Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.5

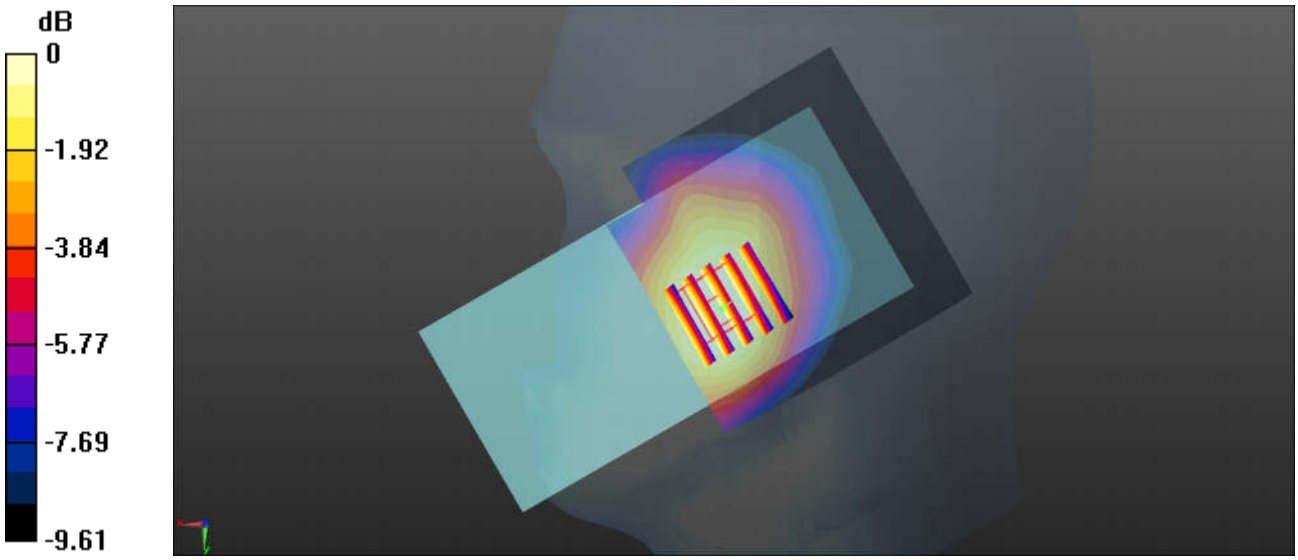
01_GSM850_GPRS 2 Tx slots_Right Cheek_0mm_Ch251

Communication System: UID 0, GSM850-2UP (0); Frequency: 848.8 MHz;Duty Cycle: 1:4.15
Medium: HSL_835 Medium parameters used: f = 849 MHz; σ = 0.925 S/m; ε_r = 41.888; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(6.38, 6.38, 6.38); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch251/Area Scan (71x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.228 W/kg

Ch251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.694 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.258 W/kg
SAR(1 g) = 0.203 W/kg; SAR(10 g) = 0.152 W/kg
Maximum value of SAR (measured) = 0.222 W/kg



0 dB = 0.222 W/kg = -6.54 dBW/kg

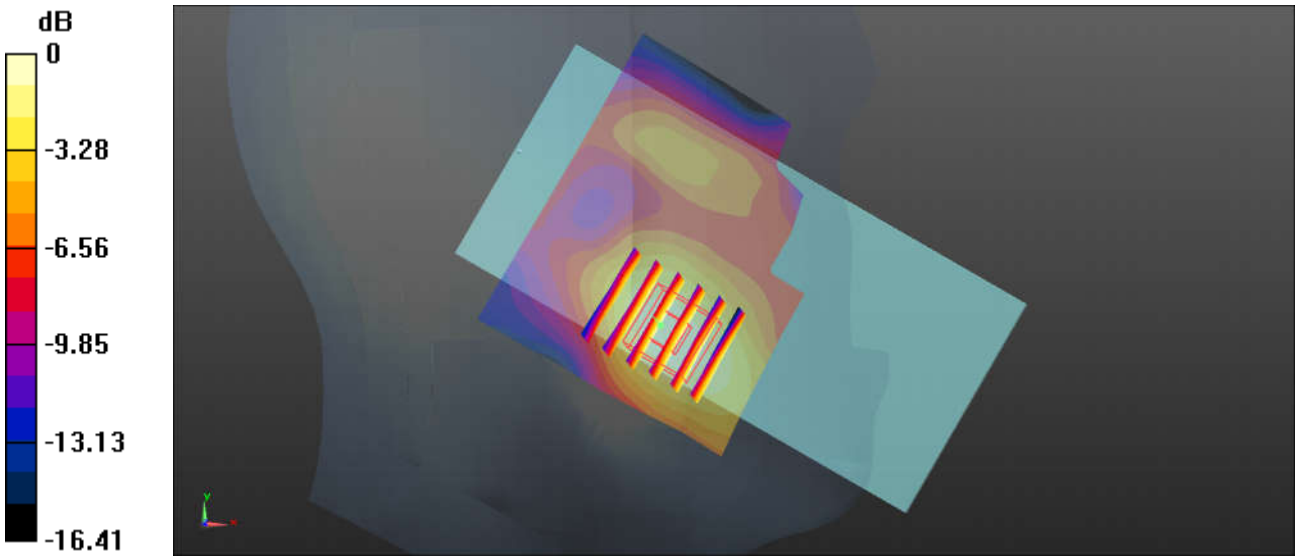
02_GSM1900_GPRS 2 Tx slots_Left Cheek_0mm_Ch512

Communication System: UID 0, PCS-2UP (0); Frequency: 1850.2 MHz;Duty Cycle: 1:4.15
Medium: HSL_1900 Medium parameters used: f = 1850.2 MHz; σ = 1.367 S/m; ε_r = 39.772; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.35, 5.35, 5.35); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch512/Area Scan (71x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0486 W/kg

Ch512/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.626 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.0660 W/kg
SAR(1 g) = 0.044 W/kg; SAR(10 g) = 0.028 W/kg
Maximum value of SAR (measured) = 0.0512 W/kg



0 dB = 0.0512 W/kg = -12.91 dBW/kg

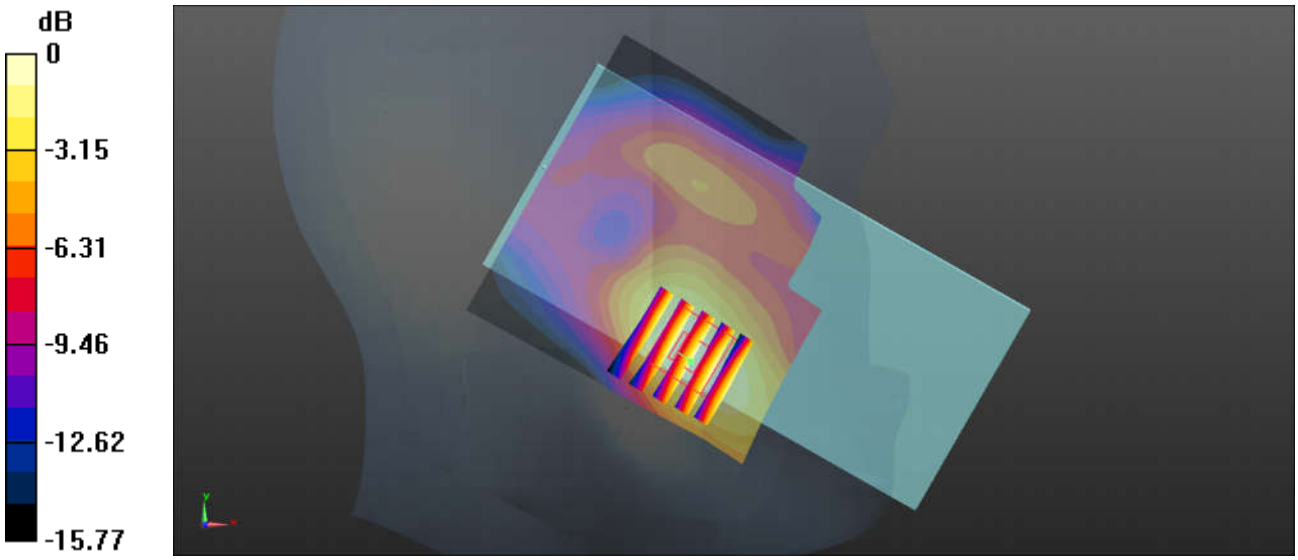
03_WCDMA II_RMC 12.2Kbps_Left Cheek_0mm_Ch9262

Communication System: UID 0, WCDMA (0); Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1852.4 MHz; σ = 1.369 S/m; ε_r = 39.766; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.35, 5.35, 5.35); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch9262/Area Scan (71x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.128 W/kg

Ch9262/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.002 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.163 W/kg
SAR(1 g) = 0.110 W/kg; SAR(10 g) = 0.070 W/kg
Maximum value of SAR (measured) = 0.127 W/kg



0 dB = 0.127 W/kg = -8.96 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.13

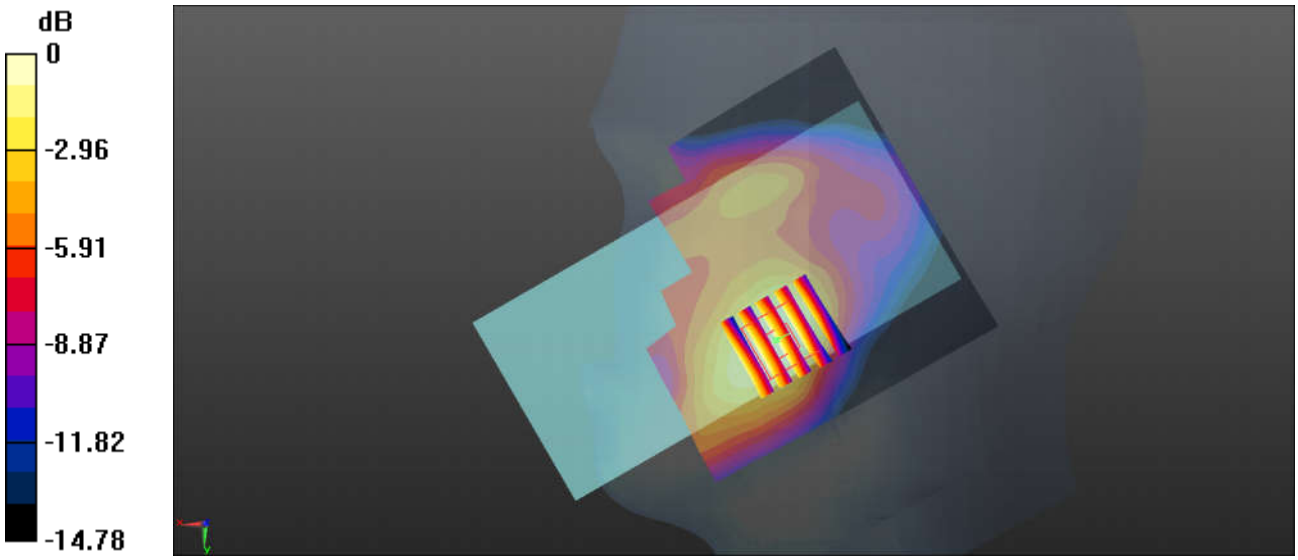
04_WCDMA IV_RMC 12.2Kbps_Right Cheek_0mm_Ch1513

Communication System: UID 0, WCDMA (0); Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium: HSL_1750 Medium parameters used: f = 1753 MHz; σ = 1.37 S/m; ε_r = 41.374; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.59, 5.59, 5.59); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch1513/Area Scan (81x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0961 W/kg

Ch1513/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.031 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.114 W/kg
SAR(1 g) = 0.078 W/kg; SAR(10 g) = 0.050 W/kg
Maximum value of SAR (measured) = 0.0891 W/kg



0 dB = 0.0891 W/kg = -10.50 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.5

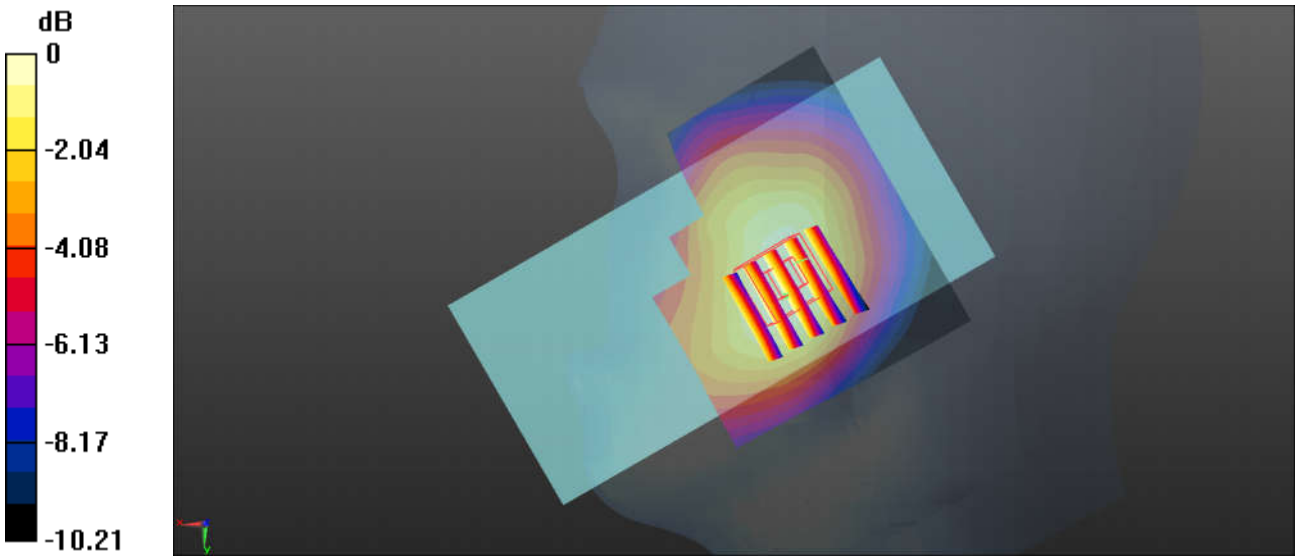
05_WCDMA V_RMC 12.2Kbps_Right Cheek_0mm_Ch4233

Communication System: UID 0, WCDMA (0); Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 847 MHz; σ = 0.923 S/m; ε_r = 41.917; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(6.38, 6.38, 6.38); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch4233/Area Scan (71x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.322 W/kg

Ch4233/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.723 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.373 W/kg
SAR(1 g) = 0.290 W/kg; SAR(10 g) = 0.216 W/kg
Maximum value of SAR (measured) = 0.316 W/kg



0 dB = 0.316 W/kg = -5.00 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.5

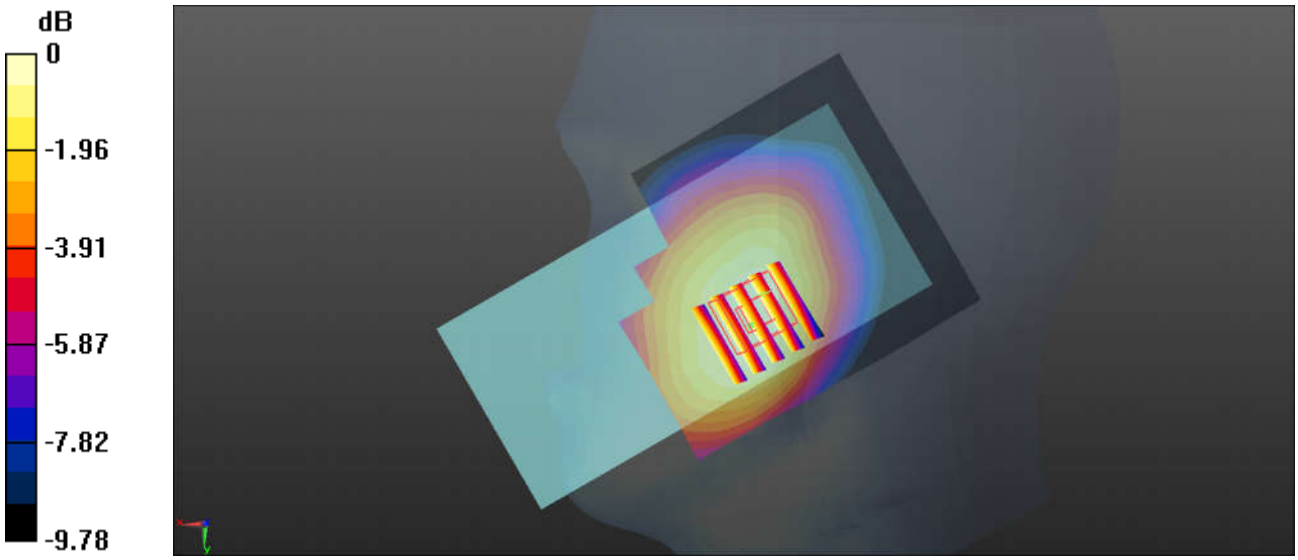
06_LTE Band 26_15M_QPSK_1RB_37Offset_Right Cheek_0mm_Ch26865

Communication System: UID 0, LTE-FDD (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 831.5 MHz; σ = 0.909 S/m; ε_r = 42.124; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(6.38, 6.38, 6.38); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch26865/Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.168 W/kg

Ch26865/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.413 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.193 W/kg
SAR(1 g) = 0.153 W/kg; SAR(10 g) = 0.117 W/kg
Maximum value of SAR (measured) = 0.167 W/kg



0 dB = 0.167 W/kg = -7.77 dBW/kg

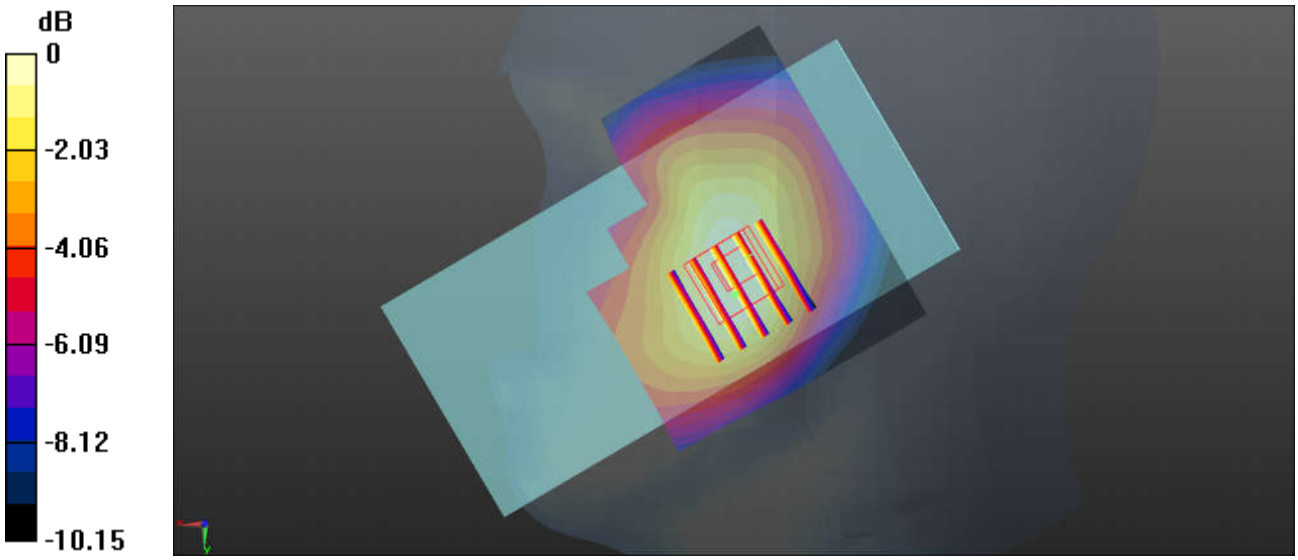
07_LTE Band 5_10M_QPSK_1RB_0Offset_Right Cheek_0mm_Ch20525

Communication System: UID 0, LTE-FDD (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 836.5 MHz; σ = 0.913 S/m; ε_r = 42.064; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(6.38, 6.38, 6.38); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch20525/Area Scan (71x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.284 W/kg

Ch20525/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.065 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.333 W/kg
SAR(1 g) = 0.255 W/kg; SAR(10 g) = 0.188 W/kg
Maximum value of SAR (measured) = 0.282 W/kg



