APPENDIX A: SAR TEST PLOTS

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PCTEST

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21483

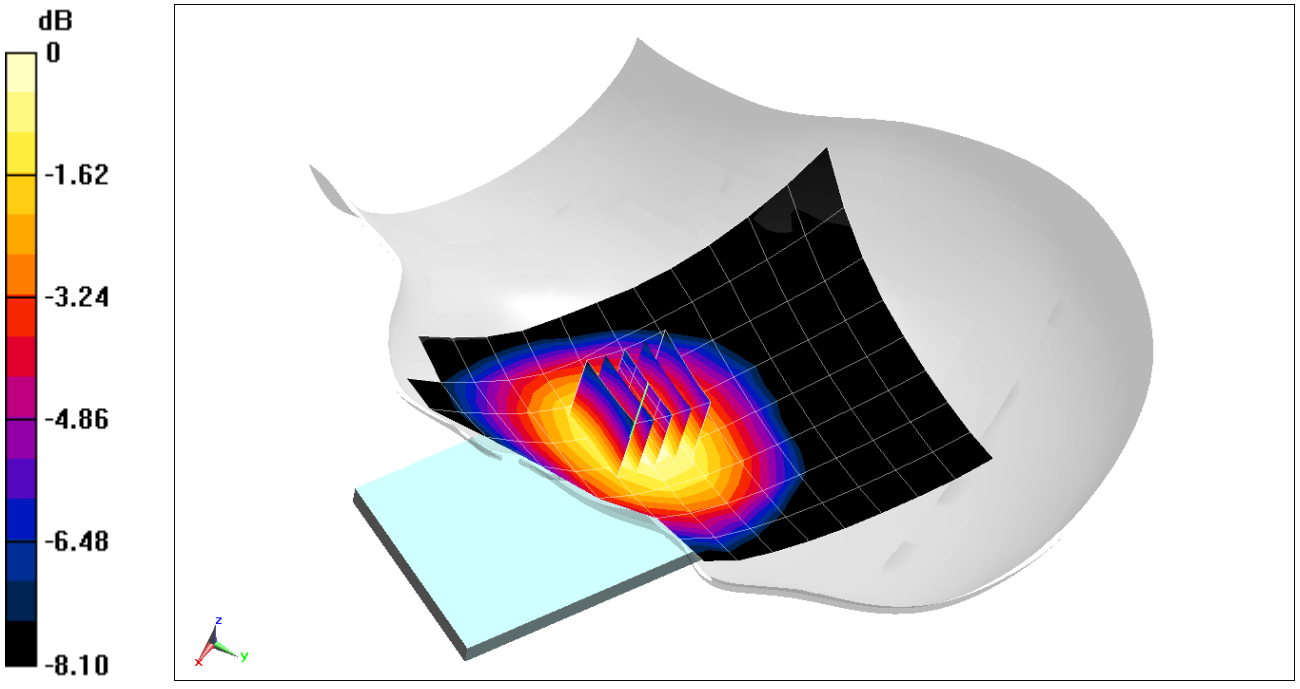
Communication System: UID 0, Cellular CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Head; Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.88 S/m; ε_r = 40.86; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01/11/2021; Ambient Temp: 22.3°C; Tissue Temp: 19.7°C

Probe: EX3DV4 - SN7308; ConvF(10.17, 10.17, 10.17) @ 820.1 MHz; Calibrated: 7/31/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/11/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: Cell. EVDO Rev. A, BC 10, Left Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.67 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.245 W/kg
SAR(1 g) = 0.190 W/kg



0 dB = 0.223 W/kg = -6.52 dBW/kg

PCTEST

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21483

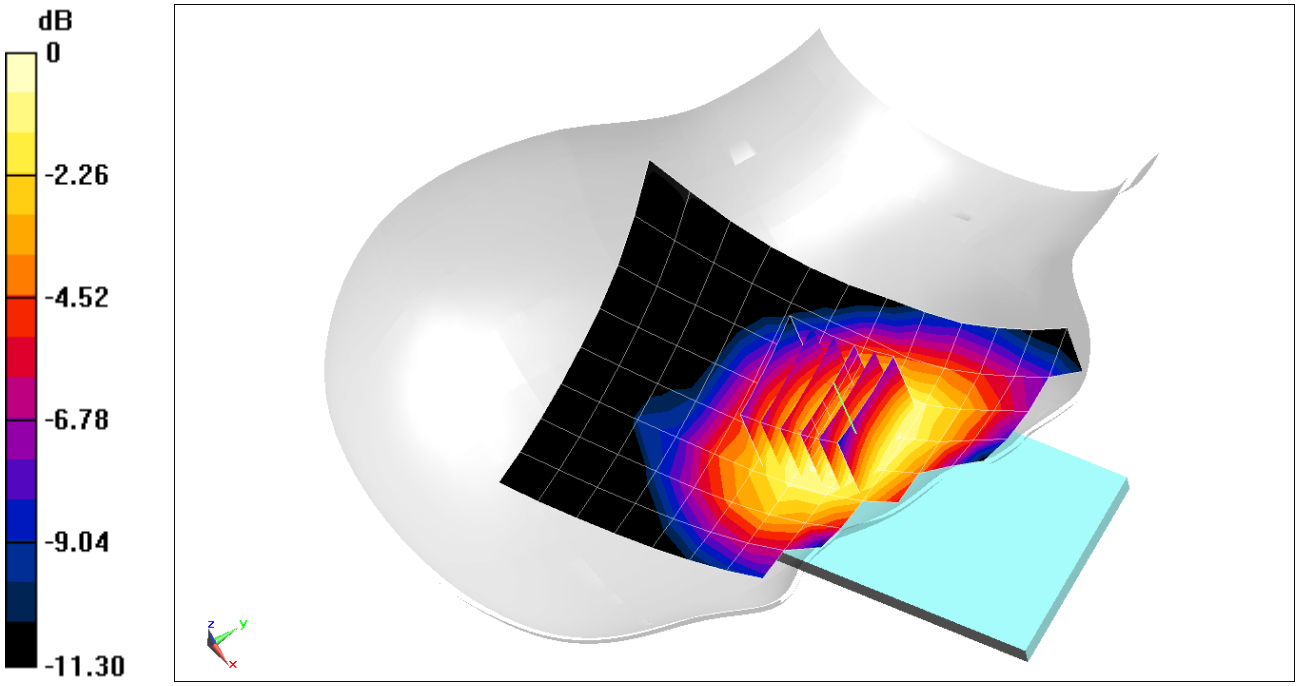
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Head; Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.897 S/m; ε_r = 40.628; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01/11/2021; Ambient Temp: 22.3°C; Tissue Temp: 19.7°C

Probe: EX3DV4 - SN7308; ConvF(10.17, 10.17, 10.17) @ 836.52 MHz; Calibrated: 7/31/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/11/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: Cell. EVDO Rev. A, BC 0, Right Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.08 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.289 W/kg
SAR(1 g) = 0.225 W/kg



0 dB = 0.265 W/kg = -5.77 dBW/kg

PCTEST

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21491

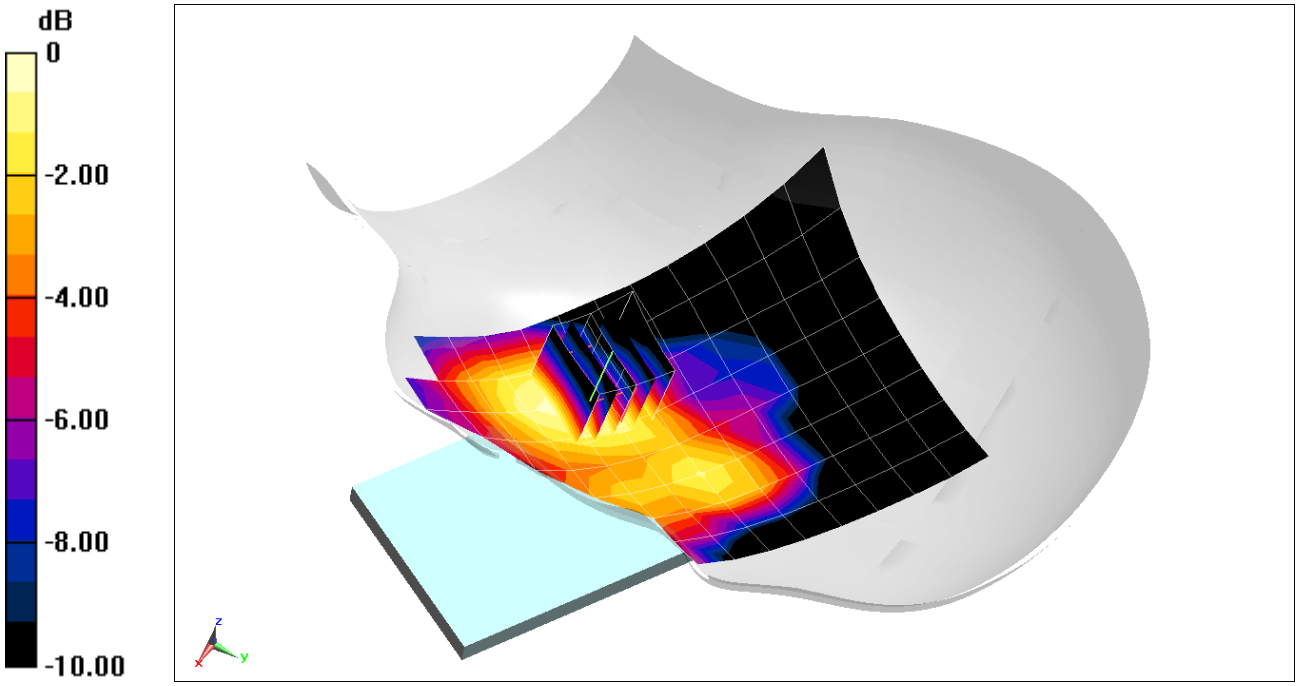
Communication System: UID 0, PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head; Medium parameters used:
f = 1880 MHz; σ = 1.383 S/m; ε_r = 39.773; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 12/30/2020; Ambient Temp: 23.0°C; Tissue Temp: 24.5°C

Probe: EX3DV4 - SN7539; ConvF(8.03, 8.03, 8.03) @ 1880 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/20/2020
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1966
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: PCS CDMA, Left Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.07 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.336 W/kg
SAR(1 g) = 0.214 W/kg



0 dB = 0.286 W/kg = -5.44 dBW/kg

PCTEST

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21483

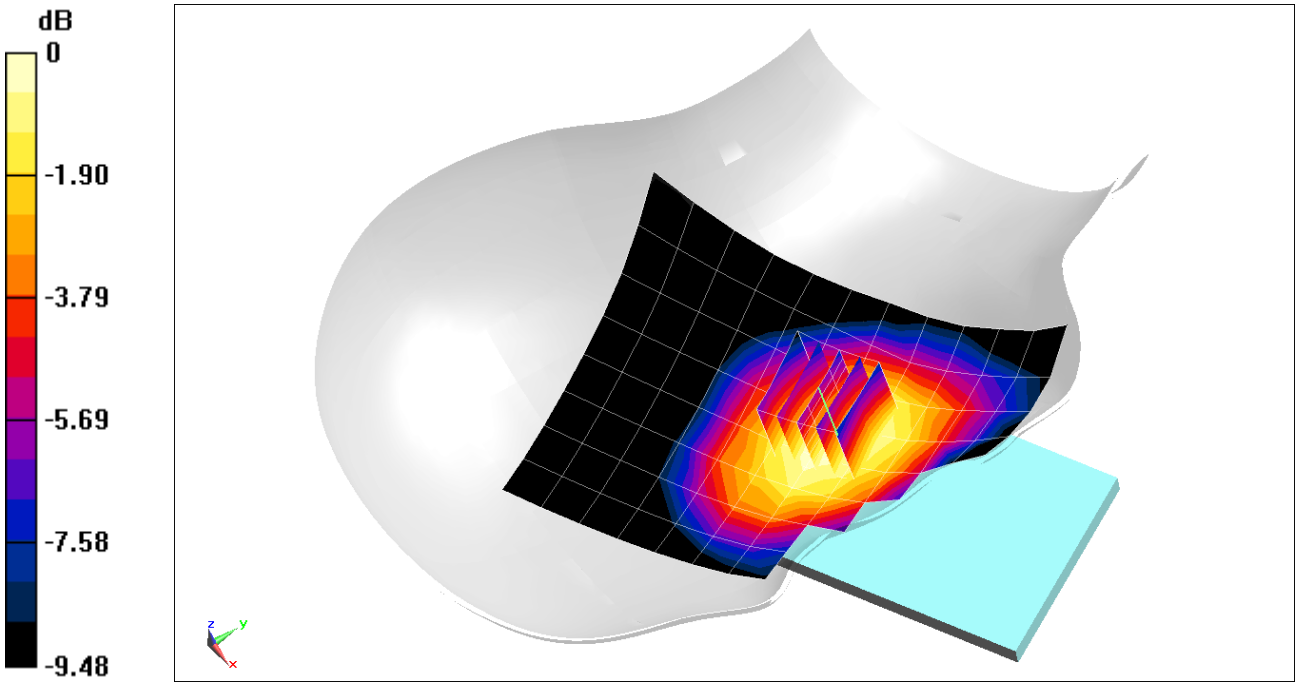
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:2.076
Medium: 835 Head; Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.897 S/m; ε_r = 40.627; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01/11/2021; Ambient Temp: 22.3°C; Tissue Temp: 19.7°C

Probe: EX3DV4 - SN7308; ConvF(10.17, 10.17, 10.17) @ 836.6 MHz; Calibrated: 7/31/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/11/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: GPRS 850, Right Head, Cheek, Mid.ch, 4 Tx slots

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.88 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.252 W/kg
SAR(1 g) = 0.194 W/kg



0 dB = 0.231 W/kg = -6.36 dBW/kg

PCTEST

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21491

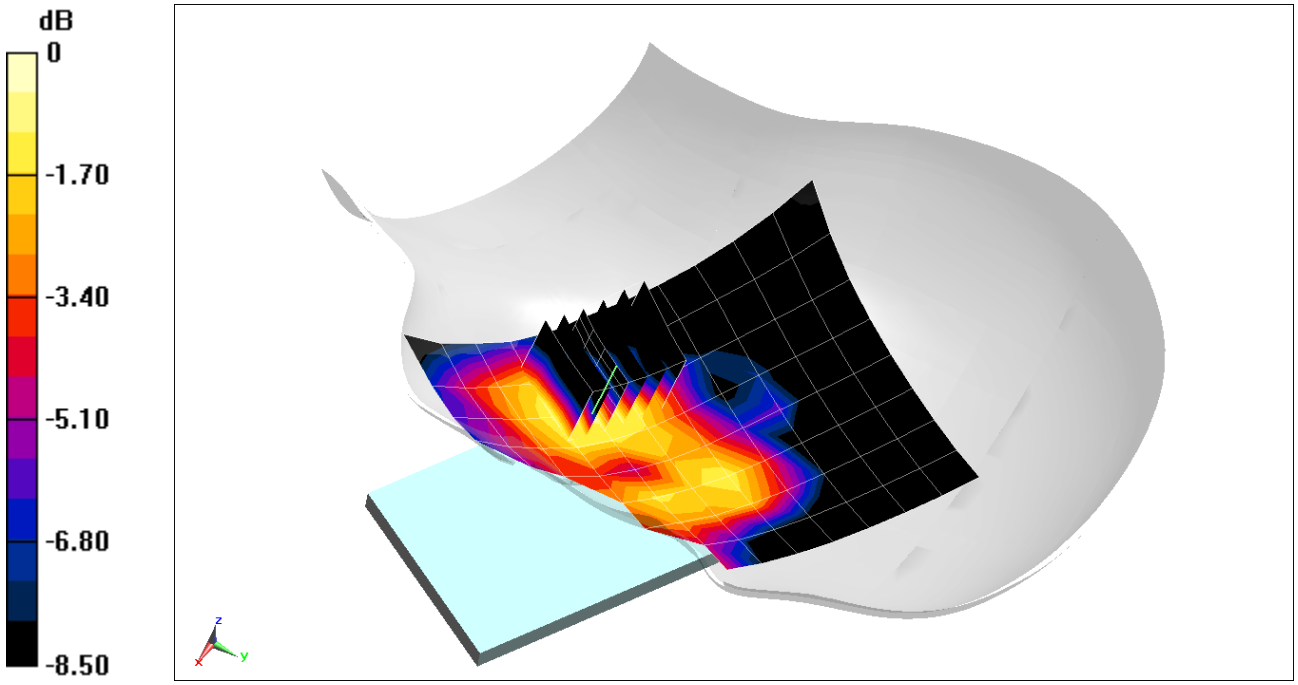
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:2.076
Medium: 1900 Head; Medium parameters used:
f = 1880 MHz; σ = 1.383 S/m; ε_r = 39.773; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 12/30/2020; Ambient Temp: 23.0°C; Tissue Temp: 24.5°C

Probe: EX3DV4 - SN7539; ConvF(8.03, 8.03, 8.03) @ 1880 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/20/2020
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1966
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: GPRS 1900, Left Head, Cheek, Mid.ch, 4 Tx slots

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.047 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.213 W/kg
SAR(1 g) = 0.131 W/kg



0 dB = 0.178 W/kg = -7.50 dBW/kg

PCTEST

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21483

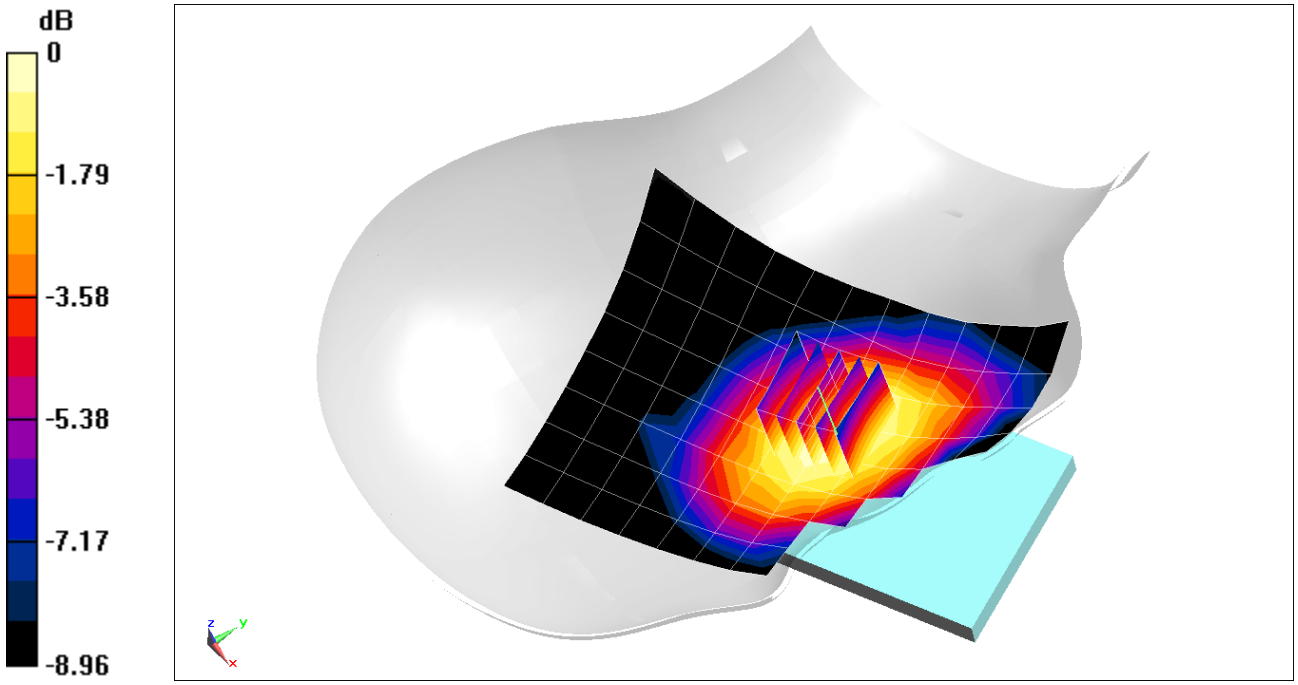
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Head; Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.884 S/m; ε_r = 39.815; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01/12/2021; Ambient Temp: 22.7°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7308; ConvF(10.17, 10.17, 10.17) @ 836.6 MHz; Calibrated: 7/31/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/11/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: UMTS 850, Right Head, Cheek, Mid.ch

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.13 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.245 W/kg
SAR(1 g) = 0.192 W/kg



0 dB = 0.227 W/kg = -6.44 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21491

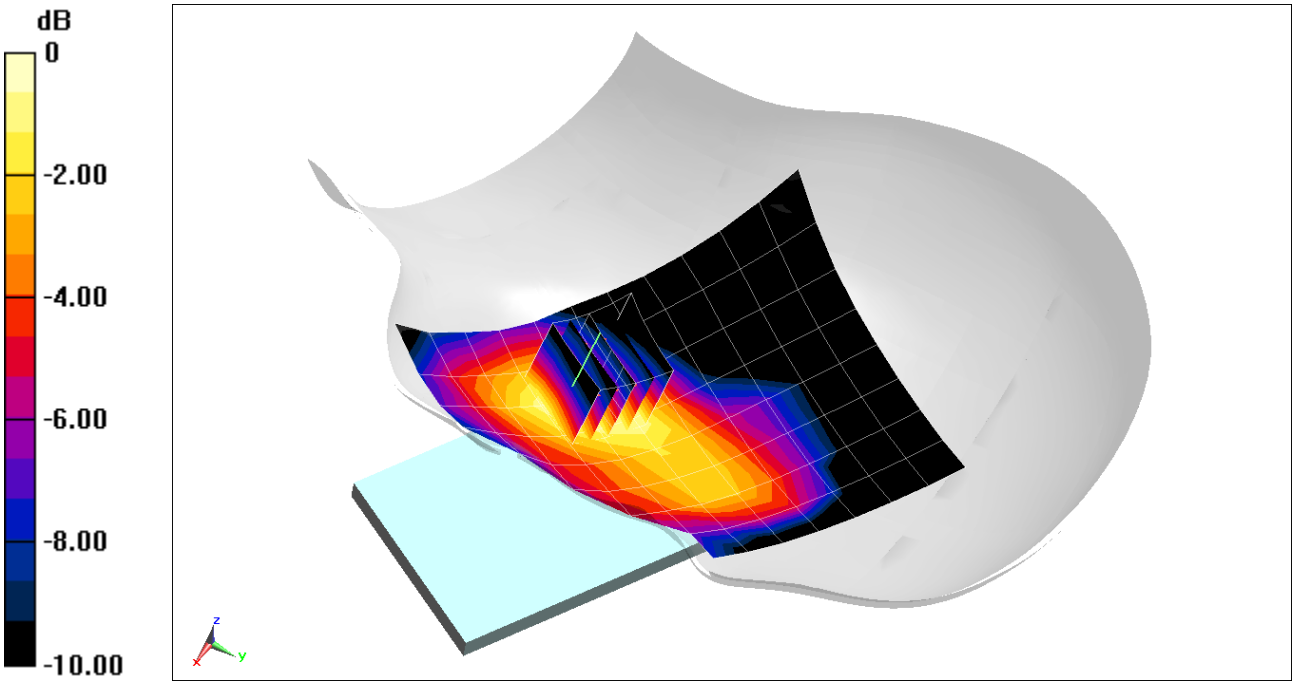
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Head; Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.379 S/m; ε_r = 39.665; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01/19/2021; Ambient Temp: 22.6°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7357; ConvF(8.69, 8.69, 8.69) @ 1732.4 MHz; Calibrated: 4/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/15/2020
Phantom: Twin-SAM V5.0 Left 30; Type: QD 000 P40 CD; Serial: 1715
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: UMTS 1750, Left Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.28 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.372 W/kg
SAR(1 g) = 0.234 W/kg



0 dB = 0.310 W/kg = -5.09 dBW/kg

PCTEST

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21491

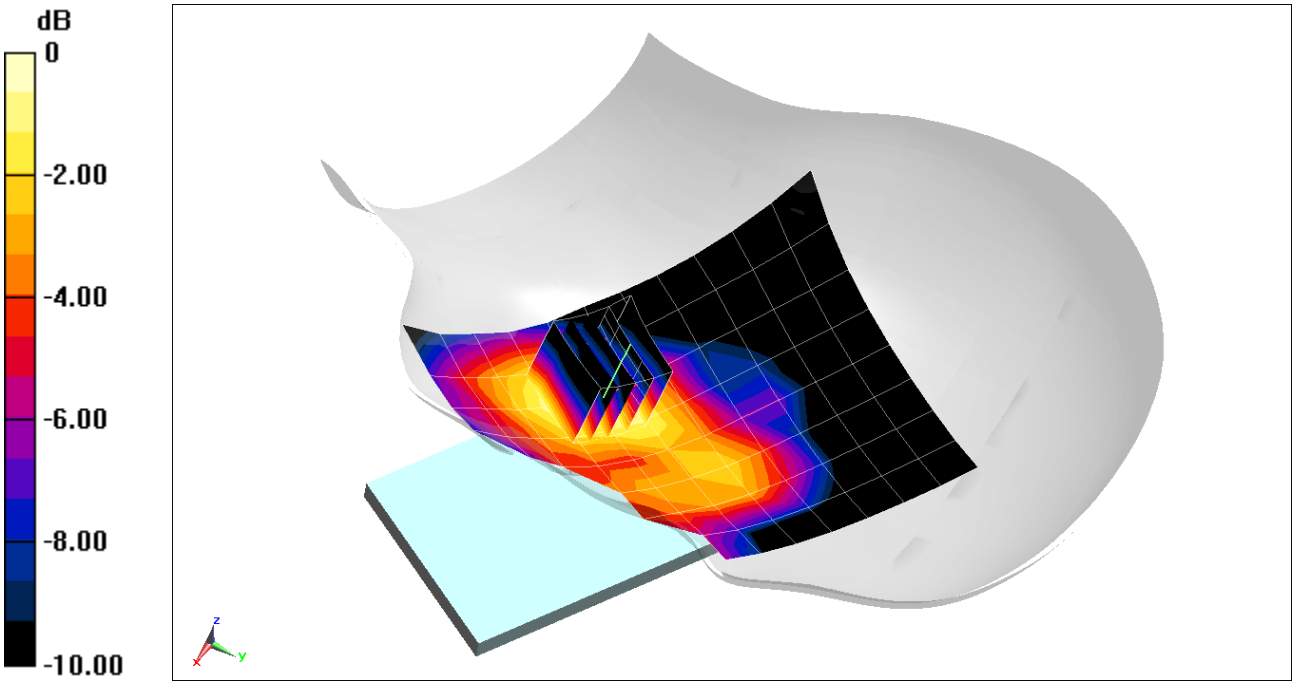
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head; Medium parameters used:
f = 1880 MHz; σ = 1.383 S/m; ε_r = 39.773; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 12/30/2020; Ambient Temp: 23.0°C; Tissue Temp: 24.5°C

Probe: EX3DV4 - SN7539; ConvF(8.03, 8.03, 8.03) @ 1880 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/20/2020
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1966
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: UMTS 1900, Left Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.50 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.394 W/kg
SAR(1 g) = 0.245 W/kg



0 dB = 0.333 W/kg = -4.78 dBW/kg

PCTEST

DUT: ZNFK330PM; Type: Portable Handset; Serial: 23265

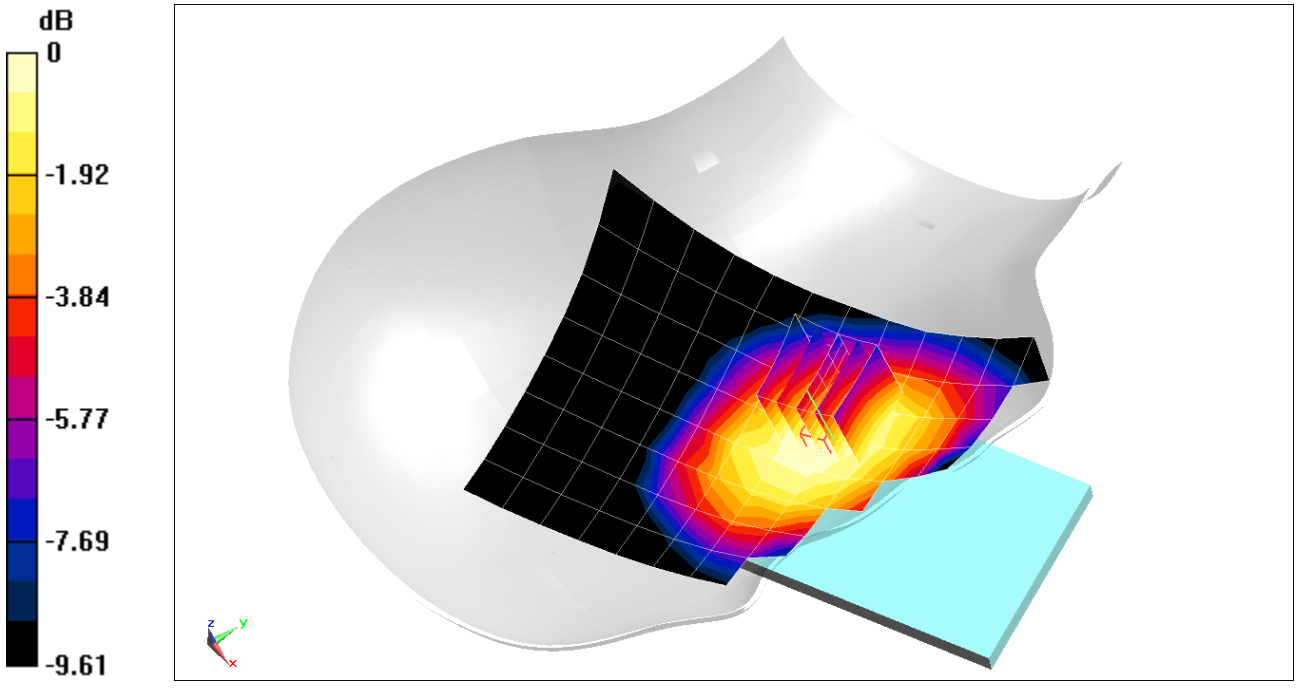
Communication System: UID 0, LTE Band 71; Frequency: 680.5 MHz; Duty Cycle: 1:1
Medium: 750 Head; Medium parameters used (interpolated):
f = 680.5 MHz; σ = 0.863 S/m; ε_r = 42.841; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01/06/2021; Ambient Temp: 20.3°C; Tissue Temp: 19.2°C

Probe: EX3DV4 - SN7357; ConvF(10.23, 10.23, 10.23) @ 680.5 MHz; Calibrated: 4/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/15/2020
Phantom: Twin-SAM V5.0 Left 30; Type: QD 000 P40 CD; Serial: 1715
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 71, Right Head, Cheek, Mid.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.57 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.234 W/kg
SAR(1 g) = 0.195 W/kg



0 dB = 0.221 W/kg = -6.56 dBW/kg

PCTEST

DUT: ZNFK330PM; Type: Portable Handset; Serial: 23265

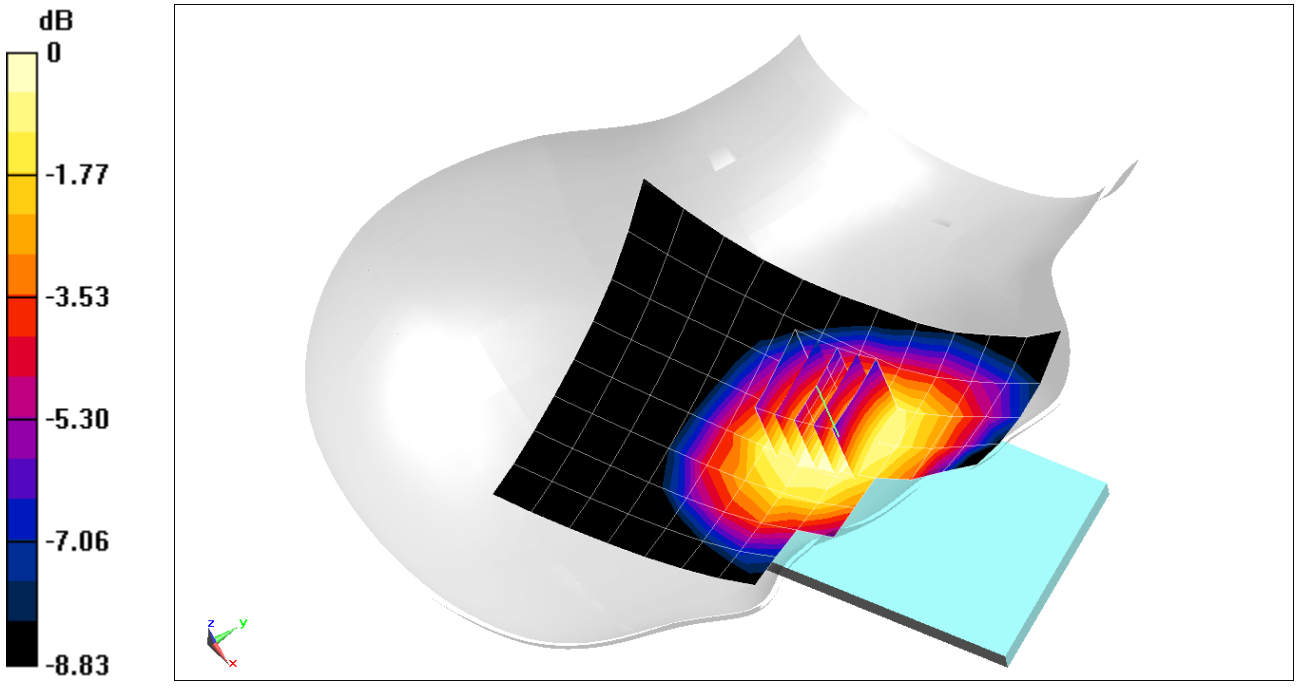
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Head; Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.874 S/m; ε_r = 42.76; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01/06/2021; Ambient Temp: 20.3°C; Tissue Temp: 19.2°C

Probe: EX3DV4 - SN7357; ConvF(10.23, 10.23, 10.23) @ 707.5 MHz; Calibrated: 4/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/15/2020
Phantom: Twin-SAM V5.0 Left 30; Type: QD 000 P40 CD; Serial: 1715
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 12, Right Head, Cheek, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.03 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.278 W/kg
SAR(1 g) = 0.230 W/kg



0 dB = 0.261 W/kg = -5.83 dBW/kg

PCTEST

DUT: ZNFK330PM; Type: Portable Handset; Serial: 23265

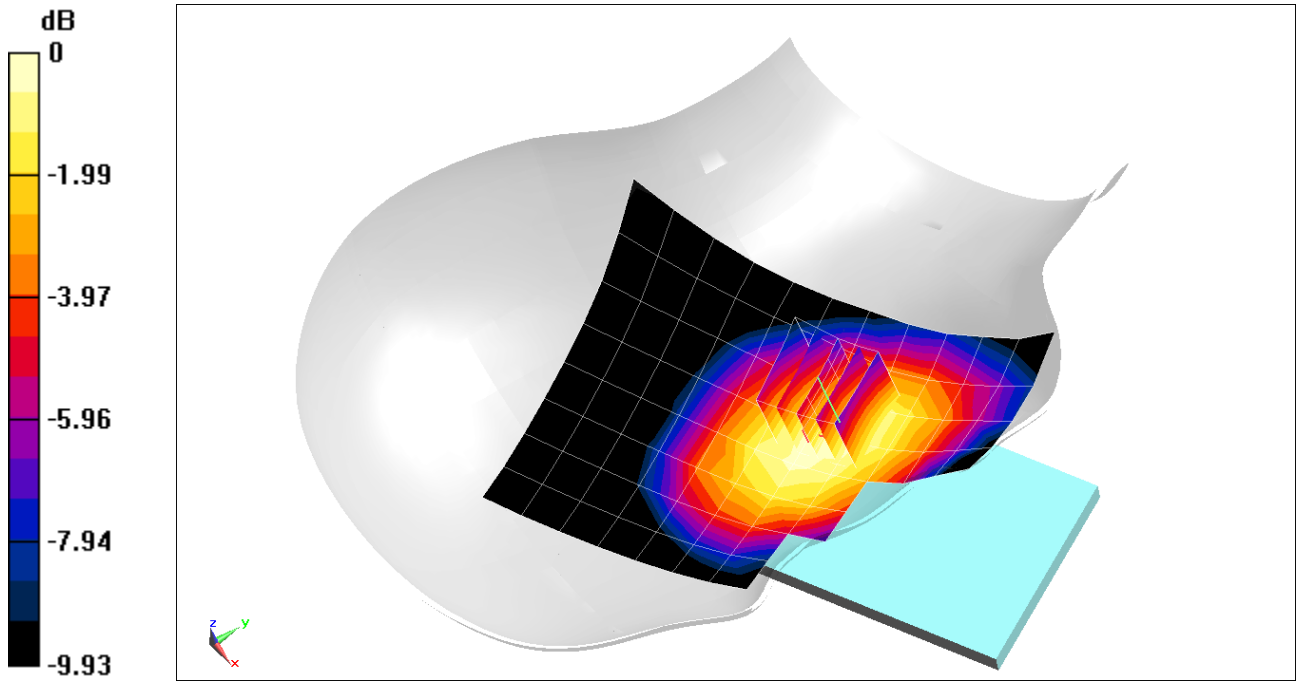
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Head; Medium parameters used (interpolated)
f = 782 MHz; σ = 0.903 S/m; ε_r = 42.526; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01/06/2021; Ambient Temp: 20.3°C; Tissue Temp: 19.2°C

Probe: EX3DV4 - SN7357; ConvF(10.23, 10.23, 10.23) @ 782 MHz; Calibrated: 4/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/15/2020
Phantom: Twin-SAM V5.0 Left 30; Type: QD 000 P40 CD; Serial: 1715
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 13, Right Head, Cheek, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.06 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.325 W/kg
SAR(1 g) = 0.267 W/kg



0 dB = 0.306 W/kg = -5.14 dBW/kg

PCTEST

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21509

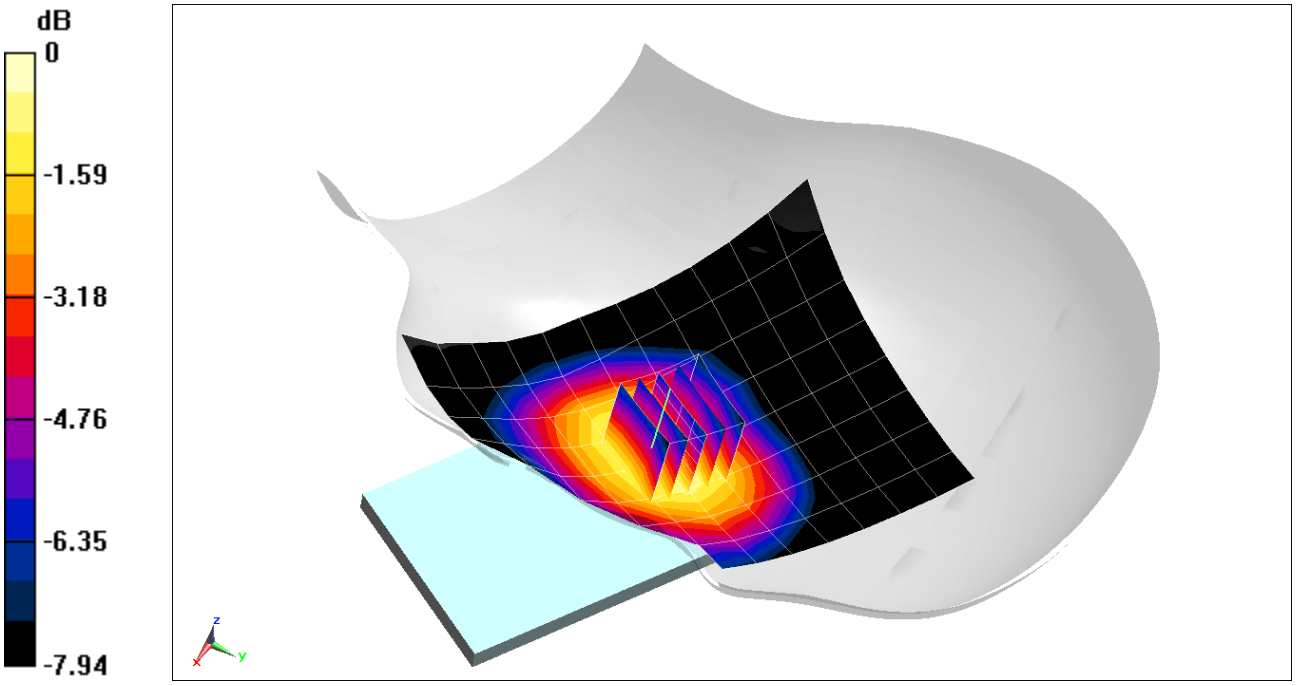
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Head; Medium parameters used (interpolated):
f = 831.5 MHz; σ = 0.904 S/m; ε_r = 42.054; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01/06/2021; Ambient Temp: 23.7°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7308; ConvF(10.17, 10.17, 10.17) @ 831.5 MHz; Calibrated: 7/31/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/11/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 26 (Cell.), Left Head, Cheek, Mid.ch,
15 MHz Bandwidth, QPSK, 1 RB, 36 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.43 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.205 W/kg
SAR(1 g) = 0.158 W/kg



0 dB = 0.187 W/kg = -7.28 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 23273

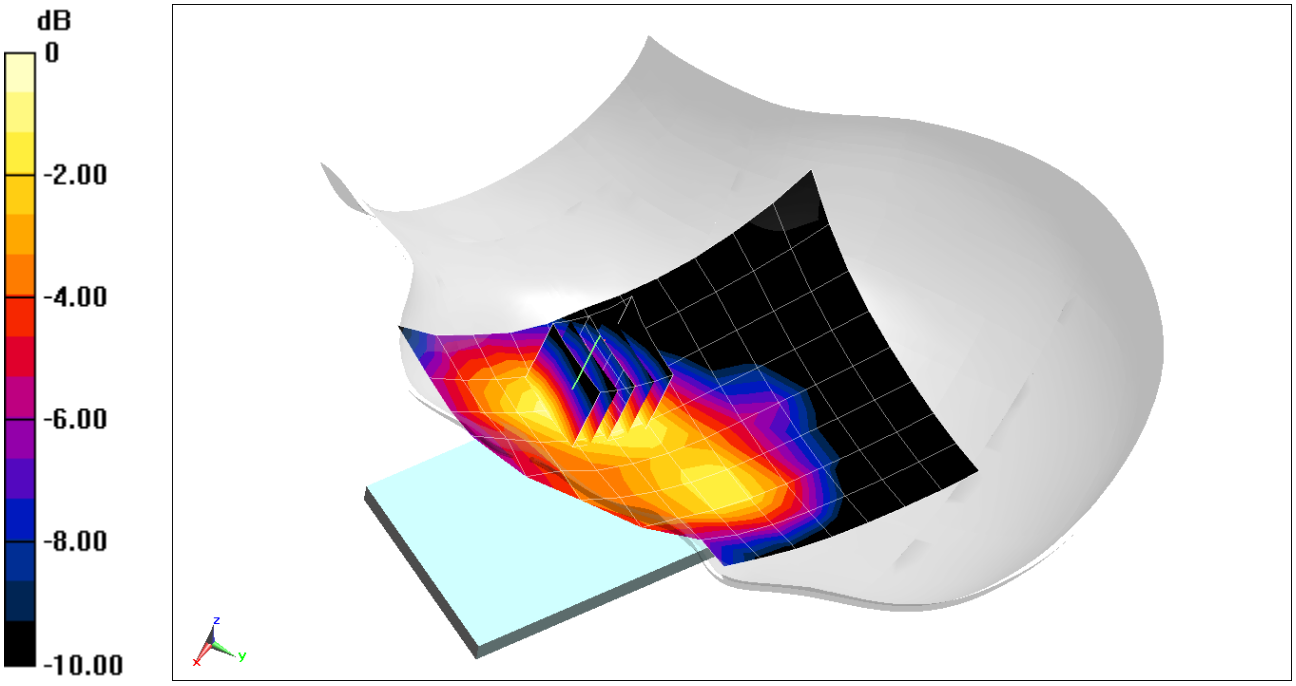
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1720 MHz; Duty Cycle: 1:1
Medium: 1750 Head; Medium parameters used:
f = 1720 MHz; σ = 1.353 S/m; ε_r = 40.76; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 12/27/2020; Ambient Temp: 23.1°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN3589; ConvF(7.55, 7.55, 7.55) @ 1720 MHz; Calibrated: 1/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 1/13/2020
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 66 (AWS), Left Head, Cheek, Low.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.17 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.299 W/kg
SAR(1 g) = 0.205 W/kg



0 dB = 0.258 W/kg = -5.88 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 23281

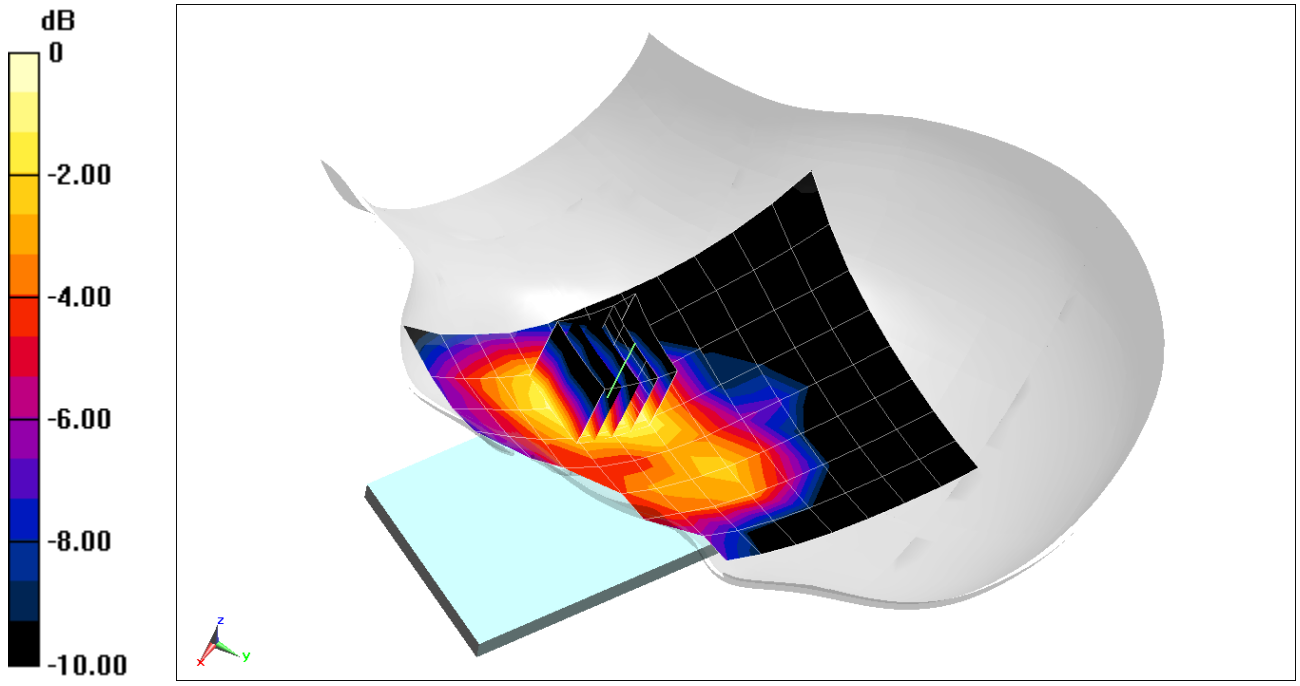
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium: 1900 Head; Medium parameters used:
f = 1905 MHz; σ = 1.408 S/m; ε_r = 39.677; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 12/30/2020; Ambient Temp: 23.0°C; Tissue Temp: 24.5°C

Probe: EX3DV4 - SN7539; ConvF(8.03, 8.03, 8.03) @ 1905 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/20/2020
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1966
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 25 (PCS), Left Head, Cheek, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.75 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.358 W/kg
SAR(1 g) = 0.231 W/kg



0 dB = 0.311 W/kg = -5.07 dBW/kg

PCTEST

DUT: ZNFK330PM; Type: Portable Handset; Serial: 23299

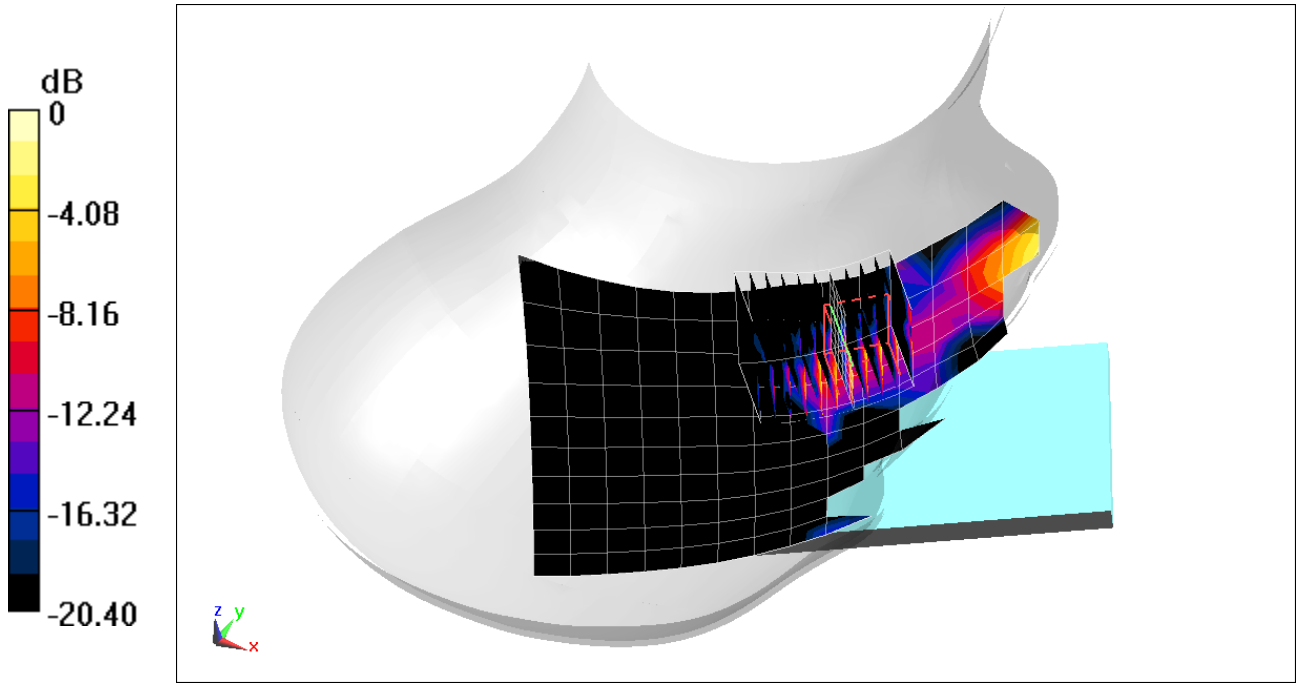
Communication System: UID 0, LTE Band 41 (Class 2); Frequency: 2636.5 MHz; Duty Cycle: 1:2.31
Medium: 2450 Head Medium parameters used (interpolated):
f = 2636.5 MHz; σ = 2.039 S/m; ε_r = 38.521; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01/25/2021; Ambient Temp: 22.5°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN7571; ConvF(7.05, 7.05, 7.05) @ 2636.5 MHz; Calibrated: 12/11/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1533; Calibrated: 12/7/2020
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 41 Power Class 2, Right Head, Cheek, Mid-High.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x11x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.803 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.0360 W/kg
SAR(1 g) = 0.013 W/kg



0 dB = 0.0244 W/kg = -16.13 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21467

