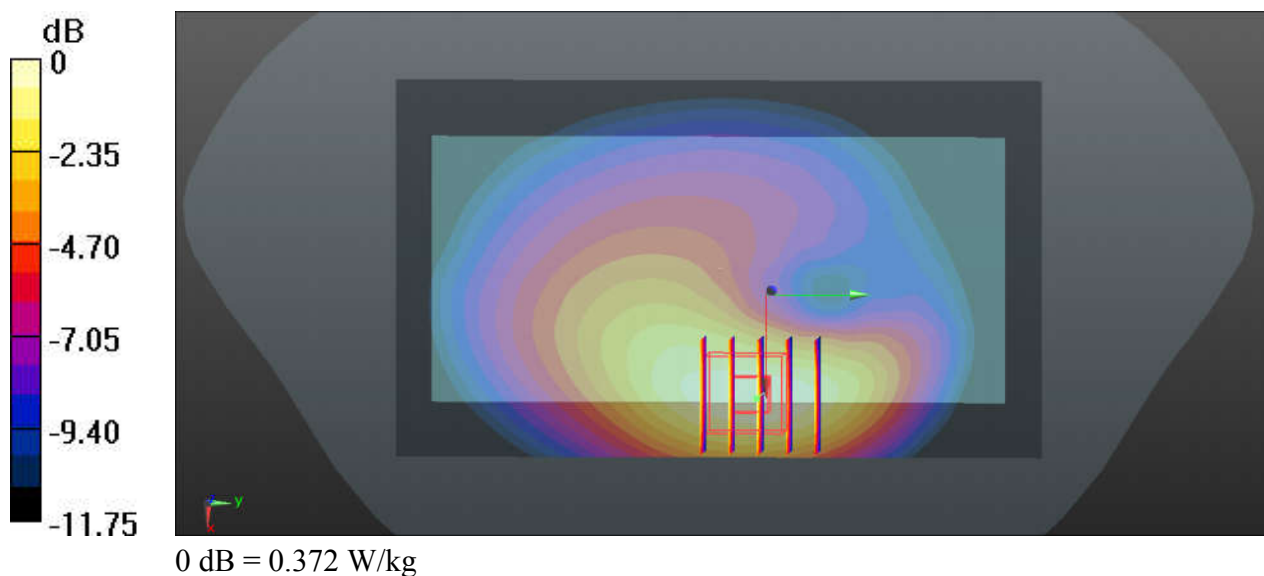
Ch580/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.85 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.425 W/kg

SAR(1 g) = 0.301 W/kg; SAR(10 g) = 0.200 W/kg

Maximum value of SAR (measured) = 0.372 W/kg



55_CDMA2000 BC1_RC3 SO32 (F+SCH) _Back_15mm_Ch1175

Communication System: UID 0, CDMA2000 (0); Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: HSL_1900_190725 Medium parameters used: $f = 1908.75$ MHz; $\sigma = 1.457$ S/m; $\epsilon_r = 38.951$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(8.27, 8.27, 8.27); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch1175/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

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

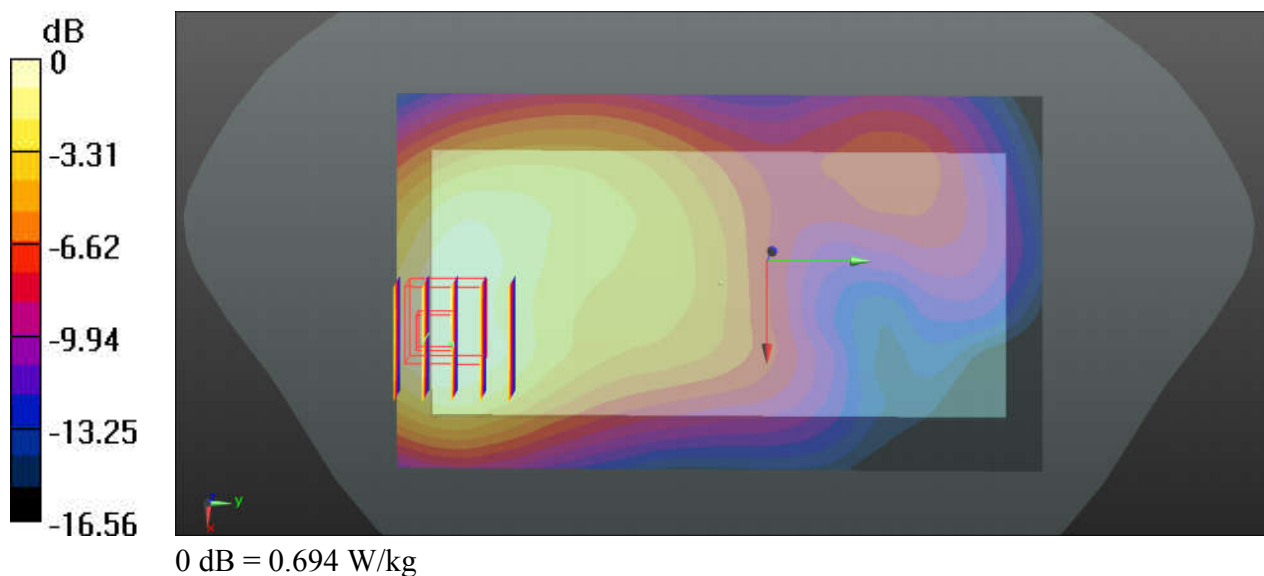
Ch1175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.343 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.888 W/kg

SAR(1 g) = 0.522 W/kg; SAR(10 g) = 0.314 W/kg

Maximum value of SAR (measured) = 0.694 W/kg



56_LTE Band 71_20M_QPSK_1RB_0Offset_Back_15mm_Ch133322

Communication System: UID 0, LTE (0); Frequency: 683 MHz; Duty Cycle: 1:1

Medium: HSL_750_190728 Medium parameters used: $f = 683$ MHz; $\sigma = 0.855$ S/m; $\epsilon_r = 42.31$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.6 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(10, 10, 10); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch133322/Area Scan (81x121x1): Interpolated grid: dx=15mm, dy=15mm

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

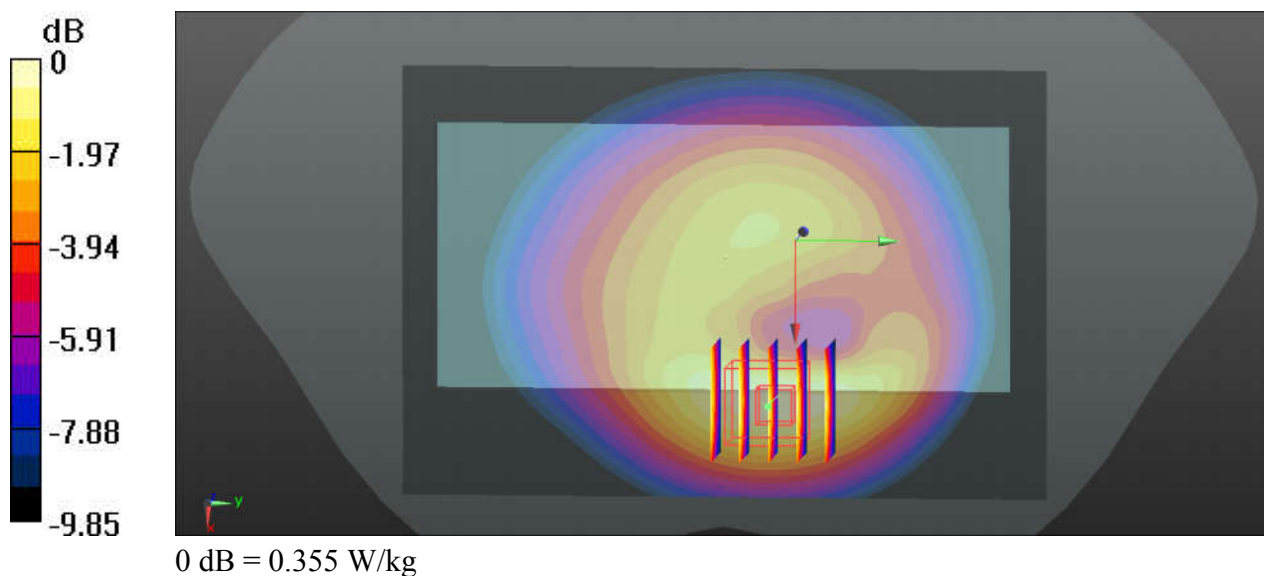
Ch133322/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.43 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.395 W/kg

SAR(1 g) = 0.294 W/kg; SAR(10 g) = 0.202 W/kg

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



57_LTE Band 12_10M_QPSK_1RB_0Offset_Back_15mm_Ch23095

Communication System: UID 0, LTE (0); Frequency: 707.5 MHz; Duty Cycle: 1:1

Medium: HSL_750_190728 Medium parameters used: $f = 707.5$ MHz; $\sigma = 0.858$ S/m; $\epsilon_r = 41.719$;

$\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C ; Liquid Temperature : 22.6 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(10, 10, 10); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch23095/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.412 W/kg

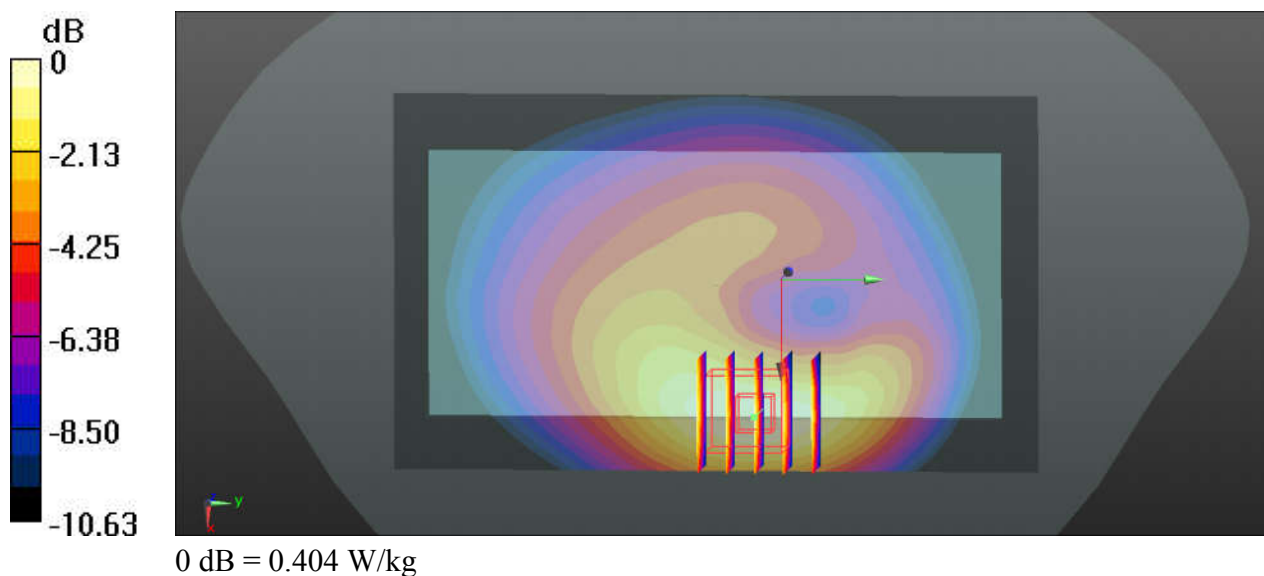
Ch23095/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.388 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.456 W/kg

SAR(1 g) = 0.333 W/kg; SAR(10 g) = 0.226 W/kg

Maximum value of SAR (measured) = 0.404 W/kg



58_LTE Band 13_10M_QPSK_25RB_0Offset_Back_15mm_Ch23230

Communication System: UID 0, LTE (0); Frequency: 782 MHz; Duty Cycle: 1:1

Medium: HSL_750_190728 Medium parameters used: $f = 782$ MHz; $\sigma = 0.899$ S/m; $\epsilon_r = 40.06$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C ; Liquid Temperature : 22.6 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(10, 10, 10); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch23230/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.553 W/kg

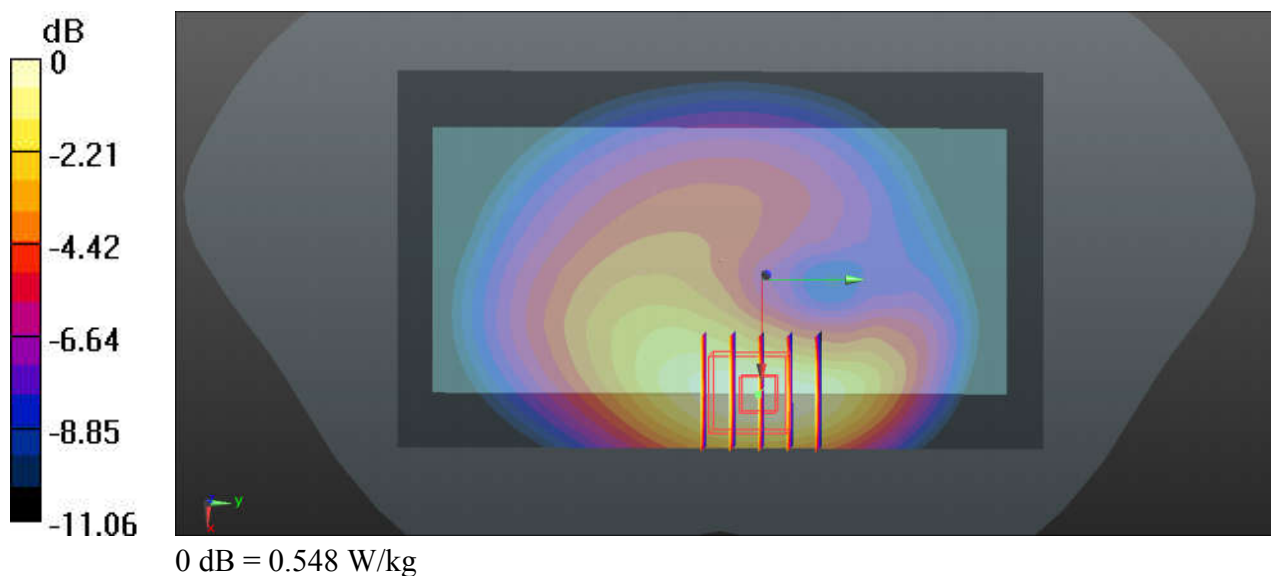
Ch23230/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.12 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.618 W/kg

SAR(1 g) = 0.445 W/kg; SAR(10 g) = 0.300 W/kg

Maximum value of SAR (measured) = 0.548 W/kg



59_LTE Band 5_10M_QPSK_1RB_0Offset_Back_15mm_Ch20525

Communication System: UID 0, LTE (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium: HSL_835_190729 Medium parameters used: $f = 836.5$ MHz; $\sigma = 0.898$ S/m; $\epsilon_r = 40.771$;
 $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(9.57, 9.57, 9.57); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch20525/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

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

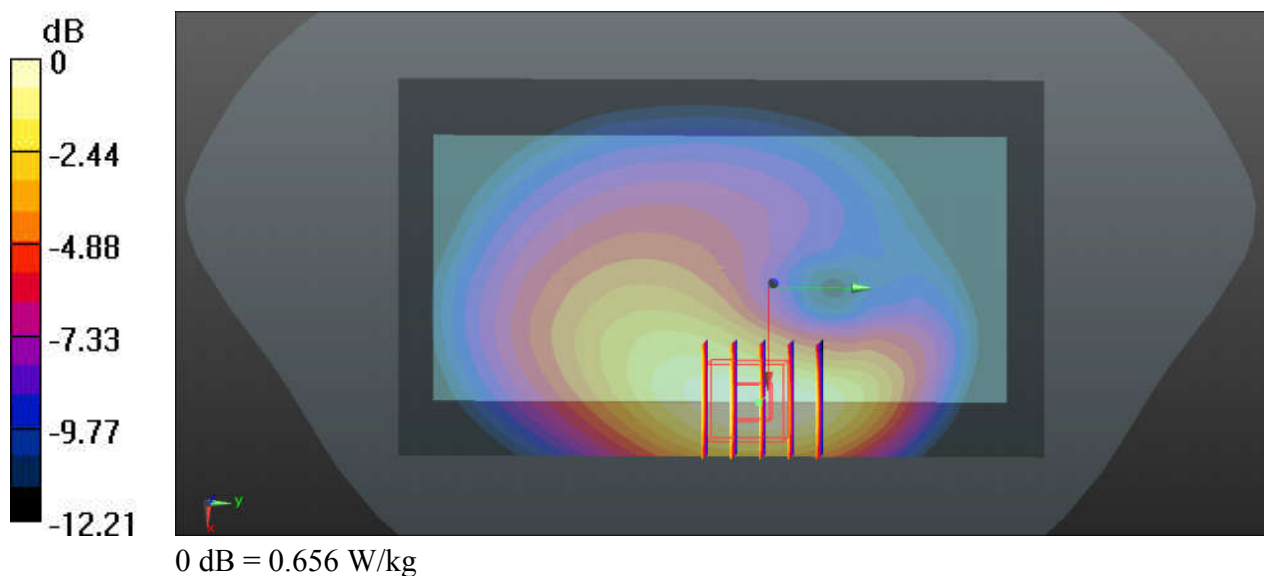
Ch20525/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.76 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 0.752 W/kg