0 dB = 0.282 W/kg = -5.50 dBW/kg

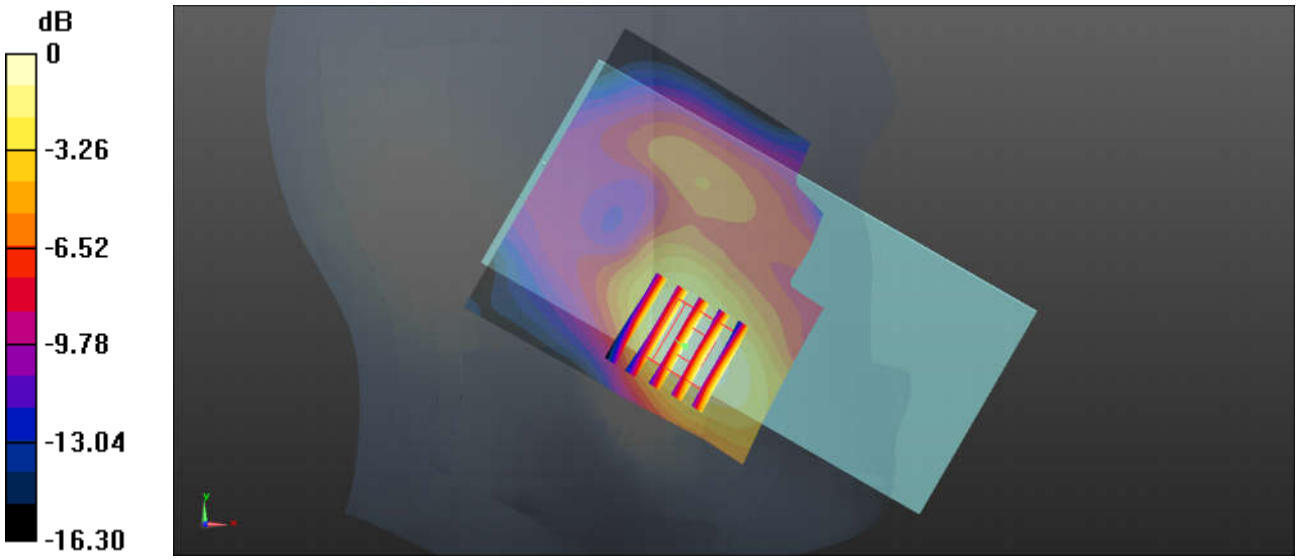
08_LTE Band 2_20M_QPSK_1RB_0Offset_Left Cheek_0mm_Ch18900

Communication System: UID 0, LTE-FDD (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1880 MHz; σ = 1.392 S/m; ε_r = 39.688; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.35, 5.35, 5.35); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch18900/Area Scan (71x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.141 W/kg

Ch18900/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.866 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.180 W/kg
SAR(1 g) = 0.121 W/kg; SAR(10 g) = 0.076 W/kg
Maximum value of SAR (measured) = 0.141 W/kg



0 dB = 0.141 W/kg = -8.51 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.13

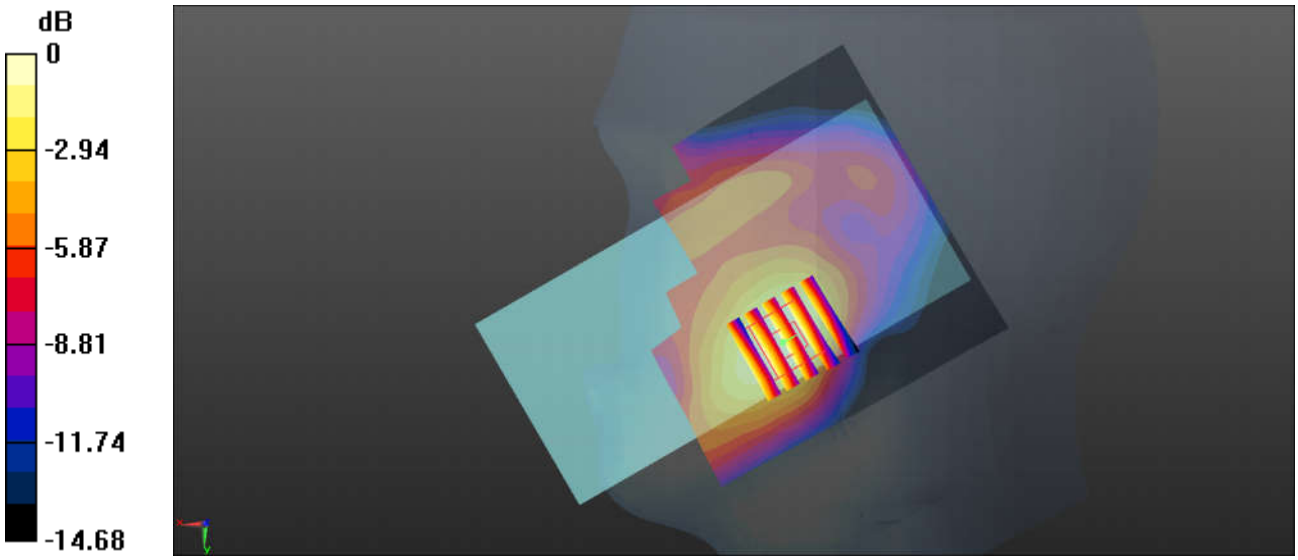
09_LTE Band 4_20M_QPSK_1RB_0Offset_Right Cheek_0mm_Ch20175

Communication System: UID 0, LTE-FDD (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium: HSL_1750 Medium parameters used: f = 1733 MHz; σ = 1.349 S/m; ε_r = 41.428; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.59, 5.59, 5.59); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch20175/Area Scan (81x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.115 W/kg

Ch20175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.796 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.139 W/kg
SAR(1 g) = 0.097 W/kg; SAR(10 g) = 0.063 W/kg
Maximum value of SAR (measured) = 0.111 W/kg



0 dB = 0.111 W/kg = -9.55 dBW/kg

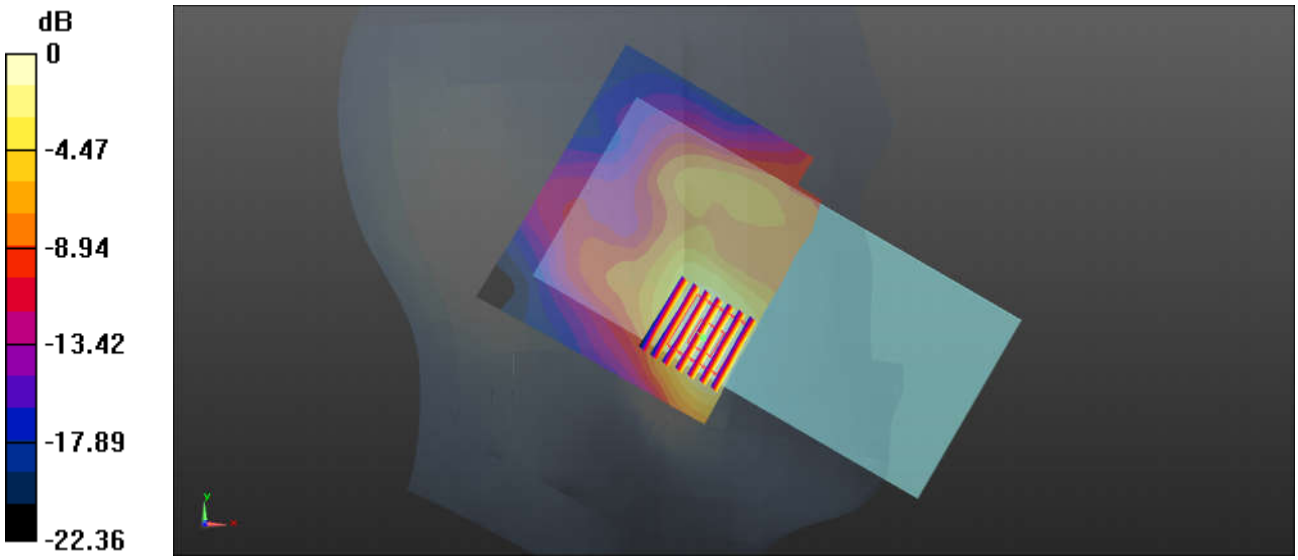
10_LTE Band 7_20M_QPSK_1RB_0Offset_Left Cheek_0mm_Ch21100

Communication System: UID 0, LTE-FDD (0); Frequency: 2535 MHz;Duty Cycle: 1:1
Medium: HSL_2600 Medium parameters used: f = 2535 MHz; σ = 1.982 S/m; ε_r = 38.577; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(4.58, 4.58, 4.58); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch21100/Area Scan (91x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.613 W/kg

Ch21100/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.136 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.870 W/kg
SAR(1 g) = 0.474 W/kg; SAR(10 g) = 0.249 W/kg
Maximum value of SAR (measured) = 0.597 W/kg



0 dB = 0.597 W/kg = -2.24 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.18

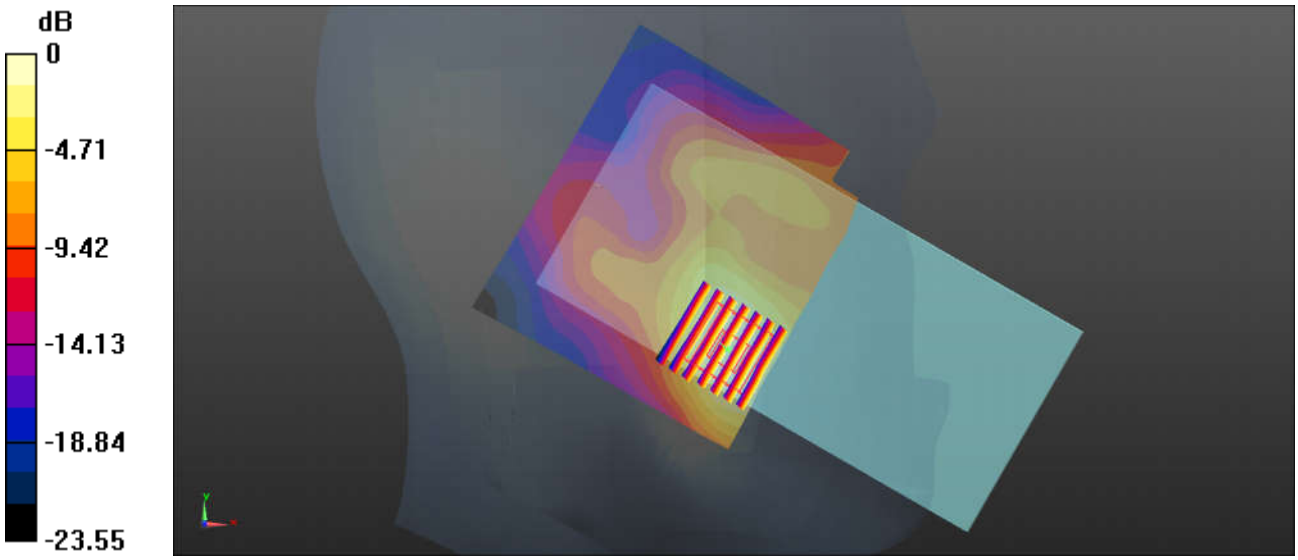
11_LTE Band 41_20M_QPSK_1RB_0Offset_Left Cheek_0mm_Ch40400

Communication System: UID 0, LTE-TDD (0); Frequency: 2571 MHz;Duty Cycle: 1:1.59
Medium: HSL_2600 Medium parameters used: f = 2571 MHz; σ = 2.026 S/m; ε_r = 38.434; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃； Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(4.58, 4.58, 4.58); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch40400/Area Scan (91x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.381 W/kg

Ch40400/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.533 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.554 W/kg
SAR(1 g) = 0.296 W/kg; SAR(10 g) = 0.154 W/kg
Maximum value of SAR (measured) = 0.372 W/kg



0 dB = 0.372 W/kg = -4.29 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.17

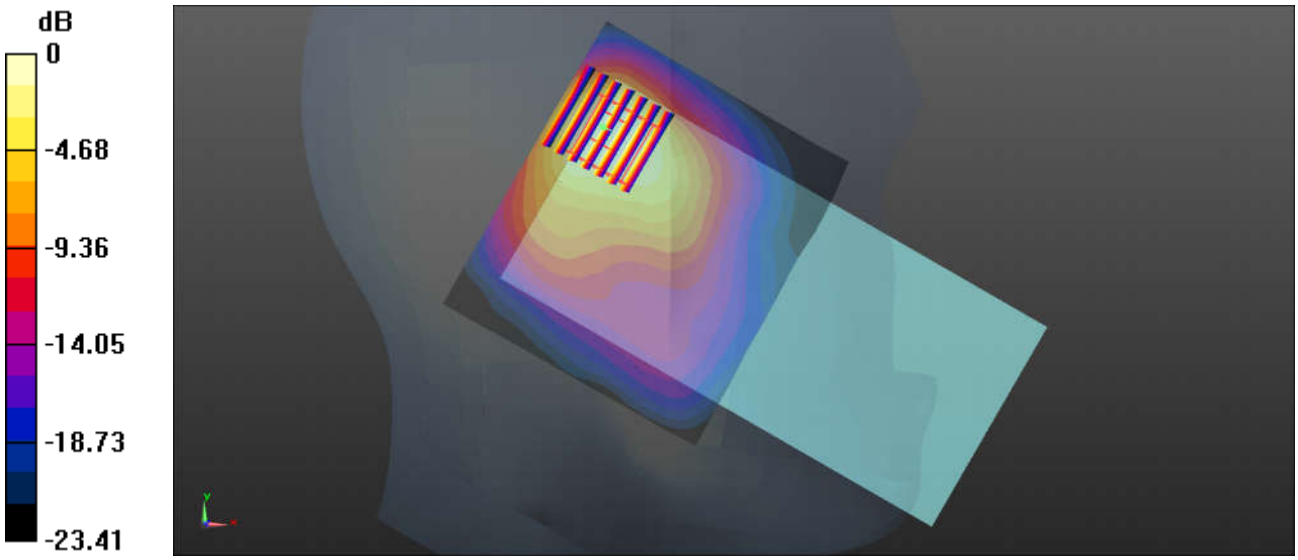
12_WLAN2.4GHz_802.11b 1Mbps_Left Cheek_0mm_Ch1

Communication System: UID 0, 802.11b (0); Frequency: 2412 MHz;Duty Cycle: 1:1.014
Medium: HSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.819 S/m; ε_r = 39.131; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(4.77, 4.77, 4.77); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch1/Area Scan (91x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.33 W/kg

Ch1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.33 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.96 W/kg
SAR(1 g) = 0.868 W/kg; SAR(10 g) = 0.425 W/kg
Maximum value of SAR (measured) = 1.09 W/kg



0 dB = 1.09 W/kg = 0.37 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.17

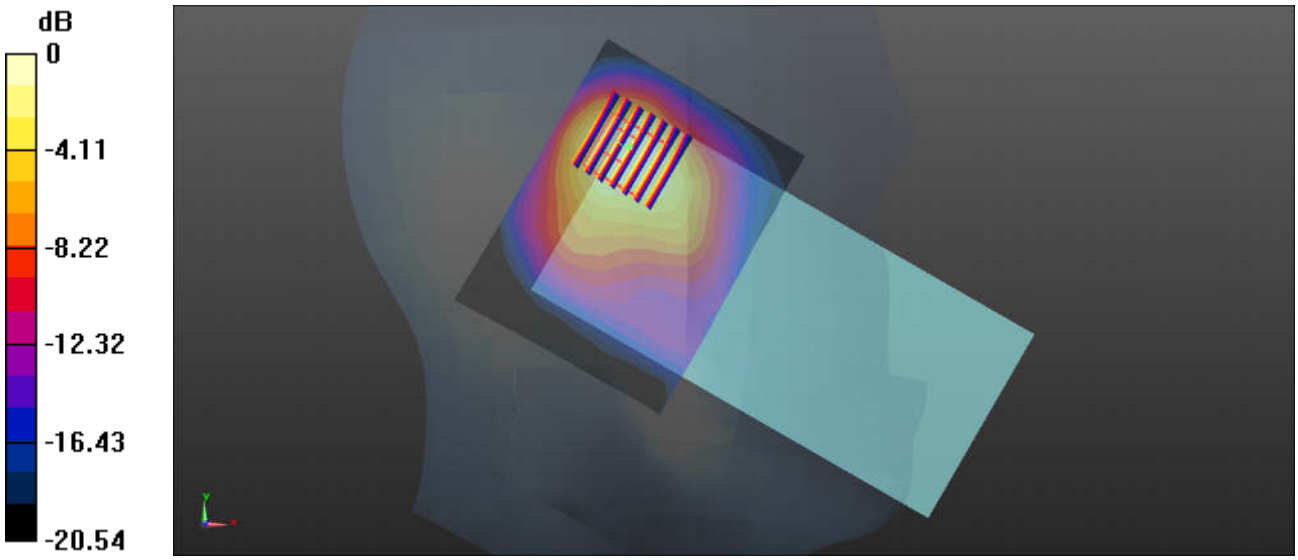
13_Bluetooth_1Mbps_Left Cheek_0mm_Ch39

Communication System: UID 0, Bluetooth (0); Frequency: 2441 MHz;Duty Cycle: 1:1.293
Medium: HSL_2450 Medium parameters used: f = 2441 MHz; σ = 1.874 S/m; ε_r = 38.42; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(4.77, 4.77, 4.77); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch39/Area Scan (91x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.306 W/kg

Ch39/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.324 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.467 W/kg
SAR(1 g) = 0.203 W/kg; SAR(10 g) = 0.100 W/kg
Maximum value of SAR (measured) = 0.260 W/kg



0 dB = 0.260 W/kg = -5.85 dBW/kg

14_GSM 850_GPRS 2 Tx slots_Back_5mm_Ch189

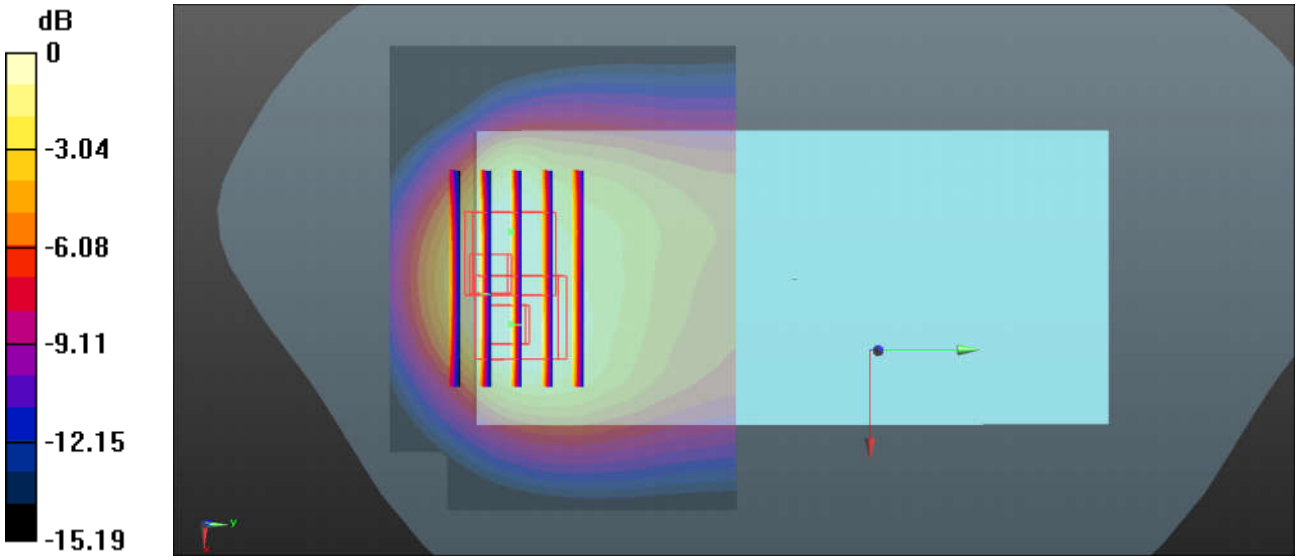
Communication System: UID 0, GSM850-2UP (0); Frequency: 836.4 MHz;Duty Cycle: 1:4.15
Medium: HSL_835 Medium parameters used: f = 836.4 MHz; σ = 0.913 S/m; ε_r = 42.066; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(6.38, 6.38, 6.38); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch189/Area Scan (81x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.57 W/kg

Ch189/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.048 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 2.60 W/kg
SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.606 W/kg
Maximum value of SAR (measured) = 1.49 W/kg

Ch189/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.048 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 1.80 W/kg
SAR(1 g) = 0.895 W/kg; SAR(10 g) = 0.522 W/kg
Maximum value of SAR (measured) = 1.17 W/kg



0 dB = 1.17 W/kg = 0.68 dBW/kg

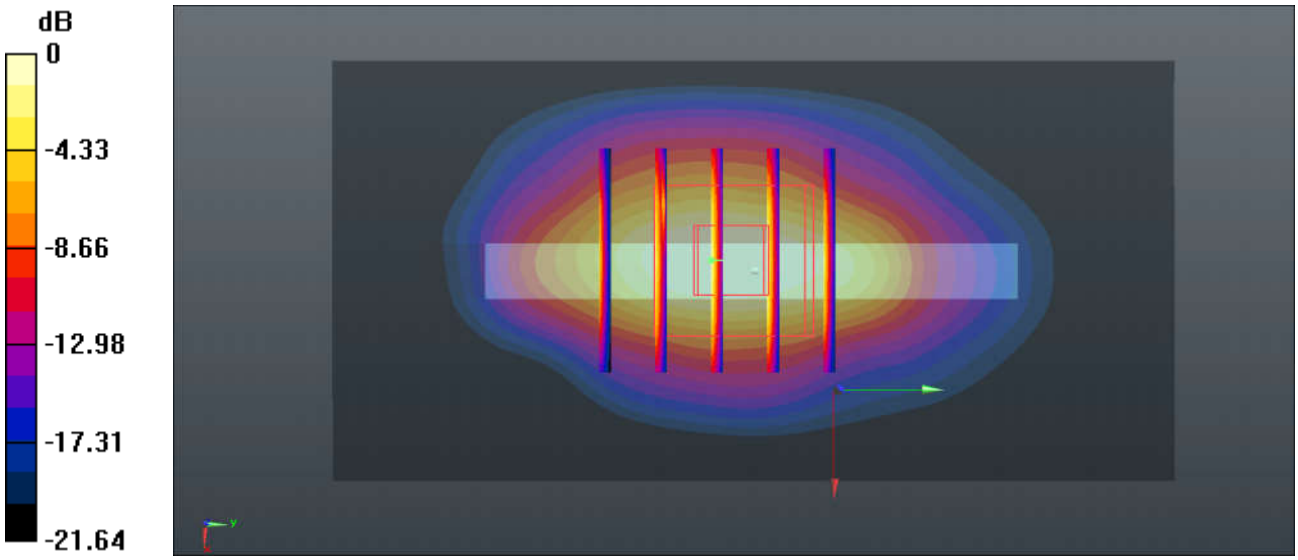
15_GSM 1900_GPRS 2 Tx slots_Bottom Side_5mm_Ch810