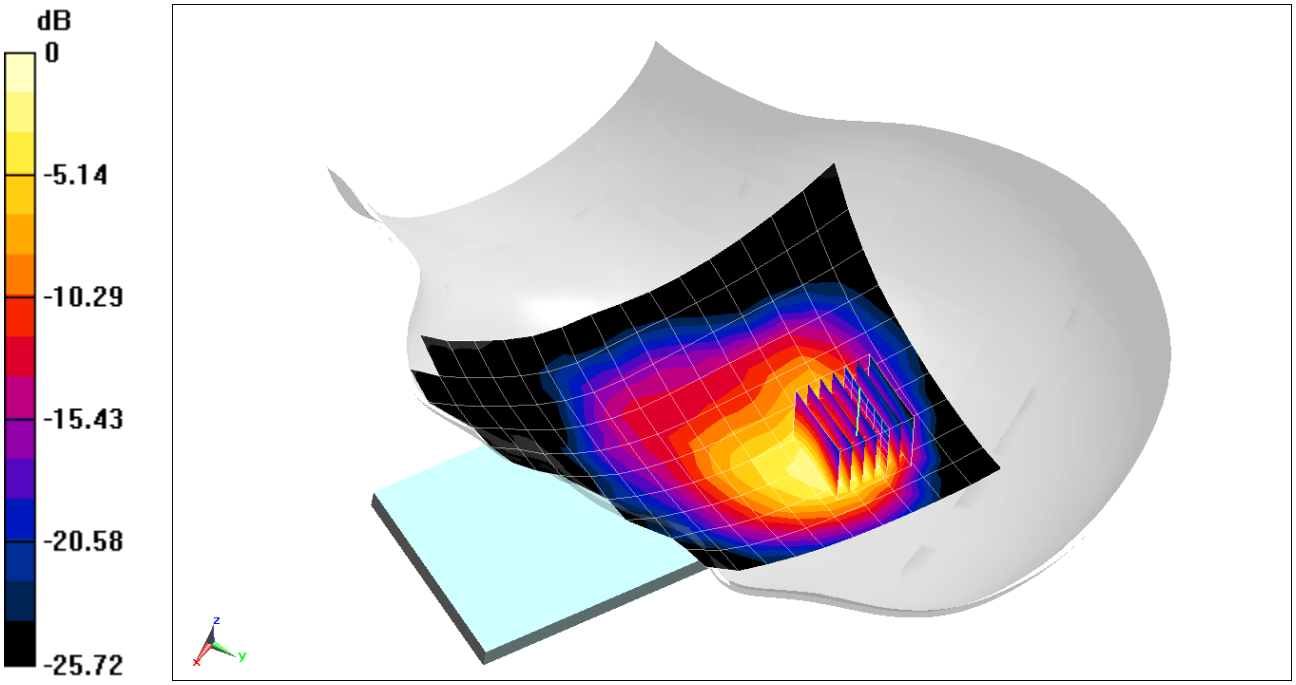
Communication System: UID 0, 802.11b; Frequency: 2437 MHz; Duty Cycle: 1:1
Medium: 2450 Head; Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.817 S/m; ε_r = 39.594; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01/10/2021; Ambient Temp: 22.2°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7571; ConvF(7.28, 7.28, 7.28) @ 2437 MHz; Calibrated: 12/11/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1533; Calibrated: 12/7/2020
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: IEEE 802.11b, 22 MHz Bandwidth, Left Head, Cheek, Ch 6, 1 Mbps

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.13 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 1.44 W/kg
SAR(1 g) = 0.648 W/kg



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

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21467

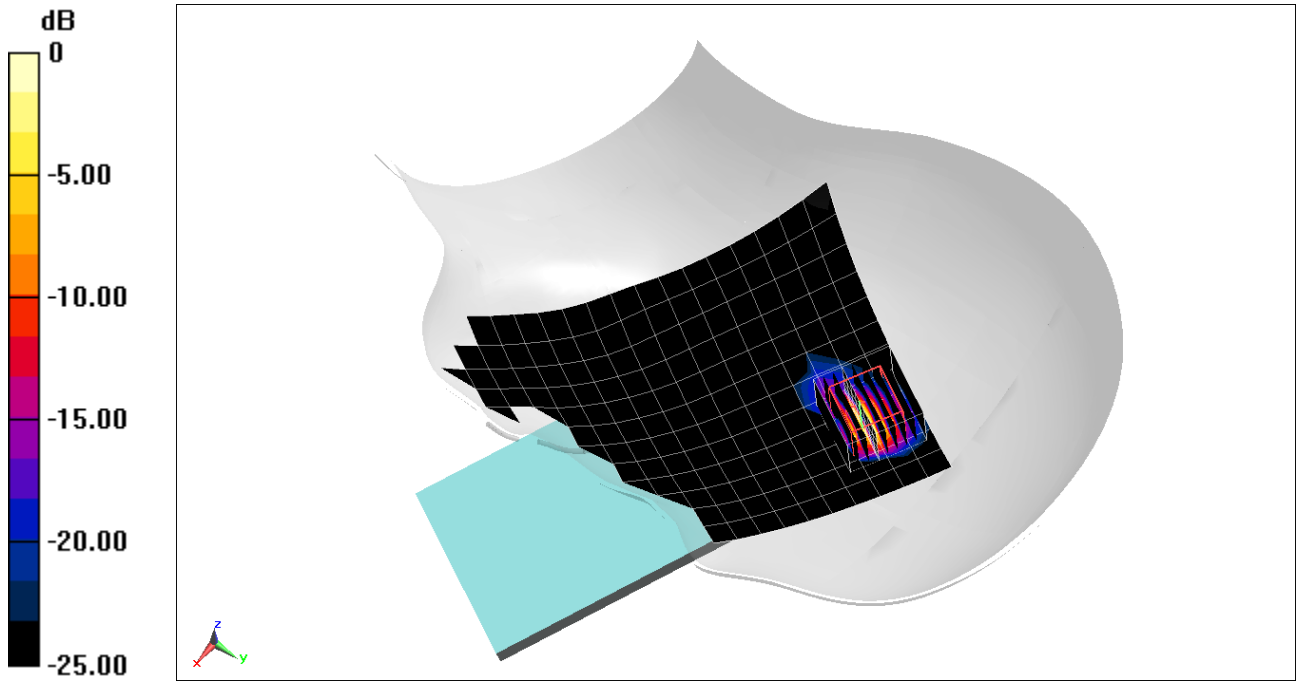
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5260 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Head; Medium parameters used:
f = 5260 MHz; σ = 4.572 S/m; ε_r = 34.623; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 12/30/2020; Ambient Temp: 23.3°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7357; ConvF(5.5, 5.5, 5.5) @ 5260 MHz; Calibrated: 4/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/15/2020
Phantom: Twin-SAM V5.0 Left 20; Type: QD 000 P40 CD; Serial: 1715
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: IEEE 802.11a, U-NII-2A, 20 MHz Bandwidth, Left Head, Tilt, Ch 52, 6 Mbps

Area Scan (13x21x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 1.780 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 3.56 W/kg
SAR(1 g) = 0.703 W/kg



0 dB = 2.09 W/kg = 3.20 dBW/kg

PCTEST

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21475

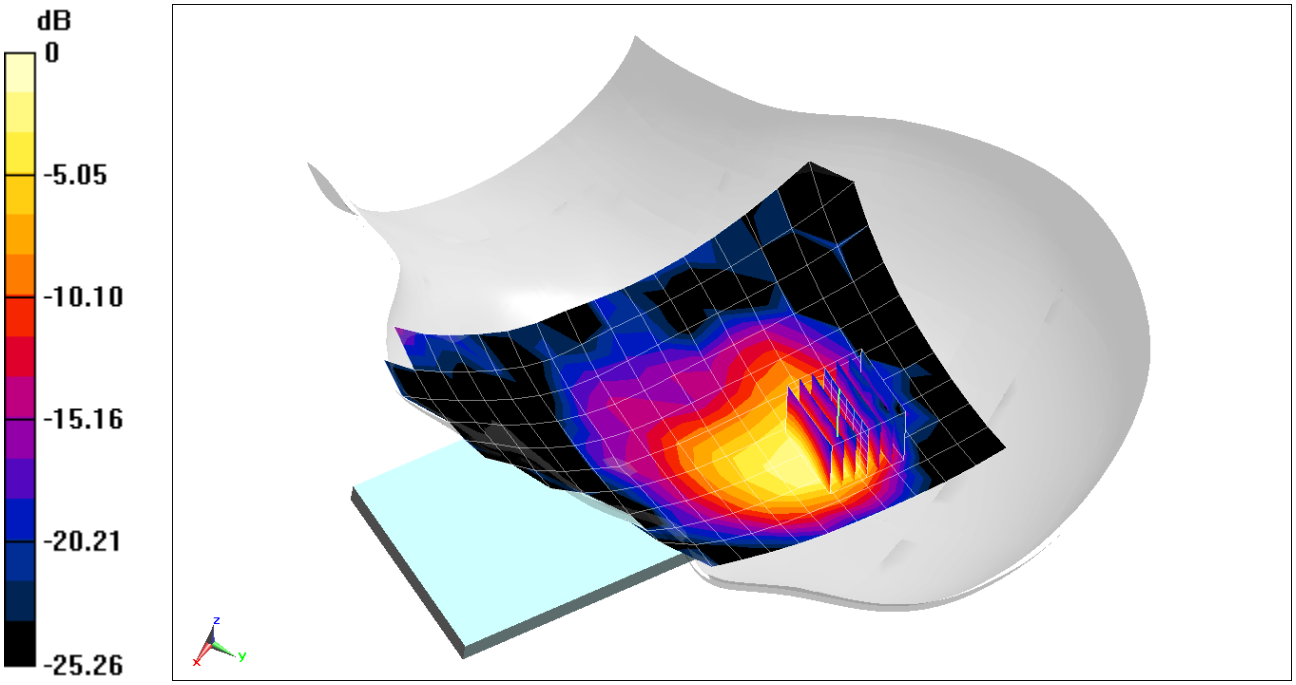
Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.305
Medium: 2450 Head; Medium parameters used:
f = 2480 MHz; σ = 1.894 S/m; ε_r = 38.566; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01/18/2021; Ambient Temp: 22.9°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7571; ConvF(7.28, 7.28, 7.28) @ 2480 MHz; Calibrated: 12/11/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1533; Calibrated: 12/7/2020
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: Bluetooth, Left Head, Cheek, Ch 78, 1 Mbps

Area Scan (11x19x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.217 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.233 W/kg
SAR(1 g) = 0.105 W/kg



0 dB = 0.176 W/kg = -7.54 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21483

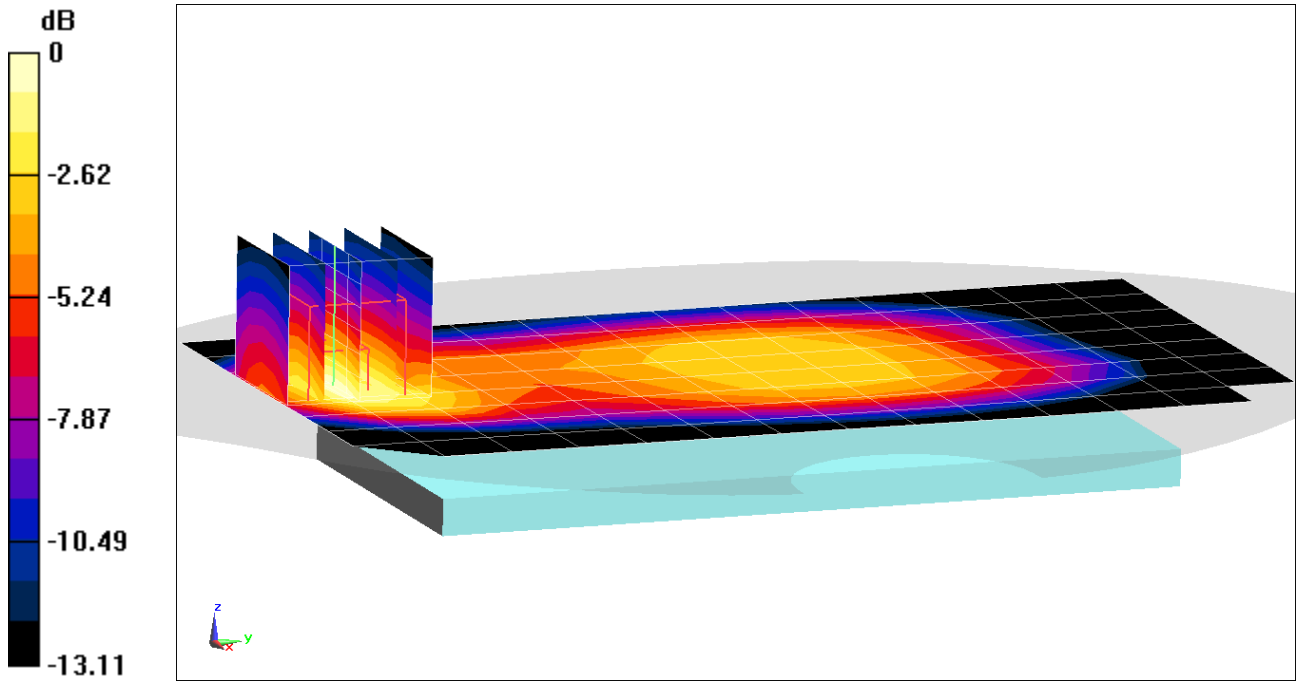
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.934 S/m; ε_r = 53.856; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/18/2021; Ambient Temp: 22.1°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7552; ConvF(9.96, 9.96, 9.96) @ 820.1 MHz; Calibrated: 9/11/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1449; Calibrated: 9/10/2020
Phantom: Twin-SAM V4.0 Left 30; Type: QD 000 P40 CC; Serial: 1687
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: Cell. CDMA BC10, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.10 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.925 W/kg
SAR(1 g) = 0.542 W/kg



0 dB = 0.781 W/kg = -1.07 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21483

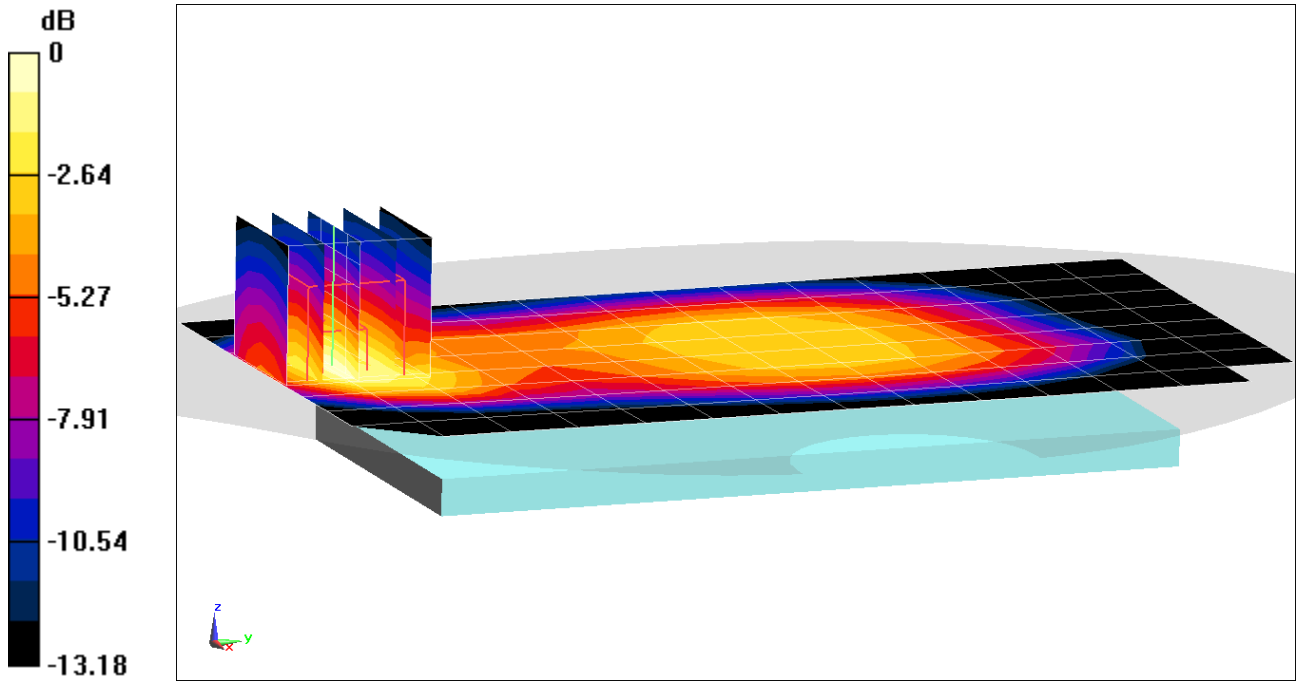
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.934 S/m; ε_r = 53.856; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/18/2021; Ambient Temp: 22.1°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7552; ConvF(9.96, 9.96, 9.96) @ 820.1 MHz; Calibrated: 9/11/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1449; Calibrated: 9/10/2020
Phantom: Twin-SAM V4.0 Left 30; Type: QD 000 P40 CC; Serial: 1687
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: Cell. EVDO BC10, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.04 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.924 W/kg
SAR(1 g) = 0.542 W/kg



0 dB = 0.779 W/kg = -1.08 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21483

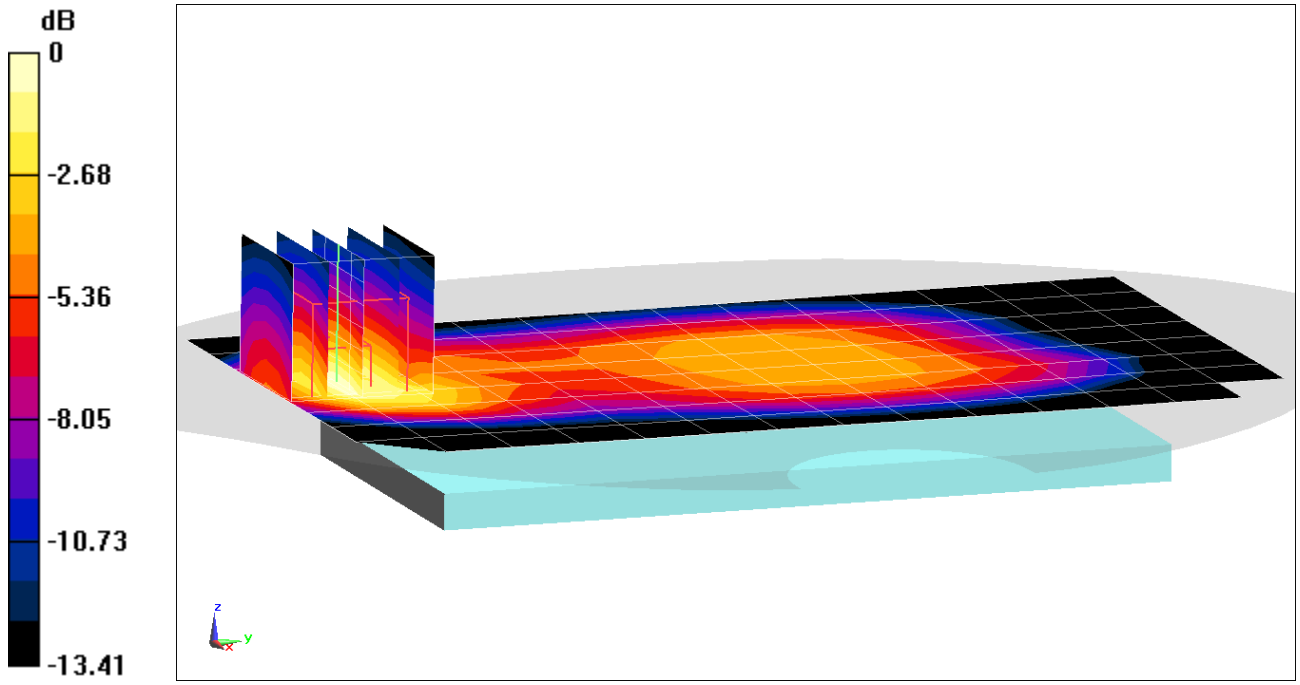
Communication System: UID 0, CDMA; Frequency: 848.31 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 848.31 MHz; σ = 0.964 S/m; ε_r = 53.548; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/18/2021; Ambient Temp: 22.1°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7552; ConvF(9.96, 9.96, 9.96) @ 848.31 MHz; Calibrated: 9/11/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1449; Calibrated: 9/10/2020
Phantom: Twin-SAM V4.0 Left 30; Type: QD 000 P40 CC; Serial: 1687
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: Cell. CDMA, BC 0, Body SAR, Back side, High.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.69 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.19 W/kg
SAR(1 g) = 0.694 W/kg



0 dB = 1.00 W/kg = 0.00 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21483

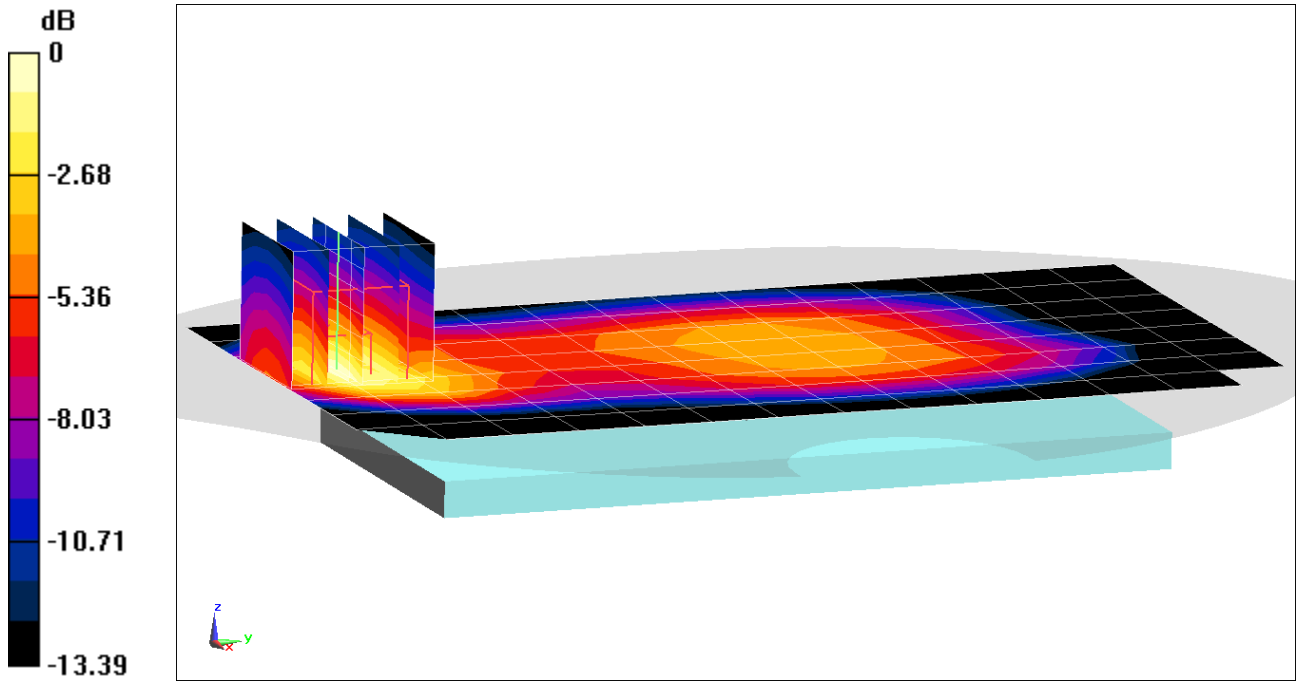
Communication System: UID 0, CDMA; Frequency: 848.31 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 848.31 MHz; σ = 0.964 S/m; ε_r = 53.548; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/18/2021; Ambient Temp: 22.1°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7552; ConvF(9.96, 9.96, 9.96) @ 848.31 MHz; Calibrated: 9/11/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1449; Calibrated: 9/10/2020
Phantom: Twin-SAM V4.0 Left 30; Type: QD 000 P40 CC; Serial: 1687
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: Cell. EVDO, BC 0, Body SAR, Back side, High.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.24 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.30 W/kg
SAR(1 g) = 0.756 W/kg



0 dB = 1.10 W/kg = 0.41 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21491

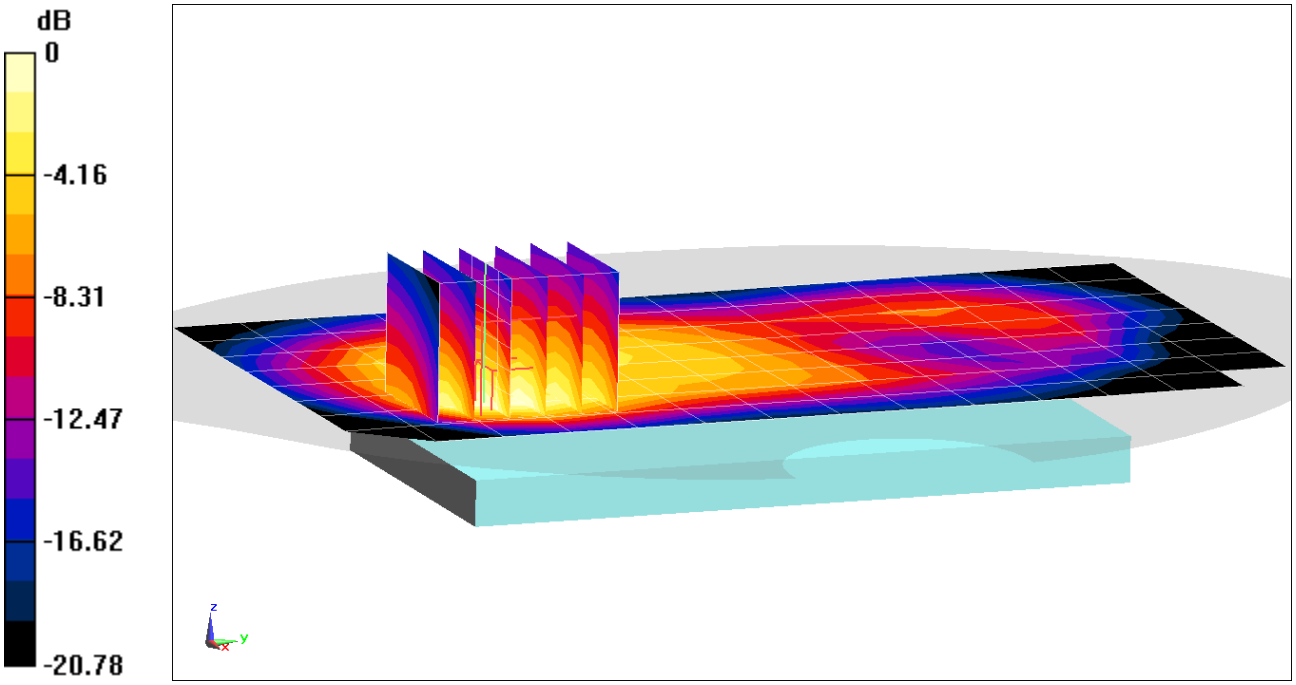
Communication System: UID 0, CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used (interpolated):
f = 1908.75 MHz; σ = 1.521 S/m; ε_r = 53.37; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/11/2021; Ambient Temp: 21.4°C; Tissue Temp: 23.2°C

Probe: EX3DV4 - SN7551; ConvF(7.84, 7.84, 7.84) @ 1908.75 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 10/16/2020
Phantom: Right Back Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: PCS CDMA, Body SAR, Back side, High.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan(5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.33 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.89 W/kg
SAR(1 g) = 1.01 W/kg



0 dB = 1.45 W/kg = 1.61 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21491

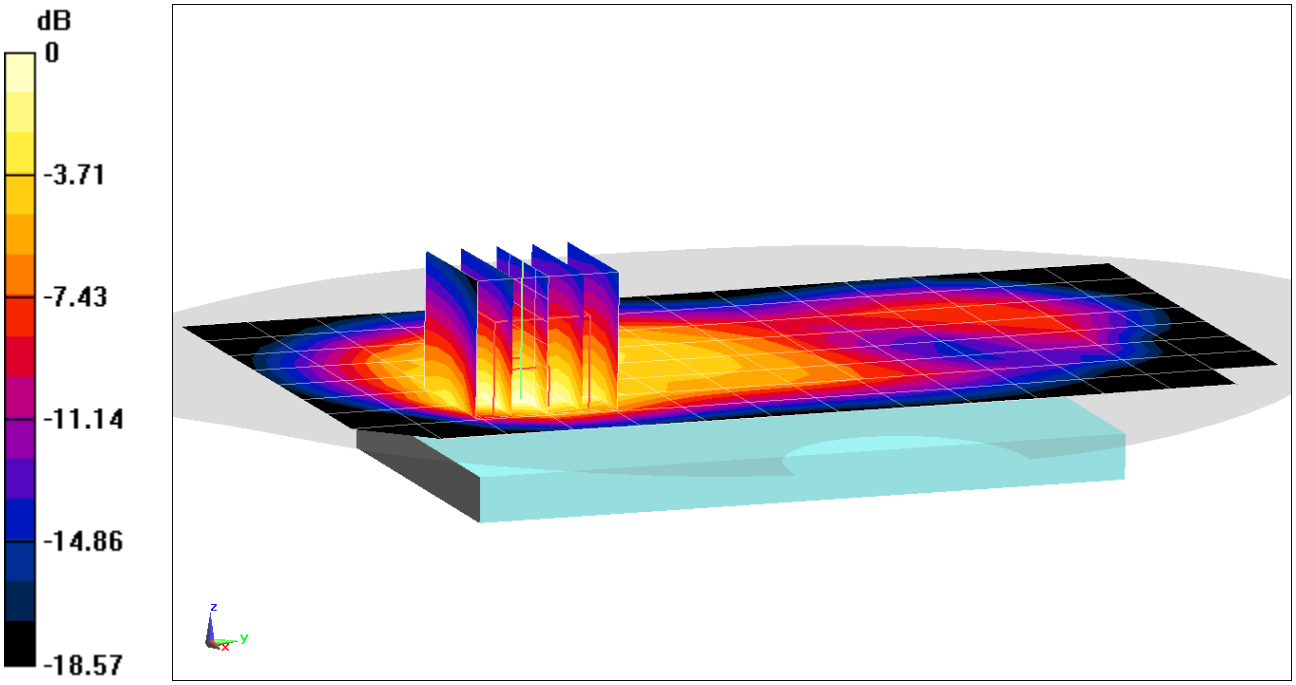
Communication System: UID 0, CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used (interpolated):
f = 1908.75 MHz; σ = 1.521 S/m; ε_r = 53.37; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/11/2021; Ambient Temp: 21.4°C; Tissue Temp: 23.2°C

Probe: EX3DV4 - SN7551; ConvF(7.84, 7.84, 7.84) @ 1908.75 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 10/16/2020
Phantom: Right Back Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: PCS EVDO, Body SAR, Back side, High.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.99 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 1.86 W/kg
SAR(1 g) = 0.986 W/kg



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

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21483

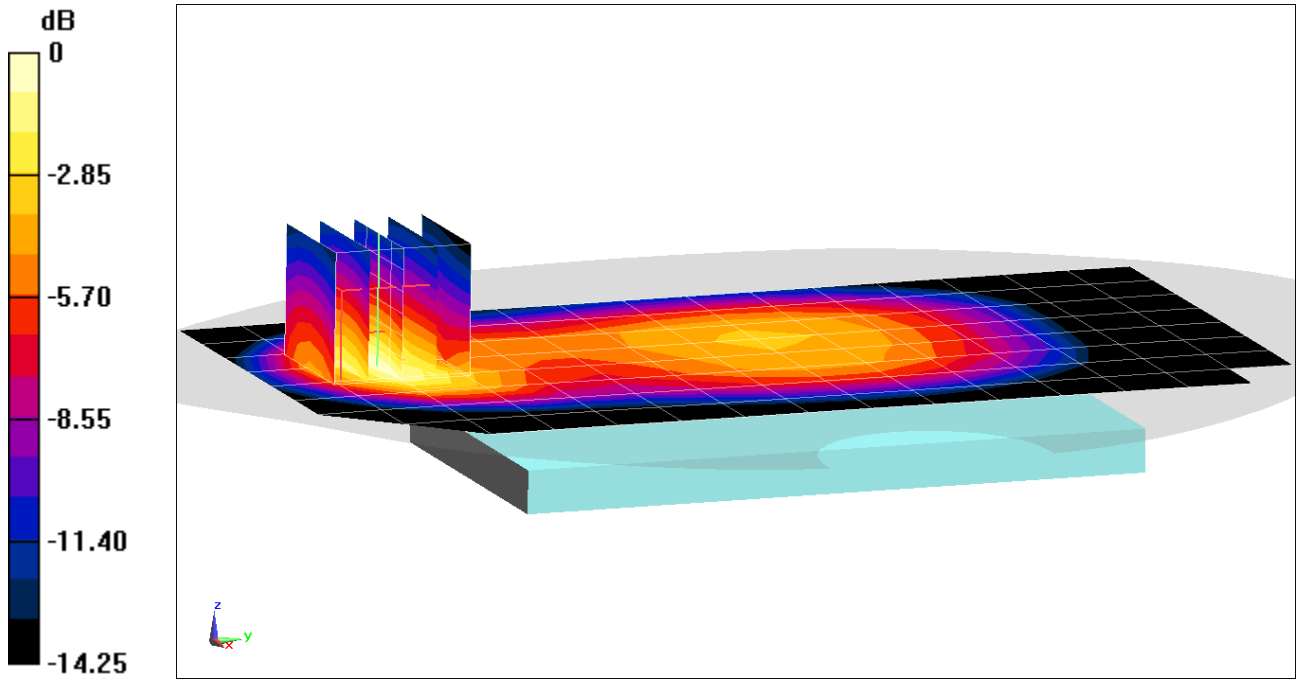
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 848.8 MHz; Duty Cycle: 1:2.076
Medium: 835 Body; Medium parameters used (interpolated):
f = 848.8 MHz; σ = 0.967 S/m; ε_r = 52.817; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12/30/2020; Ambient Temp: 22.9°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7488; ConvF(11.04, 11.04, 11.04) @ 848.8 MHz; Calibrated: 1/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/13/2020
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: GPRS 850, Body SAR, Back side, High.ch, 4 Tx Slots

Area Scan (9x16x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.56 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.724 W/kg



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

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21491

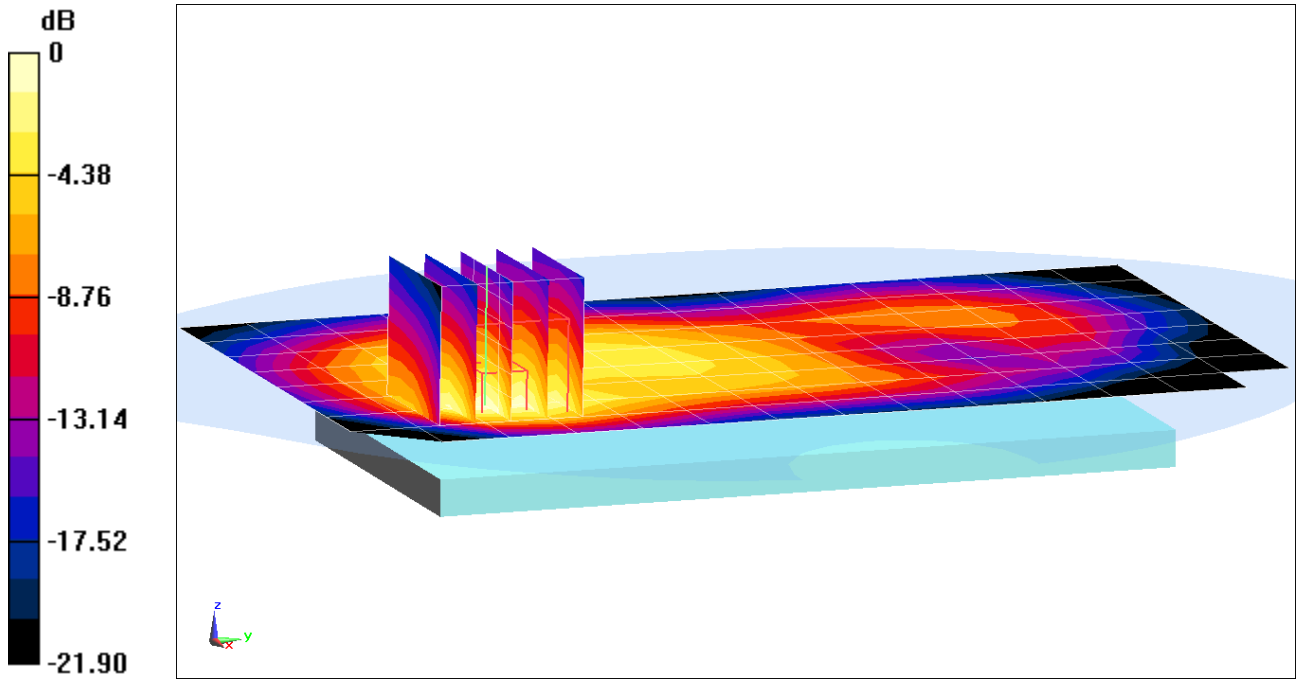
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 1850.2 MHz; Duty Cycle: 1:2.076
Medium: 1900 Body; Medium parameters used (interpolated):
f = 1850.2 MHz; σ = 1.48 S/m; ε_r = 52.078; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/03/2021; Ambient Temp: 20.3°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7410; ConvF(7.76, 7.76, 7.76) @ 1850.2 MHz; Calibrated: 7/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/15/2020
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: GPRS 1900, Body SAR, Back side, Low.ch, 4 Tx Slots

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.81 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.571 W/kg



0 dB = 0.866 W/kg = -0.62 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21483

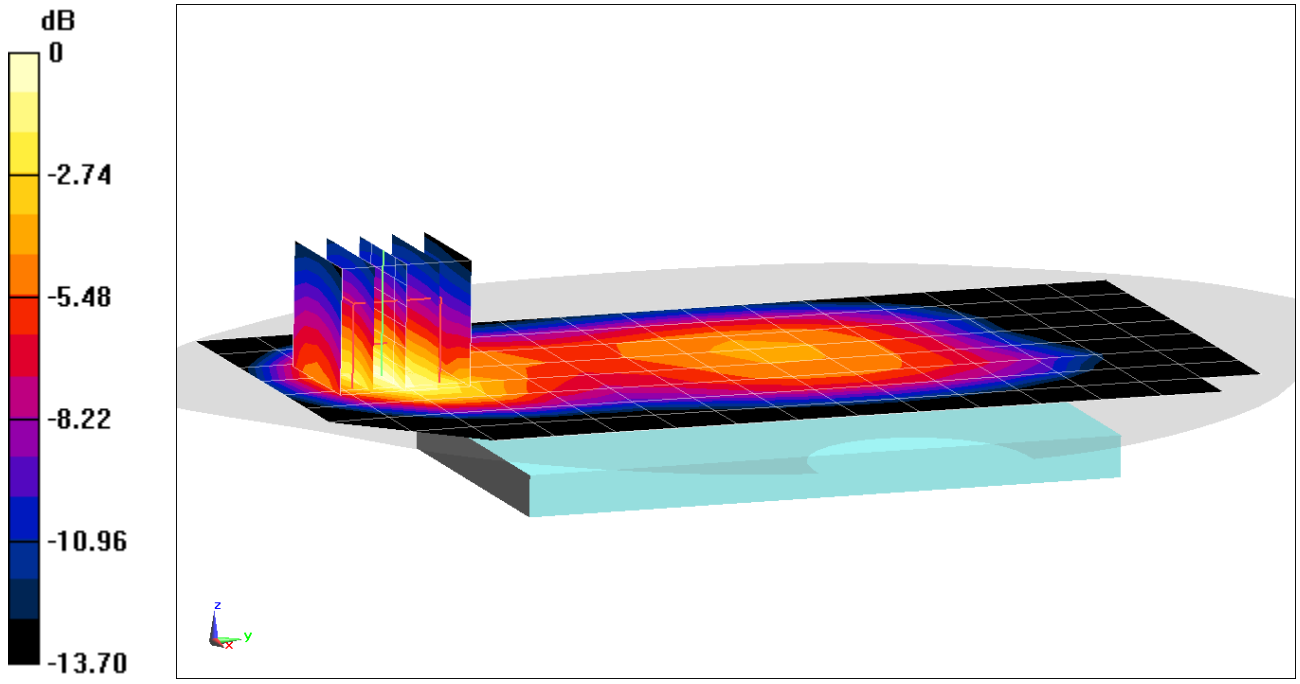
Communication System: UID 0, UMTS; Frequency: 846.6 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 846.6 MHz; σ = 0.965 S/m; ε_r = 52.843; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12/30/2020; Ambient Temp: 22.9°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7488; ConvF(11.04, 11.04, 11.04) @ 846.6 MHz; Calibrated: 1/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/13/2020
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: UMTS 850, Body SAR, Back side, High.ch

Area Scan (9x16x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.67 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.33 W/kg
SAR(1 g) = 0.774 W/kg



0 dB = 1.13 W/kg = 0.53 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21491

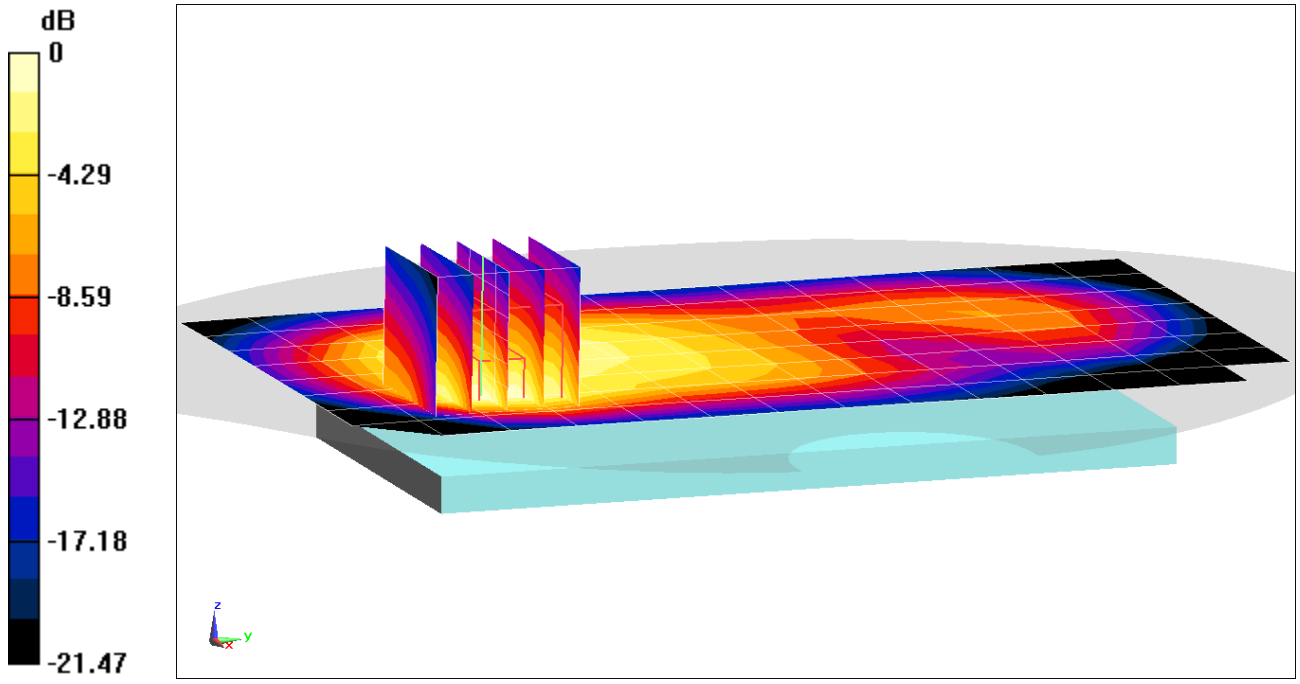
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body; Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.519 S/m; ε_r = 51.106; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/11/2021; Ambient Temp: 21.3°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN7410; ConvF(8.17, 8.17, 8.17) @ 1732.4 MHz; Calibrated: 7/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/15/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: UMTS 1750, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.31 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.00 W/kg
SAR(1 g) = 1.04 W/kg



0 dB = 1.62 W/kg = 2.10 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21491

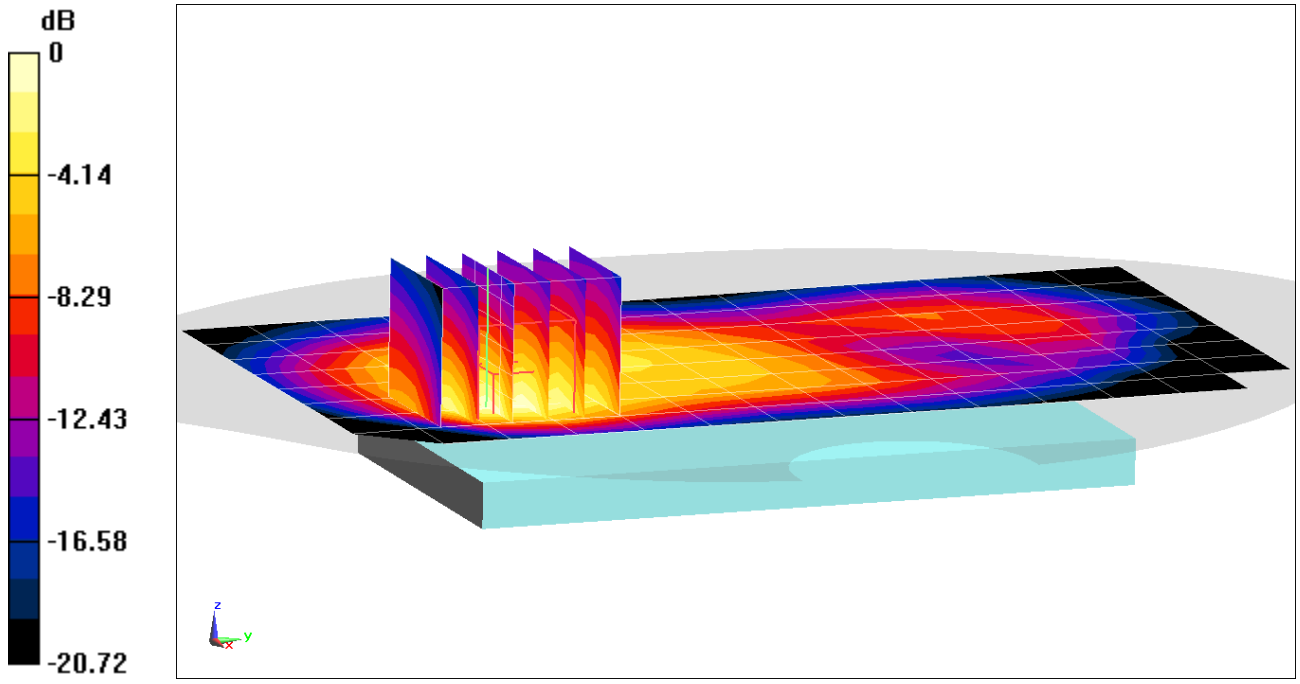
Communication System: UID 0, UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used (interpolated):
f = 1907.6 MHz; σ = 1.526 S/m; ε_r = 52.893; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/13/2021; Ambient Temp: 24.7°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7551; ConvF(7.84, 7.84, 7.84) @ 1907.6 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 10/16/2020
Phantom: Right Back Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: UMTS 1900, Body SAR, Back side, High.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.29 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 2.00 W/kg
SAR(1 g) = 1.08 W/kg



0 dB = 1.57 W/kg = 1.96 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21509

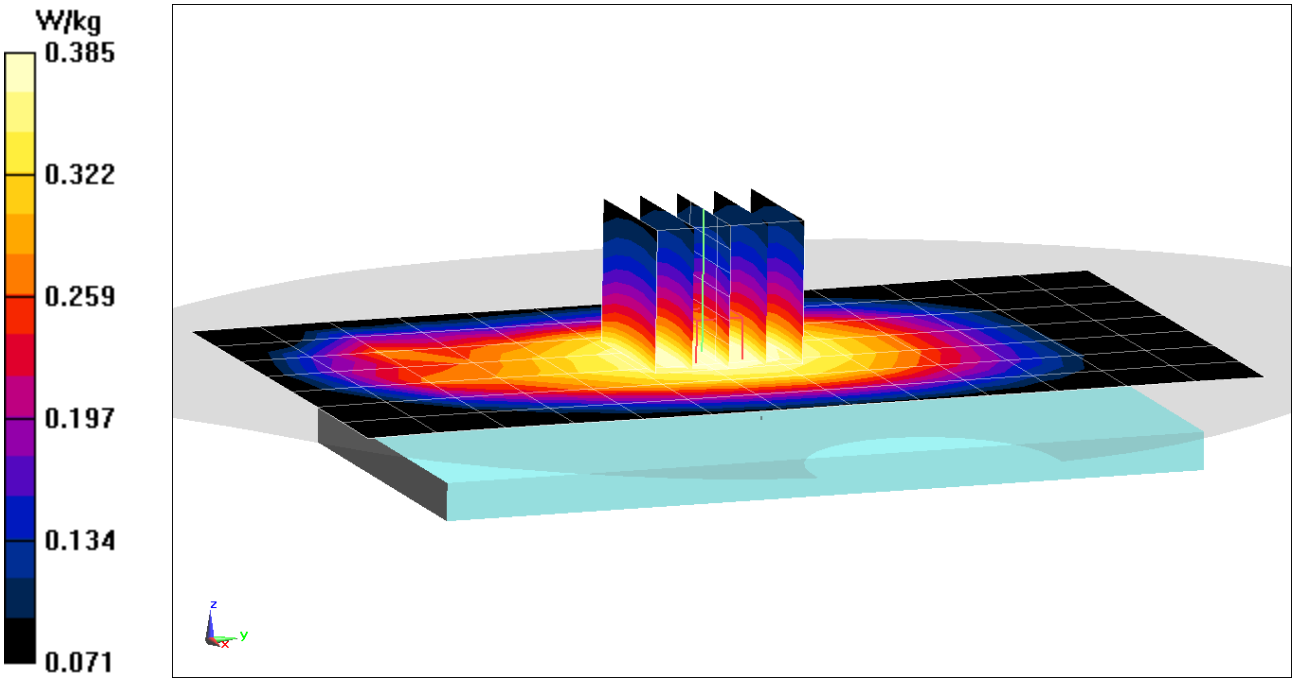
Communication System: UID 0, LTE Band 71; Frequency: 680.5 MHz; Duty Cycle: 1:1
Medium: 750 Body; Medium parameters used (interpolated):
f = 680.5 MHz; σ = 0.92 S/m; ε_r = 54.38; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12/28/2020; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7539; ConvF(10.24, 10.24, 10.24) @ 680.5 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/20/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 71, Body SAR, Back side, Mid.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.80 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.423 W/kg
SAR(1 g) = 0.321 W/kg



