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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

APPENDIX C2: SAR DISTRIBUTION PLOTS FOR MOBILE HOTSPOT

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/18/2012 3:16:55 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_17_mid_chan_QPSK_RB_25_Offset_0
_amb_temp_23.0_liq_temp_21.5C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 710 MHz

Medium parameters used: $f = 710 \text{ MHz}$; $\sigma = 0.918 \text{ mho/m}$; $\epsilon_r = 55.812$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.27, 6.27, 6.27); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.671 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

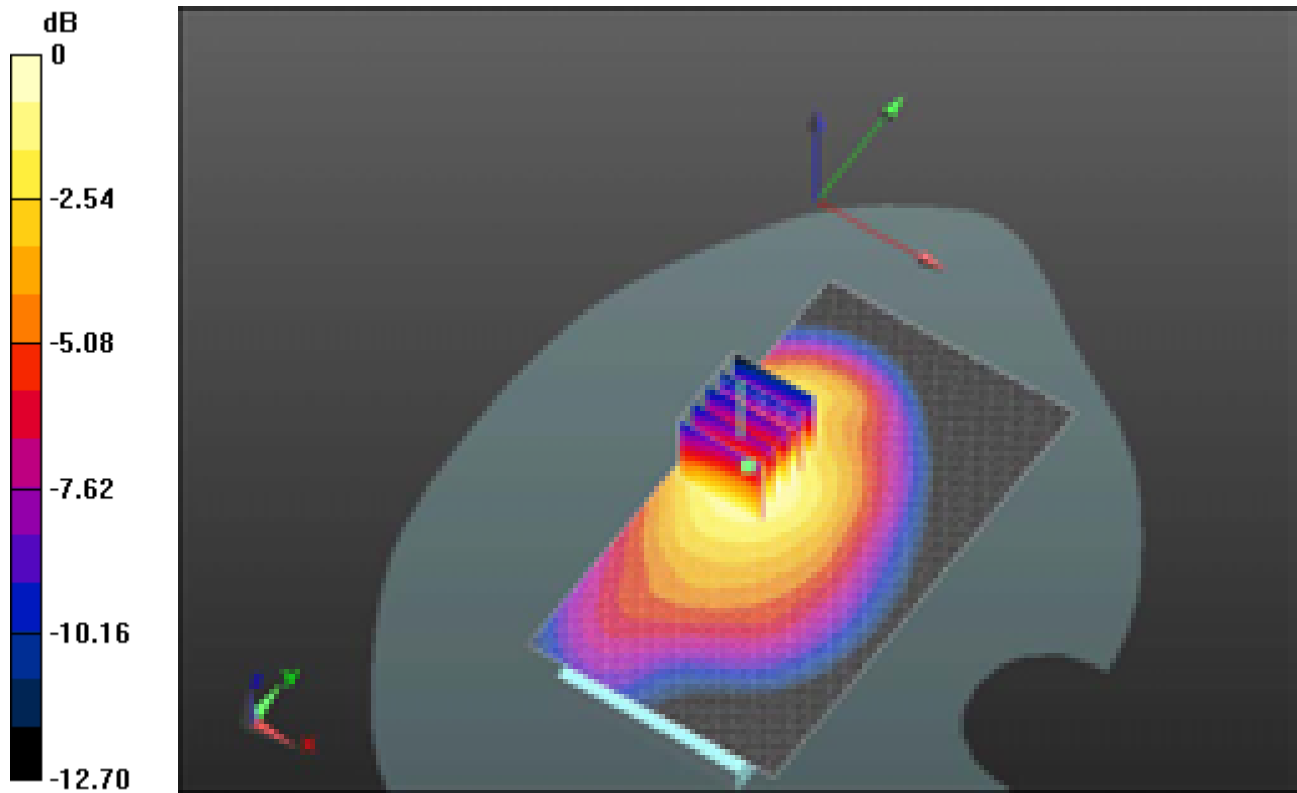
Reference Value = 18.257 V/m ; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.9810

SAR(1 g) = 0.585 mW/g ; SAR(10 g) = 0.390 mW/g

Maximum value of SAR (measured) = 0.683 mW/g

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0 dB = 0.680mW/g = -3.35 dB mW/g

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Date/Time: 6/18/2012 3:00:30 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_17_mid_chan_QPSK_RB_1_Offset_0_amb_temp_23.1_liq_temp_21.5C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 710 MHz

Medium parameters used: $f = 710 \text{ MHz}$; $\sigma = 0.918 \text{ mho/m}$; $\epsilon_r = 55.812$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.27, 6.27, 6.27); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.828 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

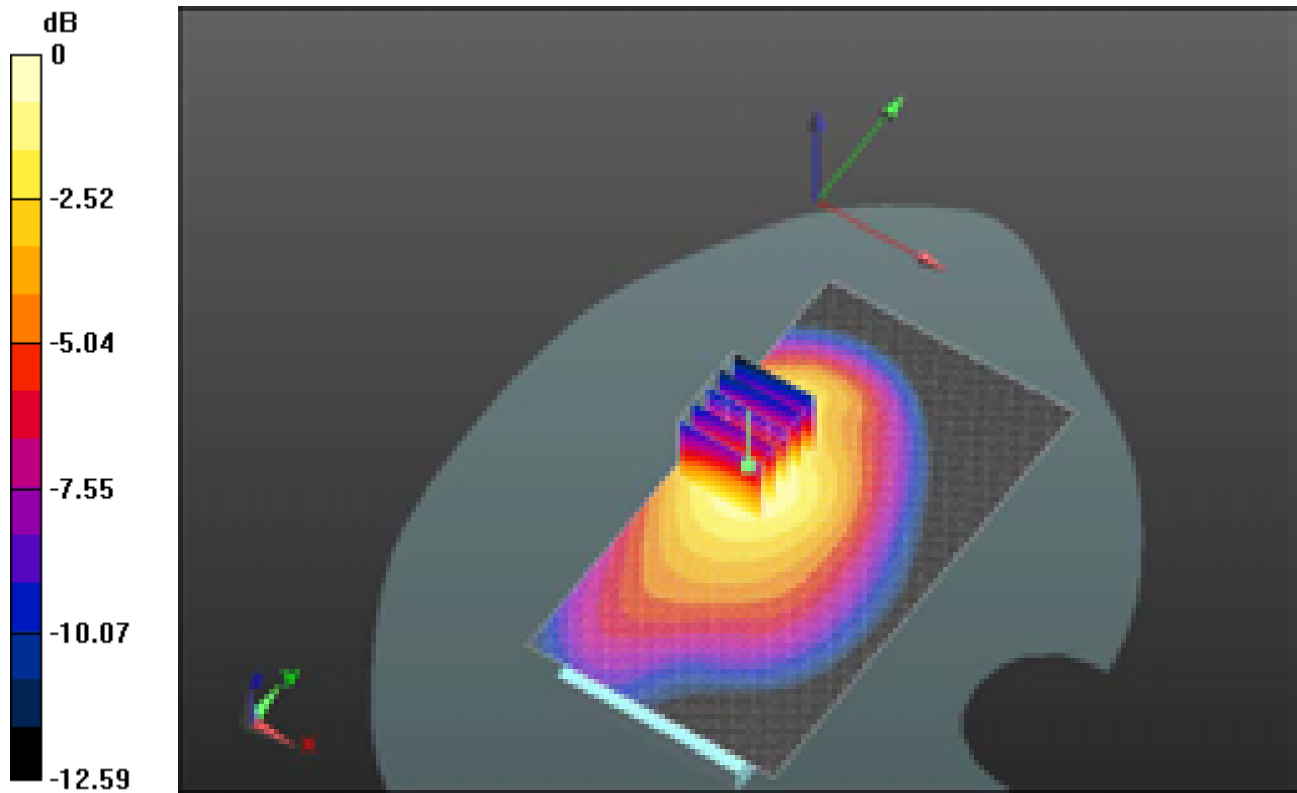
Reference Value = 20.500 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.1690

SAR(1 g) = 0.740 mW/g; SAR(10 g) = 0.487 mW/g

Maximum value of SAR (measured) = 0.867 mW/g

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0 dB = 0.870mW/g = -1.21 dB mW/g

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Date/Time: 6/18/2012 3:34:54 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_17_mid_chan_QPSK_RB_1_Offset_49_amb_temp_22.8_liq_temp_21.5C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 710 MHz

Medium parameters used: $f = 710 \text{ MHz}$; $\sigma = 0.918 \text{ mho/m}$; $\epsilon_r = 55.812$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.27, 6.27, 6.27); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS2 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.868 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

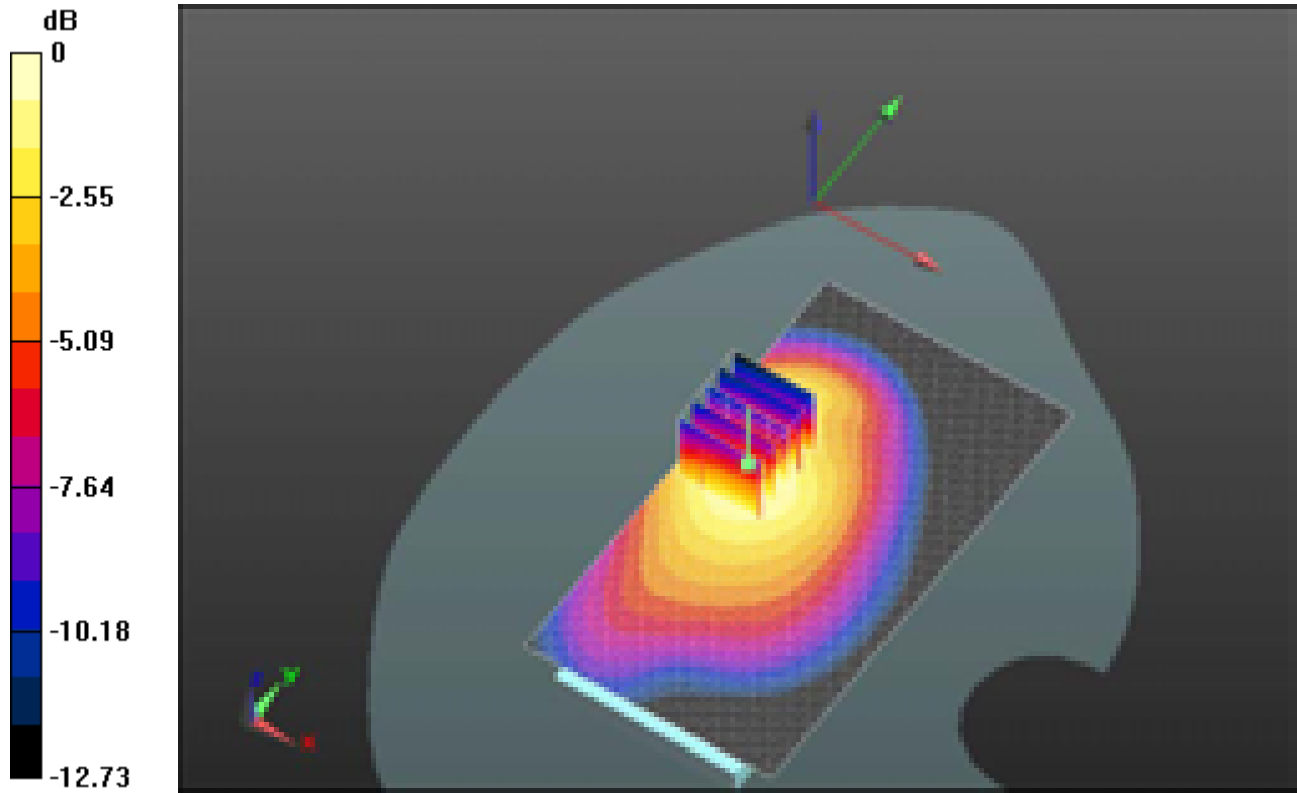
Reference Value = 20.896 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.2000

SAR(1 g) = 0.757 mW/g; SAR(10 g) = 0.500 mW/g

Maximum value of SAR (measured) = 0.887 mW/g

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0 dB = 0.890mW/g = -1.01 dB mW/g

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Date/Time: 6/18/2012 3:51:44 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_17_mid_chan_16QAM_RB_30_Offset_20_amb_temp_23.1_liq_temp_21.5C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 710 MHz

Medium parameters used: $f = 710 \text{ MHz}$; $\sigma = 0.918 \text{ mho/m}$; $\epsilon_r = 55.812$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.27, 6.27, 6.27); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.531 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

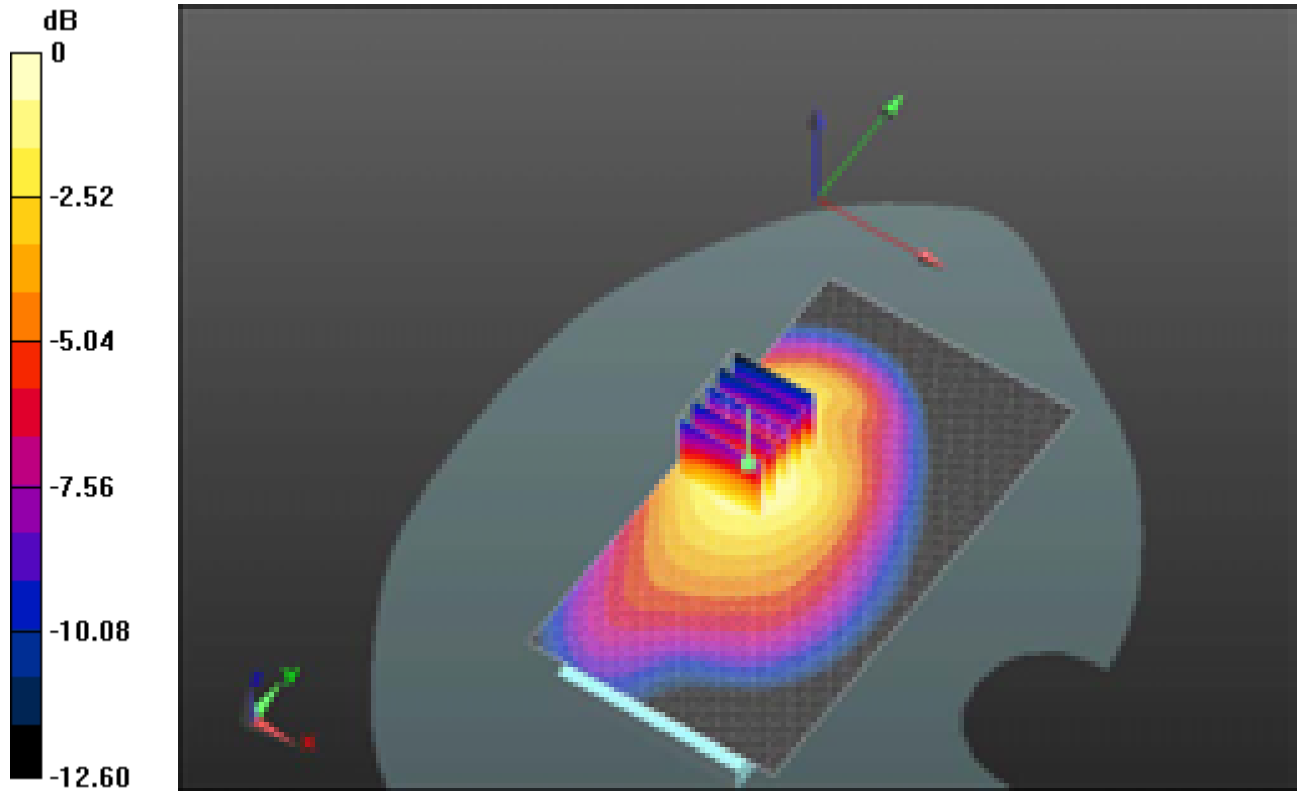
Reference Value = 16.246 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.7520

SAR(1 g) = 0.468 mW/g; SAR(10 g) = 0.307 mW/g

Maximum value of SAR (measured) = 0.553 mW/g

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0 dB = 0.550mW/g = -5.19 dB mW/g

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Date/Time: 6/18/2012 4:08:00 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_17_mid_chan_16QAM_RB_1_Offset_0
_amb_temp_22.9_liq_temp_21.5C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 710 MHz

Medium parameters used: $f = 710 \text{ MHz}$; $\sigma = 0.918 \text{ mho/m}$; $\epsilon_r = 55.812$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.27, 6.27, 6.27); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.642 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

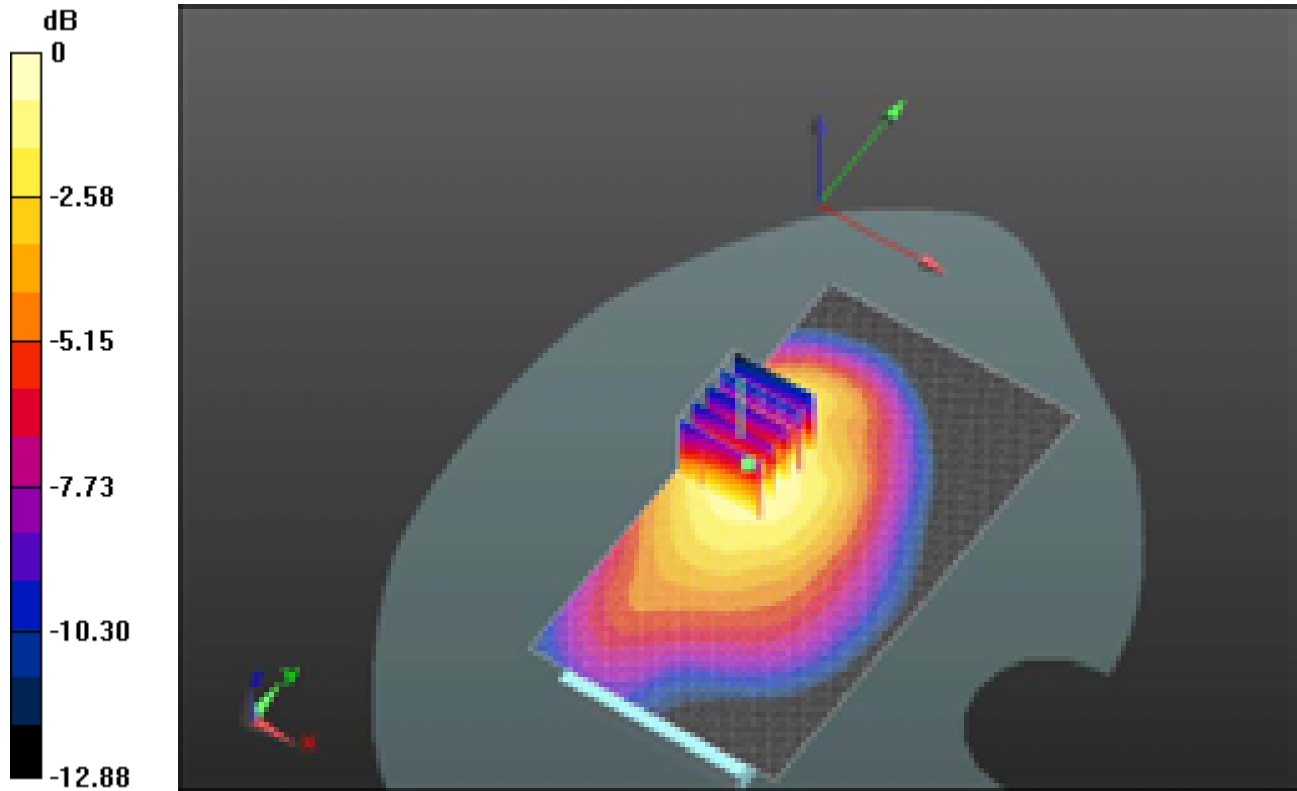
Reference Value = 18.003 V/m ; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 0.8410

SAR(1 g) = 0.539 mW/g ; SAR(10 g) = 0.360 mW/g

Maximum value of SAR (measured) = 0.634 mW/g

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0 dB = 0.630mW/g = -4.01 dB mW/g

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Date/Time: 6/18/2012 4:24:18 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_17_mid_chan_16QAM_RB_1_Offset_49_amb_temp_22.7_liq_temp_21.5C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 710 MHz

Medium parameters used: $f = 710 \text{ MHz}$; $\sigma = 0.918 \text{ mho/m}$; $\epsilon_r = 55.812$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.27, 6.27, 6.27); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.741 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

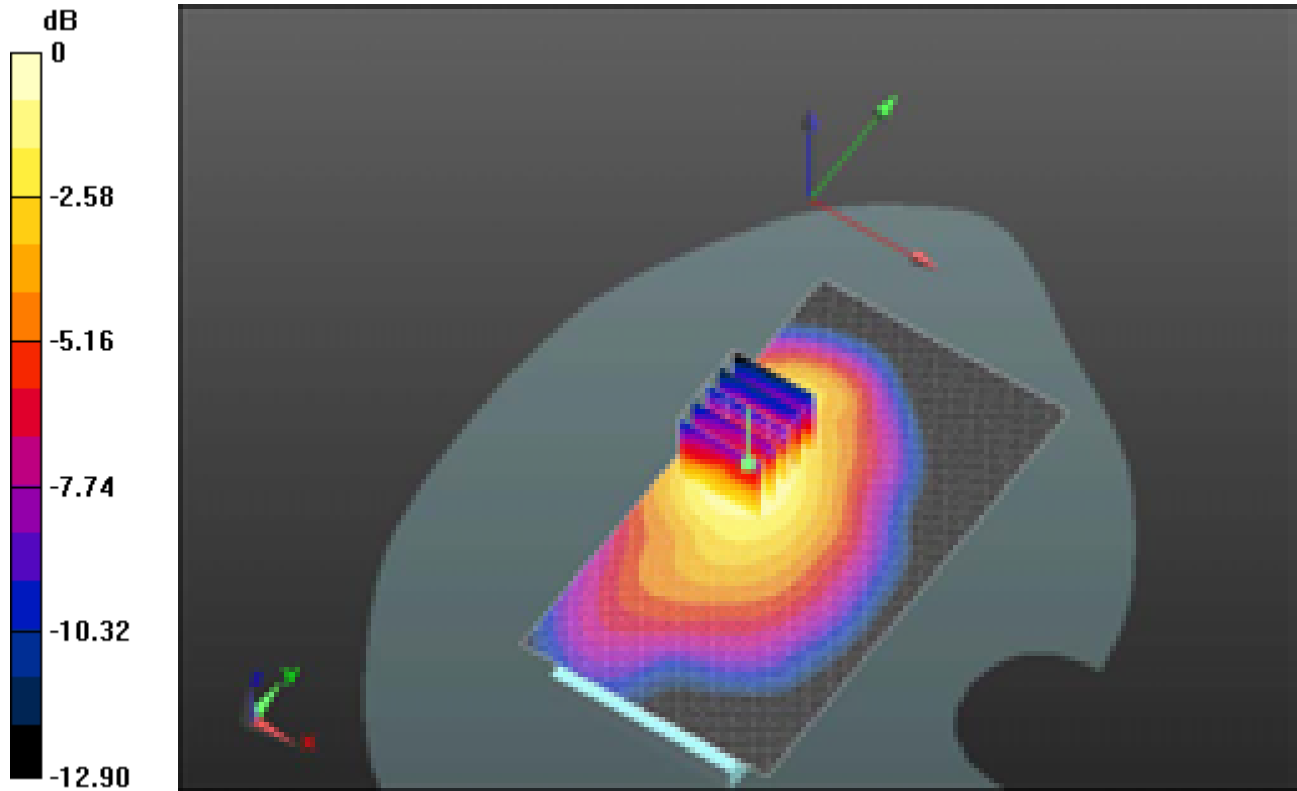
Reference Value = 18.395 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.0190

SAR(1 g) = 0.642 mW/g; SAR(10 g) = 0.412 mW/g

Maximum value of SAR (measured) = 0.746 mW/g

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0 dB = 0.750mW/g = -2.50 dB mW/g

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Date/Time: 6/18/2012 5:55:49 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Front_LTE_17_mid_chan_QPSK_RB_1_Offset_49_amb_temp_22.6_liq_temp_21.3C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 710 MHz

Medium parameters used: $f = 710 \text{ MHz}$; $\sigma = 0.918 \text{ mho/m}$; $\epsilon_r = 55.812$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.27, 6.27, 6.27); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.789 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

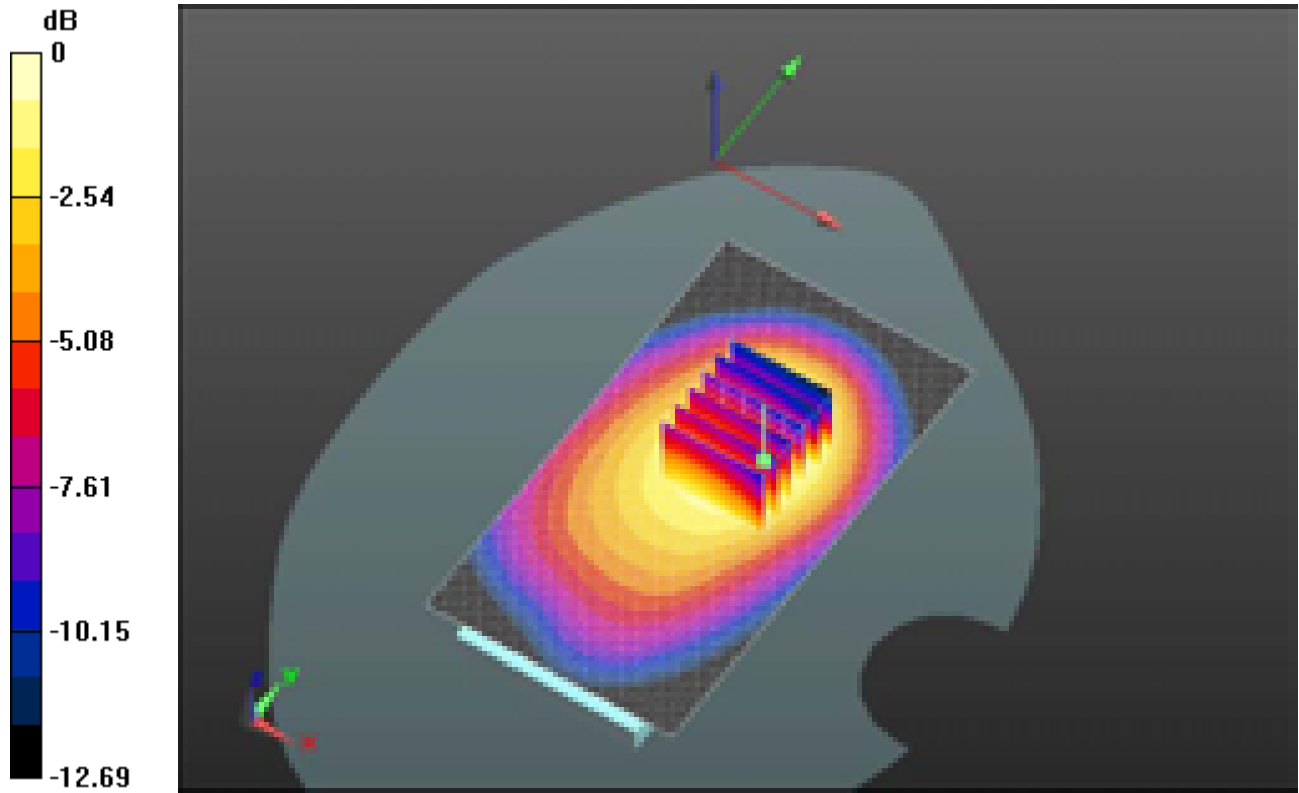
Reference Value = 22.098 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.9850

SAR(1 g) = 0.668 mW/g; SAR(10 g) = 0.457 mW/g

Maximum value of SAR (measured) = 0.783 mW/g

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0 dB = 0.780mW/g = -2.16 dB mW/g

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Date/Time: 6/18/2012 11:11:22 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Left_LTE_17_mid_chan_QPSK_RB_1_Offset_49_amb_temp_23.1C_liq_temp_21.5C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 710 MHz

Medium parameters used: $f = 710 \text{ MHz}$; $\sigma = 0.918 \text{ mho/m}$; $\epsilon_r = 55.812$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.27, 6.27, 6.27); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.466 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