Communication System: UID 0, PCS-2UP (0); Frequency: 1909.8 MHz;Duty Cycle: 1:4.15
Medium: HSL_1900 Medium parameters used: f = 1910 MHz; σ = 1.418 S/m; ε_r = 39.572; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.35, 5.35, 5.35); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch810/Area Scan (41x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.45 W/kg

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.7260 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 2.01 W/kg
SAR(1 g) = 0.982 W/kg; SAR(10 g) = 0.446 W/kg
Maximum value of SAR (measured) = 1.29 W/kg



0 dB = 1.29 W/kg = 1.11 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.11

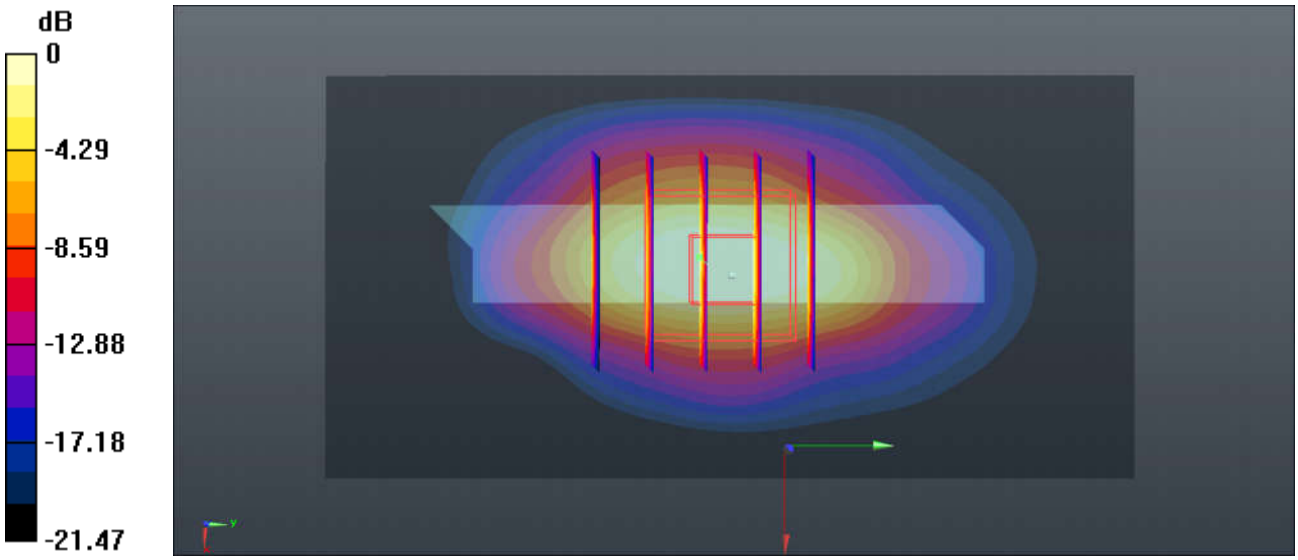
16_WCDMA II_RMC 12.2Kbps_Bottom Side_5mm_Ch9538

Communication System: UID 0, WCDMA (0); Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1908 MHz; σ = 1.416 S/m; ε_r = 39.58; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.35, 5.35, 5.35); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch9538/Area Scan (41x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.34 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.013 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.92 W/kg
SAR(1 g) = 0.940 W/kg; SAR(10 g) = 0.427 W/kg
Maximum value of SAR (measured) = 1.20 W/kg



0 dB = 1.20 W/kg = 0.79 dBW/kg

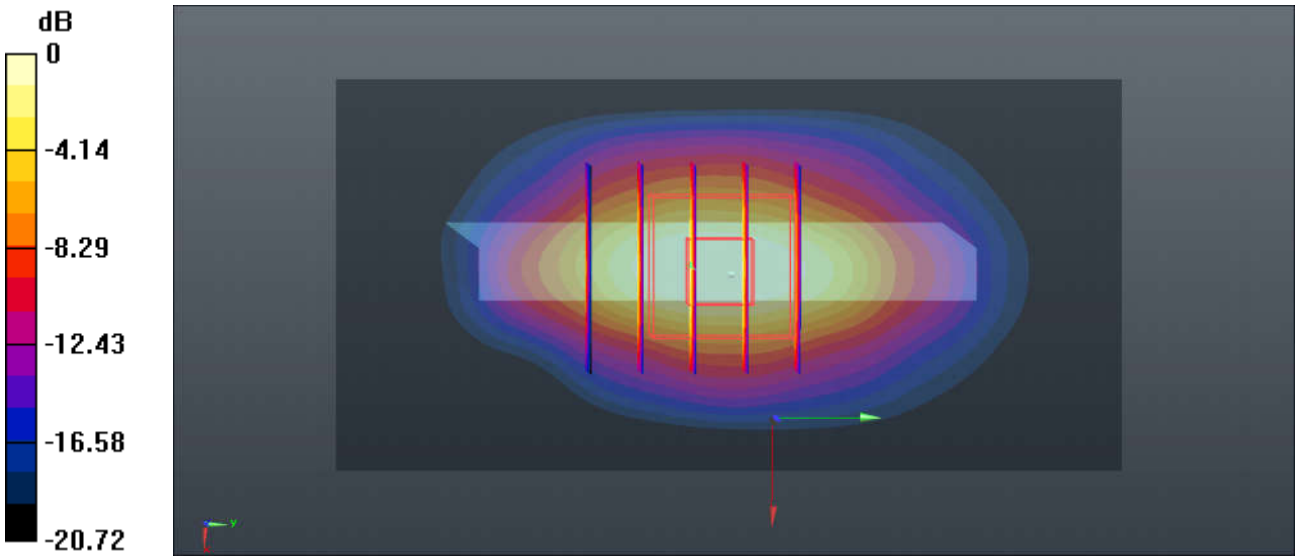
17_WCDMA IV_RMC 12.2Kbps_Bottom Side_5mm_Ch1413

Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1
Medium: HSL_1750 Medium parameters used: f = 1733 MHz; σ = 1.349 S/m; ε_r = 41.428; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.59, 5.59, 5.59); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch1413/Area Scan (41x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.40 W/kg

Ch1413/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.278 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.97 W/kg
SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.478 W/kg
Maximum value of SAR (measured) = 1.28 W/kg



0 dB = 1.28 W/kg = 1.07 dBW/kg

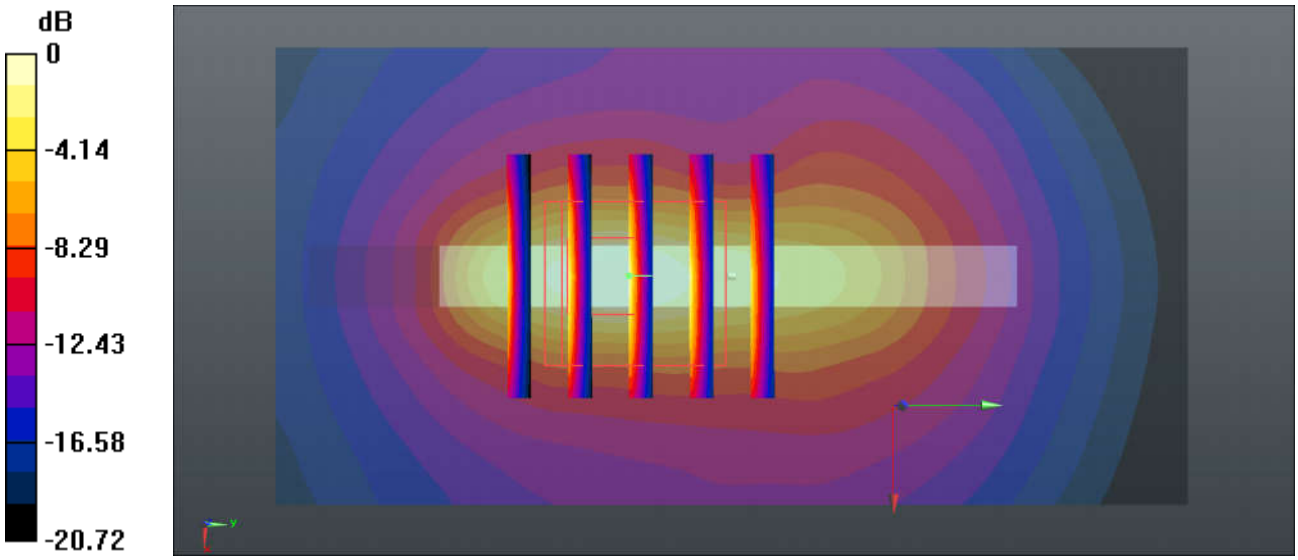
18_WCDMA V_RMC 12.2Kbps_Bottom Side_5mm_Ch4182

Communication System: UID 0, WCDMA (0); Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 836.4 MHz; σ = 0.913 S/m; ε_r = 42.066; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(6.38, 6.38, 6.38); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch4182/Area Scan (41x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.44 W/kg

Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.634 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.12 W/kg
SAR(1 g) = 0.967 W/kg; SAR(10 g) = 0.383 W/kg
Maximum value of SAR (measured) = 1.42 W/kg



0 dB = 1.42 W/kg = 1.52 dBW/kg

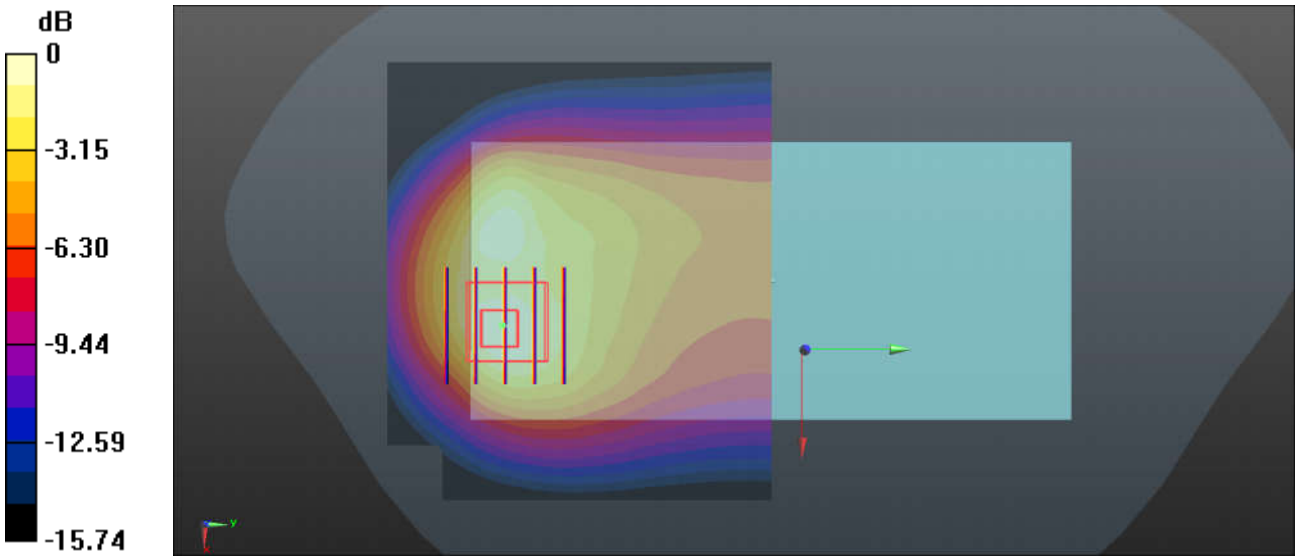
19_LTE Band 26_15M_QPSK_1RB_37Offset_Back_5mm_Ch26865

Communication System: UID 0, LTE-FDD (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 831.5 MHz; σ = 0.909 S/m; ε_r = 42.124; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(6.38, 6.38, 6.38); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch26865/Area Scan (81x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.897 W/kg

Ch26865/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.105 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.34 W/kg
SAR(1 g) = 0.653 W/kg; SAR(10 g) = 0.359 W/kg
Maximum value of SAR (measured) = 0.829 W/kg



0 dB = 0.829 W/kg = -0.81 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.5

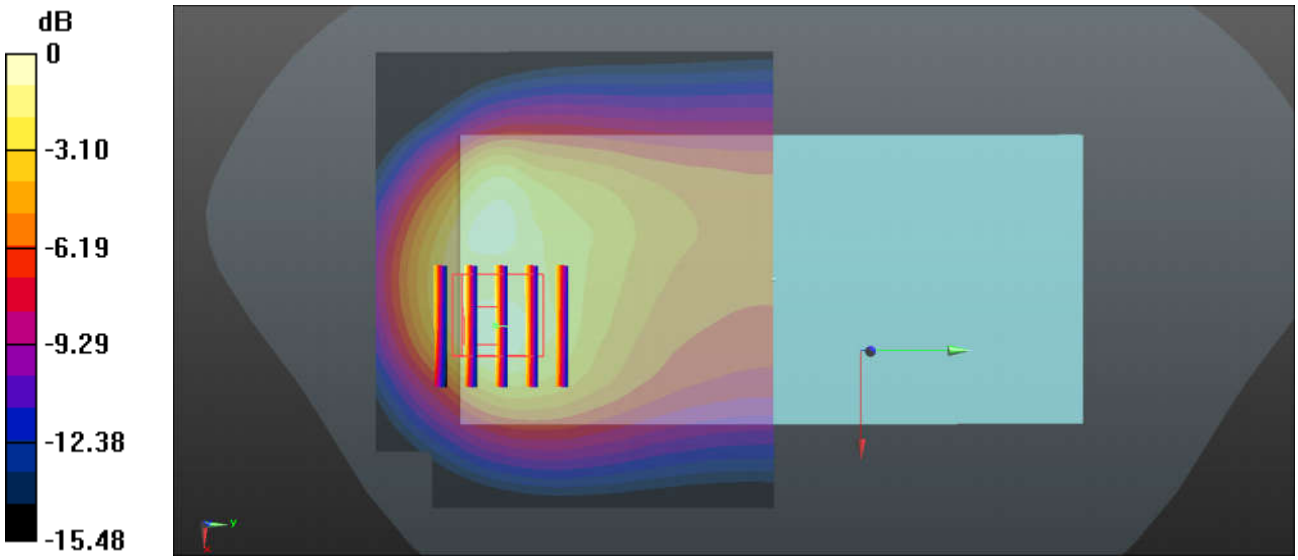
20_LTE Band 5_10M_QPSK_1RB_0Offset_Back_5mm_Ch20525

Communication System: UID 0, LTE-FDD (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 836.5 MHz; σ = 0.913 S/m; ε_r =42.064; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(6.38, 6.38, 6.38); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch20525/Area Scan (81x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.13 W/kg

Ch20525/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.139 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.73 W/kg
SAR(1 g) = 0.843 W/kg; SAR(10 g) = 0.465 W/kg
Maximum value of SAR (measured) = 1.06 W/kg



0 dB = 1.06 W/kg = 0.25 dBW/kg

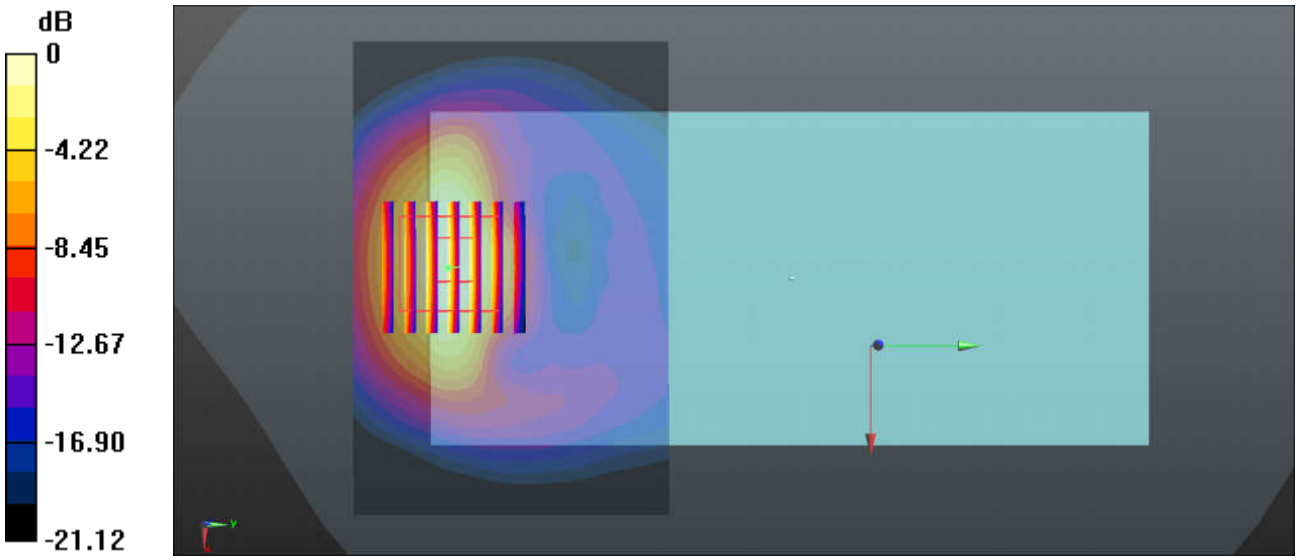
21_LTE Band 2_20M_QPSK_50RB_24Offset_Back_5mm_Ch19100

Communication System: UID 0, LTE-FDD (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1900 MHz; σ = 1.409 S/m; ε_r = 39.62; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.35, 5.35, 5.35); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch19100/Area Scan (91x61x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.54 W/kg

Ch19100/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.370 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 2.01 W/kg
SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.546 W/kg
Maximum value of SAR (measured) = 1.38 W/kg



0 dB = 1.38 W/kg = 1.40 dBW/kg

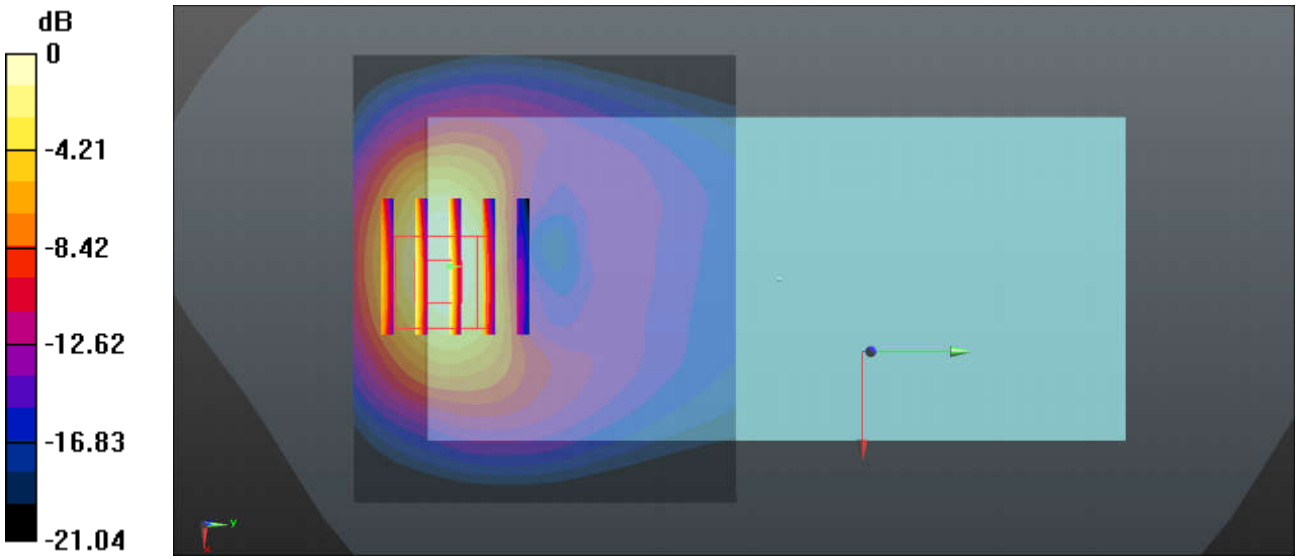
22_LTE Band 4_20M_QPSK_50RB_24Offset_Back_5mm_Ch20175

Communication System: UID 0, LTE-FDD (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium: HSL_1750 Medium parameters used: f = 1733 MHz; σ = 1.349 S/m; ε_r = 41.428; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.59, 5.59, 5.59); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch20175/Area Scan (71x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.35 W/kg

Ch20175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.583 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.79 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.531 W/kg
Maximum value of SAR (measured) = 1.21 W/kg