SAR(1 g) = 0.526 W/kg; SAR(10 g) = 0.347 W/kg

Maximum value of SAR (measured) = 0.656 W/kg



60_LTE Band 26_15M_QPSK_1RB_0Offset_Back_15mm_Ch26965

Communication System: UID 0, LTE (0); Frequency: 841.5 MHz; Duty Cycle: 1:1

Medium: HSL_835_190729 Medium parameters used: $f = 841.5$ MHz; $\sigma = 0.902$ S/m; $\epsilon_r = 40.725$;

$\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C ; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(9.57, 9.57, 9.57); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch26965/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.661 W/kg

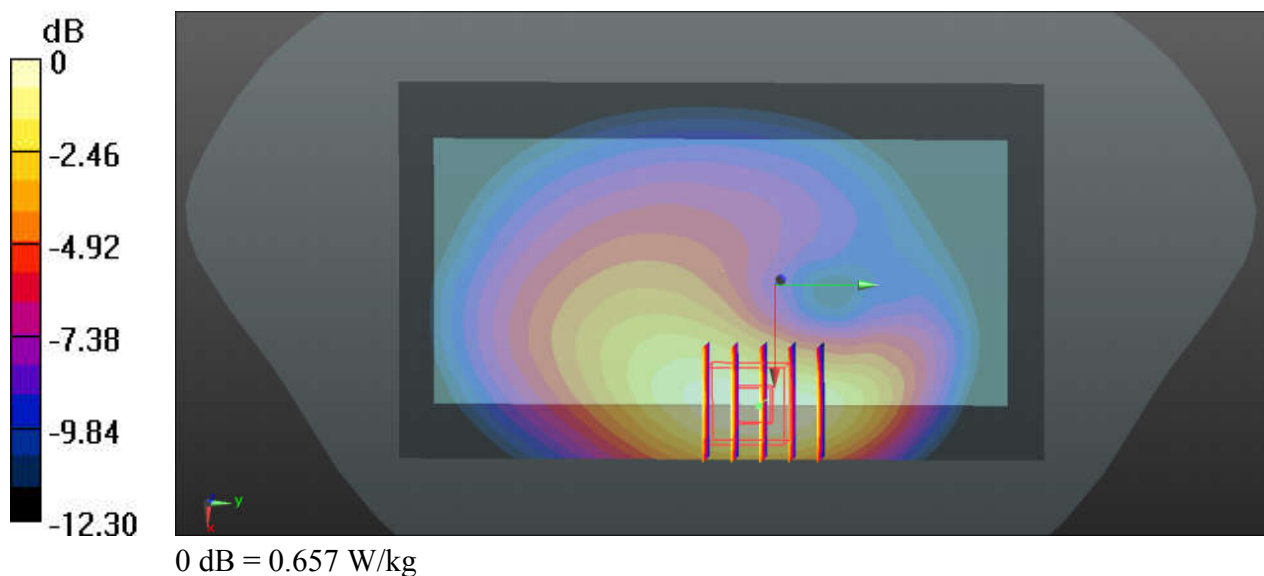
Ch26965/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.69 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.754 W/kg

SAR(1 g) = 0.525 W/kg; SAR(10 g) = 0.346 W/kg

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



61_LTE Band 66_20M_QPSK_1RB_0Offset_Back_15mm_Ch132572

Communication System: UID 0, LTE (0); Frequency: 1770 MHz; Duty Cycle: 1:1

Medium: HSL_1750_190726 Medium parameters used: $f = 1770$ MHz; $\sigma = 1.404$ S/m; $\epsilon_r = 39.749$;

$\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(8.54, 8.54, 8.54); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch132572/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.572 W/kg

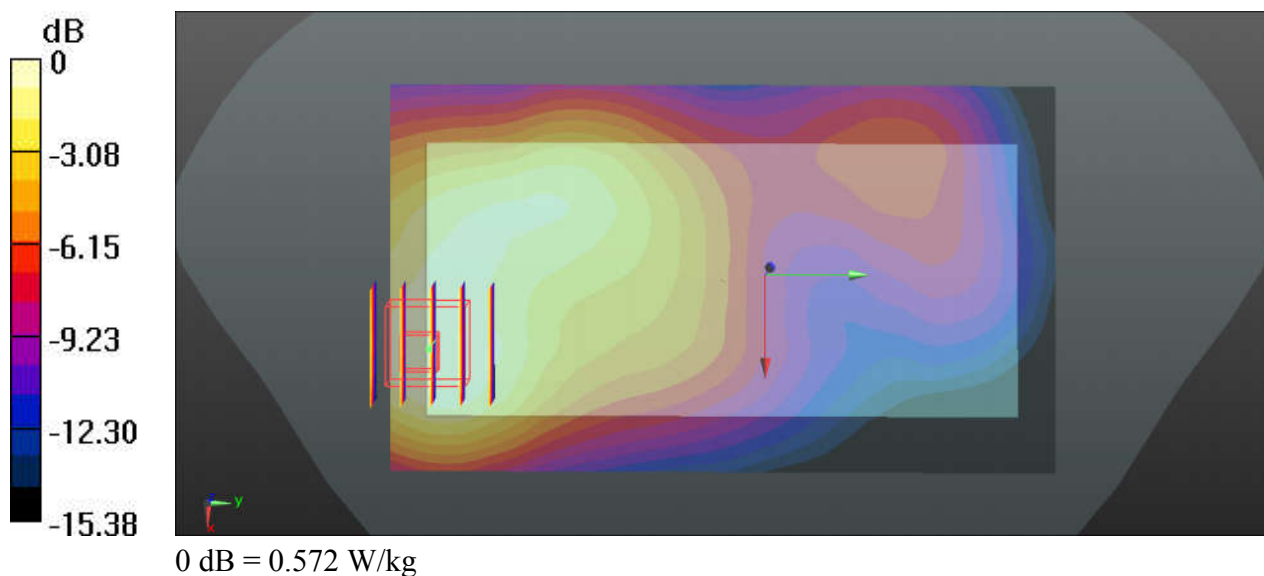
Ch132572/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.701 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.751 W/kg

SAR(1 g) = 0.464 W/kg; SAR(10 g) = 0.278 W/kg

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



62_LTE Band 25_20M_QPSK_1RB_0Offset_Back_15mm_Ch26590

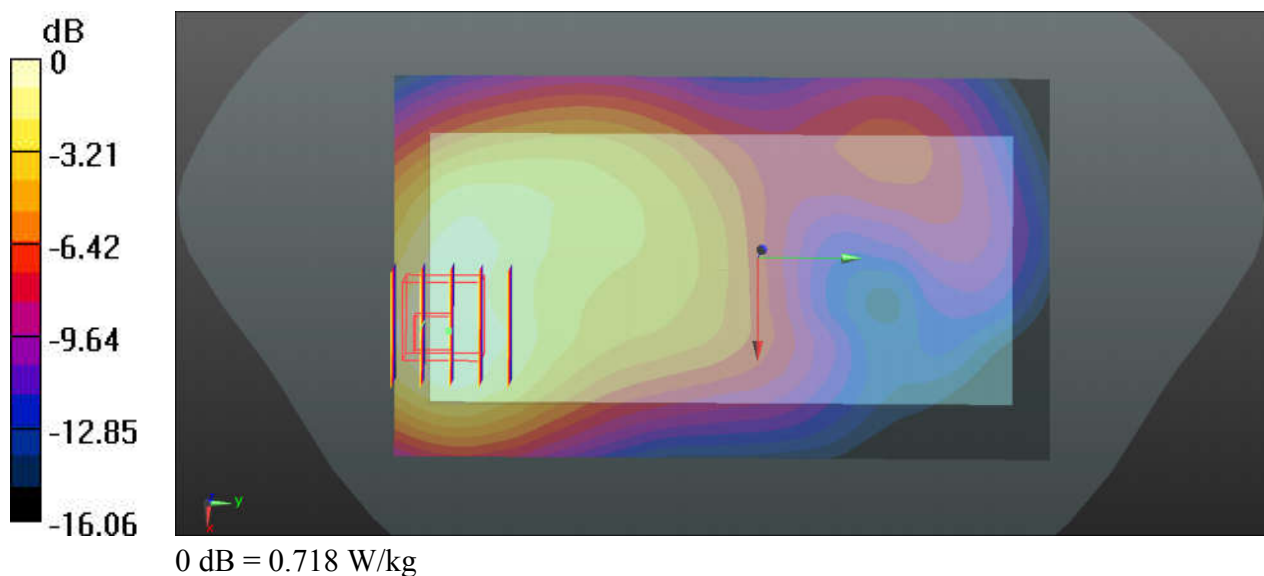
Communication System: UID 0, LTE (0); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium: HSL_1900_190725 Medium parameters used: $f = 1905$ MHz; $\sigma = 1.453$ S/m; $\epsilon_r = 38.973$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.6 °C; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(8.27, 8.27, 8.27); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch26590/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.718 W/kg

Ch26590/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.333 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.922 W/kg
SAR(1 g) = 0.539 W/kg; SAR(10 g) = 0.323 W/kg
Maximum value of SAR (measured) = 0.719 W/kg



63_LTE Band 30_10M_QPSK_1RB_25Offset_Front_15mm_Ch27710

Communication System: UID 0, LTE (0); Frequency: 2310 MHz; Duty Cycle: 1:1

Medium: HSL_2300_190727 Medium parameters used: $f = 2310$ MHz; $\sigma = 1.677$ S/m; $\epsilon_r = 38.797$;

$\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C; Liquid Temperature : 22.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(7.64, 7.64, 7.64); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch27710/Area Scan (81x151x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.632 W/kg

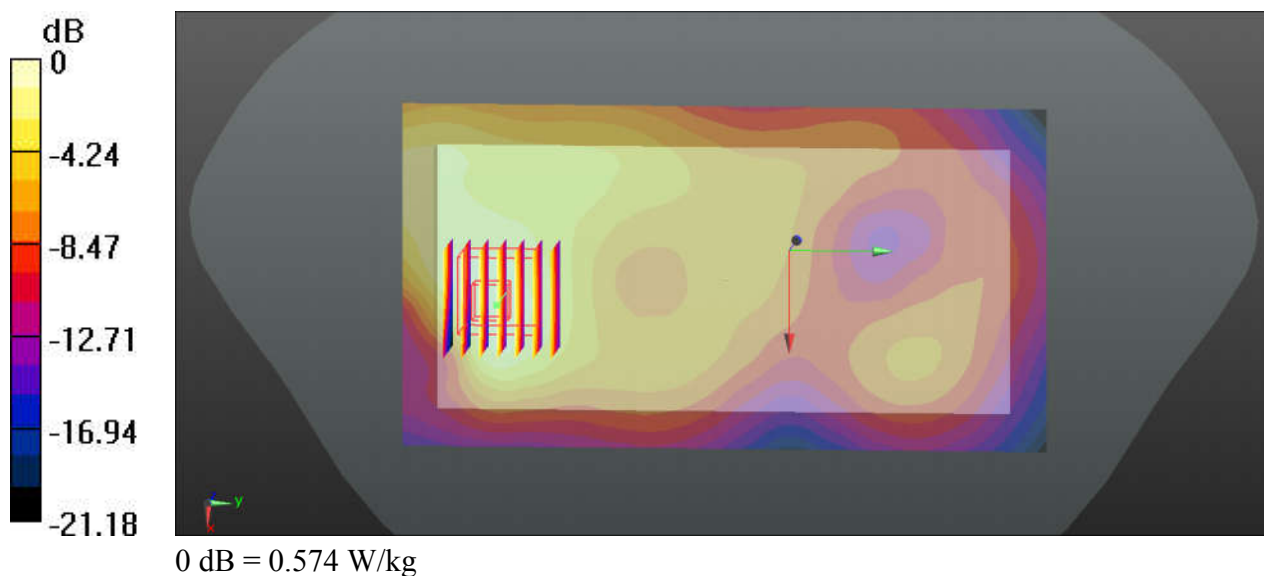
Ch27710/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.685 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.732 W/kg

SAR(1 g) = 0.425 W/kg; SAR(10 g) = 0.237 W/kg

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



64_LTE Band 7_20M_QPSK_1RB_0Offset_Front_15mm_Ch21350

Communication System: UID 0, LTE (0); Frequency: 2560 MHz; Duty Cycle: 1:1

Medium: HSL_2600_190723 Medium parameters used: $f = 2560$ MHz; $\sigma = 2.01$ S/m; $\epsilon_r = 37.49$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C ; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(7.06, 7.06, 7.06); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch21350/Area Scan (81x151x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.969 W/kg

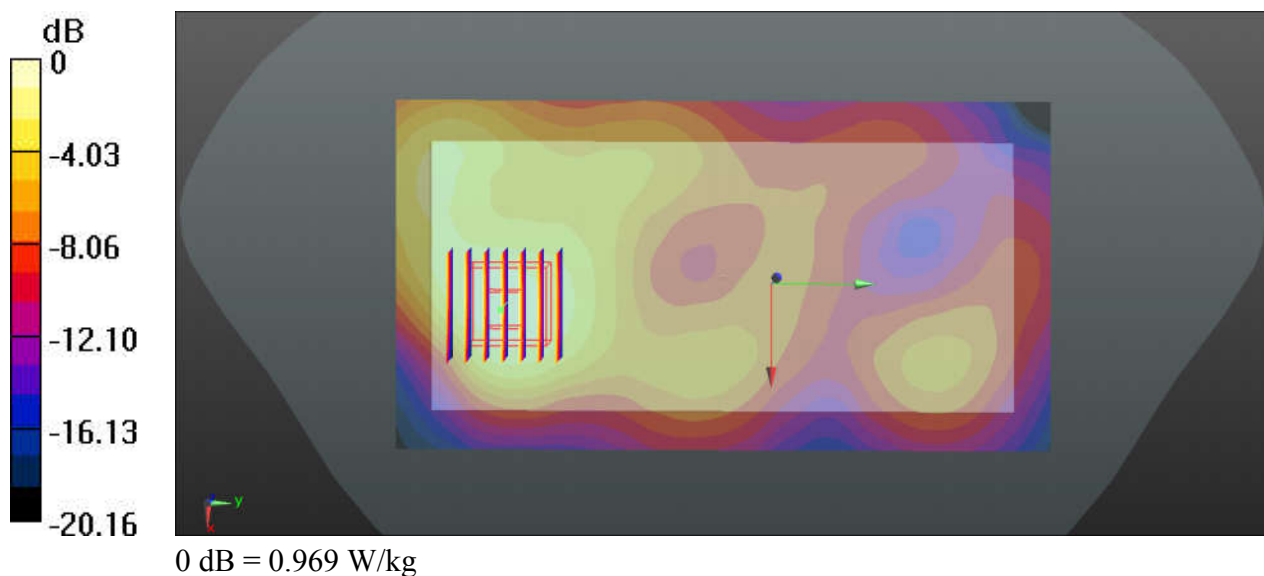
Ch21350/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.093 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.20 W/kg

SAR(1 g) = 0.660 W/kg; SAR(10 g) = 0.361 W/kg

Maximum value of SAR (measured) = 0.928 W/kg



65_LTE Band 41_20M_QPSK_1RB_99Offset_Front_15mm_Ch41490

Communication System: UID 0, LTE (0); Frequency: 2680 MHz; Duty Cycle: 1:1.59

Medium: HSL_2600_190723 Medium parameters used: $f = 2680$ MHz; $\sigma = 2.093$ S/m; $\epsilon_r = 37.005$;

$\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(7.06, 7.06, 7.06); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch41490/Area Scan (81x151x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.627 W/kg

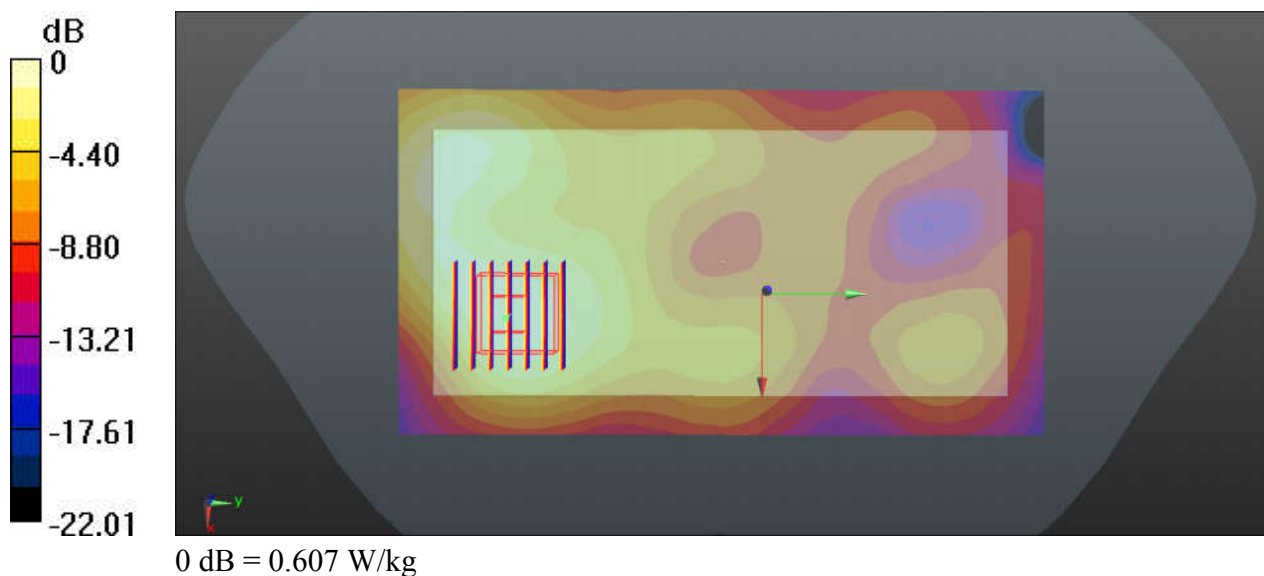
Ch41490/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.851 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.829 W/kg