PCTEST

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21509

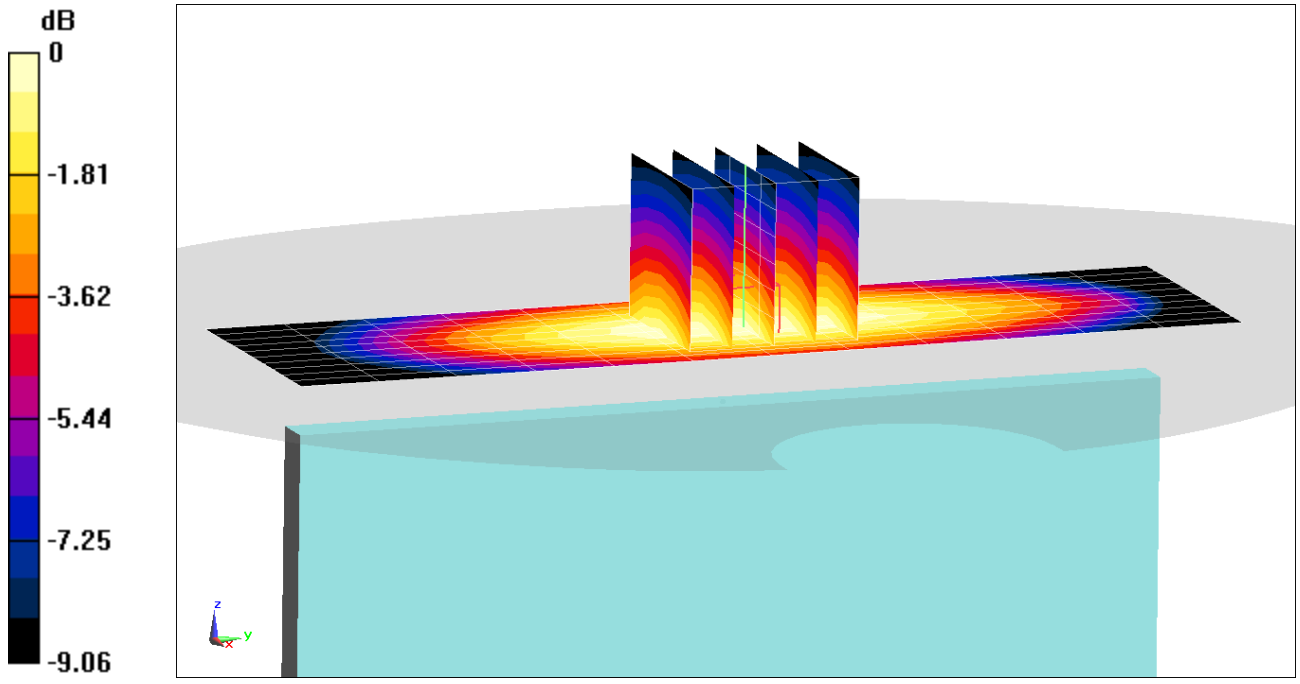
Communication System: UID 0, LTE Band 71; Frequency: 680.5 MHz; Duty Cycle: 1:1
Medium: 750 Body; Medium parameters used (interpolated):
f = 680.5 MHz; σ = 0.92 S/m; ε_r = 54.38; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12/28/2020; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7539; ConvF(10.24, 10.24, 10.24) @ 680.5 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/20/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 71, Body SAR, Right Edge, Mid.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (11x13x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.83 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.636 W/kg
SAR(1 g) = 0.422 W/kg



0 dB = 0.556 W/kg = -2.55 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21509

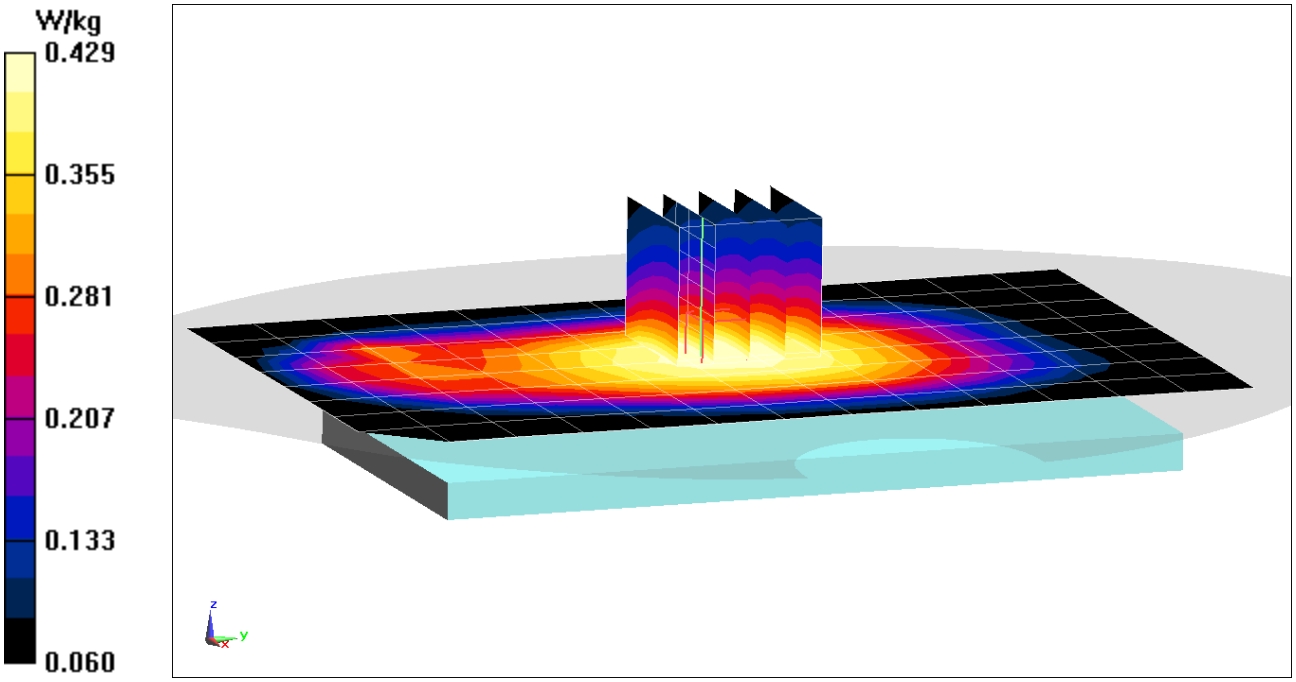
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Body; Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.93 S/m; ε_r = 54.319; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12/28/2020; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7539; ConvF(10.24, 10.24, 10.24) @ 707.5 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/20/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 12, Body SAR, Back side, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.46 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.476 W/kg
SAR(1 g) = 0.356 W/kg



DUT: ZNFK330PM; Type: Portable Handset; Serial: 21509

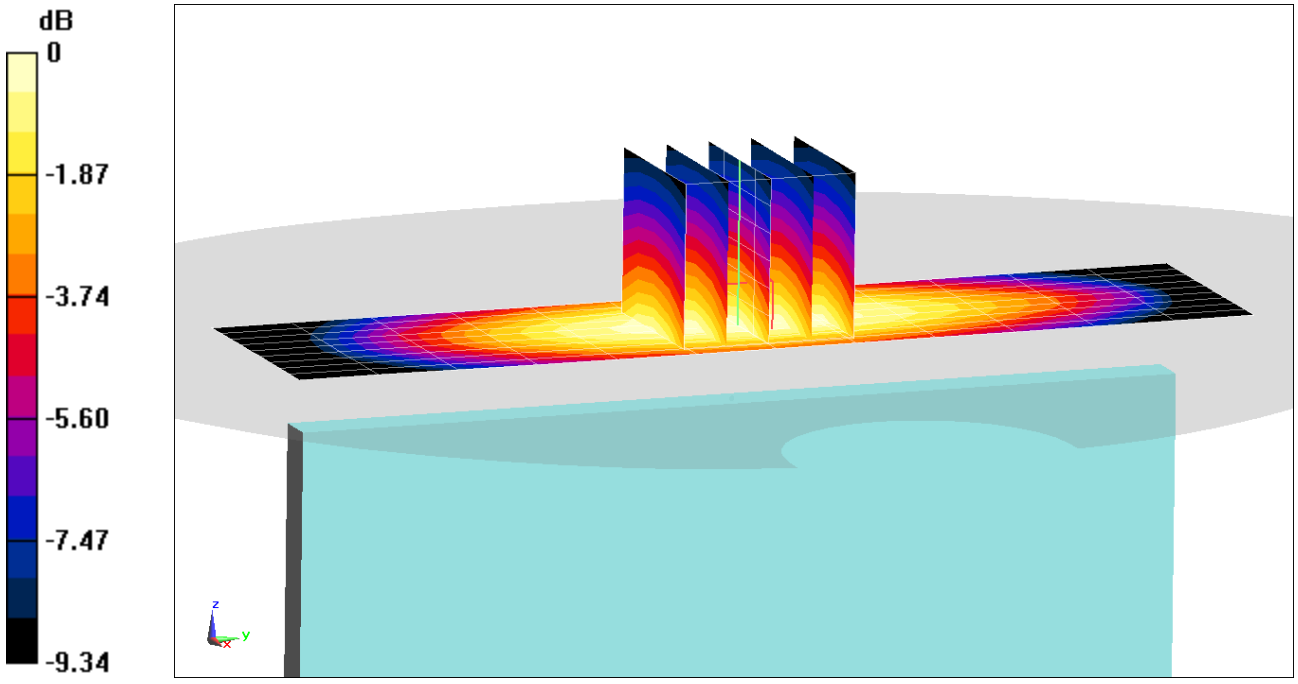
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Body; Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.93 S/m; ε_r = 54.319; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12/28/2020; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7539; ConvF(10.24, 10.24, 10.24) @ 707.5 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/20/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 12, Body SAR, Right Edge, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (10x13x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.90 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.670 W/kg
SAR(1 g) = 0.437 W/kg.



0 dB = 0.584 W/kg = -2.34 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21509

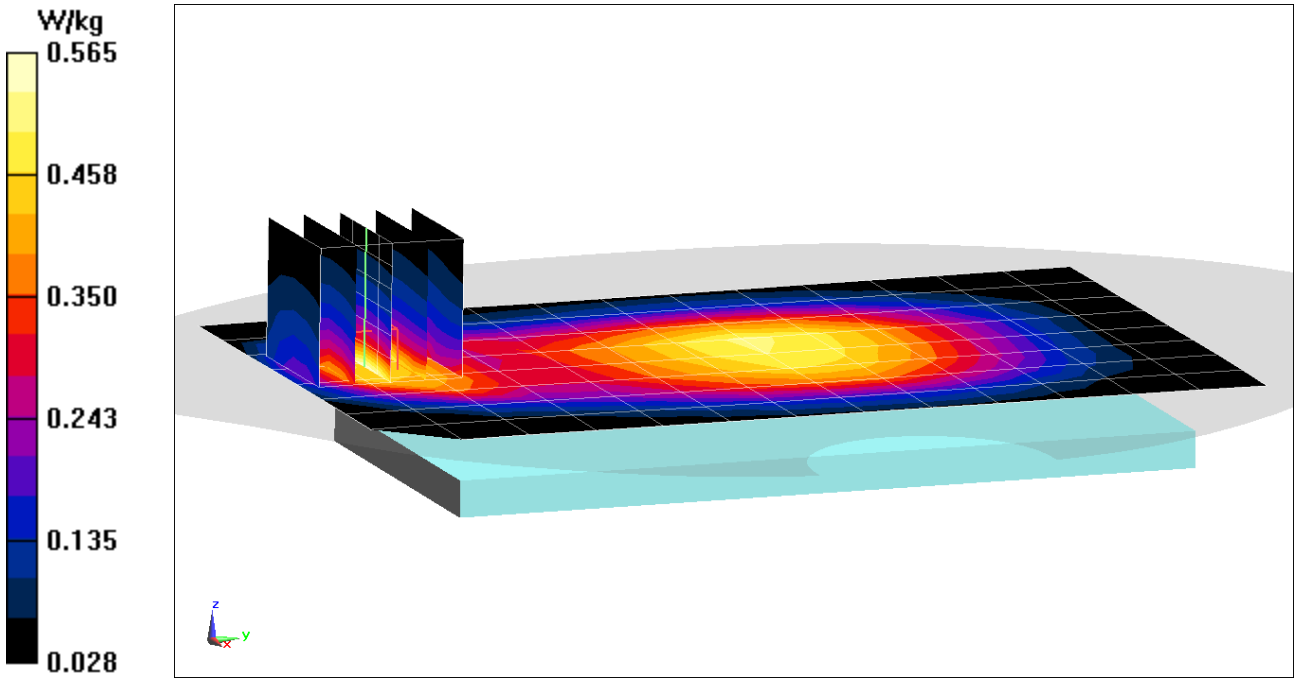
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Body; Medium parameters used (interpolated):
f = 782 MHz; σ = 0.959 S/m; ε_r = 54.134; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12/28/2020; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7539; ConvF(10.24, 10.24, 10.24) @ 782 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/20/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 13, Body SAR, Back side, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.95 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.674 W/kg
SAR(1 g) = 0.391 W/kg



DUT: ZNFK330PM; Type: Portable Handset; Serial: 21509

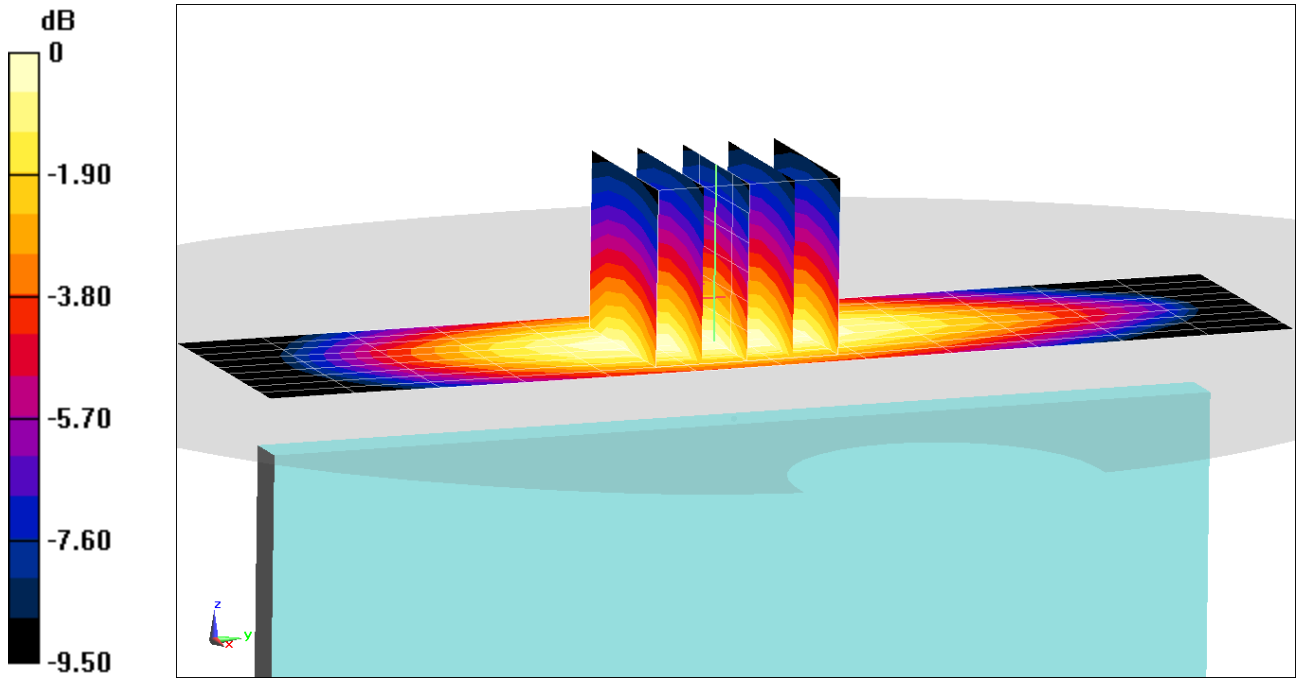
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Body; Medium parameters used (interpolated):
f = 782 MHz; σ = 0.959 S/m; ε_r = 54.134; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12/28/2020; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7539; ConvF(10.24, 10.24, 10.24) @ 782 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/20/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 13, Body SAR, Right Edge, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (10x13x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.66 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.715 W/kg
SAR(1 g) = 0.473 W/kg



0 dB = 0.623 W/kg = -2.06 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 23265

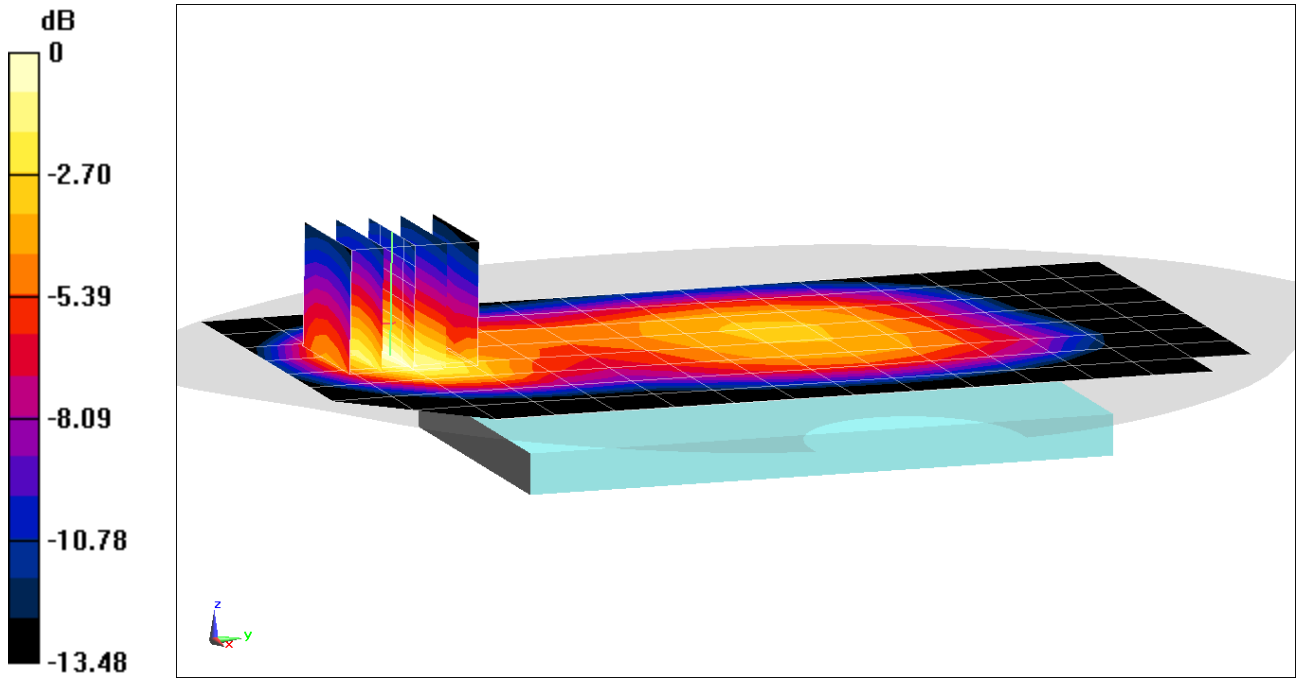
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 831.5 MHz; σ = 0.95 S/m; ε_r = 53.013; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12/30/2020; Ambient Temp: 22.9°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7488; ConvF(11.04, 11.04, 11.04) @ 831.5 MHz; Calibrated: 1/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/13/2020
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 26 (Cell.), Body SAR, Back side, Mid.ch,
15 MHz Bandwidth, QPSK, 1 RB, 36 RB Offset

Area Scan (9x16x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.89 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.08 W/kg
SAR(1 g) = 0.632 W/kg



0 dB = 0.916 W/kg = -0.38 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 23281

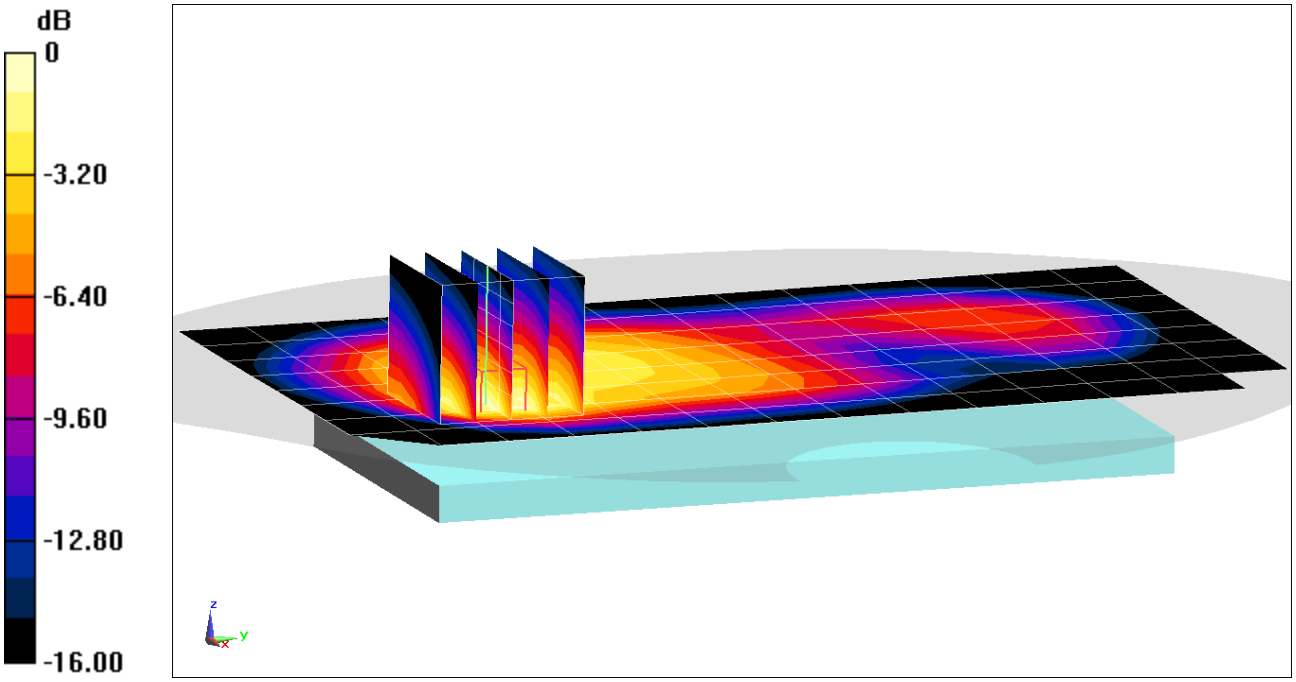
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1745 MHz; Duty Cycle: 1:1
Medium: 1750 Body; Medium parameters used:
f = 1745 MHz; σ = 1.524 S/m; ε_r = 51.531; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12/28/2020; Ambient Temp: 22.4°C; Tissue Temp: 23.0°C

Probe: EX3DV4 - SN7357; ConvF(8.17, 8.17, 8.17) @ 1745 MHz; Calibrated: 4/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/15/2020
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 66 (AWS), Body SAR, Back side, Mid.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.49 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.57 W/kg
SAR(1 g) = 0.839 W/kg



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

DUT: ZNFK330PM; Type: Portable Handset; Serial: 23273

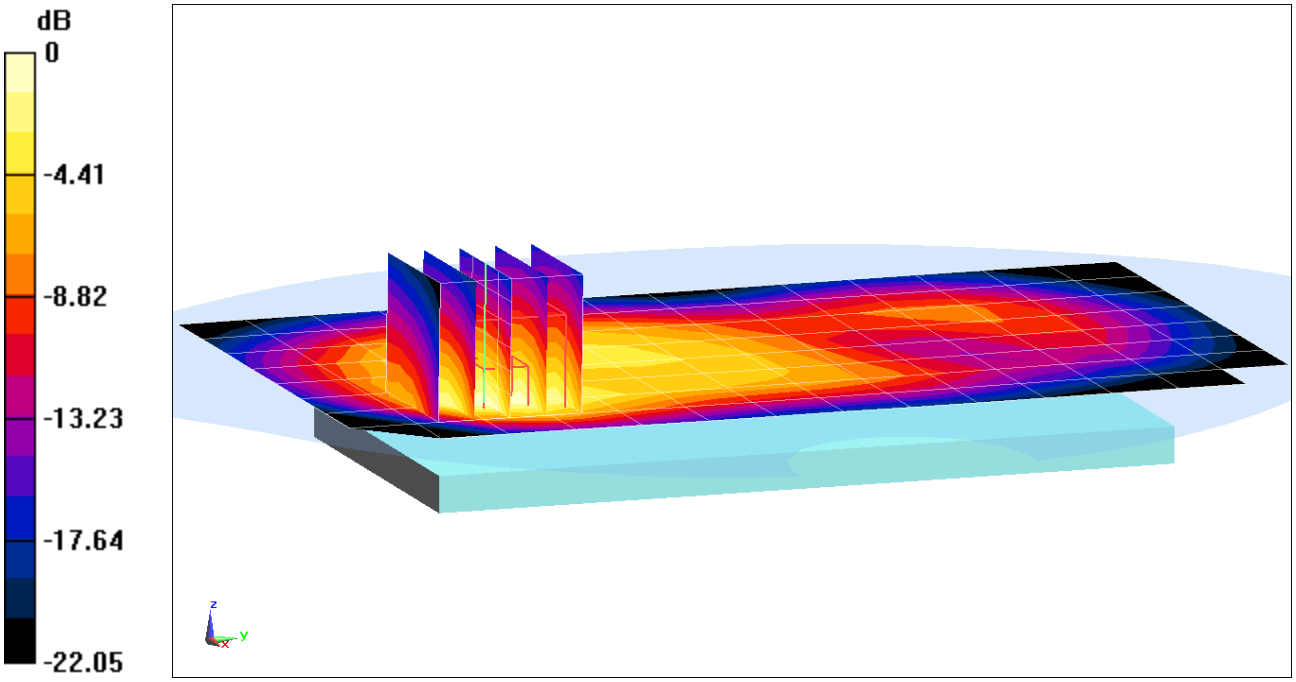
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1905 MHz; σ = 1.54 S/m; ε_r = 51.916; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/03/2021; Ambient Temp: 20.3°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7410; ConvF(7.76, 7.76, 7.76) @ 1905 MHz; Calibrated: 7/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/15/2020
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

**Mode: LTE Band 25 (PCS), Body SAR, Back side, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset**

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.58 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 1.62 W/kg
SAR(1 g) = 0.835 W/kg



0 dB = 1.30 W/kg = 1.14 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 23299

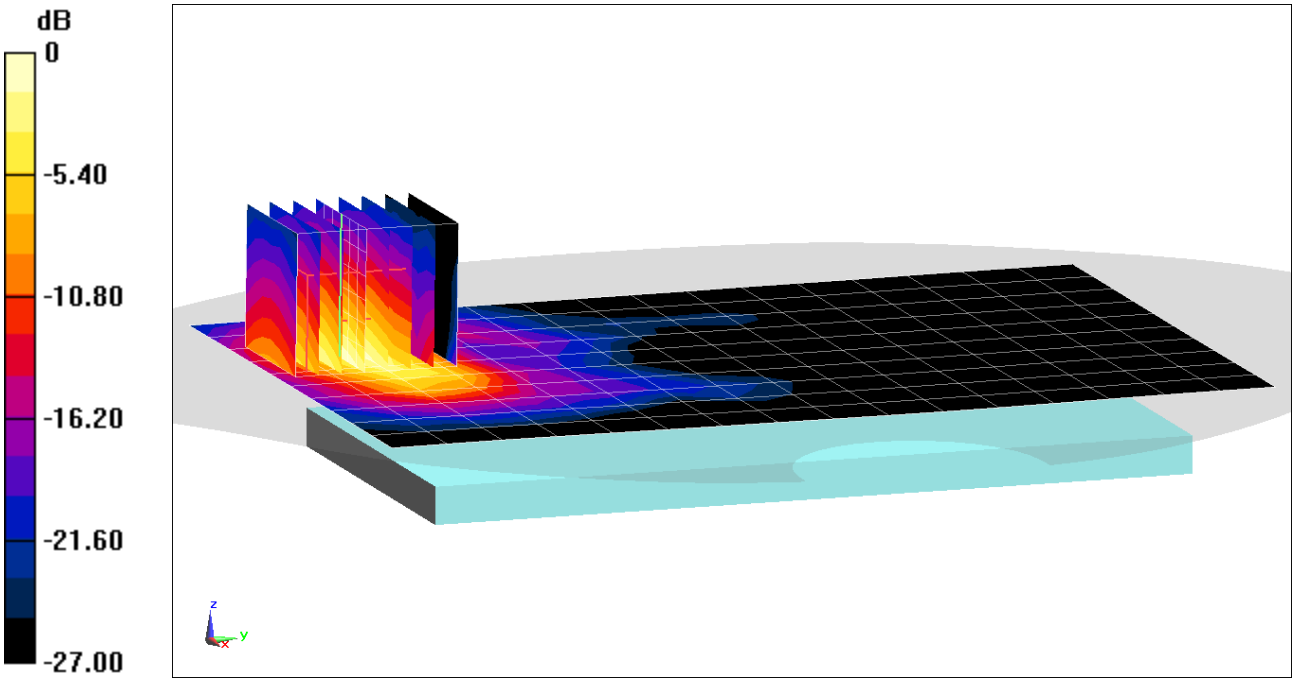
Communication System: UID 0, LTE Band 41 (Class 2); Frequency: 2680 MHz; Duty Cycle: 1:2.31
Medium: 2450 Body; Medium parameters used:
f = 2680 MHz; σ = 2.317 S/m; ε_r = 50.261; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/14/2021; Ambient Temp: 22.9°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN7409; ConvF(7.12, 7.12, 7.12) @ 2680 MHz; Calibrated: 6/23/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2020
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 41 Power Class 2, Body SAR, Back side, High.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.63 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 2.35 W/kg
SAR(1 g) = 1.04 W/kg



0 dB = 1.82 W/kg = 2.60 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 23299

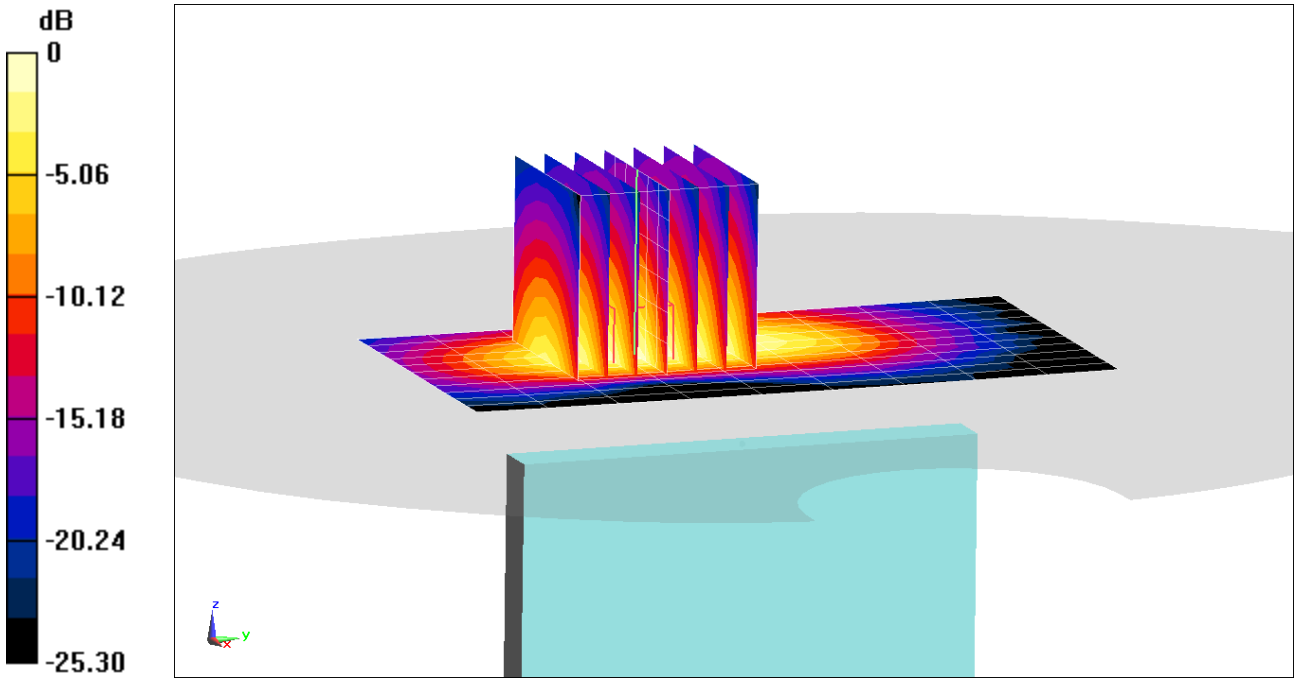
Communication System: UID 0, LTE Band 41 (Class 2); Frequency: 2506 MHz; Duty Cycle: 1:2.31
Medium: 2450 Body; Medium parameters used (interpolated):
f = 2506 MHz; σ = 2.106 S/m; ε_r = 52.747; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/18/2021; Ambient Temp: 23.2°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7409; ConvF(7.24, 7.24, 7.24) @ 2506 MHz; Calibrated: 6/23/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2020
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 41 Power Class 2, Body SAR, Bottom Edge, Low.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (12x10x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.05 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.53 W/kg
SAR(1 g) = 0.738 W/kg



0 dB = 1.23 W/kg = 0.90 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21467

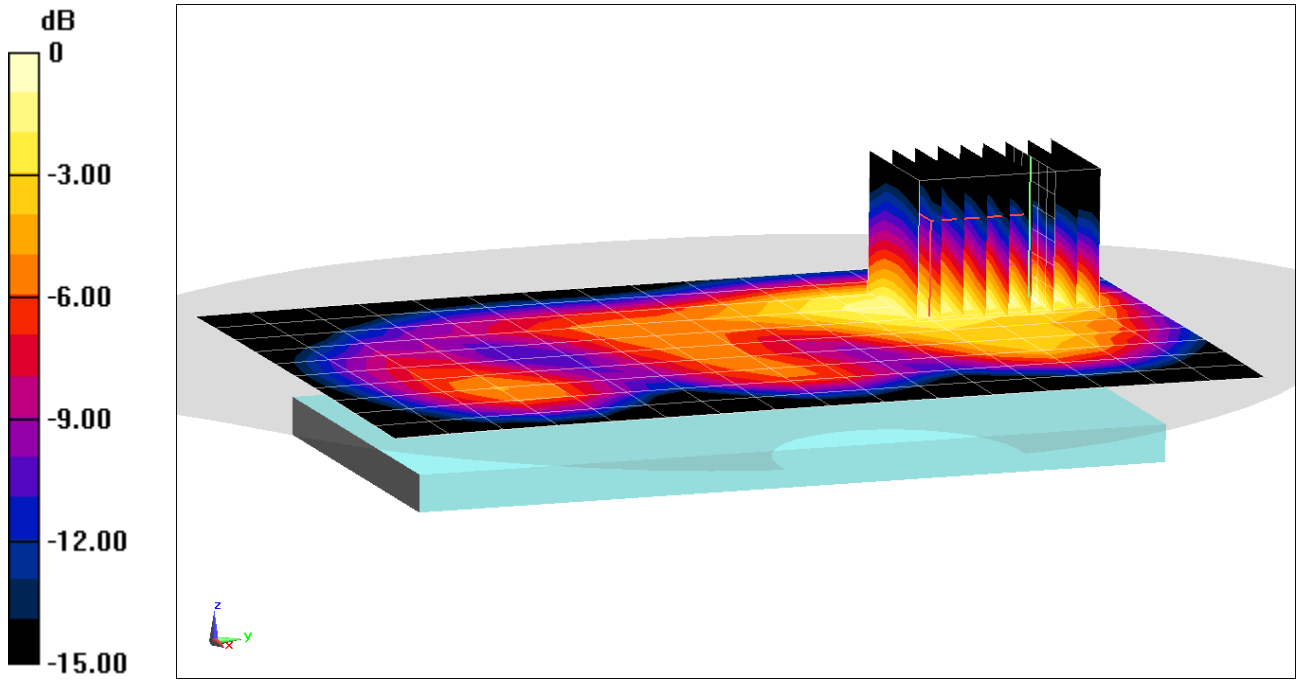
Communication System: UID 0, 802.11b; Frequency: 2437 MHz; Duty Cycle: 1:1
Medium: 2450 Body; Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.987 S/m; ε_r = 51.736; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/04/2021; Ambient Temp: 22°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7308; ConvF(7.41, 7.41, 7.41) @ 2437 MHz; Calibrated: 7/31/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/11/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: IEEE 802.11b, 22 MHz Bandwidth, Body SAR, Ch 6, 1 Mbps, Back Side

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x9x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.8380 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.597 W/kg
SAR(1 g) = 0.273 W/kg



0 dB = 0.462 W/kg = -3.35 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21475

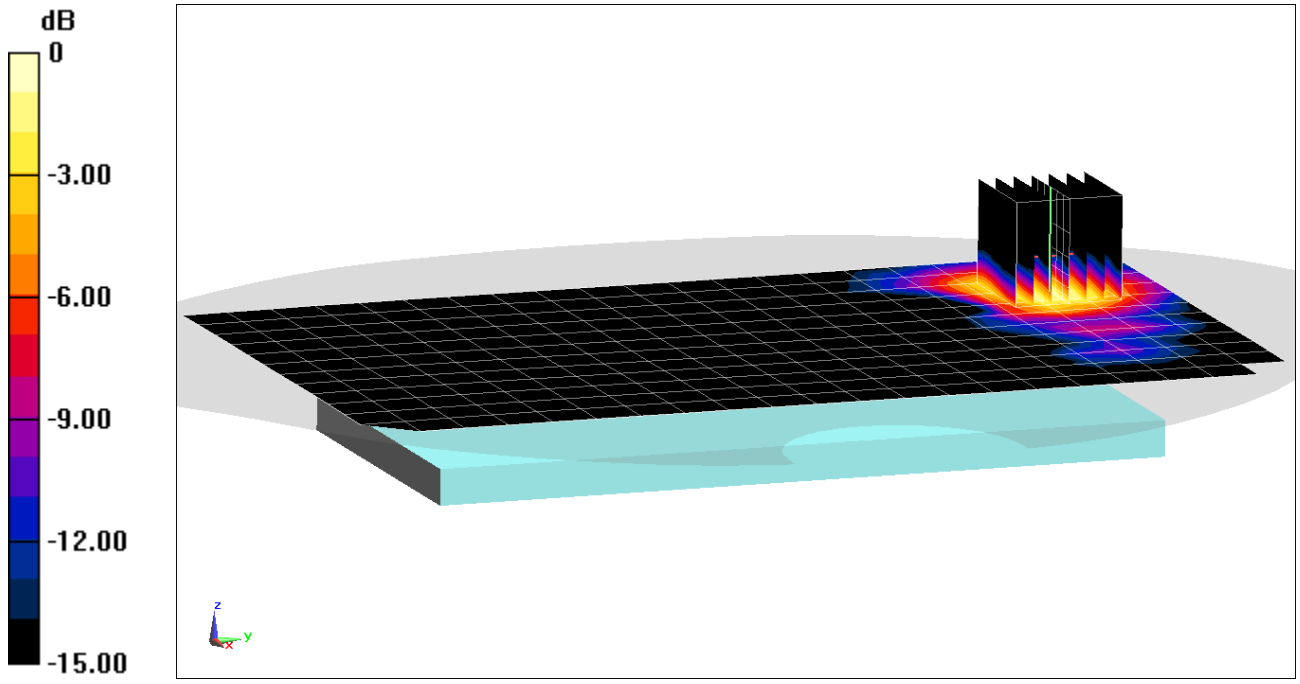
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5825 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Body; Medium parameters used:
f = 5825 MHz; σ = 6.306 S/m; ε_r = 46.31; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/04/2021; Ambient Temp: 22.8°C; Tissue Temp: 23.0°C

Probe: EX3DV4 - SN7406; ConvF(4.56, 4.56, 4.56) @ 5825 MHz; Calibrated: 6/23/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1583; Calibrated: 5/14/2020
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: IEEE 802.11a, UNII-3, 20 MHz Bandwidth, Body SAR, Ch 165, 6 Mbps, Back Side

Area Scan (13x22x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 1.264 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 1.57 W/kg
SAR(1 g) = 0.389 W/kg



0 dB = 0.909 W/kg = -0.41 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21475

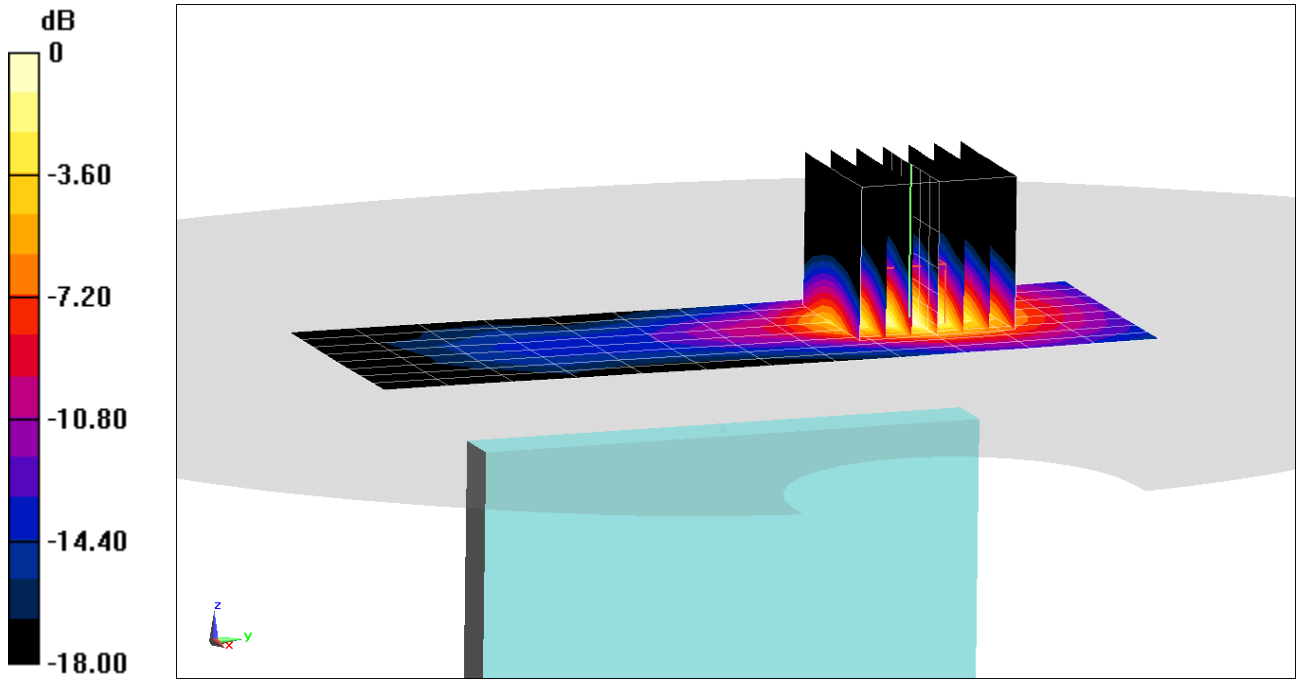
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5240 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Body; Medium parameters used:
f = 5240 MHz; σ = 5.519 S/m; ε_r = 47.297; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/04/2021; Ambient Temp: 22.8°C; Tissue Temp: 23.0°C

Probe: EX3DV4 - SN7406; ConvF(5.05, 5.05, 5.05) @ 5240 MHz; Calibrated: 6/23/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1583; Calibrated: 5/14/2020
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: IEEE 802.11a, U-NII-1, 20 MHz Bandwidth, Body SAR, Ch 48, 6 Mbps, Top Edge

Area Scan (9x13x1): Measurement grid: dx=5mm, dy=10mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 3.284 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 2.84 W/kg
SAR(1 g) = 0.764 W/kg



0 dB = 1.77 W/kg = 2.48 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21467

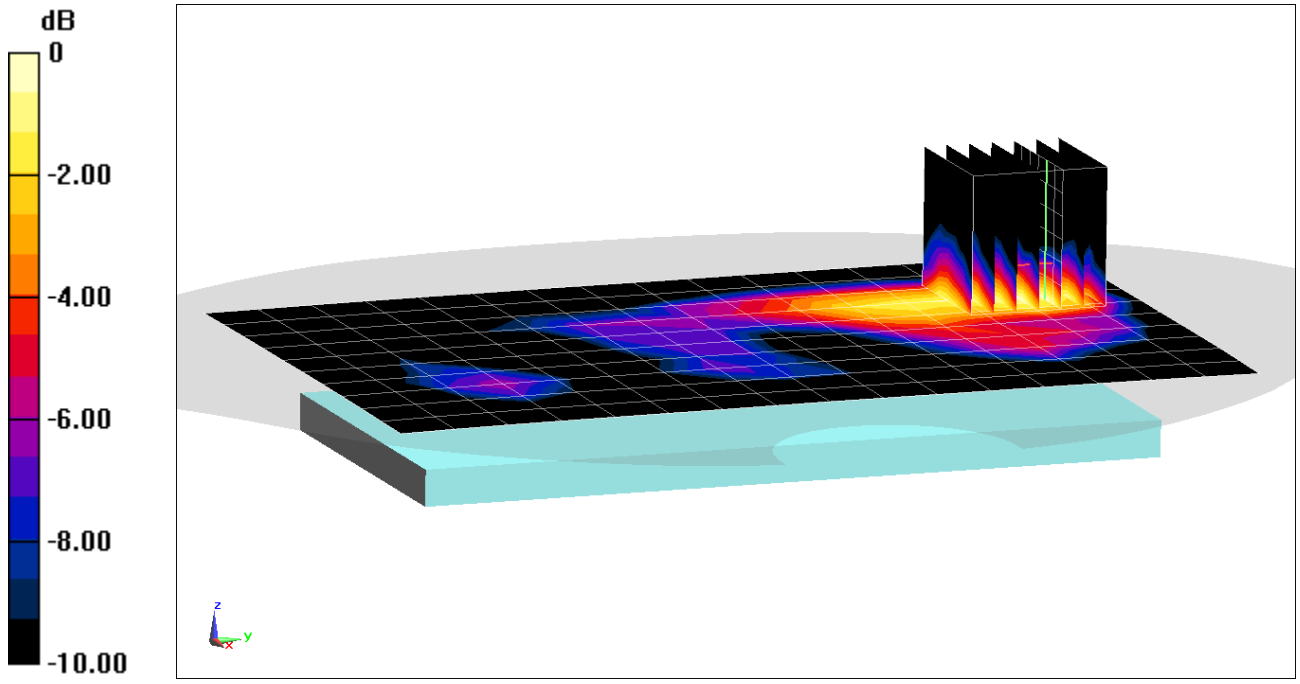
Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.305
Medium: 2450 Body; Medium parameters used:
f = 2480 MHz; σ = 2.049 S/m; ε_r = 51.601; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/04/2021; Ambient Temp: 22°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7308; ConvF(7.41, 7.41, 7.41) @ 2480 MHz; Calibrated: 7/31/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/11/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: Bluetooth, Body SAR, Ch 78, 1 Mbps, Back Side

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.479 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.0520 W/kg
SAR(1 g) = 0.022 W/kg



0 dB = 0.0391 W/kg = -14.08 dBW/kg

PCTEST

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21491

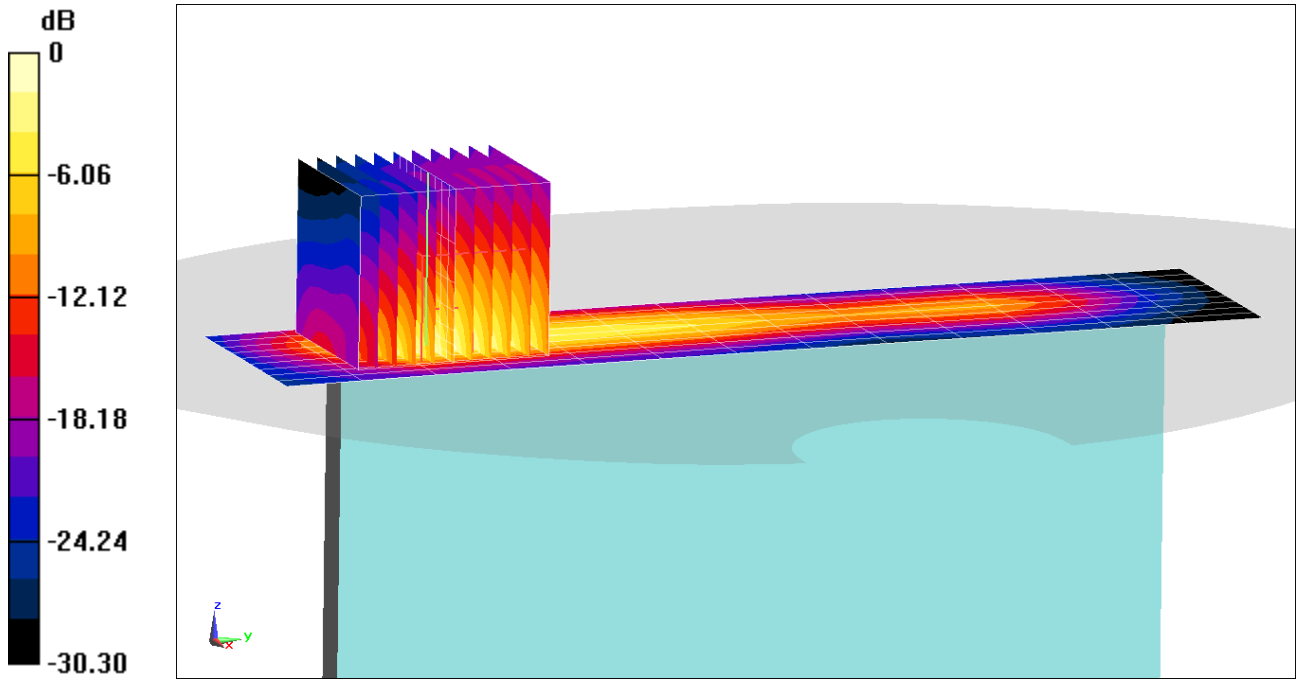
Communication System: UID 0, CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used (interpolated):
f = 1908.75 MHz; σ = 1.527 S/m; ε_r = 53.087; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 01/19/2021; Ambient Temp: 22.7°C; Tissue Temp: 23.1°C

Probe: EX3DV4 - SN7308; ConvF(7.77, 7.77, 7.77) @ 1908.75 MHz; Calibrated: 7/31/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/11/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: PCS EVDO, Phablet SAR, Left Edge, High.ch

Area Scan (10x14x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (10x11x8)/Cube 0: Measurement grid: dx=3.8mm, dy=3.8mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 61.17 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 22.3 W/kg
SAR(10 g) = 2.53 W/kg



0 dB = 10.4 W/kg = 10.17 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21491

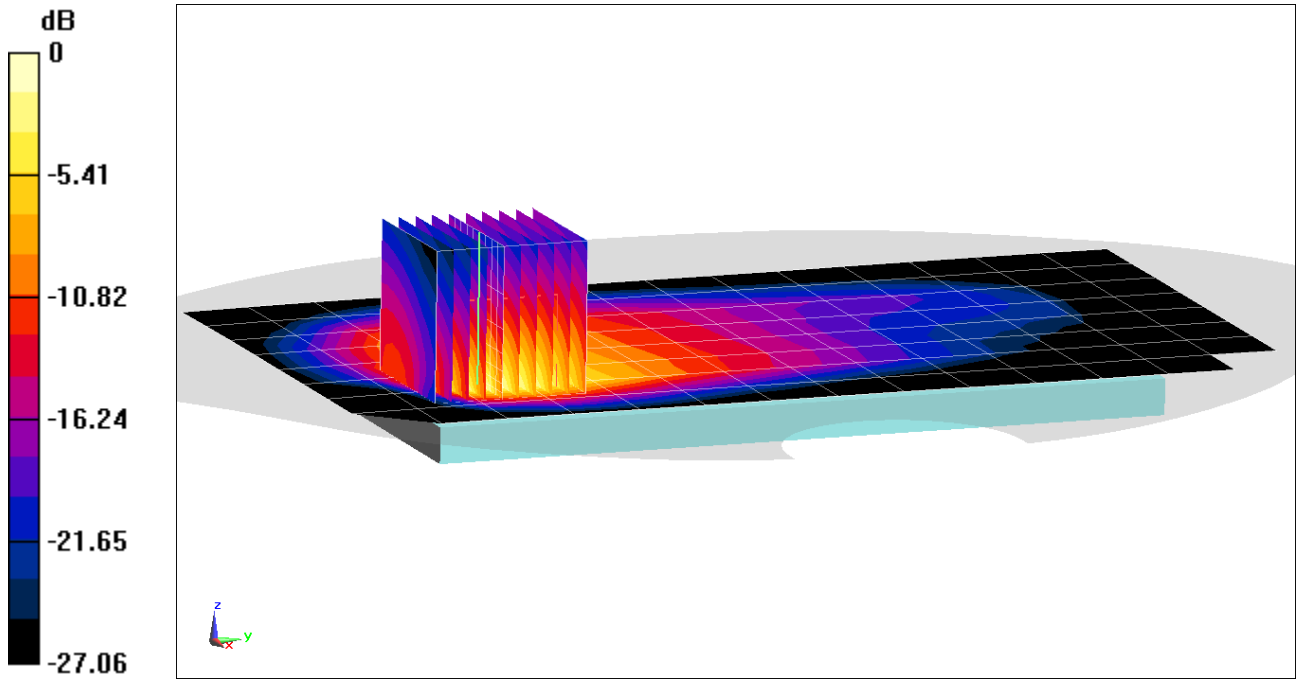
Communication System: UID 0, UMTS; Frequency: 1712.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body; Medium parameters used (interpolated):
f = 1712.4 MHz; σ = 1.484 S/m; ε_r = 51.67; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.3 cm

