Test Laboratory: UL CCS SAR Lab B Date: 7/31/2012

W-CDMA Band V (Primary Antenna)

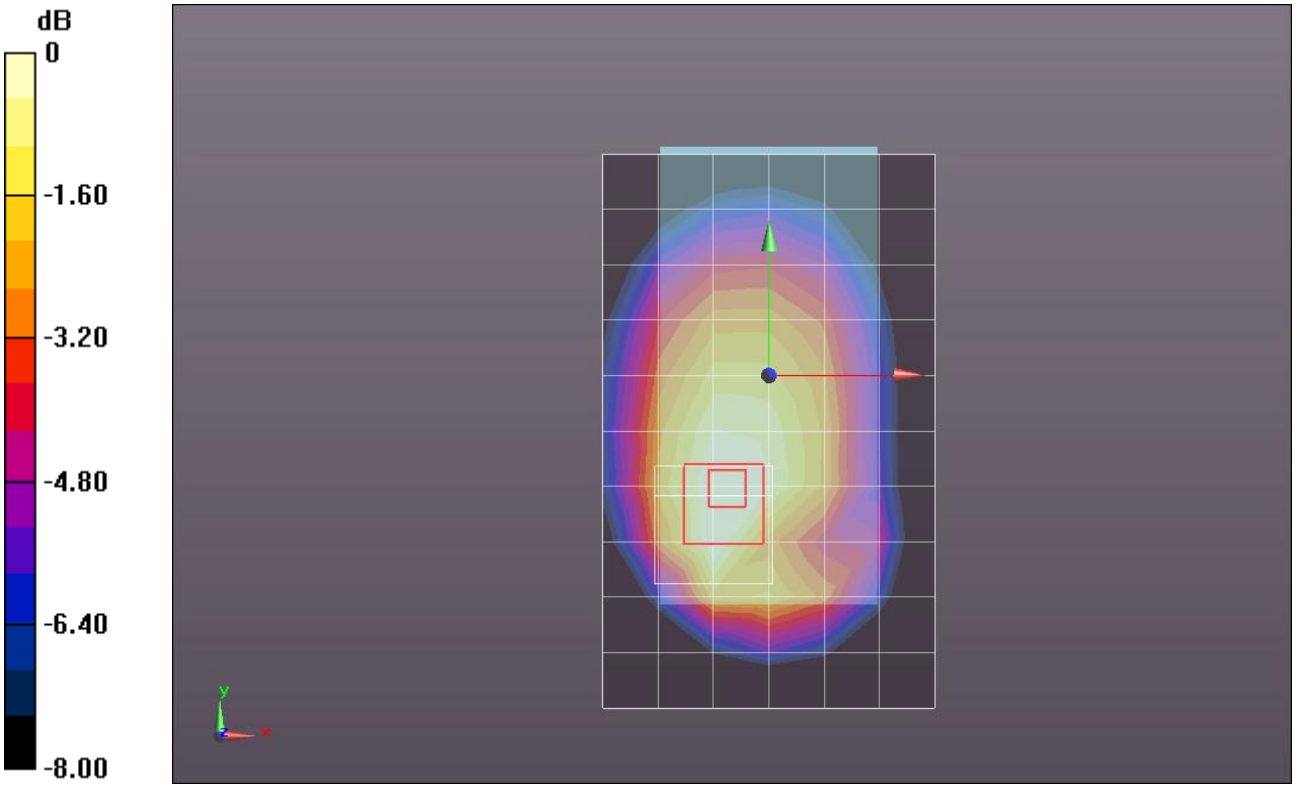
Frequency: 846.6 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 846.6 MHz; σ = 1.003 mho/m; ε_r = 54.9; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(8.73, 8.73, 8.73); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (B); Type: QDOVA001BB; Serial: 1118

Rear/R99_ch 4233/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.093 mW/g

Rear/R99_ch 4233/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 32.621 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.2750
SAR(1 g) = 0.904 mW/g; SAR(10 g) = 0.590 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.046 mW/g



0 dB = 1.050mW/g = 0.42 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 8/1/2012

LTE Band 2 (Primary Antenna)