0 dB = 1.21 W/kg = 0.83 dBW/kg

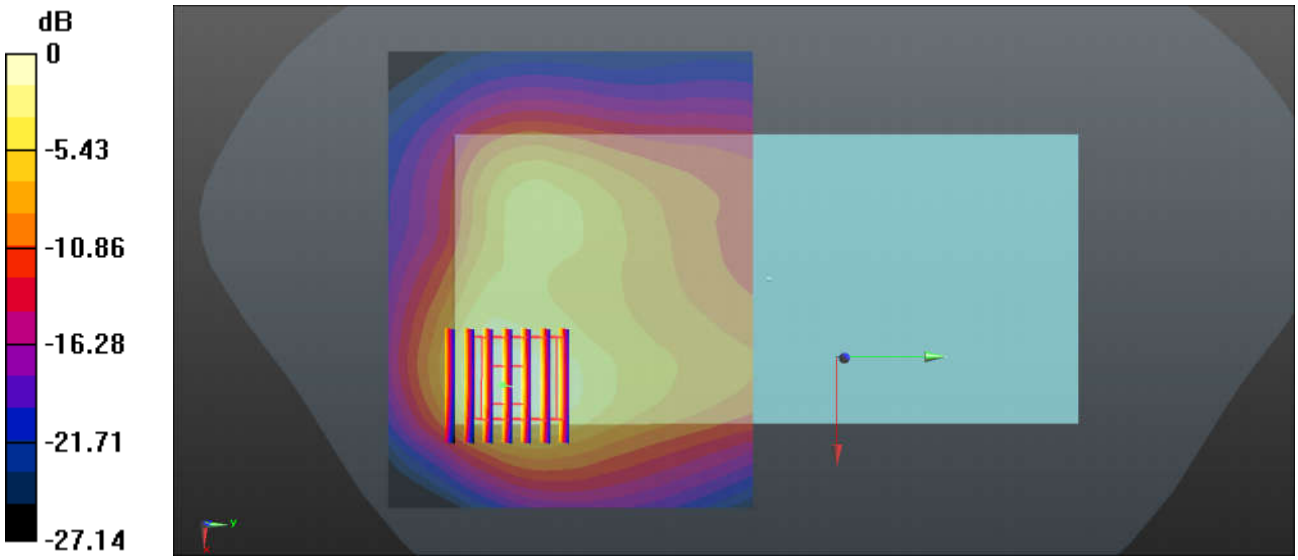
23_LTE Band 7_20M QPSK_50RB_24Offset_Back_5mm_Ch21350

Communication System: UID 0, LTE-FDD (0); Frequency: 2560 MHz;Duty Cycle: 1:1
Medium: HSL_2600 Medium parameters used: f = 2560 MHz; σ = 2.009 S/m; ε_r = 37.92; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃； Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(4.58, 4.58, 4.58); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch21350/Area Scan (101x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.59 W/kg

Ch21350/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.454 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 2.72 W/kg
SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.524 W/kg
Maximum value of SAR (measured) = 1.56 W/kg



0 dB = 1.56 W/kg = 1.93 dBW/kg

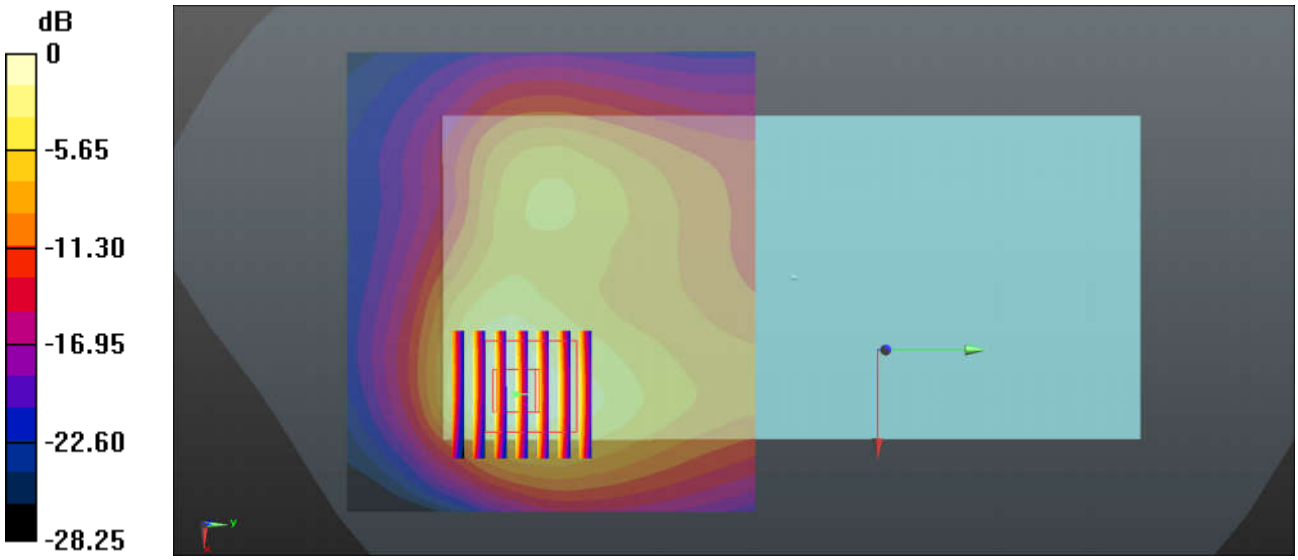
24_LTE Band 41_20M QPSK_50RB_0Offset_Back_5mm_Ch41140

Communication System: UID 0, LTE-TDD (0); Frequency: 2645 MHz;Duty Cycle: 1:1.59
Medium: HSL_2600 Medium parameters used: f = 2645 MHz; σ = 2.111 S/m; ε_r = 37.575; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃； Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(4.58, 4.58, 4.58); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch41140/Area Scan (91x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.71 W/kg

Ch41140/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.851 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.76 W/kg
SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.500 W/kg
Maximum value of SAR (measured) = 1.50 W/kg



0 dB = 1.50 W/kg = 1.76 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.17

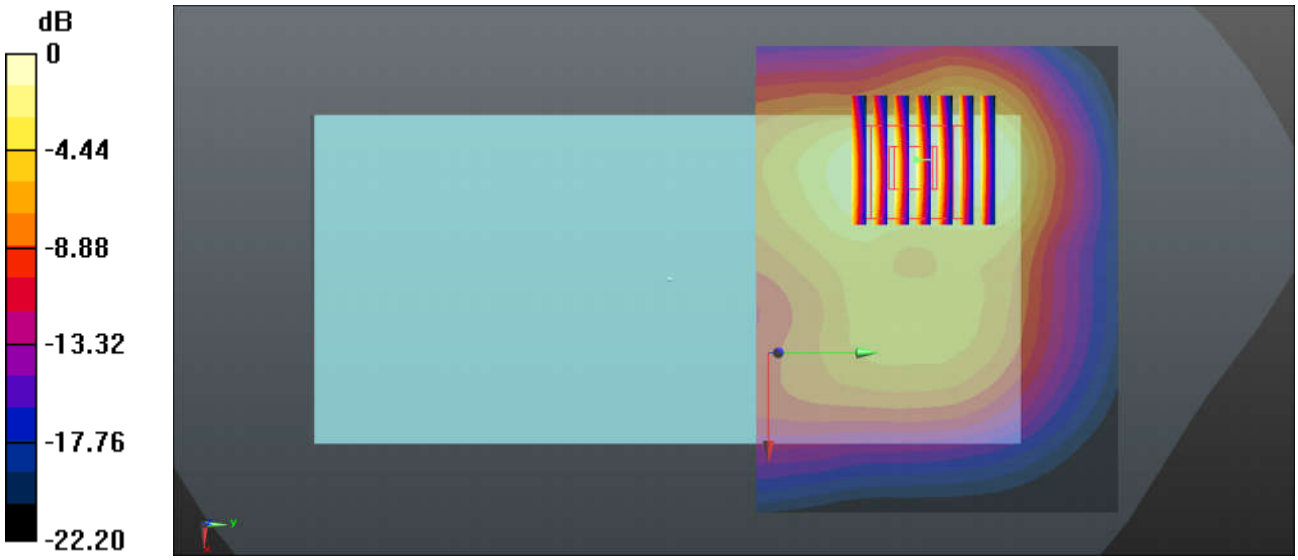
25_WLAN2.4GHz_802.11b 1Mbps_Back_5mm_Ch1

Communication System: UID 0, 802.11b (0); Frequency: 2412 MHz;Duty Cycle: 1:1.014
Medium: HSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.819 S/m; ε_r = 39.131; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(4.77, 4.77, 4.77); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch1/Area Scan (91x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.02 W/kg

Ch1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.046 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 0.806 W/kg; SAR(10 g) = 0.387 W/kg
Maximum value of SAR (measured) = 1.05 W/kg



0 dB = 1.05 W/kg = 0.21 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.17

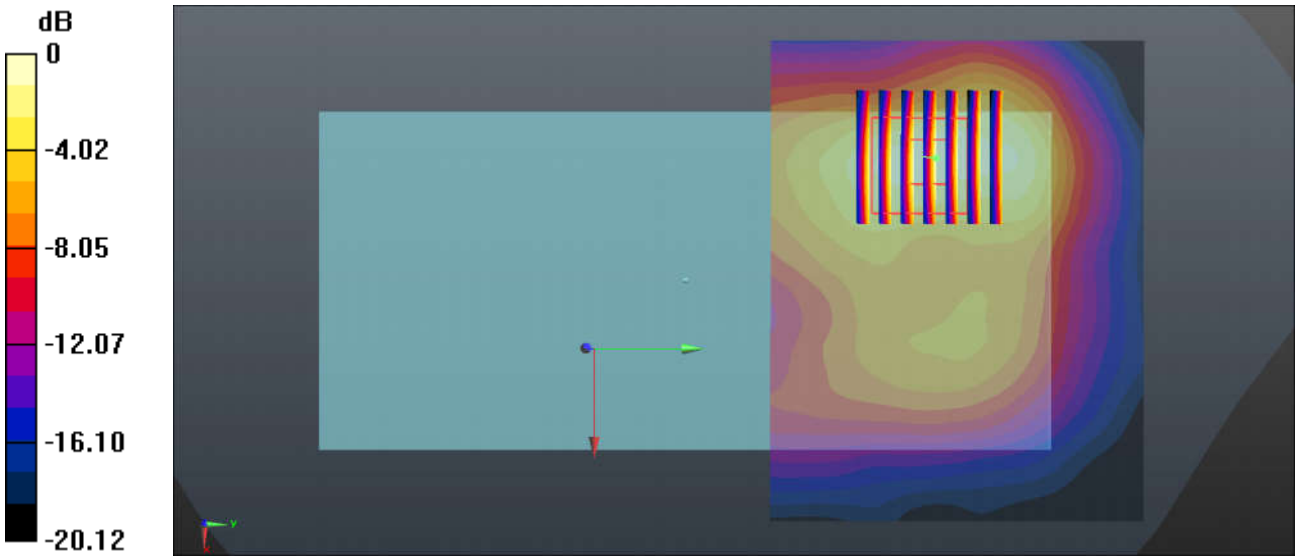
26_Bluetooth_1Mbps_Back_5mm_Ch39

Communication System: UID 0, Bluetooth (0); Frequency: 2441 MHz;Duty Cycle: 1:1.293
Medium: HSL_2450 Medium parameters used: f = 2441 MHz; σ = 1.874 S/m; ε_r = 38.42; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(4.77, 4.77, 4.77); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch39/Area Scan (91x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.132 W/kg

Ch39/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.763 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.207 W/kg
SAR(1 g) = 0.104 W/kg; SAR(10 g) = 0.050 W/kg
Maximum value of SAR (measured) = 0.137 W/kg



0 dB = 0.137 W/kg = -8.63 dBW/kg

27_GSM 850_GPRS 2 Tx slots_Back_5mm_Headset_Ch189

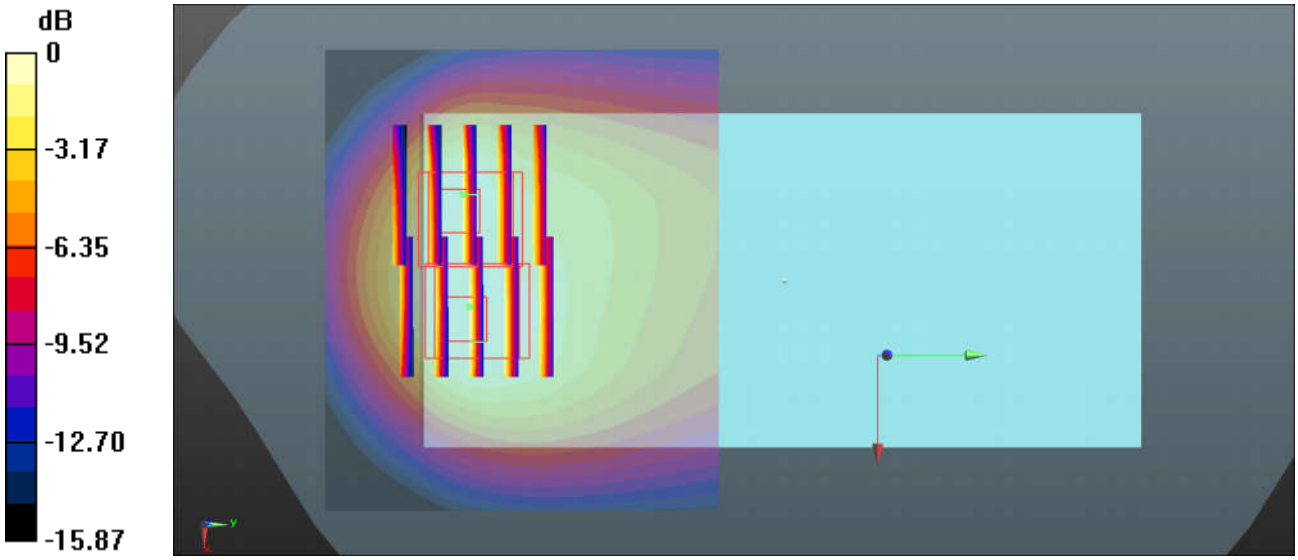
Communication System: UID 0, GSM850-2UP (0); Frequency: 836.4 MHz;Duty Cycle: 1:4.15
Medium: HSL_835 Medium parameters used: f = 836.4 MHz; σ = 0.913 S/m; ε_r = 42.066; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(6.38, 6.38, 6.38); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch189/Area Scan (71x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.56 W/kg

Ch189/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.038 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 2.29 W/kg
SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.624 W/kg
Maximum value of SAR (measured) = 1.35 W/kg

Ch189/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.038 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.92 W/kg
SAR(1 g) = 0.919 W/kg; SAR(10 g) = 0.536 W/kg
Maximum value of SAR (measured) = 1.18 W/kg



0 dB = 1.18 W/kg = 0.72 dBW/kg

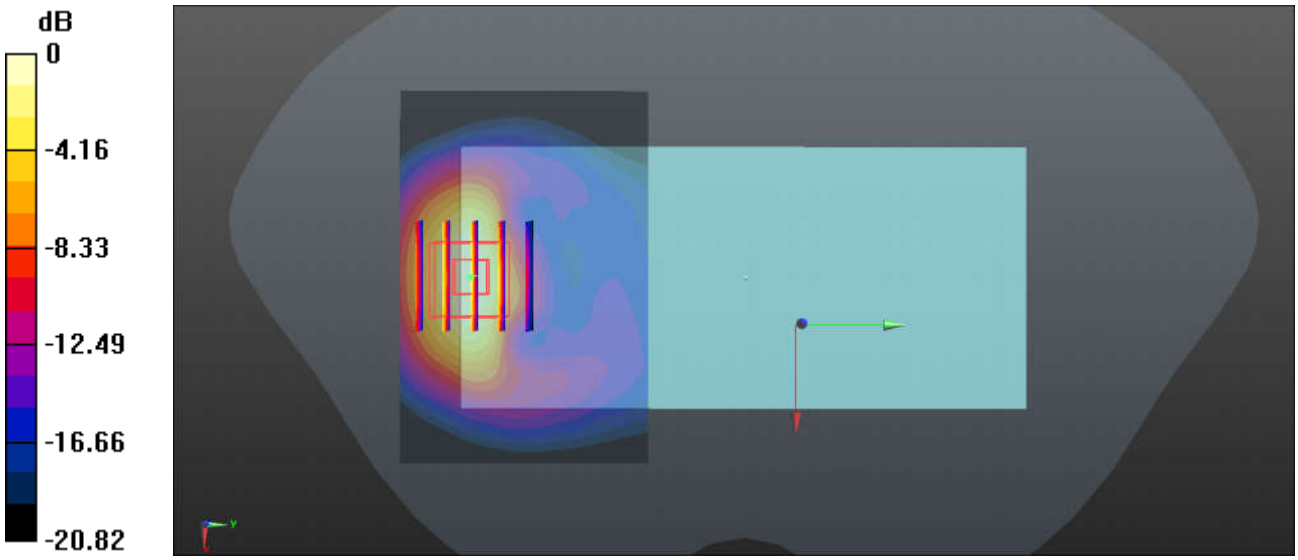
28_GSM 1900_GPRS 2 Tx slots_Back_5mm_Headset_Ch661

Communication System: UID 0, PCS-2UP (0); Frequency: 1880 MHz;Duty Cycle: 1:4.15
Medium: HSL_1900 Medium parameters used: f = 1880 MHz; σ = 1.392 S/m; ε_r = 39.688; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.35, 5.35, 5.35); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch661/Area Scan (91x61x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.58 W/kg

Ch661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.232 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.95 W/kg
SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.543 W/kg
Maximum value of SAR (measured) = 1.40 W/kg



0 dB = 1.40 W/kg = 1.46 dBW/kg

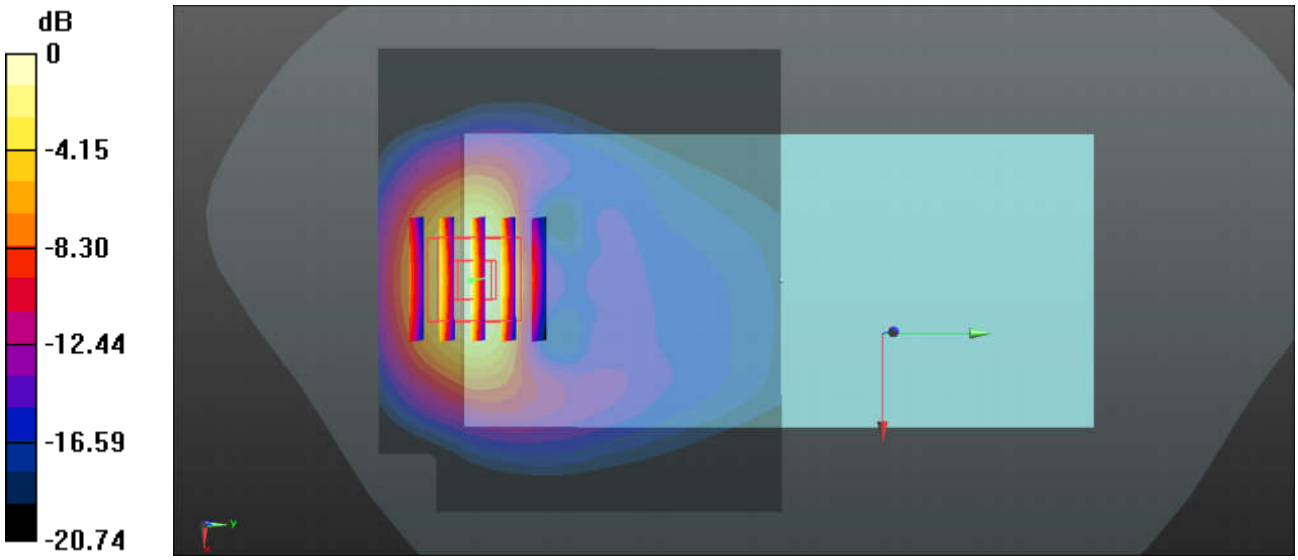
29_WCDMA II_RMC 12.2Kbps_Back_5mm_Ch9538

Communication System: UID 0, WCDMA (0); Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1908 MHz; σ = 1.416 S/m; ε_r = 39.58; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.35, 5.35, 5.35); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch9538/Area Scan (81x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.35 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.7730 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.64 W/kg
SAR(1 g) = 0.918 W/kg; SAR(10 g) = 0.461 W/kg
Maximum value of SAR (measured) = 1.14 W/kg