Test Date: 01/14/2021; Ambient Temp: 20.3°C; Tissue Temp: 23.7°C

Probe: EX3DV4 - SN7410; ConvF(8.17, 8.17, 8.17) @ 1712.4 MHz; Calibrated: 7/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/15/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: UMTS 1750, Phablet SAR, Back side, Low.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (10x10x8)/Cube 0: Measurement grid: dx=3.8mm, dy=3.8mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 67.16 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 19.4 W/kg
SAR(10 g) = 3.07 W/kg



0 dB = 11.4 W/kg = 10.57 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21491

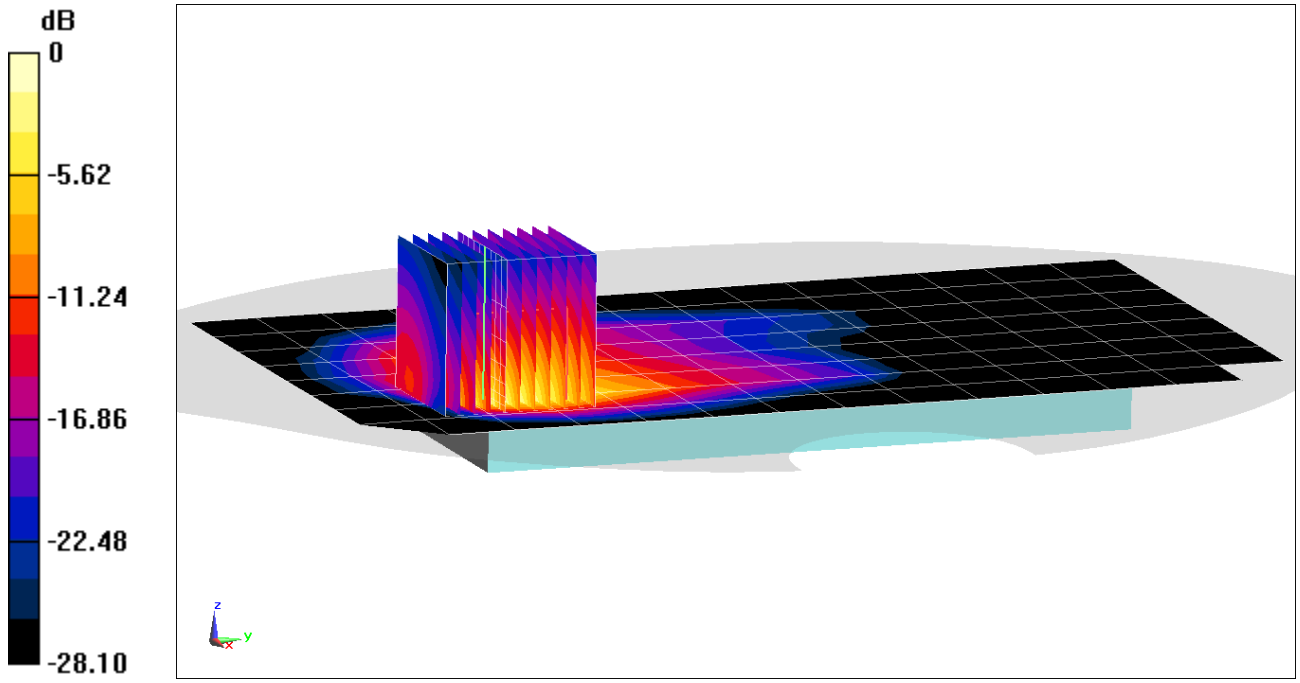
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1880 MHz; σ = 1.497 S/m; ε_r = 52.981; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 01/13/2021; Ambient Temp: 24.7°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7551; ConvF(7.84, 7.84, 7.84) @ 1880 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 10/16/2020
Phantom: Right Back Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: UMTS 1900, Phablet SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (10x11x8)/Cube 0: Measurement grid: dx=3.4mm, dy=3.4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 66.16 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 23.1 W/kg
SAR(10 g) = 3.14 W/kg



0 dB = 13.2 W/kg = 11.21 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 23273

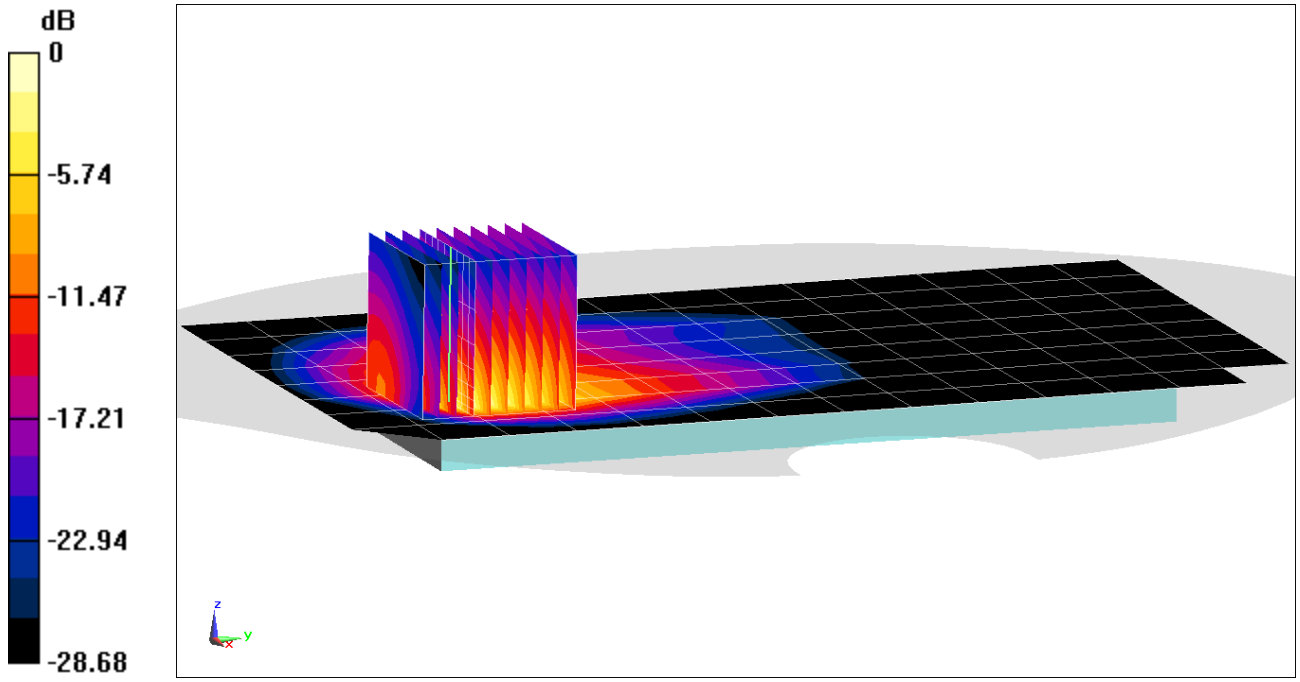
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1770 MHz; Duty Cycle: 1:1
Medium: 1750 Body; Medium parameters used:
f = 1770 MHz; σ = 1.551 S/m; ε_r = 51.444; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 12/28/2020; Ambient Temp: 22.4°C; Tissue Temp: 23.0°C

Probe: EX3DV4 - SN7357; ConvF(8.17, 8.17, 8.17) @ 1770 MHz; Calibrated: 4/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/15/2020
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 66 (AWS), Phablet SAR, Back side, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (10x10x8)/Cube 0: Measurement grid: dx=3.8mm, dy=3.8mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 54.97 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 14.7 W/kg
SAR(10 g) = 2.06 W/kg



0 dB = 8.39 W/kg = 9.24 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 23273

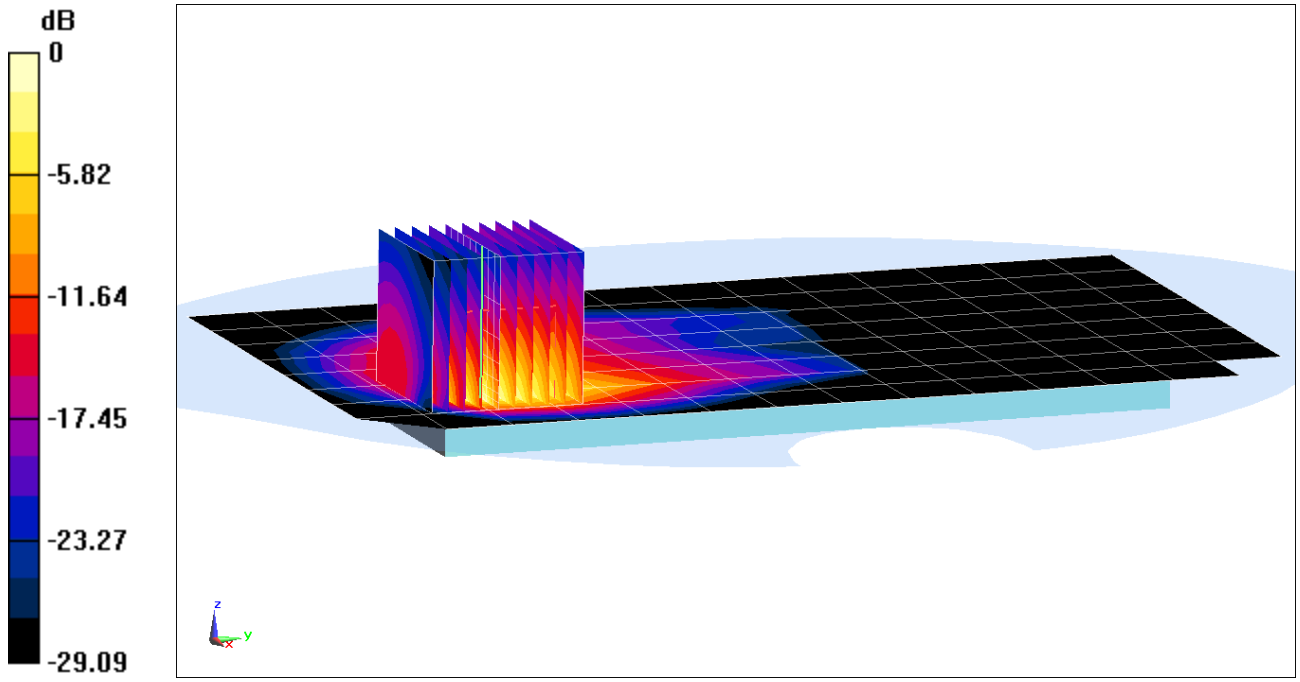
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1905 MHz; σ = 1.543 S/m; ε_r = 52.066; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 01/06/2021; Ambient Temp: 19.7°C; Tissue Temp: 22.8°C

Probe: EX3DV4 - SN7410; ConvF(7.76, 7.76, 7.76) @ 1905 MHz; Calibrated: 7/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/15/2020
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 25 (PCS), Phablet SAR, Back side, High.ch, 20 MHz Bandwidth, QPSK, 50 RB, 25 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (10x10x8)/Cube 0: Measurement grid: dx=3.8mm, dy=3.8mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 65.72 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 20.3 W/kg
SAR(10 g) = 2.69 W/kg



0 dB = 11.8 W/kg = 10.72 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 23299

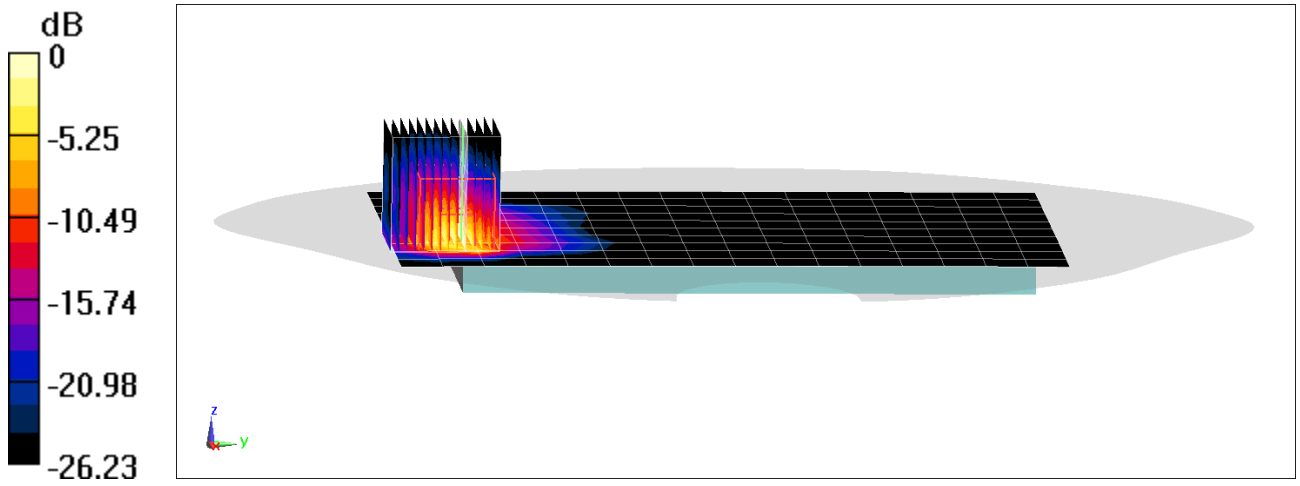
Communication System: UID 0; LTE Band 41 (Class 2); Frequency: 2636.5 MHz; Duty Cycle: 1:2.31
Medium: 2450 Body Medium parameters used (interpolated):
f = 2636.5 MHz; σ = 2.28 S/m; ε_r = 51.227; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 01/21/2021; Ambient Temp: 23.9°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN7308; ConvF(7.37, 7.37, 7.37) @ 2636.5 MHz; Calibrated: 7/31/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/11/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 41 Power Class 2, Phablet SAR, Front side, Mid-High.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (14x14x8)/Cube 0: Measurement grid: dx=2.4mm, dy=2.4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 41.59 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 11.3 W/kg
SAR(10 g) = 1.07 W/kg



0 dB = 7.36 W/kg = 8.67 dBW/kg

DUT: ZNFK330PM; Type: Portable Handset; Serial: 21475

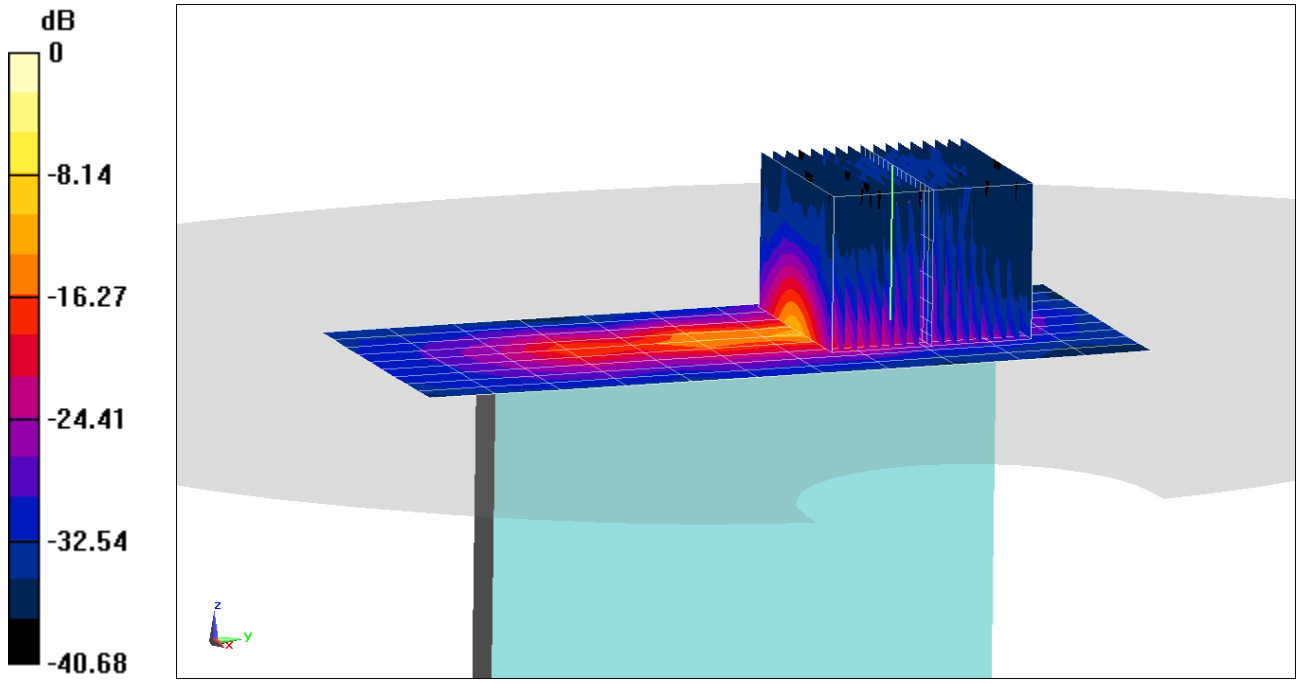
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5260 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Body; Medium parameters used:
f = 5260 MHz; σ = 5.542 S/m; ε_r = 47.243; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 01/04/2021; Ambient Temp: 22.8°C; Tissue Temp: 23.0°C

Probe: EX3DV4 - SN7406; ConvF(5.05, 5.05, 5.05) @ 5260 MHz; Calibrated: 6/23/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1583; Calibrated: 5/14/2020
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: IEEE 802.11a, U-NII-2A,20 MHz Bandwidth, Phablet SAR, Ch 52, 6 Mbps, Top Edge

Area Scan (10x12x1): Measurement grid: dx=5mm, dy=10mm
Zoom Scan (17x17x7)/Cube 0: Measurement grid: dx=1.9mm, dy=1.9mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 2.935 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 77.5 W/kg
SAR(10 g) = 1.55 W/kg



0 dB = 41.4 W/kg = 16.17 dBW/kg

APPENDIX B: SAR VERIFICATION PLOTS

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DUT: Dipole 750 MHz; Type: D750V3; Serial: 1003

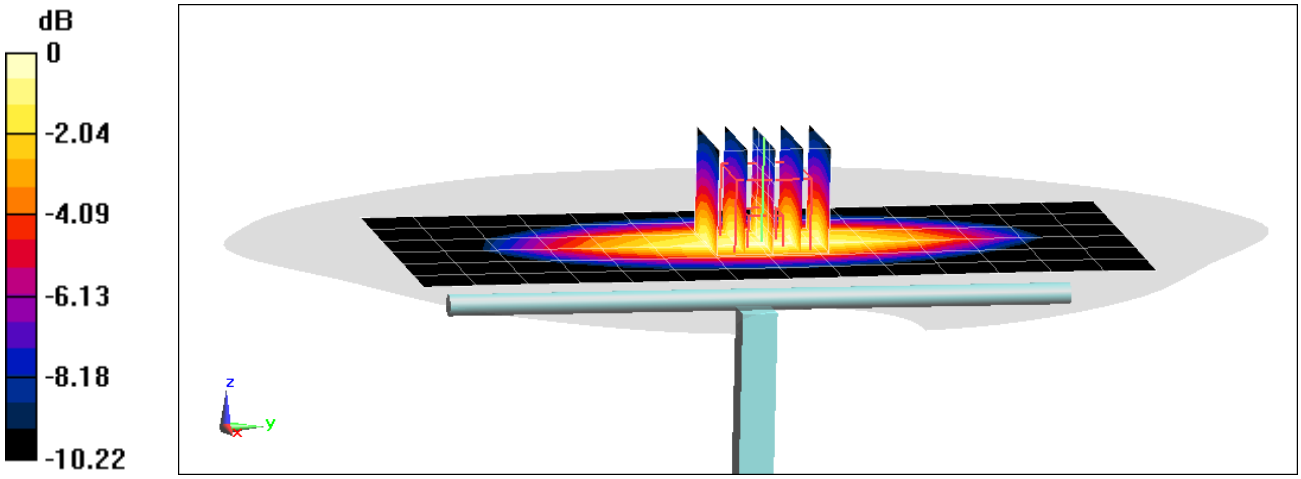
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used:
f = 750 MHz; σ = 0.89 S/m; ε_r = 42.648; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01/06/2021; Ambient Temp: 20.3°C; Tissue Temp: 19.2°C

Probe: EX3DV4 - SN7357; ConvF(10.23, 10.23, 10.23) @ 750 MHz; Calibrated: 4/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/15/2020
Phantom: Twin-SAM V5.0 Left 20; Type: QD 000 P40 CD; Serial: 1715
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

750 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.42 W/kg
SAR(1 g) = 1.66 W/kg
Deviation(1 g) = -5.47%



0 dB = 2.18 W/kg = 3.38 dBW/kg

PCTEST

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d132

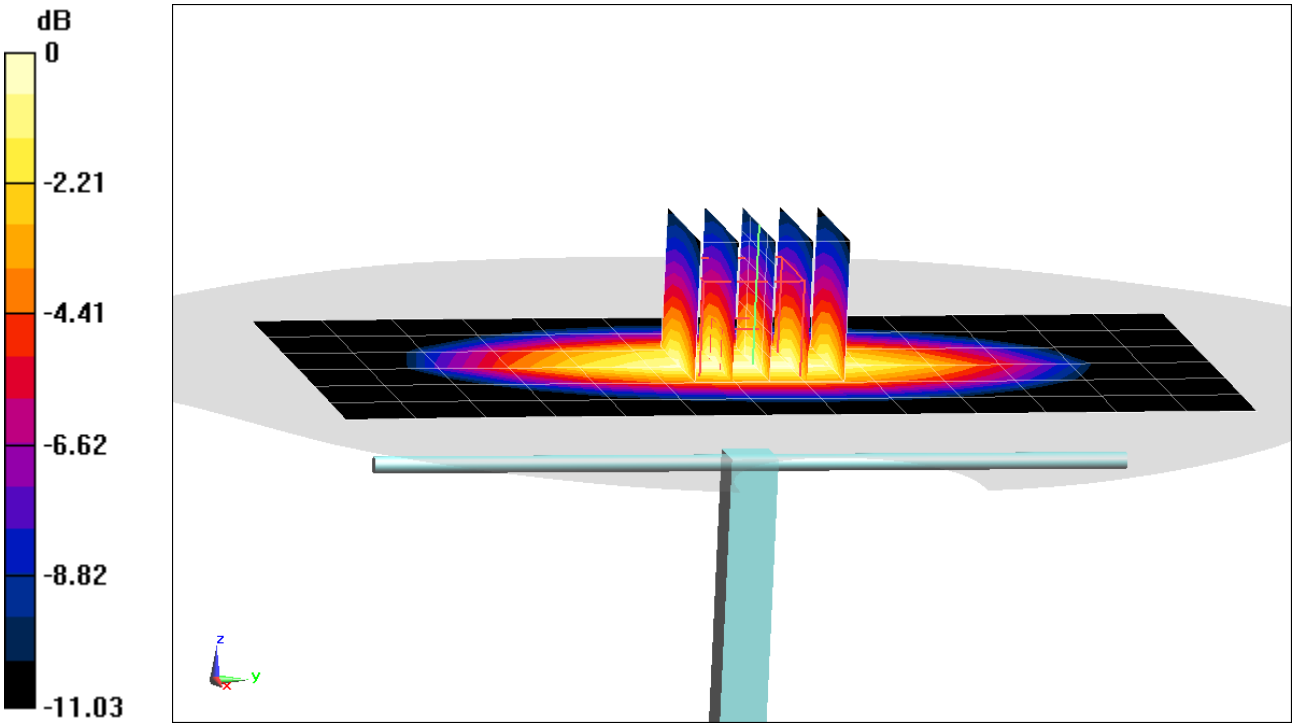
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used:
f = 835 MHz; σ = 0.908 S/m; ε_r = 42.006; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01/06/2021; Ambient Temp: 23.7°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7308; ConvF(10.17, 10.17, 10.17) @ 835 MHz; Calibrated: 7/31/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/11/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

835 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 3.06 W/kg
SAR(1 g) = 1.94 W/kg
Deviation(1 g) = 0.52%



0 dB = 2.65 W/kg = 4.23 dBW/kg

PCTEST

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d047

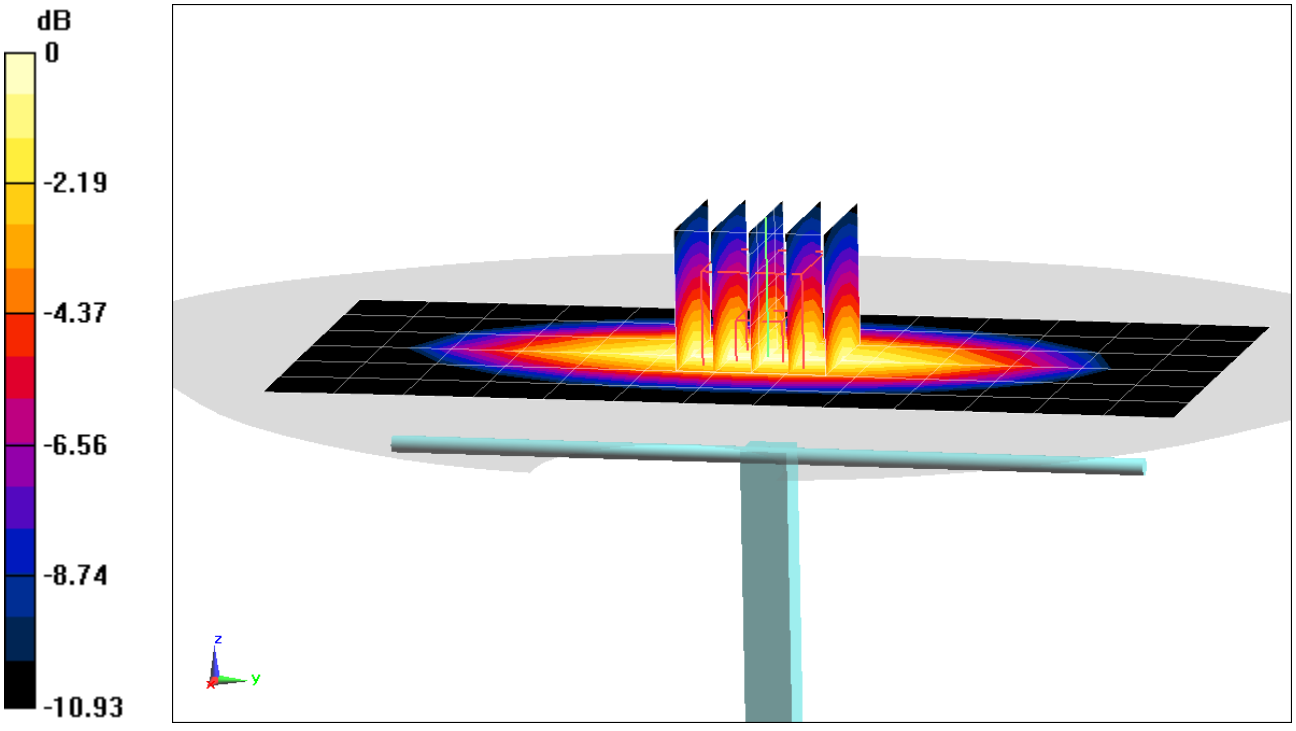
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used:
f = 835 MHz; σ = 0.895 S/m; ε_r = 40.648; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01/11/2021; Ambient Temp: 22.3°C; Tissue Temp: 19.7°C

Probe: EX3DV4 - SN7308; ConvF(10.17, 10.17, 10.17) @ 835 MHz; Calibrated: 7/31/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/11/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

835 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.84 W/kg
SAR(1 g) = 1.83 W/kg
Deviation(1 g) = -2.87%



0 dB = 2.49 W/kg = 3.96 dBW/kg

PCTEST

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d047

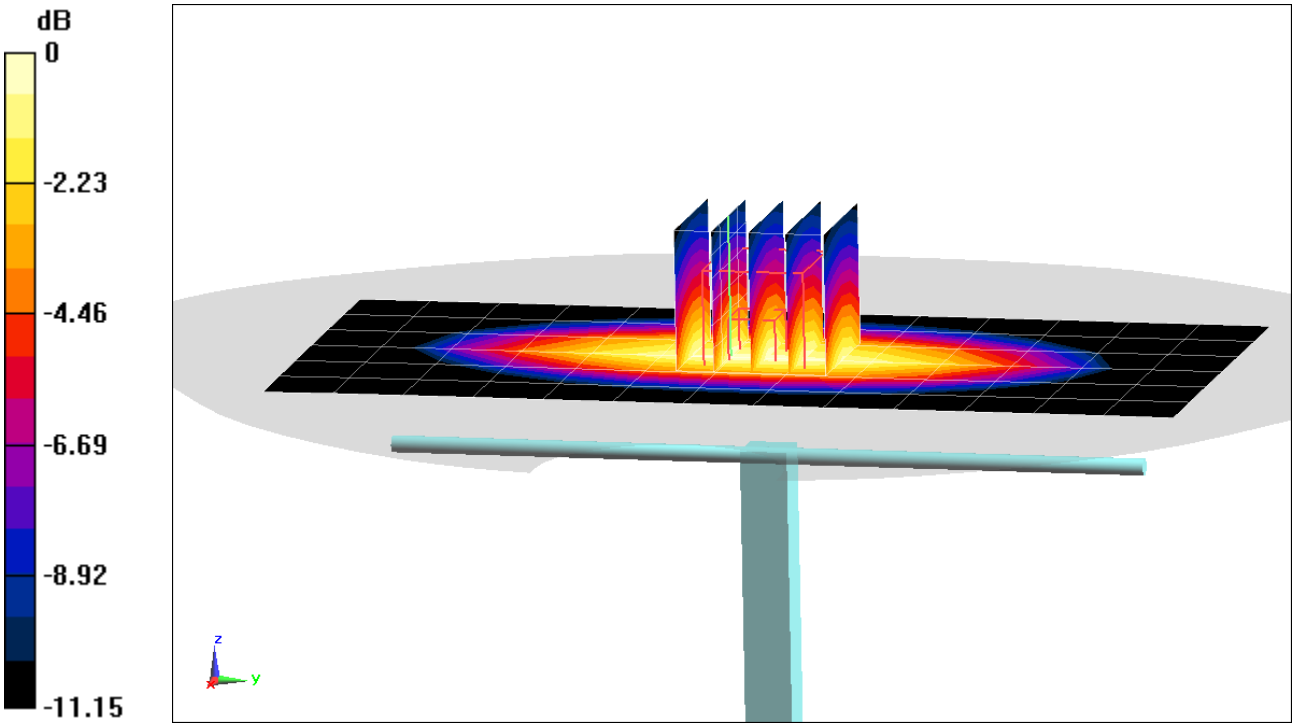
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used:
f = 835 MHz; σ = 0.882 S/m; ε_r = 39.836; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01/12/2021; Ambient Temp: 22.7°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7308; ConvF(10.17, 10.17, 10.17) @ 835 MHz; Calibrated: 7/31/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/11/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

835 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.91 W/kg
SAR(1 g) = 1.82 W/kg
Deviation(1 g) = -3.40%



0 dB = 2.47 W/kg = 3.93 dBW/kg

PCTEST

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1150

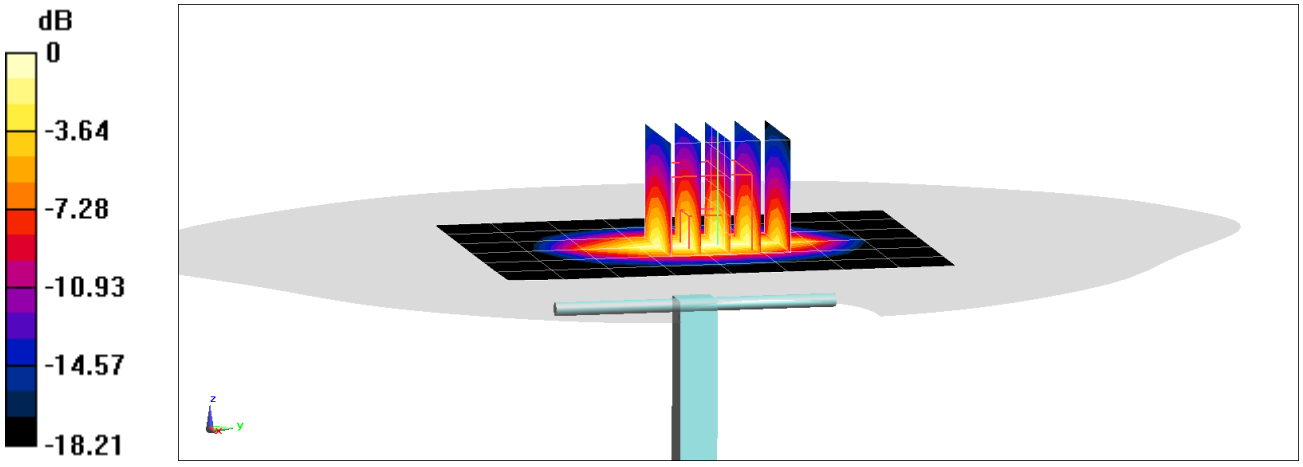
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 1750 MHz; σ = 1.369 S/m; ε_r = 40.727; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12/27/2020; Ambient Temp: 23.1°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN3589; ConvF(7.55, 7.55, 7.55) @ 1750 MHz; Calibrated: 1/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 1/13/2020
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

1750 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 6.87 W/kg
SAR(1 g) = 3.66 W/kg
Deviation(1 g) = 0.27%



0 dB = 5.63 W/kg = 7.51 dBW/kg

PCTEST

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1150

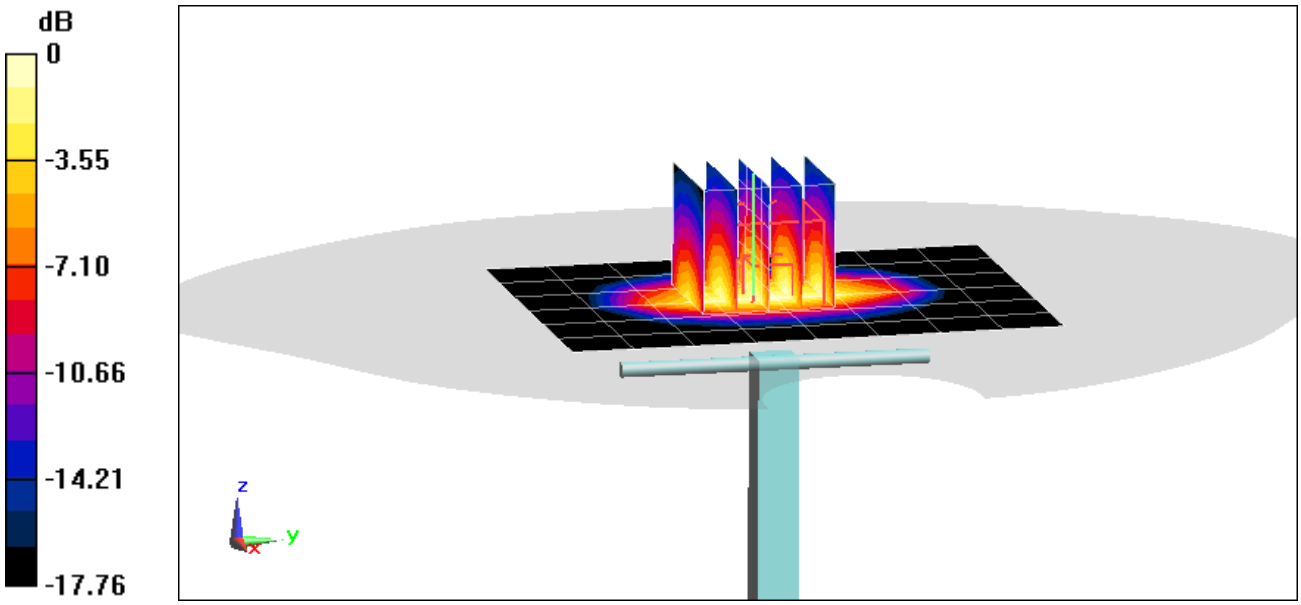
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used:
f = 1750 MHz; σ = 1.399 S/m; ε_r = 39.491; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/19/2021; Ambient Temp: 22.6°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7357; ConvF(8.69, 8.69, 8.69) @ 1750 MHz; Calibrated: 4/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/15/2020
Phantom: Twin-SAM V5.0 Left 20; Type: QD 000 P40 CD; Serial: 1715
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

1750 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.01 W/kg
SAR(1 g) = 3.79 W/kg
Deviation(1 g) = 3.84%



0 dB = 5.80 W/kg = 7.63 dBW/kg

PCTEST

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d148

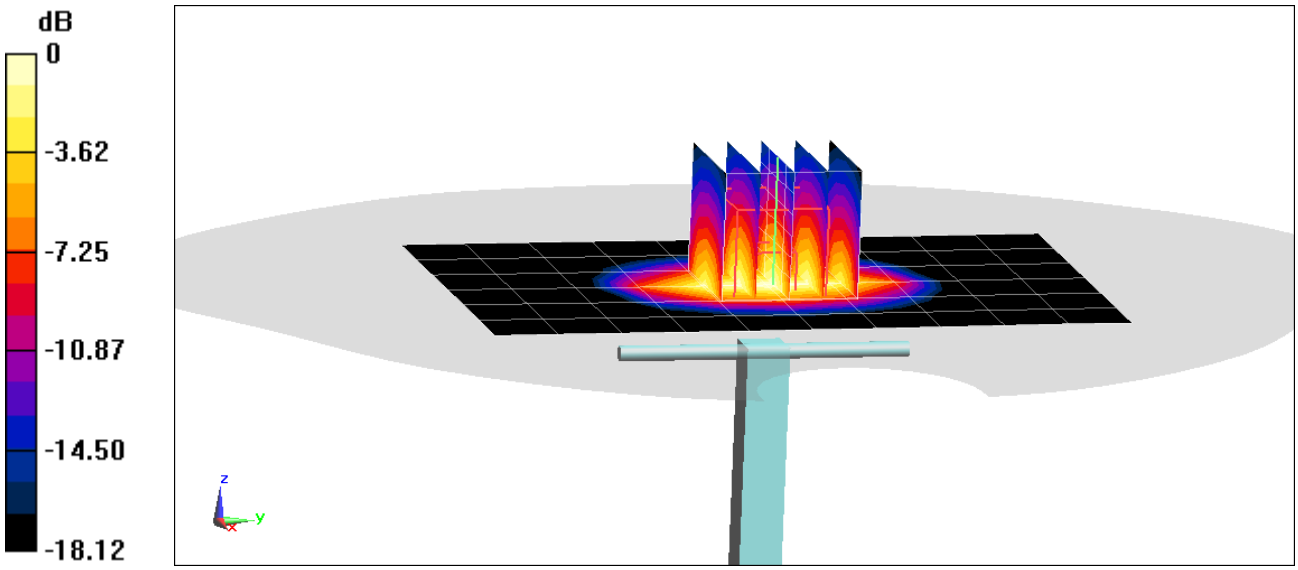
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1900 MHz; σ = 1.403 S/m; ε_r = 39.696; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12/30/2020; Ambient Temp: 23.0°C; Tissue Temp: 24.5°C

Probe: EX3DV4 - SN7539; ConvF(8.03, 8.03, 8.03) @ 1900 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/20/2020
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1966
Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.99 W/kg
SAR(1 g) = 4.2 W/kg
Deviation(1 g) = 7.42%



0 dB = 6.64 W/kg = 8.22 dBW/kg

PCTEST

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719

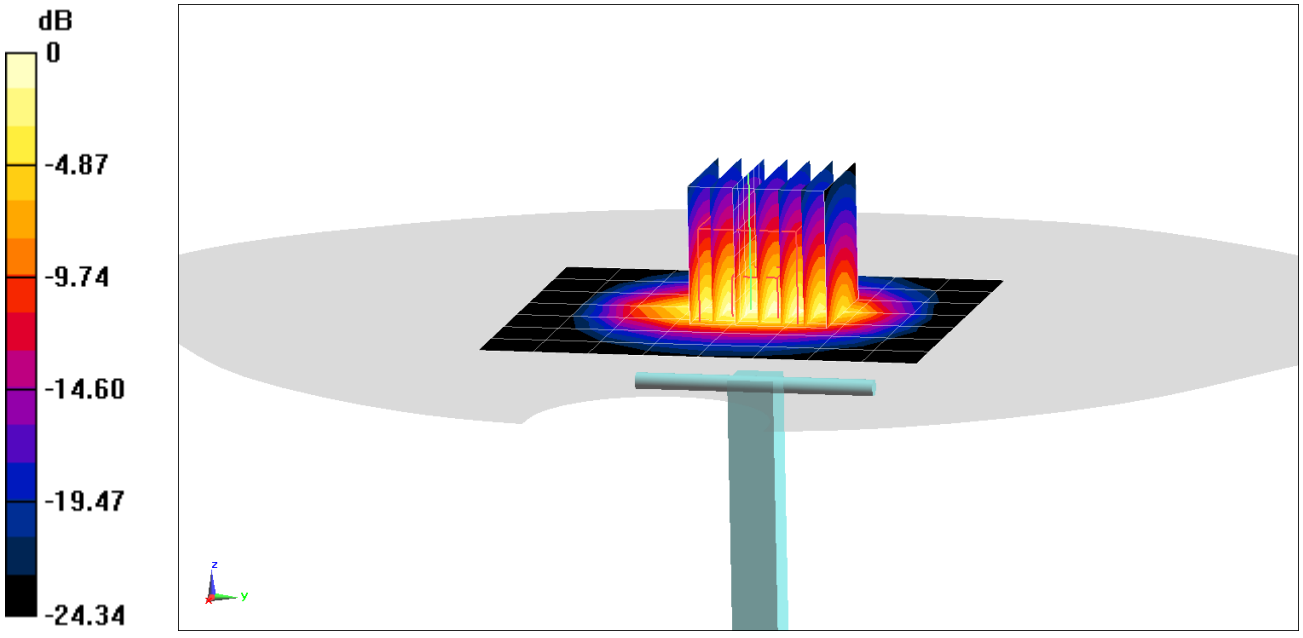
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2450 MHz; σ = 1.832 S/m; ε_r = 39.546; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/10/2021; Ambient Temp: 22.2°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7571; ConvF(7.28, 7.28, 7.28) @ 2450 MHz; Calibrated: 12/11/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1533; Calibrated: 12/7/2020
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 11.0 W/kg
SAR(1 g) = 4.97 W/kg
Deviation(1 g) = -3.31%



0 dB = 8.51 W/kg = 9.30 dBW/kg

PCTEST

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 797

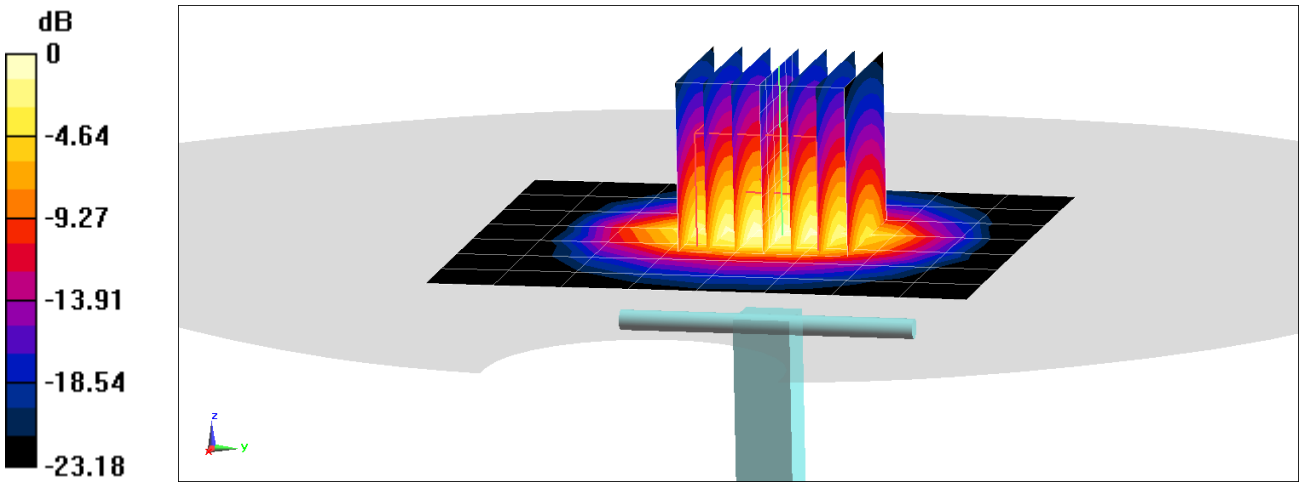
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2450 MHz; σ = 1.86 S/m; ε_r = 38.686; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/18/2021; Ambient Temp: 22.9°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7571; ConvF(7.28, 7.28, 7.28) @ 2450 MHz; Calibrated: 12/11/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1533; Calibrated: 12/7/2020
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 10.8 W/kg
SAR(1 g) = 4.98 W/kg
Deviation(1 g) = -4.96%



0 dB = 8.48 W/kg = 9.28 dBW/kg

PCTEST

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1064

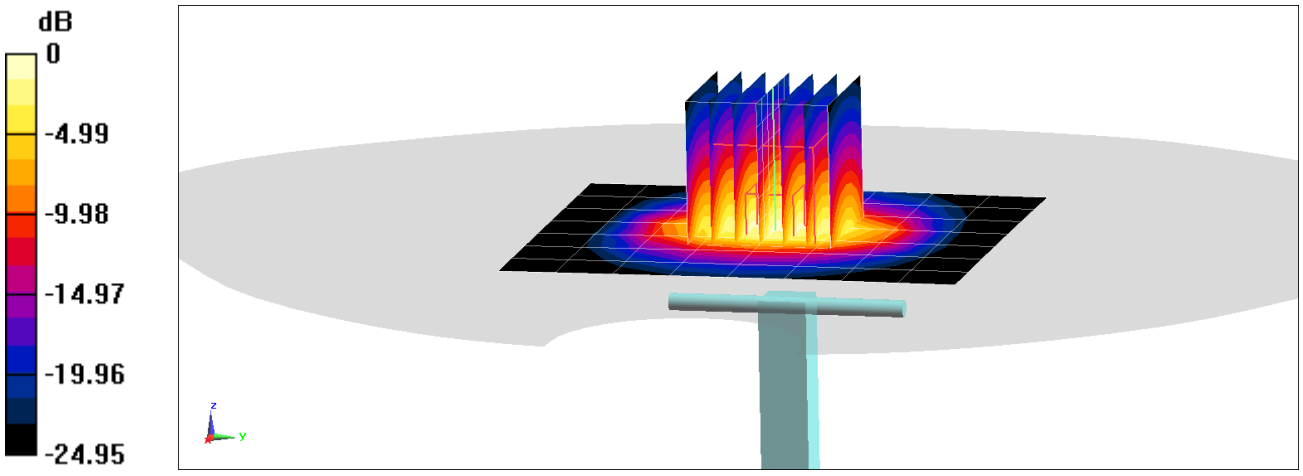
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used: |
f = 2600 MHz; σ = 1.995 S/m; ε_r = 38.658; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/25/2021; Ambient Temp: 22.5°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN7571; ConvF(7.05, 7.05, 7.05) @ 2600 MHz; Calibrated: 12/11/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1533; Calibrated: 12/7/2020
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2600 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 12.6 W/kg
SAR(1 g) = 5.52 W/kg
Deviation(1 g) = -4.99%



0 dB = 9.84 W/kg = 9.93 dBW/kg

PCTEST

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1057

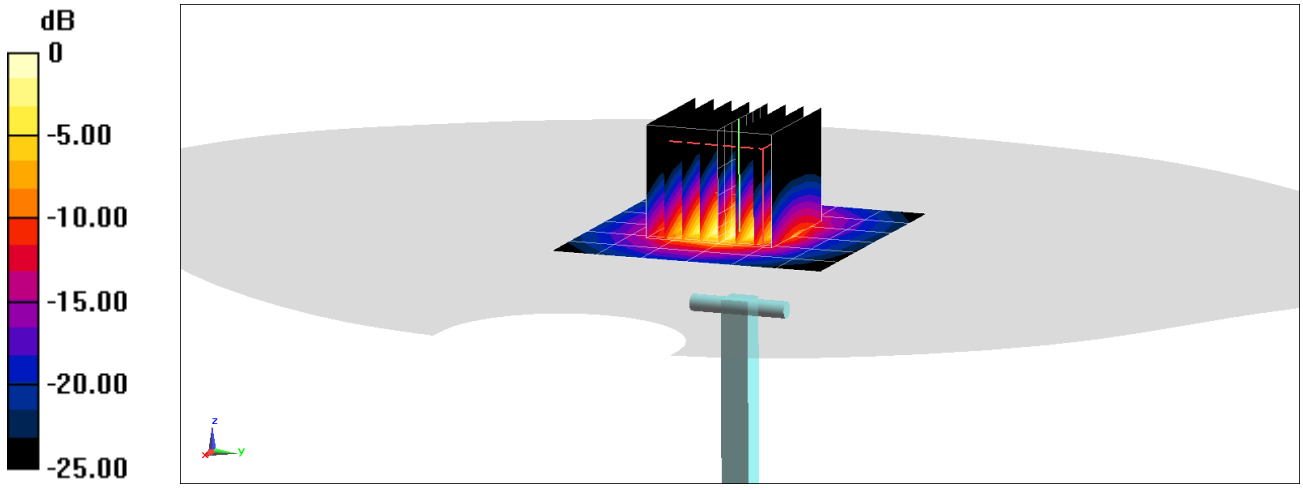
Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Head Medium parameters used:
f = 5250 MHz; σ = 4.562 S/m; ε_r = 34.647; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12/30/2020; Ambient Temp: 23.3°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7357; ConvF(5.5, 5.5, 5.5) @ 5250 MHz; Calibrated: 4/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/15/2020
Phantom: Twin-SAM V5.0 Left 20; Type: QD 000 P40 CD; Serial: 1715
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

5250 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 14.9 W/kg
SAR(1 g) = 3.7 W/kg
Deviation(1 g) = -6.57%



0 dB = 8.48 W/kg = 9.28 dBW/kg

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1057

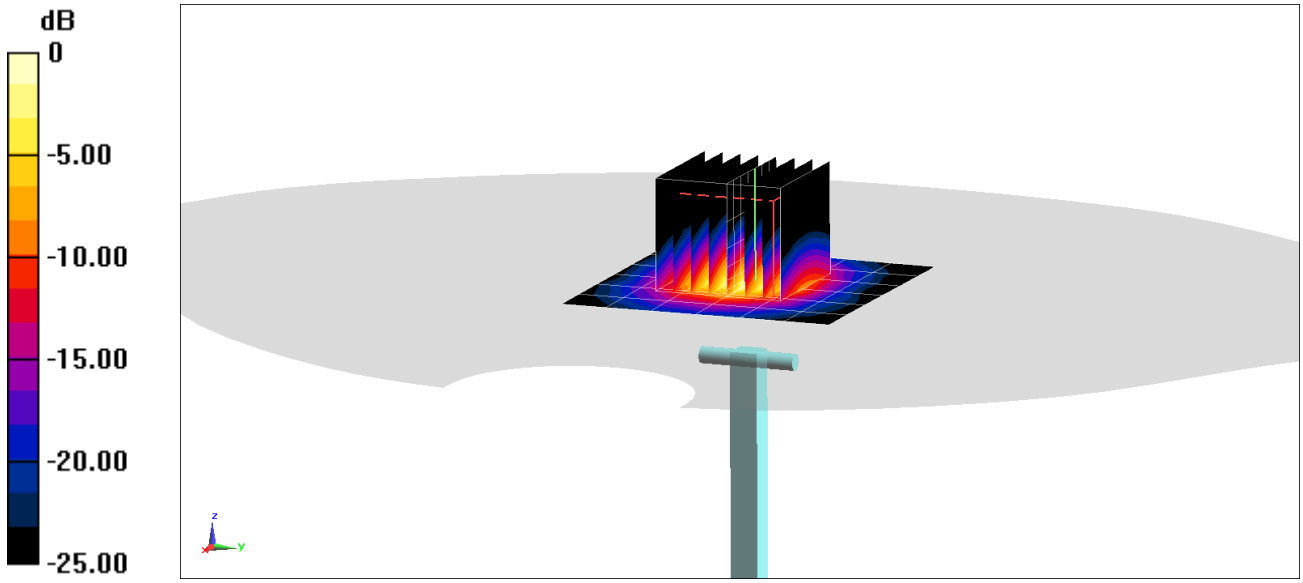
Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Head Medium parameters used:
f = 5600 MHz; σ = 4.963 S/m; ε_r = 34.097; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12/30/2020; Ambient Temp: 23.3°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7357; ConvF(4.93, 4.93, 4.93) @ 5600 MHz; Calibrated: 4/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/15/2020
Phantom: Twin-SAM V5.0 Left 20; Type: QD 000 P40 CD; Serial: 1715
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