SAR(1 g) = 0.413 W/kg; SAR(10 g) = 0.215 W/kg

Maximum value of SAR (measured) = 0.607 W/kg



66_LTE Band 48_20M_QPSK_1RB_99Offset_Back_15mm_Ch56640

Communication System: UID 0, LTE (0); Frequency: 3690 MHz; Duty Cycle: 1:1.59

Medium: HSL_3500-3700_190805 Medium parameters used: $f = 3690$ MHz; $\sigma = 3.046$ S/m; $\epsilon_r = 38.387$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C ; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(6.67, 6.67, 6.67); Calibrated: 2019.03.01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch56640/Area Scan (101x181x1): Interpolated grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.552 W/kg

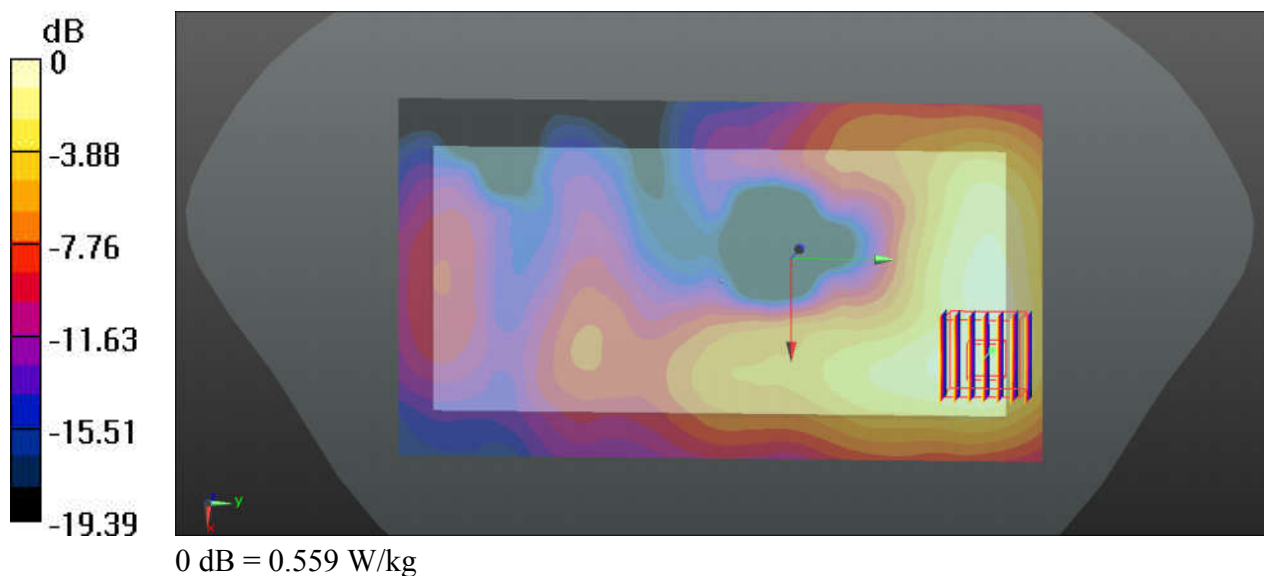
Ch56640/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 2.698 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.804 W/kg

SAR(1 g) = 0.301 W/kg; SAR(10 g) = 0.143 W/kg

Maximum value of SAR (measured) = 0.559 W/kg



67_WLAN2.4GHz_802.11b 1Mbps_Back_15mm_Ch6

Communication System: UID 0, WIFI (0); Frequency: 2437 MHz; Duty Cycle: 1:1.007

Medium: HSL_2450_190809 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.805$ S/m; $\epsilon_r = 39.8$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: ES3DV3 - SN3191; ConvF(4.69, 4.69, 4.69); Calibrated: 2019.01.29;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch6/Area Scan (81x141x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.523 W/kg

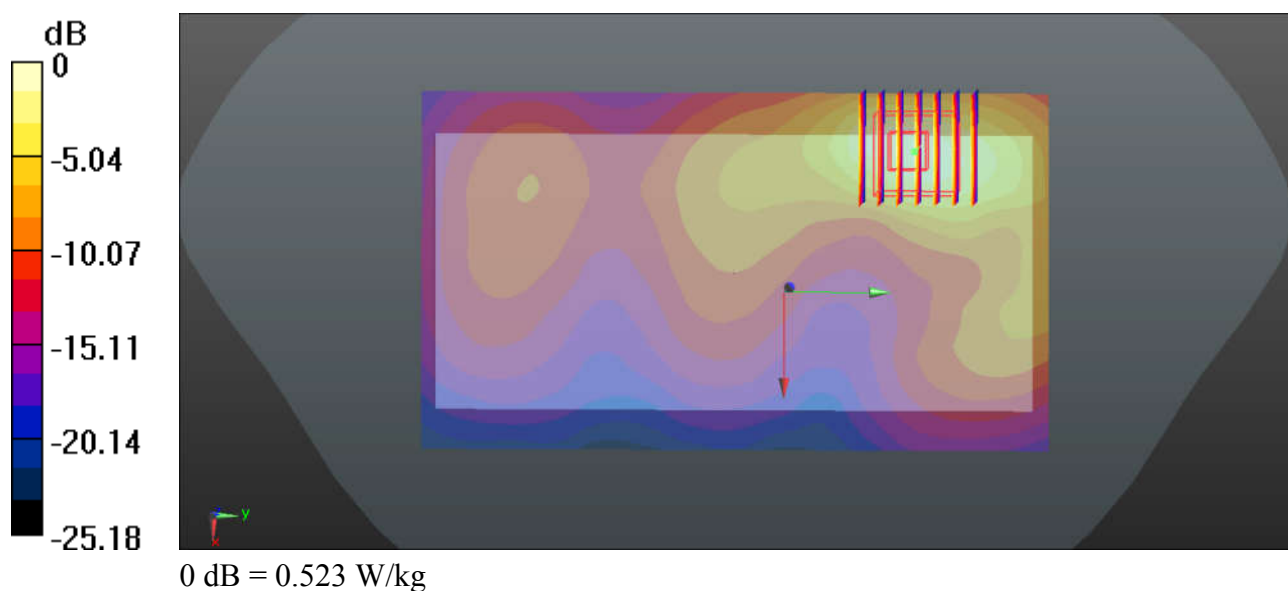
Ch6/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.572 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.807 W/kg

SAR(1 g) = 0.403 W/kg; SAR(10 g) = 0.187 W/kg

Maximum value of SAR (measured) = 0.525 W/kg



68_WLAN5GHz_802.11n-HT40 MCS0_Back_15mm_Ch62

Communication System: UID 0, WIFI (0); Frequency: 5310 MHz; Duty Cycle: 1:1.038
Medium: HSL_5250_190802 Medium parameters used: $f = 5310$ MHz; $\sigma = 4.708$ S/m; $\epsilon_r = 37.006$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.7 °C; Liquid Temperature : 22.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(5.07, 5.07, 5.07); Calibrated: 2019.03.01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch62/Area Scan (101x181x1): Interpolated grid: dx=10mm, dy=10mm

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

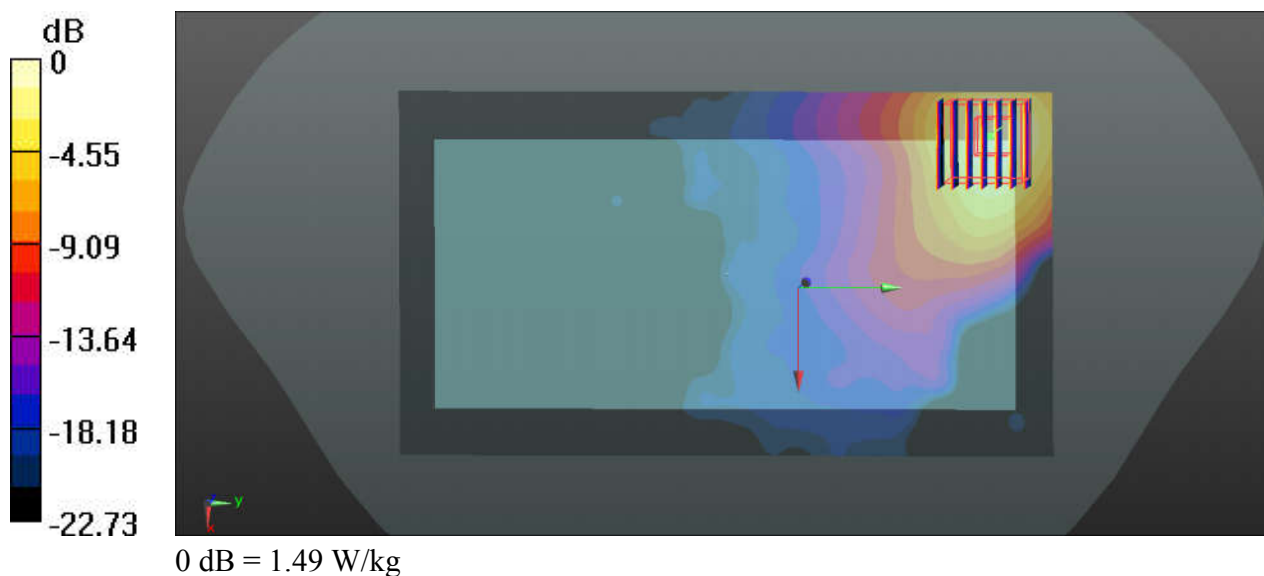
Ch62/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 1.518 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 2.37 W/kg

SAR(1 g) = 0.623 W/kg; SAR(10 g) = 0.255 W/kg

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



69_WLAN5GHz_802.11n-HT40 MCS0_Back_15mm_Ch142

Communication System: UID 0, WIFI (0); Frequency: 5710 MHz; Duty Cycle: 1:1.038
Medium: HSL_5600_190803 Medium parameters used: $f = 5710$ MHz; $\sigma = 5.175$ S/m; $\epsilon_r = 36.349$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.5 °C; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(4.7, 4.7, 4.7); Calibrated: 2019.03.01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch142/Area Scan (111x181x1): Interpolated grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.73 W/kg

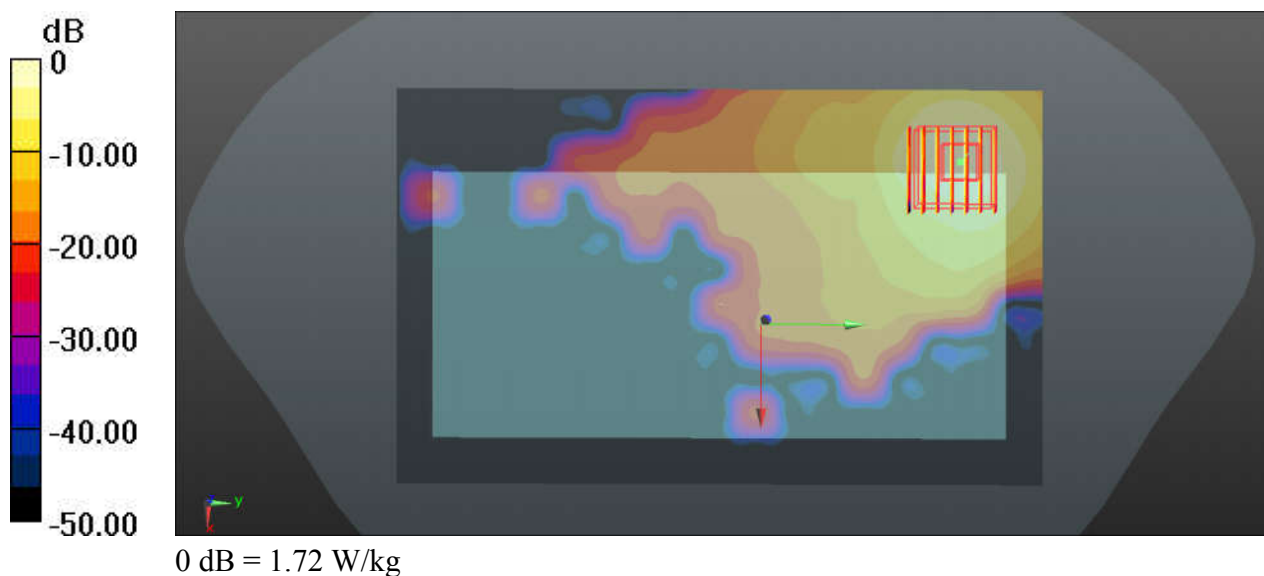
Ch142/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 1.184 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 2.88 W/kg

SAR(1 g) = 0.701 W/kg; SAR(10 g) = 0.248 W/kg

Maximum value of SAR (measured) = 1.72 W/kg



70_WLAN5GHz_802.11n-HT40 MCS0_Back_15mm_Ch159

Communication System: UID 0, WIFI (0); Frequency: 5795 MHz; Duty Cycle: 1:1.038
Medium: HSL_5750_190804 Medium parameters used: $f = 5795$ MHz; $\sigma = 5.268$ S/m; $\epsilon_r = 36.208$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.6 °C ; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(4.77, 4.77, 4.77); Calibrated: 2019.03.01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch159/Area Scan (101x181x1): Interpolated grid: dx=10mm, dy=10mm

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

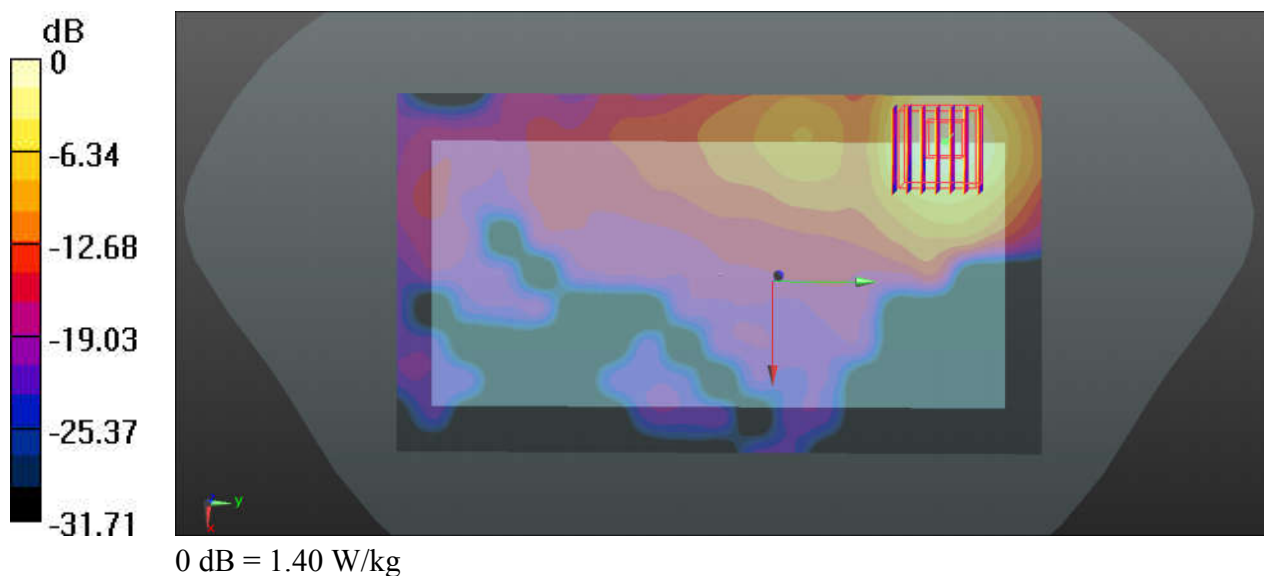
Ch159/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 2.301 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 2.40 W/kg

SAR(1 g) = 0.613 W/kg; SAR(10 g) = 0.216 W/kg

Maximum value of SAR (measured) = 1.40 W/kg



71_Bluetooth_DH5 1Mbps_Back_15mm_Ch39

Communication System: UID 0, Bluetooth (0); Frequency: 2441 MHz; Duty Cycle: 1:1.301
Medium: HSL_2450_190731 Medium parameters used: $f = 2441$ MHz; $\sigma = 1.744$ S/m; $\epsilon_r = 40.407$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.8 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3935; ConvF(7.69, 7.69, 7.69); Calibrated: 2018.11.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1303; Calibrated: 2019.01.03
- Phantom: Twin-SAM1(P1aP2a20); Type: QD 000 P40 CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