0 dB = 1.14 W/kg = 0.57 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.13

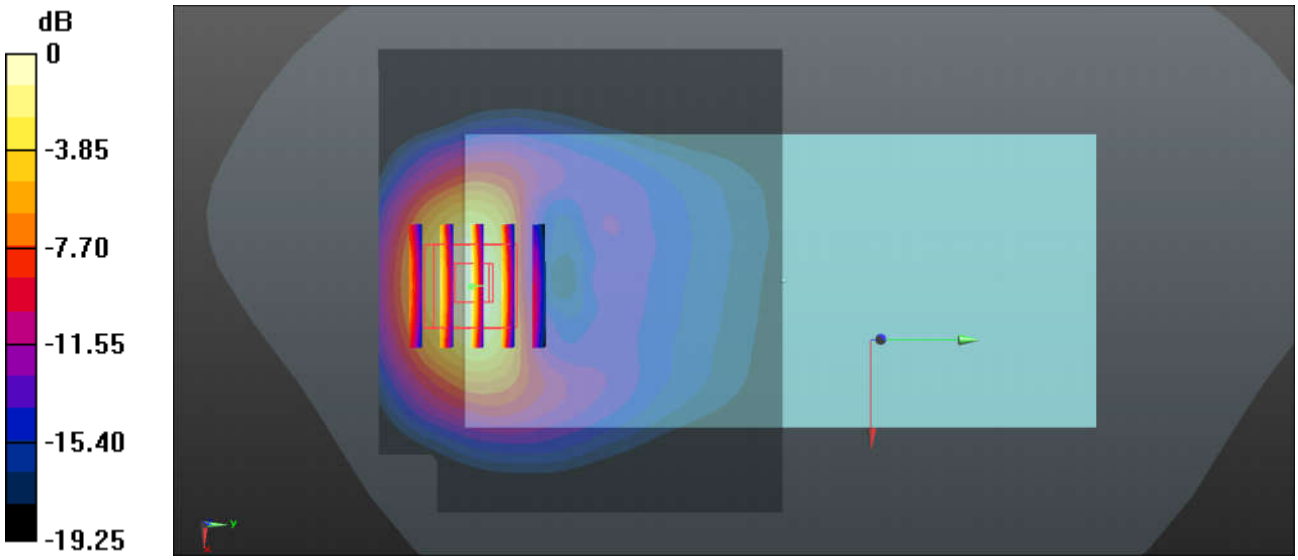
30_WCDMA IV_RMC 12.2Kbps_Back_5mm_Ch1413

Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1
Medium: HSL_1750 Medium parameters used: f = 1733 MHz; σ = 1.349 S/m; ε_r = 41.428; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.59, 5.59, 5.59); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch1413/Area Scan (81x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.43 W/kg

Ch1413/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.9720 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.79 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.522 W/kg
Maximum value of SAR (measured) = 1.27 W/kg



0 dB = 1.27 W/kg = 1.04 dBW/kg

31_WCDMA V_RMC 12.2Kbps_Back_5mm_Headset_Ch4182

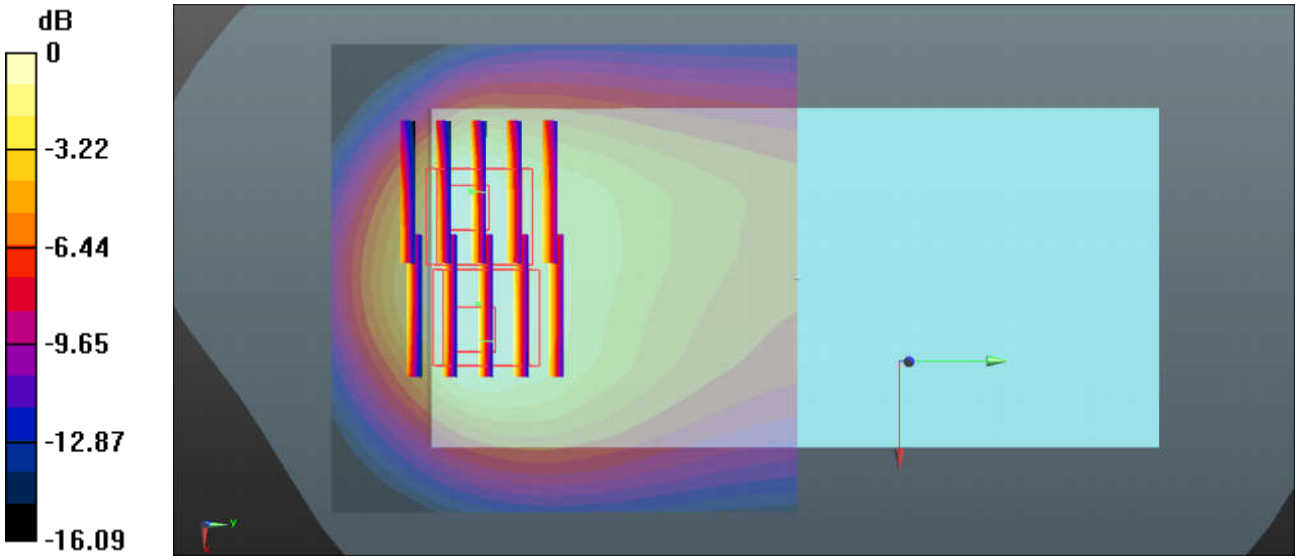
Communication System: UID 0, WCDMA (0); Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 836.4 MHz; σ = 0.913 S/m; ε_r = 42.066; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(6.38, 6.38, 6.38); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch4182/Area Scan (71x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.31 W/kg

Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.220 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 2.07 W/kg
SAR(1 g) = 1 W/kg; SAR(10 g) = 0.556 W/kg
Maximum value of SAR (measured) = 1.26 W/kg

Ch4182/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.220 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.91 W/kg
SAR(1 g) = 0.893 W/kg; SAR(10 g) = 0.504 W/kg
Maximum value of SAR (measured) = 1.12 W/kg



0 dB = 1.12 W/kg = 0.49 dBW/kg

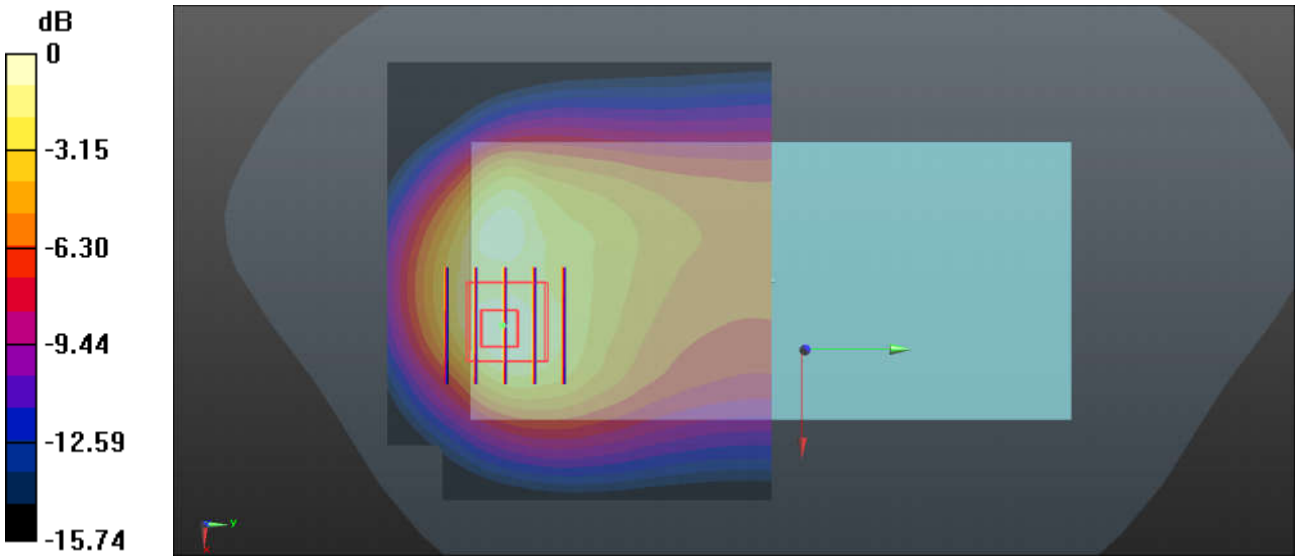
32_LTE Band 26_15M_QPSK_1RB_37Offset_Back_5mm_Ch26865

Communication System: UID 0, LTE-FDD (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 831.5 MHz; σ = 0.909 S/m; ε_r = 42.124; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(6.38, 6.38, 6.38); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch26865/Area Scan (81x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.897 W/kg

Ch26865/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.105 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.34 W/kg
SAR(1 g) = 0.653 W/kg; SAR(10 g) = 0.359 W/kg
Maximum value of SAR (measured) = 0.829 W/kg



0 dB = 0.829 W/kg = -0.81 dBW/kg

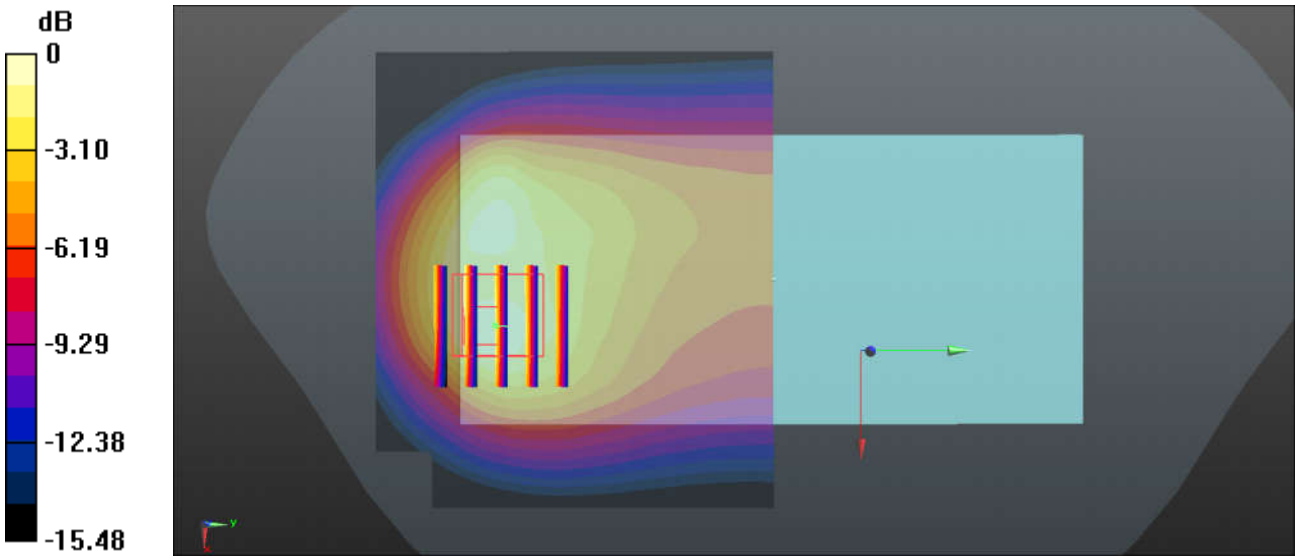
33_LTE Band 5_10M_QPSK_1RB_0Offset_Back_5mm_Ch20525

Communication System: UID 0, LTE-FDD (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 836.5 MHz; σ = 0.913 S/m; ε_r = 42.064; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(6.38, 6.38, 6.38); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch20525/Area Scan (81x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.13 W/kg

Ch20525/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.139 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.73 W/kg
SAR(1 g) = 0.843 W/kg; SAR(10 g) = 0.465 W/kg
Maximum value of SAR (measured) = 1.06 W/kg



0 dB = 1.06 W/kg = 0.25 dBW/kg

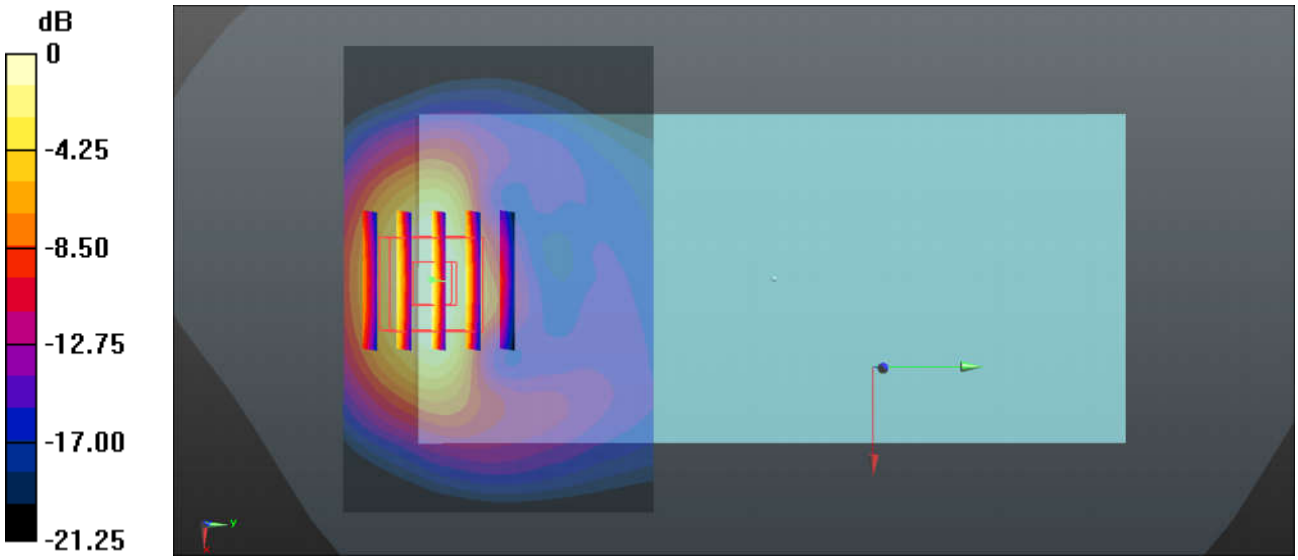
34_LTE Band 2_20M_QPSK_50RB_24Offset_Back_5mm_Headset_Ch19100

Communication System: UID 0, LTE-FDD (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1900 MHz; σ = 1.409 S/m; ε_r = 39.62; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.35, 5.35, 5.35); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch19100/Area Scan (91x61x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.78 W/kg

Ch19100/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.315 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 2.00 W/kg
SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.555 W/kg
Maximum value of SAR (measured) = 1.41 W/kg



0 dB = 1.41 W/kg = 1.49 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.13

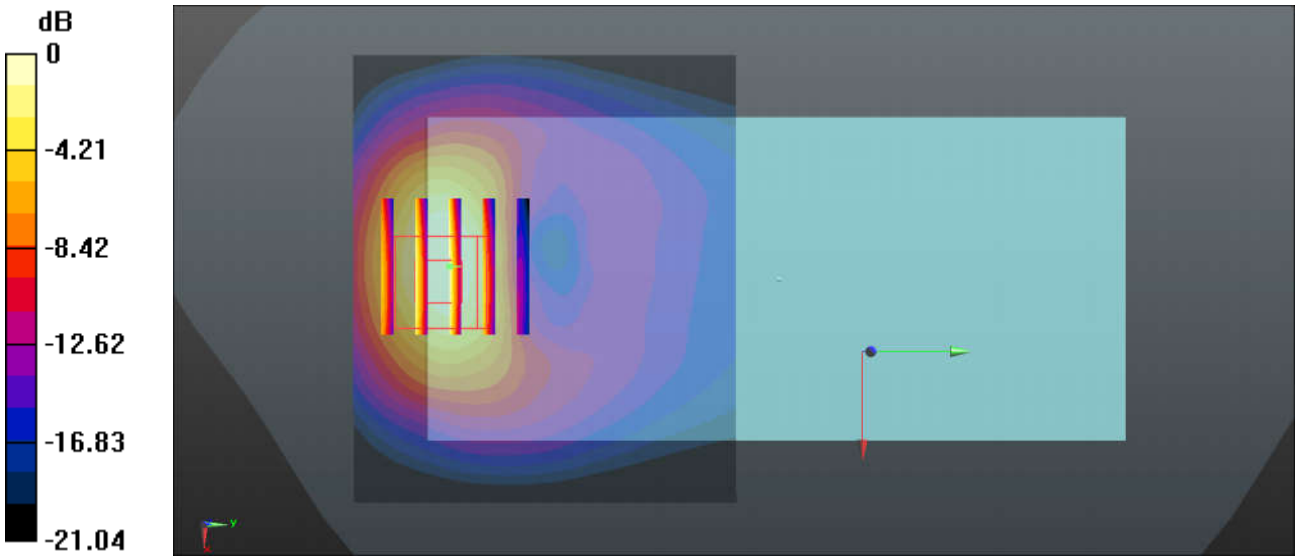
35_LTE Band 4_20M_QPSK_50RB_24Offset_Back_5mm_Ch20175

Communication System: UID 0, LTE-FDD (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium: HSL_1750 Medium parameters used: f = 1733 MHz; σ = 1.349 S/m; ε_r = 41.428; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.59, 5.59, 5.59); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch20175/Area Scan (71x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.35 W/kg

Ch20175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.583 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.79 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.531 W/kg
Maximum value of SAR (measured) = 1.21 W/kg



0 dB = 1.21 W/kg = 0.83 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.18

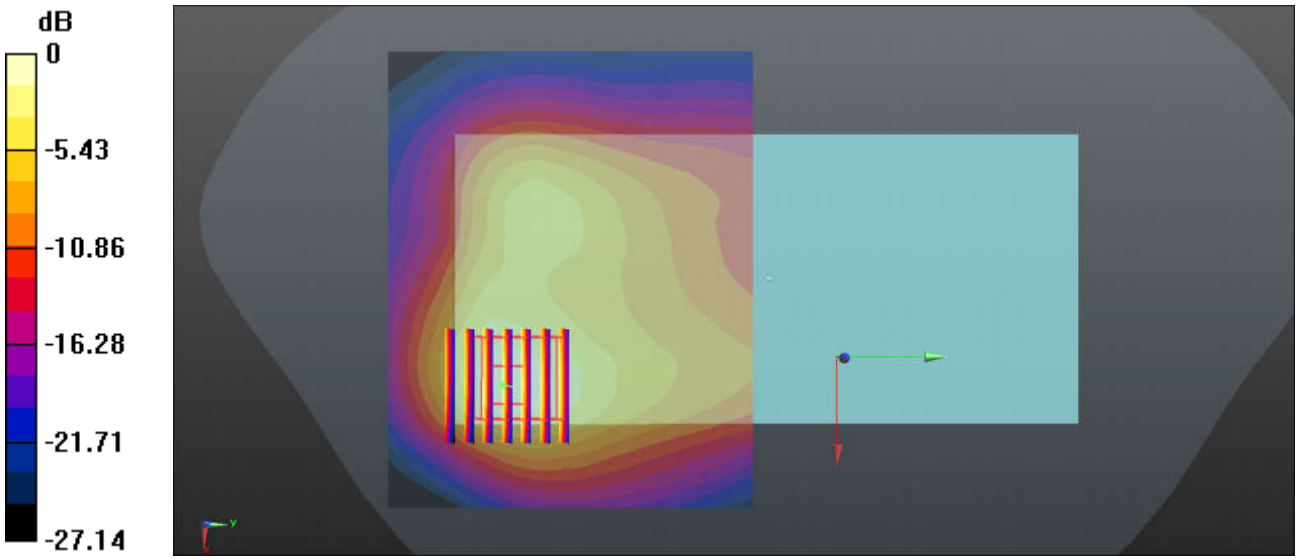
36_LTE Band 7_20M QPSK_50RB_24Offset_Back_5mm_Ch21350

Communication System: UID 0, LTE-FDD (0); Frequency: 2560 MHz;Duty Cycle: 1:1
Medium: HSL_2600 Medium parameters used: f = 2560 MHz; σ = 2.009 S/m; ε_r = 37.92; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(4.58, 4.58, 4.58); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch21350/Area Scan (101x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.59 W/kg

Ch21350/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.454 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 2.72 W/kg
SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.524 W/kg
Maximum value of SAR (measured) = 1.56 W/kg



0 dB = 1.56 W/kg = 1.93 dBW/kg

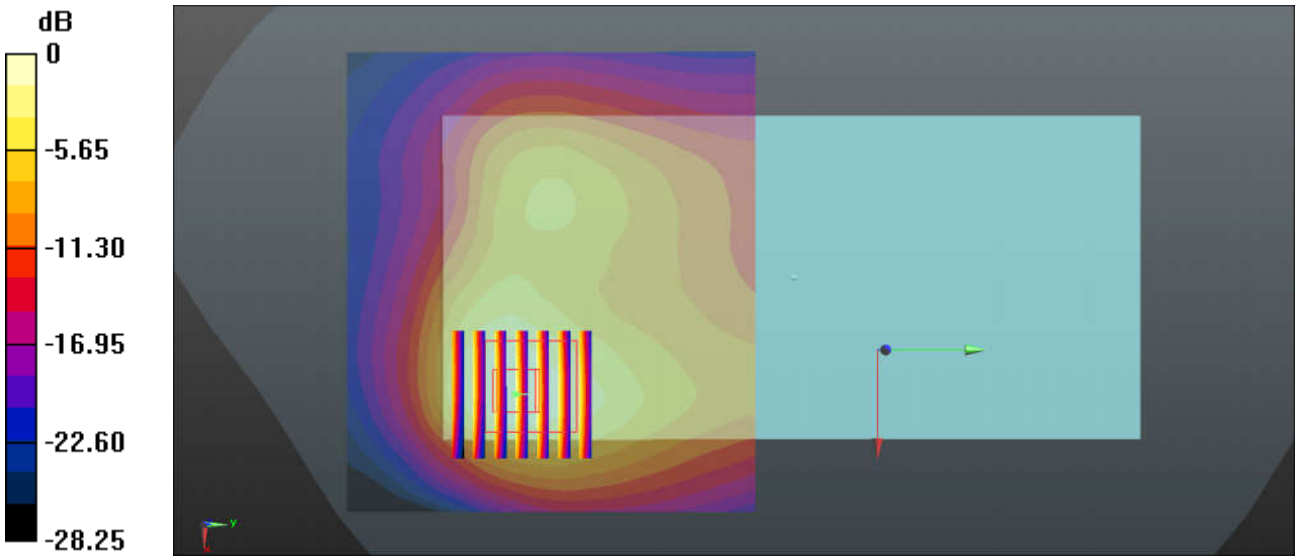
37_LTE Band 41_20M QPSK_50RB_0Offset_Back_5mm_Ch41140