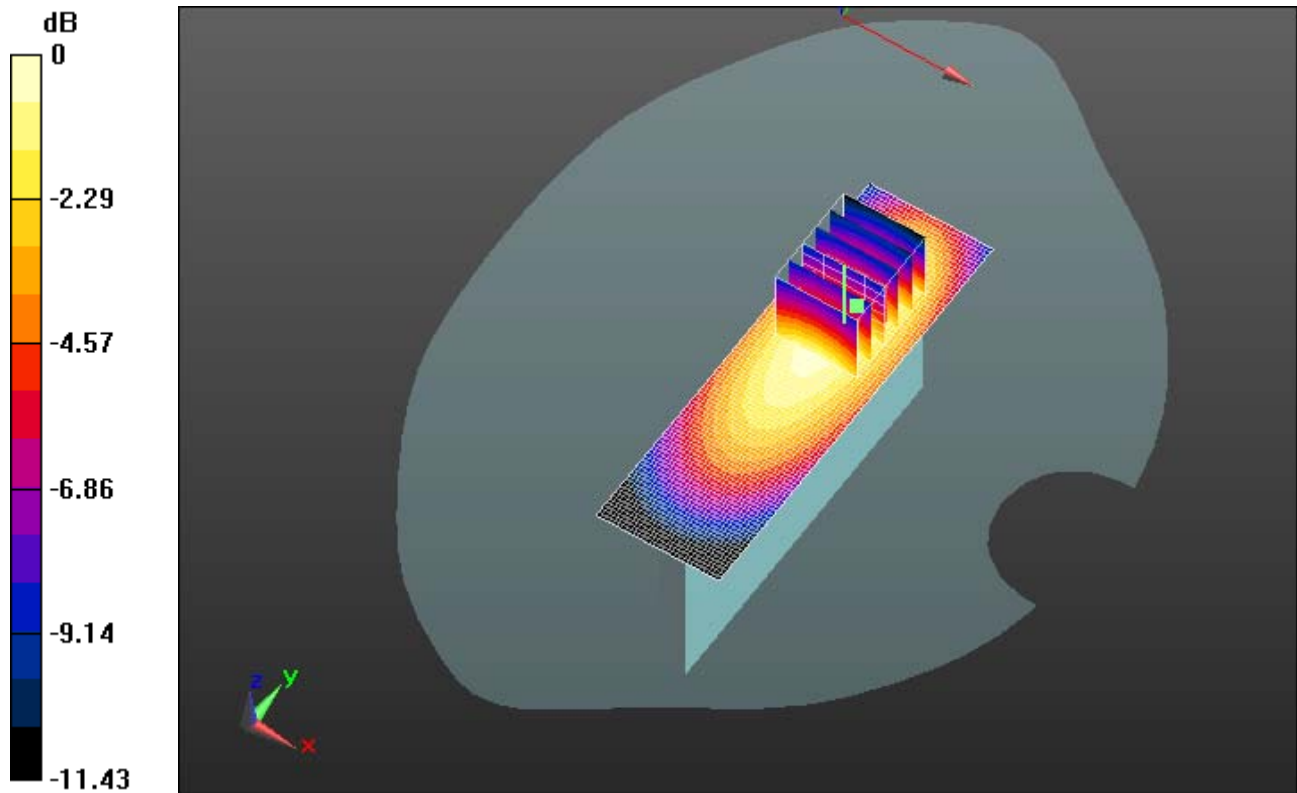
Reference Value = 21.274 V/m; Power Drift = -0.0049 dB

Peak SAR (extrapolated) = 0.5920

SAR(1 g) = 0.403 mW/g; SAR(10 g) = 0.272 mW/g

Maximum value of SAR (measured) = 0.468 mW/g

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0 dB = 0.470mW/g = -6.56 dB mW/g

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Date/Time: 6/18/2012 10:24:18 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Right_LTE_17_mid_chan_QPSK_RB_1_Offset_49_amb_temp_22.8C_liq_temp_21.6C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 710 MHz

Medium parameters used: $f = 710 \text{ MHz}$; $\sigma = 0.918 \text{ mho/m}$; $\epsilon_r = 55.812$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.27, 6.27, 6.27); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.268 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

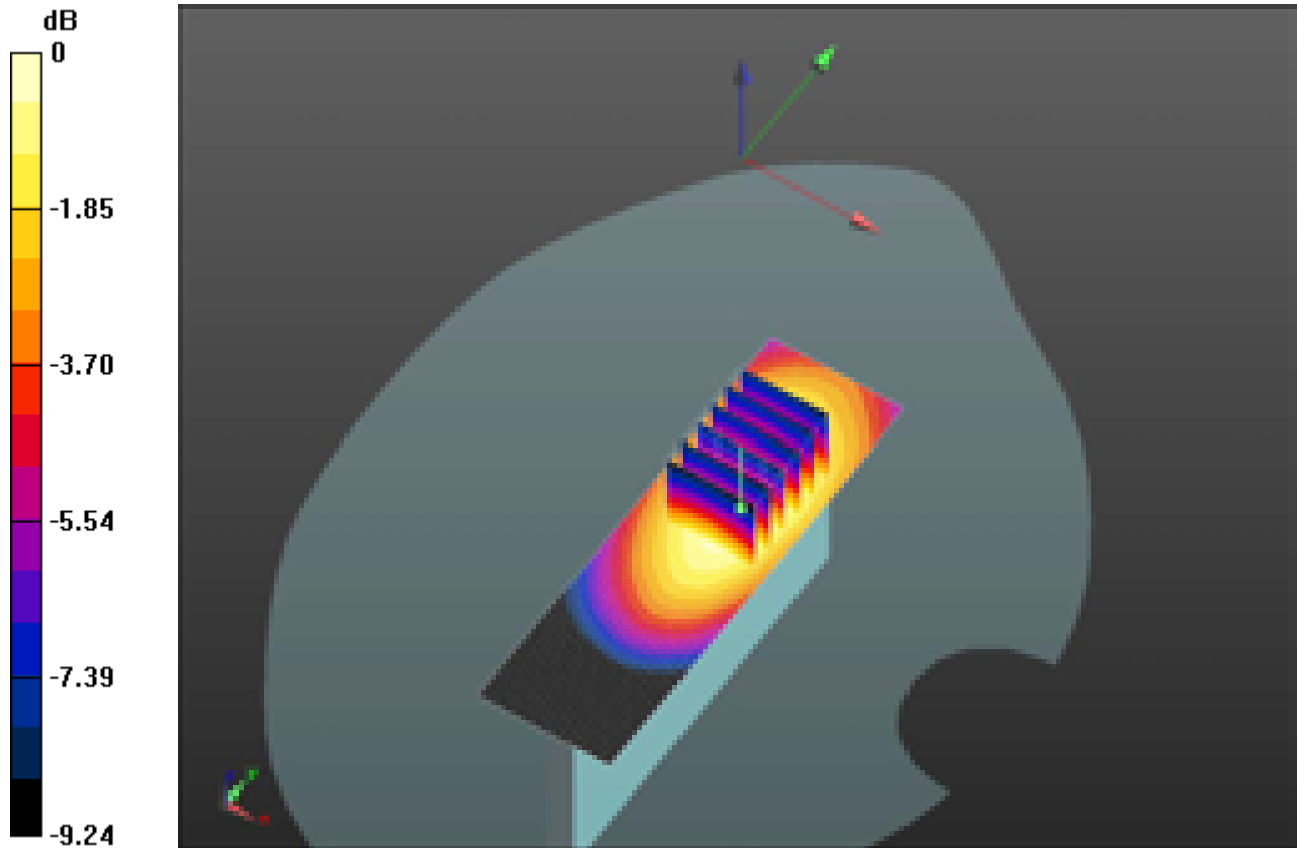
Reference Value = 16.432 V/m; Power Drift = -0.29 dB

Peak SAR (extrapolated) = 0.3300

SAR(1 g) = 0.236 mW/g; SAR(10 g) = 0.164 mW/g

Maximum value of SAR (measured) = 0.270 mW/g

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0 dB = 0.270mW/g = -11.37 dB mW/g

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Date/Time: 6/18/2012 11:33:50 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Bottom_LTE_17_mid_chan_QPSK_RB_1_Offset_49_amb_temp_22.9_liq_temp_21.5C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A211C01

Communication System: LTE; Frequency: 710 MHz

Medium parameters used: $f = 710 \text{ MHz}$; $\sigma = 0.918 \text{ mho/m}$; $\epsilon_r = 55.812$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.27, 6.27, 6.27); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (41x61x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.182 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

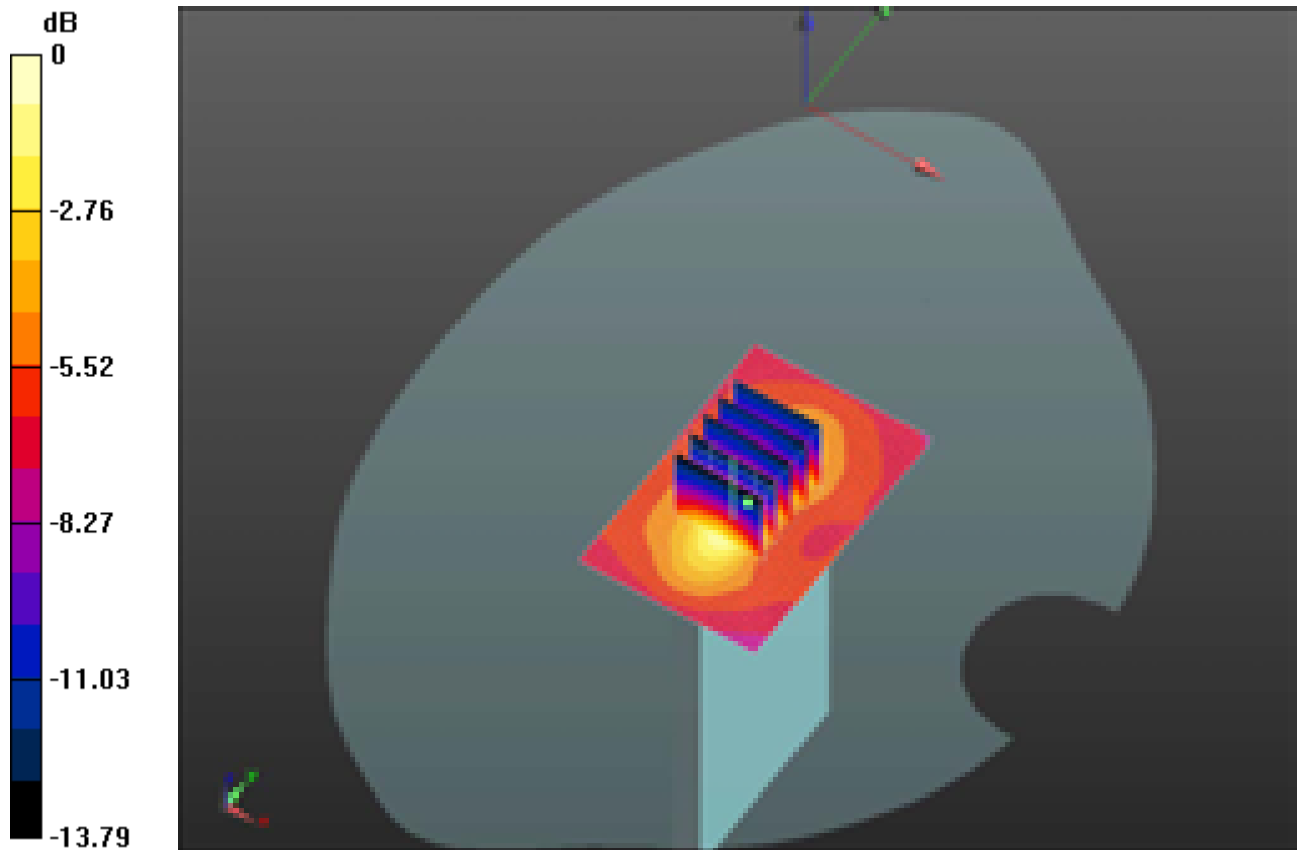
Reference Value = 14.213 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.2860

SAR(1 g) = 0.146 mW/g; SAR(10 g) = 0.077 mW/g

Maximum value of SAR (measured) = 0.186 mW/g

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0 dB = 0.190mW/g = -14.42 dB mW/g

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Date/Time: 6/18/2012 5:20:37 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_Headset_LTE_17_mid_chan_QPSK_RB_1_Offset_49_amb_temp_22.7_liq_temp_21.4C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 710 MHz

Medium parameters used: $f = 710 \text{ MHz}$; $\sigma = 0.918 \text{ mho/m}$; $\epsilon_r = 55.812$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.27, 6.27, 6.27); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.833 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 20.298 V/m ; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.1440

SAR(1 g) = 0.707 mW/g ; SAR(10 g) = 0.457 mW/g

Maximum value of SAR (measured) = 0.842 mW/g

Configuration/Touch position -/Zoom Scan 2 (5x5x7) (7x9x7)/Cube 0:

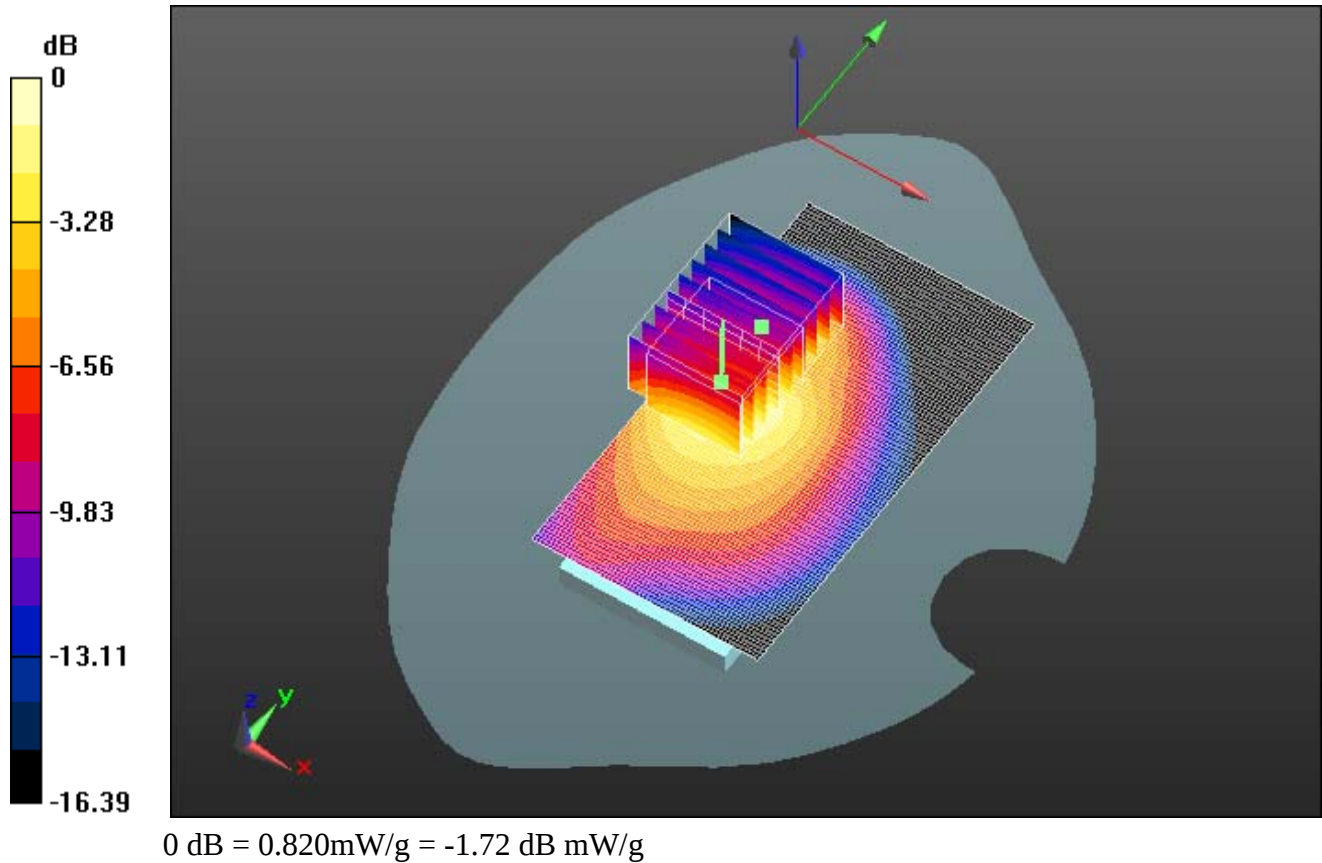
Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 20.298 V/m ; Power Drift = -0.0098 dB

Peak SAR (extrapolated) = 1.1130

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SAR(1 g) = 0.696 mW/g; SAR(10 g) = 0.453 mW/g
 Maximum value of SAR (measured) = 0.817 mW/g



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Date/Time: 10/29/2012 12:32:14 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_17_low_chan_QPSK_RB_1_Offset_49_amb_temp_24.1_liq_temp_22.8C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: LTE 700_Band 17; Frequency: 704 MHz

Medium parameters used (interpolated): $f = 704$ MHz; $\sigma = 0.913$ mho/m; $\epsilon_r = 54.695$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.27, 6.27, 6.27); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.745 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 19.983 V/m; Power Drift = 0.06 dB

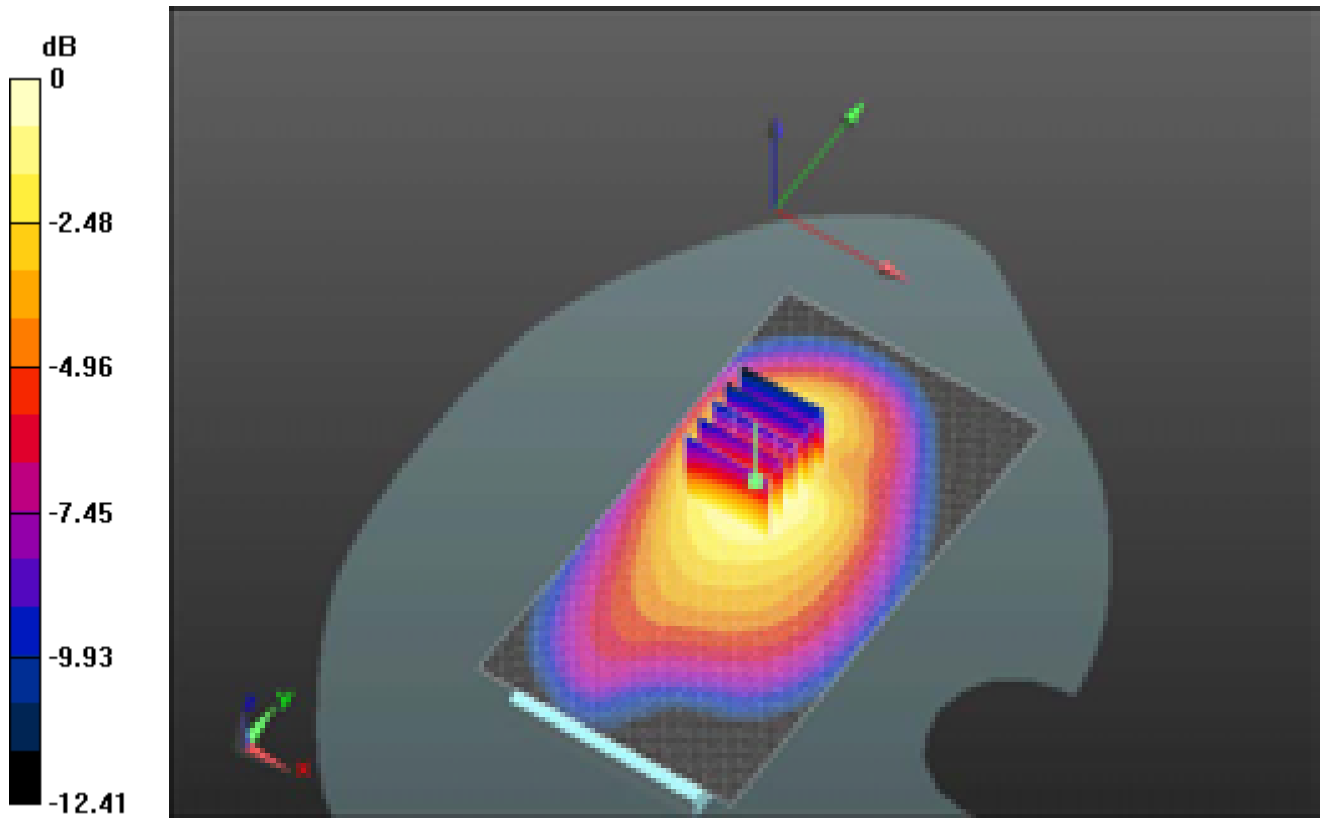
Peak SAR (extrapolated) = 0.9960

SAR(1 g) = 0.641 mW/g; SAR(10 g) = 0.427 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.743 mW/g

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0 dB = 0.740mW/g = -2.62 dB mW/g

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Date/Time: 10/29/2012 11:52:08 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_17_mid_chan_QPSK_RB_1_Offset_49
_amb_temp_24.0_liq_temp_22.8C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: LTE; Frequency: 710 MHz

Medium parameters used: $f = 710 \text{ MHz}$; $\sigma = 0.918 \text{ mho/m}$; $\epsilon_r = 54.657$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.27, 6.27, 6.27); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.023 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 23.644 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 1.3610

SAR(1 g) = 0.876 mW/g; SAR(10 g) = 0.582 mW/g

Maximum value of SAR (measured) = 1.018 mW/g

Configuration/Touch position -/Zoom Scan 2 (5x5x7) (7x9x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

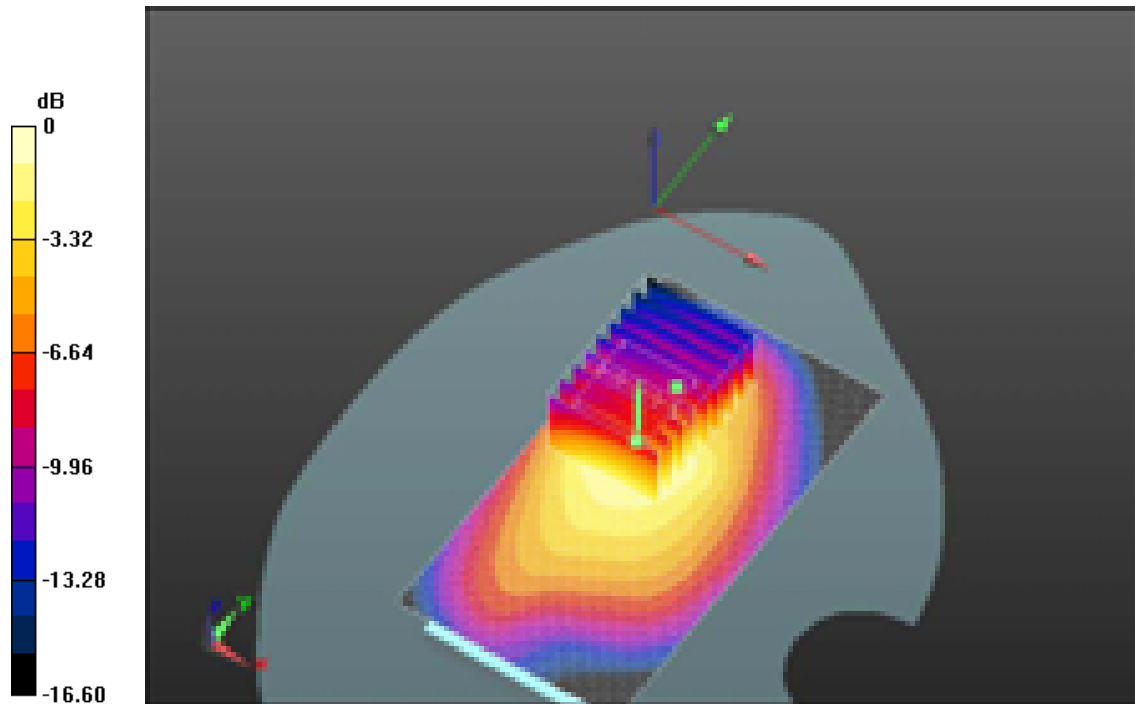
Reference Value = 23.644 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 1.3280

SAR(1 g) = 0.864 mW/g; SAR(10 g) = 0.576 mW/g

Maximum value of SAR (measured) = 1.003 mW/g

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0 dB = 1.000mW/g = 0 dB mW/g

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Date/Time: 10/29/2012 12:48:45 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_17_high_chan_QPSK_RB_1_Offset_49
_amb_temp_24.1_liq_temp_22.7C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: LTE 700_Band 17; Frequency: 716 MHz

Medium parameters used (interpolated): $f = 716 \text{ MHz}$; $\sigma = 0.921 \text{ mho/m}$; $\epsilon_r = 54.589$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.27, 6.27, 6.27); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.566 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

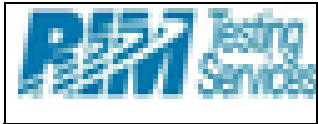
Reference Value = 17.592 V/m; Power Drift = 0.05 dB

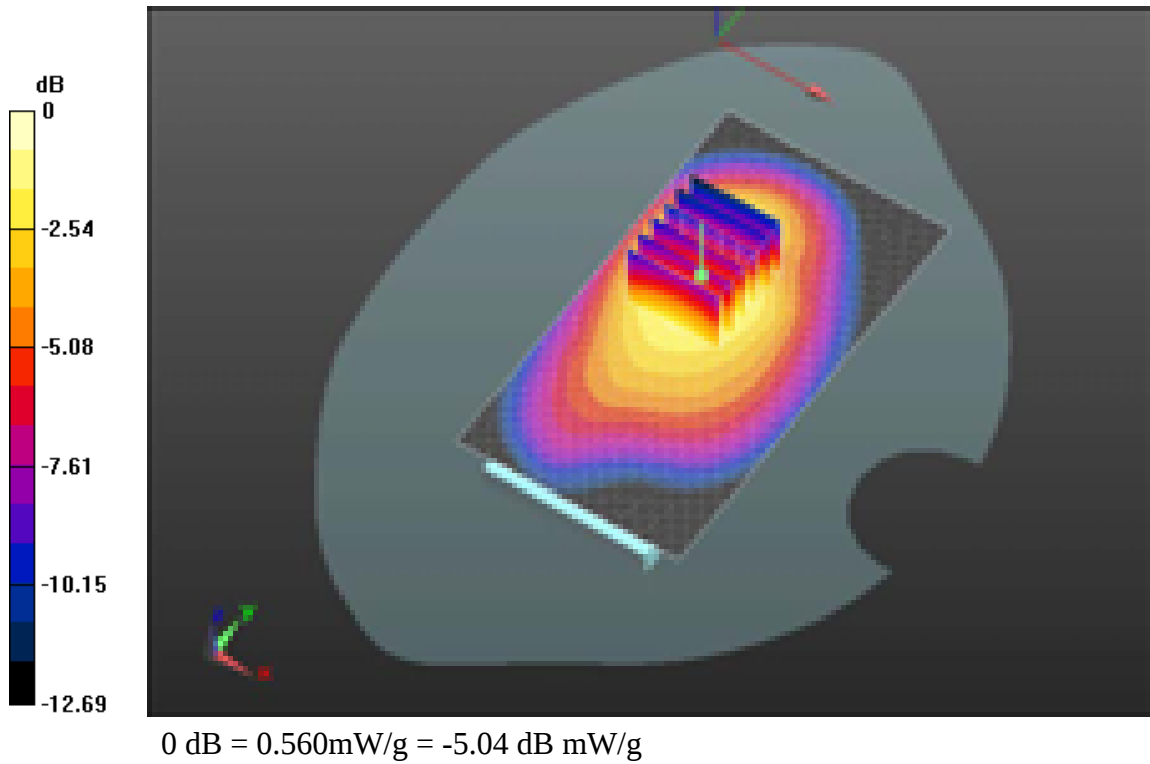
Peak SAR (extrapolated) = 0.7340

SAR(1 g) = 0.483 mW/g; SAR(10 g) = 0.321 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.564 mW/g

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Date/Time: 6/7/2012 7:06:32 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_5_mid_chan_QPSK_RB_25_Offset_0_amb_temp_22.6_liq_temp_21.3C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: LTE; Frequency: 836.5 MHz

Medium parameters used (interpolated): $f = 836.5 \text{ MHz}$; $\sigma = 0.979 \text{ mho/m}$; $\epsilon_r = 52.752$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.773 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 24.748 V/m; Power Drift = -0.0087 dB

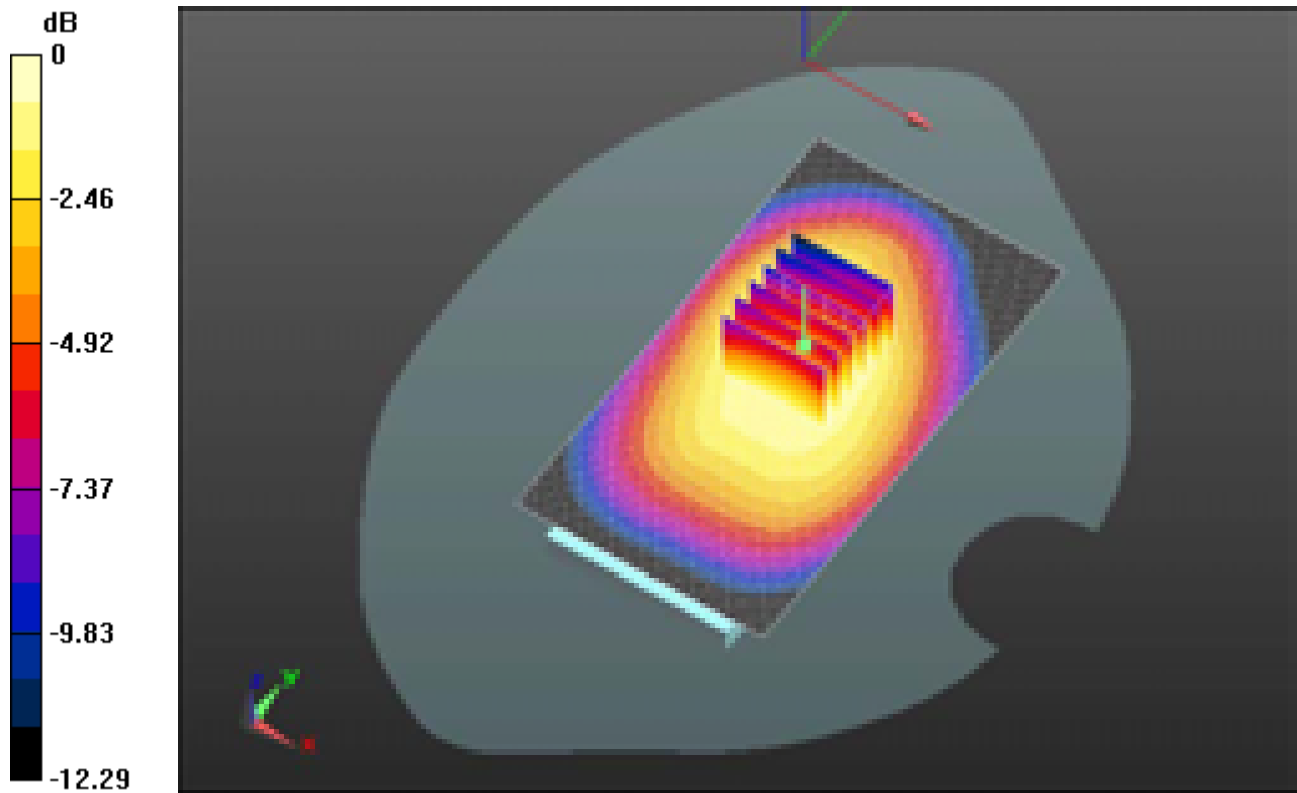
Peak SAR (extrapolated) = 0.9310

SAR(1 g) = 0.679 mW/g; SAR(10 g) = 0.497 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.765 mW/g