Ch39/Area Scan (81x151x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.0580 W/kg

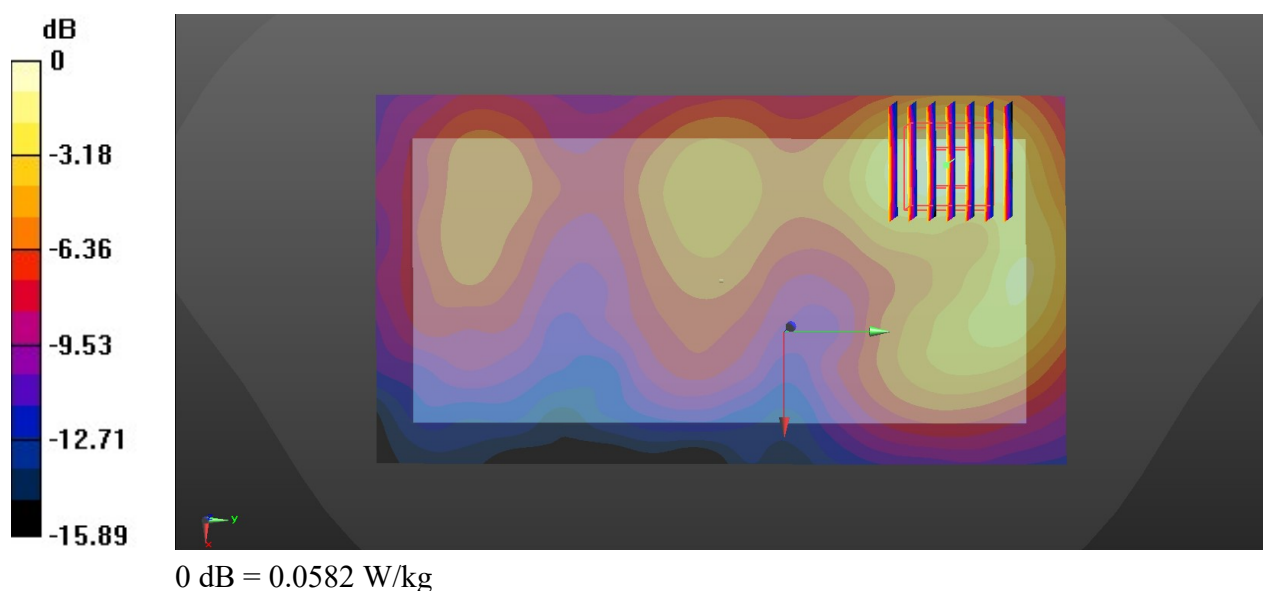
Ch39/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.909 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.0770 W/kg

SAR(1 g) = 0.041 W/kg; SAR(10 g) = 0.022 W/kg

Maximum value of SAR (measured) = 0.0582 W/kg



72_WCDMA V_RMC 12.2Kbps_Left Side_0mm_Ch4233

Communication System: UID 0, UMTS (0); Frequency: 846.6 MHz; Duty Cycle: 1:1
Medium: HSL_835_190729 Medium parameters used: $f = 846.6$ MHz; $\sigma = 0.906$ S/m; $\epsilon_r = 40.672$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.4 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(9.57, 9.57, 9.57); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch4233/Area Scan (41x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 4.58 W/kg

Ch4233/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 61.50 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 11.5 W/kg

SAR(1 g) = 3.75 W/kg; SAR(10 g) = 1.56 W/kg

Maximum value of SAR (measured) = 7.53 W/kg

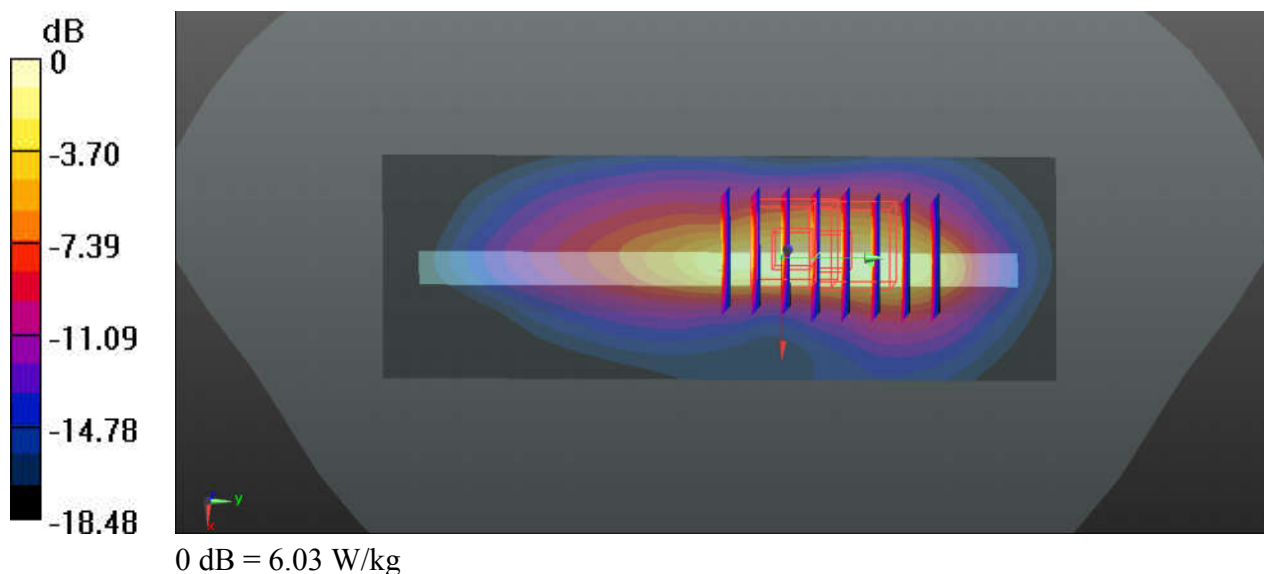
Ch4233/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 61.50 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 10.4 W/kg

SAR(1 g) = 2.97 W/kg; SAR(10 g) = 1.34 W/kg

Maximum value of SAR (measured) = 6.03 W/kg



73_WCDMA IV_RMC 12.2Kbps_Bottom Side_0mm_Ch1513

Communication System: UID 0, UMTS (0); Frequency: 1752.6 MHz; Duty Cycle: 1:1
Medium: HSL_1750_190807 Medium parameters used: $f = 17502.6$ MHz; $\sigma = 1.386$ S/m; $\epsilon_r = 39.878$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.8 °C ; Liquid Temperature : 22.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(8.54, 8.54, 8.54); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch1513/Area Scan (41x71x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 7.79 W/kg

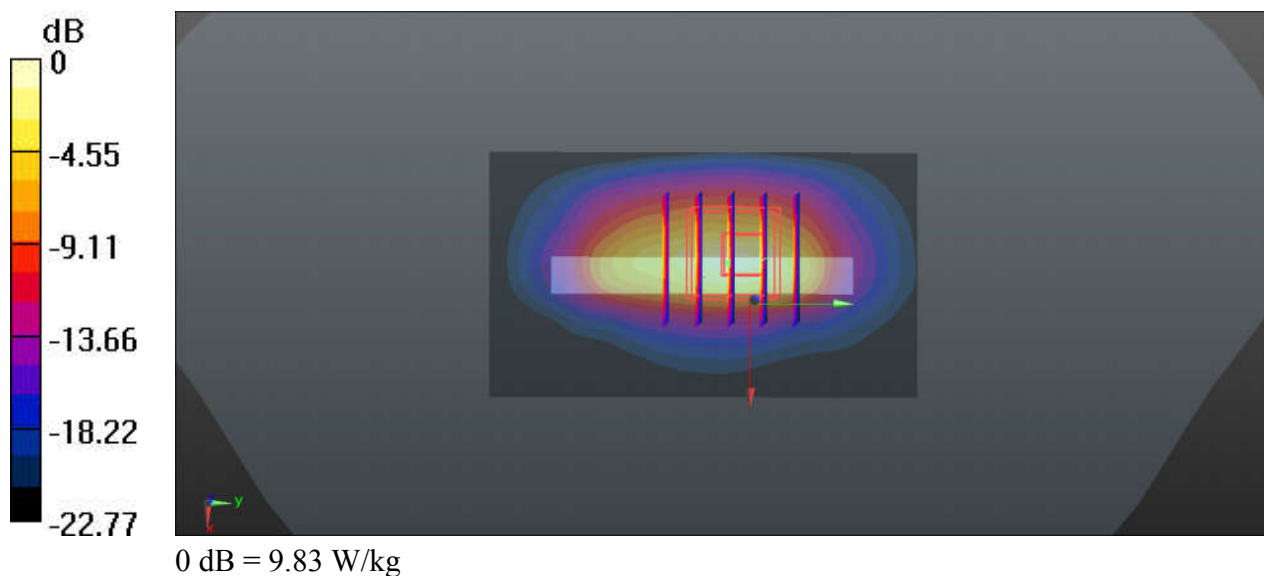
Ch1513/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 58.62 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 14.3 W/kg

SAR(1 g) = 5.31 W/kg; SAR(10 g) = 2.09 W/kg

Maximum value of SAR (measured) = 9.83 W/kg



74_WCDMA II_RMC 12.2Kbps_Back_0mm_Ch9400

Communication System: UID 0, UMTS (0); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL_1900_190725 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.428$ S/m; $\epsilon_r = 39.095$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.6 °C ; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(8.27, 8.27, 8.27); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch9400/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 8.78 W/kg

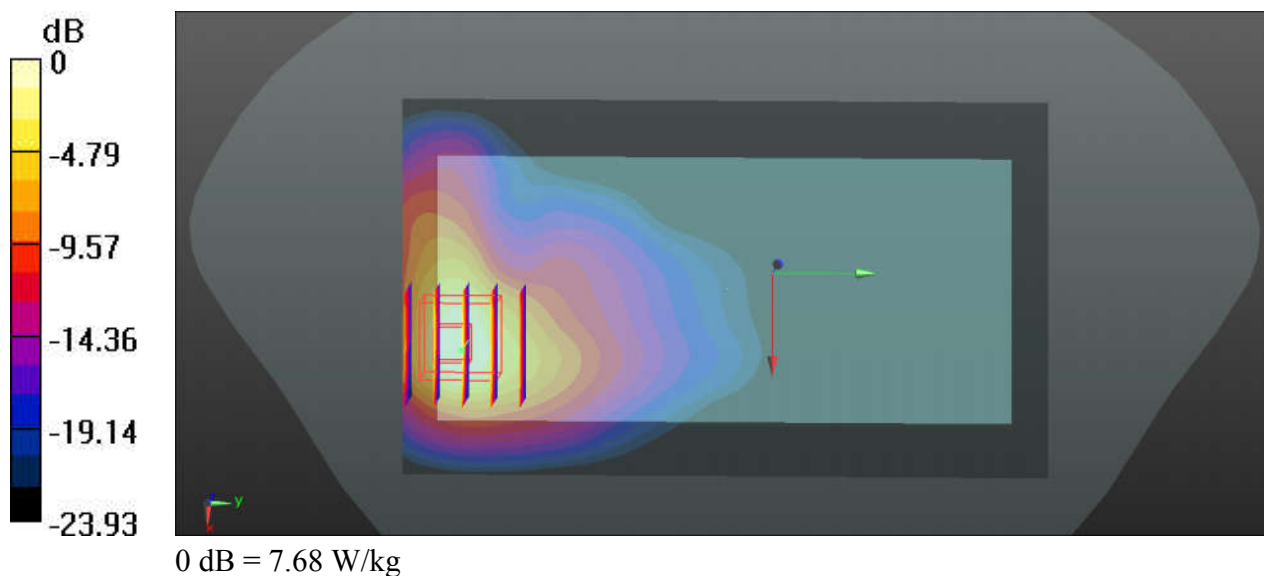
Ch9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.347 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 12.3 W/kg

SAR(1 g) = 5.15 W/kg; SAR(10 g) = 2.25 W/kg

Maximum value of SAR (measured) = 7.68 W/kg



75_CDMA2000 BC0_RTAP 153.6Kbps_Left Side_0mm_Ch1013

Communication System: UID 0, CDMA2000 (0); Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: HSL_835_190729 Medium parameters used: $f = 836.52$ MHz; $\sigma = 0.888$ S/m; $\epsilon_r = 40.881$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.4 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(9.57, 9.57, 9.57); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch1013/Area Scan (41x121x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 4.52 W/kg

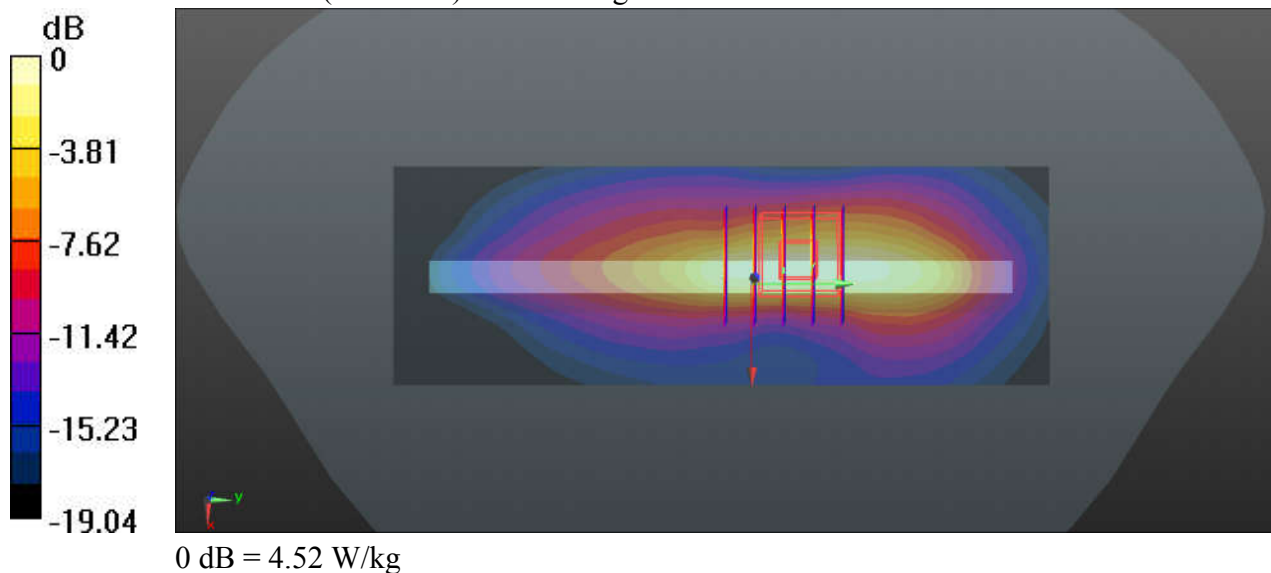
Ch1013/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 61.93 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 9.91 W/kg

SAR(1 g) = 3.29 W/kg; SAR(10 g) = 1.38 W/kg

Maximum value of SAR (measured) = 6.28 W/kg



76_CDMA2000 BC10_RTAP 153.6Kbps_Left Side_0mm_Ch580

Communication System: UID 0, CDMA2000 (0); Frequency: 820.5 MHz; Duty Cycle: 1:1
Medium: HSL_835_190729 Medium parameters used: $f = 820.5$ MHz; $\sigma = 0.884$ S/m; $\epsilon_r = 40.916$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.4 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(9.57, 9.57, 9.57); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch580/Area Scan (41x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 4.67 W/kg

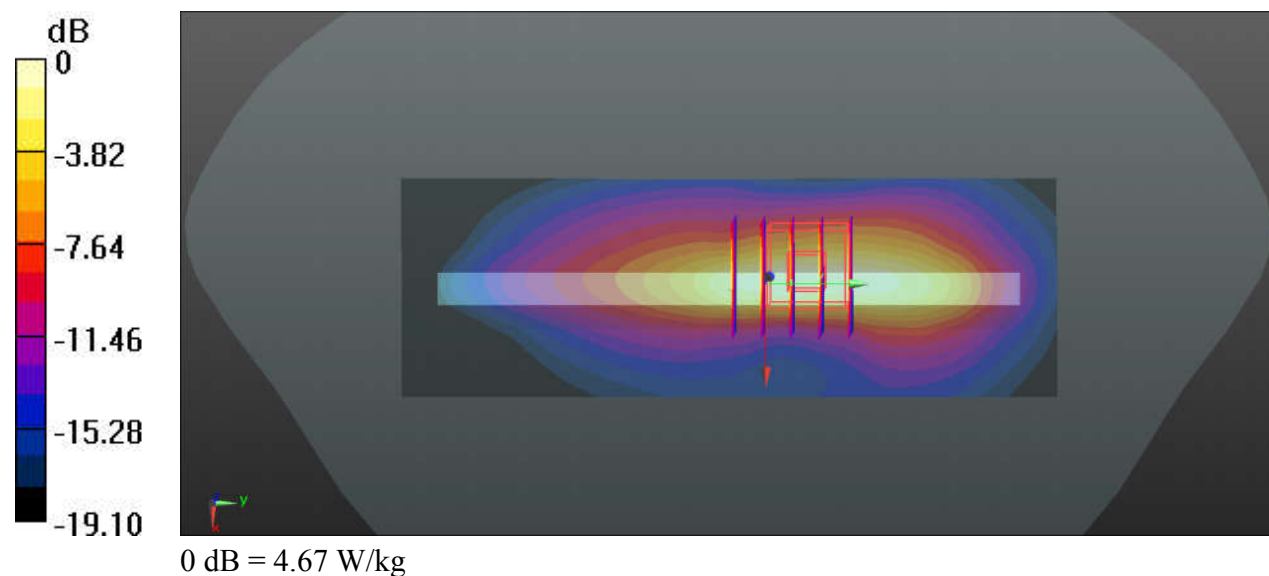
Ch580/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 62.51 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 10.6 W/kg