Communication System: UID 0, LTE-TDD (0); Frequency: 2645 MHz;Duty Cycle: 1:1.59
Medium: HSL_2600 Medium parameters used: f = 2645 MHz; σ = 2.111 S/m; ε_r = 37.575; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃； Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(4.58, 4.58, 4.58); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch41140/Area Scan (91x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.71 W/kg

Ch41140/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.851 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.76 W/kg
SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.500 W/kg
Maximum value of SAR (measured) = 1.50 W/kg



0 dB = 1.50 W/kg = 1.76 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.17

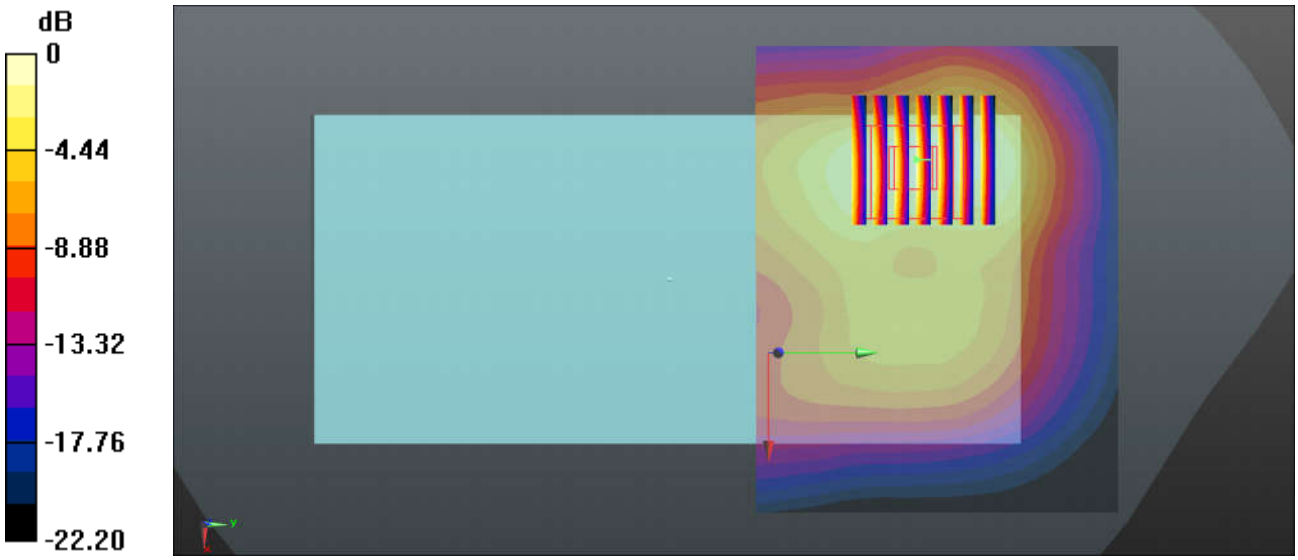
38_WLAN2.4GHz_802.11b 1Mbps_Back_5mm_Ch1

Communication System: UID 0, 802.11b (0); Frequency: 2412 MHz;Duty Cycle: 1:1.014
Medium: HSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.819 S/m; ε_r = 39.131; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(4.77, 4.77, 4.77); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch1/Area Scan (91x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.02 W/kg

Ch1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.046 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 0.806 W/kg; SAR(10 g) = 0.387 W/kg
Maximum value of SAR (measured) = 1.05 W/kg



0 dB = 1.05 W/kg = 0.21 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.17

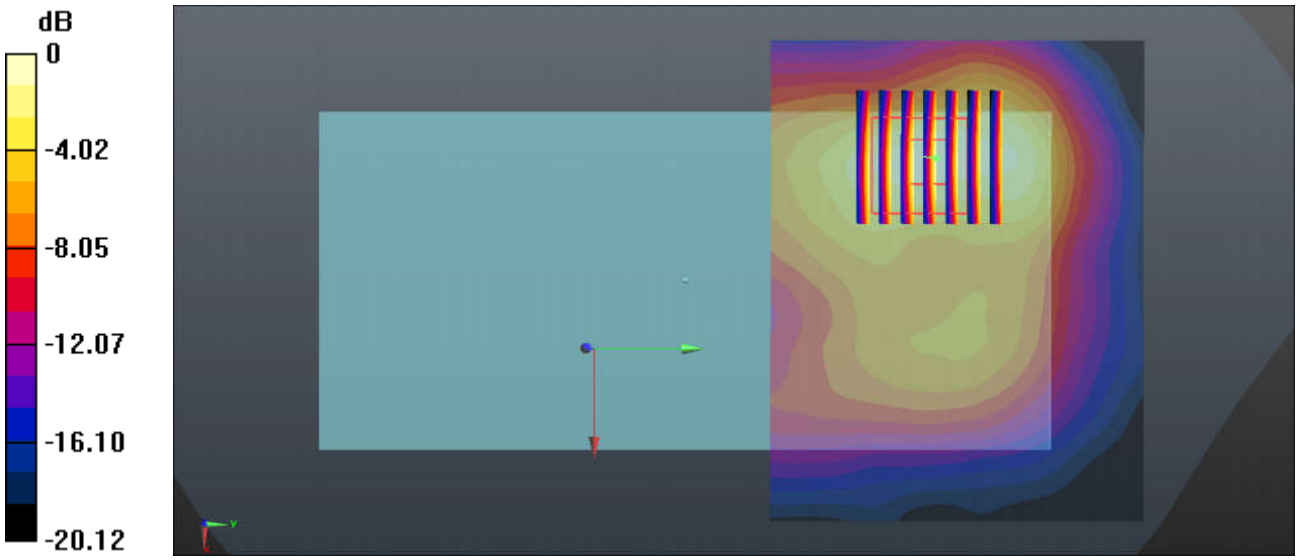
39_Bluetooth_1Mbps_Back_5mm_Ch39

Communication System: UID 0, Bluetooth (0); Frequency: 2441 MHz;Duty Cycle: 1:1.293
Medium: HSL_2450 Medium parameters used: f = 2441 MHz; σ = 1.874 S/m; ε_r = 38.42; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(4.77, 4.77, 4.77); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch39/Area Scan (91x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.132 W/kg

Ch39/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.763 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.207 W/kg
SAR(1 g) = 0.104 W/kg; SAR(10 g) = 0.050 W/kg
Maximum value of SAR (measured) = 0.137 W/kg



0 dB = 0.137 W/kg = -8.63 dBW/kg

40_GSM 850_GPRS 2 Tx slots_Back_0mm_Ch251

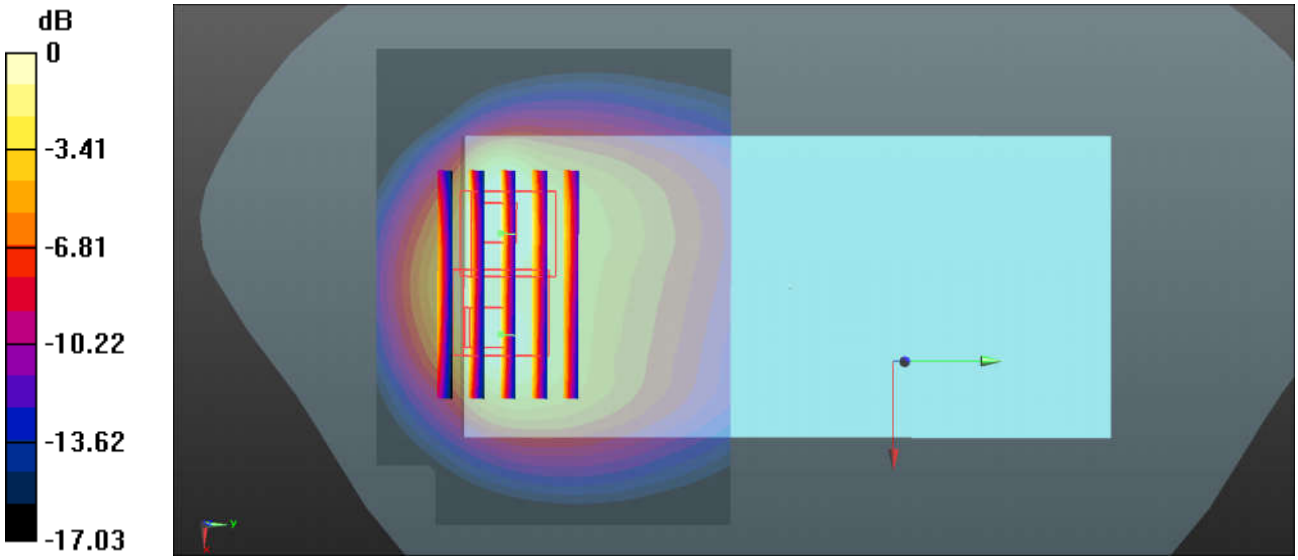
Communication System: UID 0, GSM850-2UP (0); Frequency: 848.8 MHz;Duty Cycle: 1:4.15
Medium: HSL_835 Medium parameters used: f = 849 MHz; σ = 0.925 S/m; ε_r = 41.888; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(6.38, 6.38, 6.38); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch251/Area Scan (81x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 4.52 W/kg

Ch251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.658 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 8.31 W/kg
SAR(1 g) = 3.29 W/kg; SAR(10 g) = 1.64 W/kg
Maximum value of SAR (measured) = 4.04 W/kg

Ch251/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.658 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 6.99 W/kg
SAR(1 g) = 2.85 W/kg; SAR(10 g) = 1.48 W/kg
Maximum value of SAR (measured) = 3.61 W/kg



0 dB = 3.61 W/kg = 5.58 dBW/kg

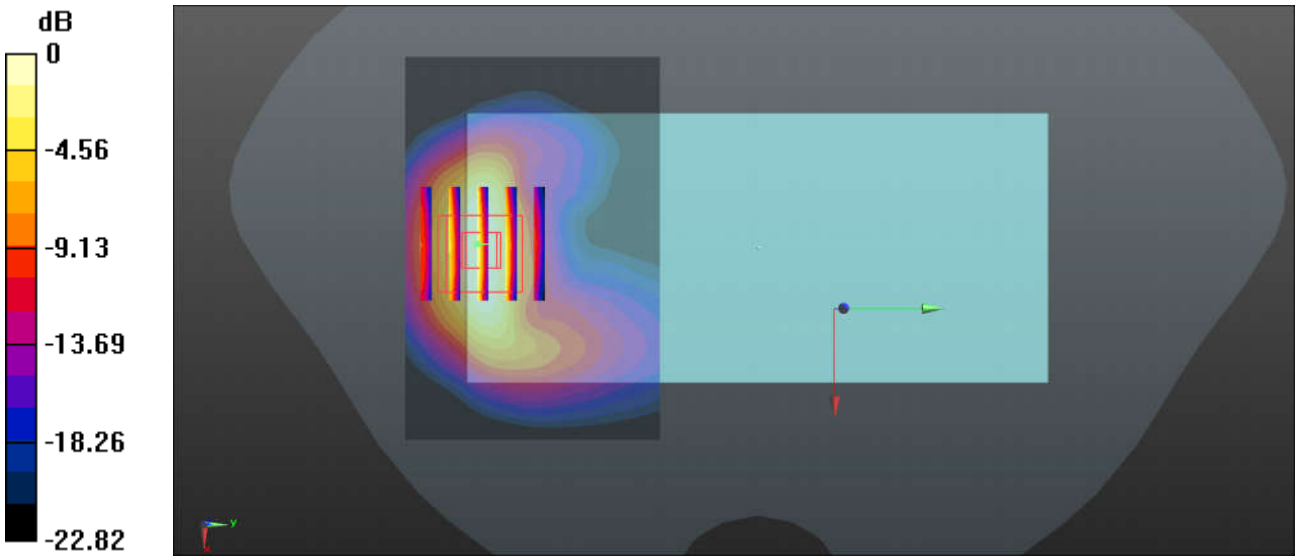
41_GSM 1900_GPRS 2 Tx slots_Back_0mm_Ch661

Communication System: UID 0, PCS-2UP (0); Frequency: 1880 MHz;Duty Cycle: 1:4.15
Medium: HSL_1900 Medium parameters used: f = 1880 MHz; σ = 1.392 S/m; ε_r = 39.688; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.35, 5.35, 5.35); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch661/Area Scan (91x61x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 7.54 W/kg

Ch661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.261 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 10.3 W/kg
SAR(1 g) = 5.36 W/kg; SAR(10 g) = 2.52 W/kg
Maximum value of SAR (measured) = 7.00 W/kg



0 dB = 7.00 W/kg = 8.45 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.11

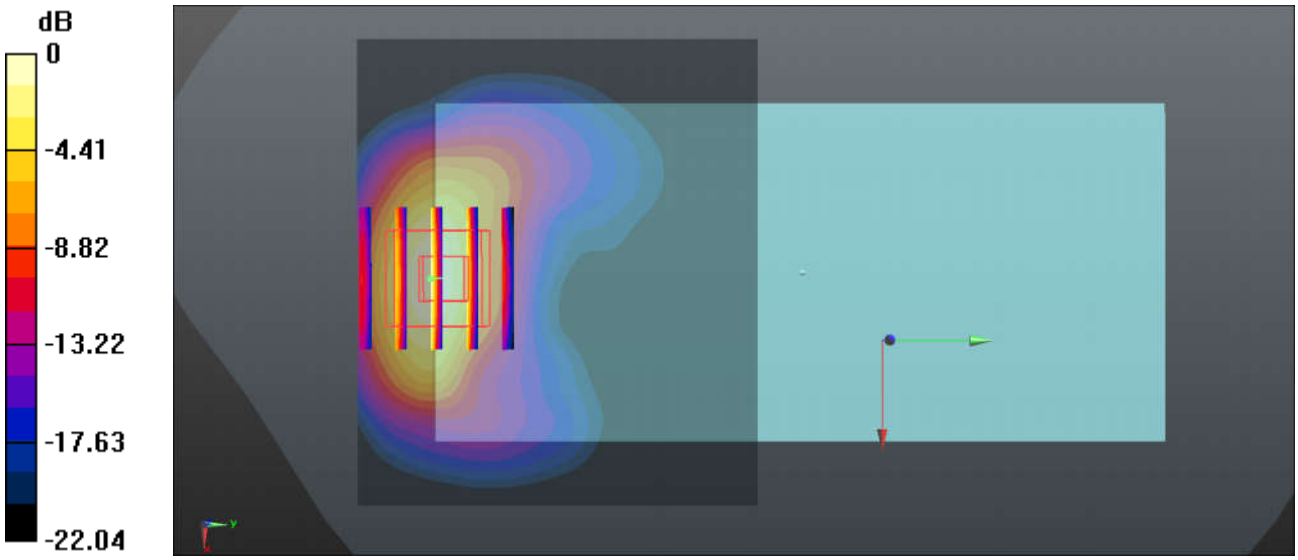
42_WCDMA II_RMC 12.2Kbps_Front_0mm_Ch9400

Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1880 MHz; σ = 1.392 S/m; ε_r = 39.688; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.35, 5.35, 5.35); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch9400/Area Scan (71x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 6.78 W/kg

Ch9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.185 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 13.6 W/kg
SAR(1 g) = 6.02 W/kg; SAR(10 g) = 2.65 W/kg
Maximum value of SAR (measured) = 7.01 W/kg



0 dB = 7.01 W/kg = 8.46 dBW/kg

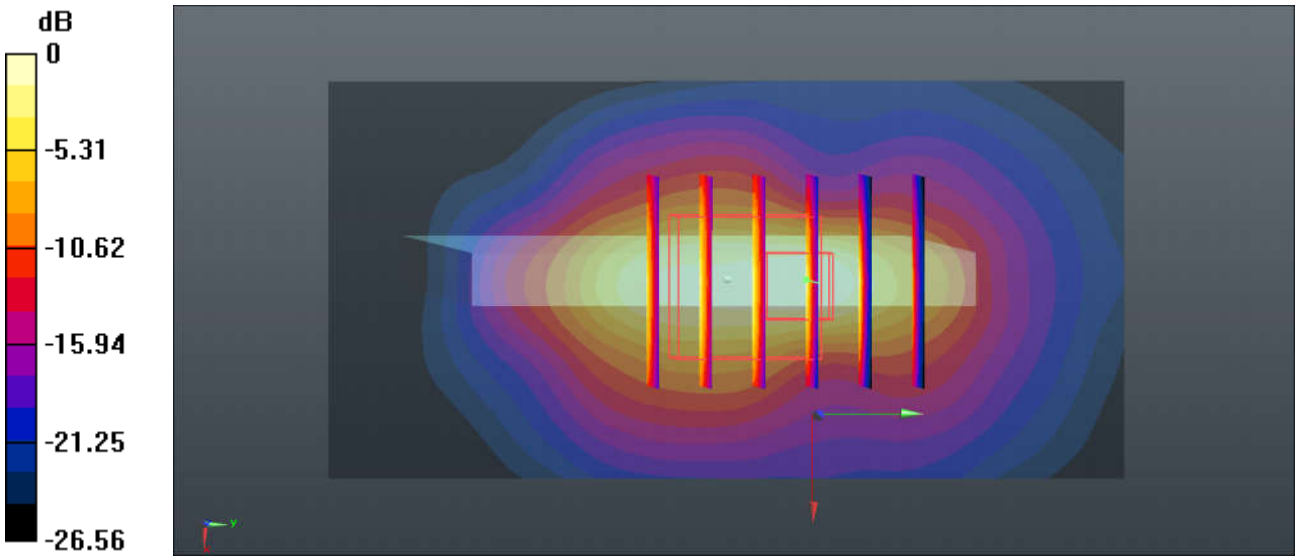
43_WCDMA IV_RMC 12.2Kbps_Bottom Side_0mm_Ch1312

Communication System: UID 0, WCDMA (0); Frequency: 1712.4 MHz;Duty Cycle: 1:1
Medium: HSL_1750 Medium parameters used: f = 1712.4 MHz; σ = 1.326 S/m; ε_r = 41.509; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.59, 5.59, 5.59); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch1312/Area Scan (41x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 9.13 W/kg

Ch1312/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.577 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 15.1 W/kg
SAR(1 g) = 4.93 W/kg; SAR(10 g) = 2.16 W/kg
Maximum value of SAR (measured) = 8.49 W/kg



0 dB = 8.49 W/kg = 9.29 dBW/kg

44_WCDMA V_RMC 12.2Kbps_Back_0mm_Ch4182

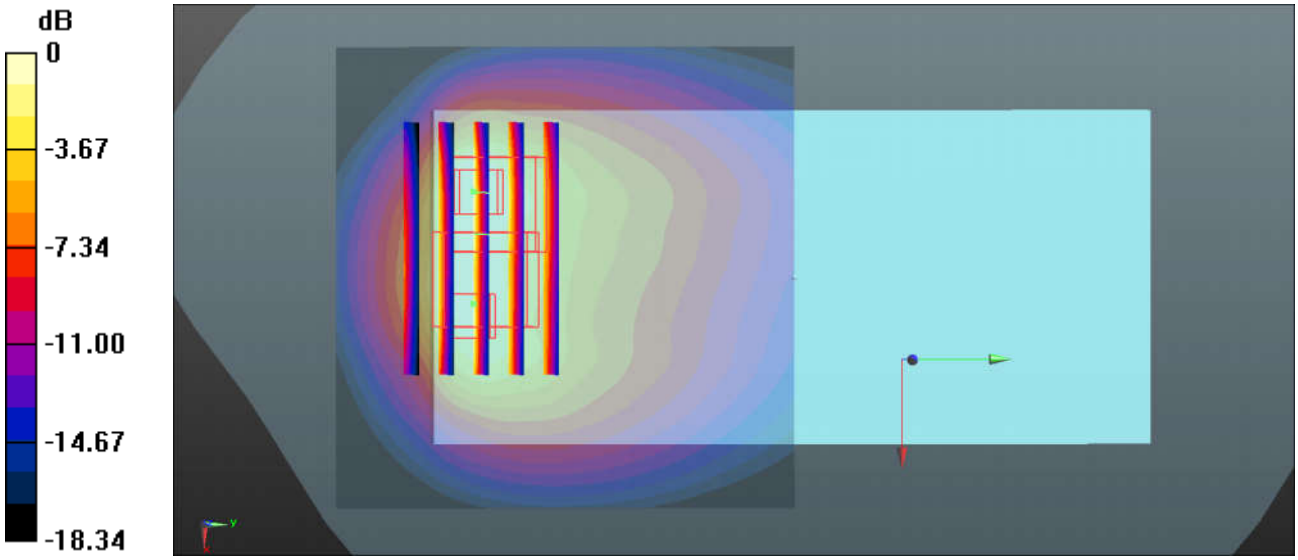
Communication System: UID 0, WCDMA (0); Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 836.4 MHz; σ = 0.913 S/m; ε_r = 42.066; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(6.38, 6.38, 6.38); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch4182/Area Scan (71x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 6.20 W/kg

Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.43 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 12.9 W/kg
SAR(1 g) = 4.01 W/kg; SAR(10 g) = 1.79 W/kg
Maximum value of SAR (measured) = 5.79 W/kg

Ch4182/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.43 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 8.55 W/kg
SAR(1 g) = 3.09 W/kg; SAR(10 g) = 1.48 W/kg
Maximum value of SAR (measured) = 4.53 W/kg