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0 dB = 0.770mW/g = -2.27 dB mW/g

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Date/Time: 6/7/2012 7:30:47 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_5_mid_chan_QPSK_RB_1_Offset_0_a
mb_temp_22.2_liq_temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: LTE; Frequency: 836.5 MHz

Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.979$ mho/m; $\epsilon_r = 52.752$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.883 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 26.724 V/m; Power Drift = -0.17 dB

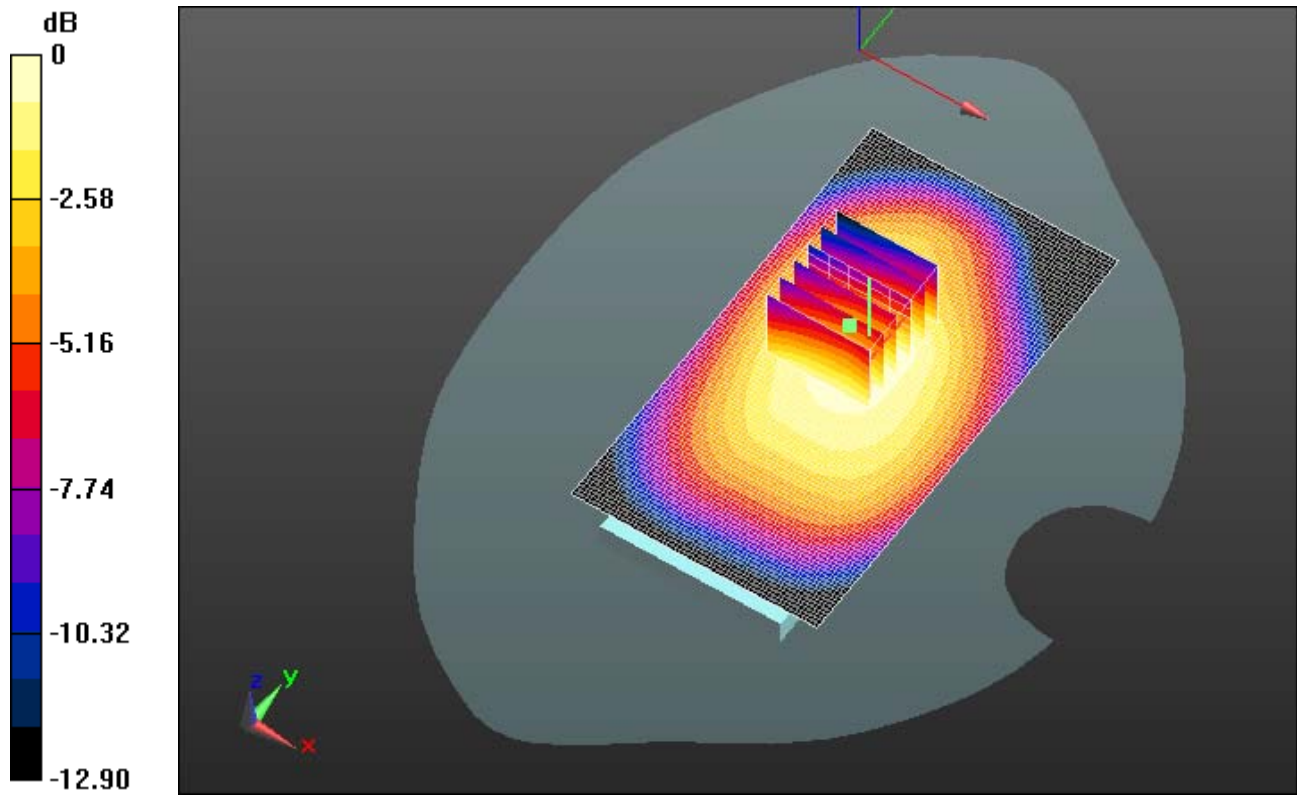
Peak SAR (extrapolated) = 1.0220

SAR(1 g) = 0.766 mW/g; SAR(10 g) = 0.565 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.852 mW/g

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0 dB = 0.850mW/g = -1.41 dB mW/g

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Date/Time: 6/7/2012 7:51:31 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_5_mid_chan_QPSK_RB_1_Offset_49_amb_temp_22.7_liq_temp_21.3C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: LTE; Frequency: 836.5 MHz

Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.979$ mho/m; $\epsilon_r = 52.752$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.893 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 26.483 V/m; Power Drift = 0.08 dB

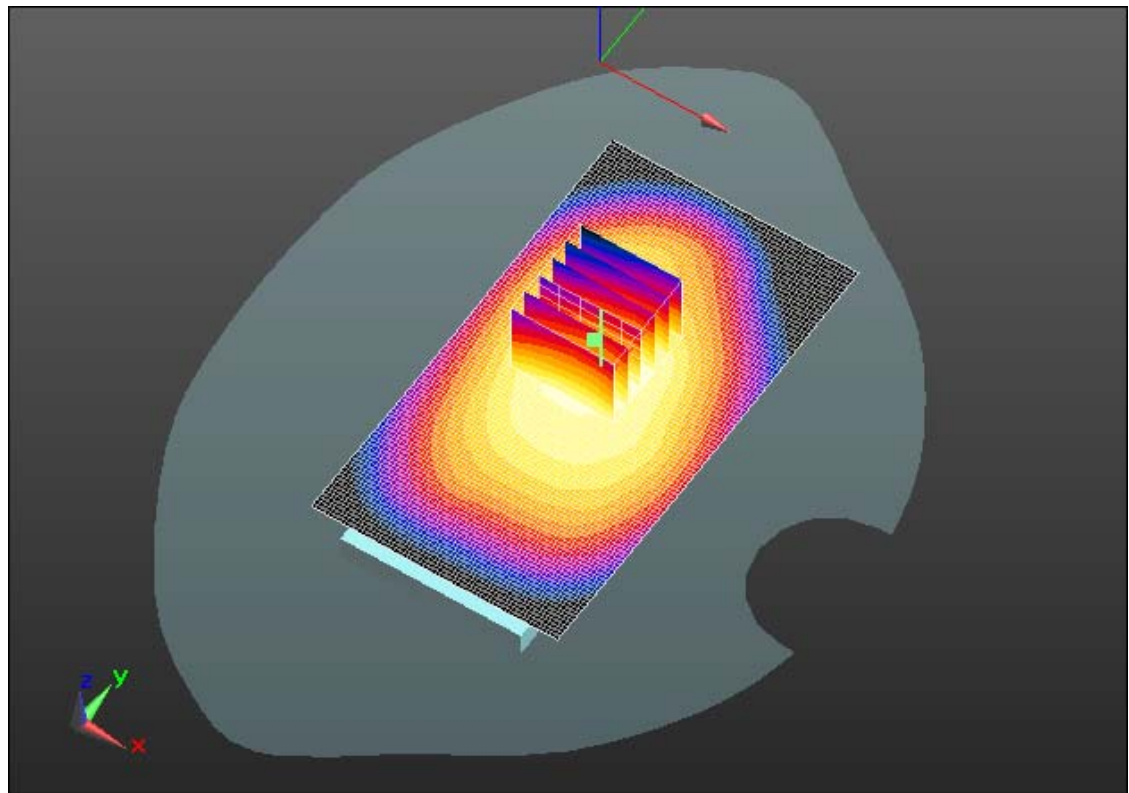
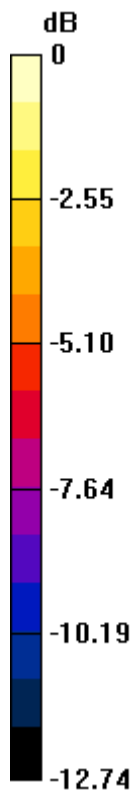
Peak SAR (extrapolated) = 1.0710

SAR(1 g) = 0.774 mW/g; SAR(10 g) = 0.568 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.855 mW/g

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0 dB = 0.850mW/g = -1.41 dB mW/g

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Date/Time: 6/7/2012 9:18:30 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_5_mid_chan_16QAM_RB_30_Offset_0
_amb_temp_22.4_liq_temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: LTE; Frequency: 836.5 MHz

Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.979$ mho/m; $\epsilon_r = 52.752$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.628 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 22.789 V/m; Power Drift = 0.05 dB

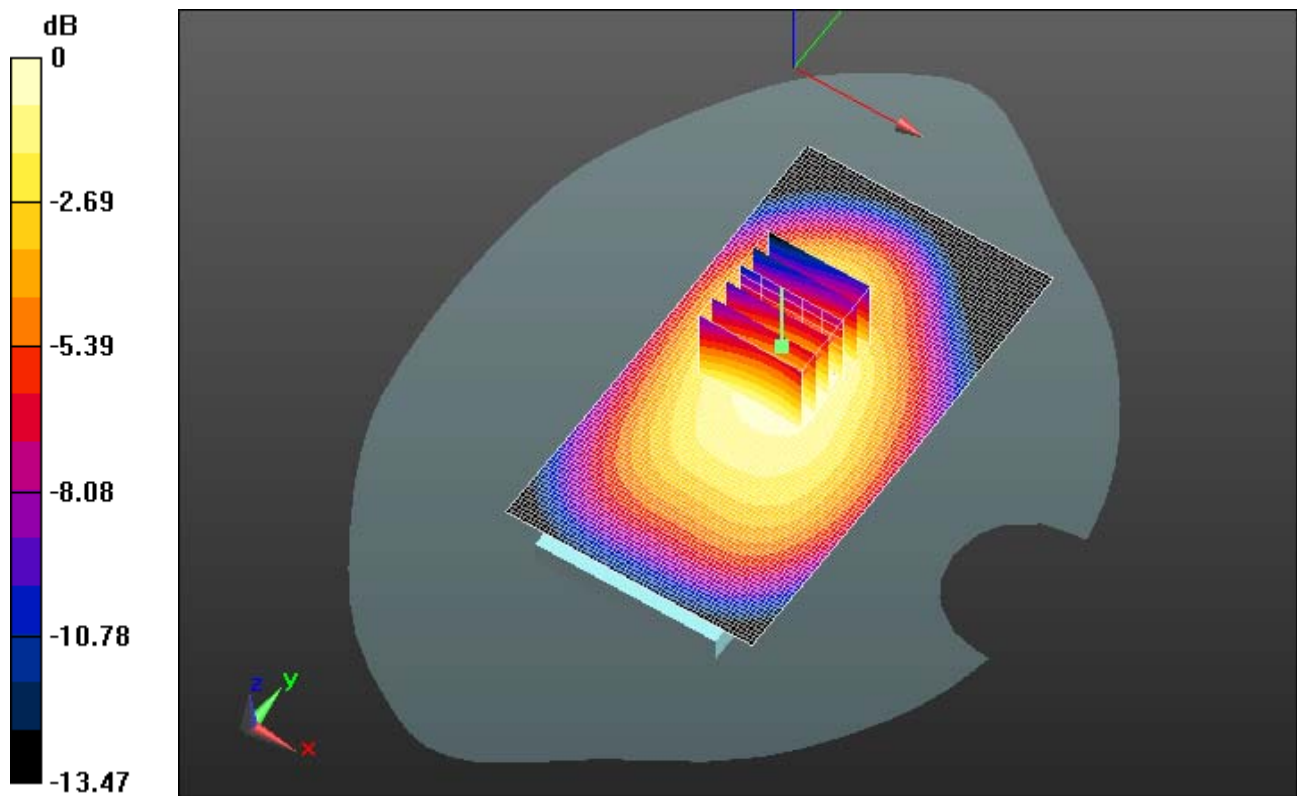
Peak SAR (extrapolated) = 0.7770

SAR(1 g) = 0.554 mW/g; SAR(10 g) = 0.405 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.621 mW/g

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0 dB = 0.620mW/g = -4.15 dB mW/g

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Date/Time: 6/7/2012 9:40:25 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_5_mid_chan_16QAM_RB_1_Offset_0_amb_temp_22.5_liq_temp_21.3C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: LTE; Frequency: 836.5 MHz

Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.979$ mho/m; $\epsilon_r = 52.752$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.693 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 23.744 V/m; Power Drift = -0.01 dB

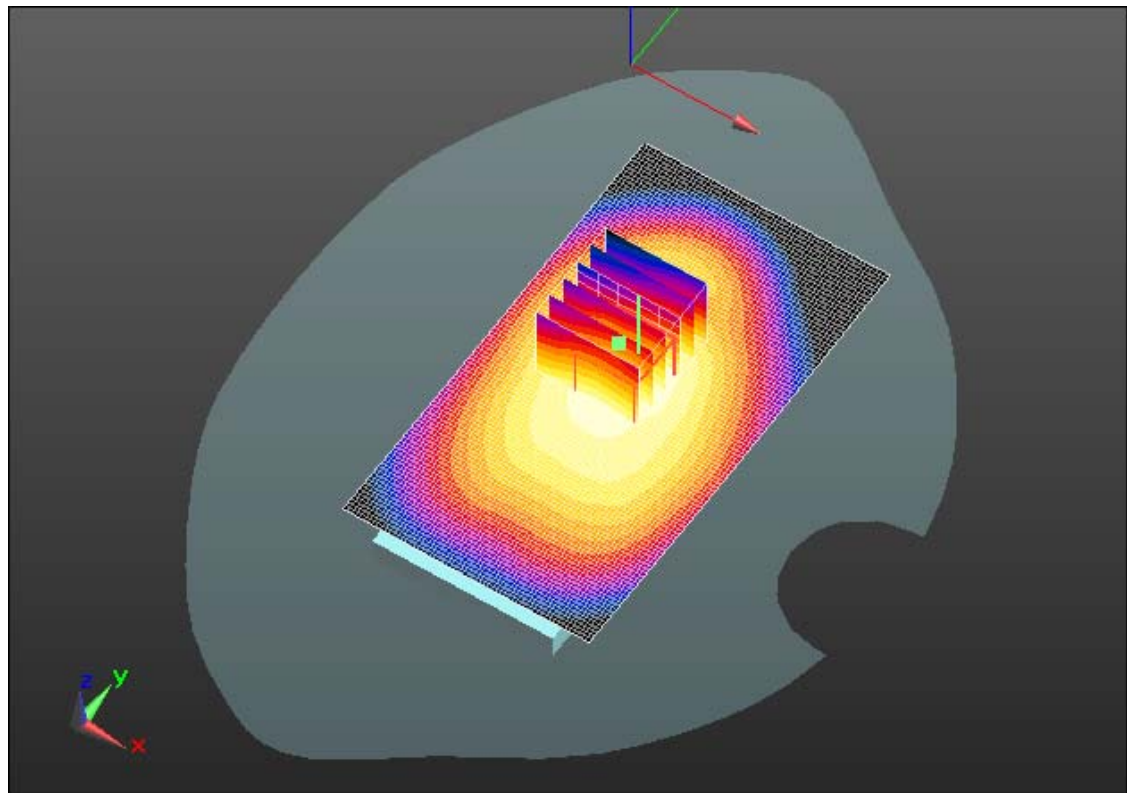
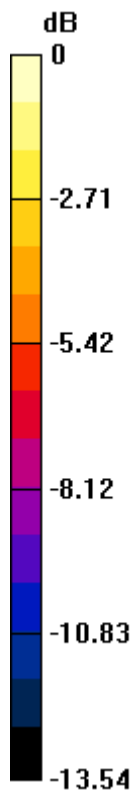
Peak SAR (extrapolated) = 0.8240

SAR(1 g) = 0.591 mW/g; SAR(10 g) = 0.443 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.659 mW/g

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0 dB = 0.660mW/g = -3.61 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/7/2012 9:59:42 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_5_mid_chan_16QAM_RB_1_Offset_49_amb_temp_22.9_liq_temp_21.3C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: LTE; Frequency: 836.5 MHz

Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.979$ mho/m; $\epsilon_r = 52.752$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.685 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 23.973 V/m; Power Drift = -0.03 dB

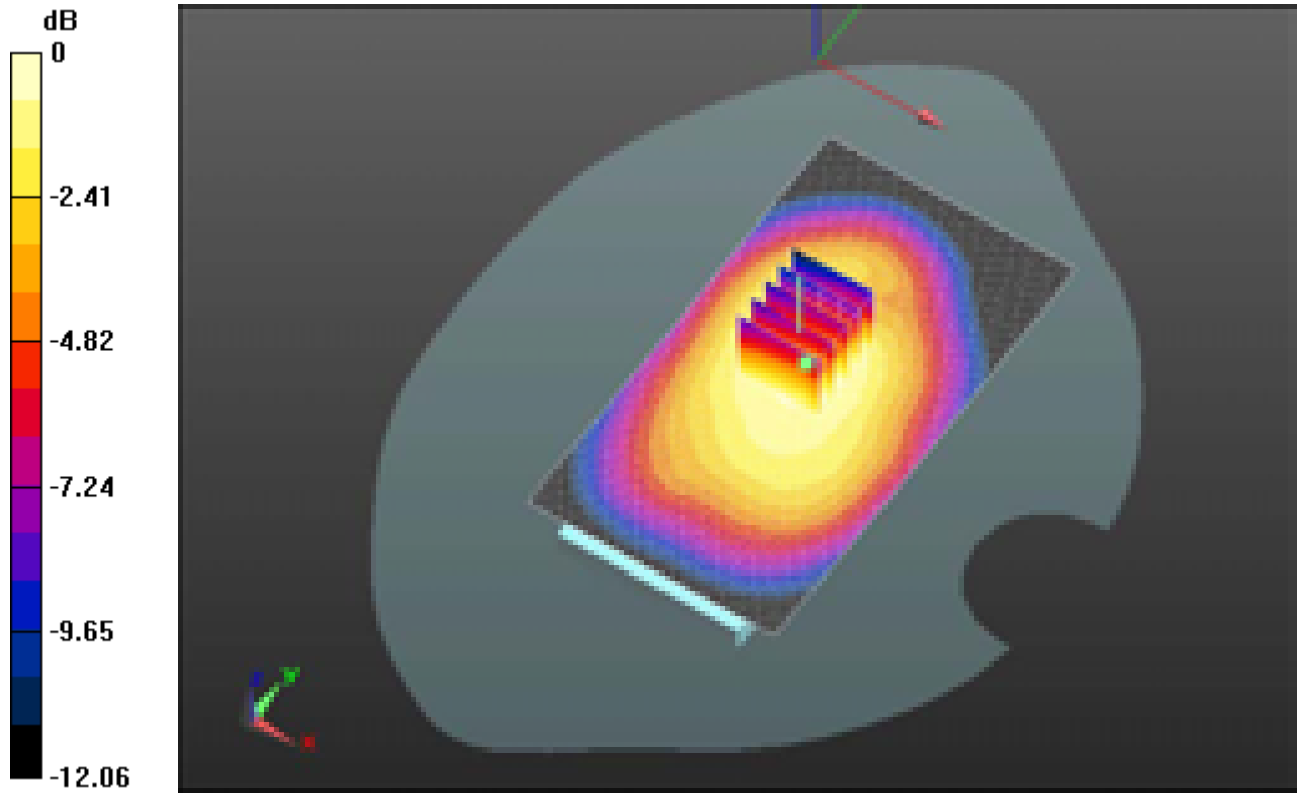
Peak SAR (extrapolated) = 0.9400

SAR(1 g) = 0.614 mW/g; SAR(10 g) = 0.440 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.711 mW/g

	Document Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			Page 41(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 0.710mW/g = -2.97 dB mW/g

	Document Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			Page 42(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/7/2012 10:42:50 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Front_LTE_5_mid_chan_QPSK_RB_1_Offset_49_amb_temp_22.9_liq_temp_21.3C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: LTE; Frequency: 836.5 MHz

Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.979$ mho/m; $\epsilon_r = 52.752$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.892 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 26.353 V/m; Power Drift = 0.05 dB

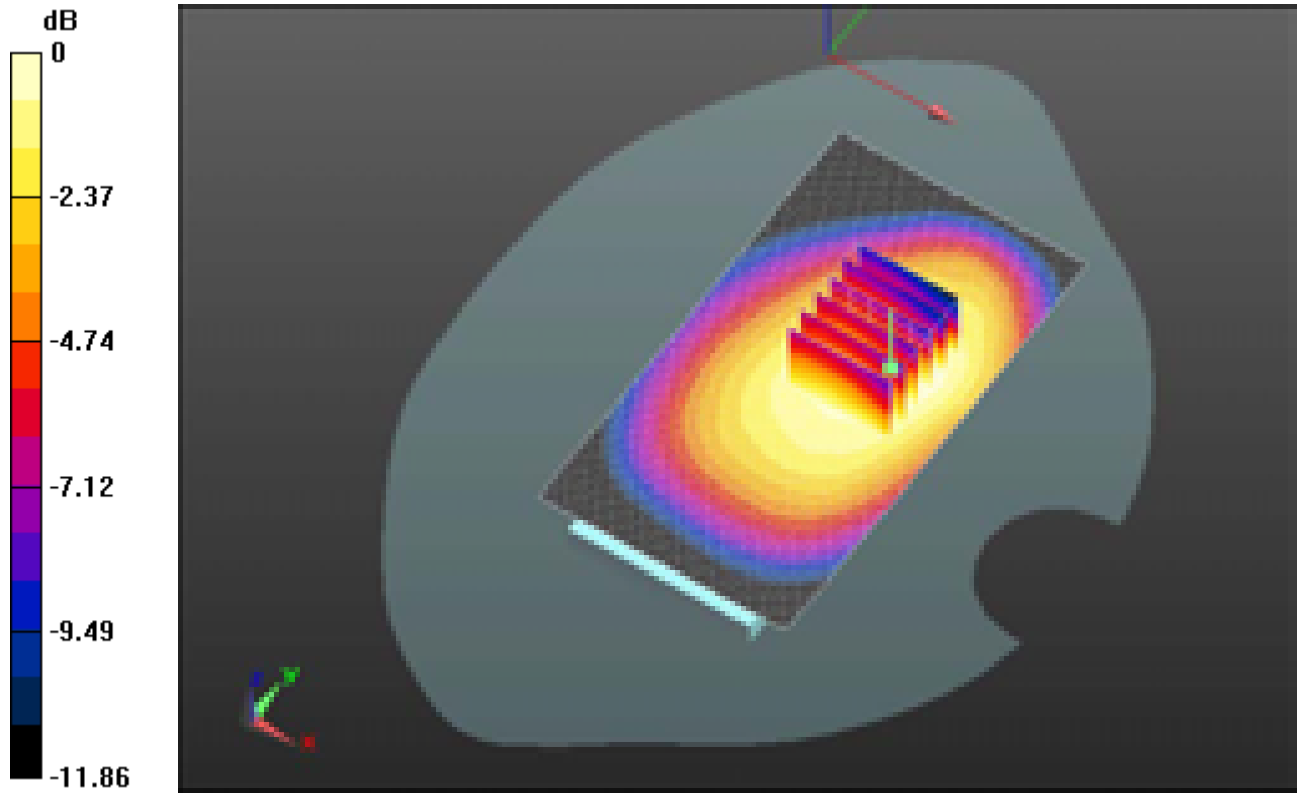
Peak SAR (extrapolated) = 1.0810

SAR(1 g) = 0.783 mW/g; SAR(10 g) = 0.573 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.882 mW/g

	Document Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			Page 43(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 0.880mW/g = -1.11 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/8/2012 4:09:01 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Left_LTE_5_mid_chan_QPSK_RB_1_Offset_49_a
mb_temp_23.2_liq_temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: LTE; Frequency: 836.5 MHz

Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.979$ mho/m; $\epsilon_r = 52.752$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.654 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 27.198 V/m; Power Drift = -0.17 dB

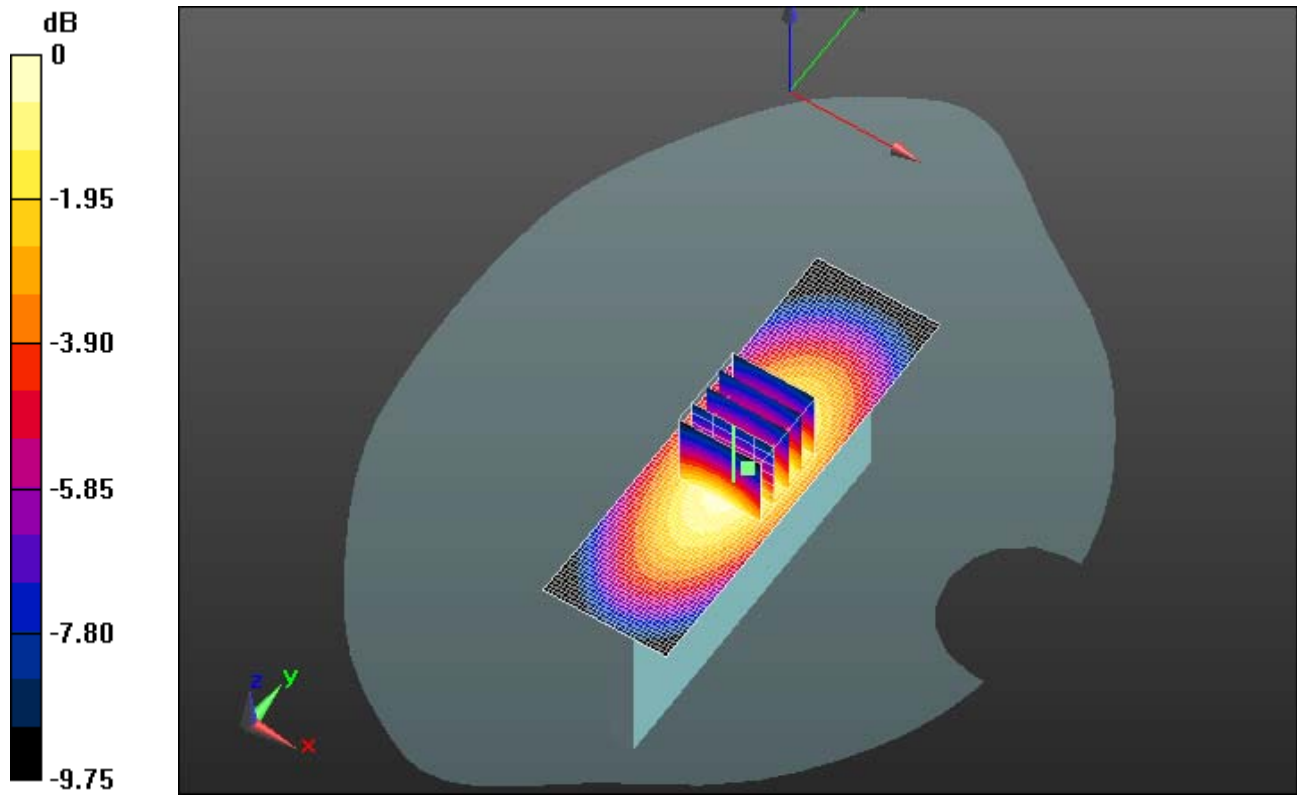
Peak SAR (extrapolated) = 0.8090

SAR(1 g) = 0.576 mW/g; SAR(10 g) = 0.393 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.660 mW/g

	Document Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			Page 45(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 0.660mW/g = -3.61 dB mW/g

	Document Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			Page 46(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/8/2012 4:23:18 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Right_LTE_5_mid_chan_QPSK_RB_1_Offset_49_amb_temp_23.4_liq_temp_21.3C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: LTE; Frequency: 836.5 MHz

Medium parameters used (interpolated): $f = 836.5 \text{ MHz}$; $\sigma = 0.979 \text{ mho/m}$; $\epsilon_r = 52.752$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.890 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 31.032 V/m; Power Drift = 0.03 dB