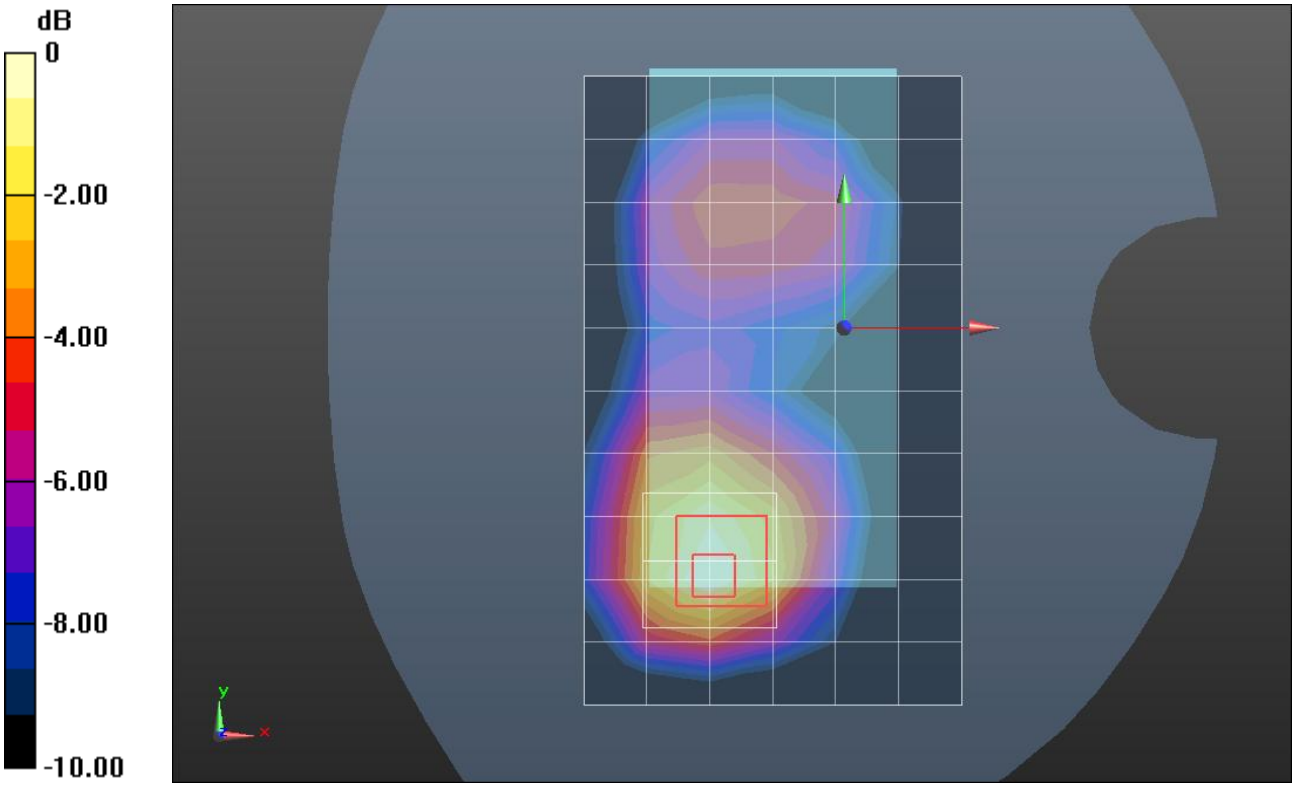
Frequency: 1880 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: f = 1880 MHz; σ = 1.55 mho/m; ε_r = 51.113; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(7.23, 7.23, 7.23); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (B); Type: QD000P40CD; Serial: 1628

Rear/QPSK_RB#1,49_Ch 18900/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 1.546 mW/g

Rear/QPSK_RB#1,49_Ch 18900/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 32.096 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 2.0680
SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.651 mW/g
Maximum value of SAR (measured) = 1.474 mW/g



0 dB = 1.470mW/g = 3.35 dB mW/g

Test Laboratory: UL CCS SAR Lab C Date: 7/31/2012

LTE Band 4 (Primary Antenna)