0 dB = 4.53 W/kg = 6.56 dBW/kg

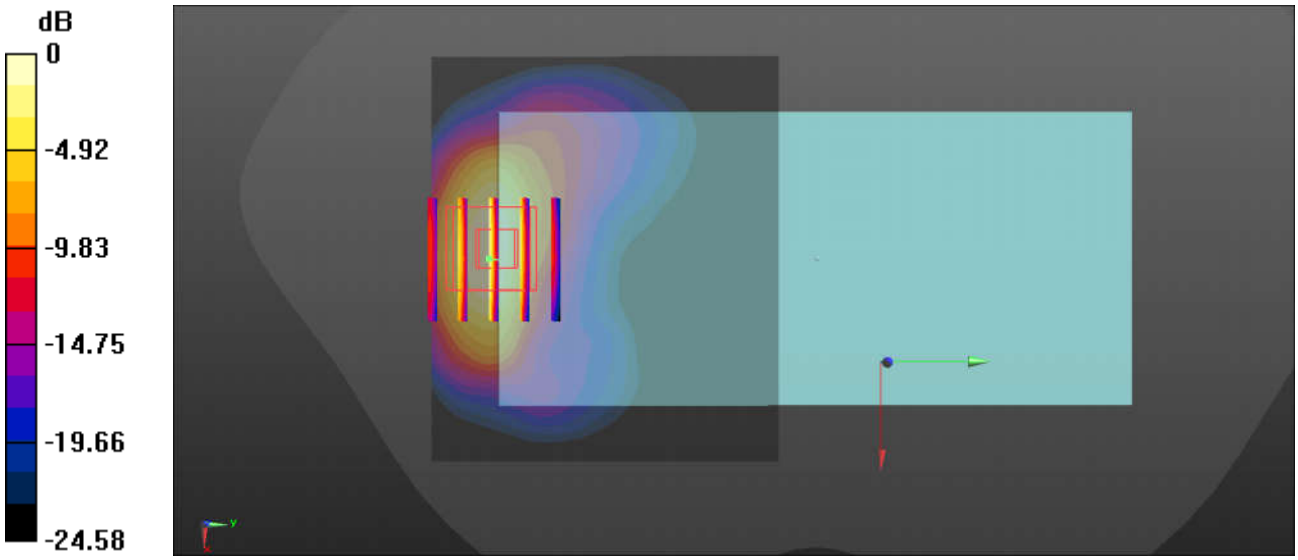
45_LTE Band 2_20M_QPSK_1RB_0Offset_Front_0mm_Ch19100

Communication System: UID 0, LTE-FDD (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1900 MHz; σ = 1.409 S/m; ε_r = 39.62; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.35, 5.35, 5.35); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch19100/Area Scan (71x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 9.83 W/kg

Ch19100/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.173 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 15.7 W/kg
SAR(1 g) = 7.31 W/kg; SAR(10 g) = 3.27 W/kg
Maximum value of SAR (measured) = 9.45 W/kg



0 dB = 9.45 W/kg = 9.75 dBW/kg

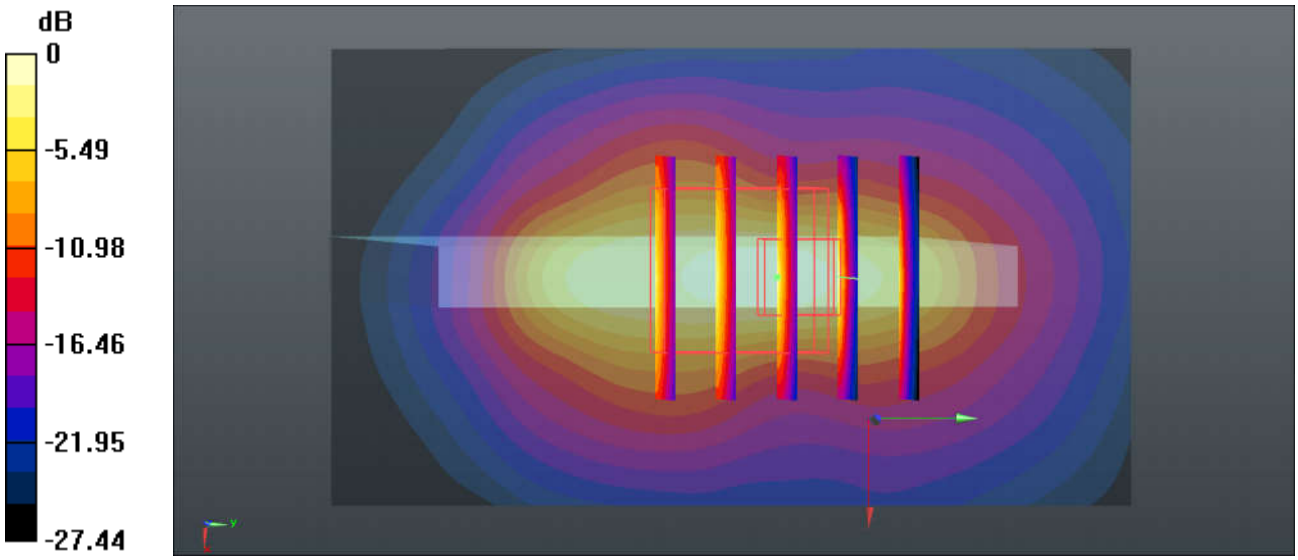
46_LTE Band 4_20M_QPSK_100RB_0Offset_Bottom Side_0mm_Ch20175

Communication System: UID 0, LTE-FDD (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium: HSL_1750 Medium parameters used: f = 1733 MHz; σ = 1.349 S/m; ε_r = 41.428; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(5.59, 5.59, 5.59); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch20175/Area Scan (41x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 10.8 W/kg

Ch20175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.281 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 19.2 W/kg
SAR(1 g) = 5.91 W/kg; SAR(10 g) = 2.37 W/kg
Maximum value of SAR (measured) = 11.1 W/kg



0 dB = 11.1 W/kg = 10.45 dBW/kg

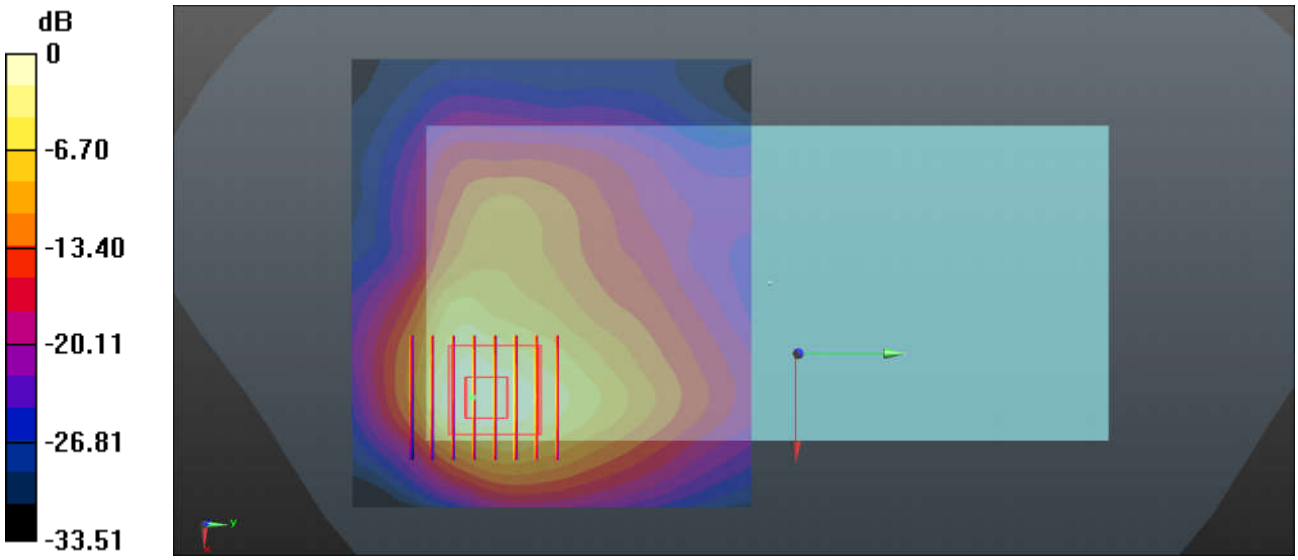
47_LTE Band 7_20M QPSK_50RB_24Offset_Back_0mm_Ch21350

Communication System: UID 0, LTE-FDD (0); Frequency: 2560 MHz;Duty Cycle: 1:1
Medium: HSL_2600 Medium parameters used: f = 2560 MHz; σ = 2.009 S/m; ε_r = 37.92; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃； Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(4.58, 4.58, 4.58); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch21350/Area Scan (91x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 14.5 W/kg

Ch21350/Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.499 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 15.5 W/kg
SAR(1 g) = 6.12 W/kg; SAR(10 g) = 2.67 W/kg
Maximum value of SAR (measured) = 11.3 W/kg



0 dB = 11.3 W/kg = 10.53 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.11.18

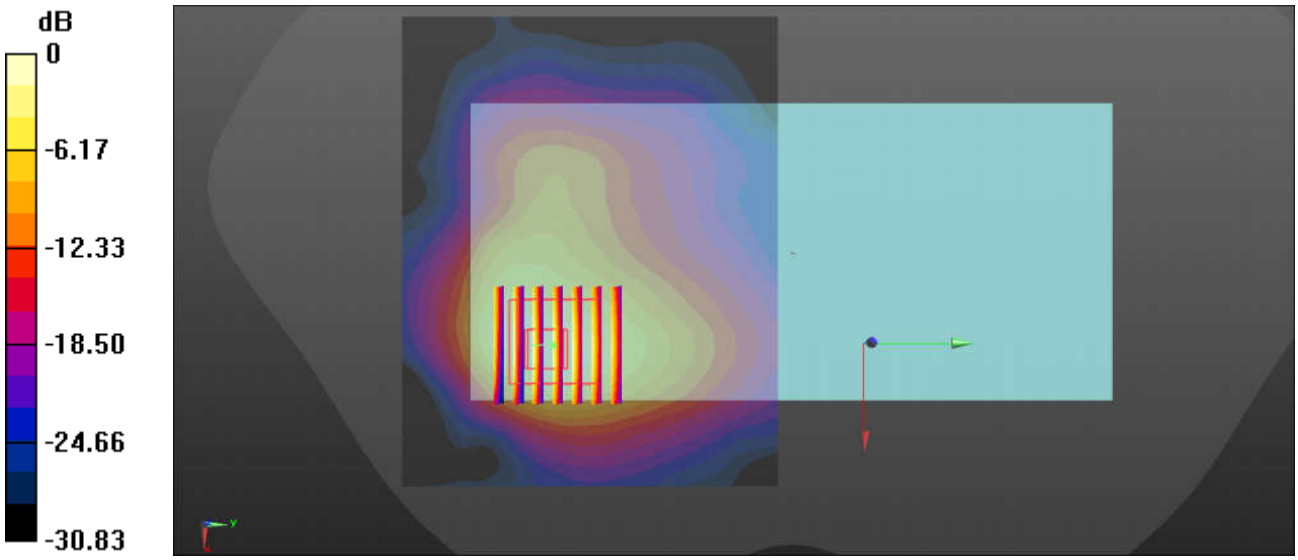
48_LTE Band 41_20M QPSK_1RB_0Offset_Back_0mm_Ch41140

Communication System: UID 0, LTE-TDD (0); Frequency: 2645 MHz;Duty Cycle: 1:1.59
Medium: HSL_2600 Medium parameters used: f = 2645 MHz; σ = 2.111 S/m; ε_r = 37.575; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃； Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: ES3DV3 - SN3279; ConvF(4.58, 4.58, 4.58); Calibrated: 2019.3.4
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2019.4.17
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch41140/Area Scan (101x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 6.93 W/kg

Ch41140/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 12.9 W/kg
SAR(1 g) = 5.16 W/kg; SAR(10 g) = 2.25 W/kg
Maximum value of SAR (measured) = 6.69 W/kg



0 dB = 6.69 W/kg = 8.25 dBW/kg

Appendix C. Supplemental Tuner Head & Body SAR Results

The results are shown as follows.

Head SAR

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																					
									Auto-Tune	0	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140
WCDMA B2	RMC 12.2Kbps	9262	1852.4	N/A	N/A	Left Cheek	0mm	0.110	0.128	0.026	0.079	0.070	0.093	0.106	0.105	0.121	0.106	0.084	0.125	0.114	0.103	0.100	0.068	0.123	0.117	0.107	0.110	0.097	0.084	0.073

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																					
									Auto-Tune	1	8	15	22	29	36	43	50	57	64	71	78	85	92	99	106	113	120	127	134	141
WCDMA B4	RMC 12.2Kbps	1513	1752.6	N/A	N/A	Right Cheek	0mm	0.078	0.096	0.047	0.075	0.076	0.082	0.081	0.090	0.032	0.076	0.062	0.082	0.049	0.038	0.076	0.064	0.086	0.053	0.040	0.051	0.040	0.027	0.022

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																					
									Auto-Tune	2	9	16	23	30	37	44	51	58	65	72	79	86	93	100	107	114	121	128	135	142
WCDMA B5	RMC 12.2Kbps	4233	846.6	N/A	N/A	Right Cheek	0mm	0.290	0.322	0.061	0.176	0.182	0.252	0.319	0.262	0.032	0.222	0.156	0.103	0.144	0.163	0.200	0.190	0.226	0.017	0.008	0.185	0.114	0.112	0.104

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																					
									Auto-Tune	3	10	17	24	31	38	45	52	59	66	73	80	87	94	101	108	115	122	129	136	143
LTE B2	QPSK	18900	1880	1	0	Left Cheek	0mm	0.121	0.141	0.063	0.095	0.093	0.112	0.132	0.138	0.058	0.033	0.123	0.099	0.072	0.131	0.127	0.123	0.122	0.088	0.095	0.022	0.133	0.121	0.103

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																					
									Auto-Tune	4	11	18	25	32	39	46	53	60	67	74	81	88	95	102	109	116	123	130	137	
LTE B5	QPSK	20525	836.5	1	0	Right Cheek	0mm	0.255	0.284	0.091	0.225	0.227	0.029	0.260	0.217	0.108	0.072	0.179	0.280	0.024	0.025	0.242	0.189	0.239	0.067	0.070	0.044	0.094	0.002	

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																					
									Auto-Tune	5	12	19	26	33	40	47	54	61	68	75	82	89	96	103	110	117	124	131	138	
LTE B26	QPSK	26965	841.5	1	37	Right Cheek	0mm	0.153	0.168	0.010	0.093	0.139	0.086	0.024	0.151	0.134	0.088	0.124	0.126	0.117	0.064	0.062	0.115	0.135	0.115	0.097	0.066	0.024	0.022	

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																					
									Auto-Tune	6	13	20	27	34	41	48	55	62	69	76	83	90	97	104	111	118	125	132	139	
LTE B4	QPSK	20175	1732.5	1	0	Right Cheek	0mm	0.097	0.115	0.082	0.083	0.092	0.107	0.088	0.057	0.075	0.059	0.065	0.040	0.034	0.071	0.055	0.069	0.043	0.032	0.038	0.029	0.032	0.019	

Body SAR

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																					
									Auto-Tune	0	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140
WCDMA B2	RMC12.2K	9538	1907.6	N/A	N/A	Bottom Side	5mm	0.94	1.340	0.228	0.717	0.651	0.826	0.908	0.783	1.149	0.937	0.812	1.058	1.140	1.100	0.925	0.636	1.067	1.152	1.143	1.105	1.060	0.980	0.911

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																					
									Auto-Tune	1	8	15	22	29	36	43	50	57	64	71	78	85	92	99	106	113	120	127	134	141
WCDMA B4	RMC12.2K	1413	1732.6	N/A	N/A	Back	5mm	1.02	1.430	0.492	0.737	0.759	0.789	0.693	0.808	0.333	0.667	0.545	1.002	0.368	0.297	0.646	0.570	1.070	0.385	0.301	0.390	0.317	0.228	0.189

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																					
									Auto-Tune	2	9	16	23	30	37	44	51	58	65	72	79	86	93	100	107	114	121	128	135	142
WCDMA B5	RMC12.2K	4182	836.4	N/A	N/A	Bottom Side	5mm	0.967	1.440	0.222	0.714	0.715	1.020	1.342	0.932	0.137	0.937	0.663	0.353	0.626	0.711	0.886	0.850	0.791	0.072	0.044	0.788	0.507	0.499	0.463

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																					
									Auto-Tune	3	10	17	24	31	38	45	52	59	66	73	80	87	94	101	108	115	122	129	136	143
LTE B2	QPSK	19100	1900	50	24	Back	5mm	1.09	1.540	0.615	0.888	0.880	1.034	1.224	1.266	0.578	1.147	1.174	0.934	0.584	1.338	1.166	1.187	1.160	0.746	0.970	0.206	1.306	1.236	1.099

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																					
									Auto-Tune	4	11	18	25	32	39	46	53	60	67	74	81	88	95	102	109	116	123	130	137	
LTE B5	QPSK	20525	836.5	1	0	Back	5mm	0.843	1.130	0.326	0.881	0.819	0.155	1.065	0.947	0.423	0.203	0.721	1.076	0.131	0.088	1.016	0.770	0.964	0.333	0.298	0.130	0.444	0.020	

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																					
									Auto-Tune	5	12	19	26	33	40	47	54	61	68	75	82	89	96	103	110	117	124	131	138	
LTE B26	QPSK	26965	841.5	1	37	Back	5mm	0.653	0.897	0.252	0.187	0.559	0.259	0.722	0.840	0.364	0.180	0.628	0.755	0.379	0.156	0.118	0.623	0.701	0.608	0.279	0.142	0.054	0.055	

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																					
									Auto-Tune	6	13	20	27	34	41	48	55	62	69	76	83	90	97	104	111	118	125	132	139	
LTE B4	QPSK	20175	1732.5	50	24	Back	5mm	1.02	1.350	0.693	0.730	0.789	0.997	1.008	0.520	0.632	0.529	0.570	0.395	0.373	0.593	0.514	0.589	0.413	0.333	0.374	0.309	0.363	0.246	

Verified single SAR >1.2W/Kg

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																				
									Auto-Tune	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
WCDMA B2	RMC12.2K	9538	1907.6	N/A	N/A	Bottom Side	5mm	0.94	1.340	0.228	0.334	0.489	0.533	0.578	0.635	0.637	0.717	0.708	0.736	0.751	0.769	0.389	0.555	0.651	0.718	0.718	0.755	0.792	0.797	0.818
										21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
										0.826	0.832	0.845	0.871	0.415	0.553	0.658	0.908	0.986	0.991	1.026	1.041	1.069	0.531	0.783	0.860	1.012	1.076	1.084	1.118	1.128
										42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62
										1.149	0.230	0.365	0.499	0.844	0.894	0.930	0.937	0.952	0.957	0.950	0.267	0.411	0.662	0.812	0.868	0.908	0.999	1.008	1.040	1.043
										63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83
										1.058	0.382	0.548	0.797	1.017	1.105	1.109	1.140	1.151	1.168	0.474	0.639	0.859	1.033	1.100	1.131	1.140	1.158	0.226	0.587	0.831
										84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104
										0.925	0.933	0.965	0.979	0.971	0.261	0.399	0.636	0.890	0.995	1.002	1.029	1.041	1.056	1.067	0.368	0.770	0.998	1.090	1.124	1.136
										105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125
										1.152	1.271	0.456	0.619	0.839	1.136	1.130	1.143	1.163	0.149	0.849	1.060	1.039	1.076	1.105	1.115	1.120	0.171	0.277	0.512	0.850
										126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143			
										1.060	1.042	1.108	1.136	1.165	0.237	0.590	0.980	1.043	1.064	1.088	0.293	0.420	0.819	0.911	0.949	0.963	0.987			

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																				
									Auto-Tune	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
WCDMA B4	RMC12.2K	1413	1732.6	N/A	N/A	Back	5mm	1.02	1.430	0.414	0.492	0.591	0.620	0.642	0.681	0.685	0.744	0.737	0.760	0.773	0.799	0.678	0.725	0.745	0.759	0.759	0.768	0.777	0.779	0.784
										21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
										0.787	0.789	0.793	0.798	1.270	1.109	0.983	0.753	0.693	0.682	0.656	0.643	0.611	1.019	0.887	0.808	0.628	0.573	0.560	0.531	0.517
										42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62
										0.484	0.333	0.404	0.456	0.587	0.611	0.633	0.649	0.667	0.678	0.707	0.464	0.495	0.529	0.541	0.545	0.550	0.559	0.561	0.566	0.571
										63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83
										0.576	1.002	0.764	0.566	0.442	0.408	0.394	0.375	0.368	0.346	1.111	0.813	0.527	0.372	0.325	0.297	0.287	0.266	0.343	0.501	0.591
										84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104
										0.636	0.646	0.670	0.681	0.720	0.482	0.513	0.543	0.570	0.578	0.584	0.586	0.587	0.591	0.602	1.070	0.617	0.485	0.441	0.422	0.414
										105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125
										0.404	0.385	1.166	0.896	0.590	0.333	0.334	0.322	0.301	0.186	0.332	0.367	0.368	0.374	0.382	0.390	0.417	0.262	0.279	0.296	0.308
										126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143			
										0.315	0.317	0.318	0.319	0.328	0.749	0.365	0.245	0.228	0.222	0.212	1.132	0.697	0.246	0.204	0.189	0.187	0.167			