SAR(1 g) = 3.47 W/kg; SAR(10 g) = 1.45 W/kg

Maximum value of SAR (measured) = 6.67 W/kg



77_CDMA2000 BC1_RTAP 153.6Kbps _Back_0mm_Ch1175

Communication System: UID 0, CDMA2000 (0); Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: HSL_1900_190725 Medium parameters used: $f = 1908.75$ MHz; $\sigma = 1.457$ S/m; $\epsilon_r = 38.951$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(8.27, 8.27, 8.27); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch1175/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 6.69 W/kg

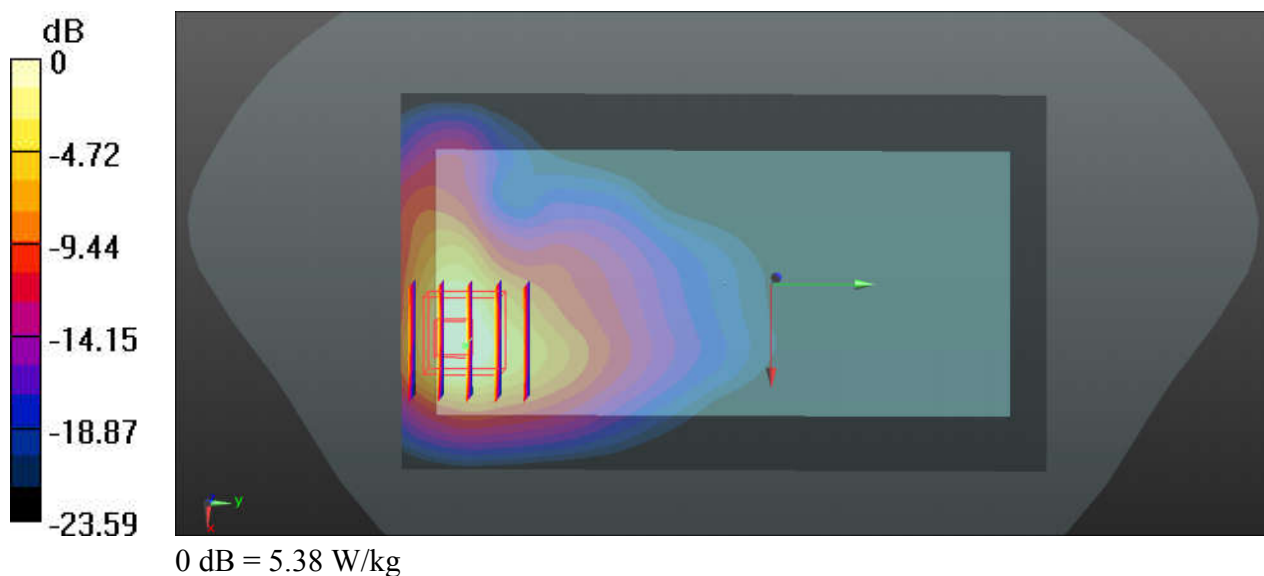
Ch1175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.065 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 9.16 W/kg

SAR(1 g) = 3.84 W/kg; SAR(10 g) = 1.7 W/kg

Maximum value of SAR (measured) = 5.38 W/kg



78_LTE Band 13_10M_QPSK_25RB_0Offset_Left Side_0mm_Ch23230

Communication System: UID 0, LTE (0); Frequency: 782 MHz; Duty Cycle: 1:1

Medium: HSL_750_190805 Medium parameters used: $f = 782 \text{ MHz}$; $\sigma = 0.907 \text{ S/m}$; $\epsilon_r = 40.139$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature : 23.4°C ; Liquid Temperature : 22.4°C

DASY5 Configuration:

- Probe: ES3DV3 - SN3191; ConvF(6.59, 6.59, 6.59); Calibrated: 2019.01.29;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch23230/Area Scan (41x121x1): Interpolated grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 2.49 W/kg

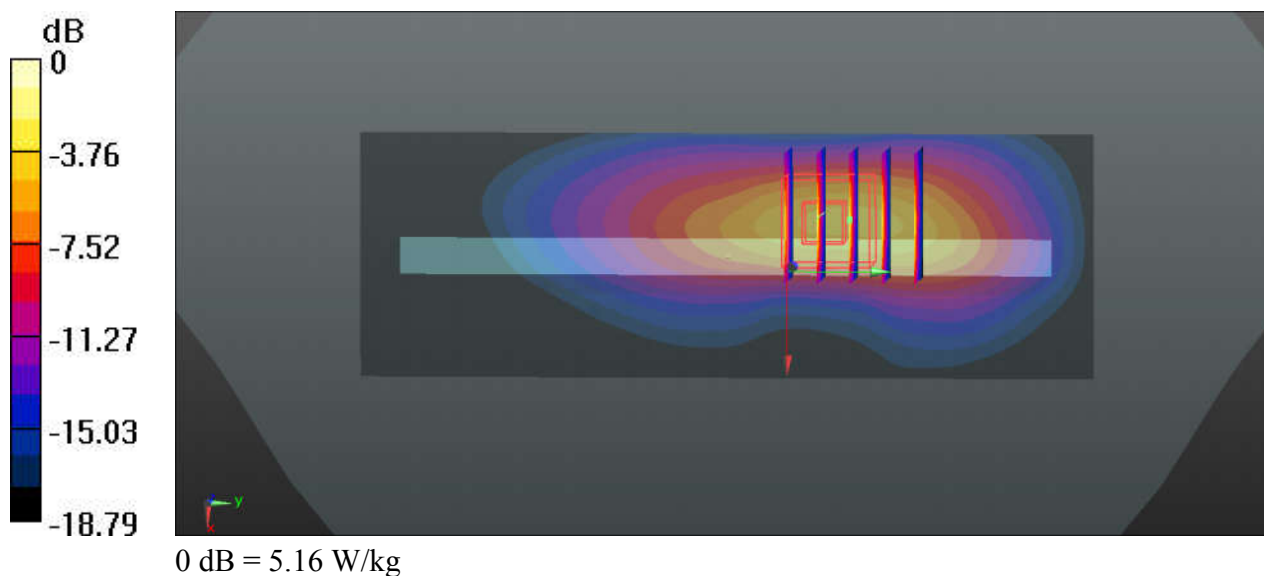
Ch23230/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 33.97 V/m ; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 9.53 W/kg

SAR(1 g) = 3.24 W/kg ; SAR(10 g) = 1.32 W/kg

Maximum value of SAR (measured) = 5.16 W/kg



79_LTE Band 26_15M_QPSK_1RB_0Offset_Left Side_0mm_Ch26965

Communication System: UID 0, LTE (0); Frequency: 841.5 MHz; Duty Cycle: 1:1

Medium: HSL_835_190729 Medium parameters used: $f = 841.5$ MHz; $\sigma = 0.902$ S/m; $\epsilon_r = 40.725$;
 $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C ; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(9.57, 9.57, 9.57); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch26965/Area Scan (41x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 4.13 W/kg

Ch26965/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 60.98 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 11.1 W/kg

SAR(1 g) = 3.64 W/kg; SAR(10 g) = 1.52 W/kg

Maximum value of SAR (measured) = 7.14 W/kg

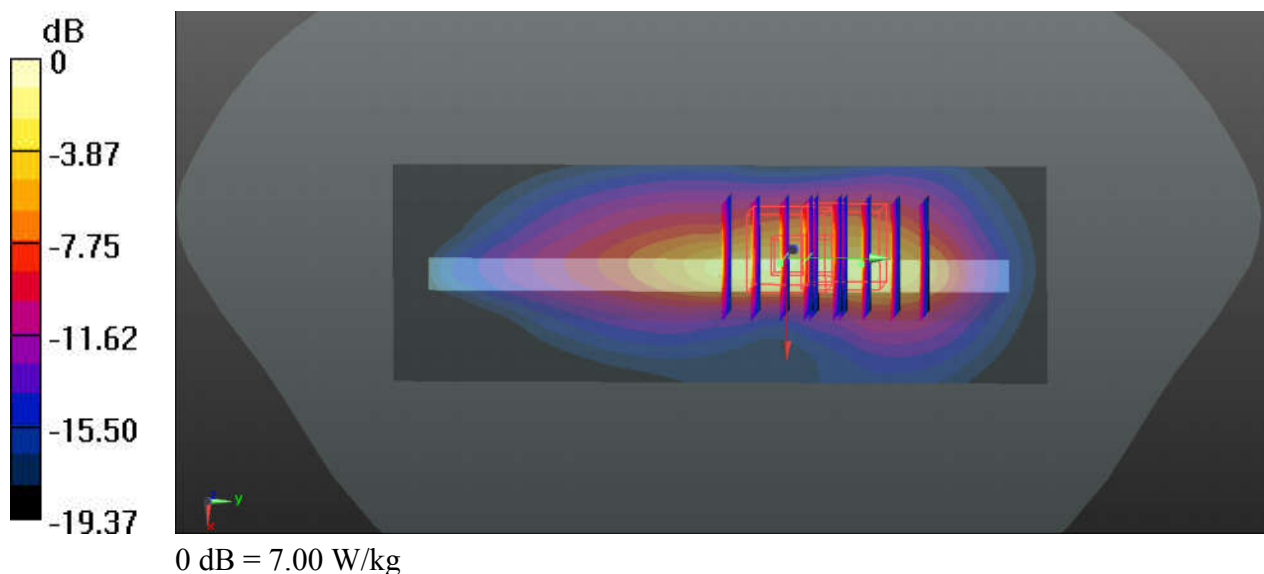
Ch26965/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 60.98 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 11.5 W/kg

SAR(1 g) = 2.99 W/kg; SAR(10 g) = 1.29 W/kg

Maximum value of SAR (measured) = 7.00 W/kg



80_LTE Band 66_20M_QPSK_50RB_0Offset_Bottom Side_0mm_Ch132072

Communication System: UID 0, LTE (0); Frequency: 1720 MHz; Duty Cycle: 1:1

Medium: HSL_1750_190726 Medium parameters used: $f = 1720$ MHz; $\sigma = 1.367$ S/m; $\epsilon_r = 39.964$;

$\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(8.54, 8.54, 8.54); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch132072/Area Scan (41x81x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 9.50 W/kg

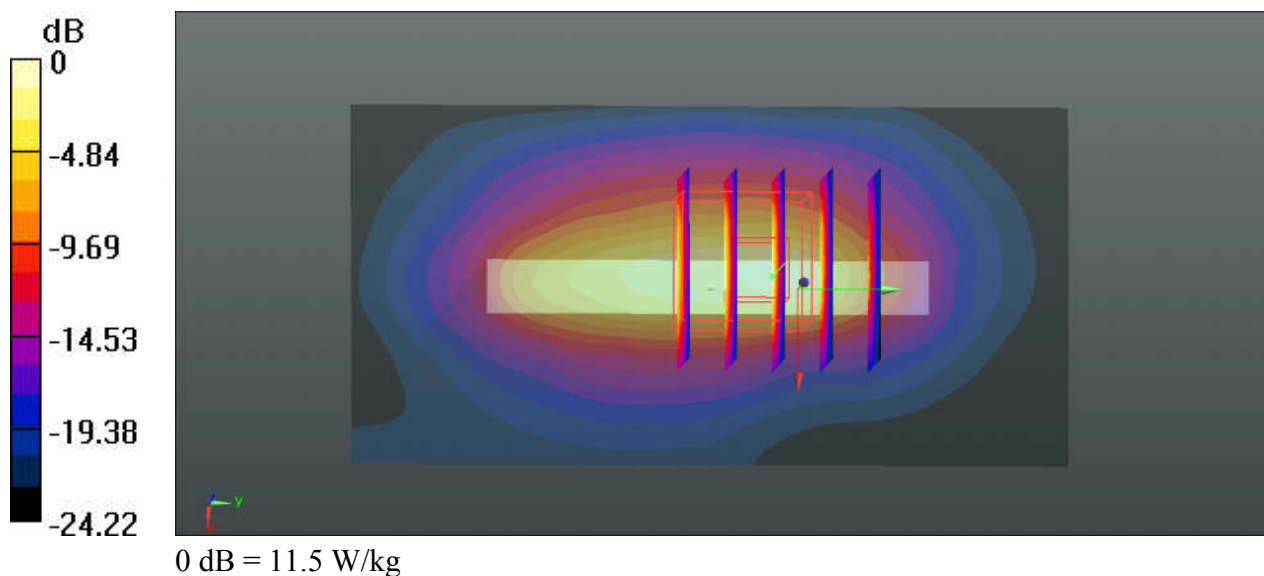
Ch132072/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 73.83 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 16.9 W/kg

SAR(1 g) = 5.93 W/kg; SAR(10 g) = 2.32 W/kg

Maximum value of SAR (measured) = 11.5 W/kg



81_LTE Band 25_20M_QPSK_50RB_0Offset_Bottom Side_0mm_Ch26140

Communication System: UID 0, LTE (0); Frequency: 1860 MHz; Duty Cycle: 1:1

Medium: HSL_1900_190725 Medium parameters used: $f = 1860$ MHz; $\sigma = 1.405$ S/m; $\epsilon_r = 39.176$;

$\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(8.27, 8.27, 8.27); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch26140/Area Scan (41x81x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 9.09 W/kg

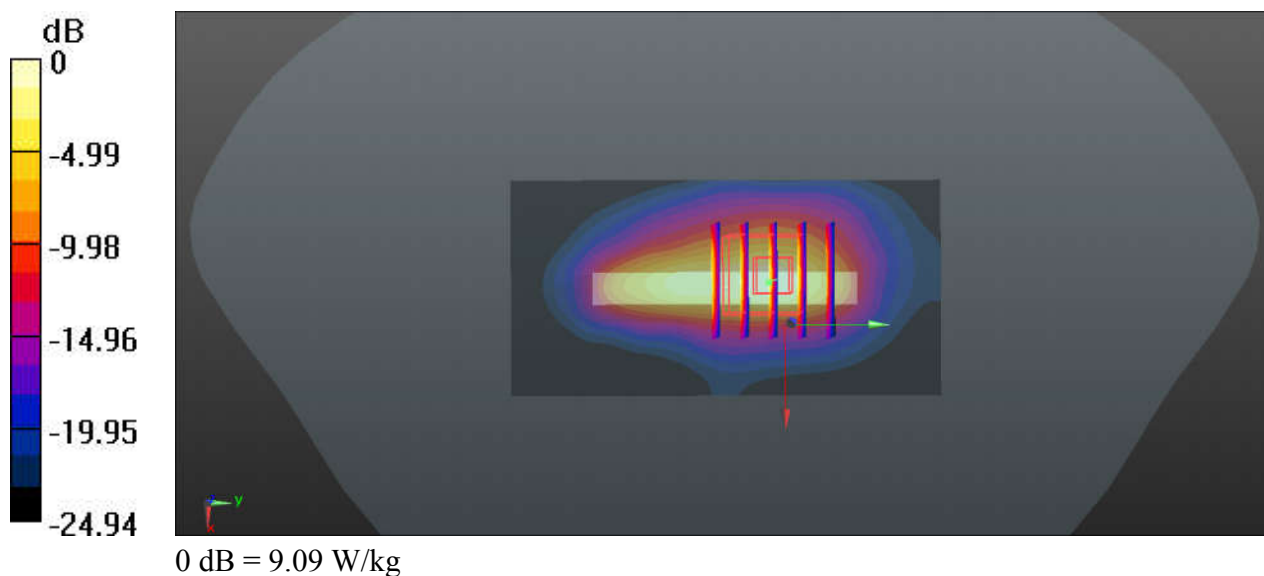
Ch26140/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.038 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 16.9 W/kg

SAR(1 g) = 5.48 W/kg; SAR(10 g) = 2.03 W/kg

Maximum value of SAR (measured) = 11.3 W/kg



82_LTE Band 7_20M_QPSK_1RB_0Offset_Top Side_0mm_Ch20850

Communication System: UID 0, LTE (0); Frequency: 2510 MHz; Duty Cycle: 1:1

Medium: HSL_2600_190730 Medium parameters used: $f = 2510$ MHz; $\sigma = 1.949$ S/m; $\epsilon_r = 38.66$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C ; Liquid Temperature : 22.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(7.06, 7.06, 7.06); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch20850/Area Scan (51x91x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 11.8 W/kg