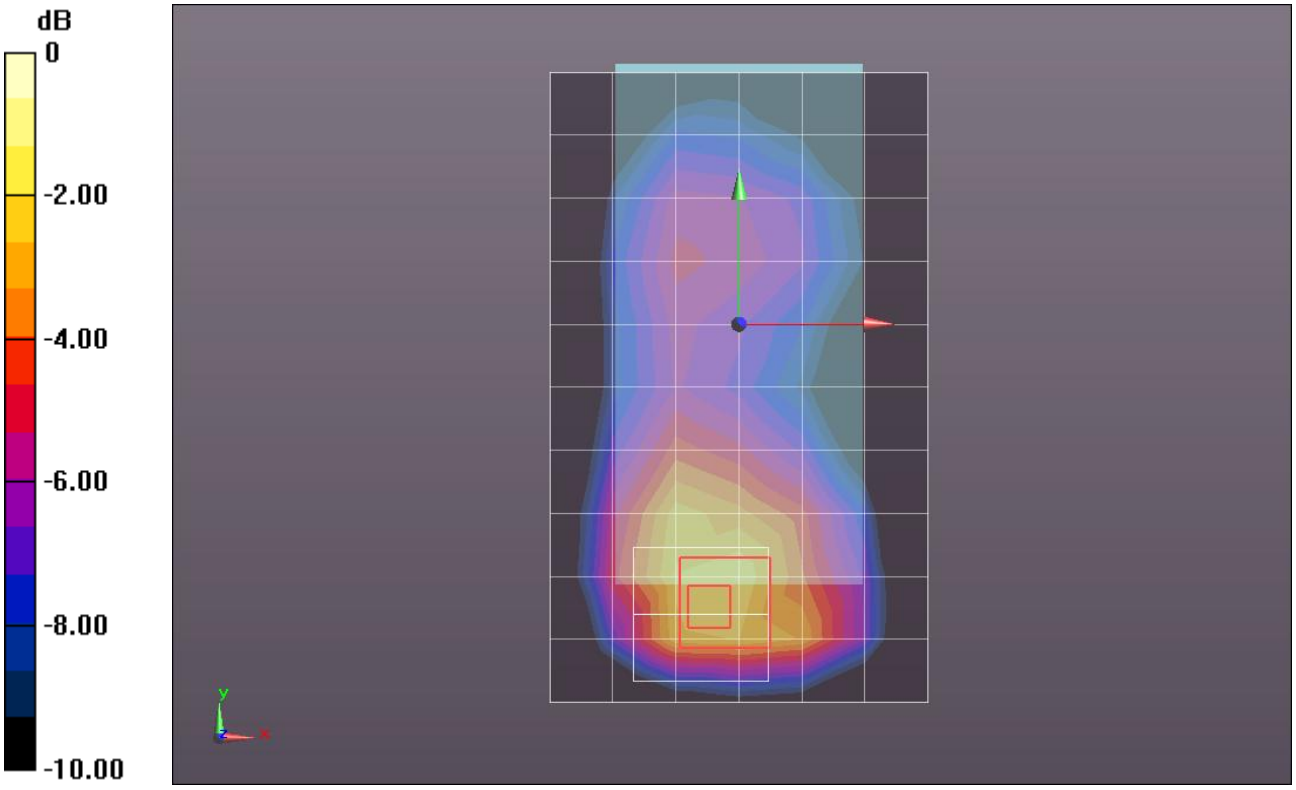
Frequency: 1732.5 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.439 mho/m; ε_r = 51.289; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3773; ConvF(7.37, 7.37, 7.37); Calibrated: 3/14/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (B); Type: QDOVA001BB; Serial: 1121

Rear/QPSK_RB# 1, 49_Ch 20175/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.131 mW/g

Rear/QPSK_RB# 1, 49_Ch 20175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.302 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.0430
SAR(1 g) = 1.16 mW/g; SAR(10 g) = 0.659 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.517 mW/g



0 dB = 1.520mW/g = 3.64 dB mW/g

Test Laboratory: UL CCS SAR Lab C Date: 7/31/2012

LTE Band 17 (Primary Antenna)