5600 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 17.2 W/kg
SAR(1 g) = 3.97 W/kg
Deviation(1 g) = -5.59%



0 dB = 9.76 W/kg = 9.89 dBW/kg

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1057

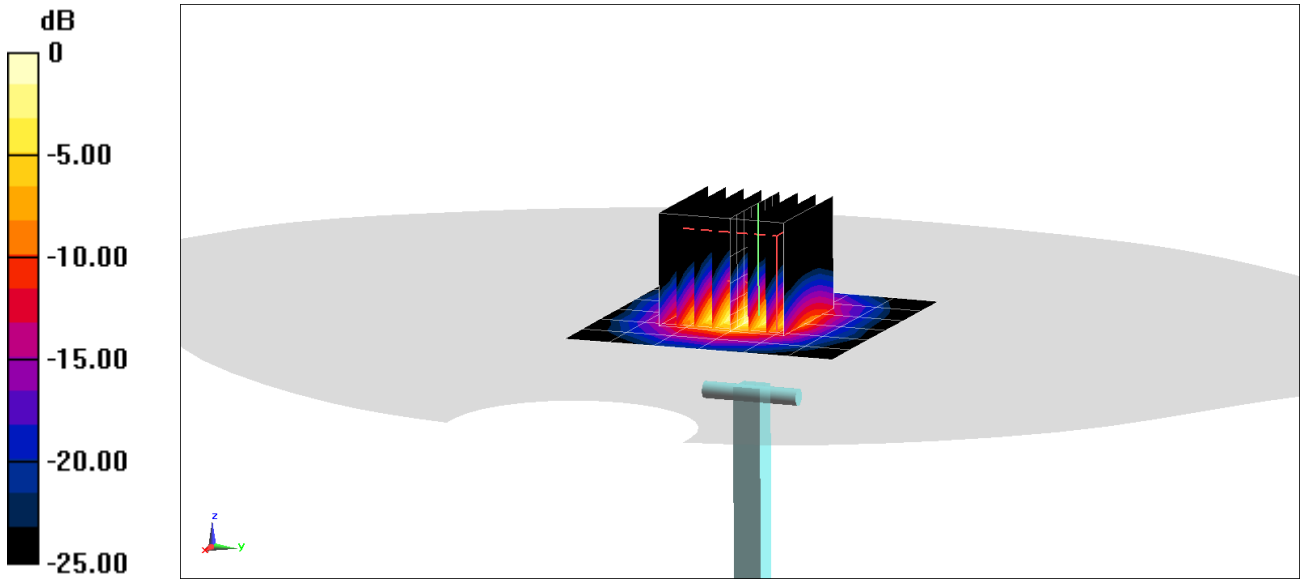
Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Head Medium parameters used:
f = 5750 MHz; σ = 5.151 S/m; ε_r = 33.87; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12/30/2020; Ambient Temp: 23.3°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7357; ConvF(5.05, 5.05, 5.05) @ 5750 MHz; Calibrated: 4/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/15/2020
Phantom: Twin-SAM V5.0 Left 20; Type: QD 000 P40 CD; Serial: 1715
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

5750 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 17.7 W/kg
SAR(1 g) = 3.9 W/kg
Deviation(1 g) = -3.11%



0 dB = 9.68 W/kg = 9.86 dBW/kg

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1161

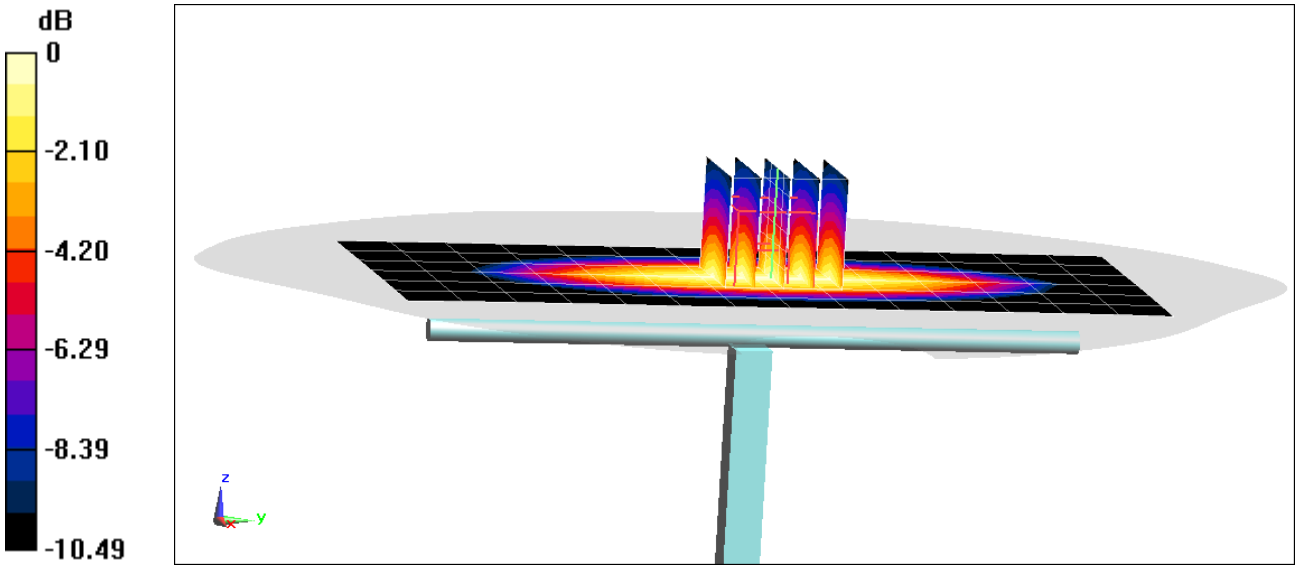
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used:
f = 750 MHz; σ = 0.947 S/m; ε_r = 54.217; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12/28/2020; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7539; ConvF(10.24, 10.24, 10.24) @ 750 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/20/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

750 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.67 W/kg
SAR(1 g) = 1.74 W/kg
Deviation(1 g) = 3.20%



0 dB = 2.34 W/kg = 3.69 dBW/kg

PCTEST

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d133

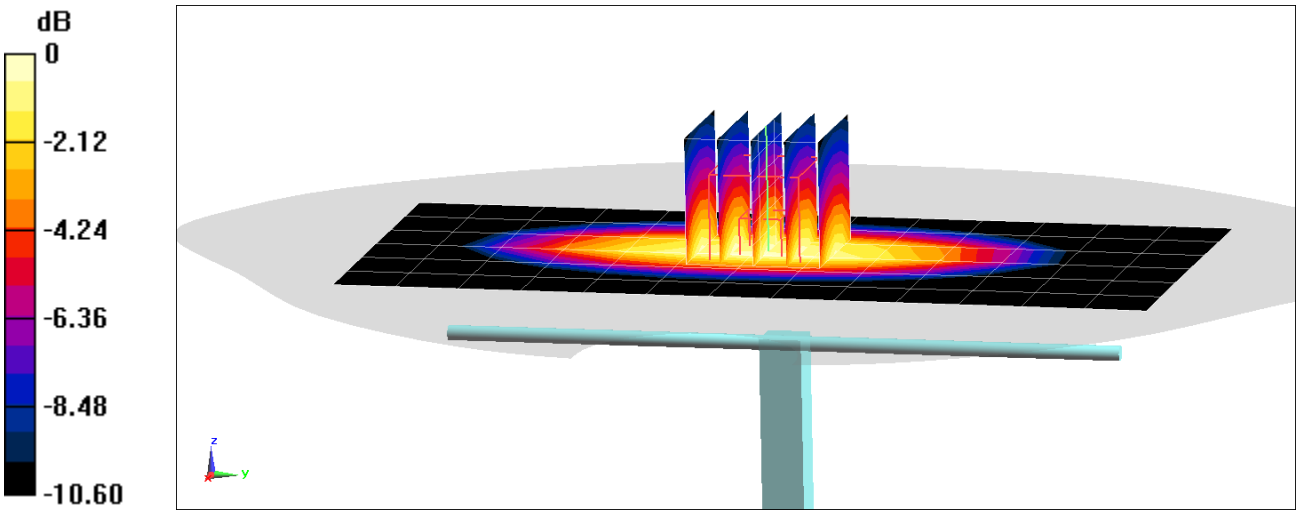
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 0.954 S/m; ε_r = 52.978; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12/30/2020; Ambient Temp: 22.9°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7488; ConvF(11.04, 11.04, 11.04) @ 835 MHz; Calibrated: 1/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/13/2020
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

835 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.92 W/kg
SAR(1 g) = 1.92 W/kg
Deviation(1 g) = -1.54%



0 dB = 2.57 W/kg = 4.10 dBW/kg

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d133

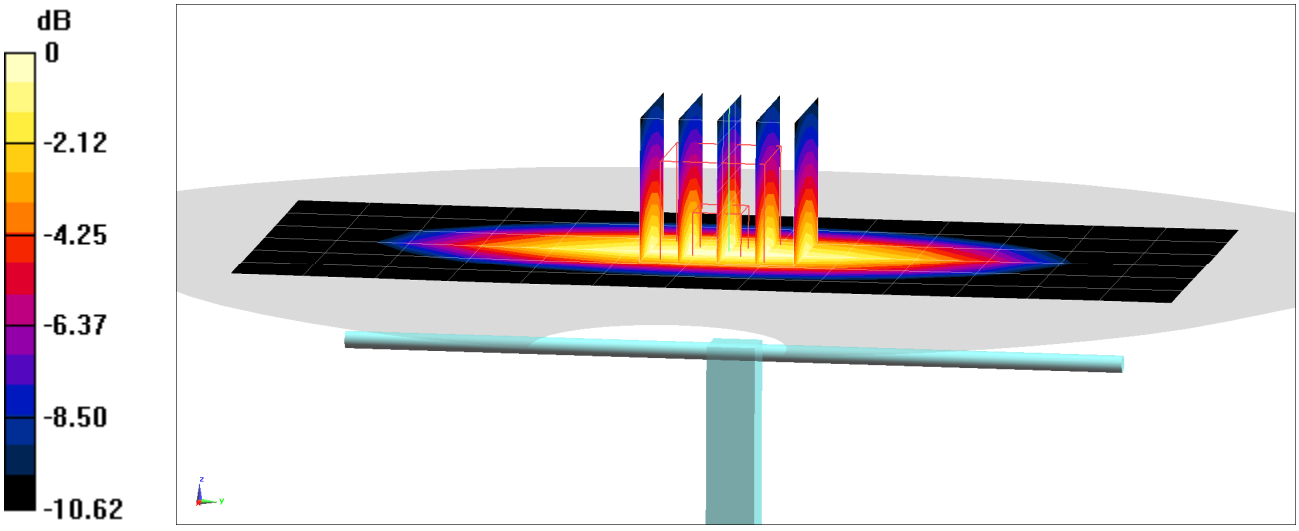
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 0.95 S/m; ε_r = 53.697; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01/18/2021; Ambient Temp: 22.1°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7552; ConvF(9.96, 9.96, 9.96) @ 835 MHz; Calibrated: 9/11/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1449; Calibrated: 9/10/2020
Phantom: Twin-SAM V4.0 Left 30; Type: QD 000 P40 CC; Serial: 1687
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

835 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 3.00 W/kg
SAR(1 g) = 1.95 W/kg
Deviation(1 g) = 0.00%



0 dB = 2.63 W/kg = 4.20 dBW/kg

PCTEST

DUT: Dipole 1750 MHz; Type: D1765V2; Serial: 1008

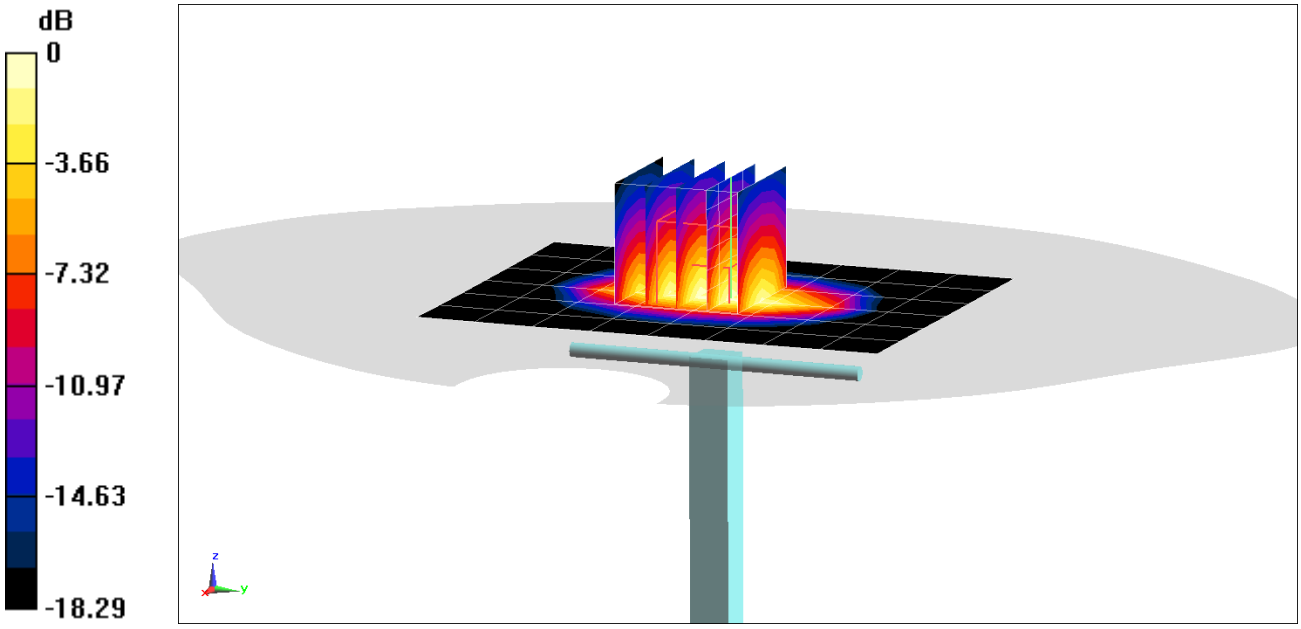
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used:
f = 1750 MHz; σ = 1.529 S/m; ε_r = 51.512; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12/28/2020; Ambient Temp: 22.4°C; Tissue Temp: 23.0°C

Probe: EX3DV4 - SN7357; ConvF(8.17, 8.17, 8.17) @ 1750 MHz; Calibrated: 4/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/15/2020
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

1750 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.08 W/kg
SAR(1 g) = 3.89 W/kg; SAR(10 g) = 2.03 W/kg
Deviation(1 g) = 4.01%; Deviation(10 g) = 2.01%



0 dB = 5.89 W/kg = 7.70 dBW/kg

PCTEST

DUT: Dipole 1750 MHz; Type: D1765V2; Serial: 1008

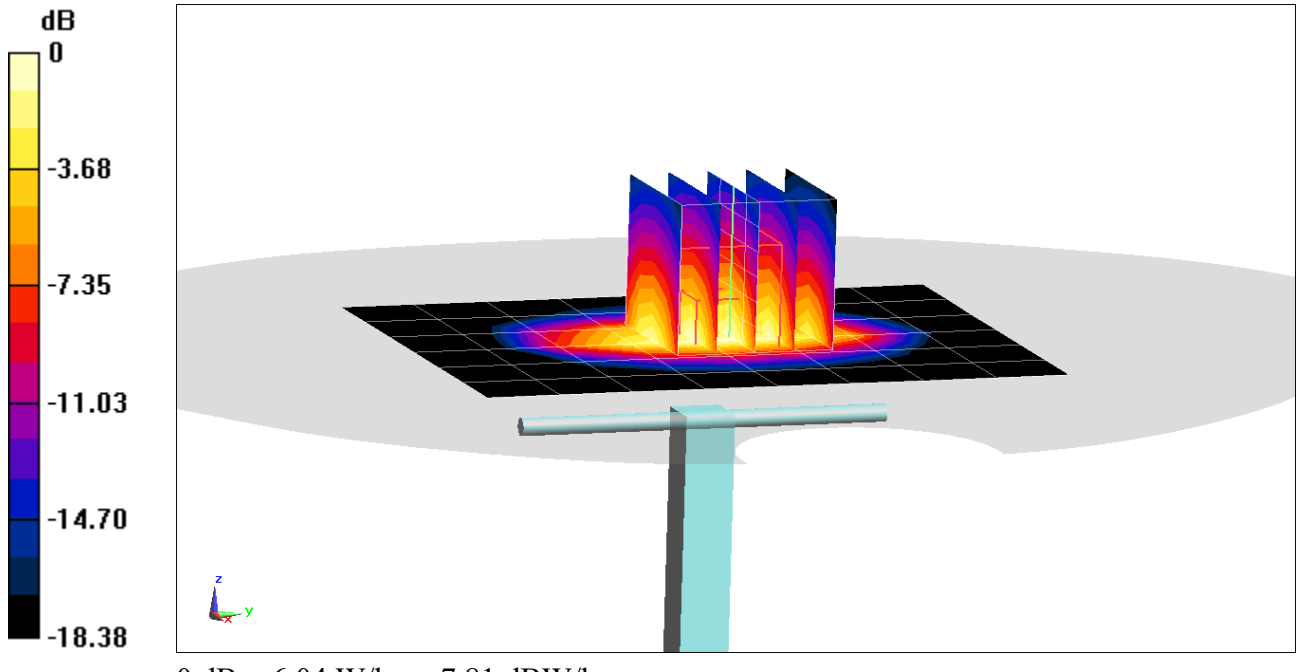
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used:
f = 1750 MHz; σ = 1.539 S/m; ε_r = 51.024; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/11/2021; Ambient Temp: 21.3°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN7410; ConvF(8.17, 8.17, 8.17) @ 1750 MHz; Calibrated: 7/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/15/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

1750 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.30 W/kg
SAR(1 g) = 3.91 W/kg
Deviation(1 g) = 4.55%



0 dB = 6.04 W/kg = 7.81 dBW/kg

DUT: Dipole 1750 MHz; Type: D1765V2; Serial: 1008

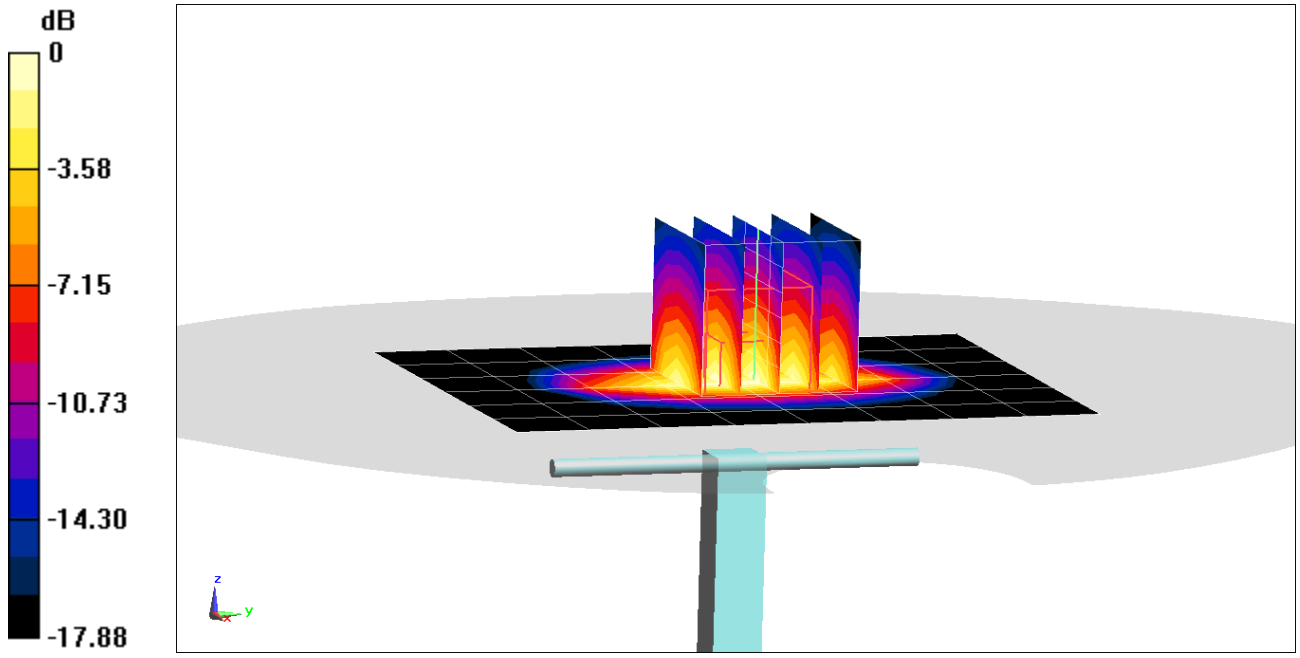
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used:
f = 1750 MHz; σ = 1.526 S/m; ε_r = 51.508; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/14/2021; Ambient Temp: 20.3°C; Tissue Temp: 23.7°C

Probe: EX3DV4 - SN7410; ConvF(8.17, 8.17, 8.17) @ 1750 MHz; Calibrated: 7/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/15/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

1750 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.18 W/kg
SAR(10 g) = 2.03 W/kg
Deviation(10 g) = 2.01%



0 dB = 5.93 W/kg = 7.73 dBW/kg

PCTEST

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1148

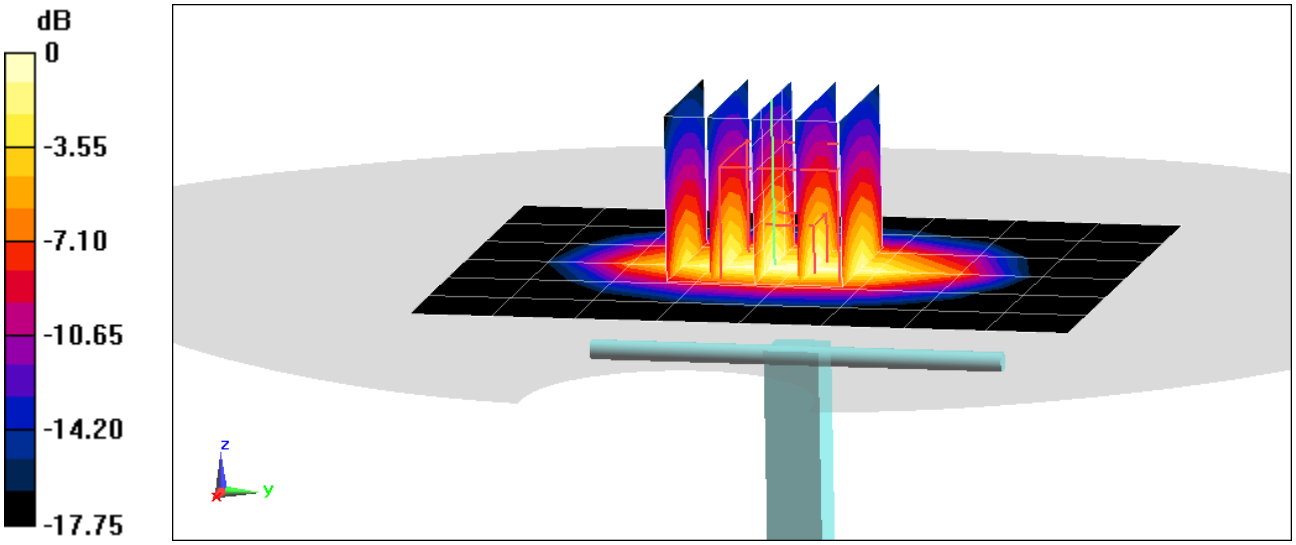
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used:
f = 1750 MHz; σ = 1.528 S/m; ε_r = 50.808; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/21/2021; Ambient Temp: 21.3°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN7308; ConvF(8.2, 8.2, 8.2) @ 1750 MHz; Calibrated: 7/31/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/11/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

1750 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 6.98 W/kg
SAR(1 g) = 3.77 W/kg
Deviation(1 g) = 3.86%



0 dB = 5.69 W/kg = 7.55 dBW/kg

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d080

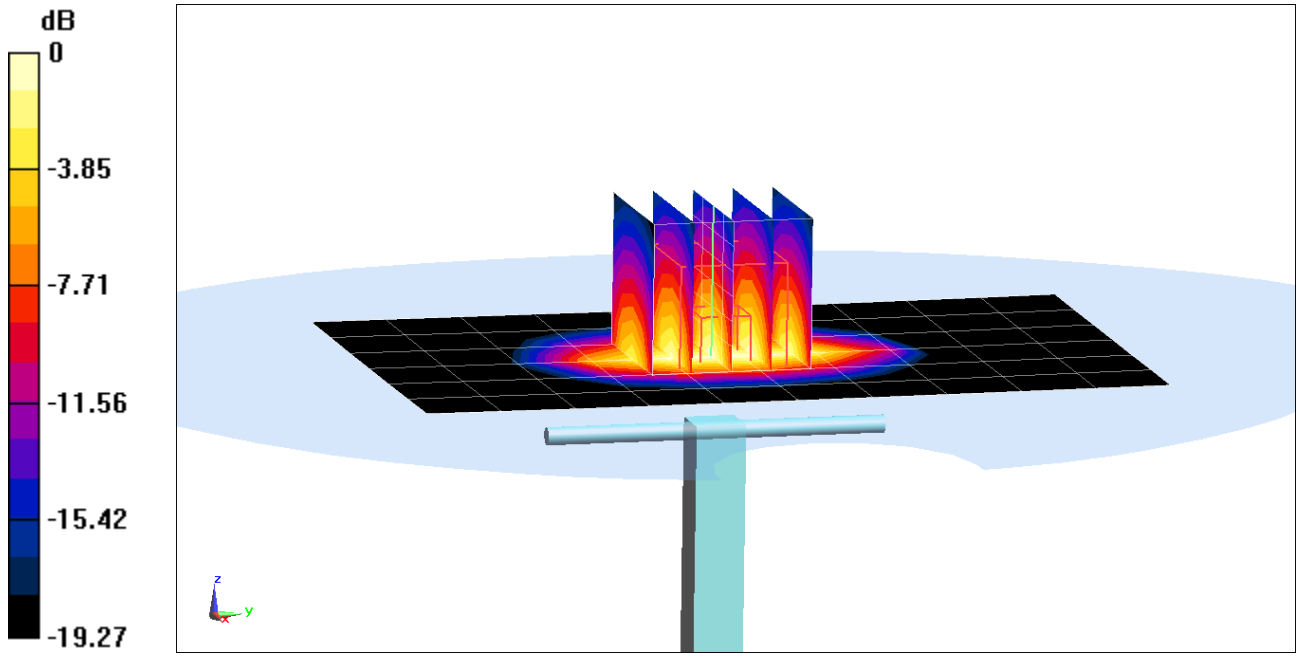
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1900 MHz; σ = 1.535 S/m; ε_r = 51.932; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/03/2021; Ambient Temp: 20.3°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7410; ConvF(7.76, 7.76, 7.76) @ 1900 MHz; Calibrated: 7/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/15/2020
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.44 W/kg
SAR(1 g) = 4.02 W/kg
Deviation(1 g) = 2.55%



0 dB = 6.23 W/kg = 7.94 dBW/kg

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d080

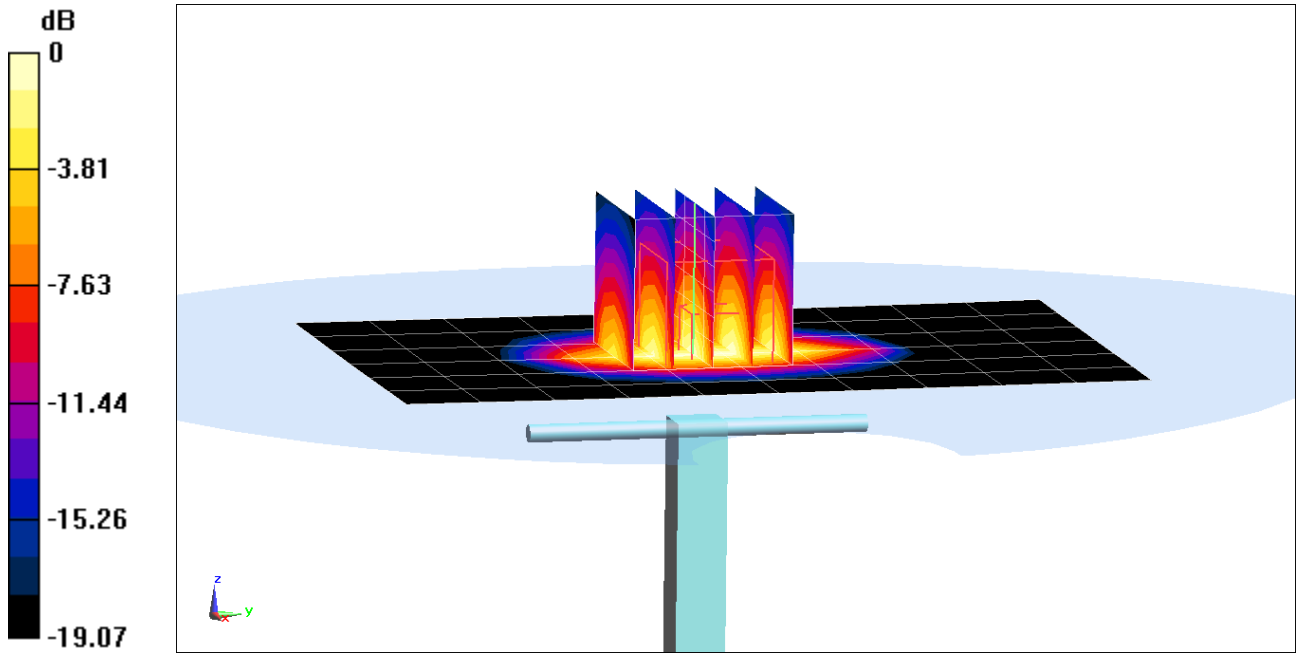
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1900 MHz; σ = 1.537 S/m; ε_r = 52.081; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/06/2021; Ambient Temp: 19.7°C; Tissue Temp: 22.8°C

Probe: EX3DV4 - SN7410; ConvF(7.76, 7.76, 7.76) @ 1900 MHz; Calibrated: 7/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/15/2020
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.59 W/kg
SAR(10 g) = 2.13 W/kg
Deviation(10 g) = 3.40%



0 dB = 6.32 W/kg = 8.01 dBW/kg

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d149

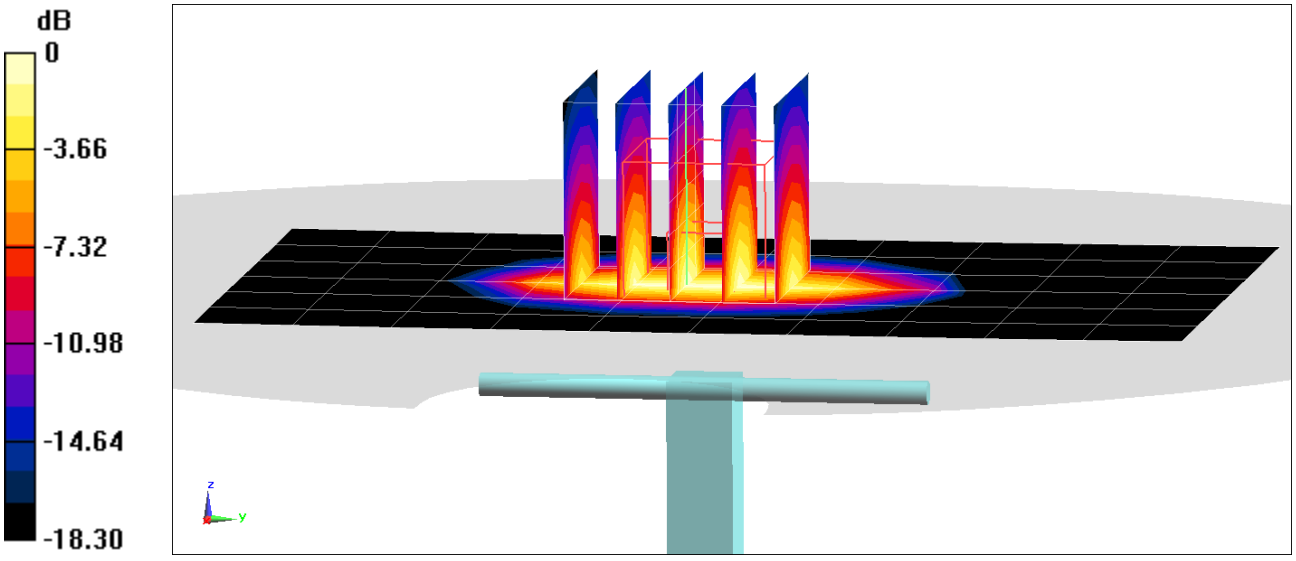
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1900 MHz; σ = 1.512 S/m; ε_r = 53.389; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/11/2021; Ambient Temp: 21.4°C; Tissue Temp: 23.2°C

Probe: EX3DV4 - SN7551; ConvF(7.84, 7.84, 7.84) @ 1900 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 10/16/2020
Phantom: Right Back Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.15 W/kg
SAR(1 g) = 4.02 W/kg
Deviation(1 g) = 2.03%



0 dB = 6.05 W/kg = 7.82 dBW/kg

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d148

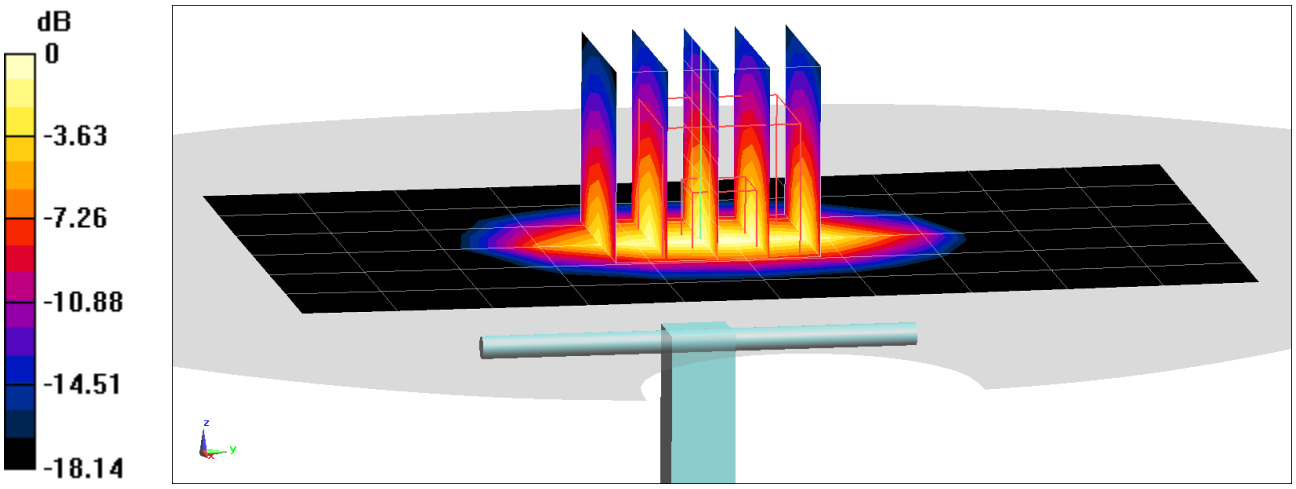
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1900 MHz; σ = 1.518 S/m; ε_r = 52.919; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/13/2021; Ambient Temp: 24.7°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7551; ConvF(7.84, 7.84, 7.84) @ 1900 MHz; Calibrated: 10/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 10/16/2020
Phantom: Right Back Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.05 W/kg
SAR(1 g) = 3.91 W/kg; SAR(10 g) = 2.02 W/kg
Deviation(1 g) = 0.00%; Deviation(10 g) = -1.46%



0 dB = 5.96 W/kg = 7.75 dBW/kg

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d148

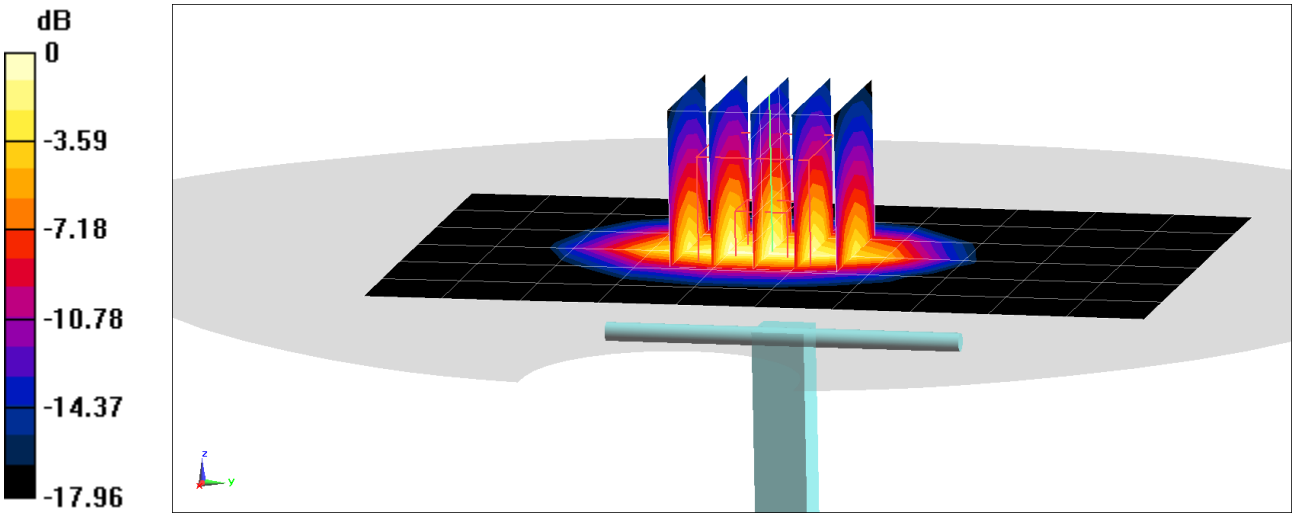
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1900 MHz; σ = 1.518 S/m; ε_r = 53.118; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/19/2021; Ambient Temp: 22.7°C; Tissue Temp: 23.1°C

Probe: EX3DV4 - SN7308; ConvF(7.77, 7.77, 7.77) @ 1900 MHz; Calibrated: 7/31/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/11/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.22 W/kg
SAR(10 g) = 1.97 W/kg
Deviation(10 g) = -3.90%



0 dB = 6.07 W/kg = 7.83 dBW/kg

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 797

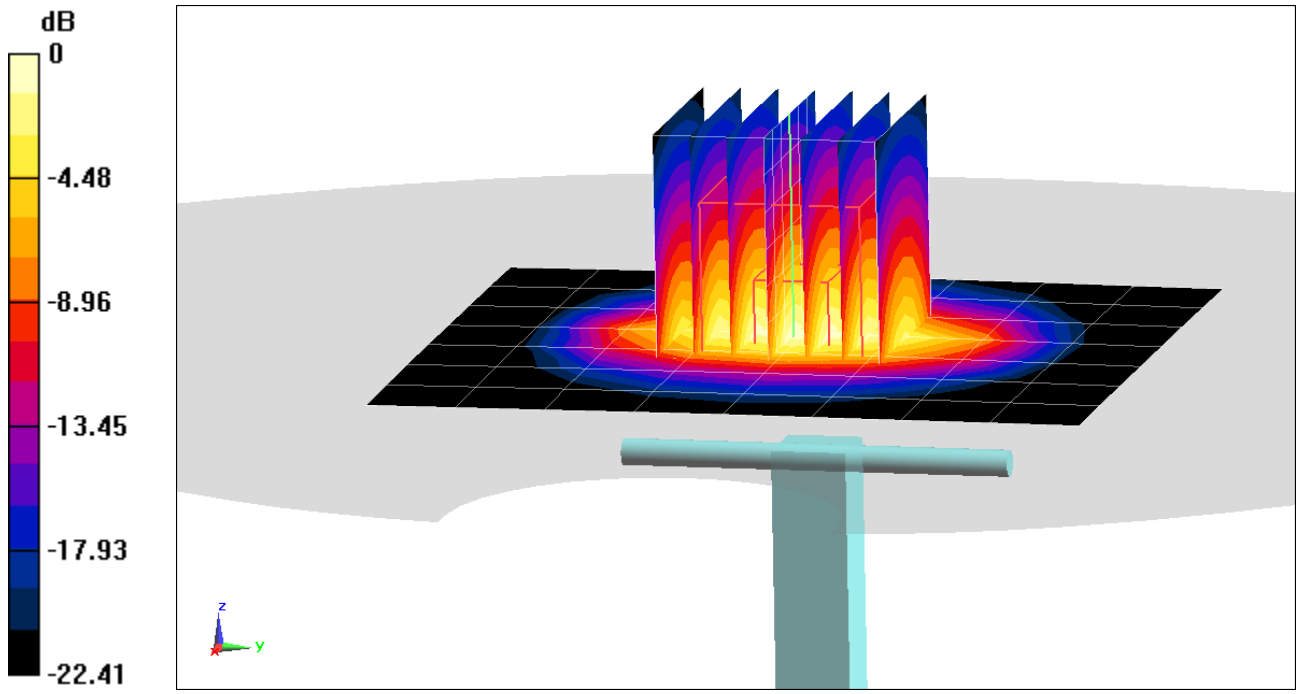
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2450 MHz; σ = 2.004 S/m; ε_r = 51.686; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/04/2021; Ambient Temp: 22.0°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7308; ConvF(7.41, 7.41, 7.41) @ 2450 MHz; Calibrated: 7/31/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/11/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 10.6 W/kg
SAR(1 g) = 4.95 W/kg
Deviation(1 g) = 0.20%



0 dB = 8.46 W/kg = 9.27 dBW/kg

PCTEST

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719

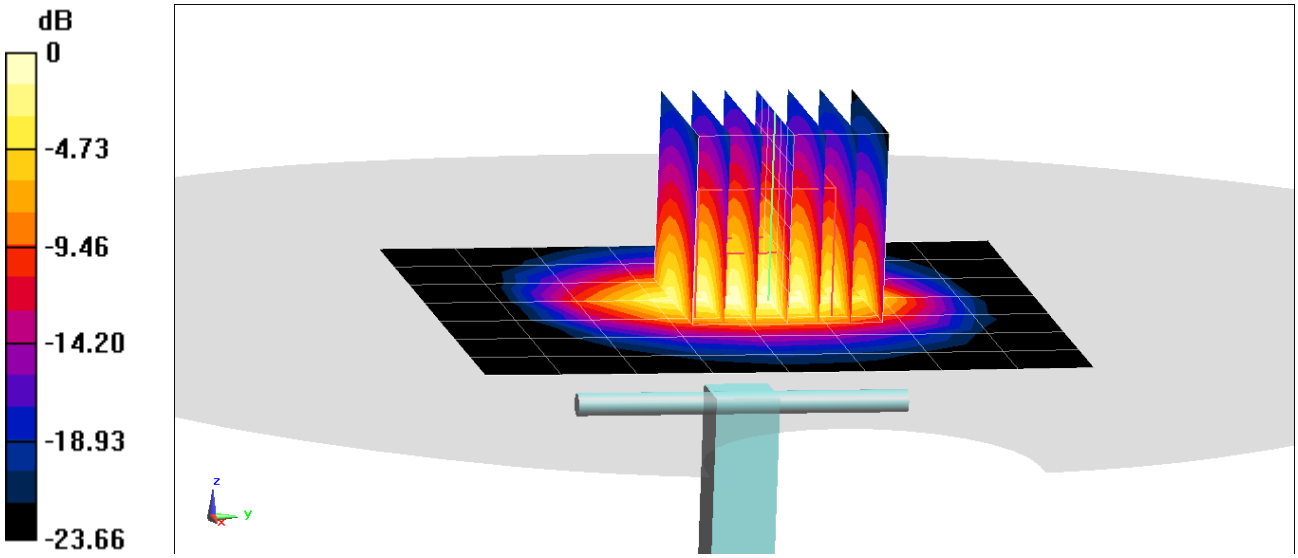
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2450 MHz; σ = 2.037 S/m; ε_r = 50.953; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/14/2021; Ambient Temp: 22.9°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN7409; ConvF(7.24, 7.24, 7.24) @ 2450 MHz; Calibrated: 6/23/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2020
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 10.9 W/kg
SAR(1 g) = 5.13 W/kg
Deviation(1 g) = 1.18%



0 dB = 8.57 W/kg = 9.33 dBW/kg

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719

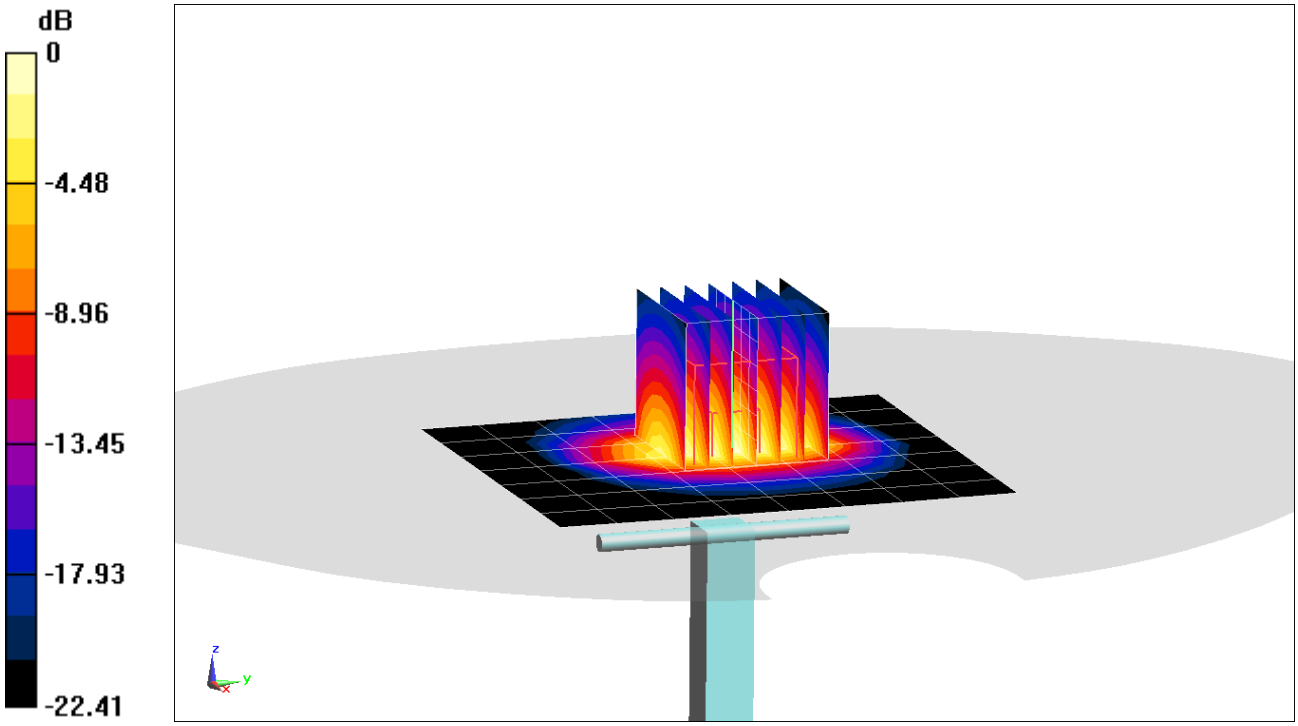
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2450 MHz; σ = 2.041 S/m; ε_r = 52.916; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/18/2021; Ambient Temp: 23.2°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7409; ConvF(7.24, 7.24, 7.24) @ 2450 MHz; Calibrated: 6/23/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2020
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 10.2 W/kg
SAR(1 g) = 4.9 W/kg
Deviation(1 g) = -3.35%



0 dB = 8.25 W/kg = 9.16 dBW/kg

PCTEST

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1004

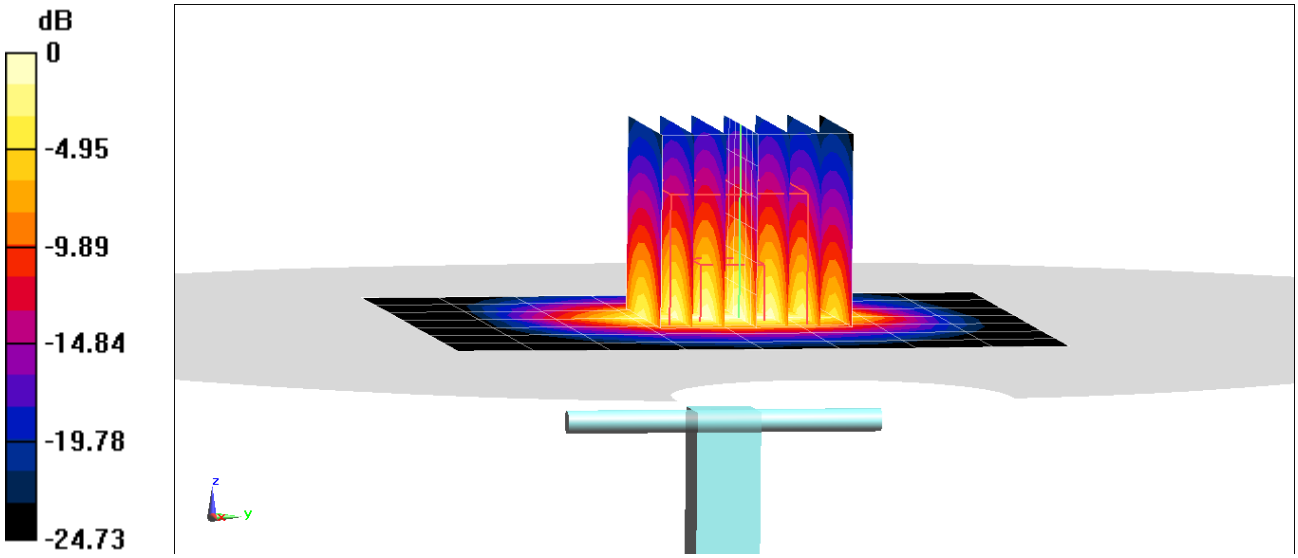
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2600 MHz; σ = 2.218 S/m; ε_r = 50.512; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/14/2021; Ambient Temp: 22.9°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN7409; ConvF(7.12, 7.12, 7.12) @ 2600 MHz; Calibrated: 6/23/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2020
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2600 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 11.9 W/kg
SAR(1 g) = 5.33 W/kg
Deviation(1 g) = -2.74%