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																				
									Auto-Tune	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
WCDMA B5	RMC12.2K	4182	836.4	N/A	N/A	Bottom Side	5mm	0.967	1.440	0.084	0.132	0.222	0.266	0.308	0.385	0.411	0.595	0.615	0.714	0.778	1.002	0.292	0.453	0.583	0.684	0.715	0.785	0.863	0.915	0.958
										21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
										0.982	0.996	1.020	1.144	0.170	0.322	0.509	1.250	1.350	1.342	1.294	1.266	1.057	0.086	0.260	0.389	0.932	1.147	1.175	1.157	1.126
										42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62
										0.902	0.087	0.137	0.189	0.481	0.561	0.660	0.780	0.871	0.937	1.218	0.191	0.283	0.449	0.574	0.622	0.663	0.814	0.856	0.922	0.945
										63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83
										1.002	0.172	0.353	0.853	1.274	1.115	1.015	0.889	0.833	0.626	0.086	0.176	0.513	1.205	1.070	0.778	0.711	0.477	0.094	0.255	0.493
										84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104
										0.669	0.754	0.886	0.951	1.261	0.203	0.296	0.466	0.724	0.850	0.900	0.941	0.964	0.996	1.103	0.151	0.791	1.308	1.185	1.020	0.967
										105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125
										0.908	0.691	0.072	0.149	0.450	0.848	0.866	0.790	0.537	0.044	0.241	0.376	0.397	0.437	0.486	0.534	0.788	0.089	0.133	0.216	0.356
										126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143			
										0.452	0.465	0.507	0.524	0.598	0.061	0.429	0.736	0.543	0.499	0.351	0.028	0.062	1.035	0.717	0.531	0.463	0.277			

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																				
									Auto-Tune	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
LTE B2	QPSK	19100	1900	50	24	Back	5mm	1.09	1.540	0.268	0.382	0.563	0.615	0.669	0.737	0.744	0.838	0.825	0.864	0.888	0.915	0.455	0.644	0.753	0.835	0.840	0.880	0.928	0.934	0.964
										21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
										0.975	0.987	1.002	1.034	0.500	0.662	0.785	1.079	1.167	1.177	1.224	1.241	1.272	0.652	0.938	1.024	1.190	1.266	1.282	1.303	1.325
										42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62
										1.360	0.271	0.426	0.578	0.991	1.050	1.095	1.122	1.131	1.140	1.147	0.317	0.483	0.774	0.940	1.013	1.059	1.174	1.192	1.235	1.257
										63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83
										1.280	0.465	0.653	0.934	1.186	1.285	1.287	1.340	1.360	1.374	0.584	0.770	1.011	1.192	1.277	1.311	1.322	1.338	0.269	0.688	0.974
										84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104
										1.096	1.100	1.150	1.166	1.180	0.317	0.473	0.745	1.038	1.169	1.187	1.227	1.239	1.267	1.286	0.453	0.911	1.160	1.278	1.311	1.338
										105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125
										1.355	1.370	0.562	0.746	0.982	1.308	1.308	1.321	1.341	0.177	0.970	1.236	1.198	1.254	1.285	1.326	1.342	0.206	0.329	0.586	0.965
										126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143			
										1.218	1.184	1.287	1.306	1.376	0.289	0.682	1.108	1.179	1.201	1.236	0.363	0.503	0.918	1.013	1.045	1.067	1.099			

Mode	Service/ Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																				
									Auto-Tune	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
LTE B4	QPSK	20175	1732.5	50	24	Back	5mm	1.02	1.350	0.423	0.505	0.601	0.633	0.649	0.692	0.693	0.747	0.742	0.765	0.784	0.814	0.691	0.730	0.756	0.773	0.774	0.780	0.786	0.785	0.789
										21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
										0.789	0.791	0.793	0.800	1.274	1.108	0.997	0.759	0.696	0.691	0.659	0.646	0.611	1.008	0.885	0.811	0.641	0.574	0.567	0.538	0.520
										42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62
										0.486	0.335	0.405	0.461	0.588	0.610	0.632	0.648	0.665	0.677	0.709	0.469	0.497	0.529	0.545	0.551	0.555	0.564	0.565	0.568	0.570
										63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83
										0.574	1.011	0.767	0.567	0.445	0.403	0.395	0.376	0.367	0.347	1.106	0.810	0.529	0.373	0.324	0.296	0.286	0.266	0.346	0.502	0.593
										84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104
										0.637	0.648	0.671	0.682	0.720	0.488	0.514	0.548	0.575	0.579	0.583	0.585	0.588	0.589	0.604	1.066	0.623	0.489	0.442	0.421	0.413
										105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125
										0.405	0.386	1.161	0.899	0.593	0.333	0.333	0.325	0.300	0.187	0.333	0.367	0.367	0.374	0.383	0.390	0.416	0.263	0.279	0.295	0.309
										126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143			
										0.315	0.317	0.319	0.320	0.329	0.755	0.363	0.244	0.228	0.221	0.210	1.113	0.702	0.246	0.204	0.188	0.180	0.166			

Appendix D. DASY Calibration Certificate

The DASY calibration certificates are shown as follows.

In Collaboration with
speag
CALIBRATION LABORATORY

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
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中国认可
国际互认
校准
CALIBRATION
CNAS L0570

Client **Sporton** **Certificate No: Z19-60082**

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 4d151
Calibration Procedure(s)	FF-Z11-003-01 Calibration Procedures for dipole validation kits
Calibration date:	March 27, 2019

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 NRP2	106277	20-Aug-18 (CTTL, No.J18X06862)	Aug-19
Power sensor NRP8S	104291	20-Aug-18 (CTTL, No.J18X06862)	Aug-19
Reference Probe EX3DV4	SN 3617	31-Jan-19(SPEAG,No.EX3-3617_Jan19)	Jan-20
DAE4	SN 1331	06-Feb-19(SPEAG,No.DAE4-1331_Feb19)	Feb-20
Secondary Standards	**ID #**	**Cal Date(Calibrated by, Certificate No.)**	**Scheduled Calibration**
Signal Generator E4438C	MY49071430	23-Jan-19 (CTTL, No.J19X00336)	Jan-20
NetworkAnalyzer E5071C	MY46110673	24-Jan-19 (CTTL, No.J19X00547)	Jan-20

	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: March 30, 2019

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

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Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013

b) IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016

c) IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010

d) KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

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 ± 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 ± 0.2) °C	42.7 ± 6 %	0.93 mho/m ± 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	2.36 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**9.30 W/kg ± 18.8 % (k=2)**
SAR averaged over 10 cm^3 (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	1.56 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**6.16 W/kg ± 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 ± 0.2) °C	56.7 ± 6 %	0.94 mho/m ± 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	2.32 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**9.53 W /kg ± 18.8 % (k=2)**
SAR averaged over 10 cm^3 (10 g) of Body TSL	Condition	
SAR measured	250 mW input power	1.52 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**6.20 W/kg ± 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	50.8Ω- 3.28jΩ
Return Loss	- 29.5dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.7Ω- 3.98jΩ
Return Loss	- 25.5dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.253 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
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DASY5 Validation Report for Head TSL Date: 03.26.2019

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d151

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

Medium parameters used: f = 835 MHz; σ = 0.925 S/m; ε_r = 42.68; ρ = 1000 kg/m3

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3617; ConvF(9.75, 9.75, 9.75) @ 835 MHz; Calibrated: 1/31/2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1331; Calibrated: 2/6/2019
- Phantom: MFP_V5.1C ; Type: QD 000 P51CA; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

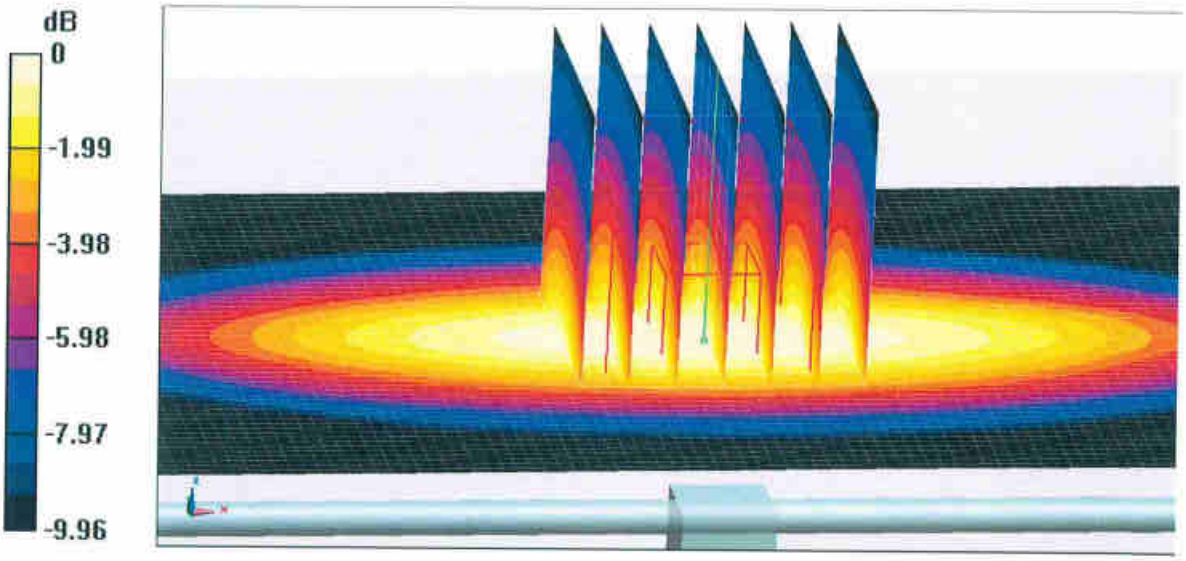
Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.34 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 3.55 W/kg

SAR(1 g) = 2.36 W/kg; SAR(10 g) = 1.56 W/kg

Maximum value of SAR (measured) = 3.14 W/kg



0 dB = 3.14 W/kg = 4.97 dBW/kg

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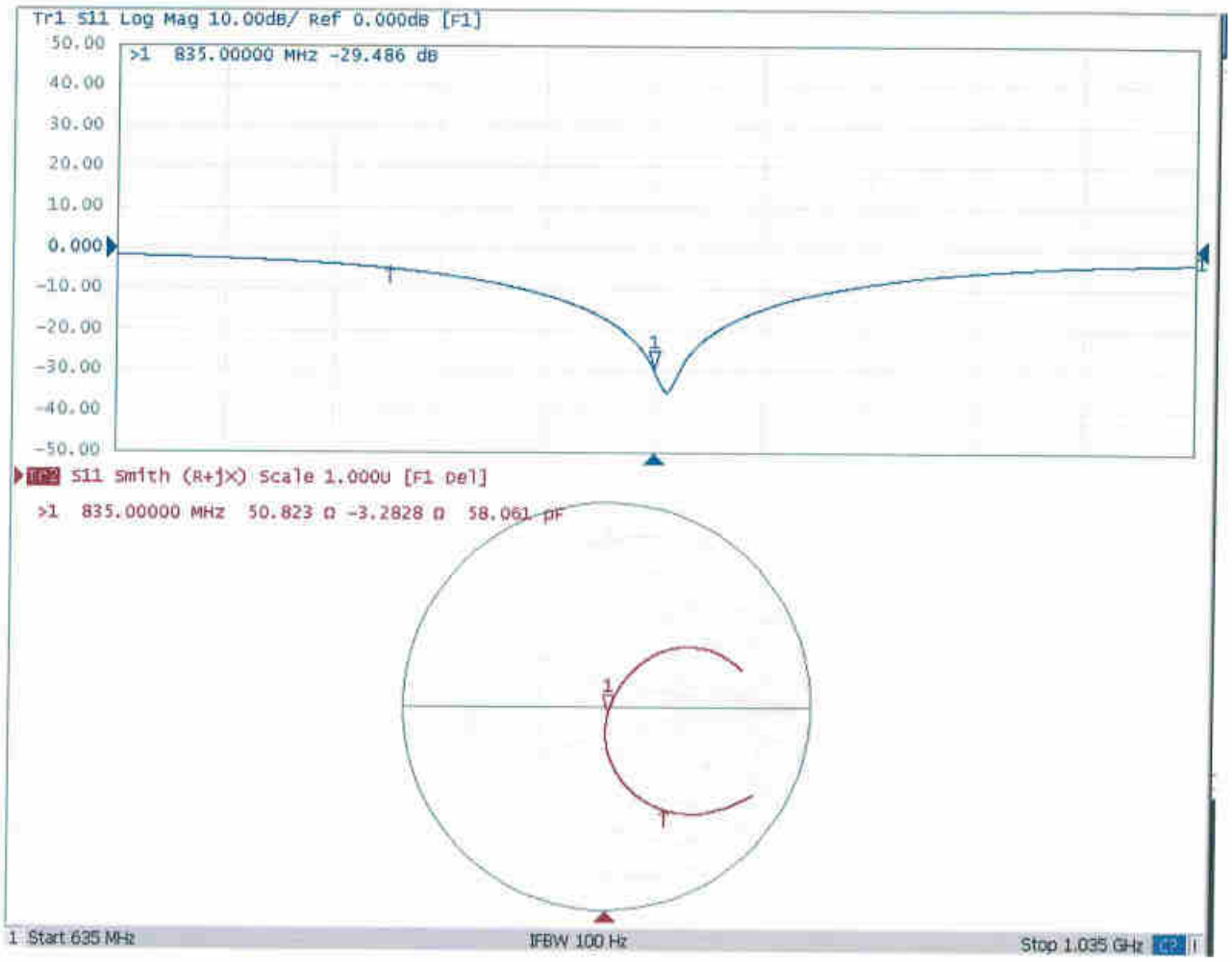
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL Date: 03.26.2019

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d151

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

Medium parameters used: f = 835 MHz; σ = 0.944 S/m; ε_r = 56.66; ρ = 1000 kg/m3

Phantom section: Center Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3617; ConvF(9.61, 9.61, 9.61) @ 835 MHz; Calibrated: 1/31/2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1331; Calibrated: 2/6/2019
- Phantom: MFP_V5.1C ; Type: QD 000 P51CA; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

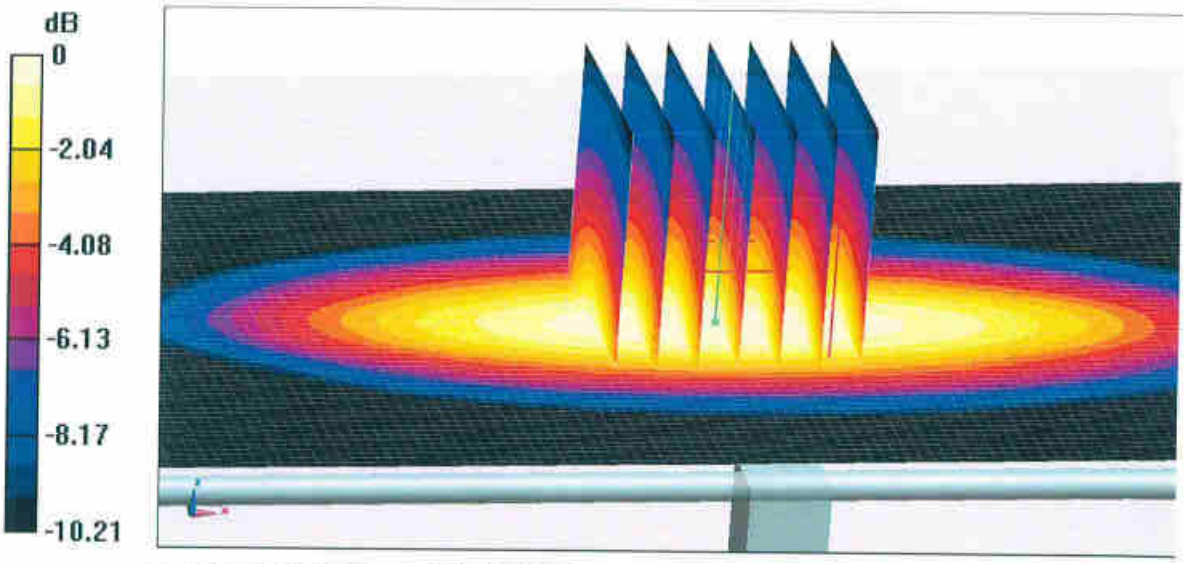
Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 56.03 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 3.53 W/kg

SAR(1 g) = 2.32 W/kg; SAR(10 g) = 1.52 W/kg

Maximum value of SAR (measured) = 3.12 W/kg



0 dB = 3.12 W/kg = 4.94 dBW/kg

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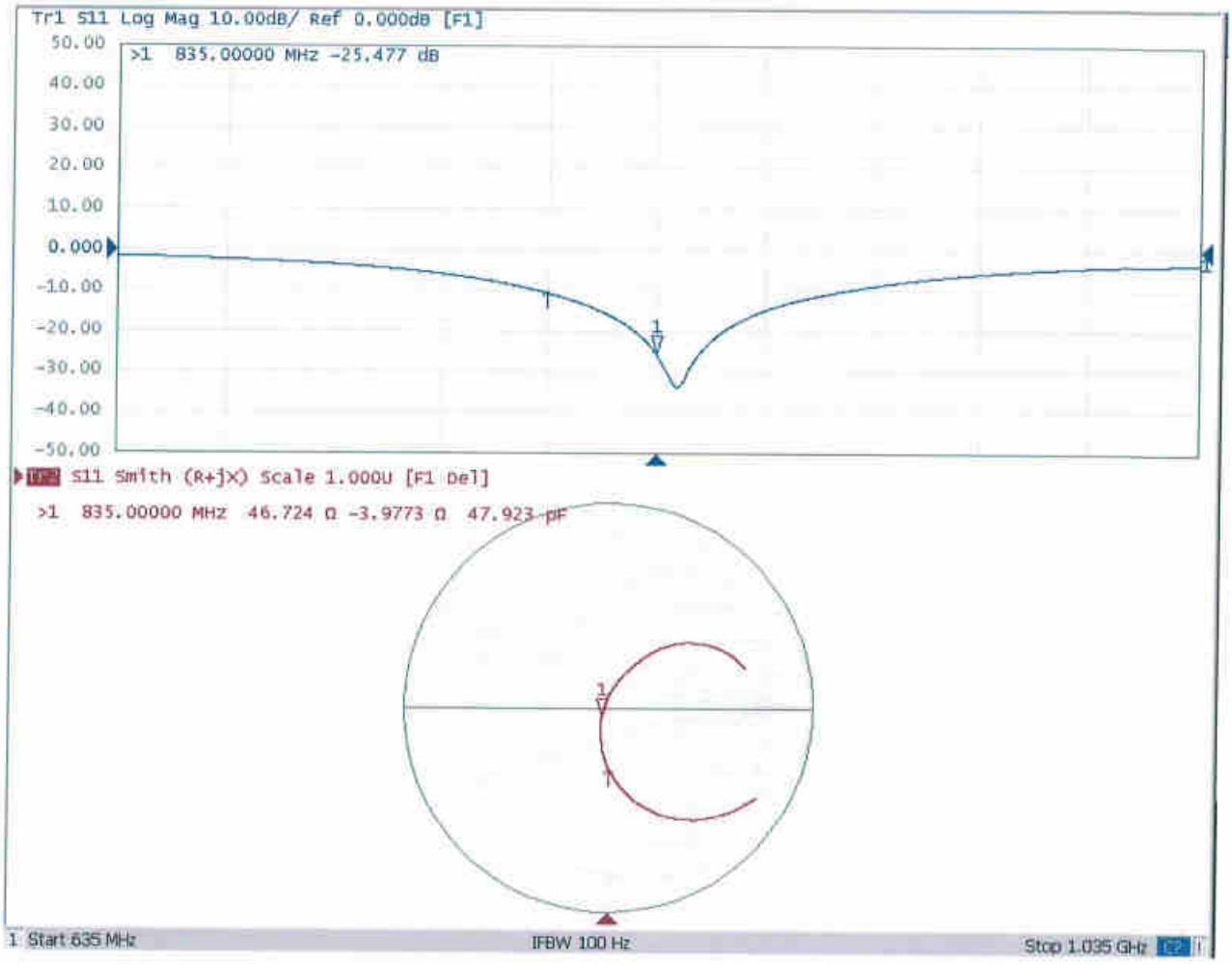
Impedance Measurement Plot for Body TSL



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CNAS L0570

Client **Sporton** **Certificate No: Z19-60084**

CALIBRATION CERTIFICATE

Object	D1750V2 - SN: 1090
Calibration Procedure(s)	FF-Z11-003-01 Calibration Procedures for dipole validation kits
Calibration date:	March 27, 2019

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 NRP2	106277	20-Aug-18 (CTTL, No.J18X06862)	Aug-19
Power sensor NRP8S	104291	20-Aug-18 (CTTL, No.J18X06862)	Aug-19
Reference Probe EX3DV4	SN 3617	31-Jan-19(SPEAG,No.EX3-3617_Jan19)	Jan-20
DAE4	SN 1331	06-Feb-19(SPEAG,No.DAE4-1331_Feb19)	Feb-20
Secondary Standards	**ID #**	**Cal Date(Calibrated by, Certificate No.)**	**Scheduled Calibration**
Signal Generator E4438C	MY49071430	23-Jan-19 (CTTL, No.J19X00336)	Jan-20
NetworkAnalyzer E5071C	MY46110673	24-Jan-19 (CTTL, No.J19X00547)	Jan-20

	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: March 29, 2019

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

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Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013

b) IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016

c) IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010

d) KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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