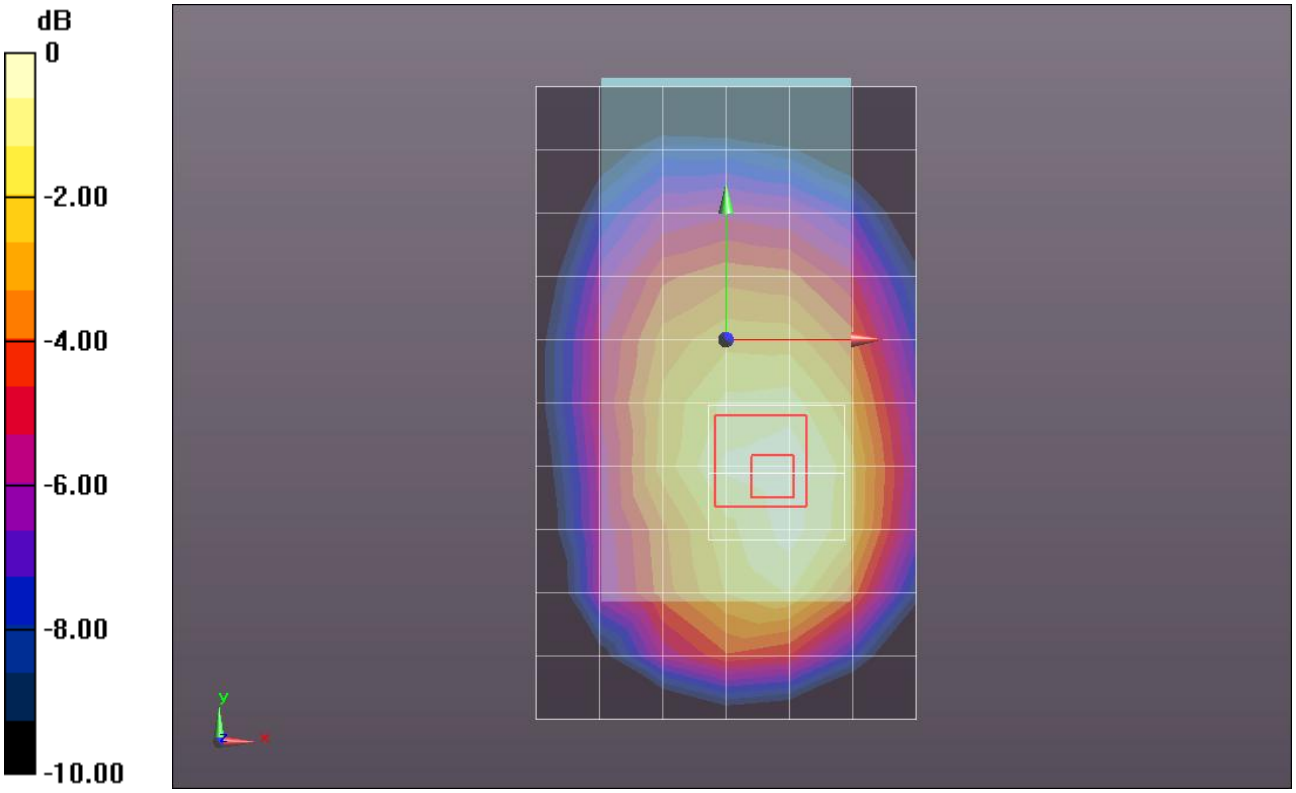
Frequency: 710 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: f = 710 MHz; σ = 0.907 mho/m; ε_r = 54.838; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3773; ConvF(8.92, 8.92, 8.92); Calibrated: 3/14/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1117

Front/QPSK_RB#1,24_Ch 23790 2/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.588 mW/g

Front/QPSK_RB#1,24_Ch 23790 2/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.691 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.7120
SAR(1 g) = 0.521 mW/g; SAR(10 g) = 0.374 mW/g
Maximum value of SAR (measured) = 0.603 mW/g



0 dB = 0.600mW/g = -4.44 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/26/2012

WiFi 2.4GHz

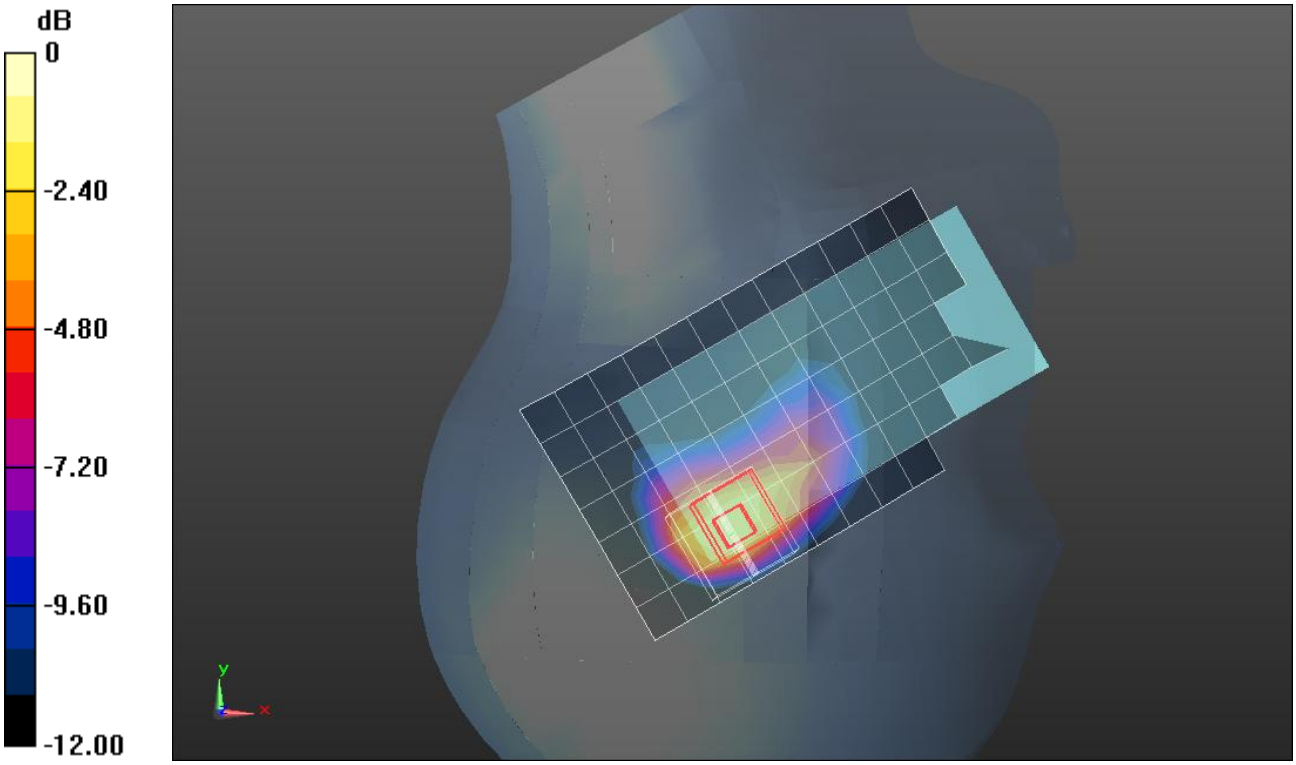
Frequency: 2437 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.817 mho/m; ε_r = 39.751; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(6.64, 6.64, 6.64); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (A); Type: QD000P40CC; Serial: 1602