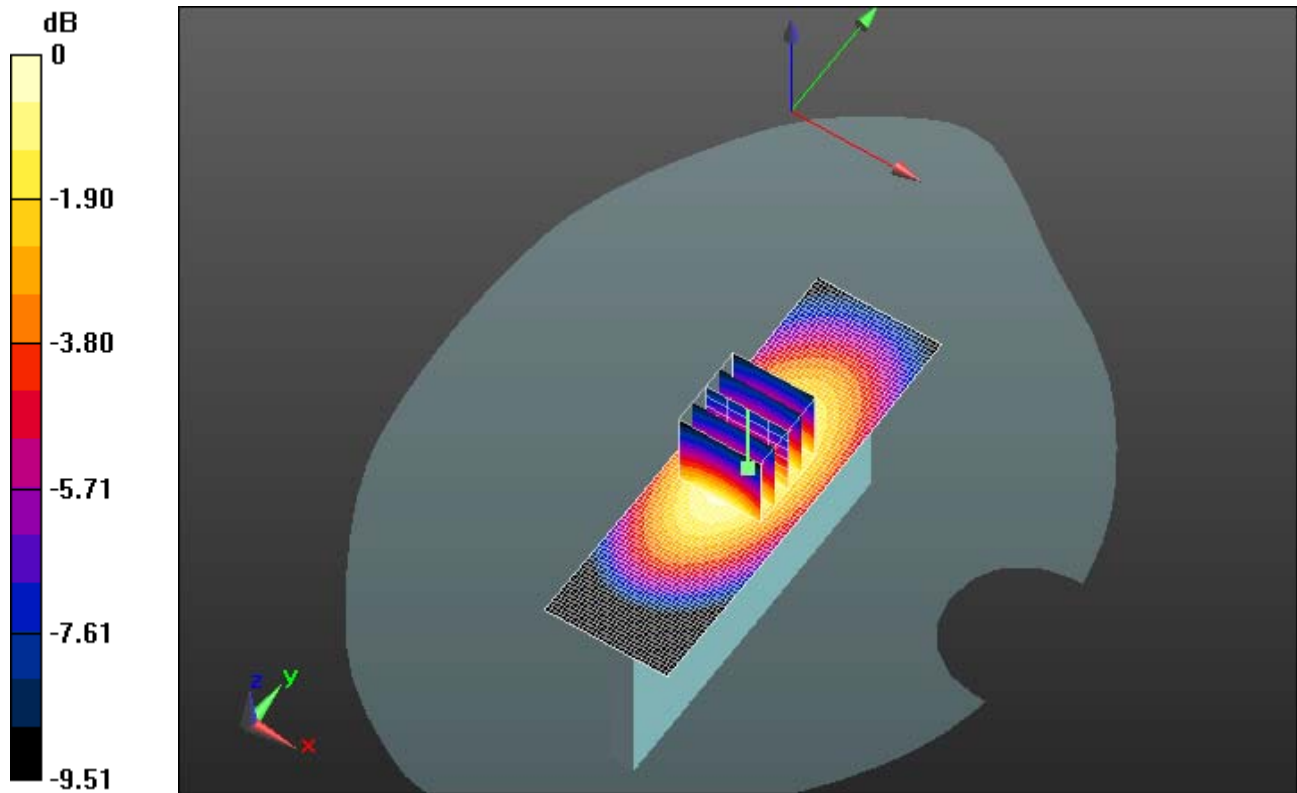
Peak SAR (extrapolated) = 1.1110

SAR(1 g) = 0.784 mW/g; SAR(10 g) = 0.536 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.900 mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 0.900mW/g = -0.92 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/8/2012 4:57:21 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Bottom_LTE_5_mid_chan_QPSK_RB_1_Offset_4
9_amb_temp_23.2_liq_temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: LTE; Frequency: 836.5 MHz

Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.979$ mho/m; $\epsilon_r = 52.752$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (41x61x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.225 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 15.050 V/m; Power Drift = -0.07 dB

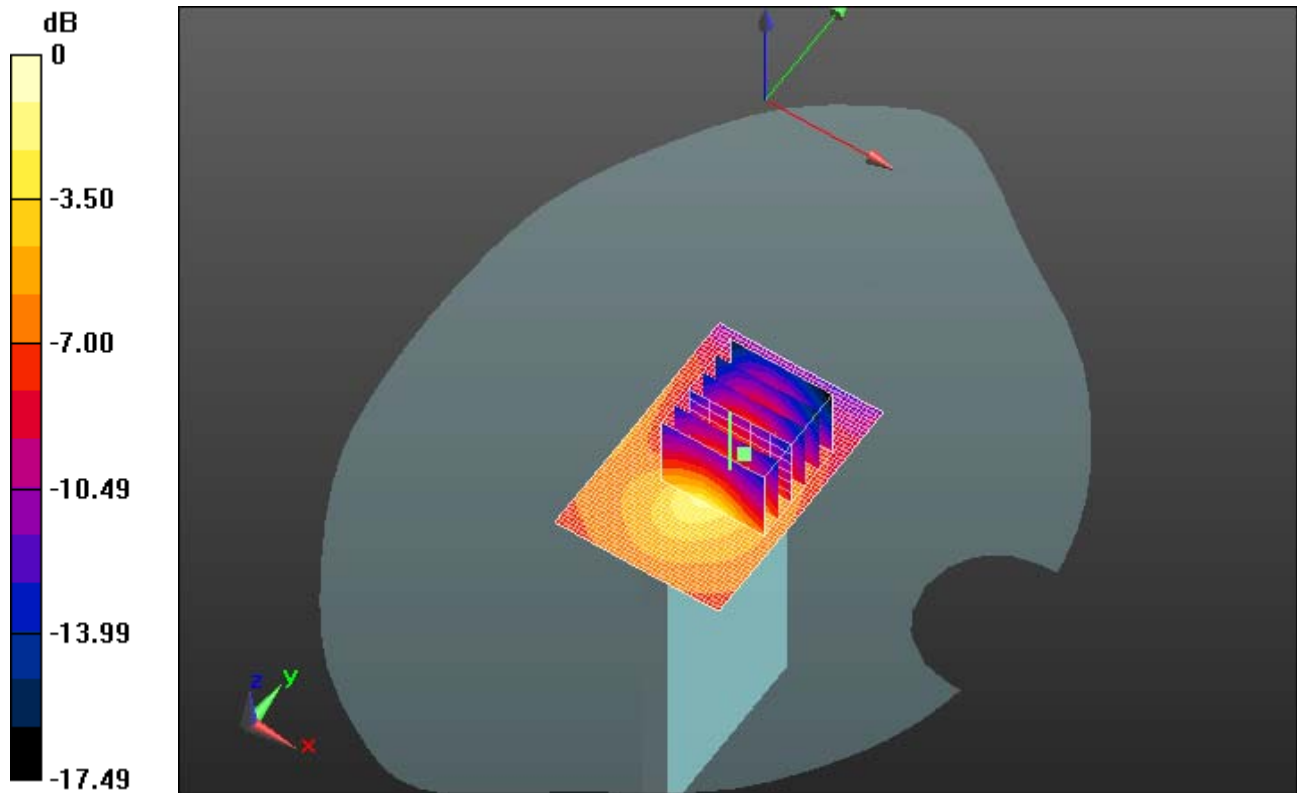
Peak SAR (extrapolated) = 0.3680

SAR(1 g) = 0.199 mW/g; SAR(10 g) = 0.105 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.247 mW/g

	Document Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			Page 49(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 0.250mW/g = -12.04 dB mW/g

	Document Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			Page 50(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/8/2012 12:46:21 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Front_Headset_LTE_5_mid_chan_QPSK_RB_1_
Offset_49_amb_temp_22.9_liq_temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: LTE; Frequency: 836.5 MHz

Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.979$ mho/m; $\epsilon_r = 52.752$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.826 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 24.580 V/m; Power Drift = -0.18 dB

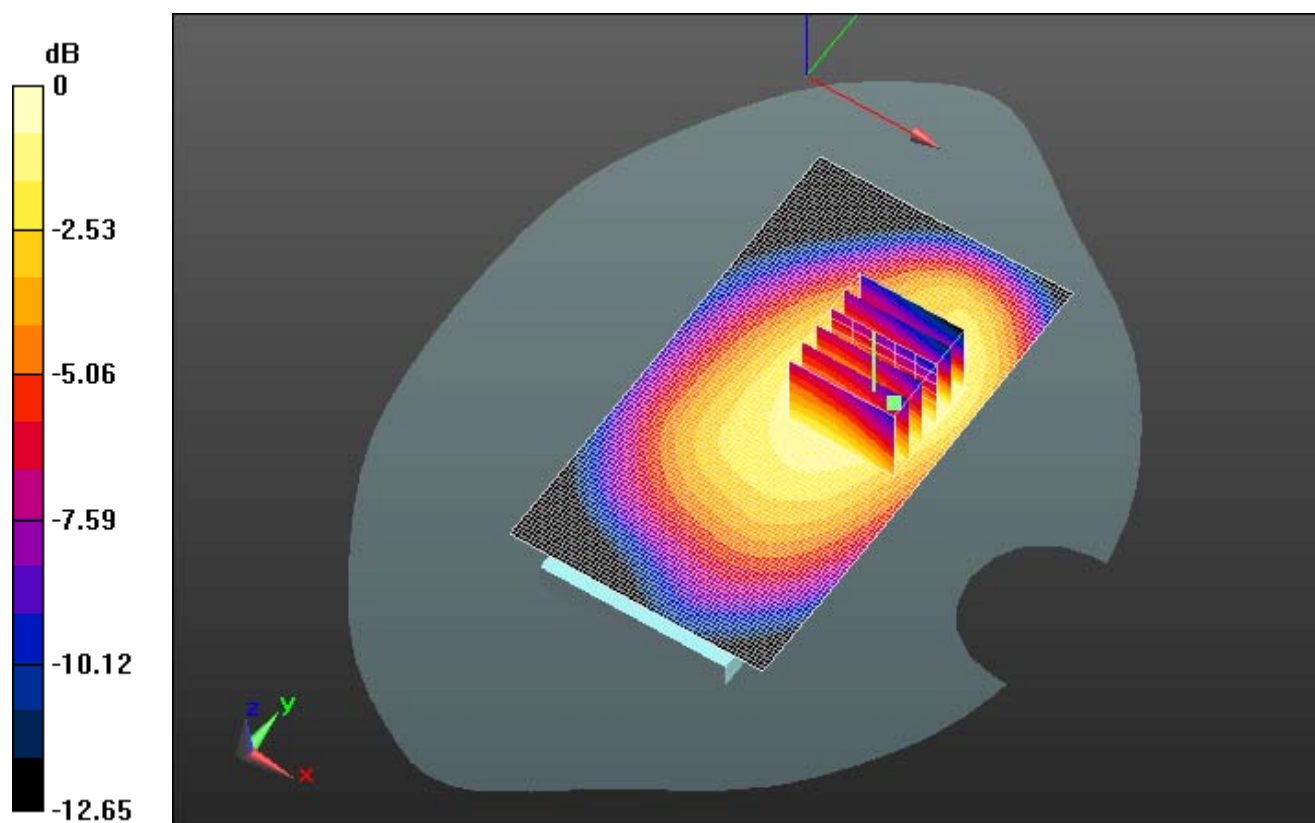
Peak SAR (extrapolated) = 1.0130

SAR(1 g) = 0.714 mW/g; SAR(10 g) = 0.511 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.831 mW/g

	Document Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			Page 51(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 0.830mW/g = -1.62 dB mW/g

	Document Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			Page 52(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 9/25/2012 10:55:02 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Front_LTE_5_mid_chan_QPSK_RB_1_Offset_49_amb_temp_24.4_liq_temp_22.5C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A8C7018

Communication System: LTE 5; Frequency: 836.5 MHz

Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.949$ mho/m; $\epsilon_r = 52.967$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.740 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 25.178 V/m; Power Drift = -0.15 dB

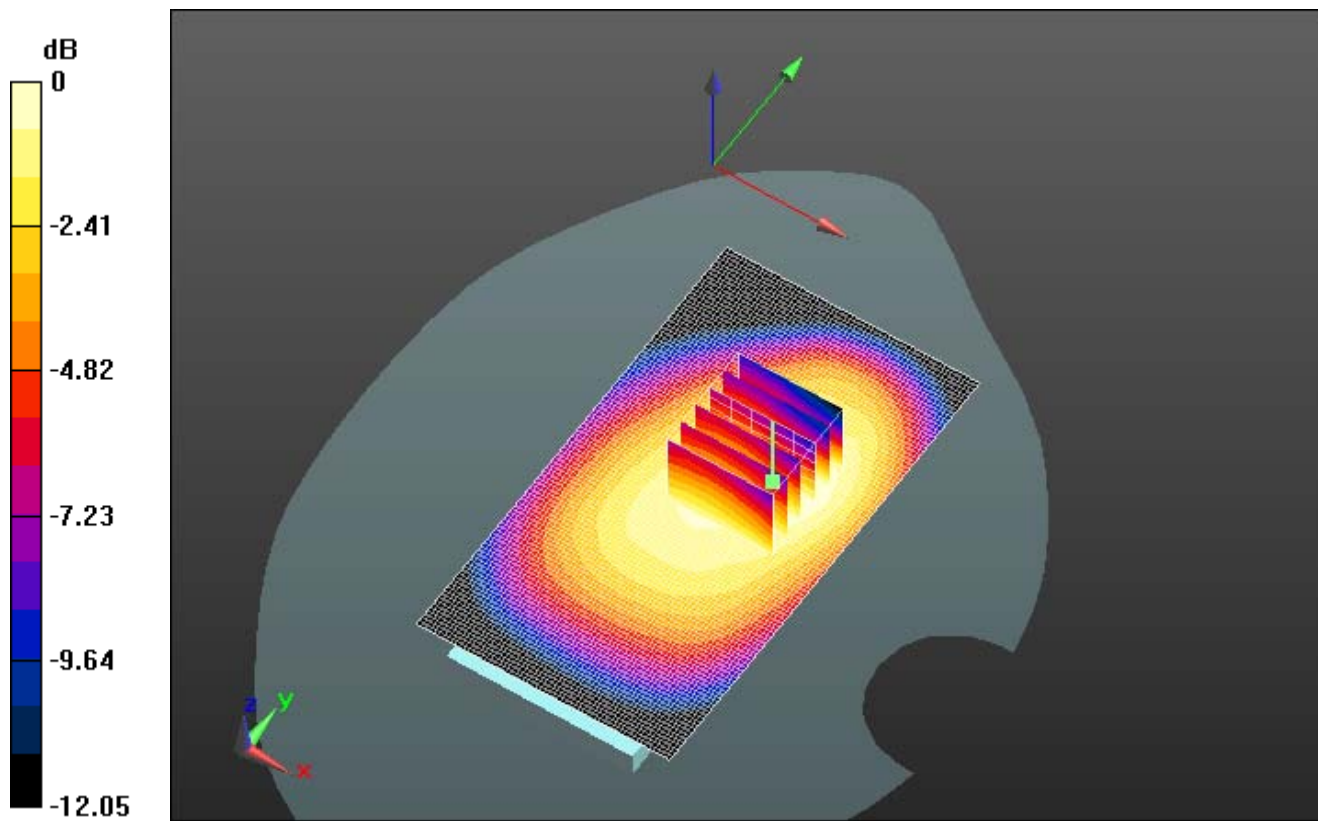
Peak SAR (extrapolated) = 0.9270

SAR(1 g) = 0.666 mW/g; SAR(10 g) = 0.493 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.741 mW/g

	Document Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			Page 53(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 0.740mW/g = -2.62 dB mW/g

	Document Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			Page 54(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/7/2012 1:57:42 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_EDGE850_mid_chan_amb_temp_22.7_liq_t
emp_21.1C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: EDGE 850 (2slots); Frequency: 836.8 MHz

Medium parameters used (interpolated): $f = 836.8$ MHz; $\sigma = 0.979$ mho/m; $\epsilon_r = 52.747$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.844 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 26.152 V/m; Power Drift = -0.12 dB

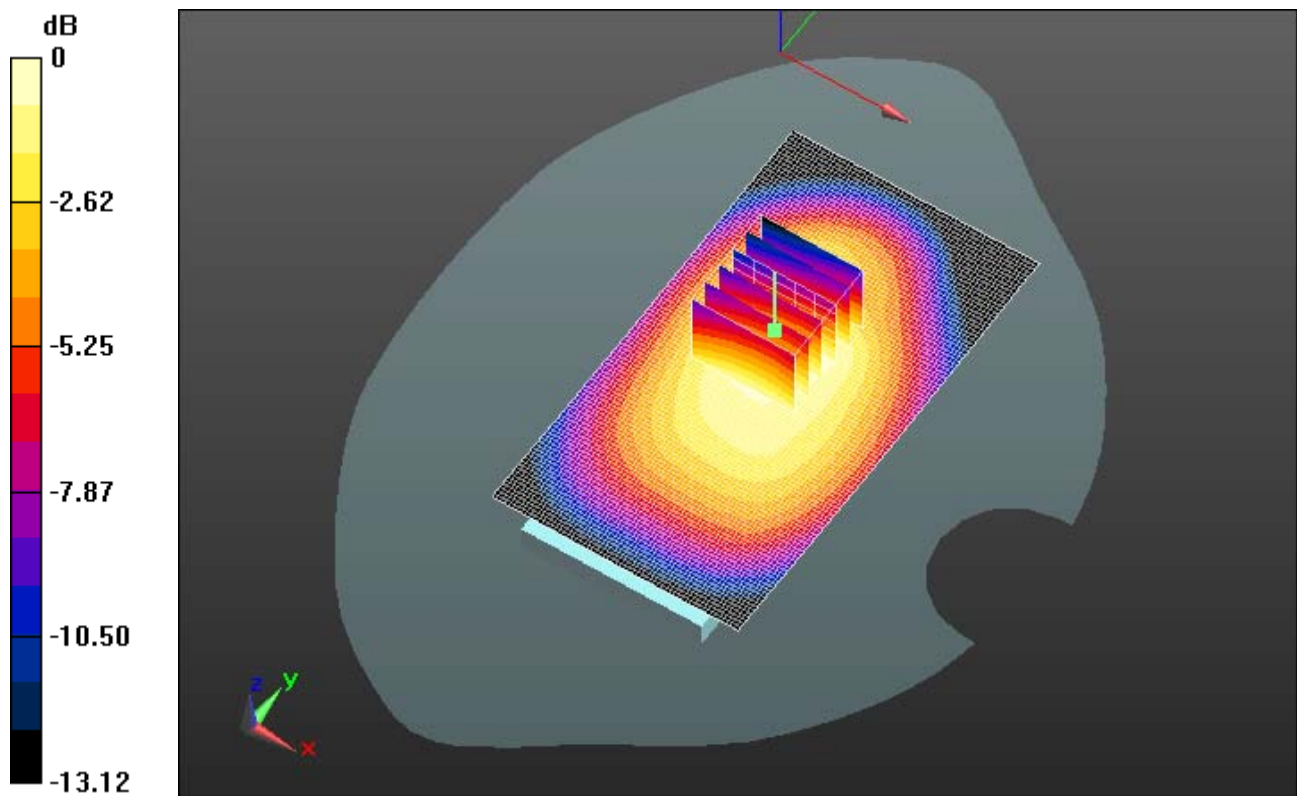
Peak SAR (extrapolated) = 1.0280

SAR(1 g) = 0.729 mW/g; SAR(10 g) = 0.527 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.825 mW/g

	Document Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			Page 55(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 0.830mW/g = -1.62 dB mW/g

	Document Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			Page 56(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/7/2012 2:30:25 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Front_GPRS850_mid_chan_amb_temp_23.0_liq_t
emp_21.5C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: GPRS 850; Frequency: 836.8 MHz

Medium parameters used (interpolated): $f = 836.8$ MHz; $\sigma = 0.979$ mho/m; $\epsilon_r = 52.747$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.880 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 26.240 V/m; Power Drift = 0.04 dB

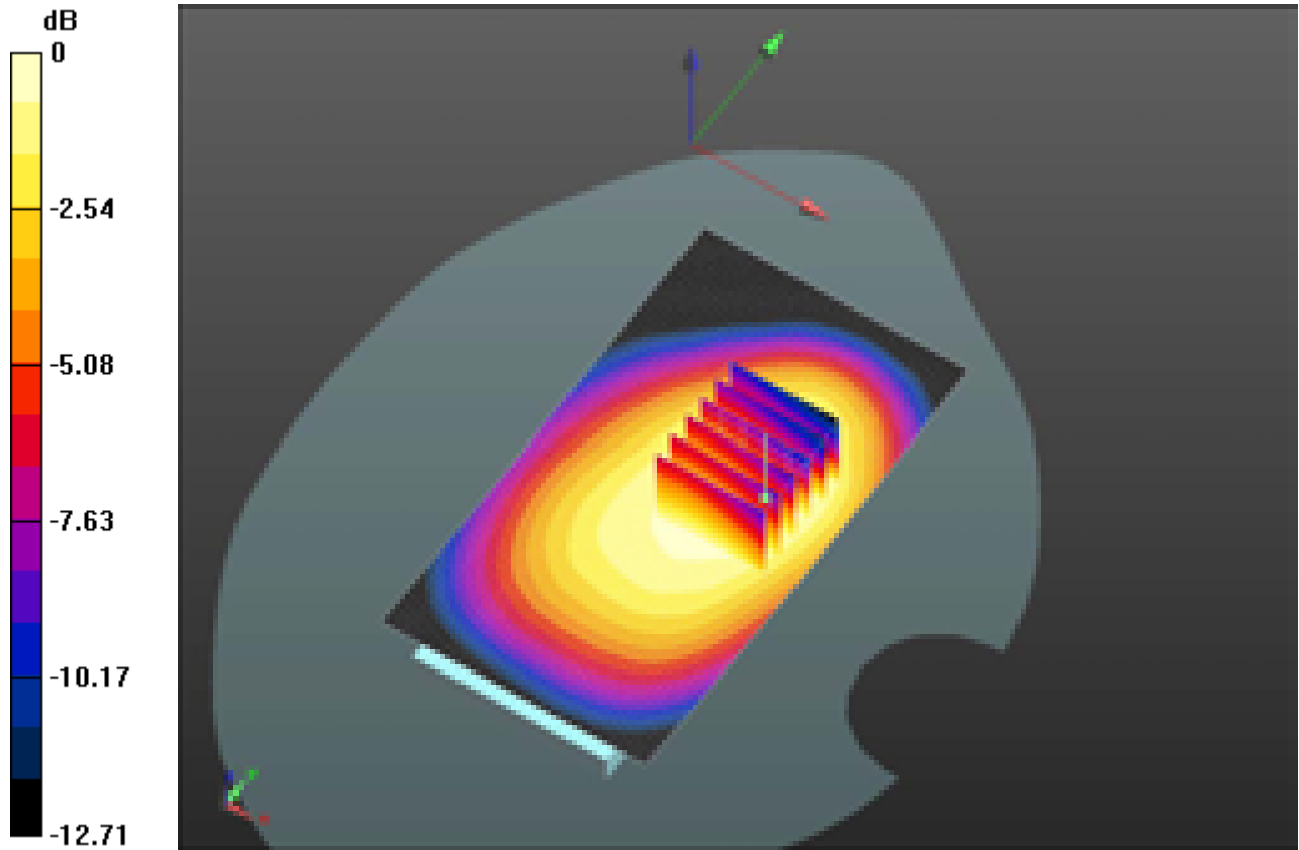
Peak SAR (extrapolated) = 1.0370

SAR(1 g) = 0.756 mW/g; SAR(10 g) = 0.555 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.847 mW/g

	Document Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			Page 57(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 0.850mW/g = -1.41 dB mW/g

	Document Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			Page 58(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/7/2012 4:21:16 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Left_GPRS850_mid_chan_amb_temp_23.0C_liq_t
emp_21.5C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: GPRS 850; Frequency: 836.8 MHz

Medium parameters used (interpolated): $f = 836.8$ MHz; $\sigma = 0.979$ mho/m; $\epsilon_r = 52.747$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.519 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 23.844 V/m; Power Drift = 0.02 dB

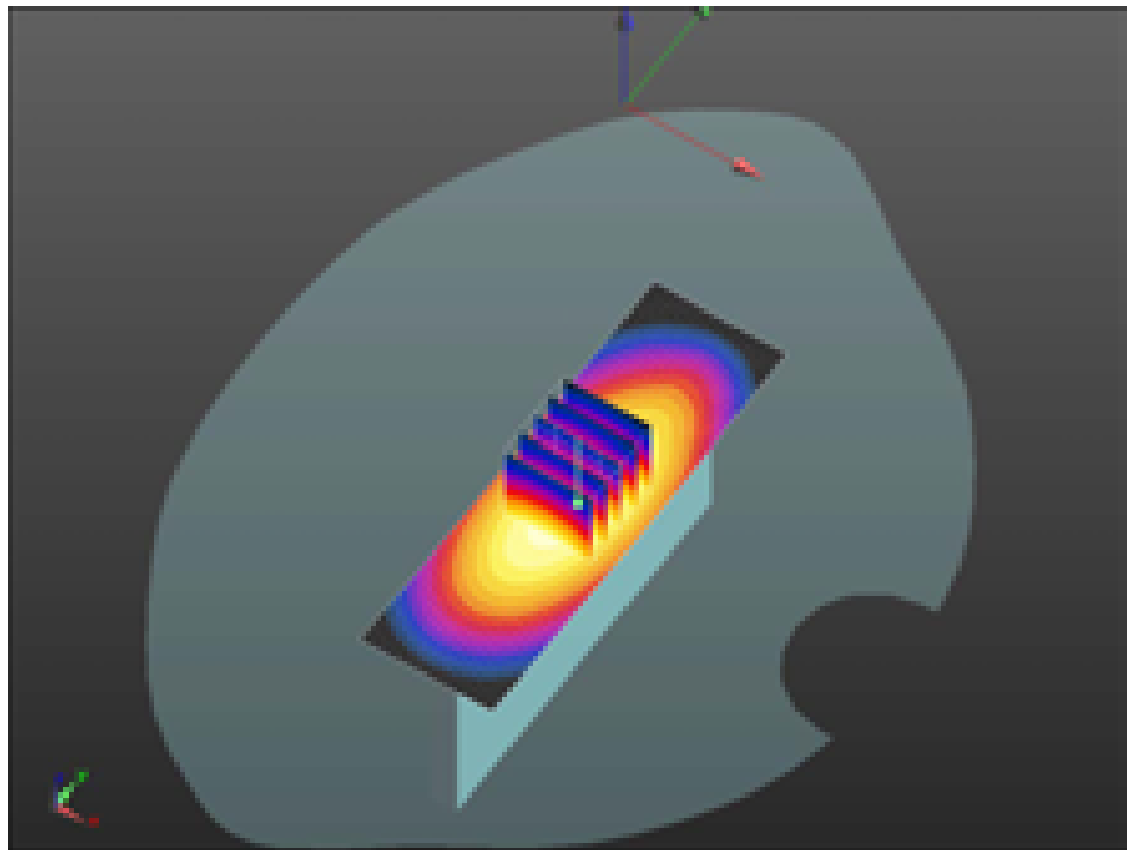
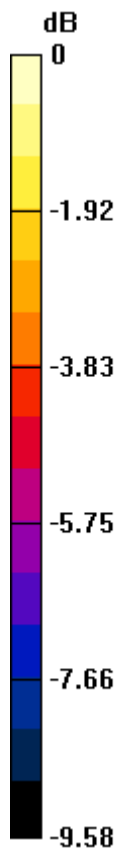
Peak SAR (extrapolated) = 0.6390

SAR(1 g) = 0.458 mW/g; SAR(10 g) = 0.316 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.522 mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 0.520mW/g = -5.68 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/7/2012 4:06:33 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Right_GPRS850_mid_chan_amb_temp_23.0C_liq
_temp_21.6C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: GPRS 850; Frequency: 836.8 MHz

Medium parameters used (interpolated): $f = 836.8 \text{ MHz}$; $\sigma = 0.979 \text{ mho/m}$; $\epsilon_r = 52.747$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.773 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 28.461 V/m ; Power Drift = -0.05 dB

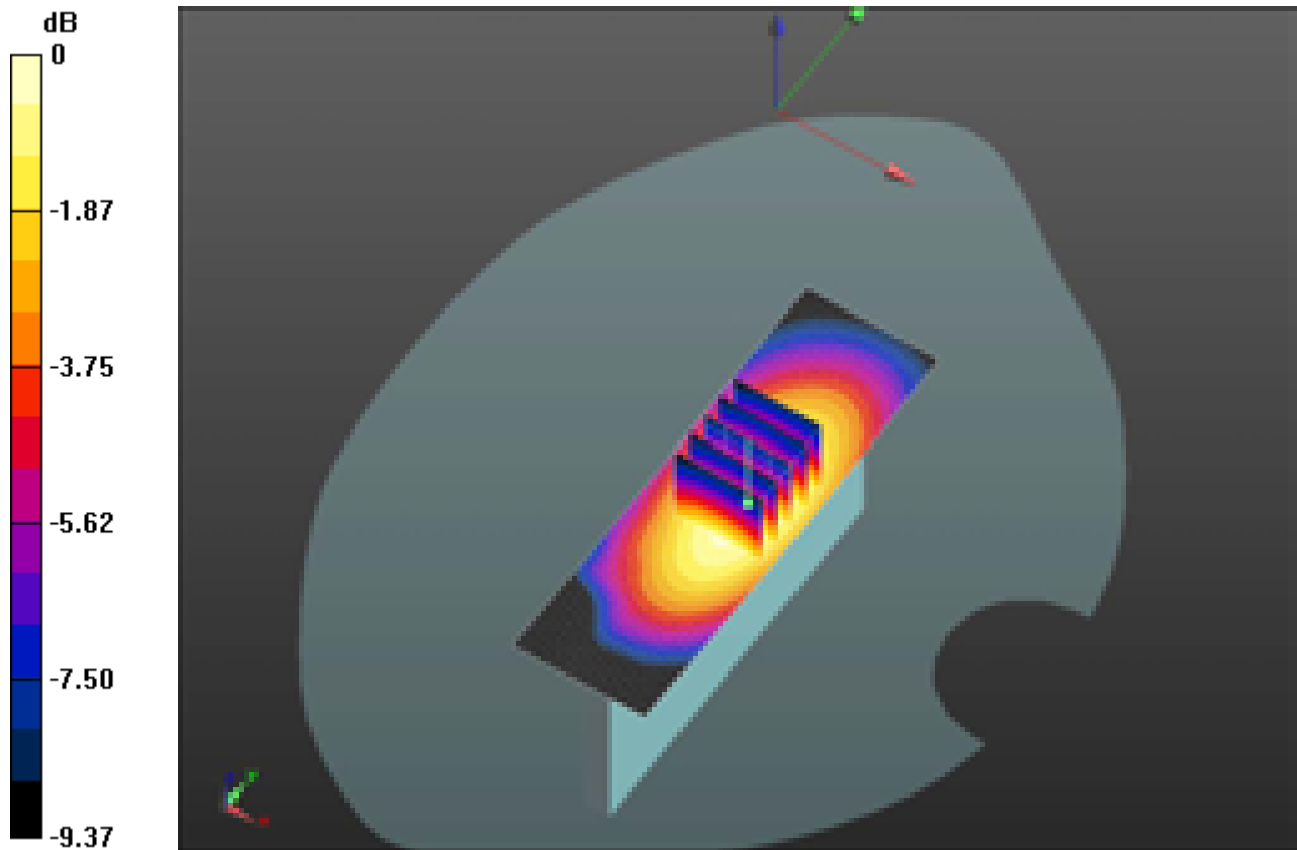
Peak SAR (extrapolated) = 0.9590

SAR(1 g) = 0.683 mW/g ; SAR(10 g) = 0.468 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.786 mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 0.790mW/g = -2.05 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/7/2012 4:39:01 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Bottom_GPRS850_mid_chan_amb_temp_23.0_liq
_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: GPRS 850; Frequency: 836.8 MHz