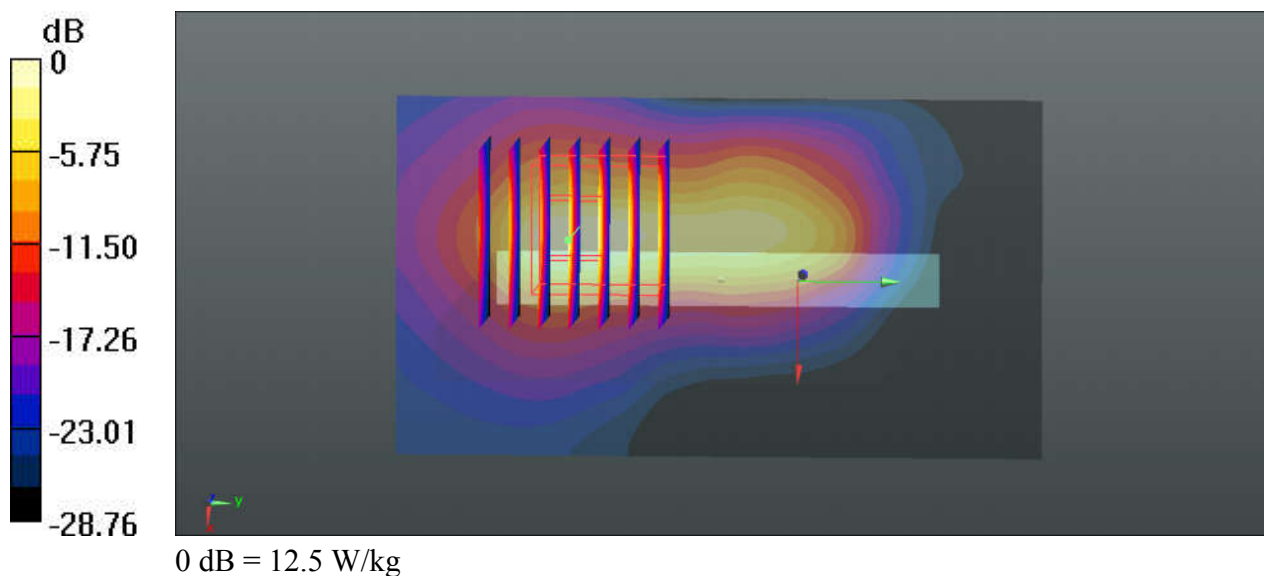
Ch20850/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 33.37 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 23.9 W/kg

SAR(1 g) = 6.42 W/kg; SAR(10 g) = 2.02 W/kg

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



83_LTE Band 41_20M_QPSK_1RB_99Offset_Top Side_0mm_Ch41055

Communication System: UID 0, LTE (0); Frequency: 2636.5 MHz; Duty Cycle: 1:1.59
Medium: HSL_2600_190730 Medium parameters used: $f = 2636.5$ MHz; $\sigma = 2.01$ S/m; $\epsilon_r = 38.171$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.5 °C; Liquid Temperature : 22.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(7.06, 7.06, 7.06); Calibrated: 2019.03.01;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch41055/Area Scan (51x91x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 7.63 W/kg

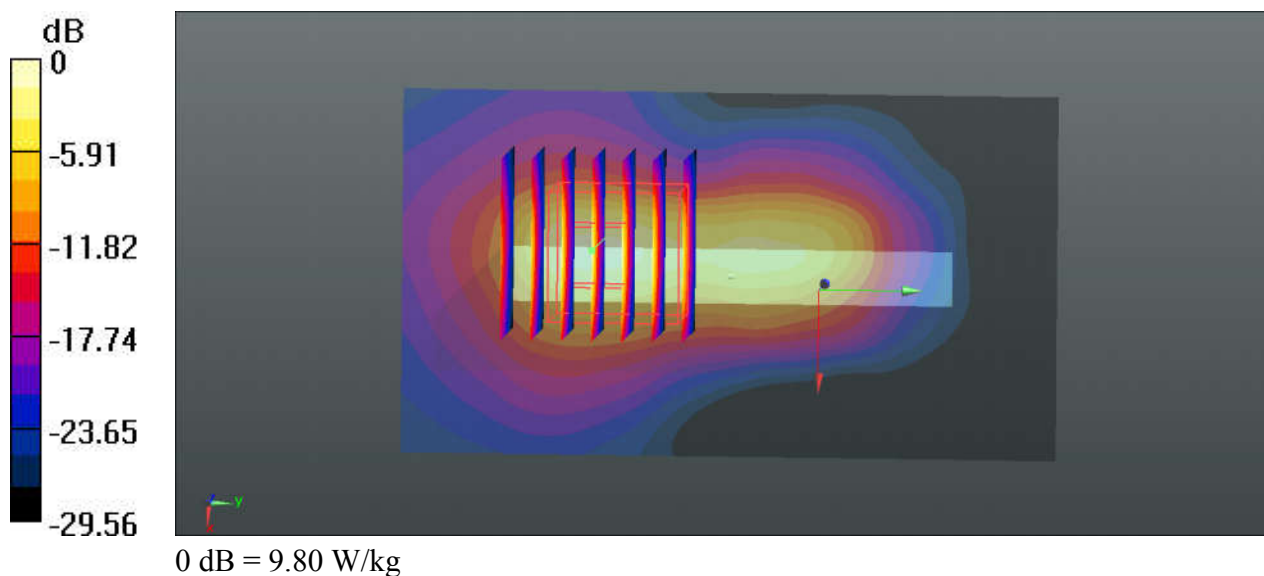
Ch41055/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 41.48 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 16.8 W/kg

SAR(1 g) = 4.91 W/kg; SAR(10 g) = 1.51 W/kg

Maximum value of SAR (measured) = 9.80 W/kg



84_LTE Band 48_20M_QPSK_1RB_99Offset_Top Side_0mm_Ch55830

Communication System: UID 0, LTE (0); Frequency: 3609 MHz; Duty Cycle: 1:1.59

Medium: HSL_3500-3700_190805 Medium parameters used: $f = 3609$ MHz; $\sigma = 2.989$ S/m; $\epsilon_r = 38.498$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(6.67, 6.67, 6.67); Calibrated: 2019.03.01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch55830/Area Scan (51x101x1): Interpolated grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 14.0 W/kg

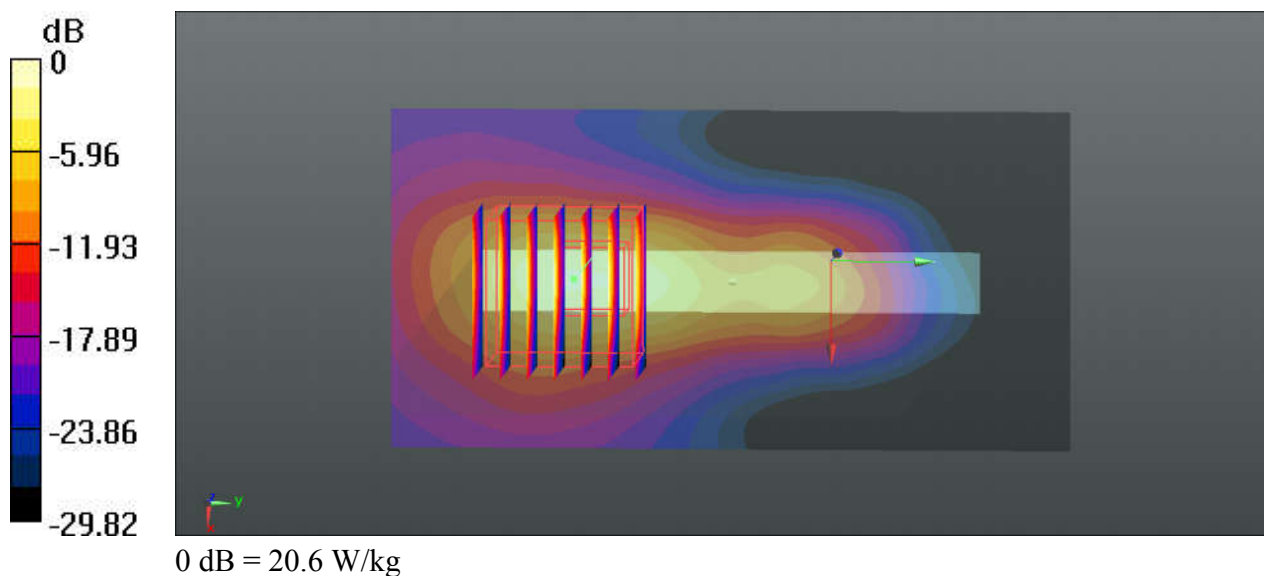
Ch55830/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 0.9150 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 36.9 W/kg

SAR(1 g) = 8.2 W/kg; SAR(10 g) = 2.22 W/kg

Maximum value of SAR (measured) = 20.6 W/kg



85_WLAN2.4GHz_802.11b 1Mbps_Back_0mm_Ch6

Communication System: UID 0, WIFI (0); Frequency: 2437 MHz; Duty Cycle: 1:1.007

Medium: HSL_2450_190809 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.805$ S/m; $\epsilon_r = 39.8$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: ES3DV3 - SN3191; ConvF(4.69, 4.69, 4.69); Calibrated: 2019.01.29;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch6/Area Scan (81x141x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 9.08 W/kg

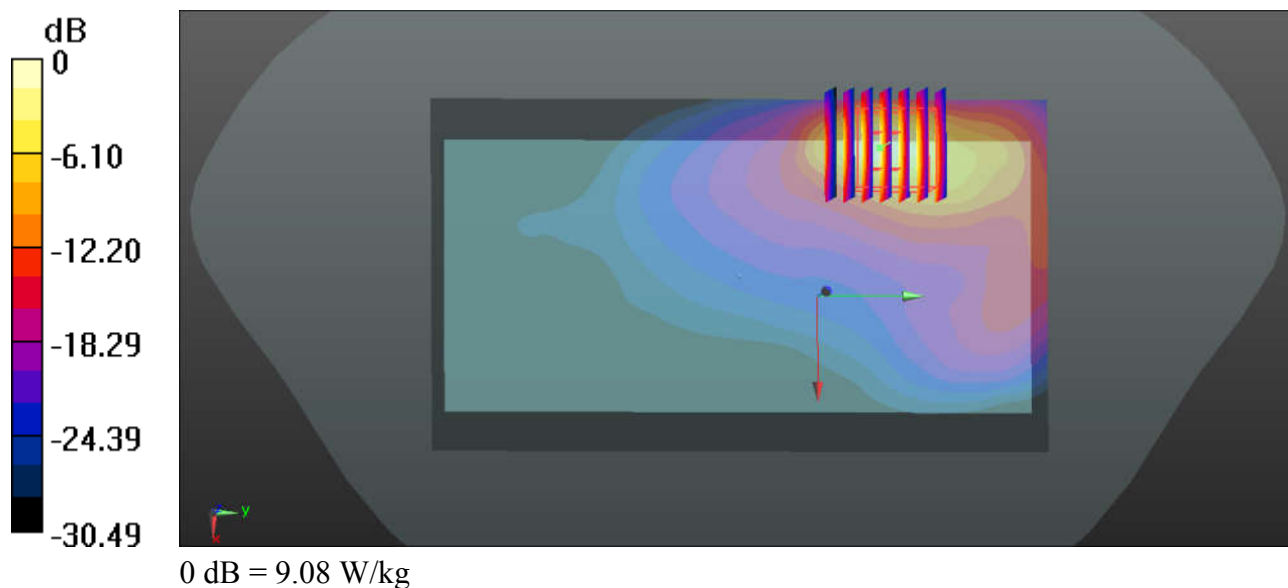
Ch6/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.239 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 19.3 W/kg

SAR(1 g) = 5.76 W/kg; SAR(10 g) = 1.83 W/kg

Maximum value of SAR (measured) = 9.55 W/kg



86_WLAN5GHz_802.11n-HT40 MCS0_Back_0mm_Ch46

Communication System: UID 0, WIFI (0); Frequency: 5230 MHz; Duty Cycle: 1:1.038
Medium: HSL_5250_190802 Medium parameters used: $f = 5230$ MHz; $\sigma = 4.617$ S/m; $\epsilon_r = 37.129$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.7 °C ; Liquid Temperature : 22.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(5.07, 5.07, 5.07); Calibrated: 2019.03.01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch46/Area Scan (101x181x1): Interpolated grid: dx=10mm, dy=10mm

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

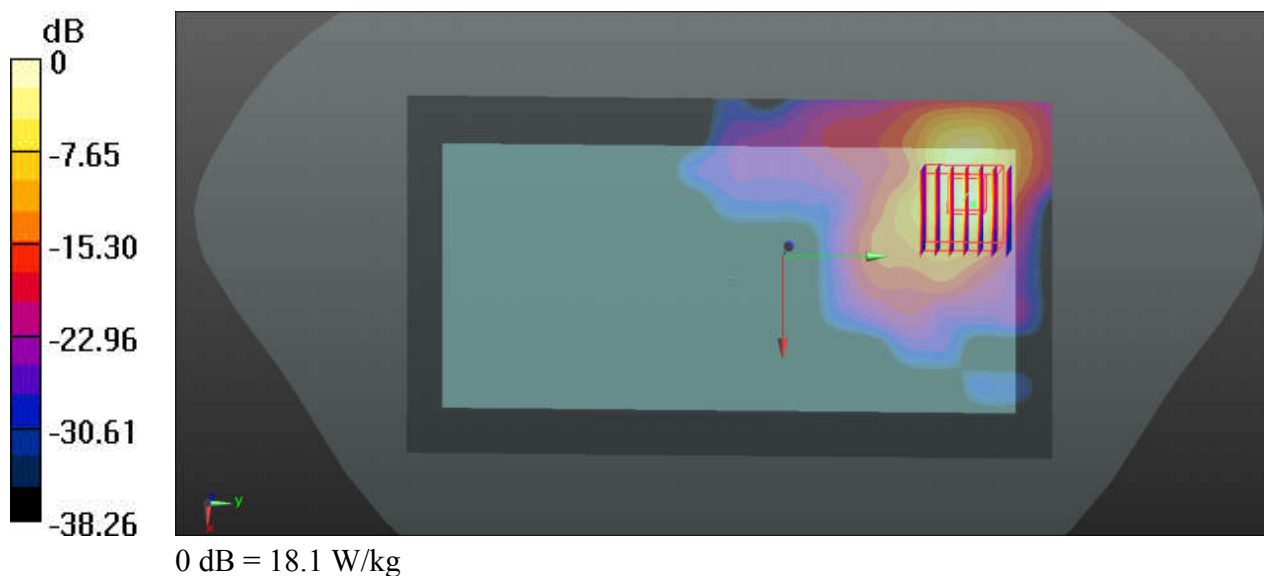
Ch46/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 0 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 33.5 W/kg

SAR(1 g) = 6.34 W/kg; SAR(10 g) = 1.37 W/kg

Maximum value of SAR (measured) = 18.1 W/kg

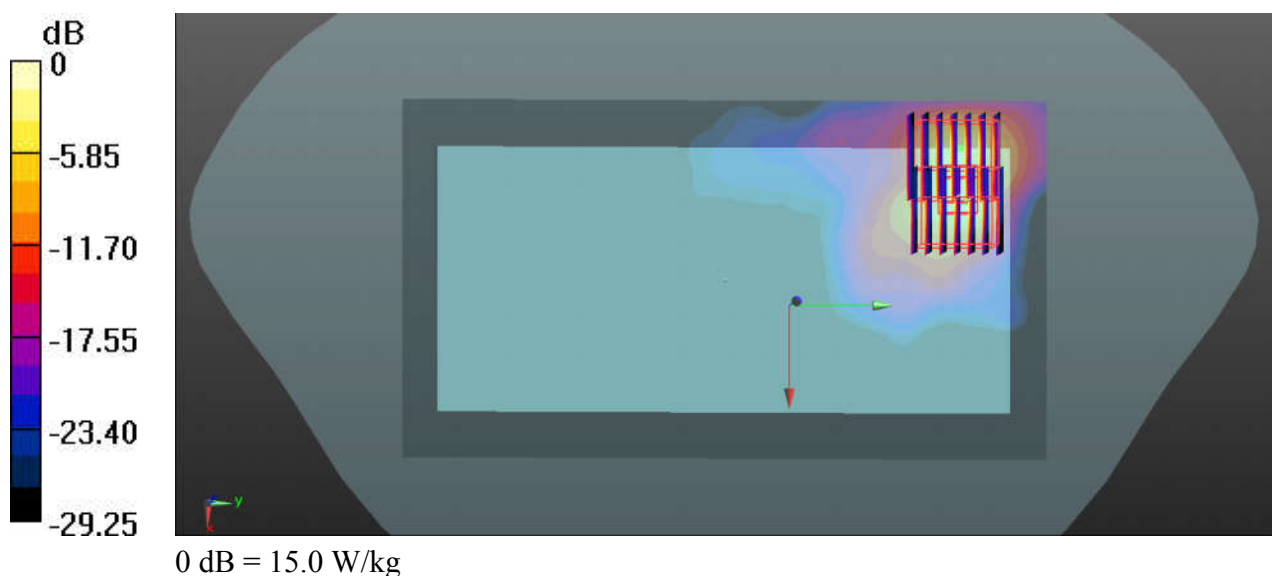


Communication System: UID 0, WIFI (0); Frequency: 5270 MHz; Duty Cycle: 1:1.038
Medium: HSL_5250_190802 Medium parameters used: $f = 5270$ MHz; $\sigma = 4.665$ S/m; $\epsilon_r = 37.062$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.7 °C; Liquid Temperature : 22.3 °C