RHS/Touch_802.11b_ch 6/Area Scan (8x13x1): Measurement grid: dx=12mm, dy=12mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.603 mW/g

RHS/Touch_802.11b_ch 6/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.930 V/m; Power Drift = 0.131 dB
Peak SAR (extrapolated) = 1.2620
SAR(1 g) = 0.573 mW/g; SAR(10 g) = 0.259 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.836 mW/g



0 dB = 0.840mW/g = -1.51 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 8/3/2012

WiFi 5 GHz band

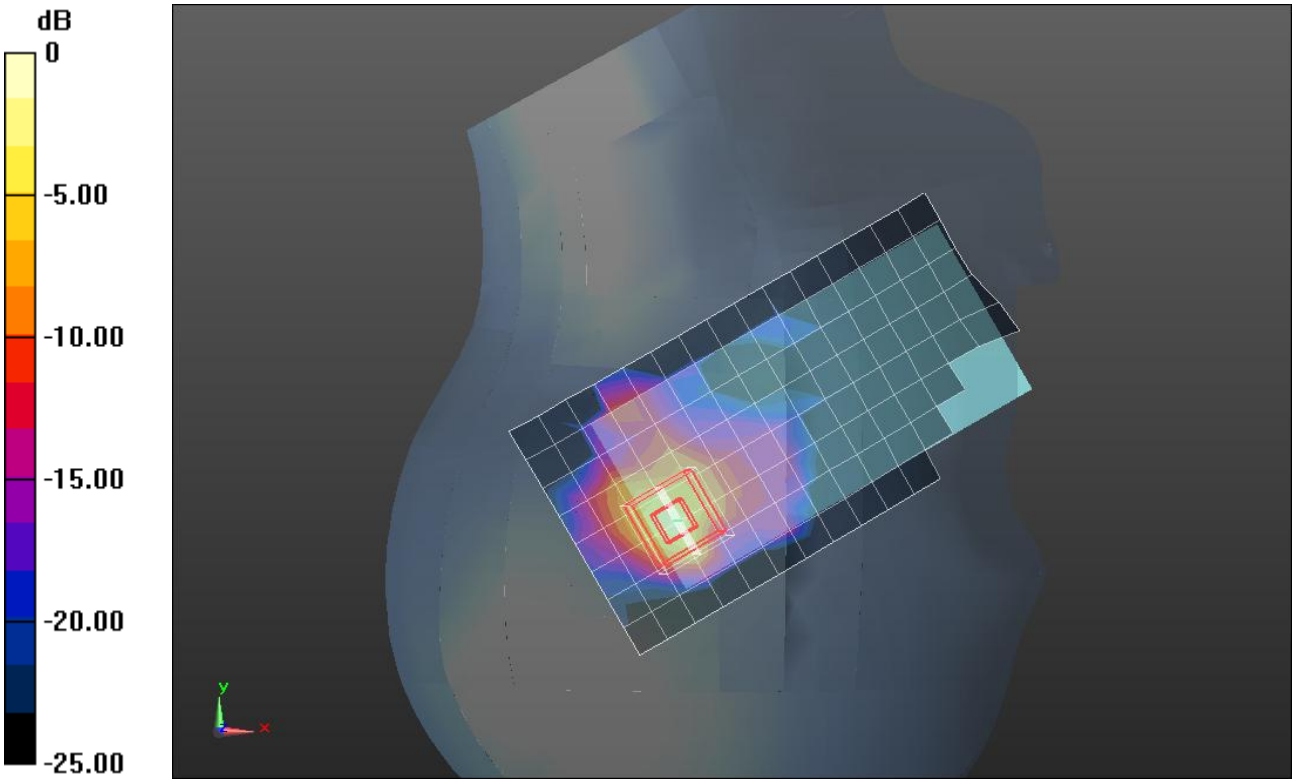
Frequency: 5240 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5240 MHz; σ = 4.629 mho/m; ε_r = 35.093; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(4.88, 4.88, 4.88); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (A); Type: QD000P40CC; Serial: 1602