Medium parameters used (interpolated): $f = 836.8 \text{ MHz}$; $\sigma = 0.979 \text{ mho/m}$; $\epsilon_r = 52.747$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (41x61x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.281 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 16.907 V/m; Power Drift = -0.40 dB

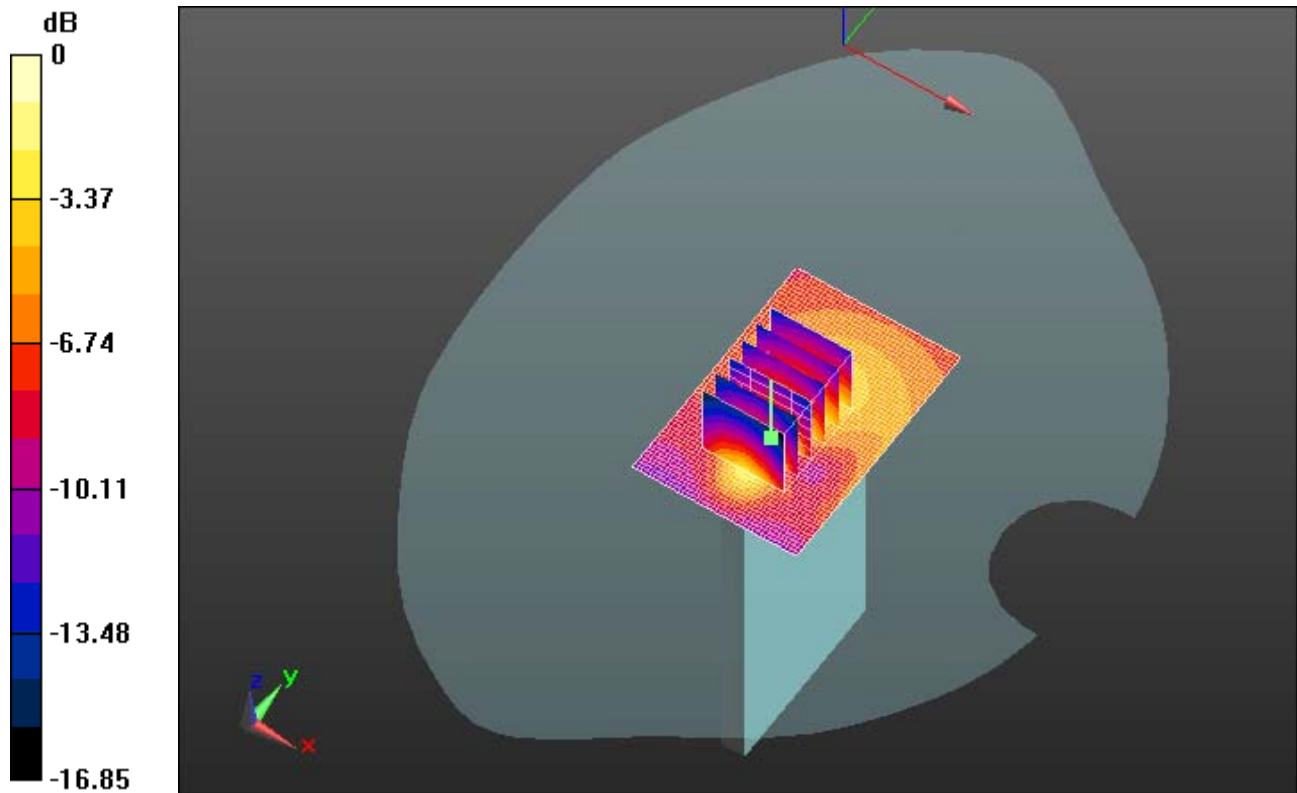
Peak SAR (extrapolated) = 0.4020

SAR(1 g) = 0.213 mW/g; SAR(10 g) = 0.112 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.274 mW/g

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0 dB = 0.270mW/g = -11.37 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/7/2012 5:02:26 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Front_Headset_GPRS850_mid_chan_amb_temp_23.1_liq_temp_21.5C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: GPRS 850; Frequency: 836.8 MHz

Medium parameters used (interpolated): $f = 836.8 \text{ MHz}$; $\sigma = 0.979 \text{ mho/m}$; $\epsilon_r = 52.747$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.787 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 23.323 V/m; Power Drift = 1.4e-005 dB

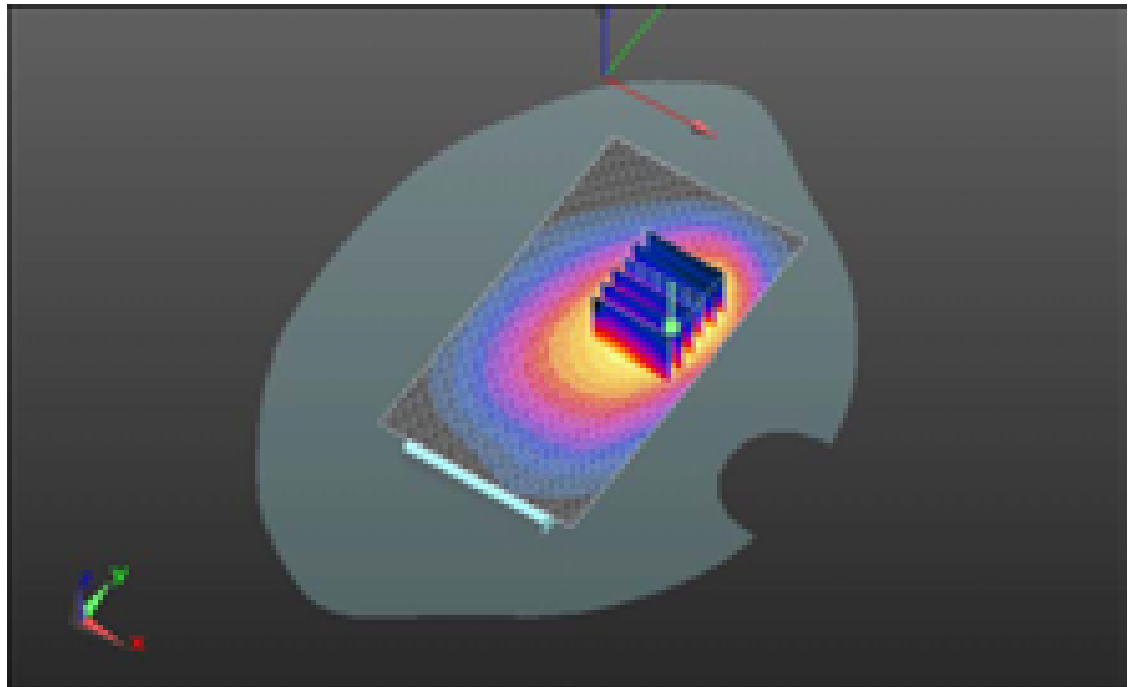
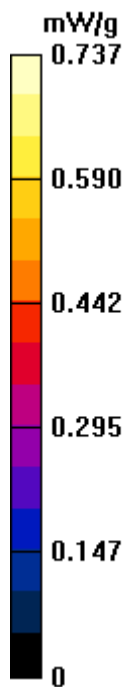
Peak SAR (extrapolated) = 0.9150

SAR(1 g) = 0.656 mW/g; SAR(10 g) = 0.469 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.737 mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/7/2012 12:49:26 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_EDGE850_3-slots_mid_chan_amb_
temp_23.3_liq_temp_21.1C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: EDGE 850 (3 slots); Frequency: 836.8 MHz

Medium parameters used (interpolated): $f = 836.8$ MHz; $\sigma = 0.979$ mho/m; $\epsilon_r = 52.747$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.820 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 25.628 V/m; Power Drift = -0.16 dB

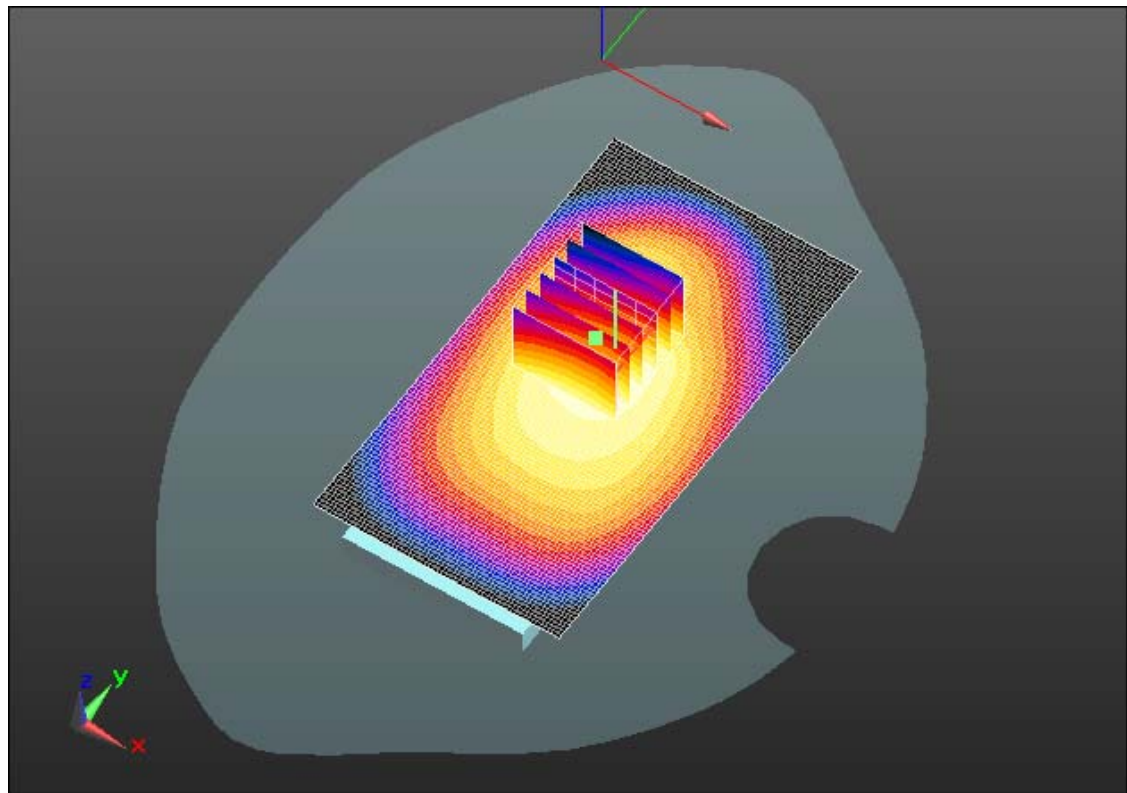
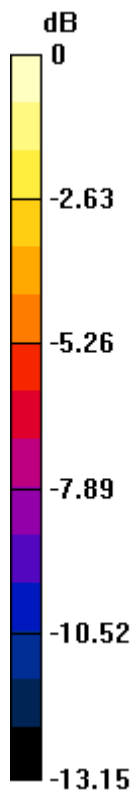
Peak SAR (extrapolated) = 0.9840

SAR(1 g) = 0.712 mW/g; SAR(10 g) = 0.517 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.789 mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 0.790mW/g = -2.05 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/7/2012 1:17:40 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_EDGE850_4-slots_mid_chan_amb_
temp_23.3_liq_temp_21.1C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: EDGE 850 (4 slots); Frequency: 836.8 MHz

Medium parameters used (interpolated): $f = 836.8 \text{ MHz}$; $\sigma = 0.979 \text{ mho/m}$; $\epsilon_r = 52.747$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.663 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 24.054 V/m ; Power Drift = -0.13 dB

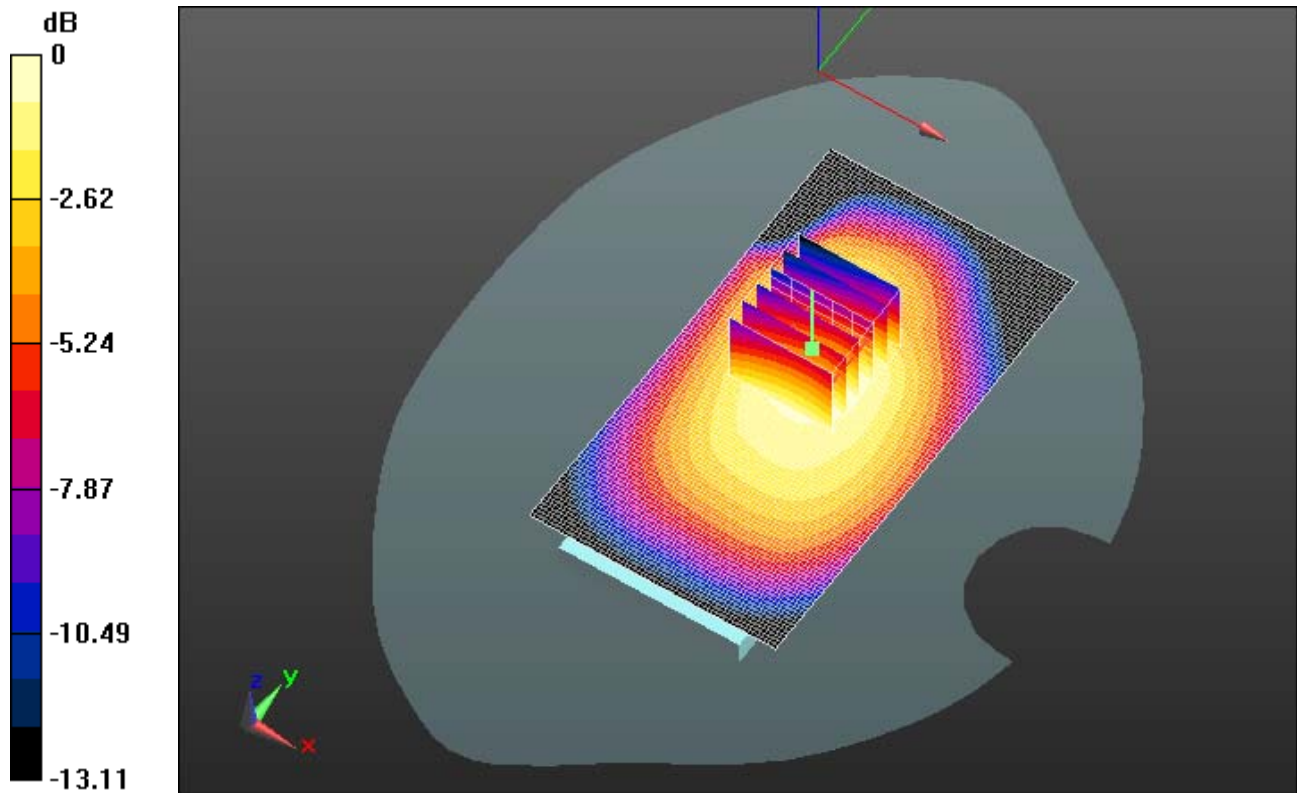
Peak SAR (extrapolated) = 0.8330

SAR(1 g) = 0.587 mW/g ; SAR(10 g) = 0.430 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.660 mW/g

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0 dB = 0.660mW/g = -3.61 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 9/21/2012 1:41:15 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Front_GPRS850_mid_chan_amb_temp_23.9_liq_t
emp_22.4C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A8C7018

Communication System: GPRS 850; Frequency: 836.8 MHz

Medium parameters used (interpolated): $f = 836.8$ MHz; $\sigma = 0.976$ mho/m; $\epsilon_r = 54.207$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.980 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 28.268 V/m; Power Drift = -0.08 dB

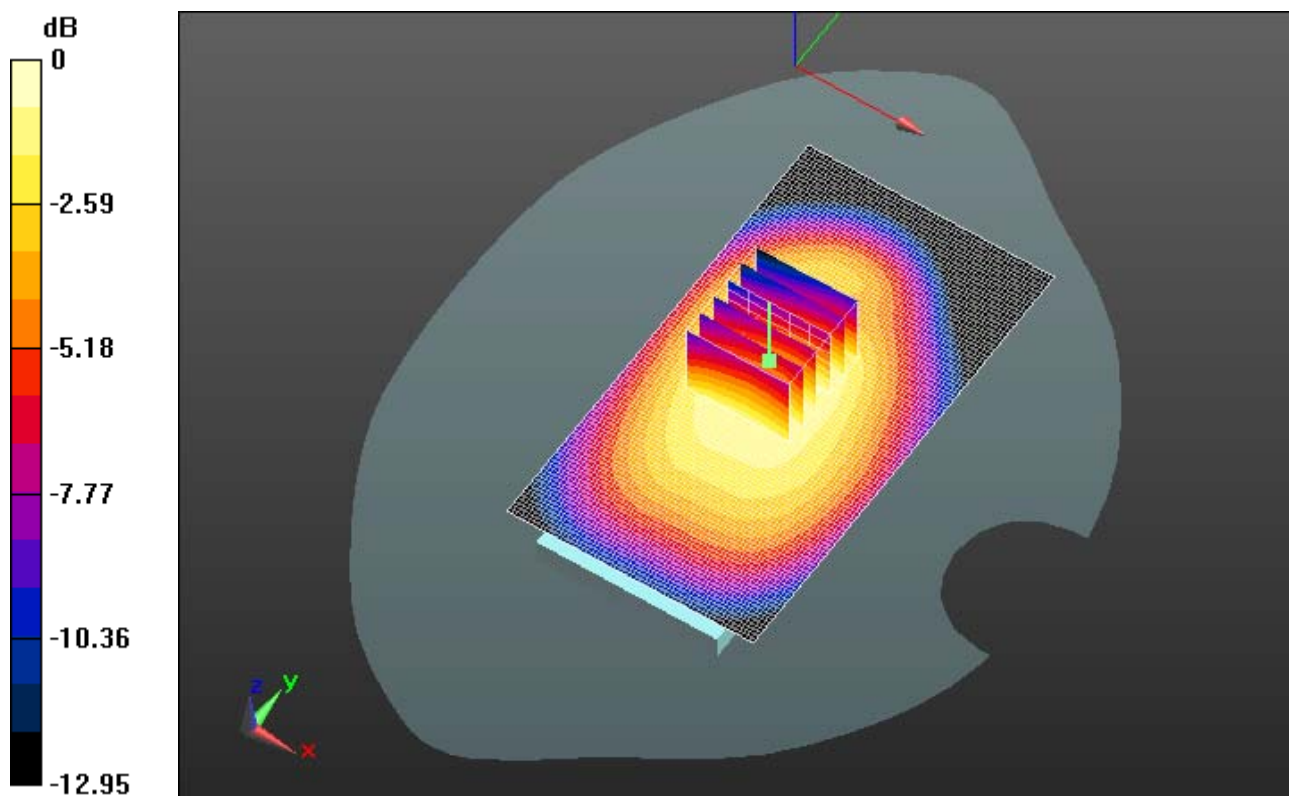
Peak SAR (extrapolated) = 1.2620

SAR(1 g) = 0.848 mW/g; SAR(10 g) = 0.607 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.960 mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 0.960mW/g = -0.35 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/5/2012 11:05:17 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_UMTS_Band_V_low_chan_amb_temp_23.1
_liq_temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: WCDMA FDD V; Frequency: 826.4 MHz

Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.957$ mho/m; $\epsilon_r = 53.208$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.979 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 28.300 V/m; Power Drift = 0.04 dB

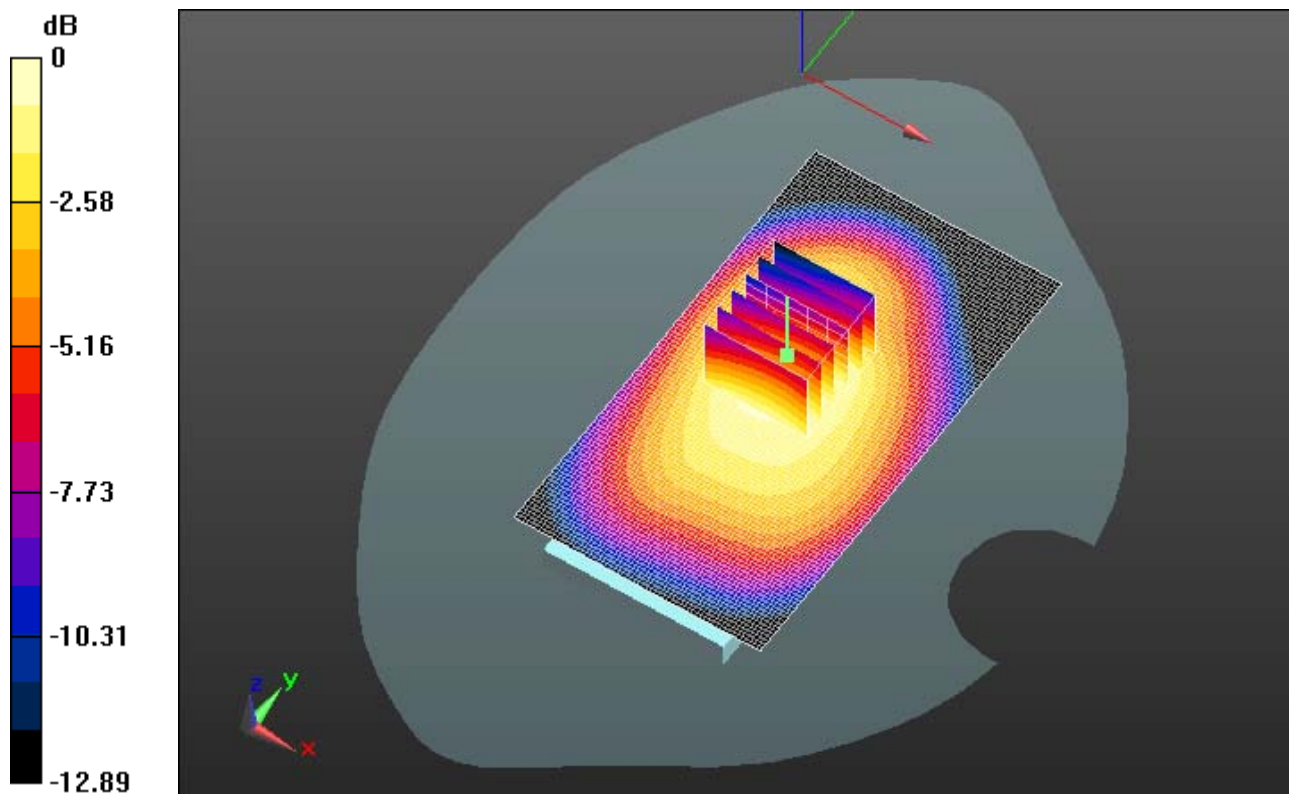
Peak SAR (extrapolated) = 1.2210

SAR(1 g) = 0.866 mW/g; SAR(10 g) = 0.625 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.975 mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 0.970mW/g = -0.26 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/5/2012 10:45:42 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_UMTS_Band_V_mid_chan_amb_temp_23.2
_liq_temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: WCDMA FDD V; Frequency: 836.4 MHz

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 0.966$ mho/m; $\epsilon_r = 53.137$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.026 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 29.132 V/m; Power Drift = -0.0077 dB

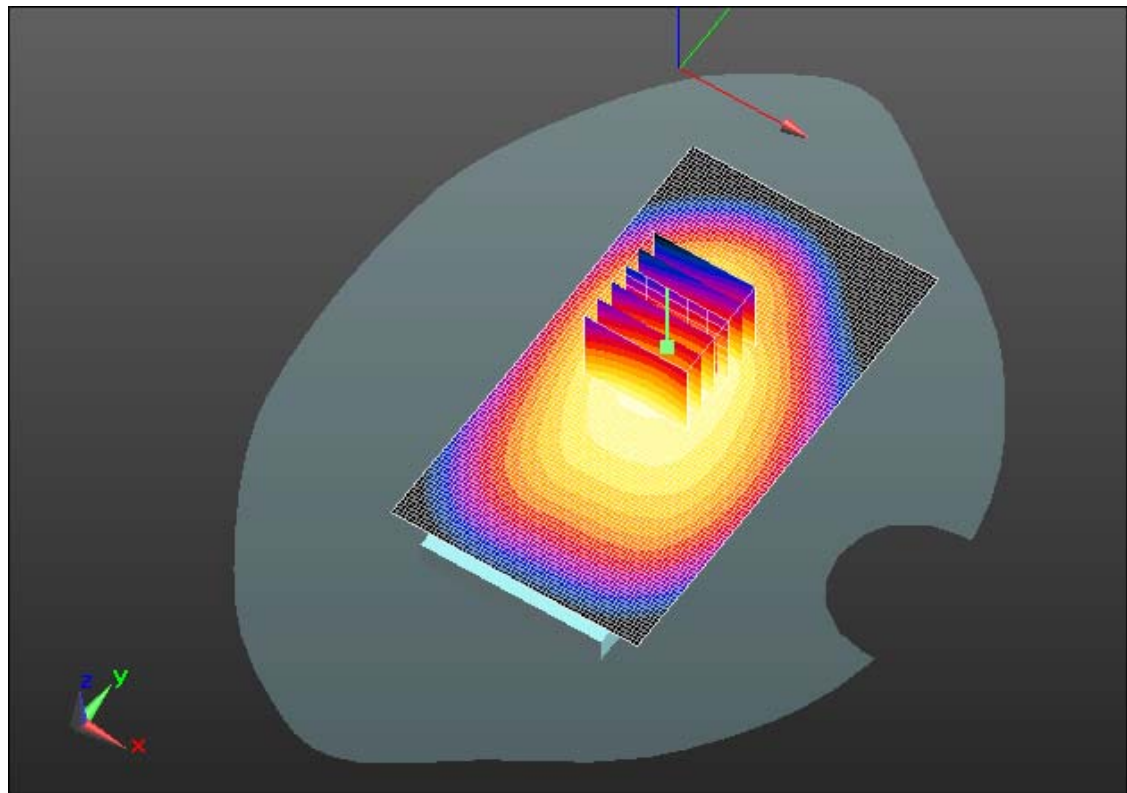
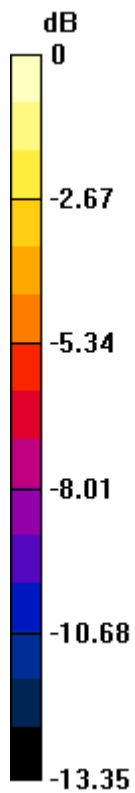
Peak SAR (extrapolated) = 1.2910

SAR(1 g) = 0.912 mW/g; SAR(10 g) = 0.660 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.039 mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 1.040mW/g = 0.34 dB mW/g

	Document Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			Page 76(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/5/2012 11:24:35 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_UMTS_Band_V_high_chan_amb_temp_23.3
_liq_temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: WCDMA FDD V; Frequency: 846.6 MHz

Medium parameters used (interpolated): $f = 846.6 \text{ MHz}$; $\sigma = 0.976 \text{ mho/m}$; $\epsilon_r = 53.02$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.753 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 25.104 V/m ; Power Drift = -0.06 dB