0 dB = 9.22 W/kg = 9.65 dBW/kg

PCTEST

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1004

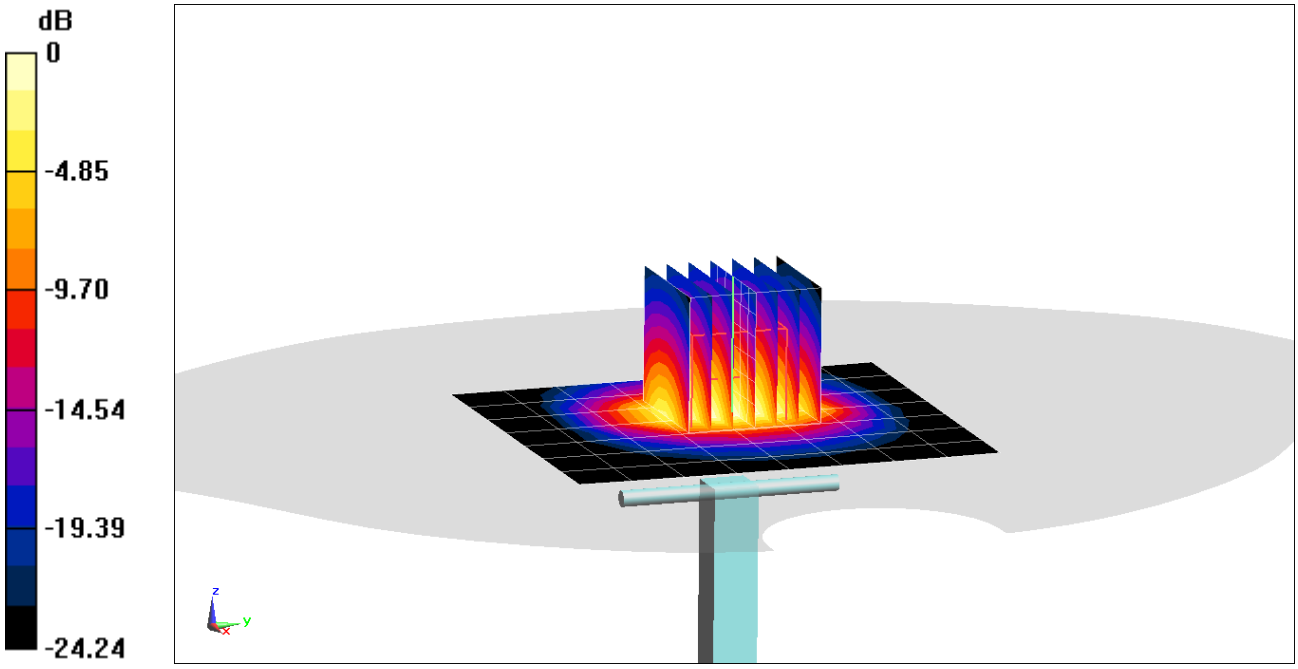
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2600 MHz; σ = 2.219 S/m; ε_r = 52.481; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/18/2021; Ambient Temp: 23.2°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7409; ConvF(7.12, 7.12, 7.12) @ 2600 MHz; Calibrated: 6/23/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2020
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2600 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 12.3 W/kg
SAR(1 g) = 5.53 W/kg
Deviation(1 g) = 0.91%



0 dB = 9.57 W/kg = 9.81 dBW/kg

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1064

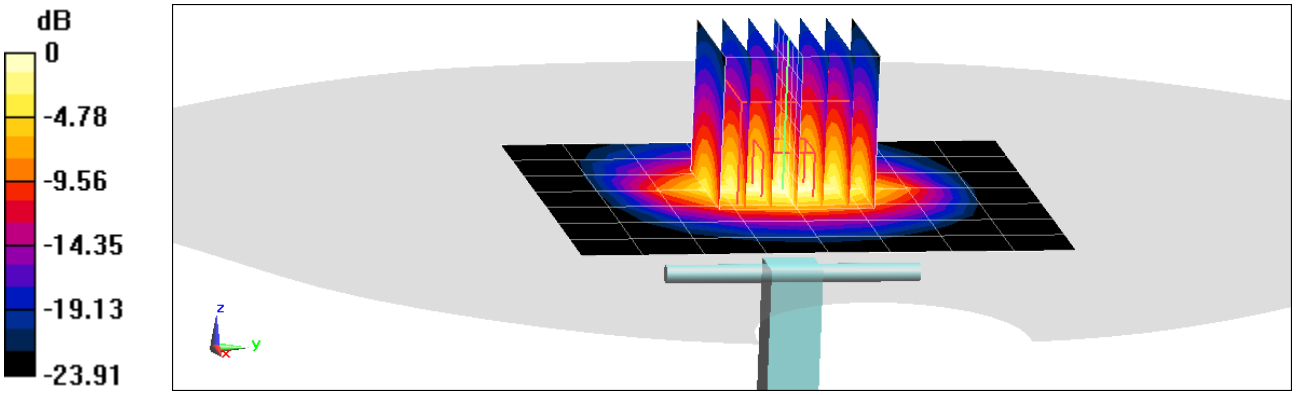
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2600 MHz; σ = 2.228 S/m; ε_r = 51.353; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/21/2021; Ambient Temp: 23.9°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN7308; ConvF(7.37, 7.37, 7.37) @ 2600 MHz; Calibrated: 7/31/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/11/2020
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2600 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 12.2 W/kg
SAR(10 g) = 2.4 W/kg
Deviation(10 g) = -4.00%



0 dB = 9.60 W/kg = 9.82 dBW/kg

PCTEST

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1004

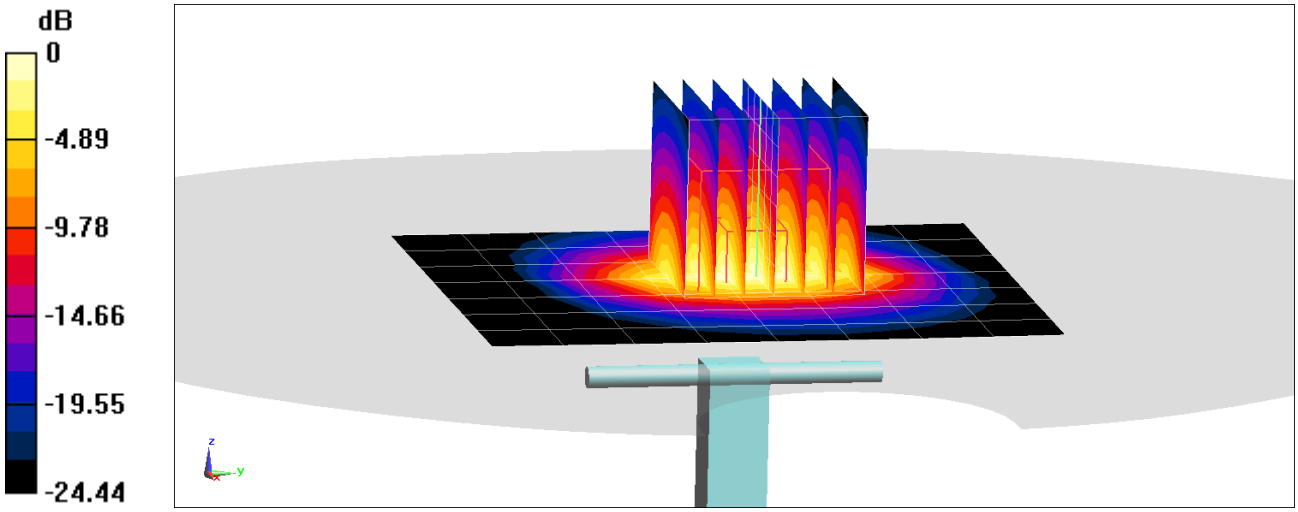
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2600 MHz; σ = 2.224 S/m; ε_r = 50.398; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/25/2021; Ambient Temp: 21.0°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN7409; ConvF(7.12, 7.12, 7.12) @ 2600 MHz; Calibrated: 6/23/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2020
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2600 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 12.6 W/kg
SAR(1 g) = 5.57 W/kg
Deviation(1 g) = 1.64%



0 dB = 9.78 W/kg = 9.90 dBW/kg

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1237

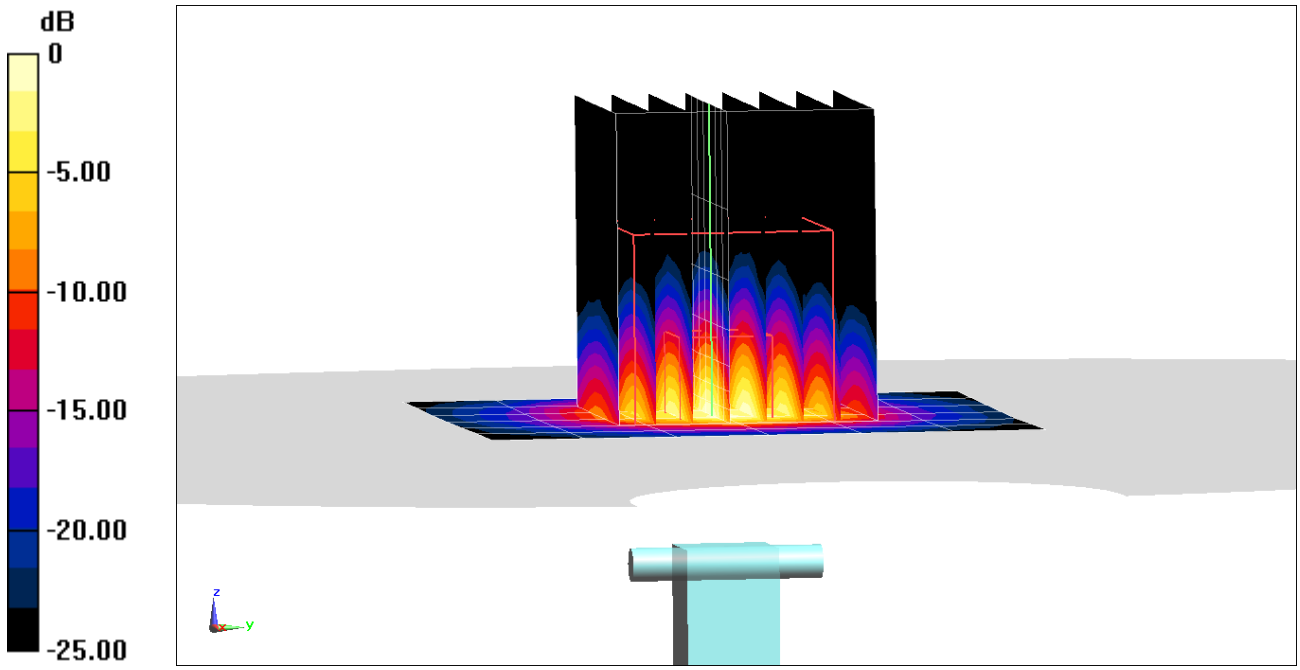
Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Body Medium parameters used:
f = 5250 MHz; σ = 5.531 S/m; ε_r = 47.268; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/04/2021; Ambient Temp: 22.8°C; Tissue Temp: 23.0°C

Probe: EX3DV4 - SN7406; ConvF(5.05, 5.05, 5.05) @ 5250 MHz; Calibrated: 6/23/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1583; Calibrated: 5/14/2020
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

5250 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 14.3 W/kg
SAR(1 g) = 3.51 W/kg; SAR(10 g) = 0.981 W/kg
Deviation(1 g) = -7.14%; Deviation(10 g) = -7.45%



0 dB = 8.21 W/kg = 9.14 dBW/kg

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1237

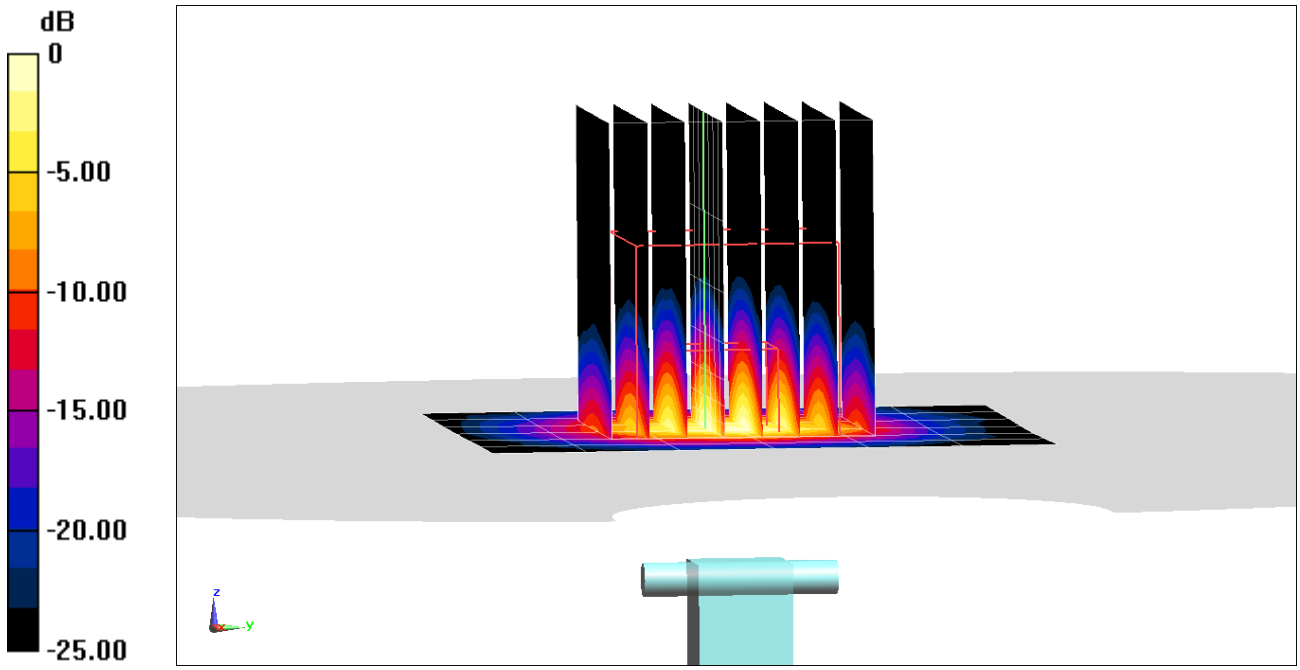
Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Body Medium parameters used:
f = 5600 MHz; σ = 5.989 S/m; ε_r = 46.681; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/04/2021; Ambient Temp: 22.8°C; Tissue Temp: 23.0°C

Probe: EX3DV4 - SN7406; ConvF(4.37, 4.37, 4.37) @ 5600 MHz; Calibrated: 6/23/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1583; Calibrated: 5/14/2020
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

5600 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 17.0 W/kg
SAR(1 g) = 3.86 W/kg; SAR(10 g) = 1.07 W/kg
Deviation(1 g) = -1.66%; Deviation(10 g) = -2.73%



0 dB = 9.50 W/kg = 9.78 dBW/kg

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1237

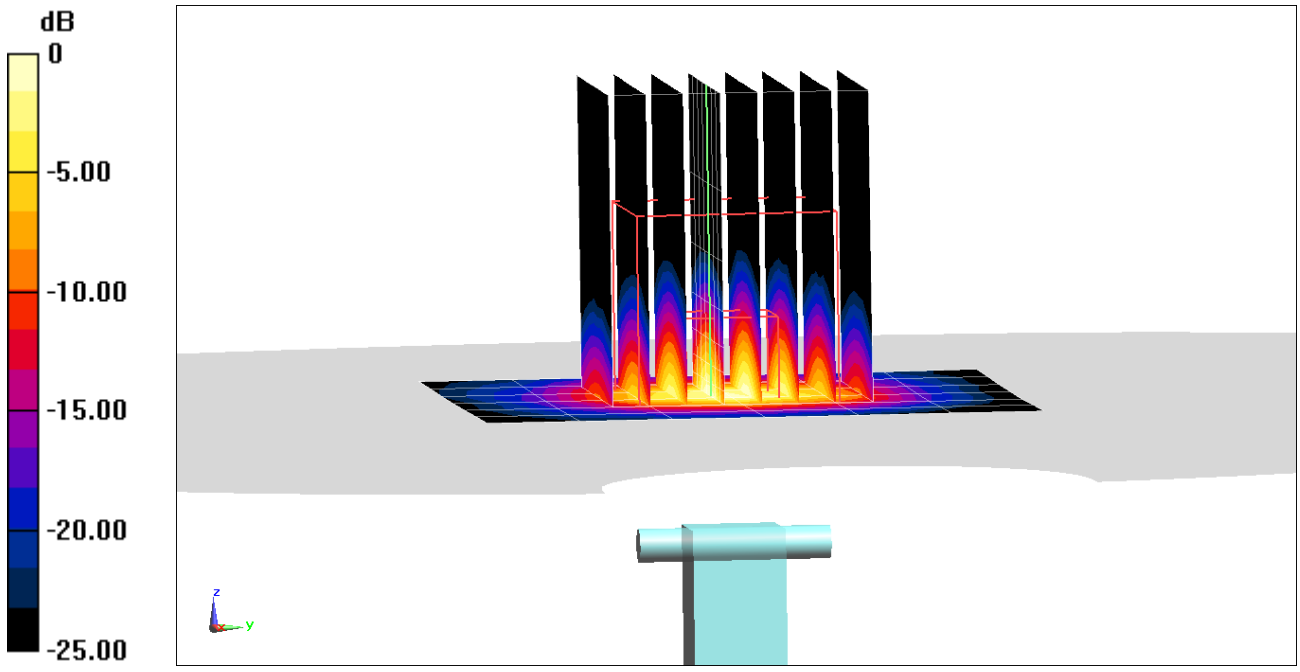
Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Body Medium parameters used:
f = 5750 MHz; σ = 6.203 S/m; ε_r = 46.43; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01/04/2021; Ambient Temp: 22.8°C; Tissue Temp: 23.0°C

Probe: EX3DV4 - SN7406; ConvF(4.56, 4.56, 4.56) @ 5750 MHz; Calibrated: 6/23/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1583; Calibrated: 5/14/2020
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

5750 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 16.8 W/kg
SAR(1 g) = 3.6 W/kg
Deviation(1 g) = -5.14%



0 dB = 8.72 W/kg = 9.41 dBW/kg

APPENDIX C: SAR TISSUE SPECIFICATIONS

Measurement Procedure for Tissue verification:

1) The network analyzer and probe system was configured and calibrated.
2) The probe was immersed in the tissue. The tissue was placed in a nonmetallic container. Trapped air bubbles beneath the flange were minimized by placing the probe at a slight angle.
3) The complex admittance with respect to the probe aperture was measured
4) The complex relative permittivity ε_r' can be calculated from the below equation (Pournaropoulos and Misra):

$$Y = \frac{j2\omega\varepsilon_r\varepsilon_0}{\left[\ln(b/a)\right]^2}\int_a^b\int_a^b\int_0^\pi \cos\phi' \frac{\exp\left[-j\omega r(\mu_0\varepsilon_r'\varepsilon_0)^{1/2}\right]}{r} d\phi' d\rho' d\rho$$

where Y is the admittance of the probe in contact with the sample, the primed and unprimed coordinates refer to source and observation points, respectively, $r^2 = \rho^2 + \rho'^2 - 2\rho\rho'\cos\phi'$, ω is the angular frequency, and $j = \sqrt{-1}$.

3 Composition / Information on ingredients

3.2 Mixtures
Description: Aqueous solution with surfactants and inhibitors
Declarable, or hazardous components:

CAS: 107-21-1 EINECS: 203-473-3 Reg.nr.: 01-2119456816-28-0000	**Ethanediol** STOT RE 2, H373; Acute Tox. 4, H302	>1.0-4.9%
CAS: 68608-26-4 EINECS: 271-781-5 Reg.nr.: 01-2119527859-22-0000	**Sodium petroleum sulfonate** Eye Irrit. 2, H319	< 2.9%
CAS: 107-41-5 EINECS: 203-489-0 Reg.nr.: 01-2119539582-35-0000	**Hexylene Glycol / 2-Methyl-pentane-2,4-diol** Skin Irrit. 2, H315; Eye Irrit. 2, H319	< 2.9%
CAS: 68920-66-1 NLP: 500-236-9 Reg.nr.: 01-2119489407-26-0000	**Alkoxylated alcohol, > C_{16}** Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Eye Irrit. 2, H319	< 2.0%

Additional information:
For the wording of the listed risk phrases refer to section 16.
Not mentioned CAS-, EINECS- or registration numbers are to be regarded as Proprietary/Confidential.
The specific chemical identity and/or exact percentage concentration of proprietary components is withheld as a trade secret.

Figure C-1

Note: Liquid recipes are proprietary SPEAG. Since the composition is approximate to the actual liquids utilized, the manufacturer tissue-equivalent liquid data sheets are provided below.

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Measurement Certificate / Material Test

Item Name	**Body Tissue Simulating Liquid (MBBL600-6000V6)**
Product No.	SL AAM U16 BC (Batch: 200803-1)
Manufacturer	SPEAG

Measurement Method

TSL dielectric parameters measured using calibrated DAK probe.

Target Parameters

Target parameters as defined in the KDB 865664 compliance standard.

Test Condition

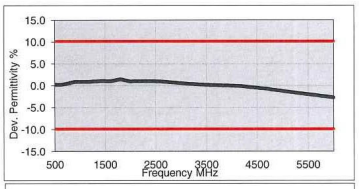
Ambient Condition	22°C ; 30% humidity
TSL Temperature	22°C
Test Date	6-Aug-20
Operator	CL

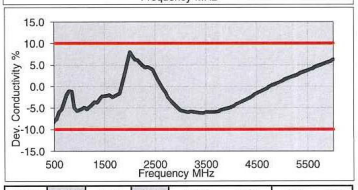
Additional Information

TSL Density
TSL Heat-capacity

Results

	Measured			Target		Diff.to Target [%]	
f [MHz]	e'	e''	sigma	eps	sigma	Δ-eps	Δ-sigma
600	56.3	26.8	0.89	56.1	0.95	0.3	-6.3
750	55.8	22.6	0.94	55.5	0.96	0.5	-2.1
800	55.7	21.6	0.96	55.3	0.97	0.7	-1.0
825	55.7	21.1	0.97	55.2	0.98	0.8	-1.0
835	55.7	20.9	0.98	55.1	0.99	1.0	-0.5
850	55.6	20.7	0.98	55.2	0.99	0.8	-1.0
900	55.5	19.9	1.00	55.0	1.05	0.9	-4.8
1400	54.7	15.9	1.24	54.1	1.28	1.1	-3.1
1450	54.6	15.8	1.27	54.0	1.30	1.1	-2.3
1600	54.4	15.3	1.36	53.8	1.39	1.1	-2.2
1625	54.4	15.3	1.38	53.8	1.41	1.2	-2.1
1640	54.4	15.2	1.39	53.7	1.42	1.3	-2.1
1650	54.3	15.2	1.39	53.7	1.43	1.1	-2.8
1700	54.2	15.1	1.43	53.6	1.46	1.2	-2.1
1750	54.2	15.0	1.46	53.4	1.49	1.4	-2.0
1800	54.1	14.9	1.50	53.3	1.52	1.5	-1.3
1810	54.1	14.9	1.51	53.3	1.52	1.5	-0.7
1825	54.1	14.9	1.52	53.3	1.52	1.5	0.0
1850	54.0	14.9	1.53	53.3	1.52	1.3	0.7
1900	54.0	14.8	1.57	53.3	1.52	1.3	3.3
1950	53.9	14.8	1.60	53.3	1.52	1.1	5.3
2000	53.8	14.8	1.64	53.3	1.52	0.9	7.9
2050	53.8	14.7	1.68	53.2	1.57	1.1	7.0
2100	53.7	14.7	1.72	53.2	1.62	1.0	6.2
2150	53.7	14.7	1.76	53.1	1.66	1.1	6.0
2200	53.6	14.7	1.80	53.0	1.71	1.1	5.3
2250	53.5	14.8	1.85	53.0	1.76	1.0	5.1
2300	53.5	14.8	1.89	52.9	1.81	1.1	4.4
2350	53.4	14.8	1.94	52.8	1.85	1.1	4.9
2400	53.3	14.8	1.98	52.8	1.90	1.0	4.2
2450	53.3	14.9	2.03	52.7	1.95	1.1	4.1
2500	53.2	14.9	2.07	52.6	2.02	1.1	2.5
2550	53.1	15.0	2.12	52.6	2.09	1.0	1.4
2600	53.0	15.0	2.17	52.5	2.16	0.9	0.5





3500	51.4	16.0	3.11	51.3	3.31	0.2	-6.0
3700	51.1	16.2	3.34	51.1	3.55	0.1	-5.9
5200	48.3	18.7	5.42	49.0	5.30	-1.5	2.3
5250	48.2	18.8	5.50	49.0	5.36	-1.6	2.5
5300	48.1	18.9	5.57	48.9	5.42	-1.7	2.8
5500	47.7	19.2	5.86	48.6	5.65	-2.0	3.8
5600	47.5	19.3	6.01	48.5	5.77	-2.1	4.2
5700	47.3	19.4	6.16	48.3	5.88	-2.3	4.8
5800	47.0	19.6	6.32	48.2	6.00	-2.4	5.3
6000	46.6	19.8	6.62	47.9	6.23	-2.7	6.3
6500							
7000							
7500							
8000							
8500							
9000							
9500							
10000							

Figure C-2
600 – 5800 MHz Body Tissue Equivalent Matter

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Measurement Certificate / Material Test

Item Name	**Head Tissue Simulating Liquid (HBBL600-10000V6)**
Product No.	SL AAH U16 BC (Batch: 200805-4)
Manufacturer	SPEAG

Measurement Method

TSL dielectric parameters measured using calibrated DAK probe.

Target Parameters

Target parameters as defined in the IEEE 1528 and IEC 62209 compliance standards.

Test Condition

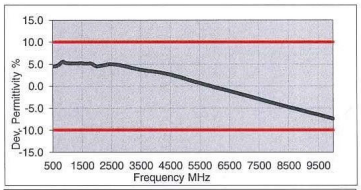
Ambient Condition	22°C ; 30% humidity
TSL Temperature	22°C
Test Date	6-Aug-20
Operator	CL

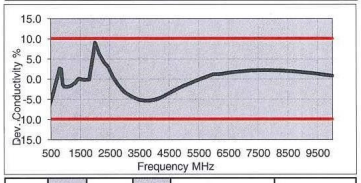
Additional Information

TSL Density
TSL Heat-capacity

Results

	Measured			Target		Diff.to Target [%]	
f [MHz]	ε'	ε''	sigma	eps	sigma	Δ-eps	Δ-sigma
600	44.7	25.7	0.86	42.7	0.88	4.6	-2.5
750	44.1	21.7	0.90	41.9	0.89	5.1	0.7
800	44.0	20.7	0.92	41.7	0.90	5.6	2.5
825	43.9	20.3	0.93	41.6	0.91	5.6	2.6
835	43.9	20.1	0.94	41.5	0.91	5.7	3.1
850	43.8	19.9	0.94	41.5	0.92	5.5	2.6
900	43.7	19.1	0.96	41.5	0.97	5.3	-1.0
1400	42.7	15.1	1.18	40.6	1.18	5.2	0.0
1450	42.6	14.9	1.20	40.5	1.20	5.2	0.0
1600	42.4	14.4	1.28	40.3	1.28	5.2	-0.3
1625	42.4	14.4	1.30	40.3	1.30	5.3	0.1
1640	42.4	14.3	1.31	40.3	1.31	5.3	0.3
1650	42.3	14.3	1.31	40.2	1.31	5.1	-0.2
1700	42.2	14.2	1.34	40.2	1.34	5.1	-0.2
1750	42.2	14.1	1.37	40.1	1.37	5.3	-0.1
1800	42.1	14.0	1.40	40.0	1.40	5.3	0.0
1810	42.1	14.0	1.41	40.0	1.40	5.3	0.7
1825	42.1	13.9	1.42	40.0	1.40	5.3	1.4
1850	42.0	13.9	1.43	40.0	1.40	5.0	2.1
1900	41.9	13.8	1.46	40.0	1.40	4.7	4.3
1950	41.9	13.8	1.49	40.0	1.40	4.7	6.4
2000	41.8	13.7	1.53	40.0	1.40	4.5	9.3
2050	41.7	13.7	1.56	39.9	1.44	4.5	8.0
2100	41.7	13.7	1.60	39.8	1.49	4.7	7.5
2150	41.6	13.6	1.63	39.7	1.53	4.7	6.3
2200	41.5	13.6	1.67	39.6	1.58	4.7	5.8
2250	41.5	13.6	1.70	39.6	1.62	4.9	4.8
2300	41.4	13.6	1.74	39.5	1.67	4.9	4.4
2350	41.3	13.6	1.78	39.4	1.71	4.9	4.0
2400	41.2	13.6	1.82	39.3	1.76	4.9	3.7
2450	41.2	13.6	1.85	39.2	1.80	5.1	2.8
2500	41.1	13.6	1.89	39.1	1.85	5.0	1.9
2550	41.0	13.7	1.94	39.1	1.91	4.9	1.6
2600	40.9	13.7	1.98	39.0	1.96	4.8	0.8





3500	39.4	14.2	2.77	37.9	2.91	3.7	-5.1
3700	39.0	14.3	2.95	37.7	3.12	3.5	-5.3
5200	36.4	15.9	4.61	36.0	4.66	1.3	-1.0
5250	36.4	16.0	4.67	35.9	4.71	1.2	-0.9
5300	36.3	16.0	4.72	35.9	4.76	1.1	-0.7
5500	35.9	16.2	4.96	35.6	4.96	0.7	-0.1
5600	35.7	16.3	5.07	35.5	5.07	0.5	0.2
5700	35.5	16.4	5.19	35.4	5.17	0.3	0.4
5800	35.4	16.5	5.31	35.3	5.27	0.1	0.7
6000	35.0	16.6	5.54	35.1	5.48	-0.2	1.2
6500	34.1	17.1	6.17	34.5	6.07	-1.1	1.6
7000	33.2	17.4	6.78	33.9	6.65	-2.0	2.0
7500	32.3	17.7	7.40	33.3	7.24	-2.9	2.2
8000	31.5	18.0	8.01	32.7	7.84	-3.8	2.2
8500	30.6	18.2	8.63	32.1	8.45	-4.7	2.1
9000	29.8	18.4	9.24	31.5	9.08	-5.6	1.8
9500	29.0	18.6	9.84	31.0	9.71	-6.5	1.3
10000	28.1	18.8	10.44	30.4	10.36	-7.4	0.8

Figure C-3
600 – 5800 MHz Head Tissue Equivalent Matter

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APPENDIX D: SAR SYSTEM VALIDATION

Per FCC KDB Publication 865664 D02v01r02, SAR system validation status should be documented to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles were used with the required tissue- equivalent media for system validation, according to the procedures outlined in FCC KDB Publication 865664 D01v01r04 and IEEE 1528-2013. Since SAR probe calibrations are frequency dependent, each probe calibration point was validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.

A tabulated summary of the system validation status including the validation date(s), measurement frequencies, SAR probes and tissue dielectric parameters has been included.

Table D-1
SAR System Validation Summary – 1g

SAR System	Freq. (MHz)	Date	Probe SN	Probe Cal Point		Cond. (σ)	Perm. (εr)	CW VALIDATION			MOD. VALIDATION		
								SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
H	750	12/22/2020	7357	750	Head	0.881	42.98	PASS	PASS	PASS	N/A	N/A	N/A
P	835	9/10/2020	7308	835	Head	0.936	42.19	PASS	PASS	PASS	GMSK	PASS	N/A
E	1750	2/20/2020	3589	1750	Head	1.39	41.519	PASS	PASS	PASS	N/A	N/A	N/A
H	1750	1/19/2021	7357	1750	Head	1.399	39.49	PASS	PASS	PASS	N/A	N/A	N/A
L	1900	11/25/2020	7539	1900	Head	1.402	40.11	PASS	PASS	PASS	GMSK	PASS	N/A
E	2450	1/7/2021	7571	2450	Head	1.847	39.72	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
E	2600	1/7/2021	7571	2600	Head	2.025	39.12	PASS	PASS	PASS	TDD	PASS	N/A
H	5250	5/7/2020	7357	5250	Head	4.644	35.12	PASS	PASS	PASS	OFDM	N/A	PASS
H	5600	5/7/2020	7357	5600	Head	5.03	34.51	PASS	PASS	PASS	OFDM	N/A	PASS
H	5750	5/7/2020	7357	5750	Head	5.207	34.26	PASS	PASS	PASS	OFDM	N/A	PASS
L	750	12/17/2020	7539	750	Body	0.941	57.1	PASS	PASS	PASS	N/A	N/A	N/A
D	835	2/20/2020	7488	835	Body	1.001	53.45	PASS	PASS	PASS	GMSK	PASS	N/A
D	835	1/7/2021	7552	835	Body	0.956	54.674	PASS	PASS	PASS	GMSK	PASS	N/A
H	1750	5/14/2020	7357	1750	Body	1.531	51.7	PASS	PASS	PASS	N/A	N/A	N/A
J	1750	12/18/2020	7410	1750	Body	1.456	51.19	PASS	PASS	PASS	N/A	N/A	N/A
P	1750	9/8/2020	7308	1750	Body	1.478	52.86	PASS	PASS	PASS	N/A	N/A	N/A
J	1900	12/3/2020	7410	1900	Body	1.561	52.634	PASS	PASS	PASS	GMSK	PASS	N/A
I	1900	1/5/2021	7551	1900	Body	1.52	53.063	PASS	PASS	PASS	GMSK	PASS	N/A
P	2450	9/9/2020	7308	2450	Body	2.028	52.65	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
K	2450	7/7/2020	7409	2450	Body	2.018	51.18	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
K	2600	7/8/2020	7409	2600	Body	2.194	50.73	PASS	PASS	PASS	TDD	PASS	N/A
G	5250	11/2/2020	7406	5250	Body	5.533	47.08	PASS	PASS	PASS	OFDM	N/A	PASS
G	5600	11/2/2020	7406	5600	Body	6.006	46.43	PASS	PASS	PASS	OFDM	N/A	PASS
G	5750	11/2/2020	7406	5750	Body	6.21	46.185	PASS	PASS	PASS	OFDM	N/A	PASS

Table D-2
SAR System Validation Summary – 10g

SAR System	Freq. (MHz)	Date	Probe SN	Probe Cal Point		Cond. (σ)	Perm. (εr)	CW VALIDATION			MOD. VALIDATION		
								SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
H	1750	5/14/2020	7357	1750	Body	1.531	51.7	PASS	PASS	PASS	N/A	N/A	N/A
J	1750	12/18/2020	7410	1750	Body	1.456	51.19	PASS	PASS	PASS	N/A	N/A	N/A
J	1900	12/3/2020	7410	1900	Body	1.561	52.634	PASS	PASS	PASS	GMSK	PASS	N/A
I	1900	1/5/2021	7551	1900	Body	1.52	53.063	PASS	PASS	PASS	GMSK	PASS	N/A
P	1900	12/7/2020	7308	1900	Body	1.571	52.79	PASS	PASS	PASS	GMSK	PASS	N/A
P	2600	9/8/2020	7308	2600	Body	2.171	52.41	PASS	PASS	PASS	TDD	PASS	N/A
G	5250	11/2/2020	7406	5250	Body	5.533	47.08	PASS	PASS	PASS	OFDM	N/A	PASS
G	5600	11/2/2020	7406	5600	Body	6.006	46.43	PASS	PASS	PASS	OFDM	N/A	PASS

NOTE: While the probes have been calibrated for both CW and modulated signals, all measurements were performed using communication systems calibrated for CW signals only. Modulations in the table above represent test configurations for which the measurement system has been validated per FCC KDB Publication 865664 D01v01r04 for scenarios when CW probe calibrations are used with other signal types. SAR systems were validated for modulated signals with a periodic duty cycle, such as GMSK, or with a high peak to average ratio (>5 dB), such as OFDM according to FCC KDB Publication 865664 D01v01r04.

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APPENDIX F: LTE LOWER BANDWIDTH RF CONDUCTED POWERS

1.1 LTE Lower Bandwidth RF Conducted Powers

1.1.1 LTE Band 71

Table 1-1

LTE Band 71 Maximum Conducted Powers – 15 MHz Bandwidth

LTE Band 71 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 133297 (680.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	24.71	0	0
	1	36	24.79		0
	1	74	24.66		0
	36	0	23.78	0-1	1
	36	18	23.82		1
	36	37	23.82		1
	75	0	23.80		1
16QAM	1	0	23.98	0-1	1
	1	36	24.04		1
	1	74	23.90		1
	36	0	22.70	0-2	2
	36	18	22.74		2
	36	37	22.75		2
	75	0	22.73		2
64QAM	1	0	22.86	0-2	2
	1	36	22.94		2
	1	74	22.78		2
	36	0	21.74	0-3	3
	36	18	21.78		3
	36	37	21.79		3
	75	0	21.75		3

Note: LTE Band 71 at 15 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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Table 1-2

LTE Band 71 Maximum Conducted Powers – 10 MHz Bandwidth

LTE Band 71 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 133172 (668.0 MHz)	Mid Channel 133297 (680.5 MHz)	High Channel 133422 (693.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.68	24.64	24.70	0	0
	1	25	24.80	24.80	24.77		0
	1	49	24.63	24.64	24.64		0
	25	0	23.65	23.74	23.85	0-1	1
	25	12	23.81	23.75	23.80		1
	25	25	23.76	23.74	23.70		1
	50	0	23.74	23.78	23.79		1
16QAM	1	0	24.01	23.96	24.04	0-1	1
	1	25	24.20	24.01	24.06		1
	1	49	23.94	23.86	23.95		1
	25	0	22.74	22.71	22.87	0-2	2
	25	12	22.69	22.73	22.82		2
	25	25	22.66	22.70	22.75		2
	50	0	22.63	22.72	22.80		2
64QAM	1	0	22.89	22.80	23.00	0-2	2
	1	25	22.91	22.96	23.06		2
	1	49	22.76	22.61	22.97		2
	25	0	21.59	21.72	21.80	0-3	3
	25	12	21.71	21.72	21.72		3
	25	25	21.62	21.70	21.68		3
	50	0	21.66	21.77	21.76		3

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Table 1-3

LTE Band 71 Maximum Conducted Powers – 5 MHz Bandwidth

LTE Band 71 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 133147 (665.5 MHz)	Mid Channel 133297 (680.5 MHz)	High Channel 133447 (695.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.59	24.64	24.59	0	0
	1	12	24.85	24.87	24.82		0
	1	24	24.65	24.55	24.66		0
	12	0	23.60	23.73	23.74	0-1	1
	12	6	23.78	23.87	23.79		1
	12	13	23.75	23.73	23.73		1
	25	0	23.71	23.76	23.76		1
16QAM	1	0	23.90	23.88	23.86	0-1	1
	1	12	24.12	24.07	24.08		1
	1	24	23.82	23.89	23.80		1
	12	0	22.64	22.74	22.81	0-2	2
	12	6	22.85	22.80	22.85		2
	12	13	22.75	22.72	22.81		2
	25	0	22.69	22.74	22.79		2
64QAM	1	0	22.85	22.78	22.89	0-2	2
	1	12	23.05	23.03	23.03		2
	1	24	22.72	22.74	22.93		2
	12	0	21.56	21.70	21.69	0-3	3
	12	6	21.73	21.77	21.71		3
	12	13	21.70	21.71	21.69		3
	25	0	21.68	21.64	21.69		3

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1.1.2 LTE Band 12

Table 1-4

LTE Band 12 Maximum Conducted Powers – 5 MHz Bandwidth

LTE Band 12 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23035 (701.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23155 (713.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.57	24.63	24.55	0	0
	1	12	24.82	24.70	24.86		0
	1	24	24.57	24.54	24.57		0
	12	0	23.75	23.76	23.85	0-1	1
	12	6	23.81	23.83	23.80		1
	12	13	23.70	23.78	23.72		1
	25	0	23.73	23.81	23.83		1
16QAM	1	0	23.85	23.98	23.77	0-1	1
	1	12	24.12	24.18	24.02		1
	1	24	23.93	23.87	23.91		1
	12	0	22.84	22.85	22.82	0-2	2
	12	6	22.88	22.90	22.79		2
	12	13	22.76	22.83	22.71		2
	25	0	22.74	22.84	22.79		2
64QAM	1	0	22.81	22.94	22.68	0-2	2
	1	12	23.10	23.12	23.03		2
	1	24	22.90	22.82	22.76		2
	12	0	21.80	21.88	21.83	0-3	3
	12	6	21.87	21.92	21.78		3
	12	13	21.77	21.81	21.72		3
	25	0	21.77	21.84	21.80		3

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Table 1-5

LTE Band 12 Maximum Conducted Powers – 3 MHz Bandwidth

LTE Band 12 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23025 (700.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23165 (714.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.69	24.71	24.74	0	0
	1	7	24.85	24.84	24.86		0
	1	14	24.65	24.69	24.72		0
	8	0	23.73	23.73	23.80	0-1	1
	8	4	23.79	23.79	23.83		1
	8	7	23.72	23.76	23.80		1
	15	0	23.77	23.78	23.79		1
16QAM	1	0	23.95	24.04	23.97	0-1	1
	1	7	24.15	24.20	24.14		1
	1	14	23.96	24.05	24.02		1
	8	0	22.86	22.91	22.86	0-2	2
	8	4	22.90	22.94	22.91		2
	8	7	22.83	22.92	22.88		2
	15	0	22.78	22.82	22.79		2
64QAM	1	0	22.98	23.00	22.90	0-2	2
	1	7	23.12	23.14	23.05		2
	1	14	22.92	22.97	22.92		2
	8	0	21.82	21.88	21.83	0-3	3
	8	4	21.87	21.92	21.85		3
	8	7	21.81	21.90	21.82		3
	15	0	21.79	21.85	21.79		3

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Table 1-6

LTE Band 12 Maximum Conducted Powers – 1.4 MHz Bandwidth

LTE Band 12 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23017 (699.7 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23173 (715.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.63	24.66	24.65	0	0
	1	2	24.77	24.77	24.80		0
	1	5	24.62	24.68	24.66		0
	3	0	24.64	24.73	24.80		0
	3	2	24.74	24.76	24.80		0
	3	3	24.73	24.76	24.76		0
	6	0	23.76	23.81	23.83	0-1	1
16QAM	1	0	23.94	24.02	23.99	0-1	1
	1	2	24.04	24.12	24.16		1
	1	5	23.96	24.02	23.95		1
	3	0	23.70	23.87	23.85		1
	3	2	23.86	23.85	23.85		1
	3	3	23.84	23.89	23.83		1
	6	0	22.83	22.86	22.81	0-2	2
64QAM	1	0	22.90	22.94	22.86	0-2	2
	1	2	23.05	23.09	23.05		2
	1	5	22.93	22.99	22.92		2
	3	0	22.81	22.86	22.82		2
	3	2	22.84	22.86	22.83		2
	3	3	22.85	22.87	22.82		2
	6	0	21.81	21.89	21.84	0-3	3

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1.1.3 LTE Band 13

Table 1-7

LTE Band 13 Maximum Conducted Powers – 5 MHz Bandwidth

LTE Band 13 5 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **23230 (782.0 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	24.66	0	0
	1	12	24.71		0
	1	24	24.63		0
	12	0	23.77	0-1	1
	12	6	23.85		1
	12	13	23.78		1
	25	0	23.80		1
16QAM	1	0	23.99	0-1	1
	1	12	24.17		1
	1	24	23.90		1
	12	0	22.78	0-2	2
	12	6	22.86		2
	12	13	22.81		2
	25	0	22.76		2
64QAM	1	0	22.88	0-2	2
	1	12	23.12		2
	1	24	22.81		2
	12	0	21.71	0-3	3
	12	6	21.79		3
	12	13	21.70		3
	25	0	21.71		3

Note: LTE Band 13 at 5 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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1.1.4 LTE Band 26

Table 1-8

LTE Band 26 Maximum Conducted Powers – 10 MHz Bandwidth

LTE Band 26 (Cell) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26740 (819.0 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 26990 (844.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.45	24.48	24.52	0	0
	1	25	24.62	24.62	24.65		0
	1	49	24.45	24.48	24.48		0
	25	0	23.62	23.67	23.67	0-1	1
	25	12	23.61	23.61	23.63		1
	25	25	23.66	23.58	23.52		1
	50	0	23.68	23.65	23.61		1
16QAM	1	0	23.87	23.87	23.95	0-1	1
	1	25	24.11	23.99	24.05		1
	1	49	23.87	23.91	23.85		1
	25	0	22.68	22.77	22.80	0-2	2
	25	12	22.67	22.72	22.74		2
	25	25	22.72	22.71	22.66		2
	50	0	22.71	22.73	22.72		2
64QAM	1	0	22.85	22.82	22.88	0-2	2
	1	25	23.02	23.01	23.06		2
	1	49	22.87	22.91	22.93		2
	25	0	21.53	21.61	21.68	0-3	3
	25	12	21.55	21.55	21.62		3
	25	25	21.58	21.53	21.55		3
	50	0	21.60	21.59	21.62		3

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Table 1-9

LTE Band 26 Maximum Conducted Powers – 5 MHz Bandwidth

LTE Band 26 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26715 (816.5 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27015 (846.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.33	24.42	24.45	0	0
	1	12	24.62	24.61	24.71		0
	1	24	24.36	24.38	24.43		0
	12	0	23.57	23.59	23.66	0-1	1
	12	6	23.64	23.61	23.68		1
	12	13	23.57	23.53	23.54		1
	25	0	23.59	23.56	23.64		1
16QAM	1	0	23.77	23.81	23.87	0-1	1
	1	12	24.02	24.07	24.04		1
	1	24	23.86	23.72	23.77		1
	12	0	22.69	22.75	22.85	0-2	2
	12	6	22.73	22.79	22.80		2
	12	6	22.70	22.72	22.74		2
	25	0	22.64	22.68	22.77		2
64QAM	1	0	22.70	22.80	22.87	0-2	2
	1	12	23.01	23.04	23.10		2
	1	24	22.76	22.82	22.86		2
	12	0	21.47	21.53	21.69	0-3	3
	12	6	21.53	21.55	21.70		3
	12	13	21.48	21.49	21.58		3
	25	0	21.47	21.51	21.65		3

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Table 1-10

LTE Band 26 Maximum Conducted Powers – 3 MHz Bandwidth

LTE Band 26 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26705 (815.5 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27025 (847.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.47	24.52	24.54	0	0
	1	7	24.63	24.64	24.72		0
	1	14	24.49	24.51	24.56		0
	8	0	23.58	23.57	23.63	0-1	1
	8	4	23.61	23.59	23.64		1
	8	7	23.60	23.56	23.60		1
	15	0	23.60	23.57	23.63		1
16QAM	1	0	23.90	23.93	23.93	0-1	1
	1	7	24.07	24.03	24.12		1
	1	14	23.92	23.93	23.87		1
	8	0	22.75	22.82	22.89	0-2	2
	8	4	22.79	22.83	22.87		2
	8	7	22.78	22.81	22.86		2
	15	0	22.69	22.71	22.80		2
64QAM	1	0	22.87	22.92	22.97	0-2	2
	1	7	23.01	23.04	23.13		2
	1	14	22.88	22.91	22.93		2
	8	0	21.51	21.57	21.69	0-3	3
	8	4	21.56	21.57	21.72		3
	8	7	21.54	21.53	21.70		3
	15	0	21.52	21.55	21.67		3

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Table 1-11

LTE Band 26 Maximum Conducted Powers – 1.4 MHz Bandwidth

LTE Band 26 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26697 (814.7 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27033 (848.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.39	24.44	24.46	0	0
	1	2	24.54	24.57	24.63		0
	1	5	24.40	24.42	24.48		0
	3	0	24.49	24.50	24.58		0
	3	2	24.51	24.53	24.62		0
	3	3	24.48	24.51	24.58		0
	6	0	23.56	23.57	23.65	0-1	1
16QAM	1	0	23.82	23.82	23.80	0-1	1
	1	2	23.99	23.99	24.02		1
	1	5	23.84	23.81	23.79		1
	3	0	23.69	23.68	23.73		1
	3	2	23.72	23.72	23.70		1
	3	3	23.67	23.71	23.68		1
	6	0	22.69	22.71	22.81	0-2	2
64QAM	1	0	22.81	22.83	22.88	0-2	2
	1	2	22.91	22.96	23.02		2
	1	5	22.82	22.81	22.87		2
	3	0	22.72	22.76	22.80		2
	3	2	22.74	22.77	22.79		2
	3	3	22.72	22.74	22.81		2
	6	0	21.51	21.54	21.67	0-3	3

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1.1.5 LTE Band 66

Table 1-12

LTE Band 66 Maximum Conducted Powers – 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132047 (1717.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132597 (1772.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.20	24.23	24.17	0	0
	1	36	24.25	24.27	24.25		0
	1	74	24.16	24.15	24.17		0
	36	0	23.33	23.38	23.37	0-1	1
	36	18	23.37	23.39	23.42		1
	36	37	23.35	23.34	23.33		1
	75	0	23.32	23.34	23.32		1
16QAM	1	0	23.57	23.55	23.55	0-1	1
	1	36	23.52	23.61	23.63		1
	1	74	23.51	23.53	23.57		1
	36	0	22.30	22.34	22.36	0-2	2
	36	18	22.34	22.35	22.37		2
	36	37	22.31	22.30	22.31		2
	75	0	22.30	22.31	22.33		2
64QAM	1	0	22.54	22.47	22.47	0-2	2
	1	36	22.48	22.54	22.55		2
	1	74	22.42	22.42	22.41		2
	36	0	21.27	21.36	21.35	0-3	3
	36	18	21.30	21.35	21.36		3
	36	37	21.28	21.30	21.30		3
	75	0	21.26	21.32	21.32		3

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Table 1-13

LTE Band 66 Maximum Conducted Powers – 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132022 (1715.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132622 (1775.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.22	24.26	24.23	0	0
	1	25	24.31	24.34	24.32		0
	1	49	24.20	24.21	24.18		0
	25	0	23.34	23.38	23.35	0-1	1
	25	12	23.35	23.39	23.33		1
	25	25	23.36	23.35	23.29		1
	50	0	23.38	23.38	23.34		1
16QAM	1	0	23.60	23.61	23.61	0-1	1
	1	25	23.61	23.72	23.67		1
	1	49	23.51	23.52	23.48		1
	25	0	22.32	22.39	22.39	0-2	2
	25	12	22.37	22.40	22.34		2
	25	25	22.32	22.36	22.30		2
	50	0	22.34	22.37	22.34		2
64QAM	1	0	22.53	22.54	22.52	0-2	2
	1	25	22.60	22.62	22.56		2
	1	49	22.45	22.47	22.44		2
	25	0	21.28	21.33	21.34	0-3	3
	25	12	21.32	21.35	21.31		3
	25	25	21.28	21.31	21.25		3
	50	0	21.31	21.34	21.34		3

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Table 1-14

LTE Band 66 Maximum Conducted Powers – 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131997 (1712.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132647 (1777.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.14	24.15	24.12	0	0
	1	12	24.37	24.42	24.40		0
	1	24	24.06	24.13	24.15		0
	12	0	23.25	23.33	23.33	0-1	1
	12	6	23.33	23.39	23.38		1
	12	13	23.32	23.32	23.29		1
	25	0	23.27	23.34	23.32		1
16QAM	1	0	23.52	23.52	23.48	0-1	1
	1	12	23.67	23.81	23.78		1
	1	24	23.46	23.46	23.48		1
	12	0	22.31	22.37	22.37	0-2	2
	12	6	22.35	22.42	22.41		2
	12	13	22.29	22.37	22.34		2
	25	0	22.27	22.34	22.32		2
64QAM	1	0	22.44	22.45	22.43	0-2	2
	1	12	22.65	22.72	22.67		2
	1	24	22.30	22.38	22.41		2
	12	0	21.25	21.33	21.33	0-3	3
	12	6	21.30	21.53	21.34		3
	12	13	21.23	21.31	21.29		3
	25	0	21.21	21.32	21.30		3