RHS/Touch_802.11a_ch 48/Area Scan (9x16x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.997 mW/g

RHS/Touch_802.11a_ch 48/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 15.097 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 2.4610
SAR(1 g) = 0.569 mW/g; SAR(10 g) = 0.156 mW/g
Maximum value of SAR (measured) = 1.190 mW/g



0 dB = 1.190mW/g = 1.51 dB mW/g

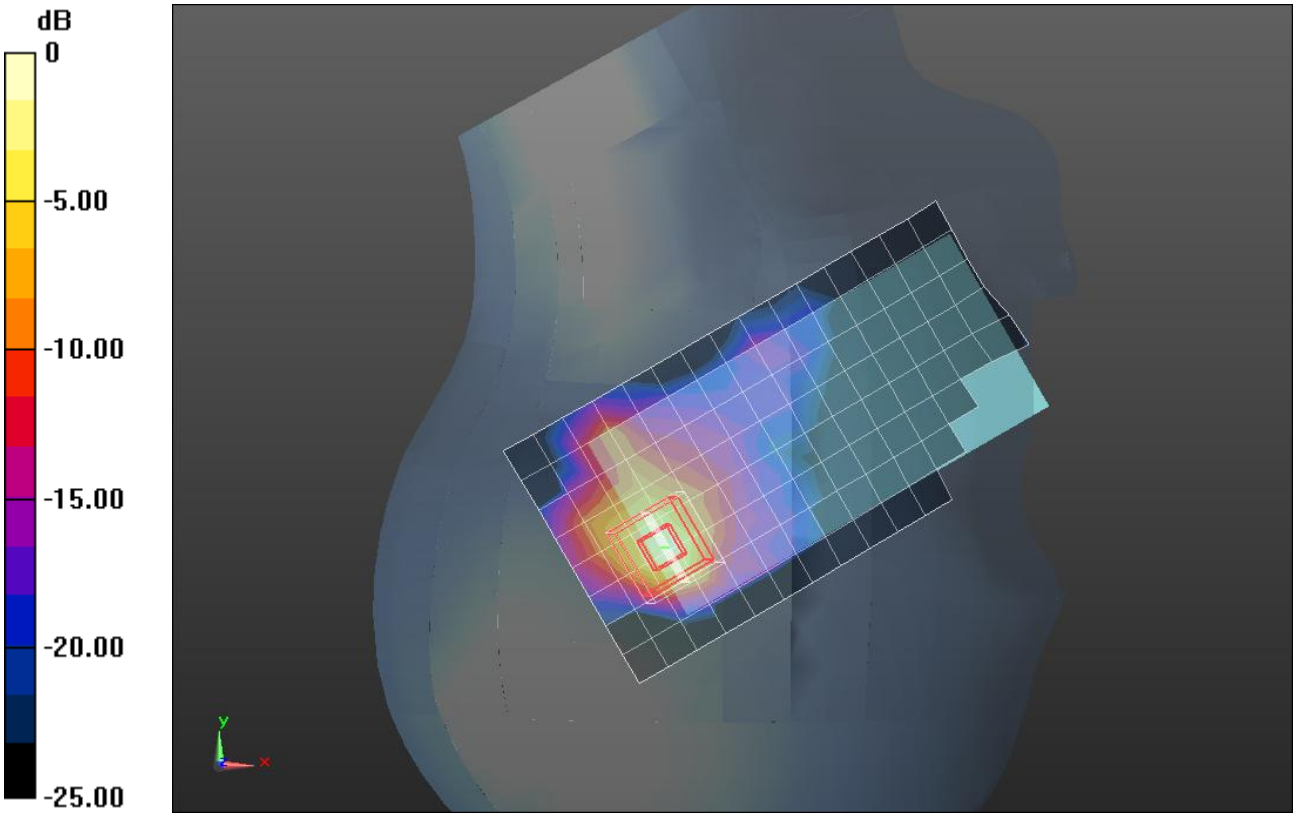
Test Laboratory: UL CCS SAR Lab A Date: 7/27/2012