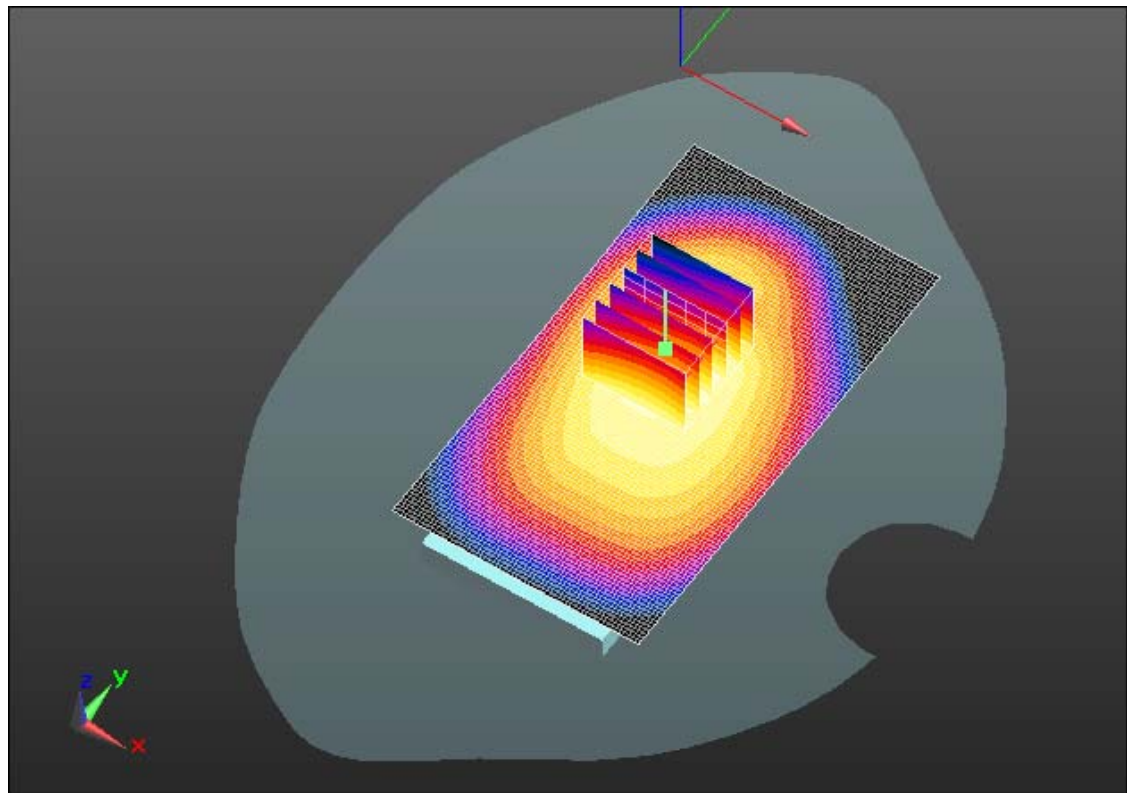
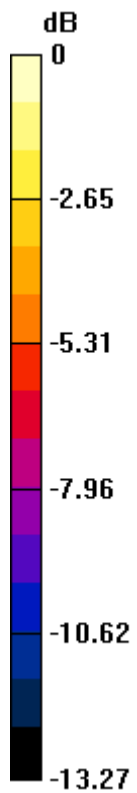
Peak SAR (extrapolated) = 0.9510

SAR(1 g) = 0.667 mW/g ; SAR(10 g) = 0.487 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.758 mW/g

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0 dB = 0.760mW/g = -2.38 dB mW/g

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Date/Time: 6/6/2012 1:01:04 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Front_UMTS_Band_V_low_chan_amb_temp_23.3
_liq_temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: WCDMA FDD V; Frequency: 826.4 MHz

Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.957$ mho/m; $\epsilon_r = 53.208$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.913 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 28.185 V/m; Power Drift = -0.10 dB

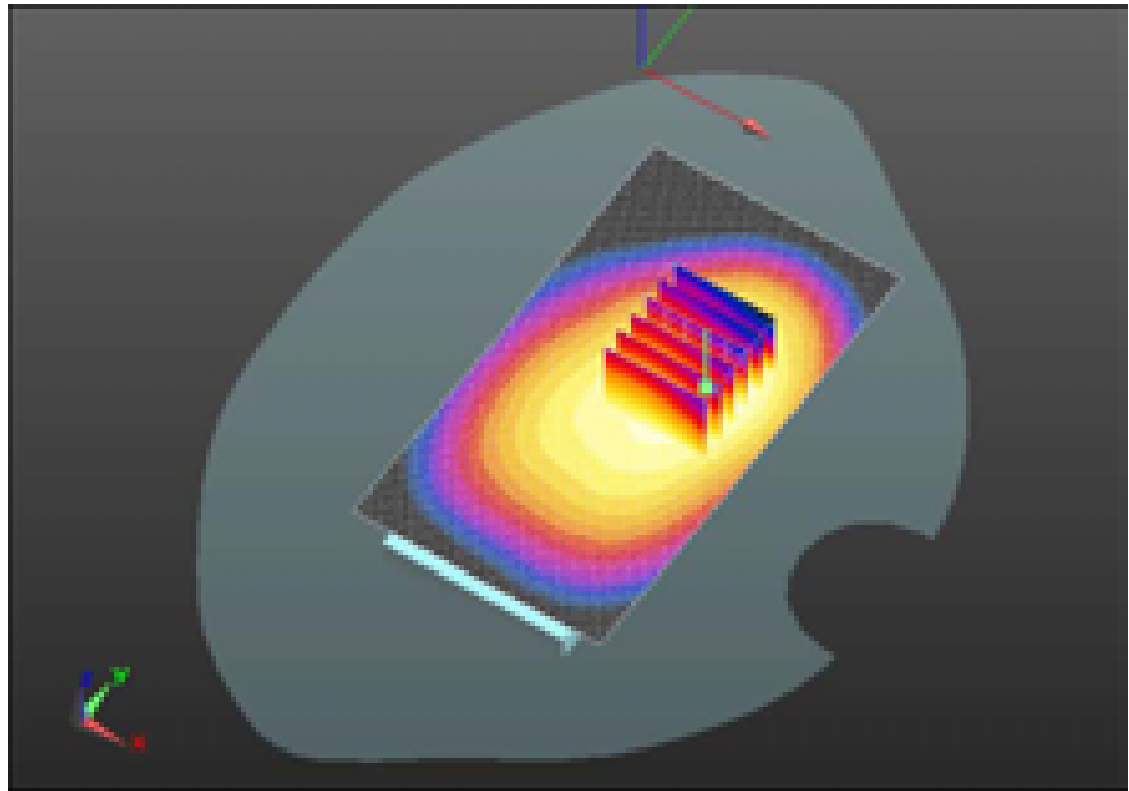
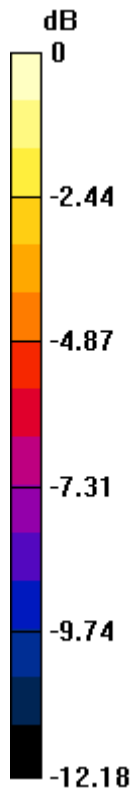
Peak SAR (extrapolated) = 1.1140

SAR(1 g) = 0.829 mW/g; SAR(10 g) = 0.610 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.930 mW/g

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0 dB = 0.930mW/g = -0.63 dB mW/g

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Date/Time: 6/6/2012 12:26:42 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Front_UMTS_Band_V_mid_chan_amb_temp_23.0
_liq_temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: WCDMA FDD V; Frequency: 836.4 MHz

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 0.966$ mho/m; $\epsilon_r = 53.137$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.969 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 28.385 V/m; Power Drift = 0.05 dB

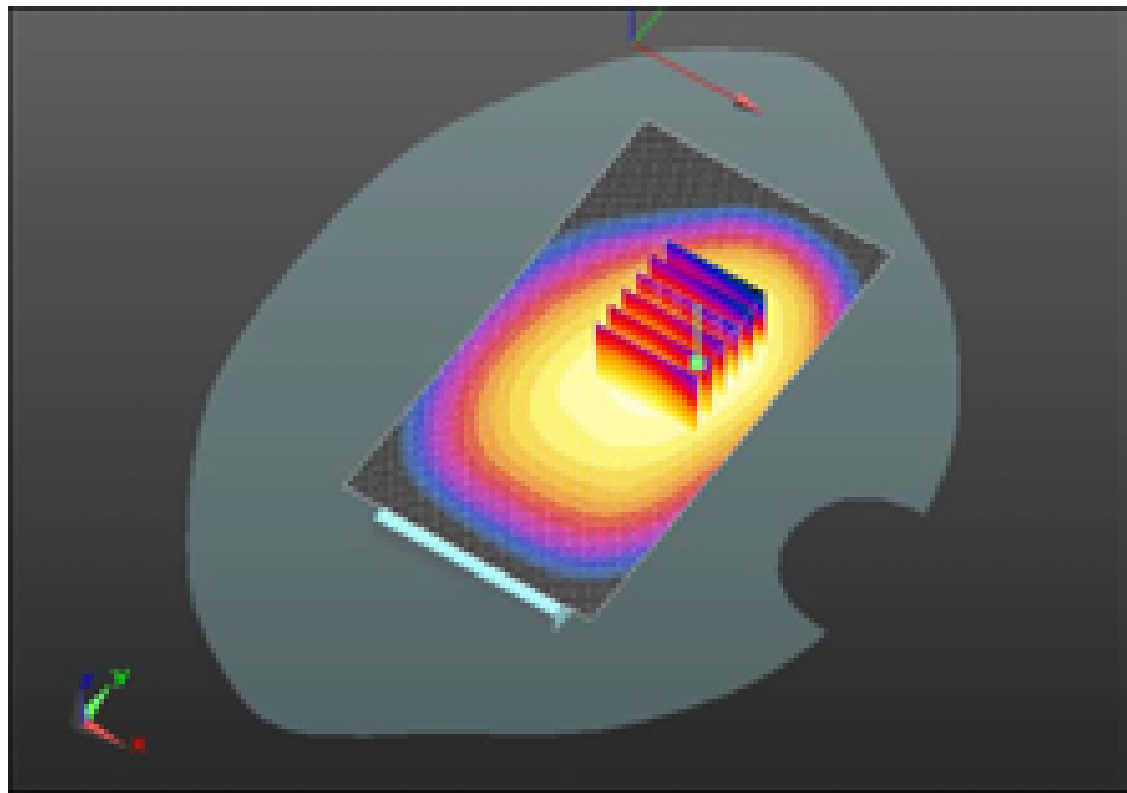
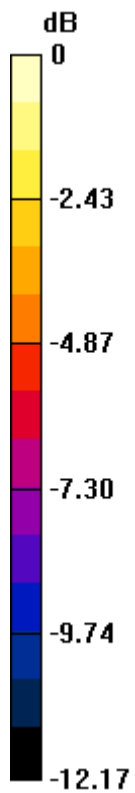
Peak SAR (extrapolated) = 1.1690

SAR(1 g) = 0.872 mW/g; SAR(10 g) = 0.644 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.979 mW/g

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0 dB = 0.980mW/g = -0.18 dB mW/g

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Date/Time: 6/6/2012 1:22:10 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Front_UMTS_Band_V_high_chan_amb_temp_23.
3_liq_temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: WCDMA FDD V; Frequency: 846.6 MHz

Medium parameters used (interpolated): $f = 846.6 \text{ MHz}$; $\sigma = 0.976 \text{ mho/m}$; $\epsilon_r = 53.02$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.732 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 25.012 V/m ; Power Drift = -0.06 dB

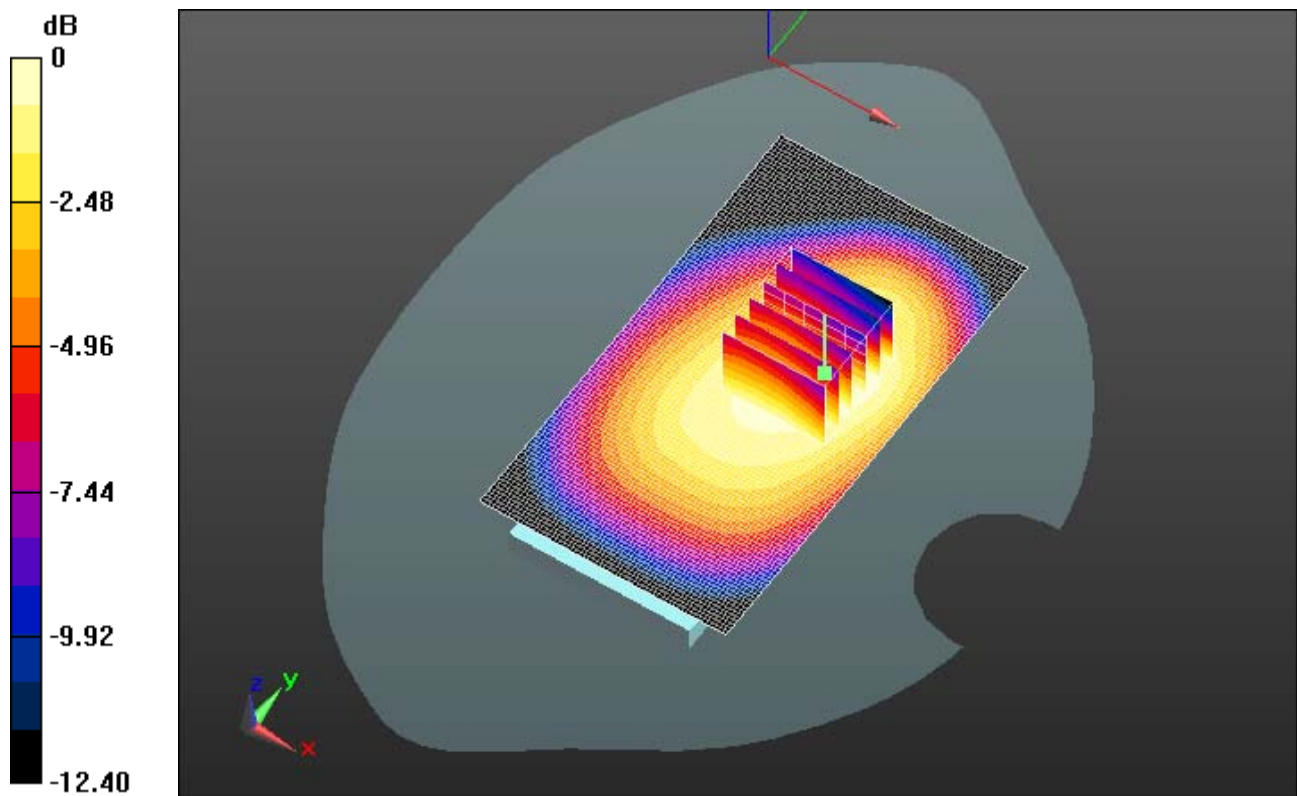
Peak SAR (extrapolated) = 0.8700

SAR(1 g) = 0.649 mW/g ; SAR(10 g) = 0.480 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.720 mW/g

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0 dB = 0.720mW/g = -2.85 dB mW/g

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Date/Time: 6/5/2012 10:26:17 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Left_UMTS_Band_V_mid_chan_amb_temp_23.1C
_liq_temp_21.2C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: WCDMA FDD V; Frequency: 836.4 MHz

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 0.966$ mho/m; $\epsilon_r = 53.137$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.644 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 26.641 V/m; Power Drift = 0.06 dB

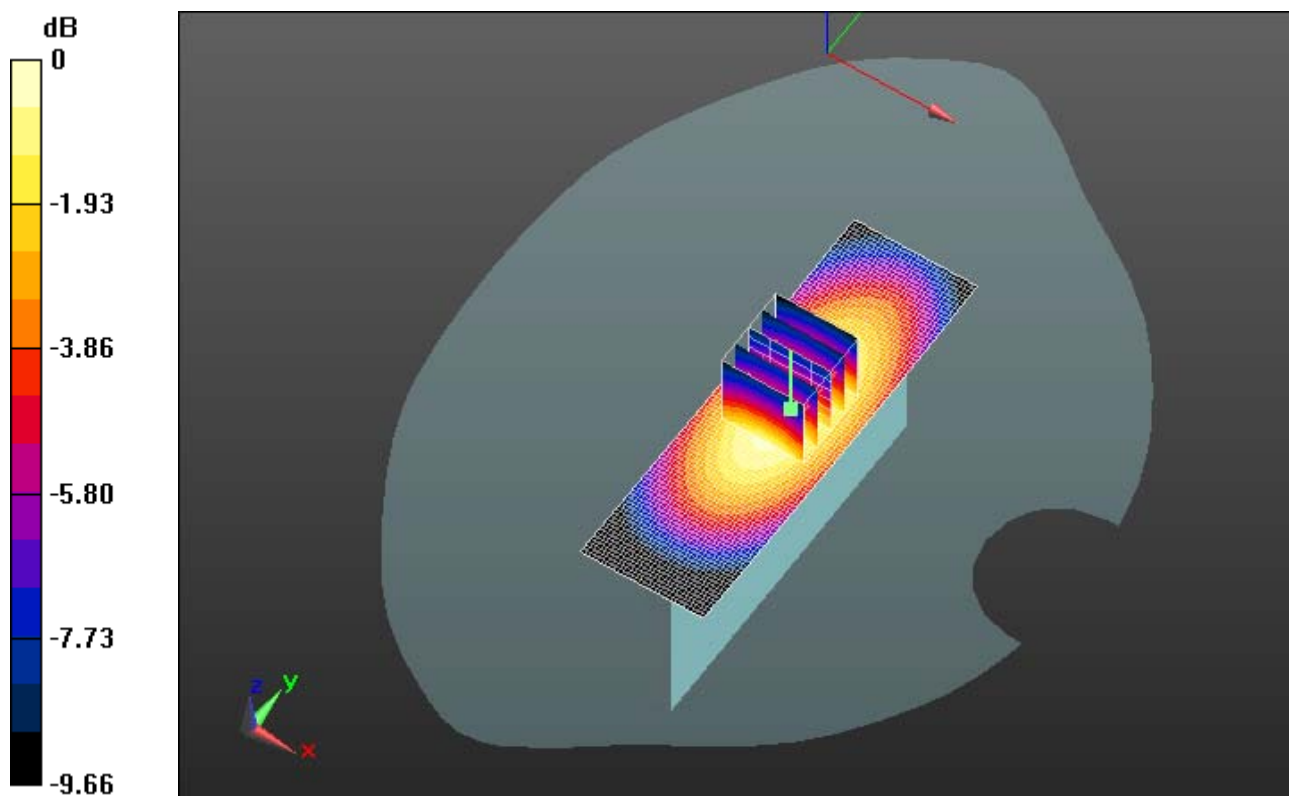
Peak SAR (extrapolated) = 0.8090

SAR(1 g) = 0.579 mW/g; SAR(10 g) = 0.397 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.666 mW/g

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0 dB = 0.670mW/g = -3.48 dB mW/g

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Date/Time: 6/5/2012 10:11:32 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Right_UMTS_Band_V_mid_chan_amb_temp_22.8
C_liq_temp_21.2C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: WCDMA FDD V; Frequency: 836.4 MHz

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 0.966$ mho/m; $\epsilon_r = 53.137$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.902 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 30.950 V/m; Power Drift = 0.0076 dB

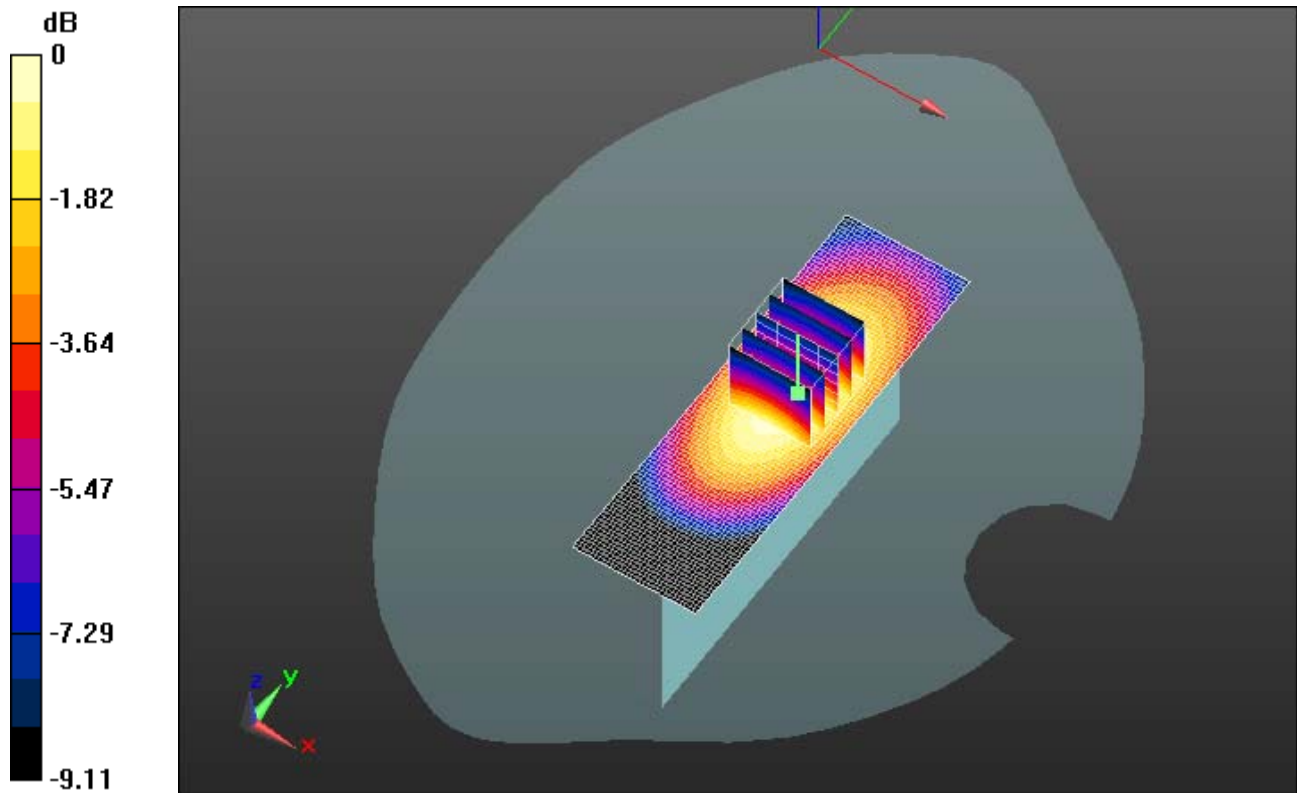
Peak SAR (extrapolated) = 1.1000

SAR(1 g) = 0.790 mW/g; SAR(10 g) = 0.548 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.901 mW/g

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0 dB = 0.900mW/g = -0.92 dB mW/g

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Date/Time: 6/5/2012 9:49:01 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Bottom_UMTS_Band_V_mid_chan_amb_temp_22
.8_liq_temp_21.2C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: WCDMA FDD V; Frequency: 836.4 MHz

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 0.966$ mho/m; $\epsilon_r = 53.137$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (41x61x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.234 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 16.127 V/m; Power Drift = -0.13 dB

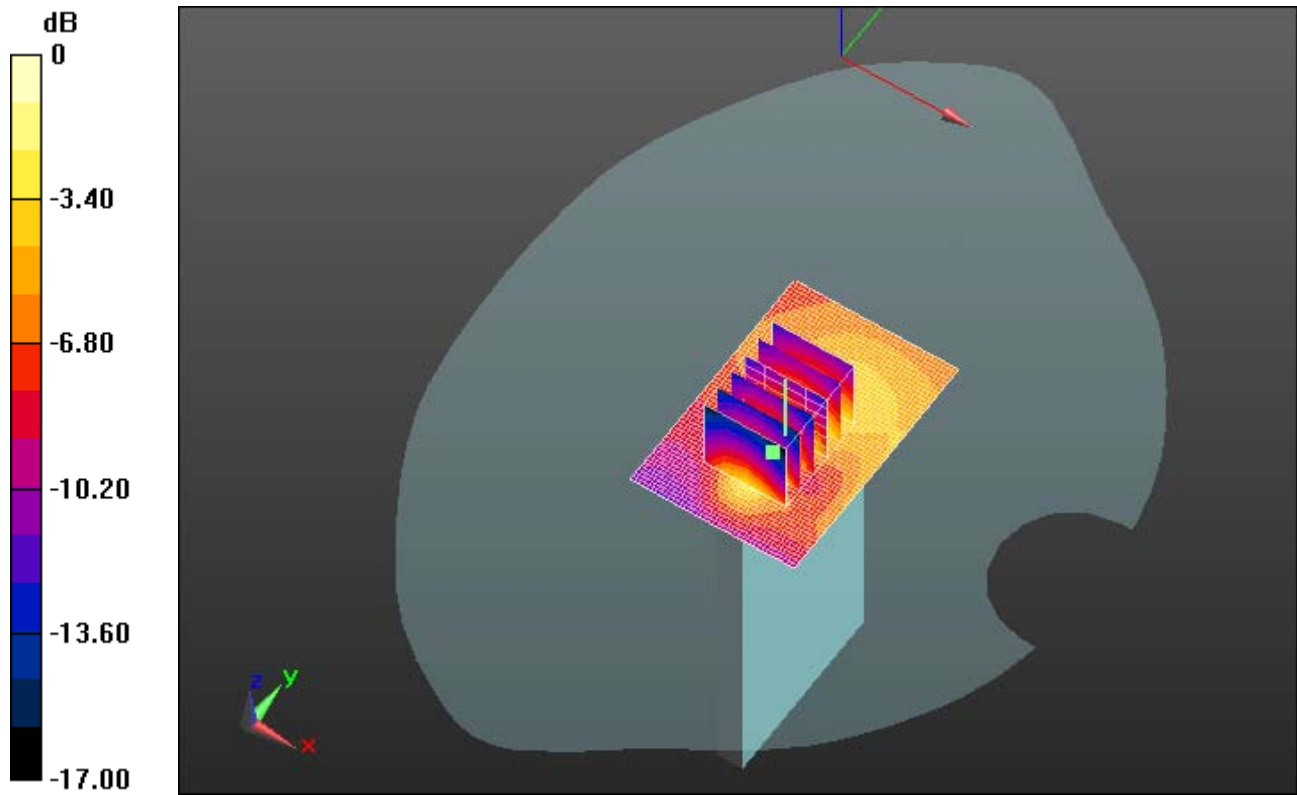
Peak SAR (extrapolated) = 0.3540

SAR(1 g) = 0.196 mW/g; SAR(10 g) = 0.107 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.248 mW/g

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0 dB = 0.250mW/g = -12.04 dB mW/g

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Date/Time: 6/6/2012 2:05:30 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_Headset_UMTS_Band_V_mid_chan_amb_t
emp_23.3_liq_temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: WCDMA FDD V; Frequency: 836.4 MHz

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 0.966$ mho/m; $\epsilon_r = 53.137$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.935 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 25.642 V/m; Power Drift = 0.03 dB

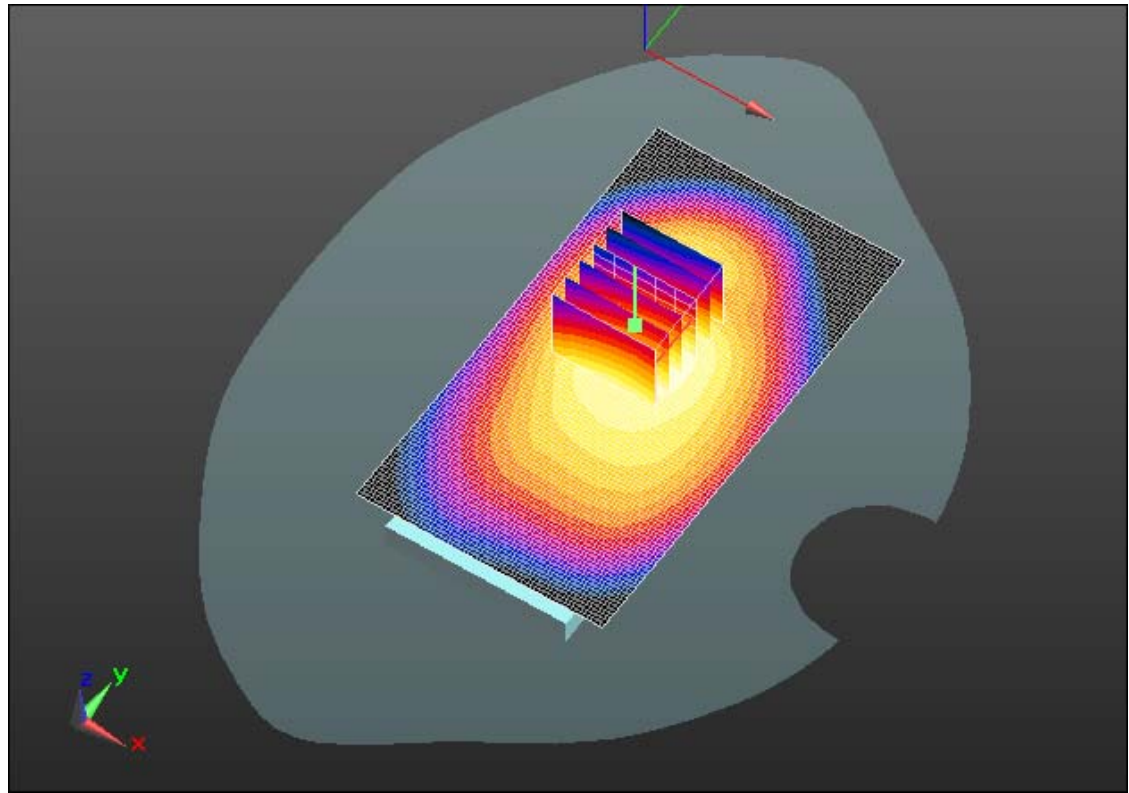
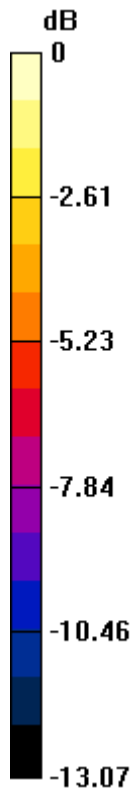
Peak SAR (extrapolated) = 1.1400