- Probe: EX3DV4 - SN3819; ConvF(5.07, 5.07, 5.07); Calibrated: 2019.03.01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch54/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 0 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 28.8 W/kg
SAR(1 g) = 5.45 W/kg; SAR(10 g) = 1.25 W/kg
Maximum value of SAR (measured) = 16.2 W/kg

Ch54/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 0 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 29.8 W/kg
SAR(1 g) = 4.97 W/kg; SAR(10 g) = 1.47 W/kg
Maximum value of SAR (measured) = 15.0 W/kg



88_WLAN5GHz_802.11n-HT40 MCS0_Back_0mm_Ch102

Communication System: UID 0, WIFI (0); Frequency: 5510 MHz; Duty Cycle: 1:1.038
Medium: HSL_5600_190803 Medium parameters used: $f = 5510$ MHz; $\sigma = 4.941$ S/m; $\epsilon_r = 36.702$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.5 °C; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(4.7, 4.7, 4.7); Calibrated: 2019.03.01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch102/Area Scan (101x181x1): Interpolated grid: dx=10mm, dy=10mm

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

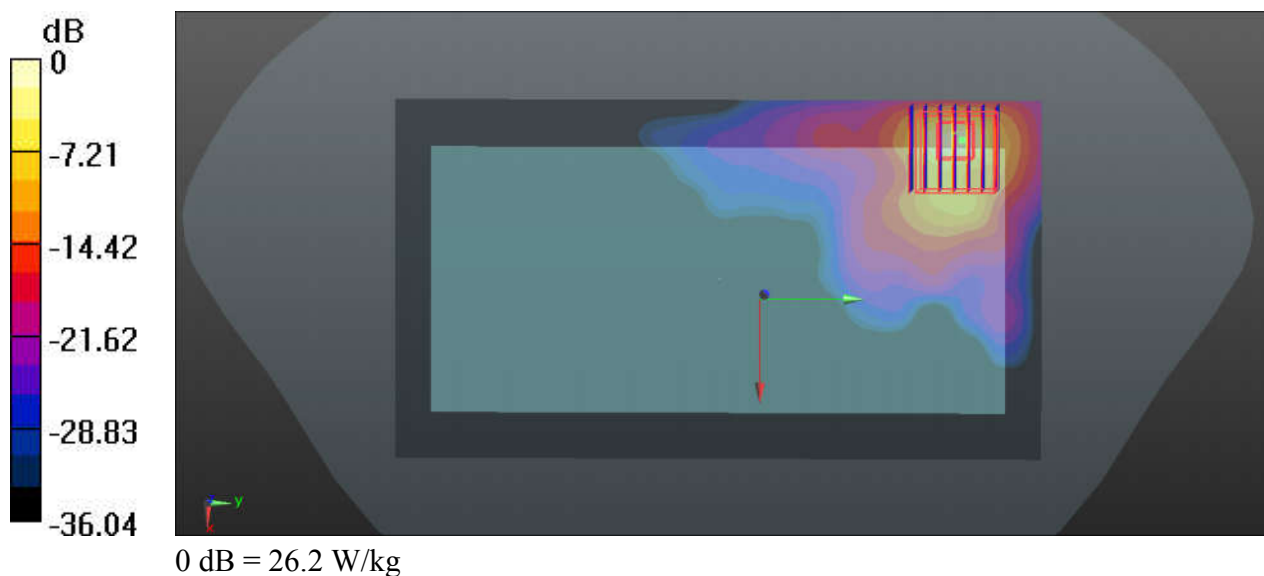
Ch102/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 0 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 58.2 W/kg

SAR(1 g) = 8.63 W/kg; SAR(10 g) = 1.86 W/kg

Maximum value of SAR (measured) = 26.2 W/kg



89_WLAN5GHz_802.11n-HT40 MCS0_Back_0mm_Ch159

Communication System: UID 0, WIFI (0); Frequency: 5795 MHz; Duty Cycle: 1:1.038
Medium: HSL_5750_190804 Medium parameters used: $f = 5795$ MHz; $\sigma = 5.268$ S/m; $\epsilon_r = 36.208$;
 $\rho = 1000$ kg/m³
Ambient Temperature : 23.6 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3819; ConvF(4.77, 4.77, 4.77); Calibrated: 2019.03.01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn715; Calibrated: 2019.01.23
- Phantom: SAM (Front) with CRP v5.0; Type: QD000P40CD; Serial: TP:1795
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch159/Area Scan (101x181x1): Interpolated grid: dx=10mm, dy=10mm

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

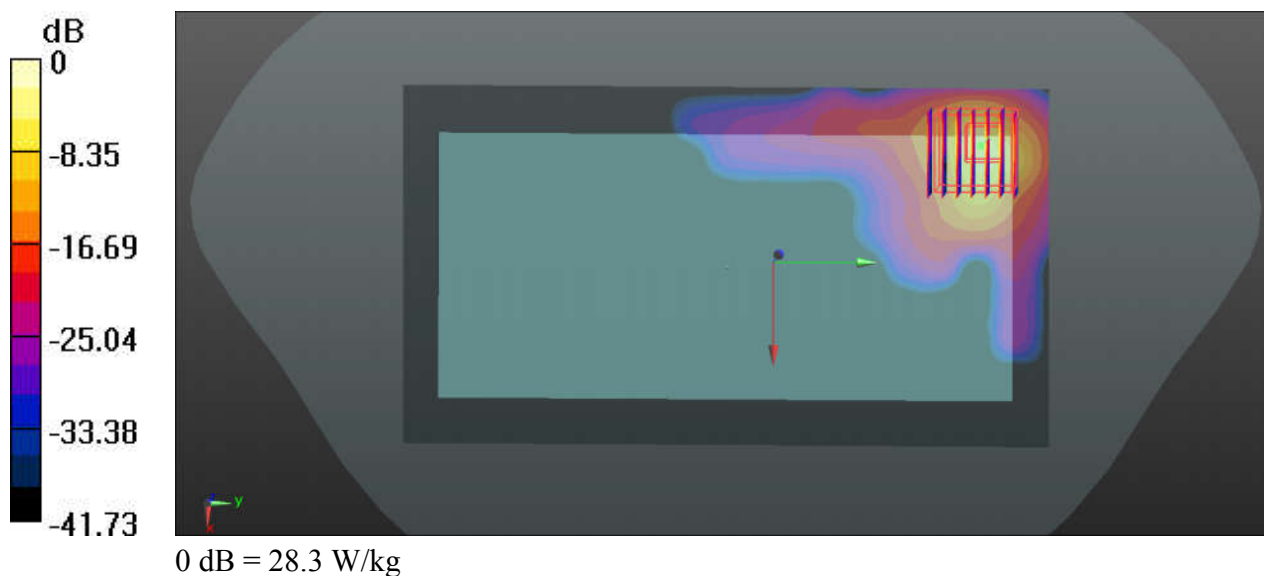
Ch159/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 0 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 56.4 W/kg

SAR(1 g) = 7.84 W/kg; SAR(10 g) = 1.47 W/kg

Maximum value of SAR (measured) = 28.3 W/kg





Appendix C. DASY Calibration Certificate

The DASY calibration certificates are shown as follows.



In Collaboration with
s p e a g
CALIBRATION LABORATORY



中国认可
国际互认
校准
CALIBRATION
CNAS L0570

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 http://www.chinattl.cn

Client

Sporton

Certificate No: **Z18-60532**

CALIBRATION CERTIFICATE

Object **D750V3 - SN: 1099**

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

Calibration date: **December 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±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	102196	07-Mar-18 (CTTL, No.J18X01510)	Mar-19
Power sensor NRV-Z5	100596	07-Mar-18 (CTTL, No.J18X01510)	Mar-19
Reference Probe EX3DV4	SN 7514	27-Aug-18(SPEAG,No.EX3-7514_Aug18)	Aug-19
DAE4	SN 1555	20-Aug-18(SPEAG,No.DAE4-1555_Aug18)	Aug-19
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
Calibrated by:	Zhao Jing	SAR Test Engineer
Reviewed by:	Lin Hao	SAR Test Engineer
Approved by:	Qi Dianyuan	SAR Project Leader

Signature

Issued: December 9, 2018

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



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: 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%.



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: cttl@chinattl.com

http://www.chinattl.cn

Measurement Conditions

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

DASY Version	DASY52	52.10.2.1495
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	43.1 $\pm$ 6 %	0.87 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	8.52 mW / g $\pm$ 18.8 % (k=2)
SAR averaged over 10 cm³ (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	1.38 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	5.64 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	54.0 $\pm$ 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	2.15 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	8.61 mW / g $\pm$ 18.8 % (k=2)
SAR averaged over 10 cm³ (10 g) of Body TSL	Condition	
SAR measured	250 mW input power	1.44 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	5.77 mW / g $\pm$ 18.7 % (k=2)



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: cttl@chinattl.com http://www.chinattl.cn

Appendix (Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	54.2Ω- 1.12jΩ
Return Loss	- 27.7dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	49.8Ω- 3.37jΩ
Return Loss	- 29.4dB

General Antenna Parameters and Design

Electrical Delay (one direction)	0.900 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
-----------------	-------



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: cttl@chinattl.com http://www.chinattl.cn

DASY5 Validation Report for Head TSL

Date: 12.05.2018

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1099

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

Medium parameters used: $f = 750$ MHz; $\sigma = 0.865$ S/m; $\epsilon_r = 43.13$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7514; ConvF(9.47, 9.47, 9.47) @ 750 MHz; Calibrated: 8/27/2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1555; Calibrated: 8/20/2018
- Phantom: MFP_V5.1C ; Type: QD 000 P51CA; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

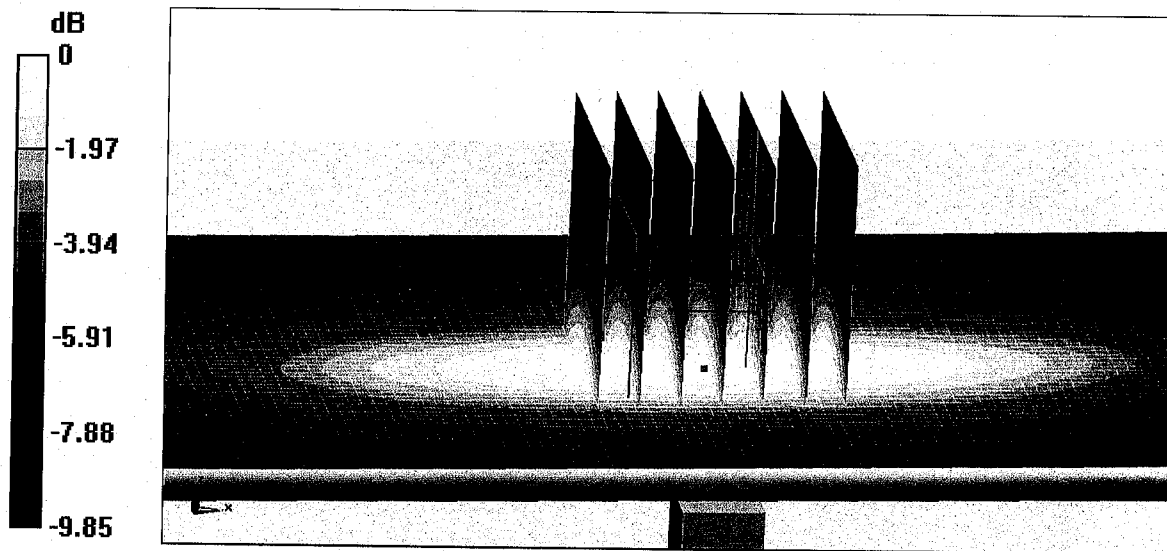
Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 53.37 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 3.12 W/kg

SAR(1 g) = 2.07 W/kg; SAR(10 g) = 1.38 W/kg

Maximum value of SAR (measured) = 2.75 W/kg

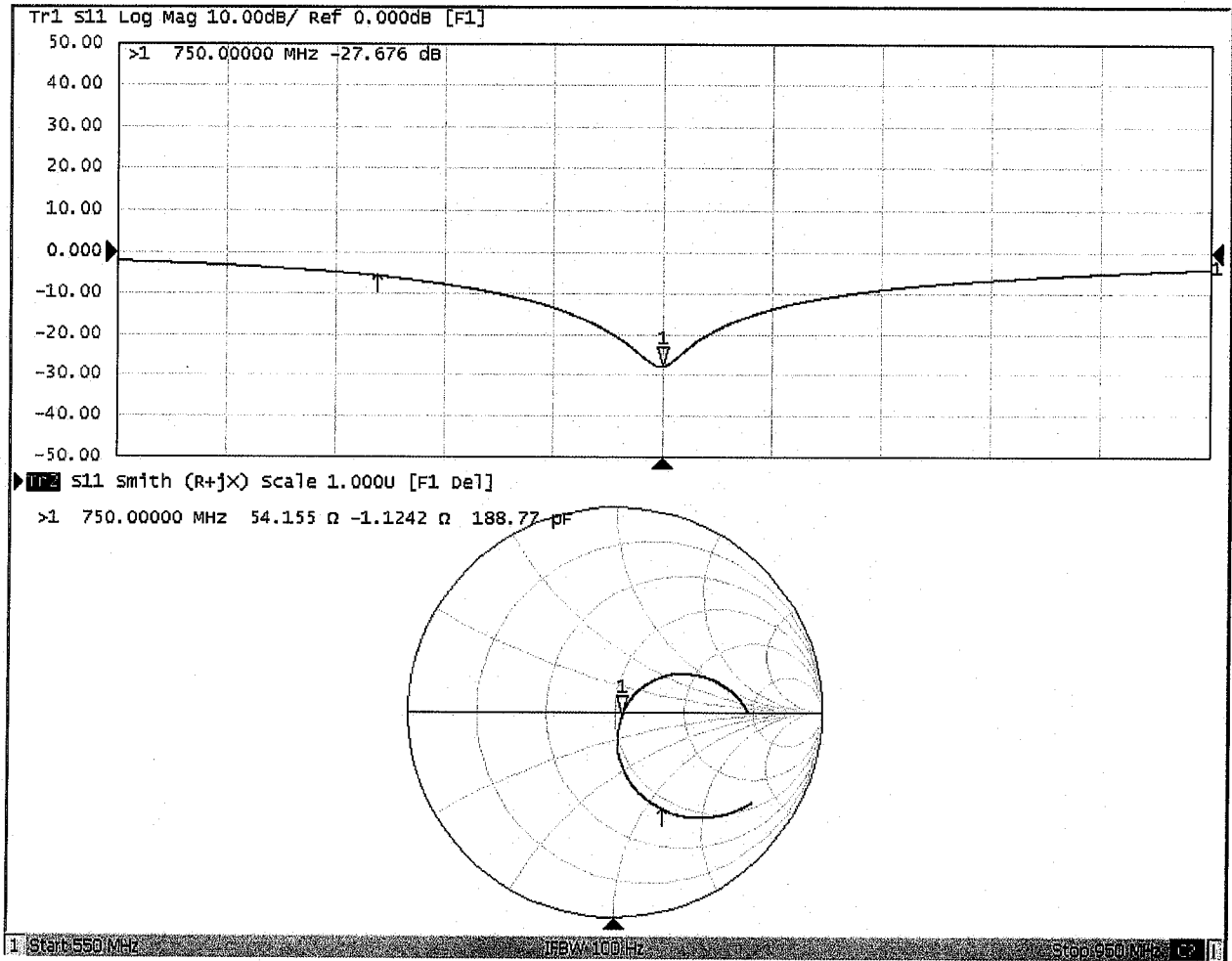


0 dB = 2.75 W/kg = 4.39 dBW/kg



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 http://www.chinattl.cn

Impedance Measurement Plot for Head TSL





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: cttl@chinattl.com http://www.chinattl.cn

DASY5 Validation Report for Body TSL

Date: 12.05.2018

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1099

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

Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.951 \text{ S/m}$; $\epsilon_r = 54.02$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Center Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7514; ConvF(9.68, 9.68, 9.68) @ 750 MHz; Calibrated: 8/27/2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1555; Calibrated: 8/20/2018
- Phantom: MFP_V5.1C ; Type: QD 000 P51CA; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