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Table 1-15

LTE Band 66 Maximum Conducted Powers – 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131987 (1711.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132657 (1778.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.27	24.25	24.22	0	0
	1	7	24.40	24.24	24.35		0
	1	14	24.23	24.22	24.22		0
	8	0	23.35	23.30	23.30	0-1	1
	8	4	23.39	23.36	23.36		1
	8	7	23.33	23.30	23.30		1
	15	0	23.33	23.32	23.34		1
16QAM	1	0	23.64	23.62	23.60	0-1	1
	1	7	23.72	23.77	23.58		1
	1	14	23.61	23.61	23.52		1
	8	0	22.46	22.43	22.42	0-2	2
	8	4	22.50	22.45	22.45		2
	8	7	22.42	22.42	22.43		2
	15	0	22.33	22.33	22.26		2
64QAM	1	0	22.59	22.49	22.50	0-2	2
	1	7	22.72	22.65	22.63		2
	1	14	22.50	22.48	22.42		2
	8	0	21.37	21.32	21.32	0-3	3
	8	4	21.40	21.39	21.36		3
	8	7	21.35	21.29	21.31		3
	15	0	21.33	21.31	21.34		3

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Table 1-16

LTE Band 66 Maximum Conducted Powers – 1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132665 (1779.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.18	24.18	24.12	0	0
	1	2	24.30	24.29	24.27		0
	1	5	24.19	24.19	24.14		0
	3	0	24.26	24.23	24.21		0
	3	2	24.32	24.26	24.26		0
	3	3	24.26	24.23	24.22		0
	6	0	23.34	23.32	23.31	0-1	1
16QAM	1	0	23.57	23.51	23.46	0-1	1
	1	2	23.67	23.61	23.62		1
	1	5	23.62	23.50	23.51		1
	3	0	23.49	23.36	23.33		1
	3	2	23.44	23.39	23.36		1
	3	3	23.49	23.39	23.14		1
	6	0	22.42	22.37	22.36	0-2	2
64QAM	1	0	22.53	22.48	22.30	0-2	2
	1	2	22.62	22.56	22.54		2
	1	5	22.50	22.44	22.25		2
	3	0	22.42	22.37	22.28		2
	3	2	22.47	22.44	22.33		2
	3	3	22.43	22.33	22.25		2
	6	0	21.36	21.34	21.27	0-3	3

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Table 1-17

LTE Band 66 Reduced Conducted Powers – 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132047 (1717.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132597 (1772.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	21.85	21.80	21.91	0	0
	1	36	21.93	21.93	22.04		0
	1	74	21.88	21.82	21.90		0
	36	0	21.93	21.92	22.04	0-1	0
	36	18	21.97	21.96	22.08		0
	36	37	21.99	21.99	22.07		0
	75	0	21.93	21.95	22.03		0
16QAM	1	0	22.20	22.19	22.24	0-1	0
	1	36	22.23	22.28	22.39		0
	1	74	22.14	22.29	22.22		0
	36	0	21.92	21.94	22.06	0-2	0
	36	18	21.93	21.99	22.09		0
	36	37	21.97	22.01	22.05		0
	75	0	21.92	21.98	22.05		0
64QAM	1	0	22.09	22.08	22.16	0-2	0
	1	36	22.13	22.21	22.25		0
	1	74	22.07	22.06	22.11		0
	36	0	21.40	21.43	21.55	0-3	0.5
	36	18	21.44	21.47	21.62		0.5
	36	37	21.45	21.52	21.56		0.5
	75	0	21.39	21.46	21.53		0.5

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Table 1-18

LTE Band 66 Reduced Conducted Powers – 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132022 (1715.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132622 (1775.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	21.93	21.91	21.95	0	0
	1	25	22.01	22.07	22.11		0
	1	49	21.91	21.94	21.93		0
	25	0	21.93	21.98	22.04	0-1	0
	25	12	21.97	22.03	22.06		0
	25	25	21.99	22.01	22.03		0
	50	0	21.98	21.91	22.04		0
16QAM	1	0	22.26	22.27	22.26	0-1	0
	1	25	22.30	22.38	22.51		0
	1	49	22.11	22.25	22.32		0
	25	0	21.96	21.97	22.05	0-2	0
	25	12	21.97	22.05	22.08		0
	25	25	22.00	22.05	22.01		0
	50	0	21.98	22.00	22.02		0
64QAM	1	0	22.18	22.10	22.15	0-2	0
	1	25	22.20	22.28	22.33		0
	1	49	22.12	22.16	22.11		0
	25	0	21.42	21.48	21.49	0-3	0.5
	25	12	21.44	21.52	21.51		0.5
	25	25	21.43	21.50	21.48		0.5
	50	0	21.47	21.50	21.47		0.5

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Table 1-19

LTE Band 66 Reduced Conducted Powers – 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131997 (1712.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132647 (1777.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	21.86	21.81	21.86	0	0
	1	12	22.05	22.08	22.07		0
	1	24	21.76	21.80	21.82		0
	12	0	21.90	21.91	21.95	0-1	0
	12	6	21.98	21.97	22.00		0
	12	13	21.91	21.94	21.92		0
	25	0	21.93	21.93	21.95		0
16QAM	1	0	22.22	22.14	22.17	0-1	0
	1	12	22.45	22.45	22.42		0
	1	24	22.11	22.17	22.15		0
	12	0	21.98	21.97	22.00	0-2	0
	12	6	22.04	22.02	22.05		0
	12	13	21.99	21.98	21.96		0
	25	0	21.93	21.94	21.95		0
64QAM	1	0	22.09	22.02	22.06	0-2	0
	1	12	22.33	22.30	22.30		0
	1	24	21.97	22.02	22.04		0
	12	0	21.41	21.43	21.45	0-3	0.5
	12	6	21.43	21.47	21.49		0.5
	12	13	21.39	21.43	21.41		0.5
	25	0	21.41	21.40	21.42		0.5

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Table 1-20

LTE Band 66 Reduced Conducted Powers – 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131987 (1711.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132657 (1778.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	21.99	21.95	21.94	0	0
	1	7	22.09	22.08	22.08		0
	1	14	21.92	21.94	21.92		0
	8	0	21.92	21.95	21.94	0-1	0
	8	4	21.96	21.98	21.96		0
	8	7	21.94	21.95	21.93		0
	15	0	21.94	21.94	21.95		0
16QAM	1	0	22.32	22.26	22.22	0-1	0
	1	7	22.36	22.38	22.40		0
	1	14	22.24	22.30	22.26		0
	8	0	22.05	22.04	22.04	0-2	0
	8	4	22.09	22.08	22.09		0
	8	7	22.04	22.08	22.04		0
	15	0	21.96	21.97	21.98		0
64QAM	1	0	22.12	22.14	22.10	0-2	0
	1	7	22.29	22.26	22.30		0
	1	14	22.16	22.16	22.12		0
	8	0	21.46	21.47	21.45	0-3	0.5
	8	4	21.51	21.51	21.47		0.5
	8	7	21.48	21.44	21.45		0.5
	15	0	21.46	21.45	21.44		0.5

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Table 1-21

LTE Band 66 Reduced Conducted Powers – 1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132665 (1779.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.11	22.11	22.01	0	0
	1	2	22.24	22.21	22.14		0
	1	5	22.12	22.08	22.05		0
	3	0	22.17	22.14	22.10		0
	3	2	22.19	22.19	22.14		0
	3	3	22.17	22.16	22.11		0
	6	0	22.18	22.15	22.13	0-1	0
16QAM	1	0	22.50	22.47	22.39	0-1	0
	1	2	22.59	22.53	22.52		0
	1	5	22.45	22.41	22.40		0
	3	0	22.29	22.29	22.28		0
	3	2	22.38	22.27	22.25		0
	3	3	22.30	22.26	22.24		0
	6	0	22.28	22.25	22.21	0-2	0
64QAM	1	0	22.37	22.31	22.25	0-2	0
	1	2	22.49	22.43	22.38		0
	1	5	22.33	22.32	22.25		0
	3	0	22.32	22.22	22.21		0
	3	2	22.28	22.31	22.24		0
	3	3	22.31	22.24	22.19		0
	6	0	21.71	21.71	21.62	0-3	0.5

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1.1.6 LTE Band 25

Table 1-22

LTE Band 25 Maximum Conducted Powers – 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26115 (1857.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26615 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.10	24.12	24.07	0	0
	1	36	24.21	24.23	24.18		0
	1	74	24.12	24.08	24.10		0
	36	0	23.35	23.34	23.28	0-1	1
	36	18	23.30	23.30	23.29		1
	36	37	23.32	23.26	23.26		1
	75	0	23.30	23.27	23.27		1
16QAM	1	0	23.42	23.50	23.42	0-1	1
	1	36	23.50	23.49	23.45		1
	1	74	23.50	23.33	23.38		1
	36	0	22.29	22.30	22.31	0-2	2
	36	18	22.29	22.33	22.35		2
	36	37	22.32	22.29	22.30		2
	75	0	22.31	22.30	22.29		2
64QAM	1	0	22.34	22.38	22.35	0-2	2
	1	36	22.44	22.45	22.46		2
	1	74	22.45	22.36	22.41		2
	36	0	21.21	21.26	21.33	0-3	3
	36	18	21.21	21.27	21.34		3
	36	37	21.25	21.22	21.31		3
	75	0	21.22	21.24	21.30		3

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Table 1-23

LTE Band 25 Maximum Conducted Powers – 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.12	24.20	24.11	0	0
	1	25	24.26	24.34	24.26		0
	1	49	24.15	24.19	24.14		0
	25	0	23.38	23.42	23.36	0-1	1
	25	12	23.34	23.35	23.27		1
	25	25	23.31	23.31	23.25		1
	50	0	23.36	23.35	23.31		1
16QAM	1	0	23.50	23.54	23.36	0-1	1
	1	25	23.58	23.62	23.57		1
	1	49	23.52	23.42	23.38		1
	25	0	22.39	22.39	22.38	0-2	2
	25	12	22.35	22.37	22.31		2
	25	25	22.32	22.34	22.29		2
	50	0	22.36	22.38	22.32		2
64QAM	1	0	22.45	22.43	22.36	0-2	2
	1	25	22.55	22.56	22.51		2
	1	49	22.49	22.42	22.37		2
	25	0	21.29	21.30	21.33	0-3	3
	25	12	21.24	21.28	21.26		3
	25	25	21.22	21.23	21.23		3
	50	0	21.30	21.33	21.31		3

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Table 1-24

LTE Band 25 Maximum Conducted Powers – 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.02	24.05	24.11	0	0
	1	12	24.29	24.33	24.43		0
	1	24	23.98	24.02	24.10		0
	12	0	23.22	23.24	23.32	0-1	1
	12	6	23.27	23.26	23.35		1
	12	13	23.17	23.21	23.28		1
	25	0	23.22	23.25	23.33		1
16QAM	1	0	23.33	23.38	23.43	0-1	1
	1	12	23.58	23.59	23.72		1
	1	24	23.30	23.35	23.37		1
	12	0	22.29	22.31	22.39	0-2	2
	12	6	22.31	22.34	22.44		2
	12	13	22.21	22.37	22.36		2
	25	0	22.22	22.37	22.38		2
64QAM	1	0	22.29	22.41	22.39	0-2	2
	1	12	22.53	22.71	22.71		2
	1	24	22.26	22.41	22.36		2
	12	0	21.12	21.31	21.32	0-3	3
	12	6	21.16	21.33	21.40		3
	12	13	21.09	21.27	21.30		3
	25	0	21.10	21.28	21.33		3

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Table 1-25

LTE Band 25 Maximum Conducted Powers – 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.21	24.24	24.21	0	0
	1	7	24.35	24.38	24.42		0
	1	14	24.18	24.21	24.23		0
	8	0	23.29	23.29	23.30	0-1	1
	8	4	23.31	23.30	23.32		1
	8	7	23.27	23.27	23.27		1
	15	0	23.32	23.31	23.32		1
16QAM	1	0	23.51	23.51	23.51	0-1	1
	1	7	23.65	23.62	23.63		1
	1	14	23.49	23.50	23.48		1
	8	0	22.41	22.40	22.44	0-2	2
	8	4	22.42	22.44	22.45		2
	8	7	22.37	22.42	22.42		2
	15	0	22.32	22.37	22.35		2
64QAM	1	0	22.46	22.49	22.48	0-2	2
	1	7	22.59	22.66	22.65		2
	1	14	22.44	22.53	22.46		2
	8	0	21.24	21.31	21.35	0-3	3
	8	4	21.25	21.28	21.34		3
	8	7	21.21	21.27	21.29		3
	15	0	21.20	21.29	21.33		3

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Table 1-26

LTE Band 25 Maximum Conducted Powers – 1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.16	24.22	24.25	0	0
	1	2	24.32	24.37	24.40		0
	1	5	24.16	24.21	24.25		0
	3	0	24.28	24.31	24.37		0
	3	2	24.30	24.34	24.39		0
	3	3	24.27	24.35	24.38		0
	6	0	23.35	23.37	23.41	0-1	1
16QAM	1	0	23.46	23.53	23.58	0-1	1
	1	2	23.67	23.65	23.73		1
	1	5	23.41	23.51	23.51		1
	3	0	23.34	23.41	23.41		1
	3	2	23.47	23.40	23.46		1
	3	3	23.36	23.39	23.45		1
	6	0	22.41	22.47	22.53	0-2	2
64QAM	1	0	22.42	22.51	22.52	0-2	2
	1	2	22.57	22.61	22.65		2
	1	5	22.41	22.49	22.50		2
	3	0	22.37	22.44	22.48		2
	3	2	22.42	22.47	22.52		2
	3	3	22.38	22.48	22.43		2
	6	0	21.25	21.41	21.45	0-3	3

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Table 1-27

LTE Band 25 Reduced Conducted Powers – 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26115 (1857.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26615 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.05	23.11	23.07	0	0
	1	36	23.18	23.19	23.16		0
	1	74	23.15	23.12	23.12		0
	36	0	23.23	23.25	23.26	0-1	0
	36	18	23.21	23.28	23.29		0
	36	37	23.25	23.22	23.25		0
	75	0	23.22	23.24	23.25		0
16QAM	1	0	23.39	23.41	23.40	0-1	0
	1	36	23.47	23.46	23.46		0
	1	74	23.46	23.40	23.41		0
	36	0	22.71	22.73	22.75	0-2	0.5
	36	18	22.70	22.76	22.75		0.5
	36	37	22.74	22.71	22.73		0.5
	75	0	22.72	22.72	22.73		0.5
64QAM	1	0	22.74	22.82	22.81	0-2	0.5
	1	36	22.87	22.85	22.87		0.5
	1	74	22.89	22.82	22.81		0.5
	36	0	21.64	21.67	21.76	0-3	1.5
	36	18	21.64	21.68	21.77		1.5
	36	37	21.68	21.65	21.74		1.5
	75	0	21.63	21.68	21.71		1.5

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Table 1-28

LTE Band 25 Reduced Conducted Powers – 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.09	23.13	23.14	0	0
	1	25	23.22	23.26	23.27		0
	1	49	23.13	23.13	23.18		0
	25	0	23.27	23.26	23.35	0-1	0
	25	12	23.21	23.30	23.26		0
	25	25	23.18	23.21	23.25		0
	50	0	23.25	23.28	23.30		0
16QAM	1	0	23.33	23.38	23.43	0-1	0
	1	25	23.51	23.56	23.58		0
	1	49	23.45	23.41	23.44		0
	25	0	22.74	22.76	22.84	0-2	0.5
	25	12	22.72	22.76	22.77		0.5
	25	25	22.69	22.71	22.74		0.5
	50	0	22.73	22.79	22.79		0.5
64QAM	1	0	22.78	22.83	22.78	0-2	0.5
	1	25	22.92	22.97	22.98		0.5
	1	49	22.87	22.84	22.82		0.5
	25	0	21.66	21.71	21.81	0-3	1.5
	25	12	21.60	21.68	21.74		1.5
	25	25	21.60	21.63	21.72		1.5
	50	0	21.66	21.72	21.79		1.5

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Table 1-29

LTE Band 25 Reduced Conducted Powers – 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.02	23.08	23.07	0	0
	1	12	23.30	23.32	23.38		0
	1	24	23.01	23.05	23.08		0
	12	0	23.19	23.24	23.21	0-1	0
	12	6	23.22	23.26	23.30		0
	12	13	23.12	23.20	23.21		0
	25	0	23.16	23.23	23.26		0
16QAM	1	0	23.27	23.36	23.35	0-1	0
	1	12	23.54	23.56	23.62		0
	1	24	23.33	23.32	23.35		0
	12	0	22.71	22.78	22.77	0-2	0.5
	12	6	22.73	22.78	22.81		0.5
	12	13	22.66	22.72	22.77		0.5
	25	0	22.66	22.74	22.76		0.5
64QAM	1	0	22.70	22.77	22.75	0-2	0.5
	1	12	22.99	23.00	23.06		0.5
	1	24	22.71	22.78	22.76		0.5
	12	0	21.58	21.67	21.71	0-3	1.5
	12	6	21.60	21.69	21.77		1.5
	12	13	21.53	21.63	21.70		1.5
	25	0	21.56	21.65	21.74		1.5

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Table 1-30

LTE Band 25 Reduced Conducted Powers – 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.11	23.18	23.18	0	0
	1	7	23.30	23.33	23.38		0
	1	14	23.11	23.16	23.16		0
	8	0	23.16	23.21	23.23	0-1	0
	8	4	23.19	23.21	23.27		0
	8	7	23.14	23.20	23.22		0
	15	0	23.17	23.21	23.25		0
16QAM	1	0	23.42	23.46	23.42	0-1	0
	1	7	23.53	23.59	23.58		0
	1	14	23.35	23.46	23.42		0
	8	0	22.73	22.80	22.82	0-2	0.5
	8	4	22.76	22.81	22.85		0.5
	8	7	22.73	22.79	22.79		0.5
	15	0	22.70	22.72	22.76		0.5
64QAM	1	0	22.79	22.85	22.85	0-2	0.5
	1	7	23.03	23.03	23.02		0.5
	1	14	22.83	22.84	22.85		0.5
	8	0	21.59	21.66	21.73	0-3	1.5
	8	4	21.60	21.66	21.75		1.5
	8	7	21.55	21.62	21.69		1.5
	15	0	21.60	21.64	21.73		1.5

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Table 1-31

LTE Band 25 Reduced Conducted Powers – 1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.12	23.15	23.16	0	0
	1	2	23.27	23.29	23.31		0
	1	5	23.12	23.14	23.15		0
	3	0	23.20	23.23	23.26		0
	3	2	23.23	23.25	23.29		0
	3	3	23.21	23.23	23.26		0
	6	0	23.23	23.25	23.29	0-1	0
16QAM	1	0	23.40	23.43	23.42	0-1	0
	1	2	23.50	23.59	23.59		0
	1	5	23.34	23.47	23.42		0
	3	0	23.24	23.30	23.30		0
	3	2	23.29	23.34	23.32		0
	3	3	23.23	23.27	23.29		0
	6	0	22.76	22.80	22.80	0-2	0.5
64QAM	1	0	22.81	22.83	22.85	0-2	0.5
	1	2	22.92	22.99	22.97		0.5
	1	5	22.77	22.81	22.85		0.5
	3	0	22.74	22.76	22.77		0.5
	3	2	22.75	22.82	22.81		0.5
	3	3	22.73	22.76	22.78		0.5
	6	0	21.63	21.68	21.75	0-3	1.5

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1.1.7 LTE Band 41

Table 1-32

LTE Band 41 PC3 Maximum Conducted Powers – 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.80	24.88	24.91	25.06	25.02	0	0
	1	36	24.86	25.06	25.09	25.20	25.19		0
	1	74	24.76	24.90	24.98	25.12	25.01		0
	36	0	23.87	24.12	24.10	24.32	24.14	0-1	1
	36	18	23.91	24.16	24.11	24.32	24.16		1
	36	37	23.89	24.08	24.12	24.25	24.13		1
	75	0	23.87	24.10	24.04	24.29	24.11		1
16QAM	1	0	23.71	23.98	23.97	24.18	24.05	0-1	1
	1	36	23.89	24.20	24.11	24.34	24.15		1
	1	74	23.67	24.16	23.99	24.19	24.01		1
	36	0	22.82	22.98	22.92	23.24	23.11	0-2	2
	36	18	22.86	23.08	22.96	23.23	23.11		2
	36	37	22.79	23.02	22.97	23.25	23.06		2
	75	0	22.82	23.17	23.00	23.45	23.15		2
64QAM	1	0	22.40	22.72	22.66	22.88	22.81	0-2	2
	1	36	22.64	22.82	22.73	22.90	22.91		2
	1	74	22.32	22.75	22.58	22.88	22.76		2
	36	0	21.84	22.02	21.93	22.25	22.14	0-3	3
	36	18	21.82	22.15	22.00	22.34	22.12		3
	36	37	21.80	21.97	21.99	22.22	22.08		3
	75	0	21.80	22.08	22.00	22.41	22.14		3

Table 1-33

LTE Band 41 PC3 Maximum Conducted Powers – 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.99	25.05	25.18	25.31	25.26	0	0
	1	25	24.96	25.22	25.15	25.28	25.32		0
	1	49	24.96	25.15	25.05	25.33	25.27		0
	25	0	24.03	24.35	24.14	24.51	24.36	0-1	1
	25	12	24.08	24.31	24.28	24.40	24.31		1
	25	25	24.05	24.28	24.11	24.41	24.32		1
	50	0	24.06	24.38	24.20	24.59	24.34		1
16QAM	1	0	24.04	24.20	24.14	24.58	24.28	0-1	1
	1	25	24.06	24.23	24.01	24.55	24.16		1
	1	49	24.03	24.33	24.19	24.44	24.24		1
	25	0	23.03	23.37	23.25	23.62	23.44	0-2	2
	25	12	23.16	23.34	23.23	23.59	23.46		2
	25	25	23.10	23.32	23.24	23.54	23.42		2
	50	0	23.04	23.39	23.20	23.47	23.45		2
64QAM	1	0	22.73	22.94	22.76	23.16	22.96	0-2	2
	1	25	22.68	22.85	22.84	23.07	23.02		2
	1	49	22.68	22.81	22.84	23.10	22.84		2
	25	0	22.08	22.19	22.19	22.52	22.32	0-3	3
	25	12	22.10	22.31	22.18	22.52	22.37		3
	25	25	22.05	22.17	22.16	22.51	22.27		3
	50	0	22.08	22.45	22.17	22.74	22.41		3

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Table 1-34

LTE Band 41 PC3 Maximum Conducted Powers – 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.87	25.05	25.04	25.23	25.20	0	0
	1	12	25.21	25.43	25.23	25.52	25.47		0
	1	24	24.76	24.99	25.05	25.32	25.21		0
	12	0	24.05	24.30	24.17	24.46	24.38	0-1	1
	12	6	24.06	24.32	24.13	24.51	24.43		1
	12	13	24.03	24.29	24.16	24.47	24.27		1
	25	0	24.03	24.23	24.09	24.42	24.27		1
16QAM	1	0	23.93	24.20	24.09	24.43	24.21	0-1	1
	1	12	24.22	24.55	24.33	24.65	24.53		1
	1	24	23.89	24.13	23.96	24.43	24.14		1
	12	0	22.92	23.20	23.05	23.39	23.26	0-2	2
	12	6	23.05	23.25	23.10	23.42	23.32		2
	12	13	22.94	23.17	23.02	23.42	23.17		2
	25	0	23.09	23.36	23.20	23.55	23.36		2
64QAM	1	0	22.58	22.84	22.72	23.08	22.89	0-2	2
	1	12	22.82	23.12	22.96	23.33	23.26		2
	1	24	22.59	22.84	22.69	23.08	22.90		2
	12	0	22.02	22.17	22.02	22.33	22.24	0-3	3
	12	6	22.03	22.21	22.17	22.43	22.29		3
	12	13	21.98	22.12	22.04	22.38	22.15		3
	25	0	22.02	22.17	22.13	22.57	22.26		3

Table 1-35

LTE Band 41 PC3 Reduced Conducted Powers – 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.59	22.74	22.71	22.92	22.86	0	0
	1	36	22.66	22.83	22.74	23.03	23.00		0
	1	74	22.54	22.68	22.68	22.91	22.88		0
	36	0	22.70	22.84	22.73	23.04	22.97	0-1	0
	36	18	22.70	22.85	22.79	23.07	23.00		0
	36	37	22.69	22.80	22.76	22.98	23.00		0
	75	0	22.63	22.89	22.71	23.10	23.00		0
16QAM	1	0	22.60	22.90	22.76	23.05	22.99	0-1	0
	1	36	22.78	22.85	22.82	23.15	23.11		0
	1	74	22.66	22.68	22.82	23.07	22.97		0
	36	0	22.62	22.85	22.75	23.08	22.97	0-2	0
	36	18	22.62	22.87	22.77	23.10	22.97		0
	36	37	22.62	22.76	22.75	22.98	22.95		0
	75	0	22.67	22.95	22.75	23.25	23.01		0
64QAM	1	0	22.20	22.34	22.40	22.59	22.57	0-2	0
	1	36	22.35	22.50	22.48	22.70	22.68		0
	1	74	22.22	22.40	22.31	22.62	22.55		0
	36	0	21.64	21.57	21.70	22.07	21.95	0-3	1
	36	18	21.66	21.87	21.74	22.10	21.96		1
	36	37	21.62	21.75	21.68	22.00	21.92		1
	75	0	21.65	21.96	21.74	22.22	21.90		1

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Table 1-36

LTE Band 41 PC3 Reduced Conducted Powers – 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.63	22.82	22.84	22.94	22.94	0	0
	1	25	22.64	22.81	22.67	23.01	22.98		0
	1	49	22.64	22.81	22.74	23.02	22.91		0
	25	0	22.74	22.86	22.88	23.12	22.92	0-1	0
	25	12	22.77	22.88	22.80	23.14	22.94		0
	25	25	22.74	22.84	22.85	23.01	22.89		0
	50	0	22.69	22.96	22.83	23.19	23.09		0
16QAM	1	0	22.79	22.94	22.87	23.21	22.75	0-1	0
	1	25	22.78	22.96	22.87	23.13	23.07		0
	1	49	22.70	22.84	22.91	23.20	23.05		0
	25	0	22.74	22.92	22.89	23.13	23.09	0-2	0
	25	12	22.76	22.86	22.87	23.10	23.06		0
	25	25	22.75	22.91	22.86	23.17	23.04		0
	50	0	22.73	23.06	22.86	23.39	23.16		0
64QAM	1	0	22.37	22.51	22.46	22.76	22.61	0-2	0
	1	25	22.32	22.53	22.48	22.68	22.64		0
	1	49	22.33	22.44	22.49	22.76	22.60		0
	25	0	21.78	21.96	22.01	22.26	22.09	0-3	1
	25	12	21.75	22.01	21.87	22.26	22.05		1
	25	25	21.77	21.93	21.89	22.22	22.01		1
	50	0	21.73	22.08	21.82	22.36	22.10		1

Table 1-37

LTE Band 41 PC3 Reduced Conducted Powers – 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.58	22.67	22.75	22.93	22.75	0	0
	1	12	22.80	23.09	23.02	23.26	23.21		0
	1	24	22.57	22.62	22.36	22.93	22.76		0
	12	0	22.73	22.84	22.43	23.03	22.94	0-1	0
	12	6	22.81	22.92	22.79	23.13	22.94		0
	12	13	22.72	22.81	22.67	23.06	22.94		0
	25	0	22.68	22.80	22.80	23.09	22.93		0
16QAM	1	0	22.68	22.89	22.79	23.11	22.99	0-1	0
	1	12	22.97	23.20	23.00	23.27	23.26		0
	1	24	22.66	22.87	22.77	23.14	22.96		0
	12	0	22.68	22.76	22.74	23.01	22.94	0-2	0
	12	6	22.73	22.84	22.80	23.09	23.01		0
	12	13	22.64	22.77	22.71	22.99	22.96		0
	25	0	22.71	22.78	22.81	23.02	23.02		0
64QAM	1	0	22.27	22.42	22.40	22.65	22.57	0-2	0
	1	12	22.56	22.72	22.61	22.93	22.86		0
	1	24	22.25	22.44	22.35	22.69	22.86		0
	12	0	21.75	21.93	21.72	22.11	21.99	0-3	1
	12	6	21.76	21.95	21.79	21.47	22.04		1
	12	13	21.70	21.88	21.68	22.11	21.95		1
	25	0	21.72	21.92	21.74	22.20	22.06		1

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APPENDIX G POWER REDUCTION VERIFICATION

Per the May 2017 TCBC Workshop Notes, demonstration of proper functioning of the power reduction mechanisms is required to support the corresponding SAR configurations. The verification process was divided into two parts: (1) evaluation of output power levels for individual or multiple triggering mechanisms and (2) evaluation of the triggering distances for proximity-based sensors.

G.1 Power Verification Procedure

The power verification was performed according to the following procedure:

1. A base station simulator was used to establish a conducted RF connection and the output power was monitored. The power measurements were confirmed to be within expected tolerances for all states before and after a power reduction mechanism was triggered.

2. Step 1 was repeated for all relevant modes and frequency bands for the mechanism being investigated.

3. Steps 1 and 2 were repeated for all individual power reduction mechanisms and combinations thereof. For the combination cases, one mechanism was switched to a 'triggered' state at a time; powers were confirmed to be within tolerances after each additional mechanism was activated.

G.2 Distance Verification Procedure

The distance verification procedure was performed according to the following procedure:

1. A base station simulator was used to establish an RF connection and to monitor the power levels. The device being tested was placed below the relevant section of the phantom with the relevant side or edge of the device facing toward the phantom.

2. The device was moved toward and away from the phantom to determine the distance at which the mechanism triggers and the output power is reduced, per KDB Publication 616217 D04v01r02 and FCC Guidance. Each applicable test position was evaluated. The distances were confirmed to be the same or larger (more conservative) than the minimum distances provided by the manufacturer.

3. Steps 1 and 2 were repeated for low, mid, and high bands, as appropriate (see note below Table G-2 for more details).

4. Steps 1 through 3 were repeated for all distance-based power reduction mechanisms.

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G.3 Main Antenna Verification Summary

Table G-1
Power Measurement Verification for Main Antenna

Mechanism(s)	Mode/Band	Conducted Power (dBm)	
1st		Un-triggered (Max)	Mechanism #1 (Reduced)
Grip	PCS CDMA	25.16	22.60

Table G-2
Distance Measurement Verification for Main Antenna

Mechanism(s)	Test Condition	Band	Distance Measurements (mm)		Minimum Distance per Manufacturer (mm)
			Moving Toward	Moving Away	
Grip	Phablet - Back Side	Mid	5	7	4
Grip	Phablet - Back Side	High	5	7	4
Grip	Phablet - Bottom Edge	Mid	4	6	4
Grip	Phablet - Bottom Edge	High	4	6	4

*Note: Mid band refers to: CDMA BC1, UMTS B2/4, LTE B2/4/25/66; High band refers to: LTE B41

G.4 WIFI Verification Summary

Table G-3
Power Measurement Verification WIFI

Mechanism(s)	Mode/Band	Conducted Power (dBm)	
1st		Un-triggered (Max)	Mechanism #1 (Reduced)
Held-to-Ear	802.11b	20.75	16.99
Held-to-Ear	802.11g	18.46	17.37
Held-to-Ear	802.11n (2.4GHz)	17.53	17.05

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APPENDIX H: PROBE AND DIPOLE CALIBRATION CERTIFICATES

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Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client PC Test

Certificate No: D1765V2-1008_May18

CALIBRATION CERTIFICATE

Object D1765V2 - SN 1008

Calibration procedure(s) QA CAL-05.v10
Calibration procedure for dipole validation kits above 700 MHz

BNV 7/16/2018
BNV 05/20/2019
BNV 05/29/2020 Extended

Calibration date: May 23, 2018

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-18 (No. 217-02682)	Apr-19
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dec-18
DAE4	SN: 601	26-Oct-17 (No. DAE4-601_Oct17)	Oct-18

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check: Oct-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-17)	In house check: Oct-18

	Name	Function	Signature
Calibrated by:	Manu Seitz	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: May 23, 2018

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

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

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 the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "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%.

Measurement Conditions

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

DASY Version	DASY5	V52.10.1
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5.0 mm	
Frequency	1750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.1	1.37 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.0 ± 6 %	1.34 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	8.94 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**36.2 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.71 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**19.0 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	53.4	1.49 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.2 ± 6 %	1.46 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.21 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**37.4 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	4.92 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**19.9 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	47.7 Ω - 6.5 jΩ
Return Loss	- 23.0 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	43.3 Ω - 6.0 jΩ
Return Loss	- 20.3 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.210 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
Manufactured on	October 06, 2005

Appendix (Additional assessments outside the scope of SCS 0108)

Measurement Conditions

DASY system configuration, as far as not given on page 1 and 3.

Phantom	SAM Head Phantom	For usage with cSAR3DV2-R/L

SAR result with SAM Head (Top)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.26 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**37.4 W/kg ± 17.5 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.95 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**19.9 W/kg ± 16.9 % (k=2)**

SAR result with SAM Head (Mouth)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.47 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**38.2 W/kg ± 17.5 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.06 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**20.4 W/kg ± 16.9 % (k=2)**

SAR result with SAM Head (Neck)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.26 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**37.4 W/kg ± 17.5 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.02 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**20.2 W/kg ± 16.9 % (k=2)**

SAR result with SAM Head (Ear)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	7.12 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**28.7 W/kg ± 17.5 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.01 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**16.1 W/kg ± 16.9 % (k=2)**

DASY5 Validation Report for Head TSL

Date: 15.05.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1765 MHz; Type: D1765V2; Serial: D1765V2 - SN:1008

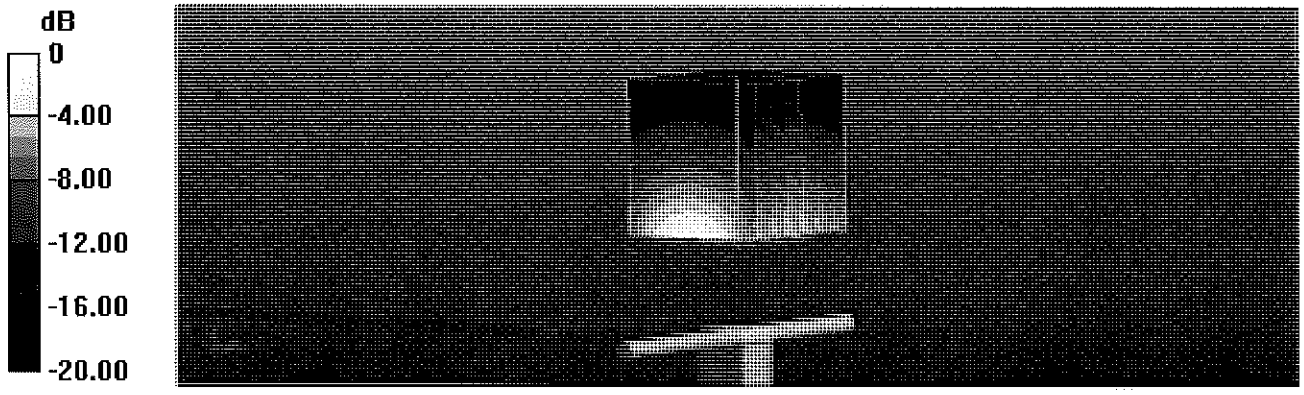
Communication System: UID 0 - CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.34 S/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.5, 8.5, 8.5) @ 1750 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.1(1476); SEMCAD X 14.6.11(7439)

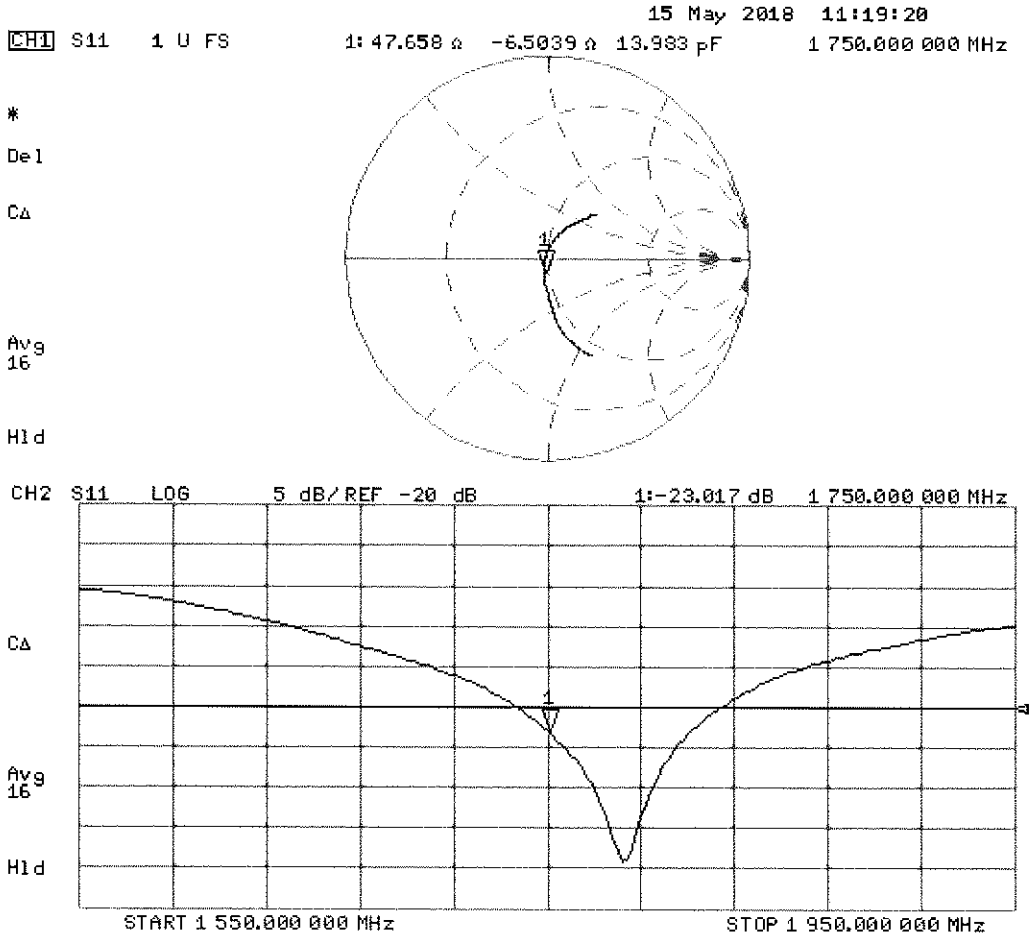
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 106.6 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 16.4 W/kg
SAR(1 g) = 8.94 W/kg; SAR(10 g) = 4.71 W/kg
Maximum value of SAR (measured) = 13.8 W/kg



0 dB = 13.8 W/kg = 11.40 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 15.05.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1765 MHz; Type: D1765V2; Serial: D1765V2 - SN:1008

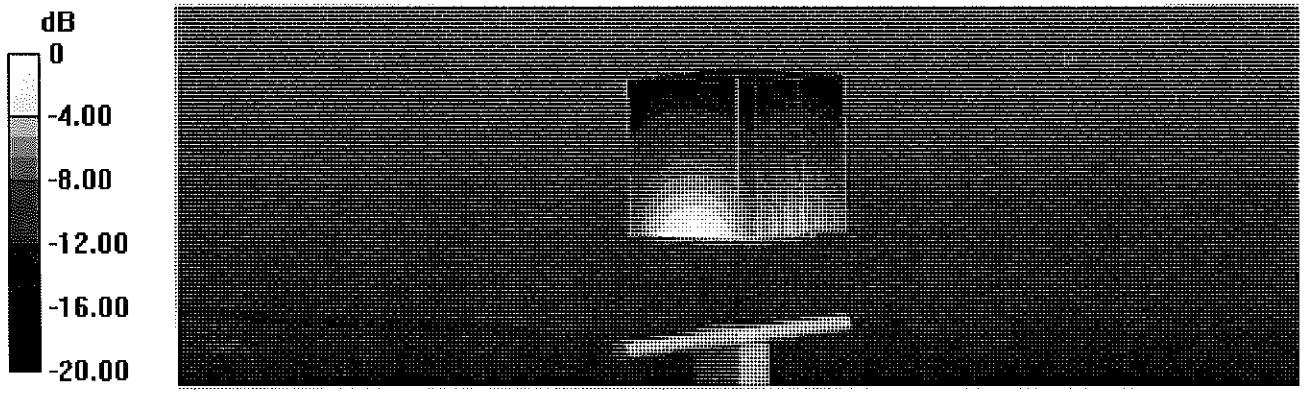
Communication System: UID 0 - CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.46 S/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.35, 8.35, 8.35) @ 1750 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.1(1476); SEMCAD X 14.6.11(7439)

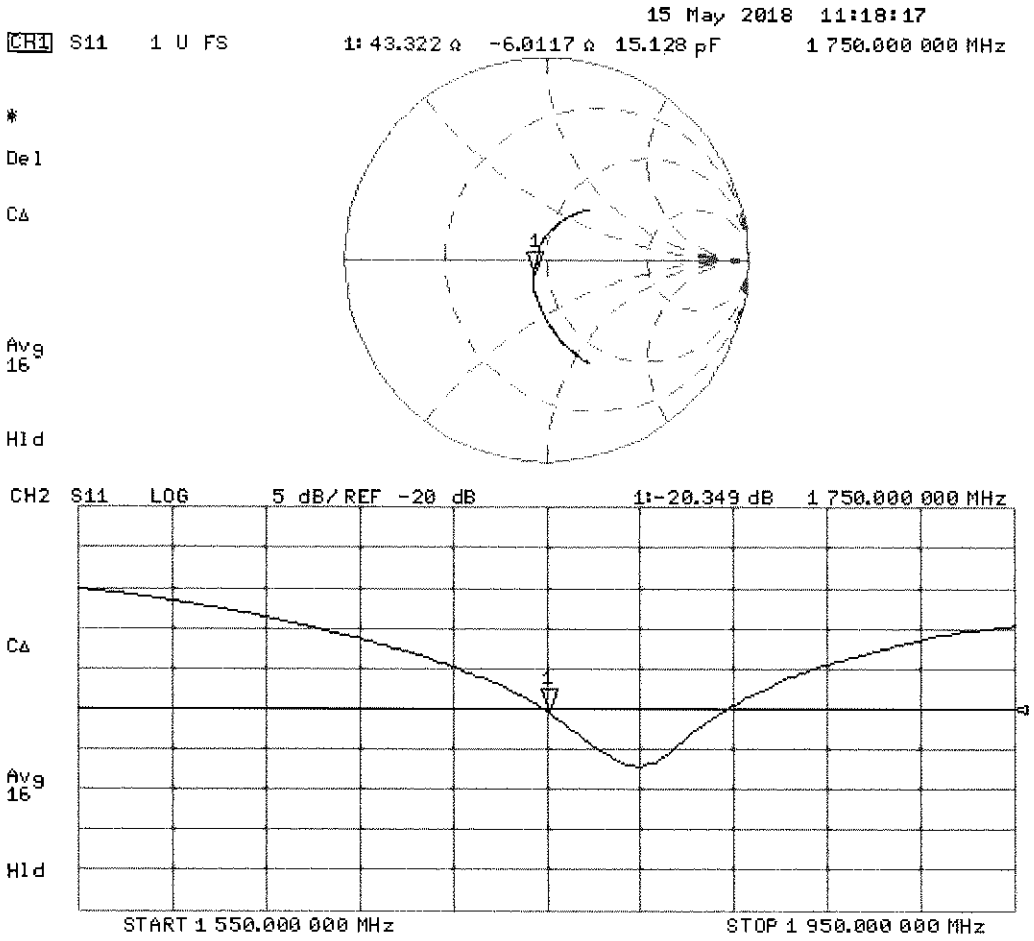
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 102.4 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 16.1 W/kg
SAR(1 g) = 9.21 W/kg; SAR(10 g) = 4.92 W/kg
Maximum value of SAR (measured) = 13.7 W/kg



0 dB = 13.7 W/kg = 11.37 dBW/kg

Impedance Measurement Plot for Body TSL



DASY5 Validation Report for SAM Head

Date: 23.05.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1765 MHz; Type: D1765V2; Serial: D1765V2 - SN:1008

Communication System: UID 0 - CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.37 S/m; ε_r = 41.8; ρ = 1000 kg/m^3
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

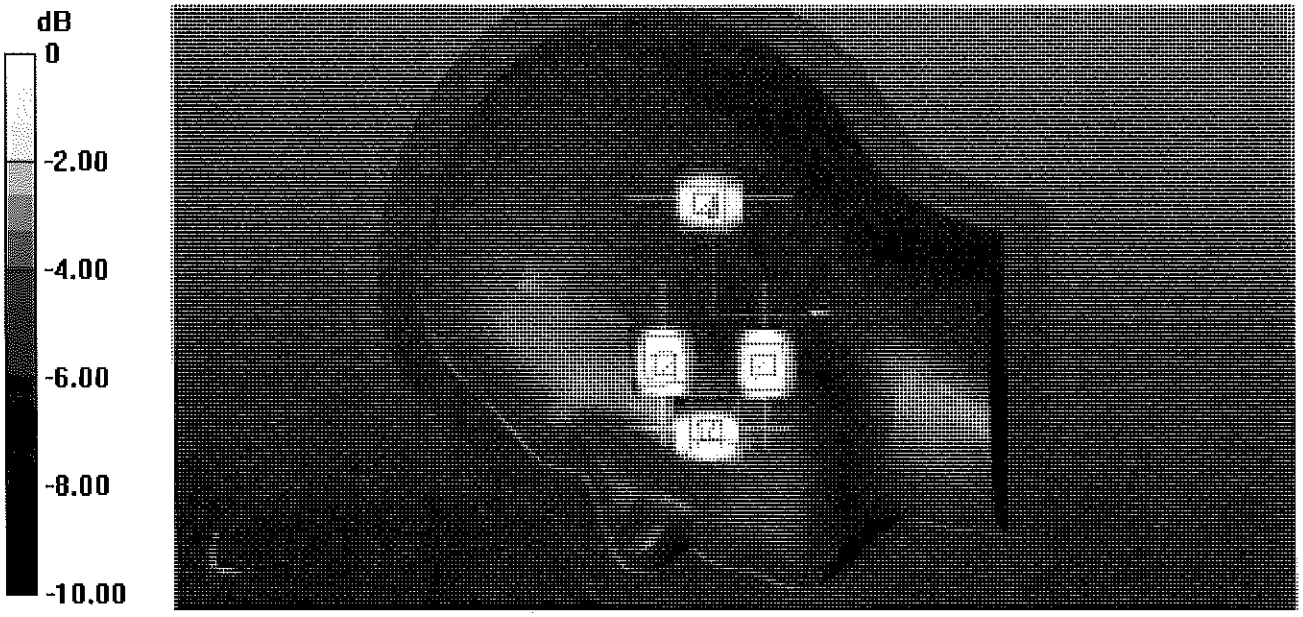
- Probe: EX3DV4 - SN7349; ConvF(8.5, 8.5, 8.5) @ 1750 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: SAM Head
- DASY52 52.10.1(1476); SEMCAD X 14.6.11(7439)

SAM/Head/Top/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 105.8 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 16.4 W/kg
SAR(1 g) = 9.26 W/kg; SAR(10 g) = 4.95 W/kg
Maximum value of SAR (measured) = 13.9 W/kg

SAM/Head/Mouth/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 104.2 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 16.6 W/kg
SAR(1 g) = 9.47 W/kg; SAR(10 g) = 5.06 W/kg
Maximum value of SAR (measured) = 13.7 W/kg

SAM/Head/Neck/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 104.7 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 15.8 W/kg
SAR(1 g) = 9.26 W/kg; SAR(10 g) = 5.02 W/kg
Maximum value of SAR (measured) = 13.8 W/kg

SAM/Head/Ear/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 90.46 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 11.8 W/kg
SAR(1 g) = 7.12 W/kg; SAR(10 g) = 4.01 W/kg
Maximum value of SAR (measured) = 10.3 W/kg



0 dB = 10.3 W/kg = 10.13 dBW/kg

Certification of Calibration

Object D1765V2 – SN: 1008

Calibration procedure(s) Procedure for Calibration Extension for SAR Dipoles.

Extension Calibration date: 5/17/2019

Description: SAR Validation Dipole at 1750 MHz.

Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8753ES	S-Parameter Network Analyzer	3/11/2019	Annual	3/11/2020	US39170122
Agilent	N5182A	MXG Vector Signal Generator	11/28/2018	Annual	11/28/2019	MY47420603
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Anritsu	MA2411B	Pulse Power Sensor	11/20/2018	Annual	11/20/2019	1027293
Anritsu	MA2411B	Pulse Power Sensor	10/30/2018	Annual	10/30/2019	1126066
Anritsu	ML2495A	Power Meter	10/21/2018	Annual	10/21/2019	941001
Control Company	4040	Therm./ Clock/ Humidity Monitor	10/9/2018	Biennial	10/9/2020	181647811
Control Company	4352	Ultra Long Stem Thermometer	6/6/2018	Biennial	6/6/2020	181334678
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	6/4/2018	Annual	6/4/2019	MY53401181
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Seekonk	NC-100	Torque Wrench	7/11/2018	Annual	7/11/2019	N/A
SPEAG	EX3DV4	SAR Probe	6/25/2018	Annual	6/25/2019	7409
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/18/2018	Annual	6/18/2019	1334
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	3914
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/14/2019	Annual	2/14/2020	1272
SPEAG	DAK-3.5	Dielectric Assessment Kit	9/11/2018	Annual	9/11/2019	1091

Measurement Uncertainty = ±23% (k=2)

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Test Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	

DIPOLE CALIBRATION EXTENSION

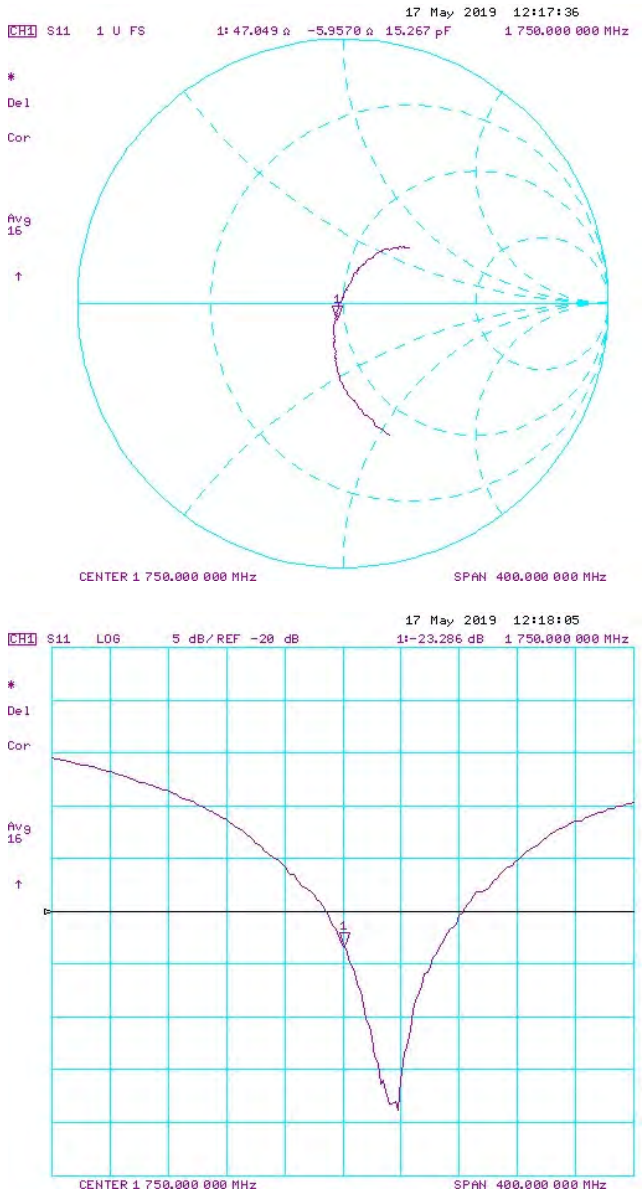
Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
3. The measurement of real or imaginary parts of impedance does not deviate more than 5Ω from the previous measurement.