SAR(1 g) = 0.804 mW/g; SAR(10 g) = 0.573 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.903 mW/g

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0 dB = 0.900mW/g = -0.92 dB mW/g

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Date/Time: 9/21/2012 1:41:15 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_UMTS_Band_V_mid_chan_amb_temp_23.9
_liq_temp_22.4C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A8C7018

Communication System: WCDMA FDD V; Frequency: 836.4 MHz

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 0.975$ mho/m; $\epsilon_r = 54.209$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.07, 6.07, 6.07); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.892 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 27.218 V/m; Power Drift = -0.07 dB

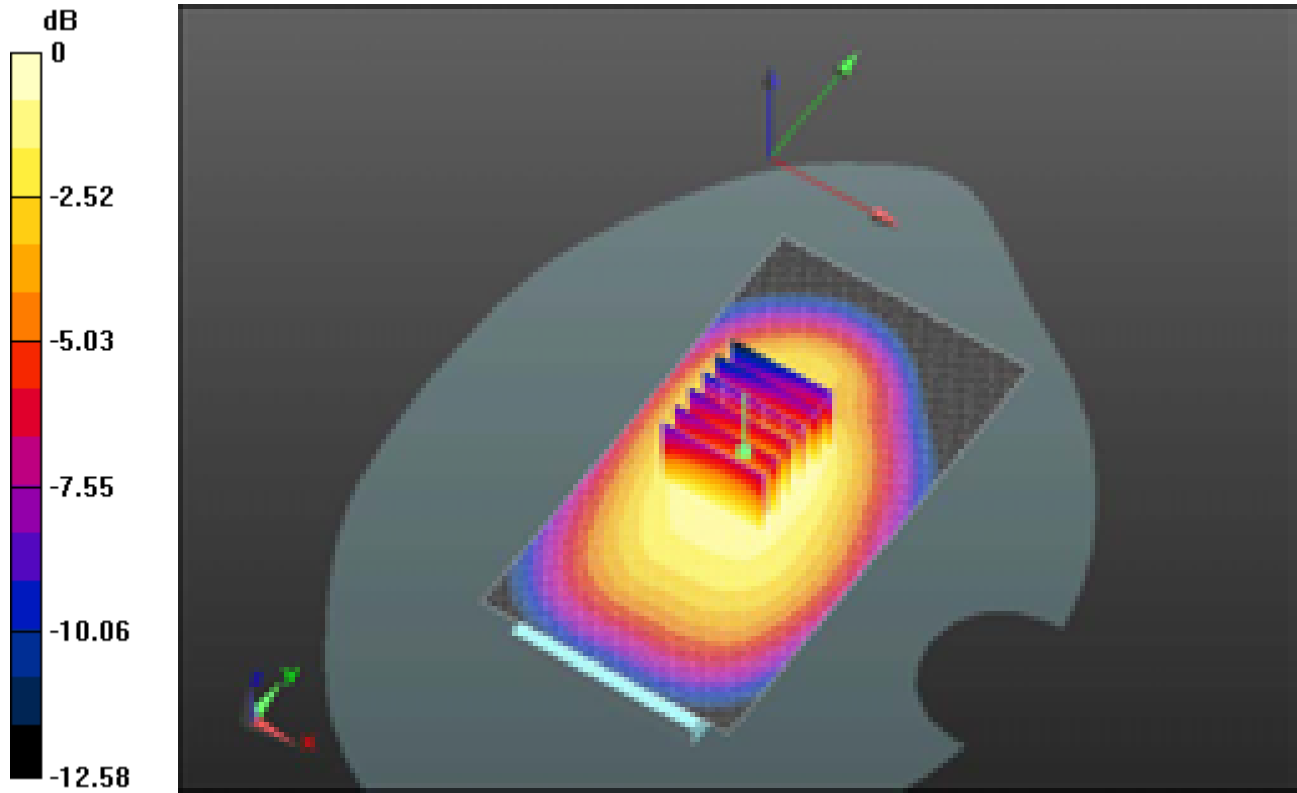
Peak SAR (extrapolated) = 1.1090

SAR(1 g) = 0.783 mW/g; SAR(10 g) = 0.569 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.877 mW/g

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0 dB = 0.880mW/g = -1.11 dB mW/g

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Date/Time: 6/14/2012 8:48:38 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_4_mid_chan_QPSK_RB_1_Offset_0_a
mb_temp_23.5_liq_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.287$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS2 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.919 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 12.640 V/m; Power Drift = -0.13 dB

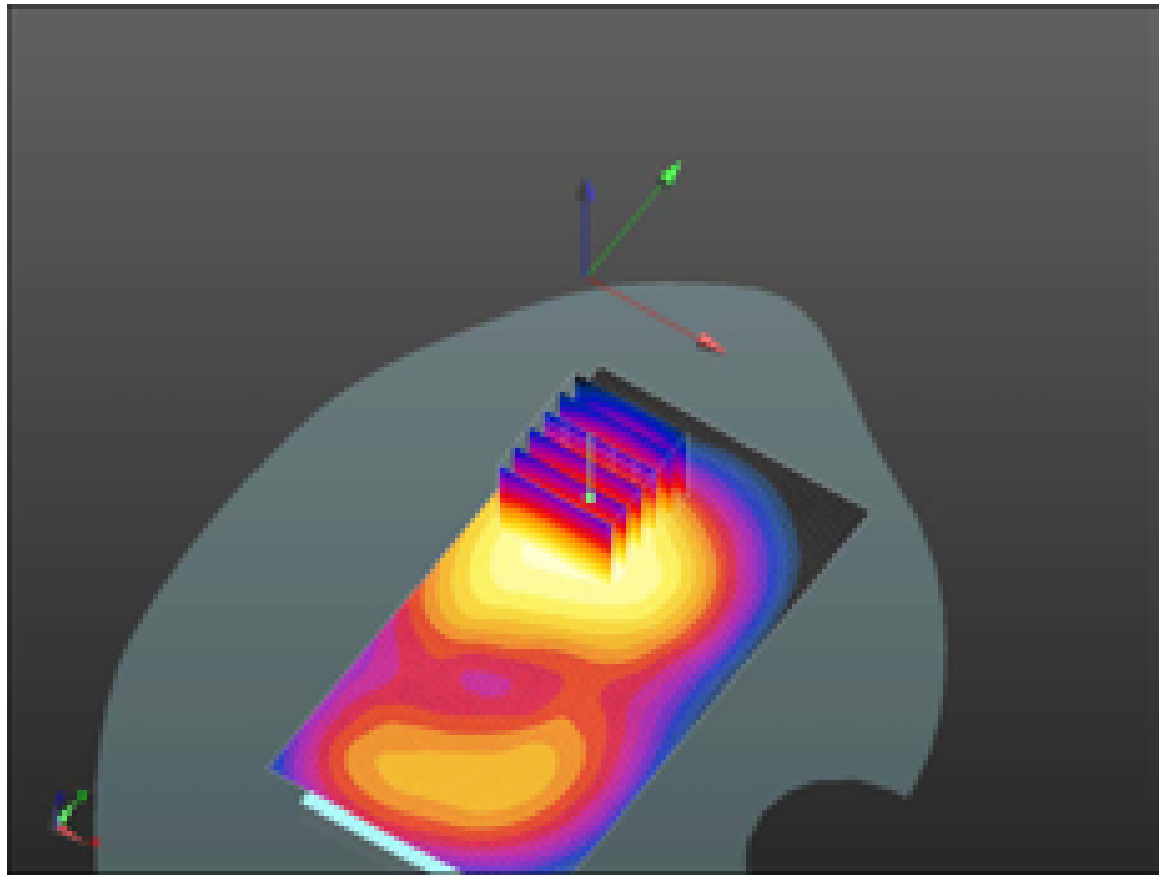
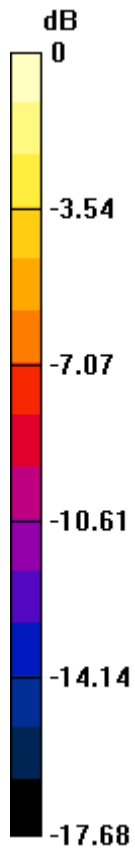
Peak SAR (extrapolated) = 2.5230

SAR(1 g) = 1.5 mW/g; SAR(10 g) = 0.909 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.829 mW/g

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0 dB = 1.830mW/g = 5.25 dB mW/g

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Date/Time: 6/14/2012 9:08:42 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_4_mid_chan_QPSK_RB_1_Offset_99_amb_temp_22.8_liq_temp_21.6C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.287$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.738 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 12.047 V/m; Power Drift = -0.03 dB

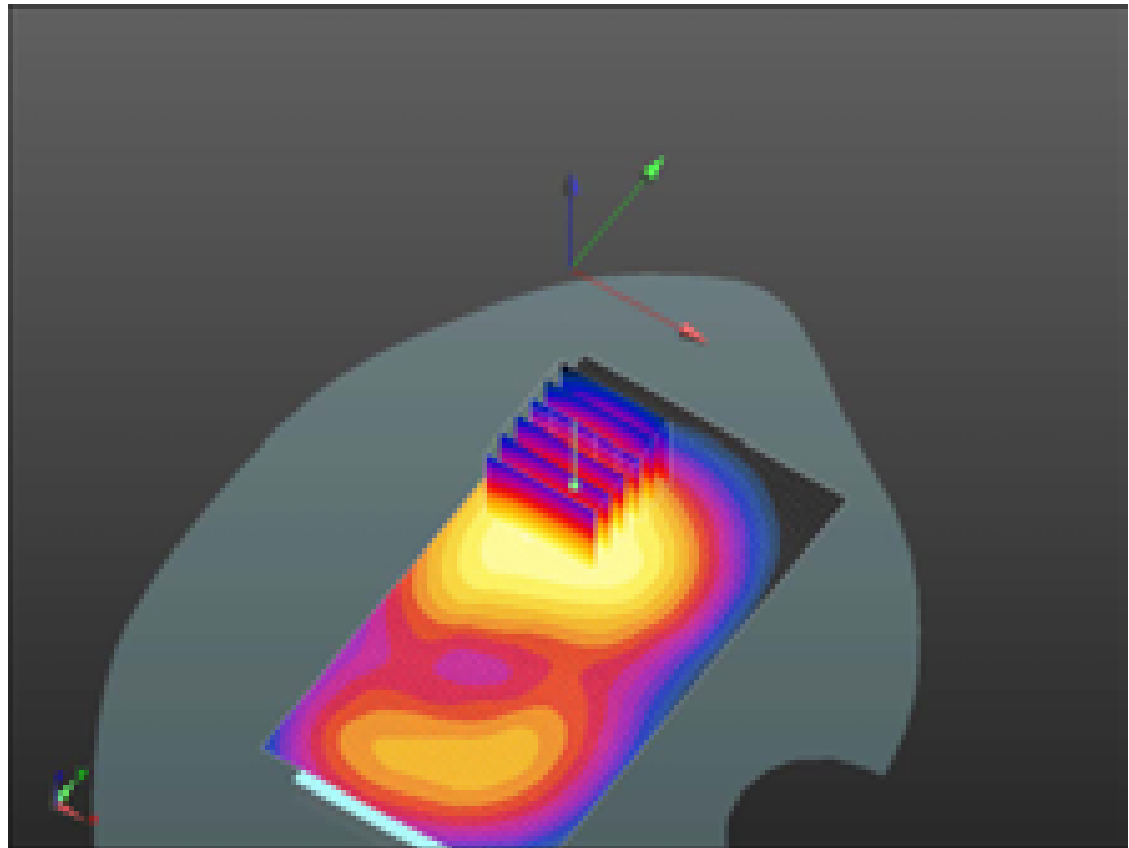
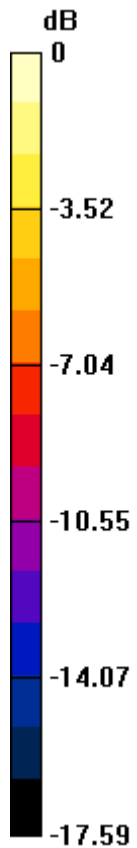
Peak SAR (extrapolated) = 2.3260

SAR(1 g) = 1.36 mW/g; SAR(10 g) = 0.805 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.689 mW/g

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0 dB = 1.690mW/g = 4.56 dB mW/g

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Date/Time: 6/14/2012 12:17:58 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_4_mid_chan_QPSK_RB_50_Offset_0_amb_temp_22.8_liq_temp_21.4C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.287$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.561 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 12.612 V/m; Power Drift = -0.16 dB

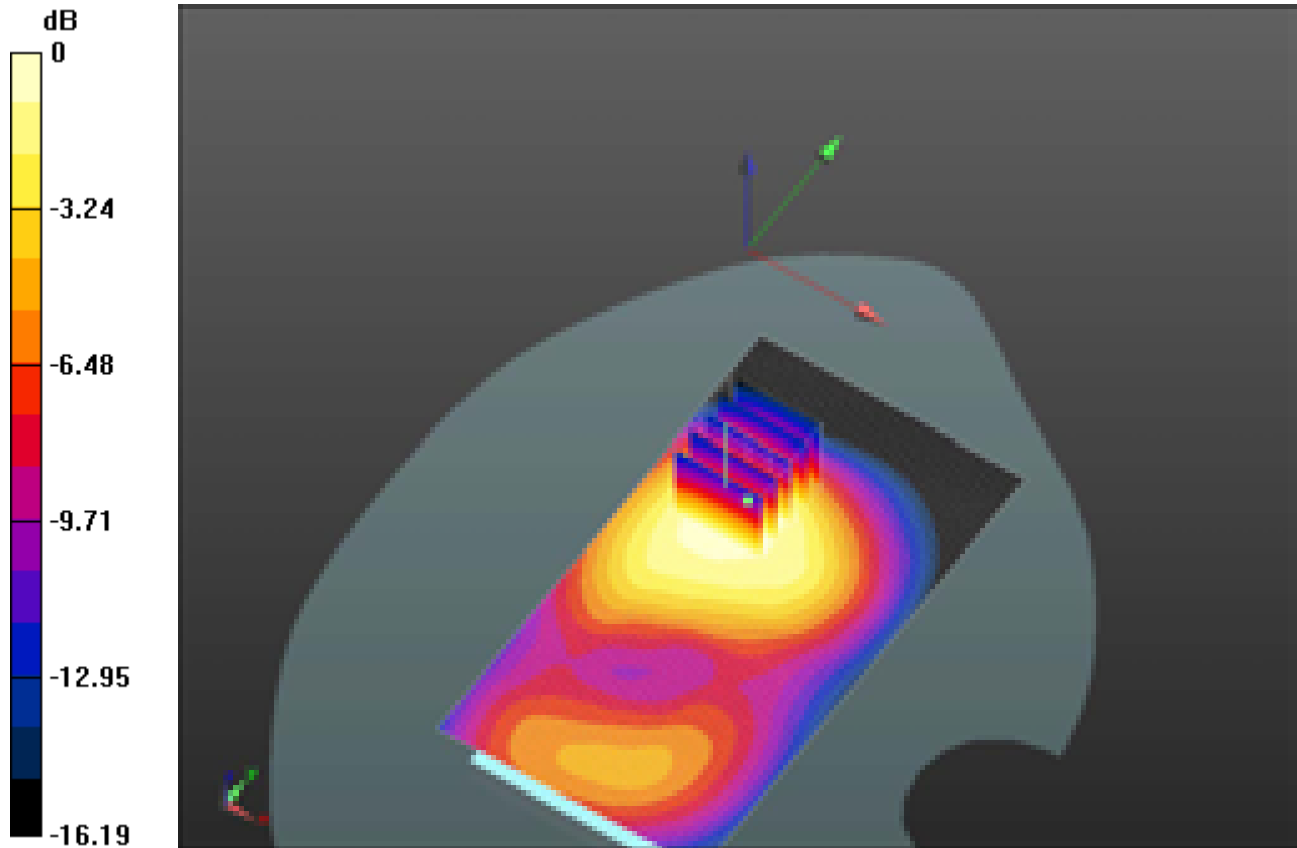
Peak SAR (extrapolated) = 1.9530

SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.671 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.331 mW/g

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0 dB = 1.330mW/g = 2.48 dB mW/g

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Date/Time: 6/14/2012 12:46:47 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_4_mid_chan_16QAM_RB_1_Offset_0_amb_temp_23.0_liq_temp_21.7C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.287$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.446 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 10.544 V/m; Power Drift = -0.28 dB

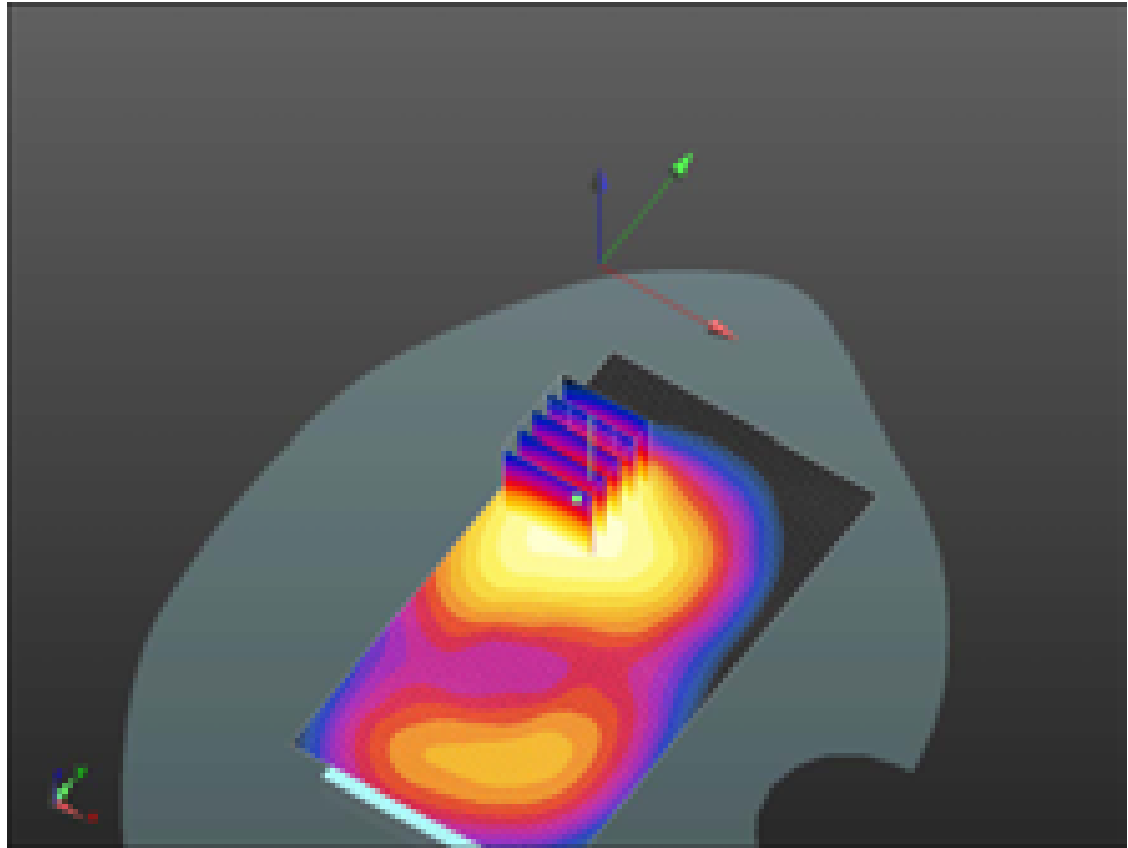
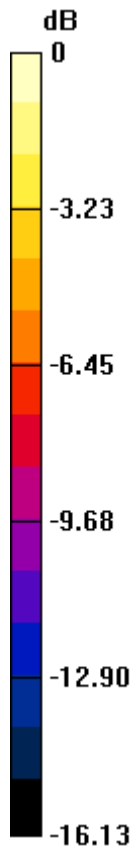
Peak SAR (extrapolated) = 1.7470

SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.634 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.243 mW/g

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0 dB = 1.240mW/g = 1.87 dB mW/g

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Date/Time: 6/14/2012 2:55:25 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_4_mid_chan_16QAM_RB_1_Offset_99
_amb_temp_22.9_liq_temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.287$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.499 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 11.667 V/m; Power Drift = -0.29 dB

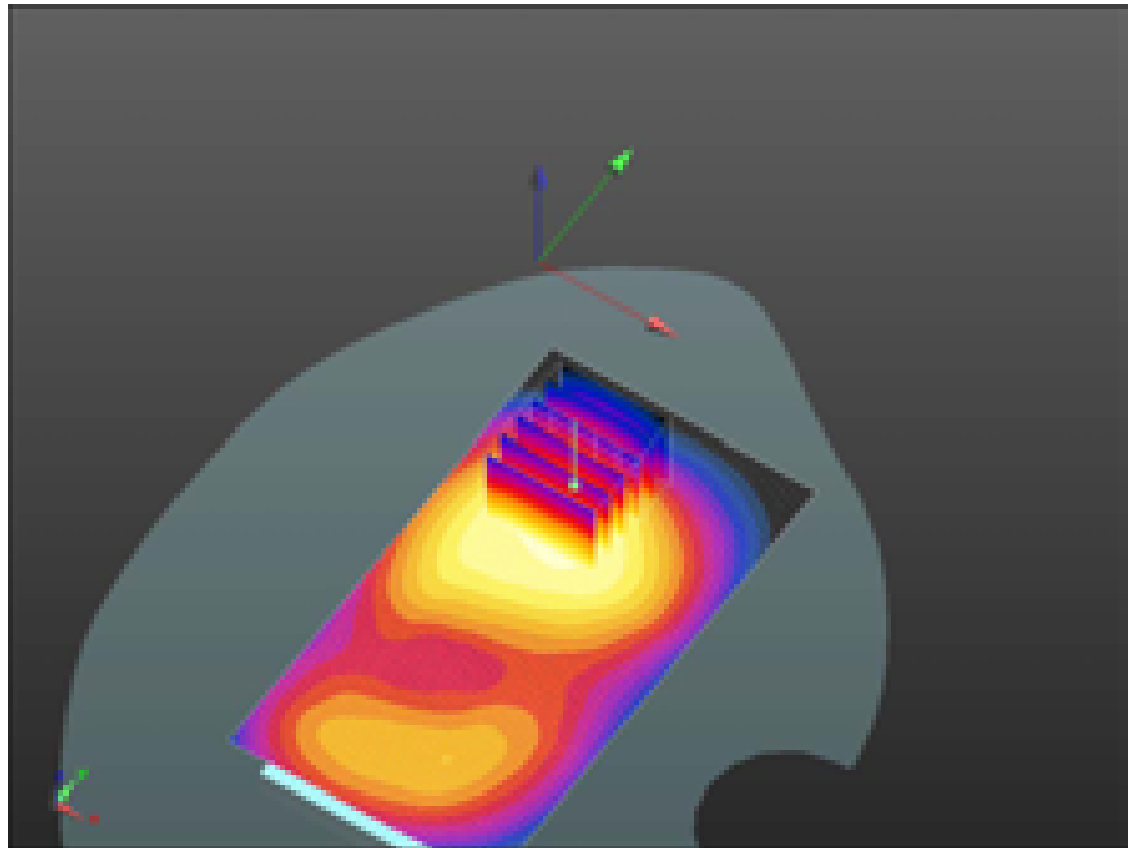
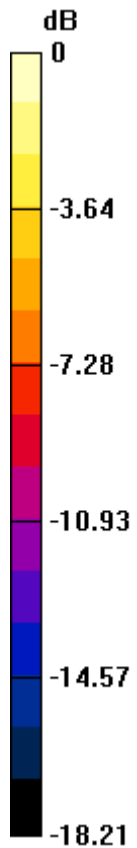
Peak SAR (extrapolated) = 1.9700

SAR(1 g) = 1.16 mW/g; SAR(10 g) = 0.692 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.443 mW/g

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0 dB = 1.440mW/g = 3.17 dB mW/g

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Date/Time: 6/14/2012 3:41:18 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_4_mid_chan_16QAM_RB_75_Offset_0
_amb_temp_22.7_liq_temp_21.6C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.287$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.389 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 10.282 V/m; Power Drift = 0.01 dB

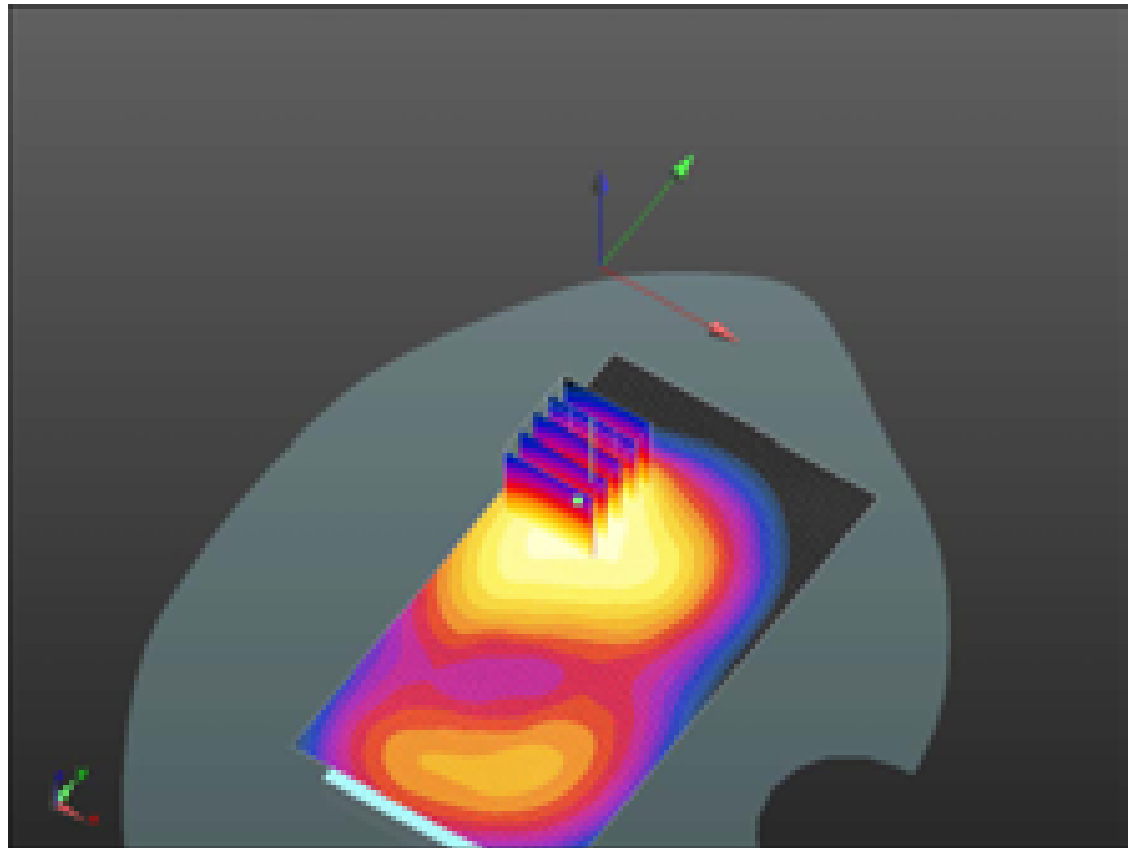
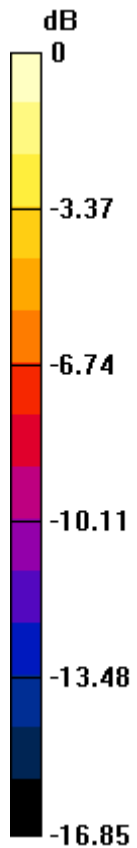
Peak SAR (extrapolated) = 1.7160

SAR(1 g) = 0.996 mW/g; SAR(10 g) = 0.593 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.189 mW/g

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

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Date/Time: 6/14/2012 4:02:10 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Front_LTE_4_mid_chan_QPSK_RB_1_Offset_0_amb_temp_23.1_liq_temp_21.8C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.287$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.312 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 11.073 V/m; Power Drift = -0.21 dB