WiFi 5.3GHz

Frequency: 5260 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5260 MHz; σ = 4.563 mho/m; ε_r = 35.162; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(4.62, 4.62, 4.62); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (B); Type: QD000P40CD; Serial: 1628

RHS/Touch_802.11a_ch 52/Area Scan (9x16x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.778 mW/g

RHS/Touch_802.11a_ch 52/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 12.996 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 2.0390
SAR(1 g) = 0.510 mW/g; SAR(10 g) = 0.145 mW/g
Maximum value of SAR (measured) = 1.034 mW/g



0 dB = 1.030mW/g = 0.26 dB mW/g

WiFi 5 GHz band

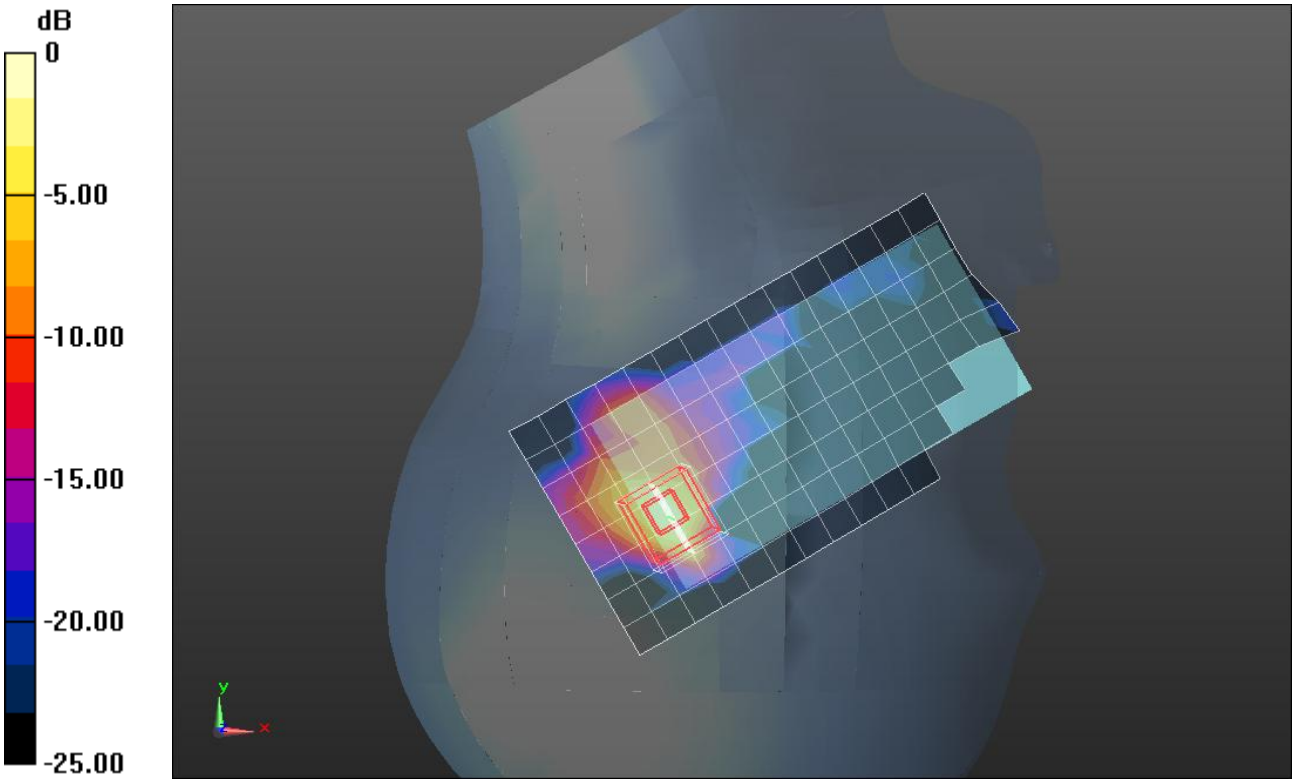
Frequency: 5680 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5680 MHz; σ = 5.138 mho/m; ε_r = 34.789; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(4.25, 4.25, 4.25); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (A); Type: QD000P40CC; Serial: 1602