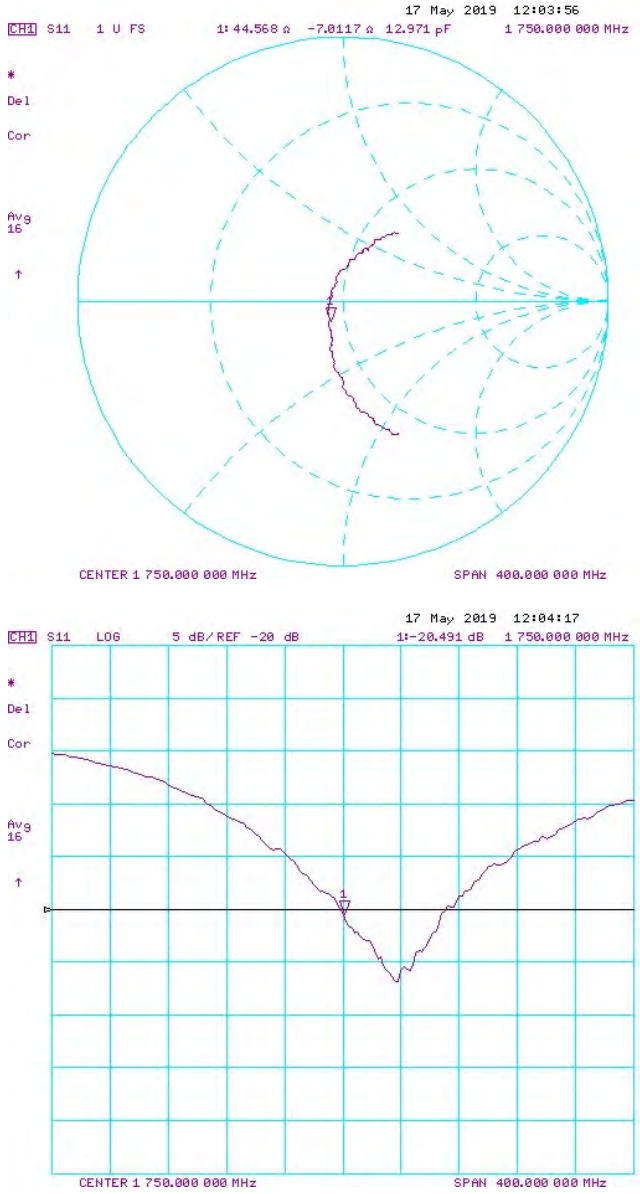
The following dipole was checked to pass the above 3 requirements to have 2-year calibration period from the calibration date:

Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Head (1g) W/kg @ 20.0 dBm	Measured Head SAR (1g) W/kg @ 20.0 dBm	Deviation 1g (%)	Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	Measured Head SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	Deviation (%)	PASS/FAIL
5/23/2018	5/17/2019	1.21	3.62	3.63	0.28%	1.9	1.92	1.05%	47.7	47	0.7	-6.5	-6	0.5	-23	-23.3	-1.20%	PASS
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Body (1g) W/kg @ 20.0 dBm	Measured Body SAR (1g) W/kg @ 20.0 dBm	Deviation 1g (%)	Certificate SAR Target Body (10g) W/kg @ 20.0 dBm	Measured Body SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Body (Ohm) Imaginary	Measured Impedance Body (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
5/23/2018	5/17/2019	1.21	3.74	3.95	5.61%	1.99	2.08	4.52%	43.3	44.6	1.3	-6	-7	1	-20.3	-20.5	-0.90%	PASS

Impedance & Return-Loss Measurement Plot for Head TSL



Impedance & Return-Loss Measurement Plot for Body TSL



Certification of Calibration

Object	D1765V2 – SN: 1008
Calibration procedure(s)	Procedure for Calibration Extension for SAR Dipoles.
Extension Calibration date:	5/23/2020
Description:	SAR Validation Dipole at 1750 MHz.

Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291470
Control Company	4352	Ultra Long Stem Thermometer	8/2/2018	Biennial	8/2/2020	181334684
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	7/2/2019	Annual	7/2/2020	MY53401181
Rohde & Schwarz	ZNLE6	Vector Network Analyzer	10/11/2019	Annual	10/11/2020	101307
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
SPEAG	DAKS-3.5	Portable DAK	9/10/2019	Annual	9/10/2020	1045
Anritsu	MA2411B	Pulse Power Sensor	8/14/2019	Annual	8/14/2020	1315051
Anritsu	MA2411B	Pulse Power Sensor	8/8/2019	Annual	8/8/2020	1339008
Anritsu	ML2495A	Power Meter	12/17/2019	Annual	12/17/2020	941001
Agilent	N5182A	MXG Vector Signal Generator	8/19/2019	Annual	8/19/2020	MY47420837
Seekonk	NC-100	Torque Wrench (8" lb)	5/23/2018	Biennial	5/23/2020	22217
MiniCircuits	ZHDC-16-63-S+	Bidirectional Coupler	CBT	N/A	CBT	N/A
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
SPEAG	EX3DV4	SAR Probe	4/21/2020	Annual	4/21/2021	7357
SPEAG	EX3DV4	SAR Probe	7/16/2019	Annual	7/16/2020	7410
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1322
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/12/2020	Annual	3/12/2021	1368

Measurement Uncertainty = ±23% (k=2)

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Test Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	

DIPOLE CALIBRATION EXTENSION

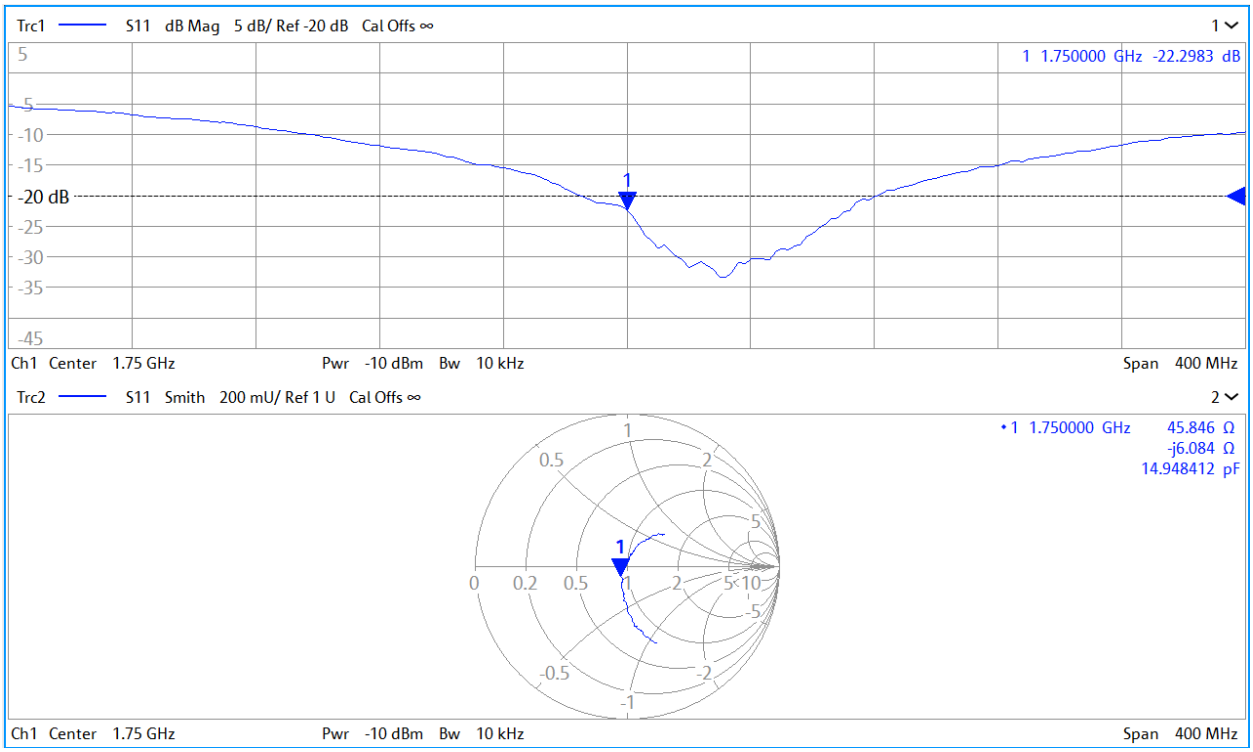
Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
3. The measurement of real or imaginary parts of impedance does not deviate more than 5Ω from the previous measurement.

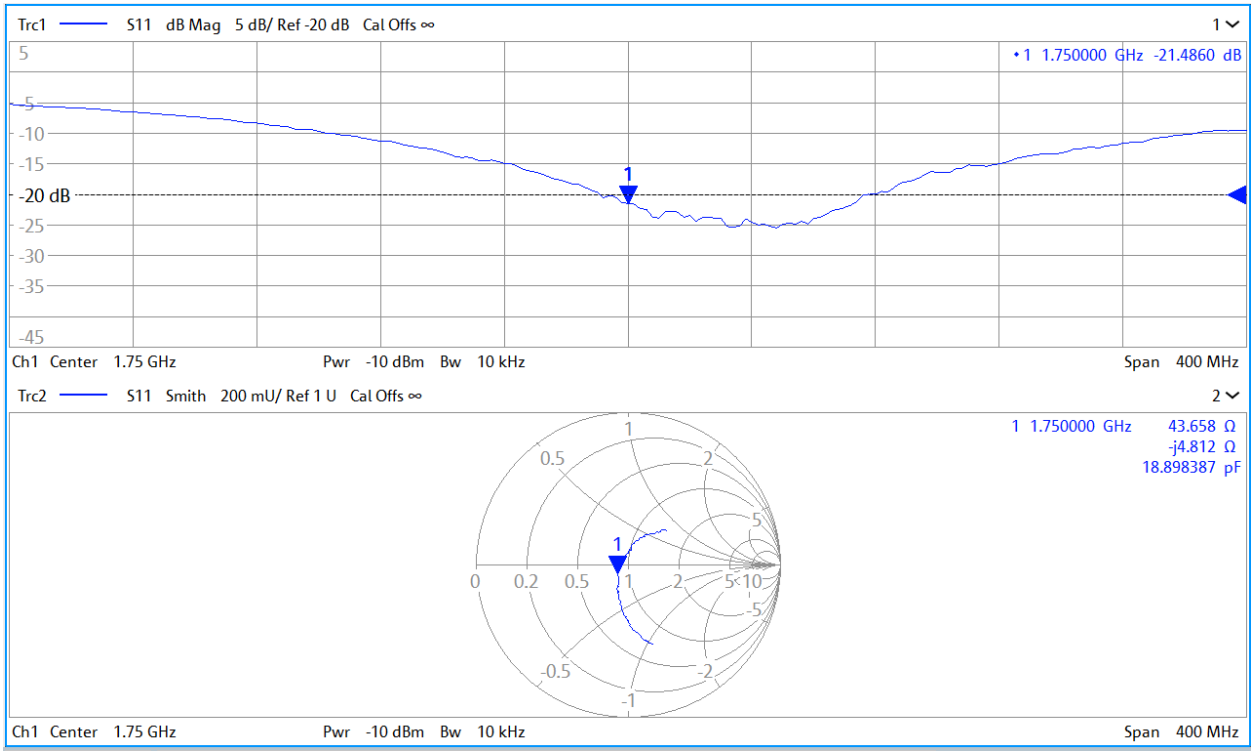
The following dipole was checked to pass the above 3 requirements to have 3-year calibration period from the calibration date:

Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Head (1g) W/kg @ 20.0 dBm	Measured Head SAR (1g) W/kg @ 20.0 dBm	Deviation 1g (%)	Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	Measured Head SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	Deviation (%)	PASS/FAIL
5/23/2018	5/23/2020	1.21	3.62	3.65	0.83%	1.90	1.94	2.11%	47.7	45.9	1.9	-6.5	-6.1	0.4	-23	-22.3	3.10%	PASS
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Body (1g) W/kg @ 20.0 dBm	Measured Body SAR (1g) W/kg @ 20.0 dBm	Deviation 1g (%)	Certificate SAR Target Body (10g) W/kg @ 20.0 dBm	Measured Body SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Body (Ohm) Imaginary	Measured Impedance Body (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
5/23/2018	5/23/2020	1.21	3.74	4.00	6.95%	1.99	2.12	6.53%	43.3	43.7	0.4	-6.0	-4.8	1.2	-20.3	-21.5	-5.80%	PASS

Impedance & Return-Loss Measurement Plot for Head TSL



Impedance & Return-Loss Measurement Plot for Body TSL



Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client **PC Test**

Certificate No: D1900V2-5d080_Oct18

CALIBRATION CERTIFICATE

Object	D1900V2 - SN:5d080
Calibration procedure(s)	QA CAL-05.v10 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	October 23, 2018

BN ✓ 10-30-2018
BNV 10-20-2019
BN ✓ 10-23-20

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-18 (No. 217-02682)	Apr-19
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dec-18
DAE4	SN: 601	04-Oct-18 (No. DAE4-601_Oct18)	Oct-19

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: October 23, 2018

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

Glossary:

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

Calibration is Performed According to the Following Standards:

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 the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "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%.

Measurement Conditions

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

DASY Version	DASY5	V52.10.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.3 ± 6 %	1.40 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.93 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**39.8 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.18 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**20.7 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.9 ± 6 %	1.47 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.62 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**39.2 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.09 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**20.6 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.5 Ω + 7.9 jΩ
Return Loss	- 21.8 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.1 Ω + 8.1 jΩ
Return Loss	- 21.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.193 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
Manufactured on	June 28, 2006

DASY5 Validation Report for Head TSL

Date: 23.10.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d080

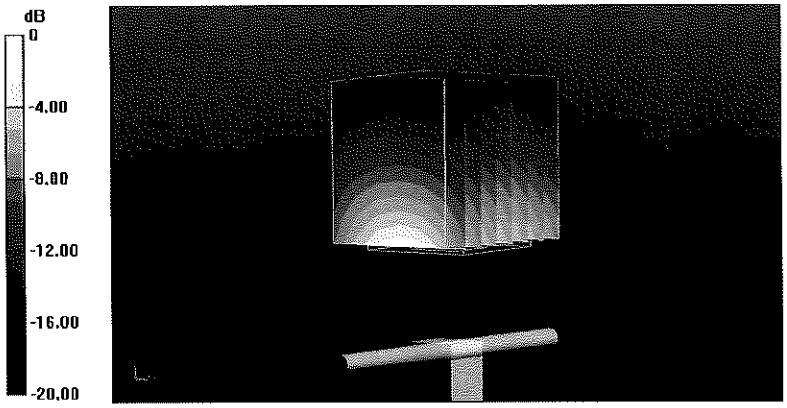
Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.4 S/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.18, 8.18, 8.18) @ 1900 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.10.2018
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

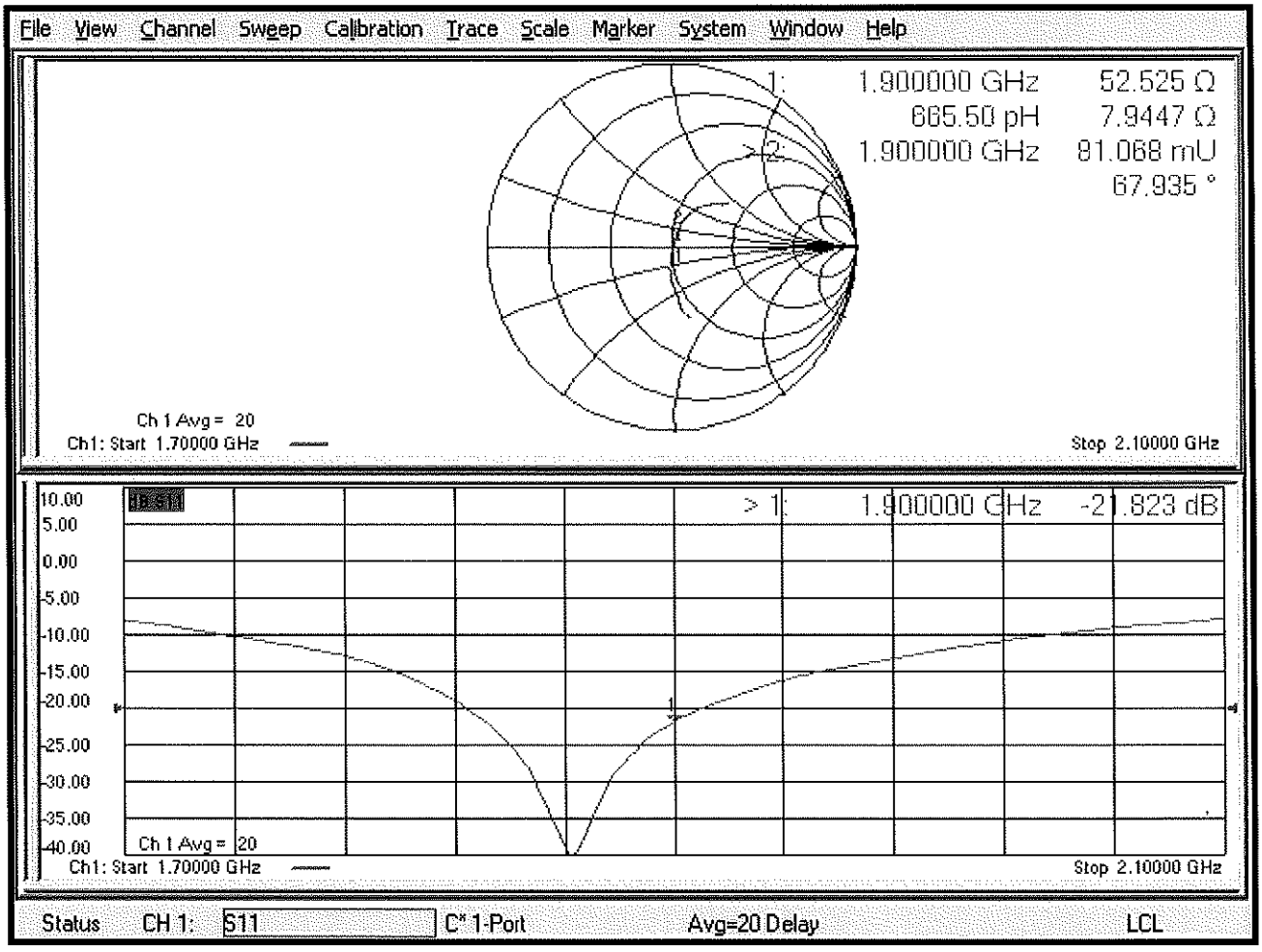
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 110.0 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 18.7 W/kg
SAR(1 g) = 9.93 W/kg; SAR(10 g) = 5.18 W/kg
Maximum value of SAR (measured) = 15.6 W/kg



0 dB = 15.6 W/kg = 11.93 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 23.10.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d080

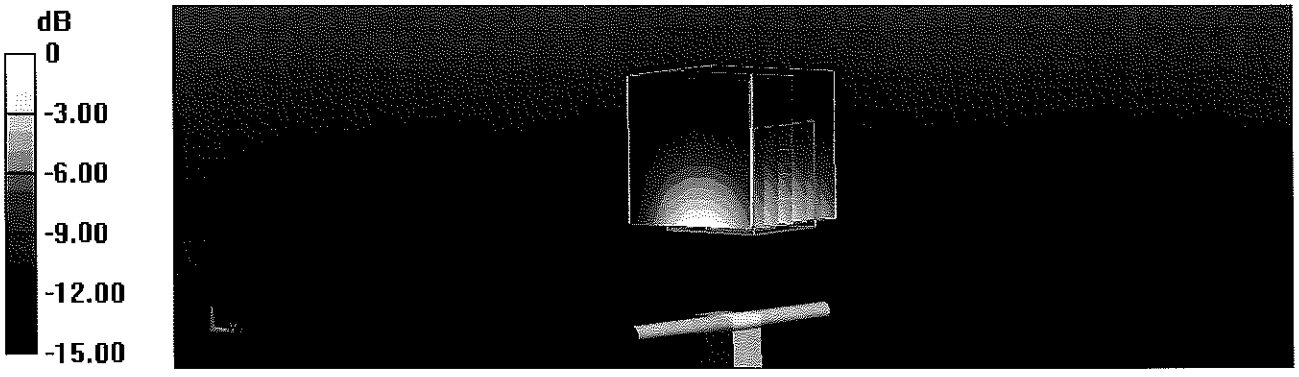
Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.47 S/m; ε_r = 52.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.15, 8.15, 8.15) @ 1900 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.10.2018
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

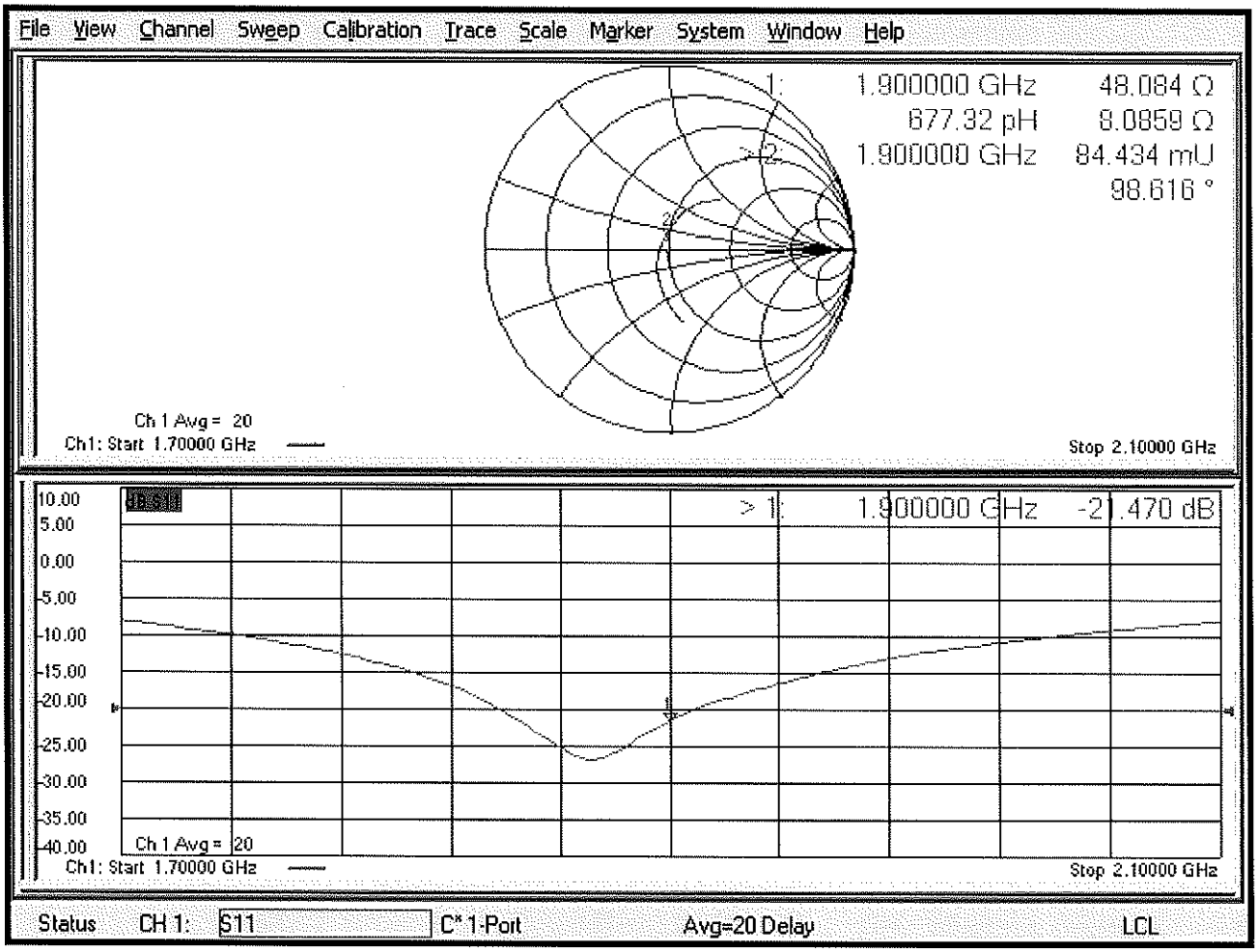
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 99.86 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 17.3 W/kg
SAR(1 g) = 9.62 W/kg; SAR(10 g) = 5.09 W/kg
Maximum value of SAR (measured) = 14.1 W/kg



0 dB = 14.1 W/kg = 11.49 dBW/kg

Impedance Measurement Plot for Body TSL



Certification of Calibration

Object	D1900V2 – SN:5d080
Calibration procedure(s)	Procedure for Calibration Extension for SAR Dipoles.
Extended Calibration date:	October 18, 2019
Description:	SAR Validation Dipole at 1900 MHz.

Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291470
Control Company	4352	Ultra Long Stem Thermometer	8/2/2018	Biennial	8/2/2020	181334684
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	7/2/2019	Annual	7/2/2020	MY53401181
Rohde & Schwarz	ZNLE6	Vector Network Analyzer	10/11/2019	Annual	10/11/2020	101307
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
SPEAG	DAKS-3.5	Portable Dielectric Assessment Kit	8/13/2019	Annual	8/13/2020	1041
Anritsu	MA2411B	Pulse Power Sensor	8/14/2019	Annual	8/14/2020	1315051
Anritsu	MA2411B	Pulse Power Sensor	8/8/2019	Annual	8/8/2020	1339008
Anritsu	ML2495A	Power Meter	11/20/2018	Annual	11/20/2019	1039008
Agilent	N5182A	MXG Vector Signal Generator	8/19/2019	Annual	8/19/2020	MY47420837
Seekonk	NC-100	Torque Wrench	5/9/2018	Biennial	5/9/2020	22217
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
MiniCircuits	ZHDC-16-63-S+	Bidirectional Coupler	CBT	N/A	CBT	N/A
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	3914
SPEAG	EX3DV4	SAR Probe	5/16/2019	Annual	5/16/2020	7406
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/8/2019	Annual	5/8/2020	859
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/14/2019	Annual	2/14/2020	1272

Note: CBT (Calibrated Before Testing). Prior to testing, the measurement paths containing a cable, amplifier, attenuator, coupler or filter were connected to a calibrated source (i.e. a signal generator) to determine the losses of the measurement path.

Measurement Uncertainty = ±23% (k=2)

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Team Lead Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	

DIPOLE CALIBRATION EXTENSION

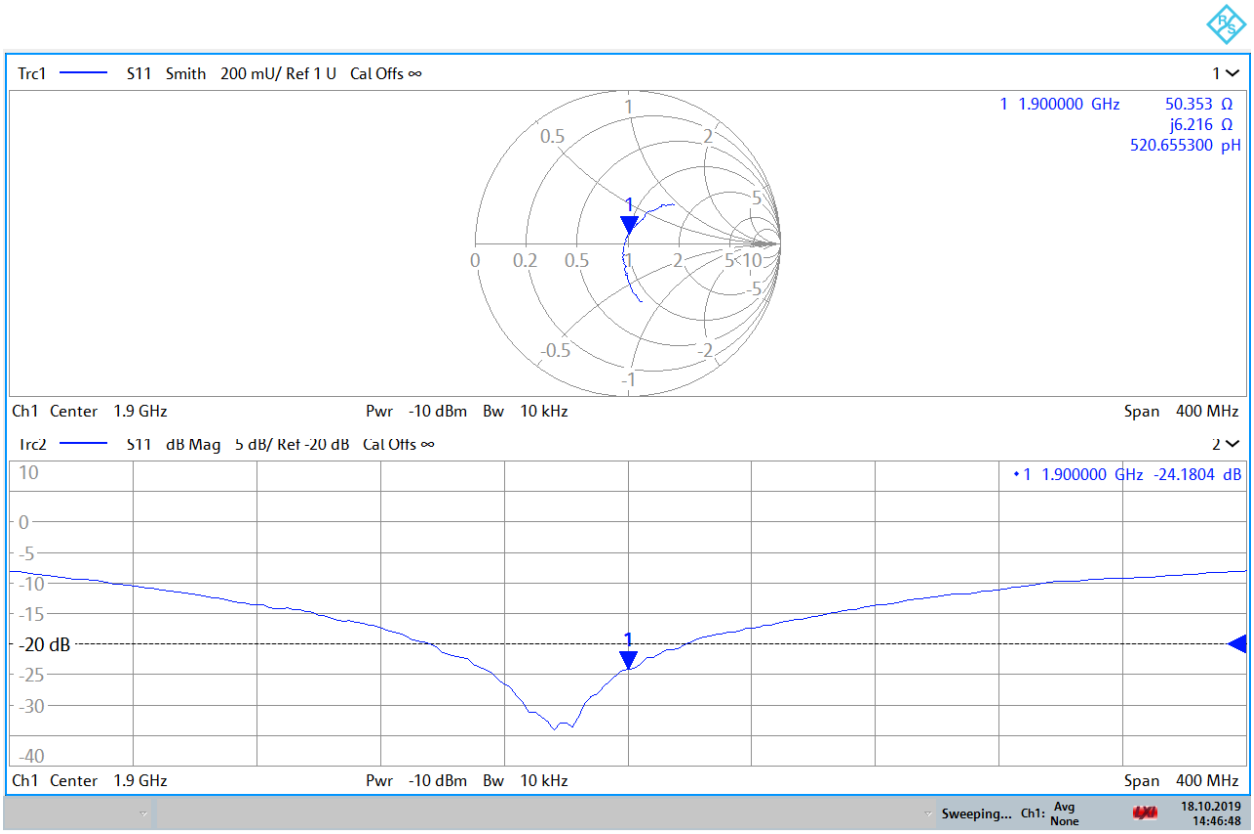
Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
3. The measurement of real or imaginary parts of impedance does not deviate more than 5Ω from the previous measurement.

The following dipole was checked to pass the above 3 requirements to have 2-year calibration period from the calibration date:

Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Head (1g) W/kg @ 20.0 dBm	Measured Head SAR (1g) W/kg @ 20.0 dBm	Deviation 1g (%)	Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	Measured Head SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	Deviation (%)	PASS/FAIL
10/23/2018	10/18/2019	1.193	3.98	4.16	4.52%	2.07	2.13	2.90%	52.5	50.4	2.1	7.9	6.2	1.7	-21.8	-24.2	-10.90%	PASS
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Body (1g) W/kg @ 20.0 dBm	Measured Body SAR (1g) W/kg @ 20.0 dBm	Deviation 1g (%)	Certificate SAR Target Body (10g) W/kg @ 20.0 dBm	Measured Body SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Body (Ohm) Imaginary	Measured Impedance Body (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
10/23/2018	10/18/2019	1.193	3.92	4.21	7.40%	2.06	2.16	4.85%	48.1	46.5	1.6	8.1	6.6	1.5	-21.5	-22.2	-3.40%	PASS

Impedance & Return-Loss Measurement Plot for Head TSL



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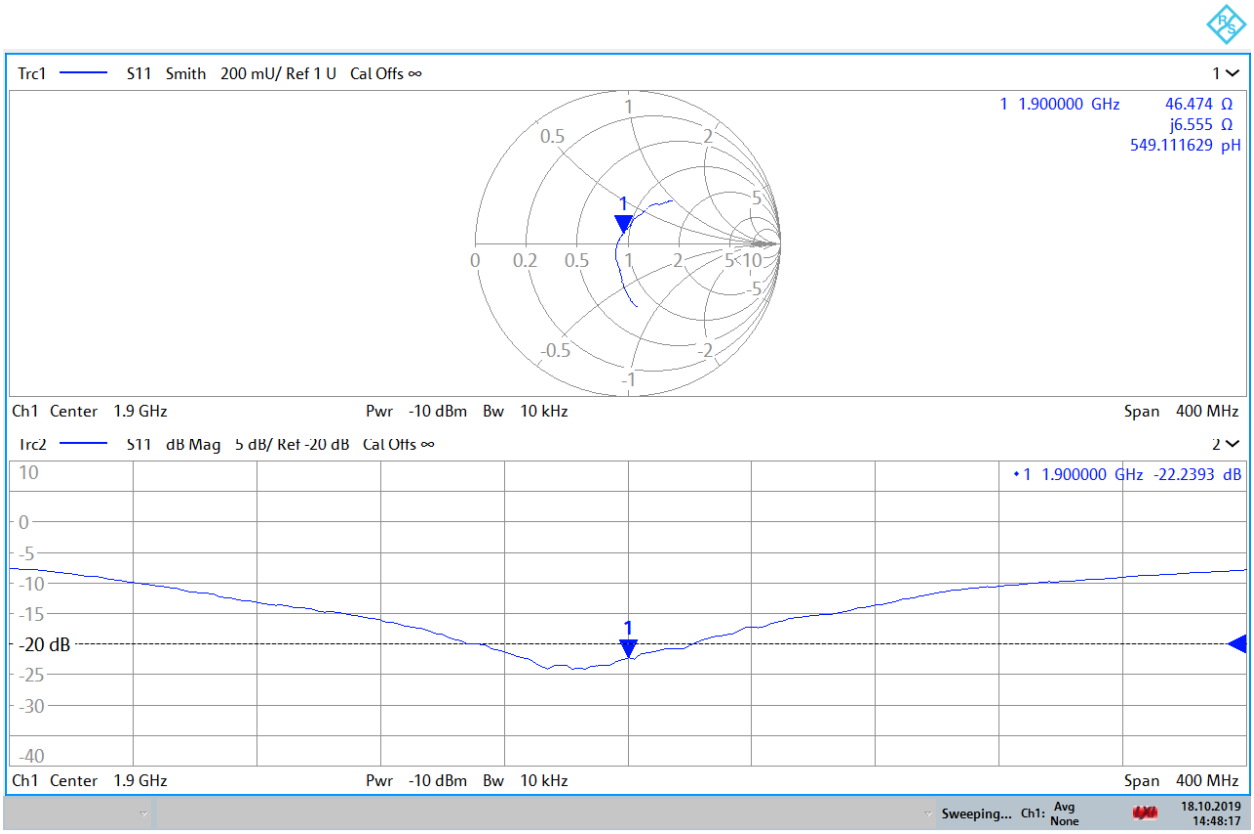
Impedance & Return-Loss Measurement Plot for Body TSL



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Certification of Calibration

Object D1900V2 – SN: 5d080

Calibration procedure(s) Procedure for Calibration Extension for SAR Dipoles.

Extension Calibration date: 10/18/2020

Description: SAR Validation Dipole at 1900 MHz.

Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291470
Control Company	4352	Ultra Long Stem Thermometer	11/29/2018	Biennial	11/29/2020	181766816
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Agilent	85033E	3.5mm Standard Calibration Kit	6/6/2020	Annual	6/6/2021	MY53402352
Rohde & Schwarz	ZNLE6	Vector Network Analyzer	9/29/2020	Annual	9/29/2021	101307
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/12/2020	Annual	5/12/2021	1070
Anritsu	MA2411B	Pulse Power Sensor	8/12/2020	Annual	8/12/2021	1207364
Anritsu	MA2411B	Pulse Power Sensor	9/22/2020	Annual	9/22/2021	1315051
Anritsu	ML2495A	Power Meter	1/15/2020	Annual	1/15/2021	1328004
Anritsu	ML2495A	Power Meter	12/17/2019	Annual	12/17/2020	941001
Agilent	N5182A	MXG Vector Signal Generator	5/13/2020	Annual	5/13/2021	MY47420603
Pasternack	NC-100	Torque Wrench	8/4/2020	Biennial	8/4/2022	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
MiniCircuits	ZHDC-16-63-S+	Bidirectional Coupler	CBT	N/A	CBT	N/A
SPEAG	EX3DV4	SAR Probe	3/18/2020	Annual	3/18/2021	7526
SPEAG	EX3DV4	SAR Probe	12/11/2019	Annual	12/11/2020	7570
SPEAG	DAE4	Dasy Data Acquisition Electronics	12/18/2019	Annual	12/18/2020	859
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/12/2020	Annual	3/12/2021	1368

Measurement Uncertainty = ±23% (k=2)

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Test Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	KOK

DIPOLE CALIBRATION EXTENSION

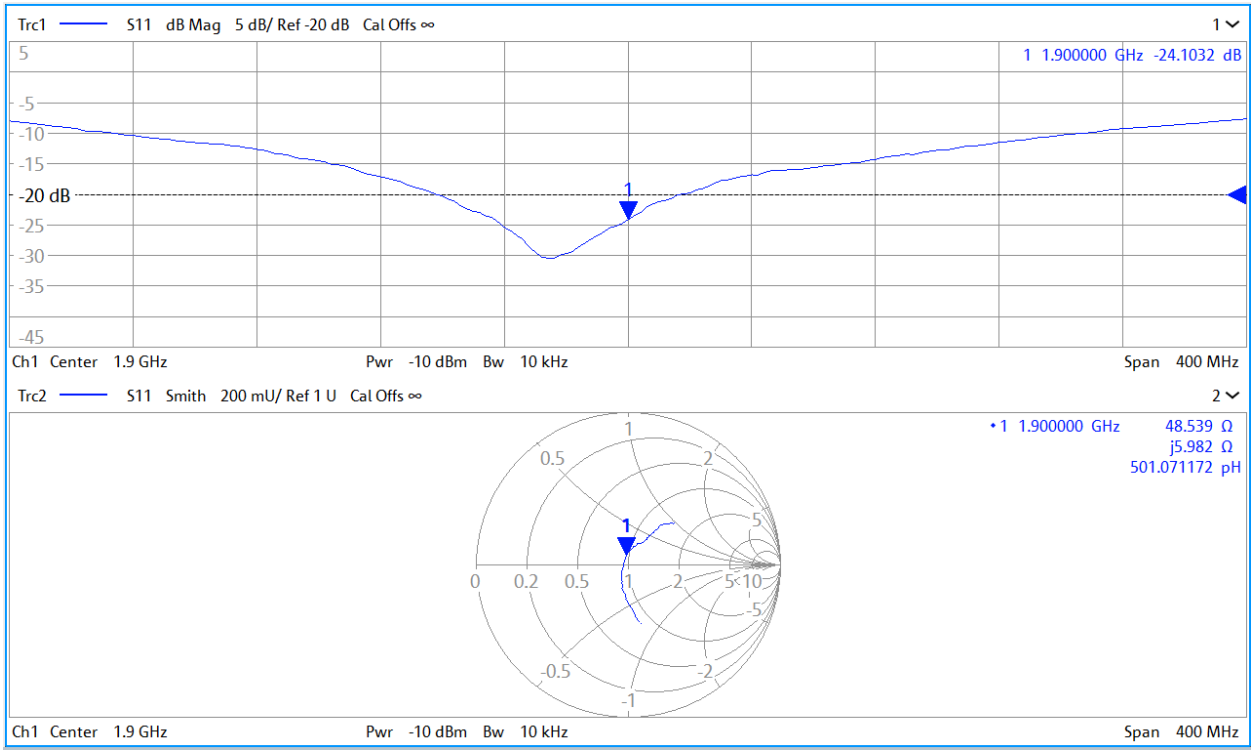
Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
3. The measurement of real or imaginary parts of impedance does not deviate more than 5Ω from the previous measurement.

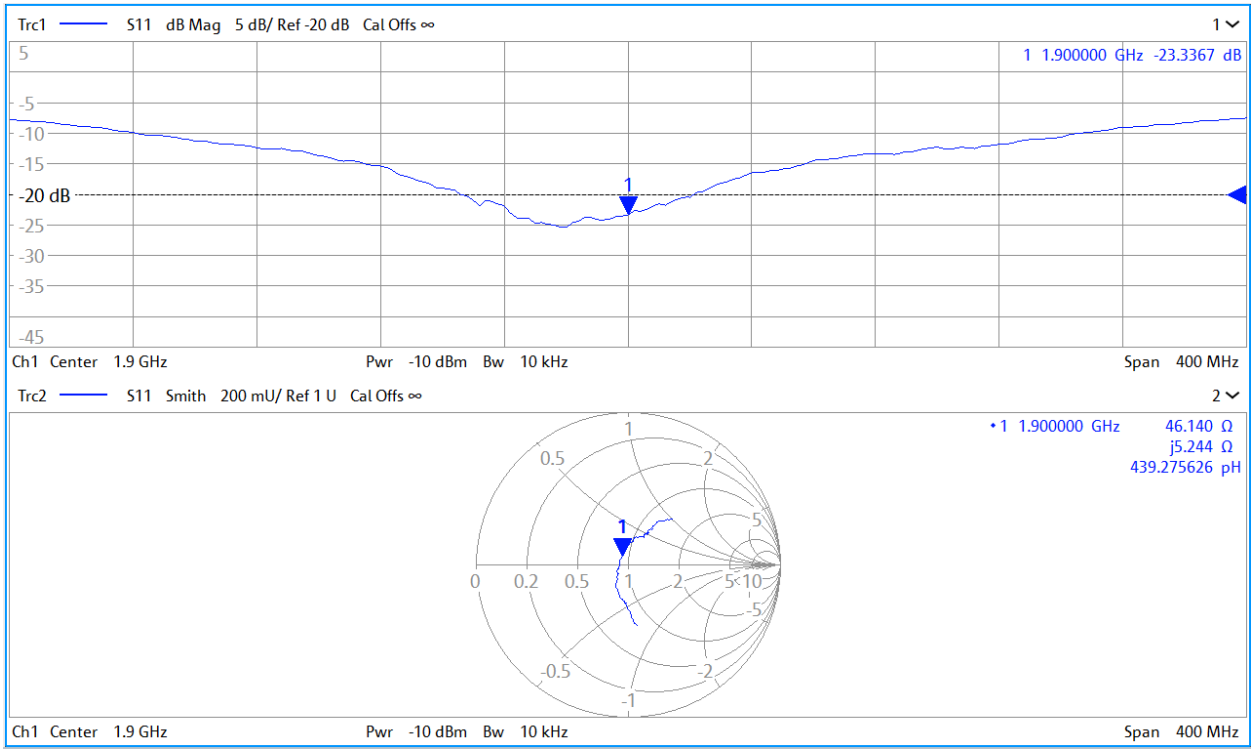
The following dipole was checked to pass the above 3 requirements to have 3-year calibration period from the calibration date:

Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Head (1g) W/kg @ 20.0 dBm	Measured Head SAR (1g) W/kg @ 20.0 dBm	Deviation 1g (%)	Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	Measured Head SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	Deviation (%)	PASS/FAIL
10/23/2018	10/18/2020	1.193	3.98	4.01	0.75%	2.07	2.05	-0.97%	52.5	48.5	4	7.9	6	1.9	-21.8	-24.1	-10.60%	PASS
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Body (1g) W/kg @ 20.0 dBm	Measured Body SAR (1g) W/kg @ 20.0 dBm	Deviation 1g (%)	Certificate SAR Target Body (10g) W/kg @ 20.0 dBm	Measured Body SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured impedance Body (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Body (Ohm) Imaginary	Measured Impedance Body (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
10/23/2018	10/18/2020	1.193	3.92	4.24	8.16%	2.06	2.18	5.83%	48.1	46.1	2	8.1	5.2	2.9	-21.5	-23.3	-8.50%	PASS

Impedance & Return-Loss Measurement Plot for Head TSL



Impedance & Return-Loss Measurement Plot for Body TSL



Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client **PC Test**

Certificate No: **D1900V2-5d148_Feb19**

CALIBRATION CERTIFICATE

Object D1900V2 - SN:5d148

Calibration procedure(s) QA CAL-05.v11
Calibration Procedure for SAR Validation Sources between 0.7-3 GHz

BN ✓
03-01-19
BN ✓
02-26-2020

Calibration date: February 21, 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)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-18 (No. 217-02682)	Apr-19
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	31-Dec-18 (No. EX3-7349_Dec18)	Dec-19
DAE4	SN: 601	04-Oct-18 (No. DAE4-601_Oct18)	Oct-19

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	07-Oct-15 (in house check Feb-19)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19

	Name	Function	Signature
Calibrated by:	Manu Seitz	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: February 21, 2019

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

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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S Swiss Calibration Service

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The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

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 the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "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%.

Measurement Conditions

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

DASY Version	DASY5	V52.10.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.9 ± 6 %	1.38 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.65 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**39.1 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.05 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**20.4 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.6 ± 6 %	1.47 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.56 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**39.1 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.05 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**20.5 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.8 Ω + 6.8 jΩ
Return Loss	- 23.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.4 Ω + 7.8 jΩ
Return Loss	- 21.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.170 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

DASY5 Validation Report for Head TSL

Date: 21.02.2019

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d148

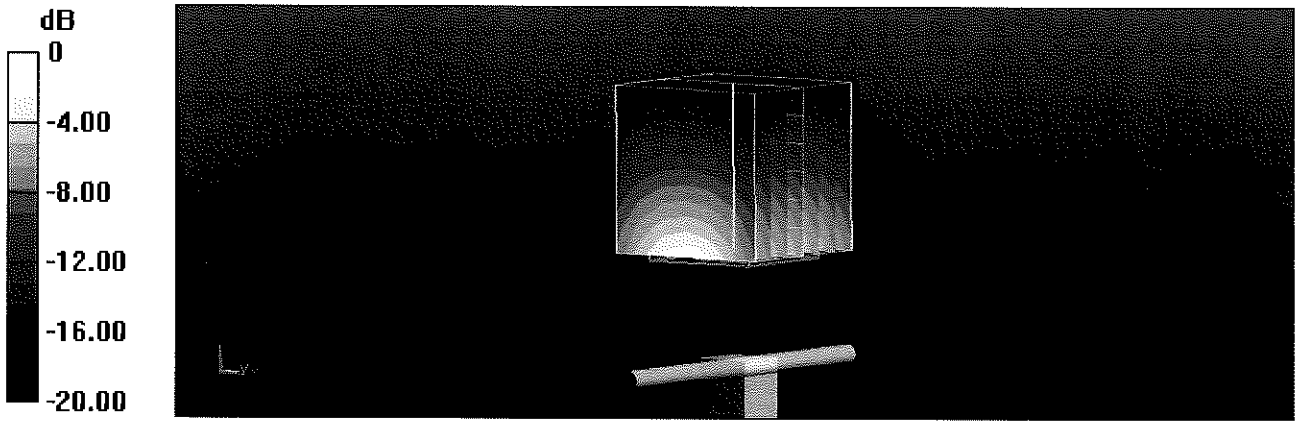
Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.38 S/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.26, 8.26, 8.26) @ 1900 MHz; Calibrated: 31.12.2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.10.2018
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

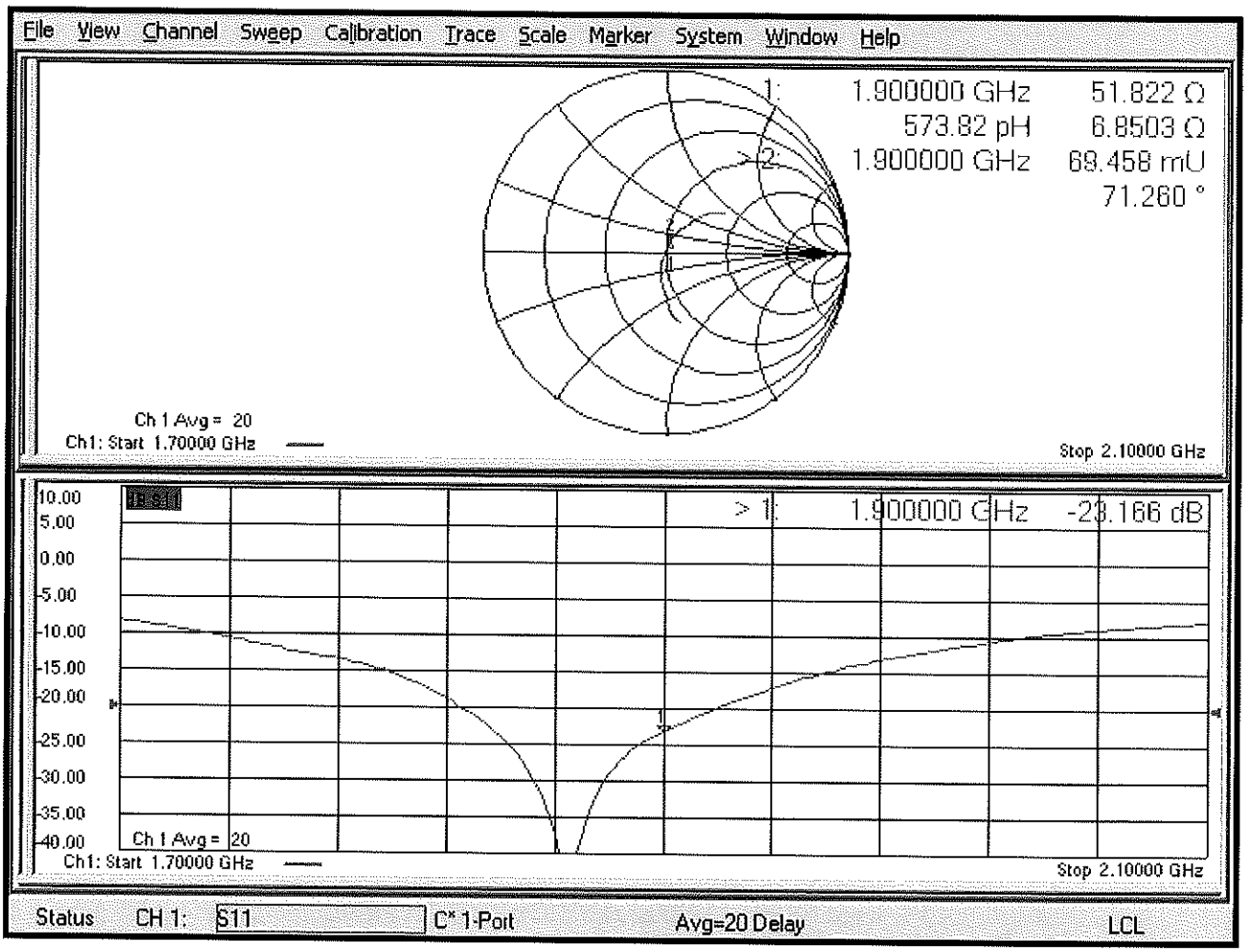
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 109.4 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 17.8 W/kg
SAR(1 g) = 9.65 W/kg; SAR(10 g) = 5.05 W/kg
Maximum value of SAR (measured) = 15.0 W/kg



0 dB = 15.0 W/kg = 11.76 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 21.02.2019

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d148

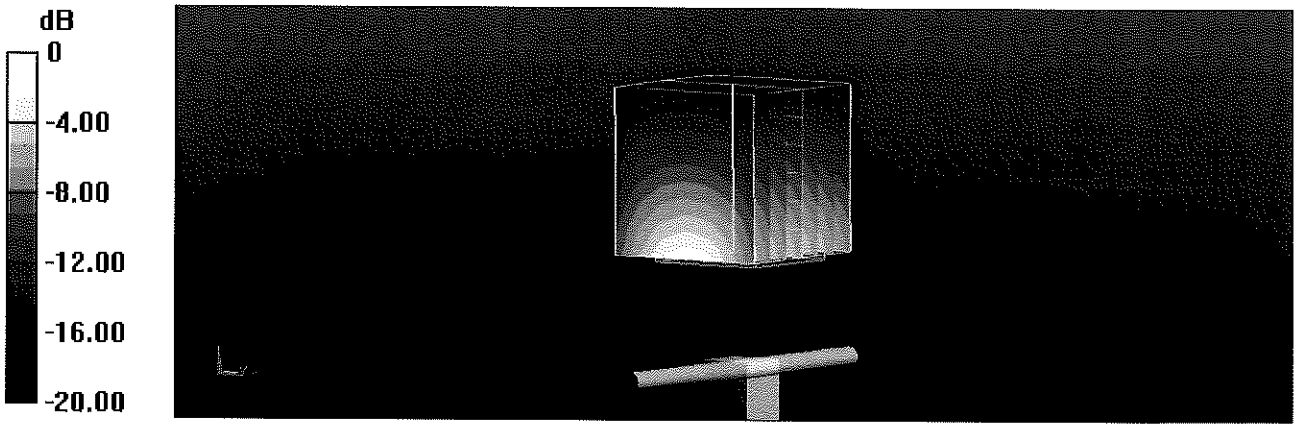
Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.47 S/m; ε_r = 53.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.23, 8.23, 8.23) @ 1900 MHz; Calibrated: 31.12.2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.10.2018
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 103.7 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 17.0 W/kg
SAR(1 g) = 9.56 W/kg; SAR(10 g) = 5.05 W/kg
Maximum value of SAR (measured) = 14.4 W/kg



0 dB = 14.4 W/kg = 11.58 dBW/kg

Impedance Measurement Plot for Body TSL