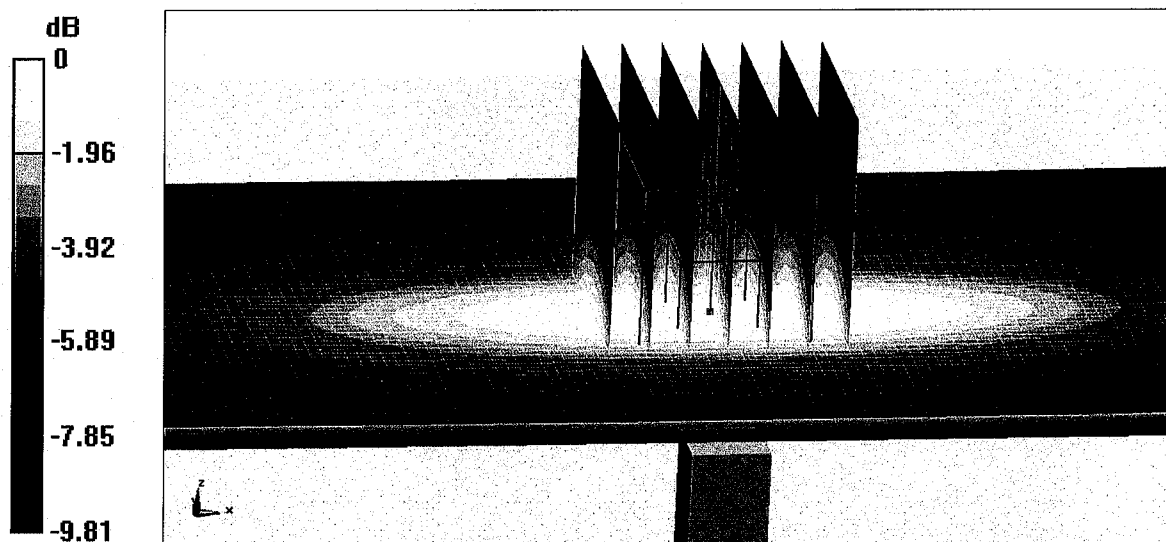
Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 51.51 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 3.29 W/kg

SAR(1 g) = 2.15 W/kg; SAR(10 g) = 1.44 W/kg

Maximum value of SAR (measured) = 2.88 W/kg



0 dB = 2.88 W/kg = 4.59 dBW/kg

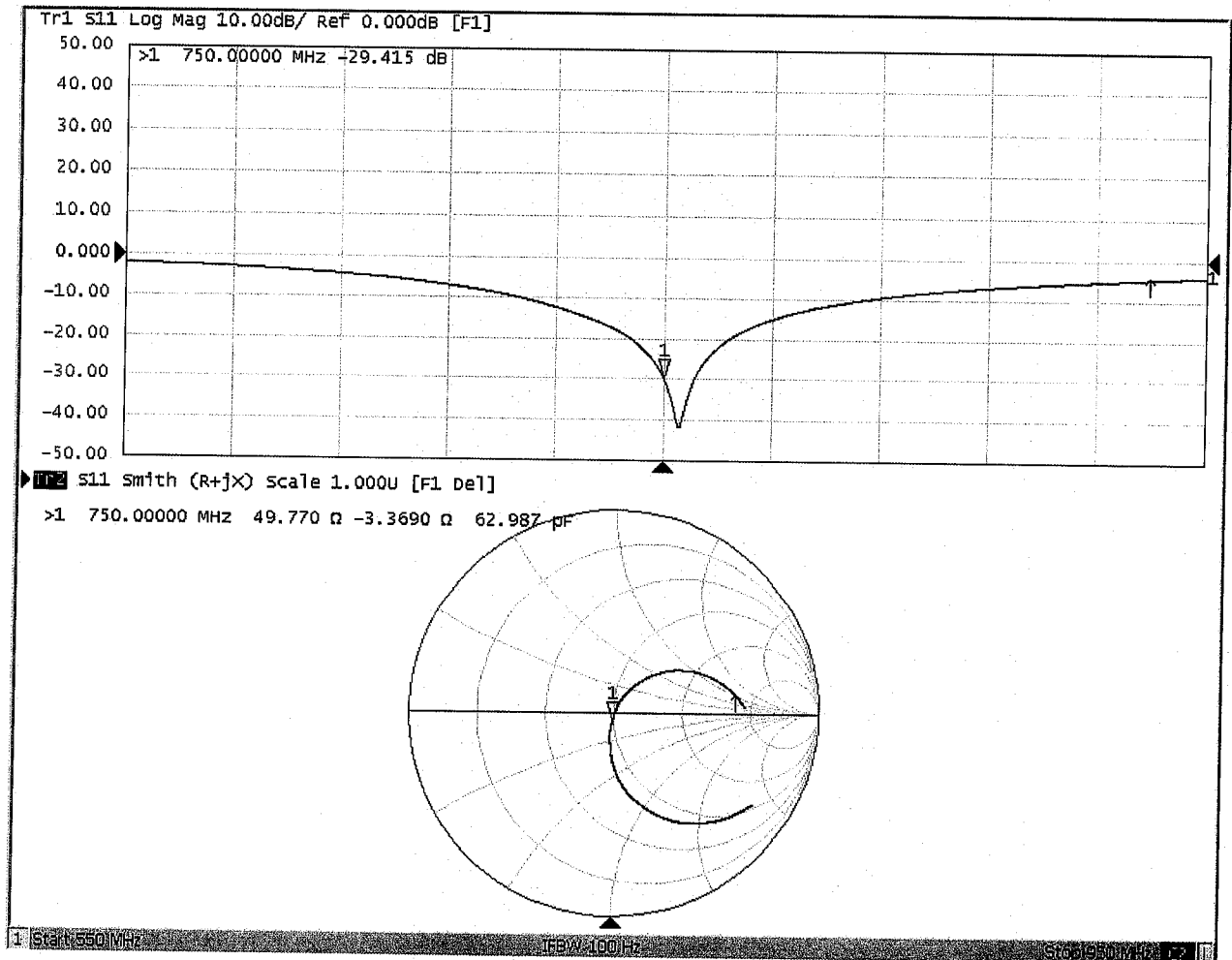


In Collaboration with

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: cttl@chinattl.com http://www.chinattl.cn

Impedance Measurement Plot for Body TSL





In Collaboration with
s p e a g
CALIBRATION LABORATORY



中国认可
国际互认
校准
CALIBRATION
CNAS L0570

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 http://www.chinattl.cn

Client **Sporton**

Certificate No: **Z18-60533**

CALIBRATION CERTIFICATE

Object **D835V2 - SN: 4d162**

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

Calibration date: **December 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±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	102196	07-Mar-18 (CTTL, No.J18X01510)	Mar-19
Power sensor NRV-Z5	100596	07-Mar-18 (CTTL, No.J18X01510)	Mar-19
Reference Probe EX3DV4	SN 7514	27-Aug-18(SPEAG,No.EX3-7514_Aug18)	Aug-19
DAE4	SN 1555	20-Aug-18(SPEAG,No.DAE4-1555_Aug18)	Aug-19
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

Calibrated by: **Zhao Jing** SAR Test Engineer

Reviewed by: **Lin Hao** SAR Test Engineer

Approved by: **Qi Dianyuan** SAR Project Leader

Signature

Issued: December 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 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%.



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: cttl@chinattl.com http://www.chinattl.cn

Measurement Conditions

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

DASY Version	DASY52	52.10.2.1495
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	42.7 $\pm$ 6 %	0.88 mho/m $\pm$ 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (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	9.61 mW / g $\pm$ 18.8 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	1.56 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	6.35 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	53.7 $\pm$ 6 %	0.99 mho/m $\pm$ 6 %
Body TSL temperature change during test	<1.0 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.47 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	9.70 mW / g $\pm$ 18.8 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Body TSL	Condition	
SAR measured	250 mW input power	1.64 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	6.47 mW / g $\pm$ 18.7 % (k=2)



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 http://www.chinattl.cn

Appendix (Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.6 Ω - 2.56j Ω
Return Loss	- 28.9dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.2 Ω - 6.92j Ω
Return Loss	- 22.3dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.306 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
-----------------	-------



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: cttl@chinattl.com http://www.chinattl.cn

DASY5 Validation Report for Head TSL

Date: 12.04.2018

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d162

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

Medium parameters used: $f = 835$ MHz; $\sigma = 0.881$ S/m; $\epsilon_r = 42.71$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7514; ConvF(9.09, 9.09, 9.09) @ 835 MHz; Calibrated: 8/27/2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1555; Calibrated: 8/20/2018
- Phantom: MFP_V5.1C ; Type: QD 000 P51CA; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

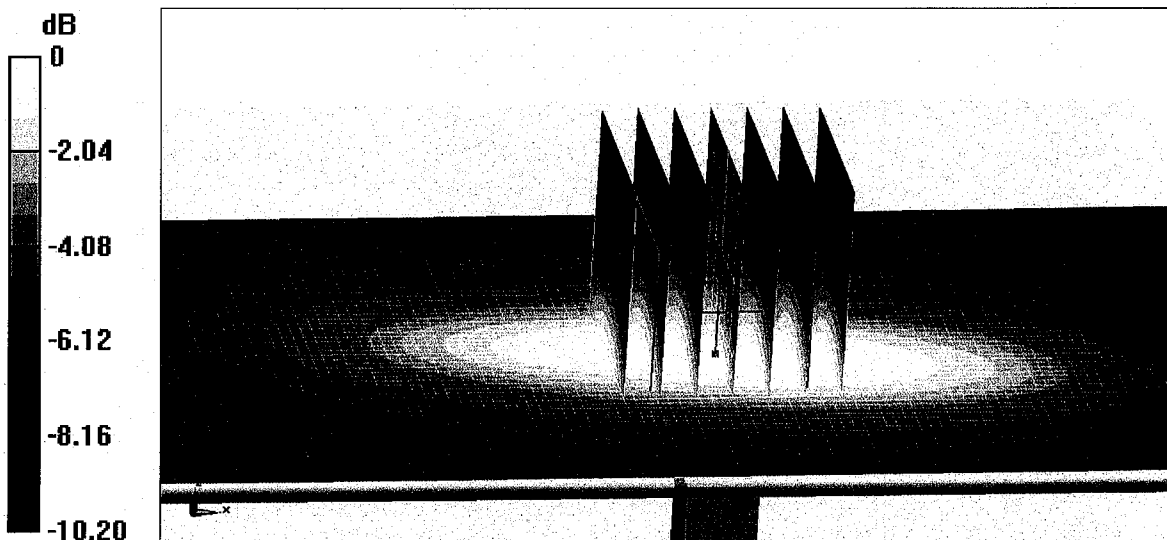
Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.75 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 3.50 W/kg

SAR(1 g) = 2.35 W/kg; SAR(10 g) = 1.56 W/kg

Maximum value of SAR (measured) = 3.11 W/kg

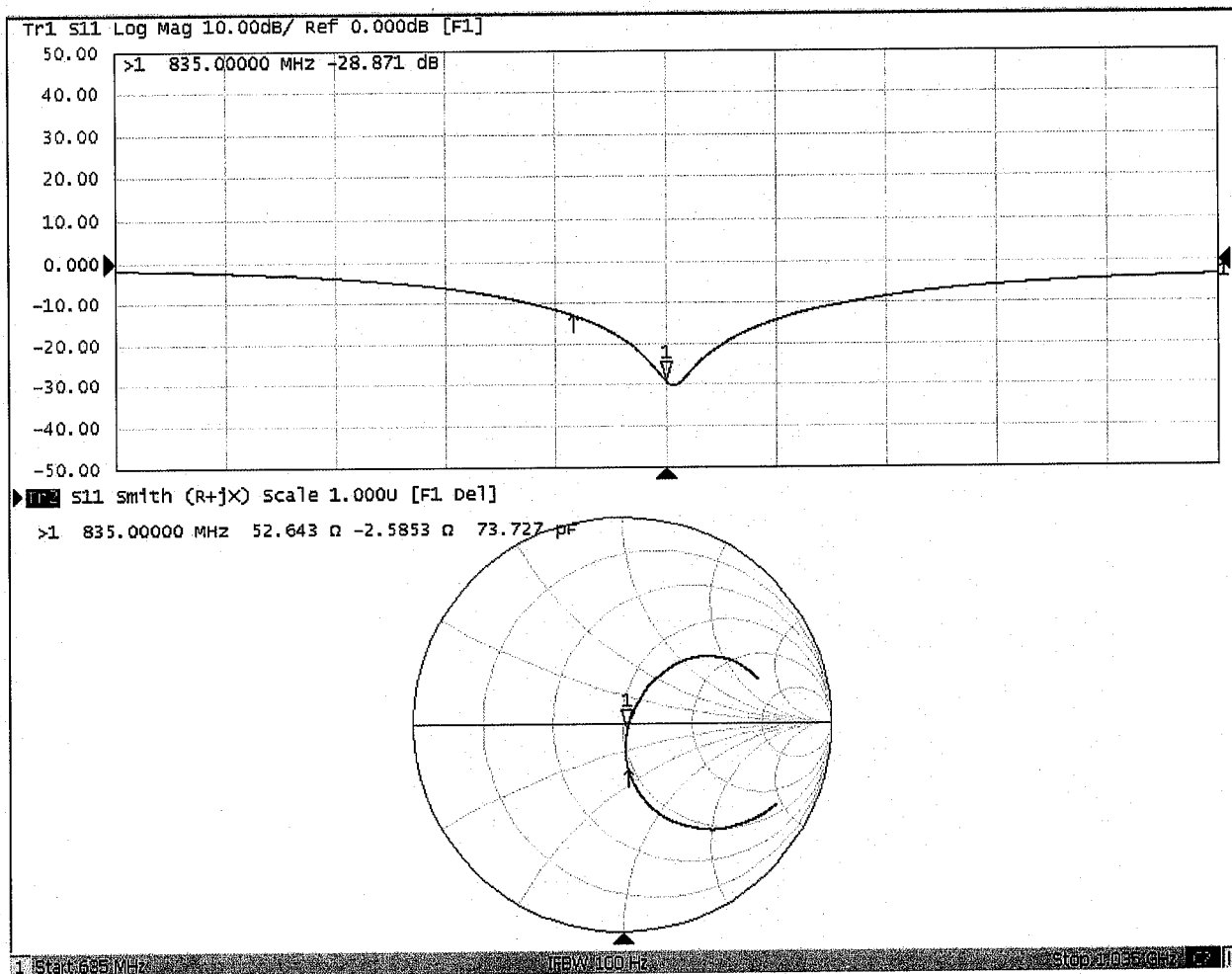


0 dB = 3.11 W/kg = 4.93 dBW/kg



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 http://www.chinattl.cn

Impedance Measurement Plot for Head TSL





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 http://www.chinattl.cn

DASY5 Validation Report for Body TSL

Date: 12.04.2018

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d162

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

Medium parameters used: $f = 835$ MHz; $\sigma = 0.986$ S/m; $\epsilon_r = 53.72$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7514; ConvF(9.47, 9.47, 9.47) @ 835 MHz; Calibrated: 8/27/2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1555; Calibrated: 8/20/2018
- Phantom: MFP_V5.1C ; Type: QD 000 P51CA; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

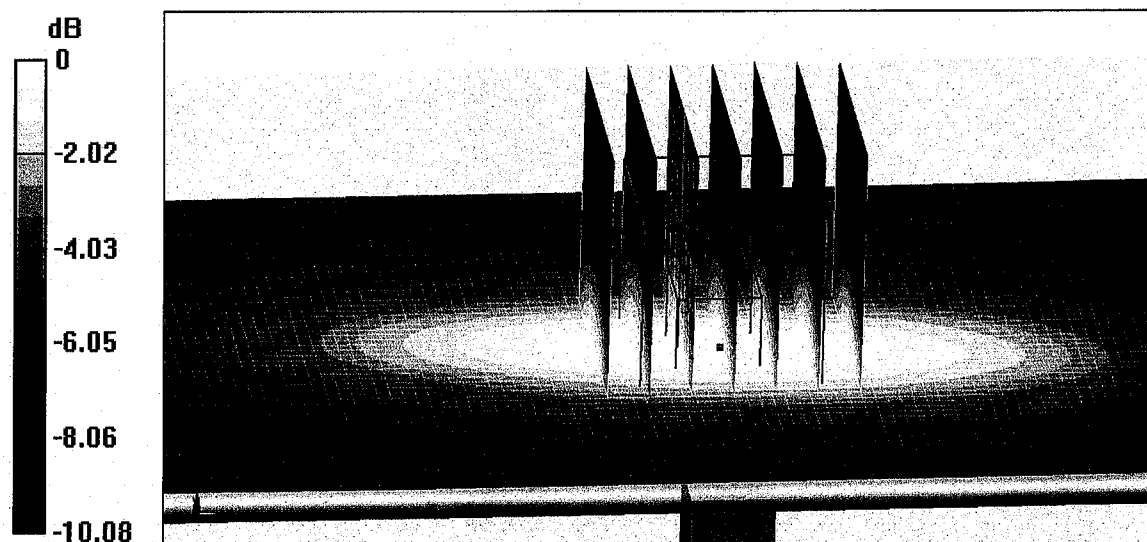
Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.24 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 3.72 W/kg

SAR(1 g) = 2.47 W/kg; SAR(10 g) = 1.64 W/kg

Maximum value of SAR (measured) = 3.29 W/kg



0 dB = 3.29 W/kg = 5.17 dBW/kg



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: cttl@chinattl.com http://www.chinattl.cn

Impedance Measurement Plot for Body TSL