RHS/Touch_802.11a_ch 136/Area Scan (9x16x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.839 mW/g

RHS/Touch_802.11a_ch 136/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 13.221 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 2.3370
SAR(1 g) = 0.556 mW/g; SAR(10 g) = 0.156 mW/g
Maximum value of SAR (measured) = 1.160 mW/g



0 dB = 1.160mW/g = 1.29 dB mW/g

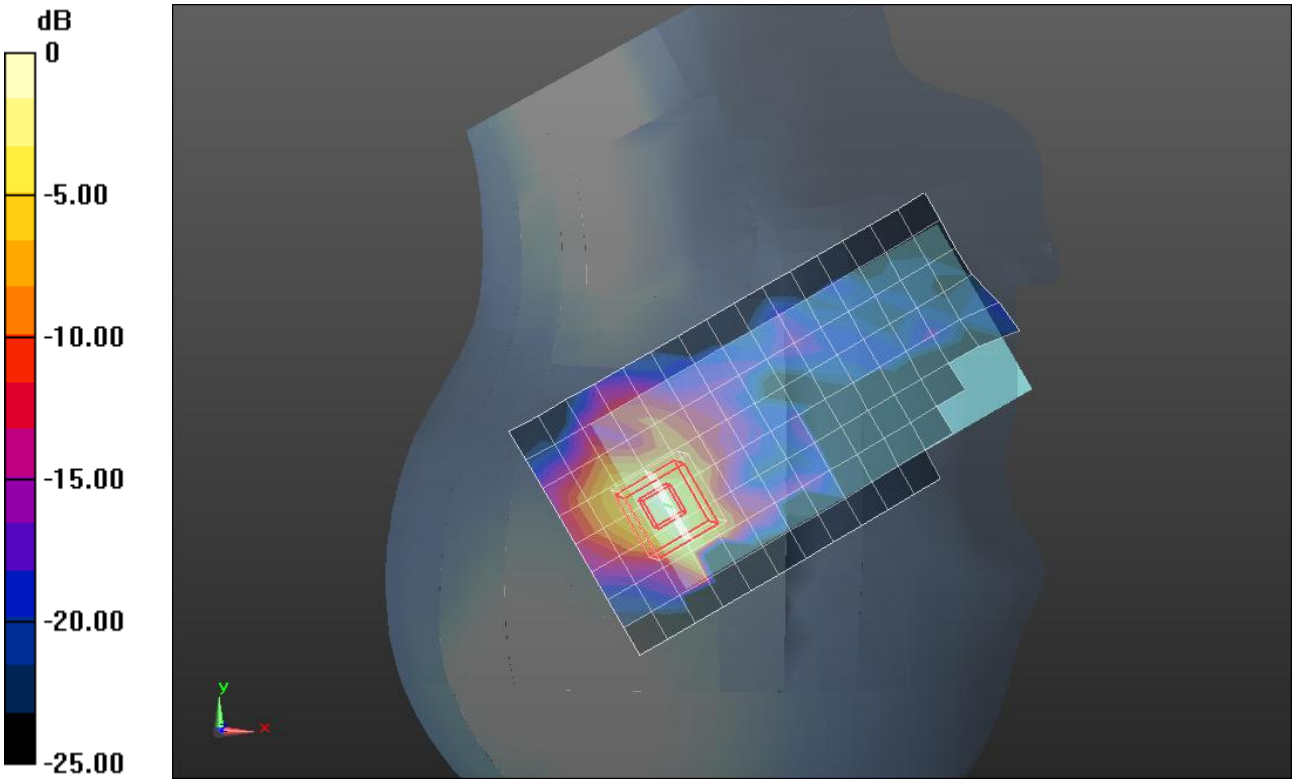
Test Laboratory: UL CCS SAR Lab A Date: 8/3/2012

WiFi 5 GHz band

Frequency: 5785 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5785 MHz; σ = 5.221 mho/m; ε_r = 34.568; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(4.31, 4.31, 4.31); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (A); Type: QD000P40CC; Serial: 1602

RHS/Touch_802.11a_ch 157/Area Scan (9x16x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.893 mW/g

RHS/Touch_802.11a_ch 157/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 13.767 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 2.4940
SAR(1 g) = 0.552 mW/g; SAR(10 g) = 0.182 mW/g
Maximum value of SAR (measured) = 1.095 mW/g



0 dB = 1.090mW/g = 0.75 dB mW/g