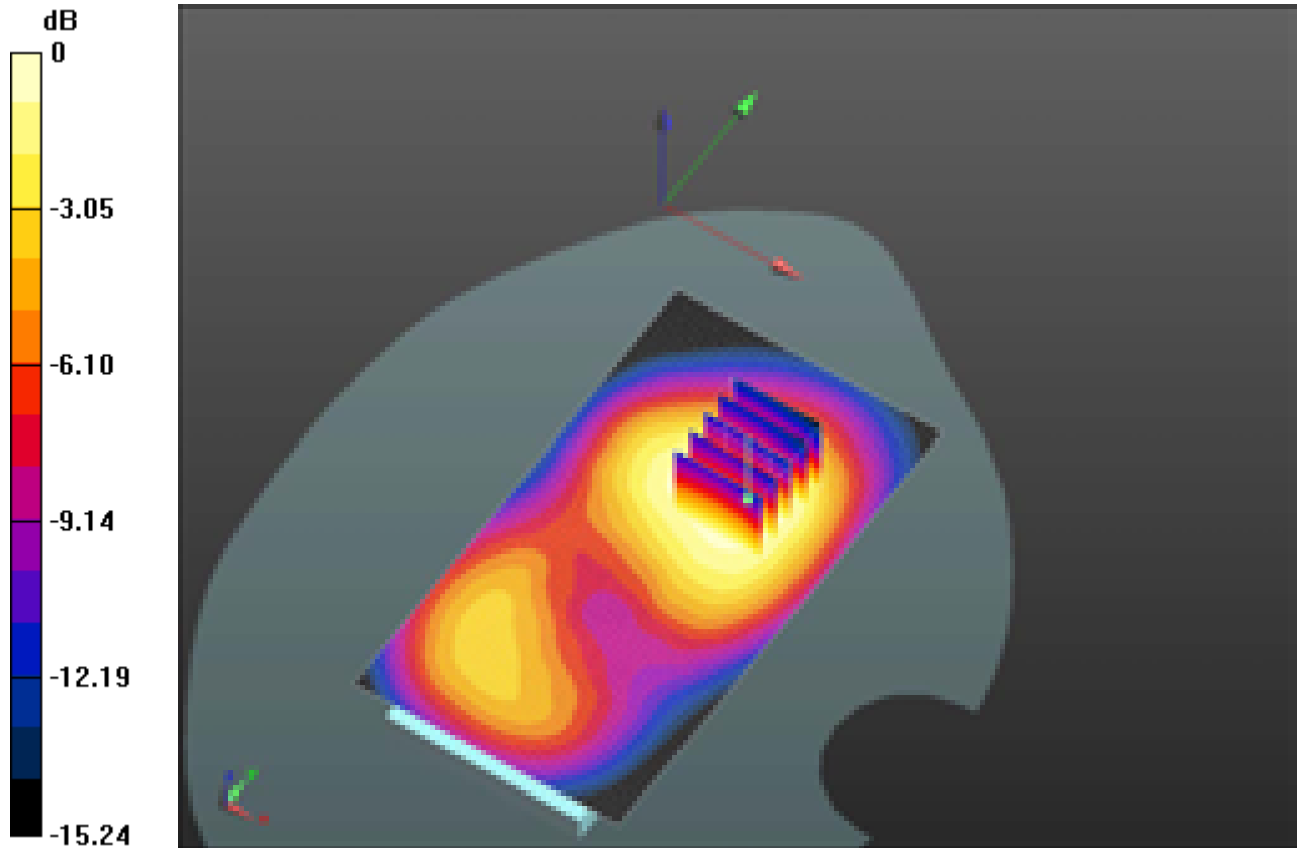
Peak SAR (extrapolated) = 1.6120

SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.652 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.203 mW/g

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0 dB = 1.200mW/g = 1.58 dB mW/g

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Date/Time: 6/14/2012 4:59:46 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Left_LTE_4_mid_chan_QPSK_RB_1_Offset_0
_amb_temp_22.6C_liq_temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.287$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.659 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 14.275 V/m; Power Drift = 0.22 dB

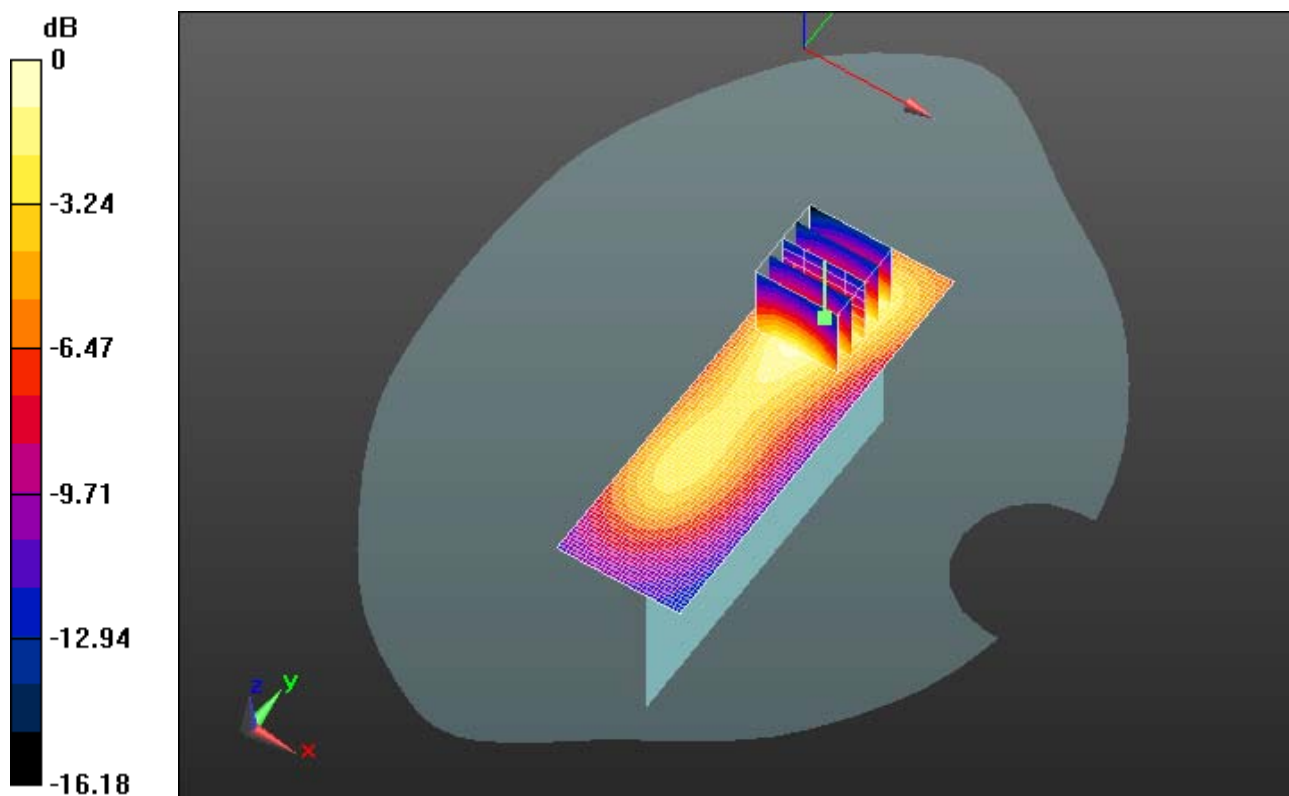
Peak SAR (extrapolated) = 0.8710

SAR(1 g) = 0.528 mW/g; SAR(10 g) = 0.303 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.643 mW/g

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0 dB = 0.640mW/g = -3.88 dB mW/g

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Date/Time: 6/14/2012 4:42:09 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Right_LTE_4_mid_chan_amb_temp_22.9C_liq_temper_21.4C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.287$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.348 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 12.933 V/m; Power Drift = -0.11 dB

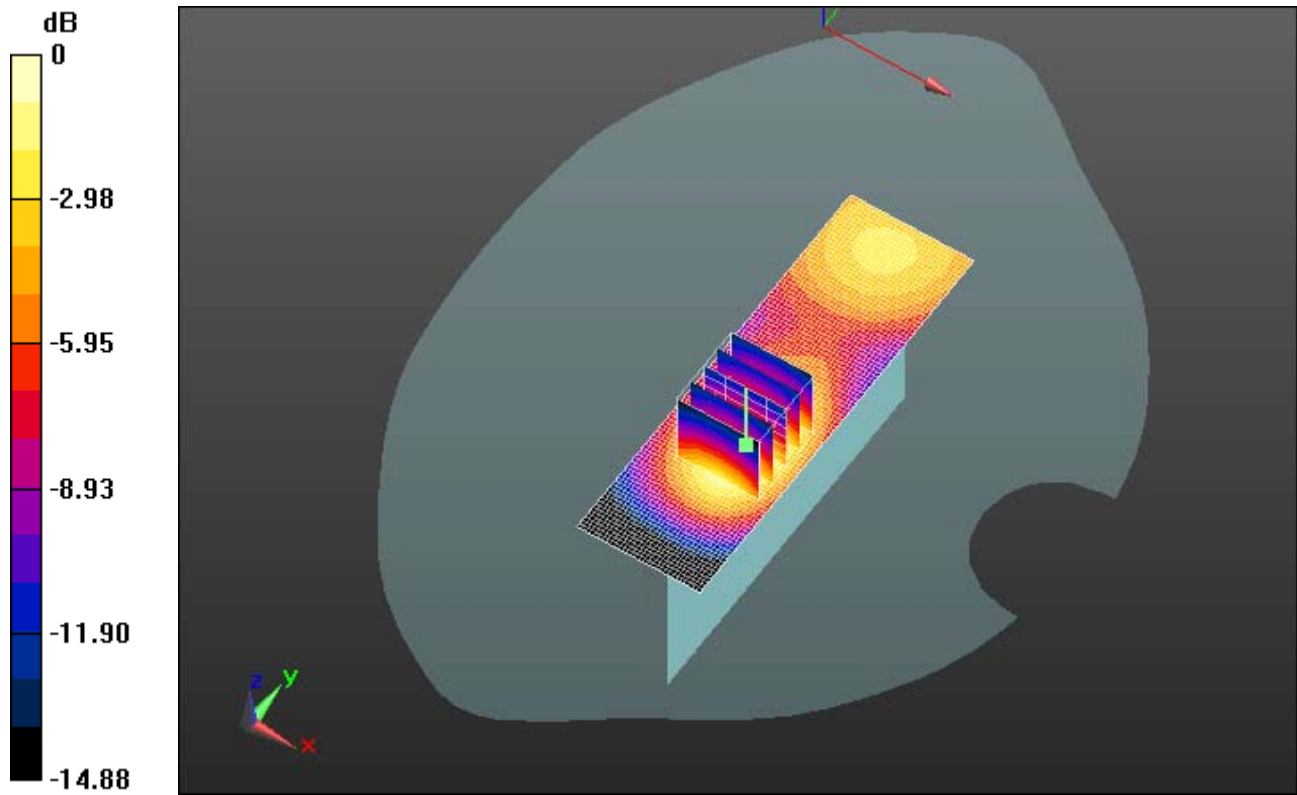
Peak SAR (extrapolated) = 0.4470

SAR(1 g) = 0.279 mW/g; SAR(10 g) = 0.164 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.337 mW/g

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0 dB = 0.340mW/g = -9.37 dB mW/g

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Date/Time: 6/14/2012 5:20:56 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Bottom_LTE_4_mid_chan_QPSK_RB_1_Offset_0_amb_temp_22.6_liq_temp_21.3C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.287$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x81x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.688 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 20.827 V/m; Power Drift = -0.10 dB

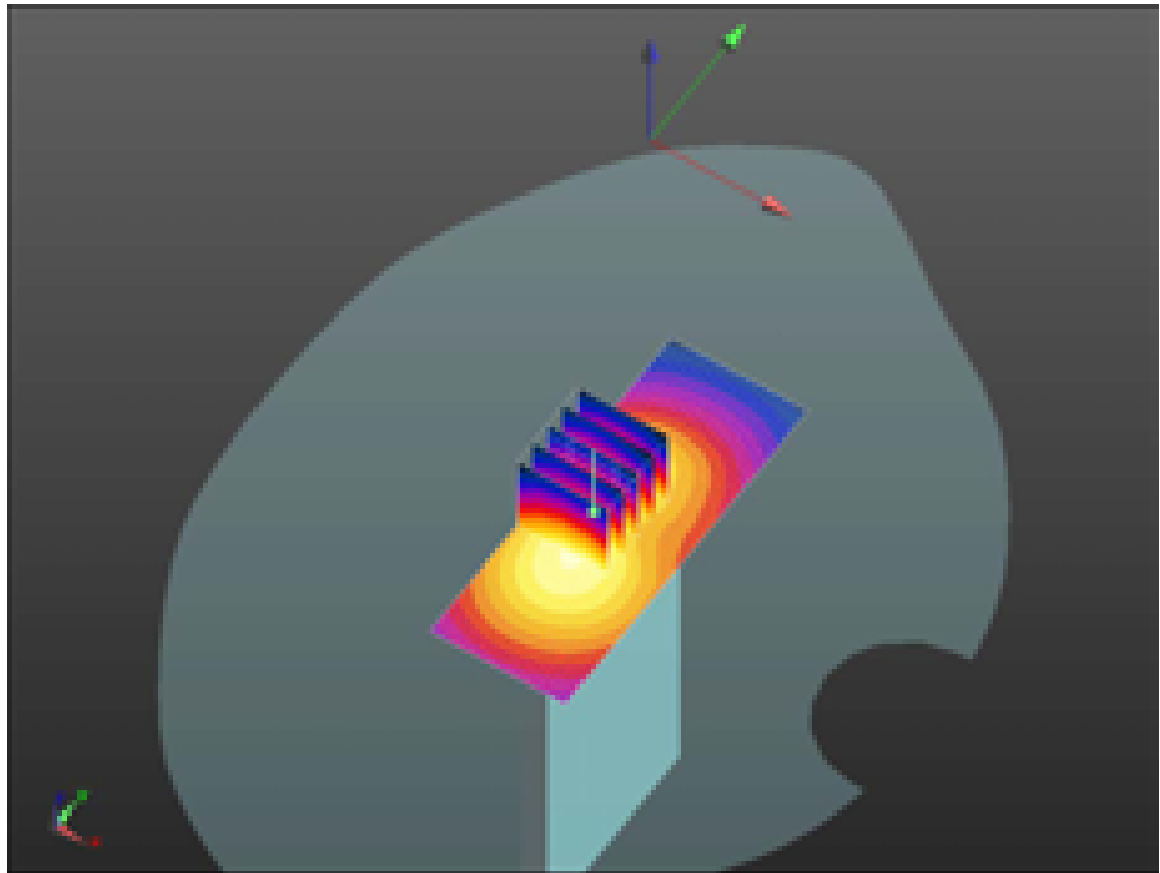
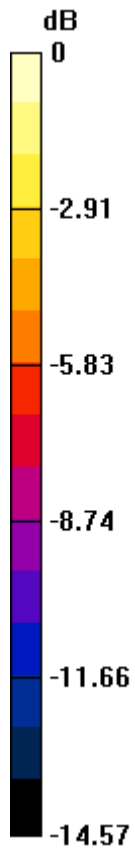
Peak SAR (extrapolated) = 0.9220

SAR(1 g) = 0.558 mW/g; SAR(10 g) = 0.324 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.684 mW/g

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0 dB = 0.680mW/g = -3.35 dB mW/g

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Date/Time: 6/14/2012 9:50:09 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_4_low_chan_QPSK_RB_1_Offset_0_a
mb_temp_22.5_liq_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1720 MHz

Medium parameters used: $f = 1720 \text{ MHz}$; $\sigma = 1.495 \text{ mho/m}$; $\epsilon_r = 51.37$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.822 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

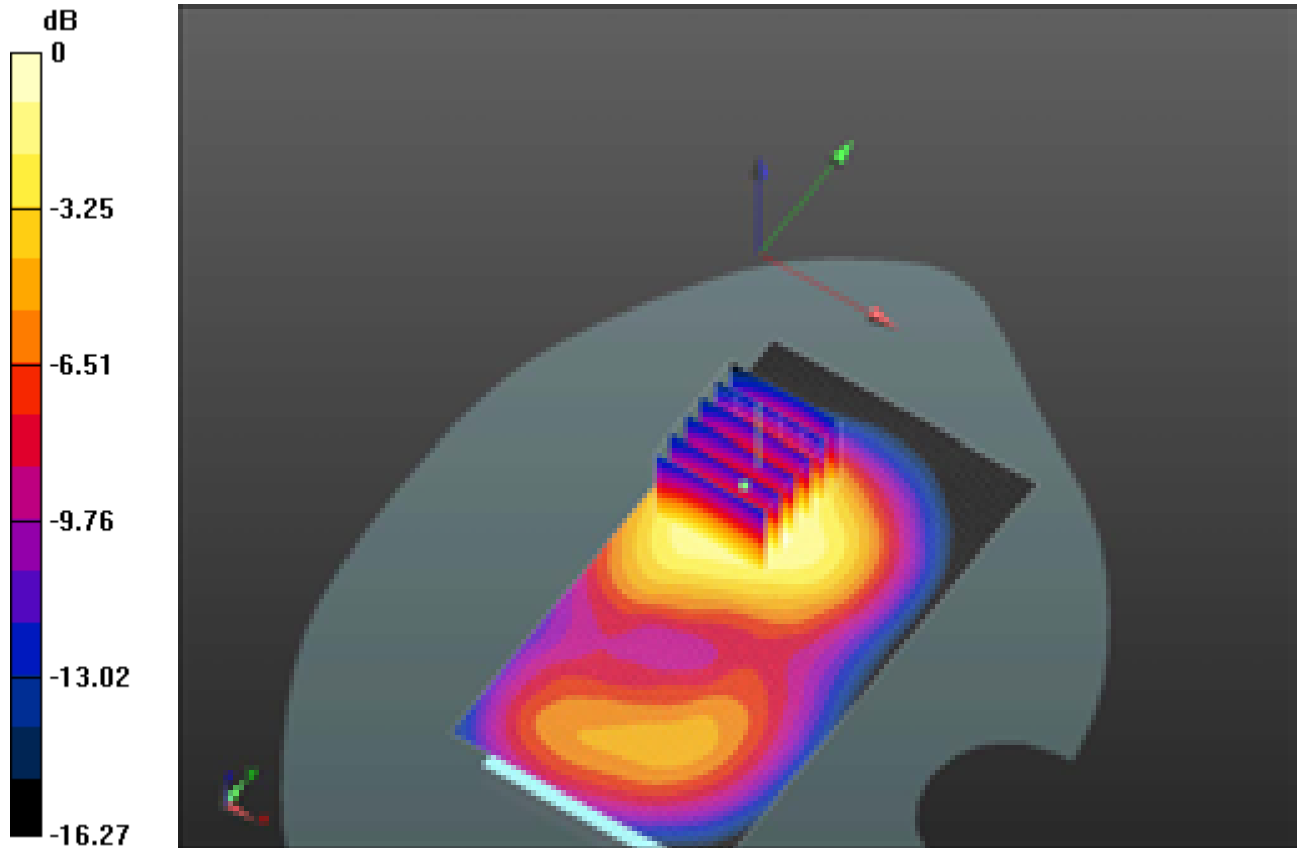
Reference Value = 12.502 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 2.3750

SAR(1 g) = 1.42 mW/g; SAR(10 g) = 0.874 mW/g

Maximum value of SAR (measured) = 1.727 mW/g

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0 dB = 1.730mW/g = 4.76 dB mW/g

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Date/Time: 6/14/2012 10:10:59 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_4_high_chan_QPSK_RB_1_Offset_0_a
mb_temp_22.7_liq_temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1745 MHz

Medium parameters used: $f = 1745 \text{ MHz}$; $\sigma = 1.52 \text{ mho/m}$; $\epsilon_r = 51.238$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.732 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

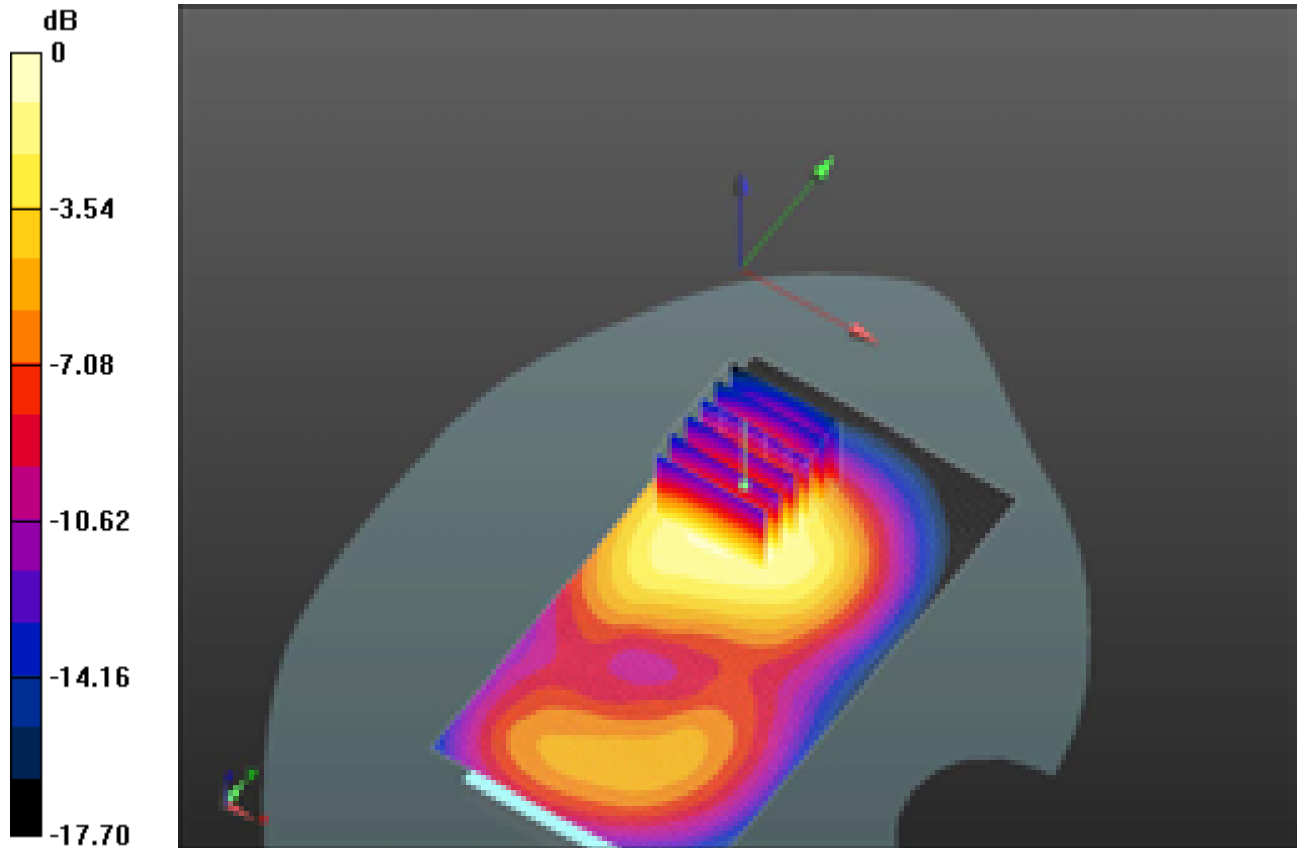
Reference Value = 11.875 V/m ; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 2.3640

SAR(1 g) = 1.38 mW/g ; SAR(10 g) = 0.822 mW/g

Maximum value of SAR (measured) = 1.711 mW/g

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0 dB = 1.710mW/g = 4.66 dB mW/g

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Date/Time: 6/14/2012 11:00:18 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_HS_Back_LTE_4_mid_chan_QPSK_RB_1_Offset_0_amb_temp_23.0_liq_temp_21.6C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.287$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.832 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 12.387 V/m; Power Drift = -0.06 dB

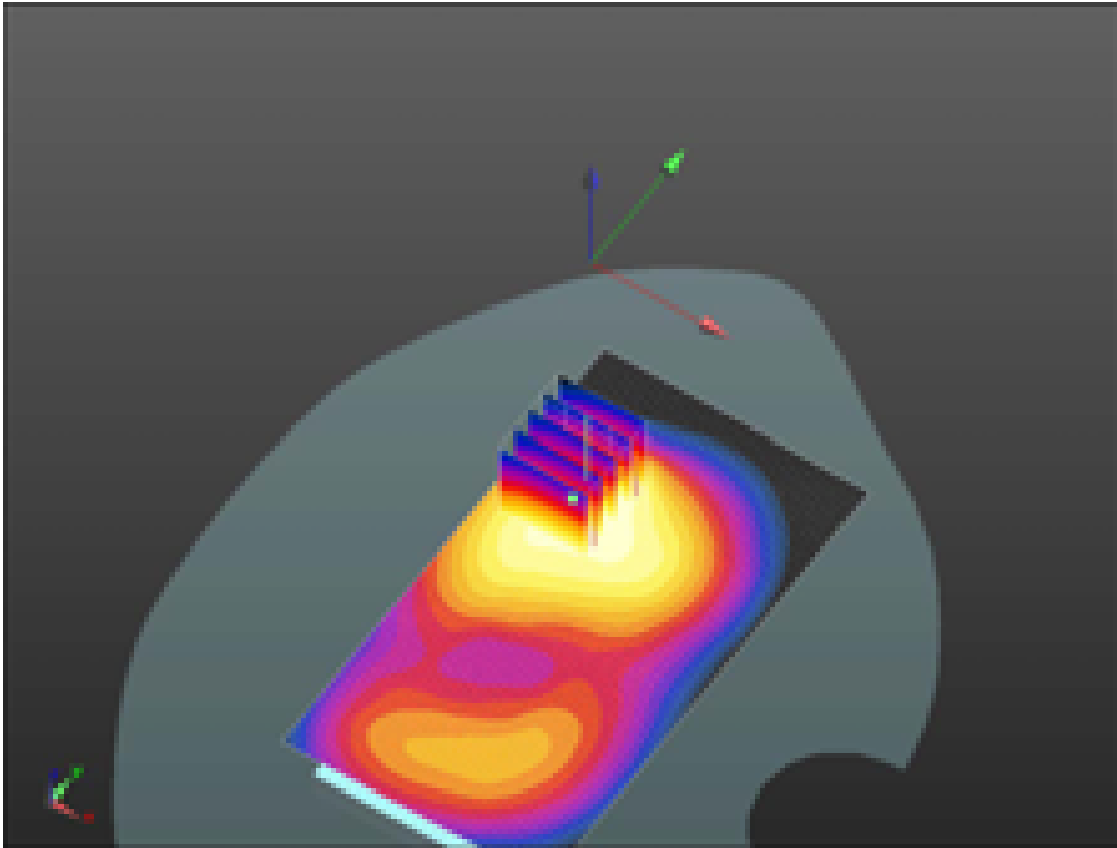
Peak SAR (extrapolated) = 2.3380

SAR(1 g) = 1.41 mW/g; SAR(10 g) = 0.861 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.728 mW/g

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0 dB = 1.730mW/g = 4.76 dB mW/g

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Date/Time: 6/18/2012 5:31:52 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_4_mid_chan_QPSK_BW_15_RB_1_Off
set_0_amb_temp_23.2_liq_temp_21.9C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.484$ mho/m; $\epsilon_r = 50.989$;
 $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.989 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 13.595 V/m; Power Drift = -0.04 dB

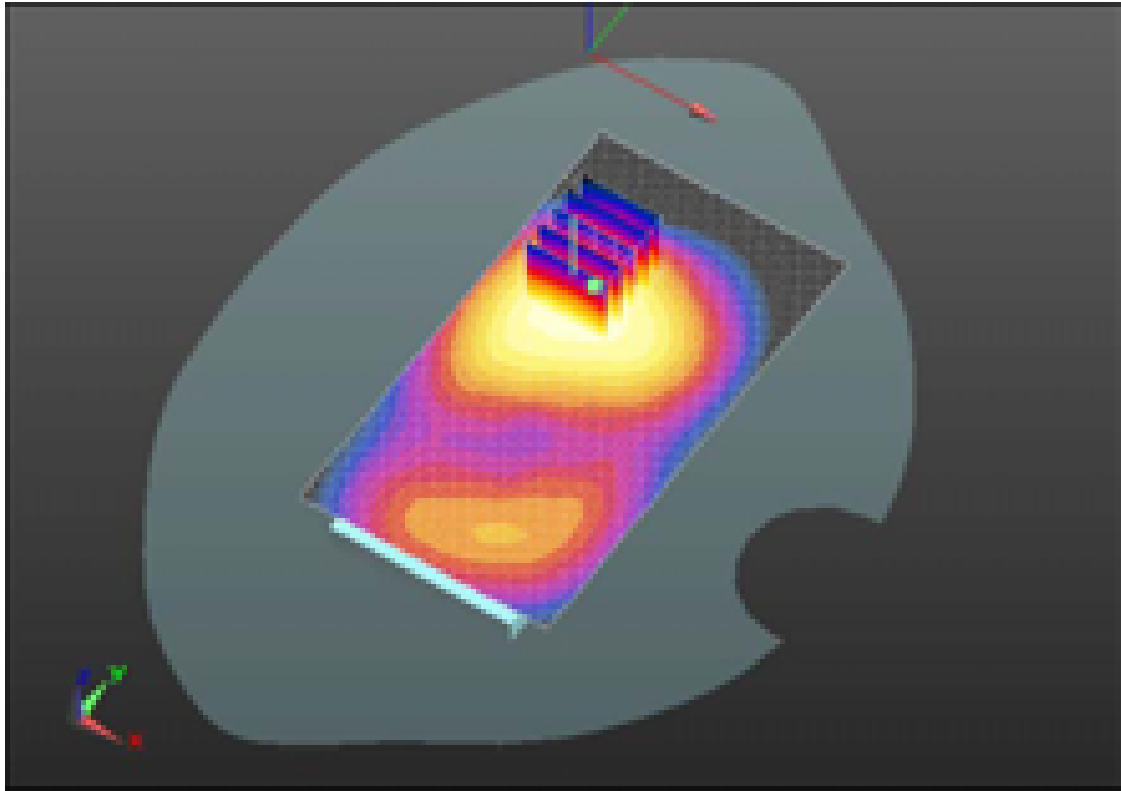
Peak SAR (extrapolated) = 2.5190

SAR(1 g) = 1.48 mW/g; SAR(10 g) = 0.892 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.723 mW/g

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0 dB = 1.720mW/g = 4.71 dB mW/g

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Date/Time: 6/18/2012 6:49:28 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_4_mid_chan_QPSK_BW_10_RB_1_Off
set_0_amb_temp_23.2_liq_temp_21.9C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.484$ mho/m; $\epsilon_r = 50.989$;
 $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 2.241 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 12.032 V/m; Power Drift = -0.14 dB

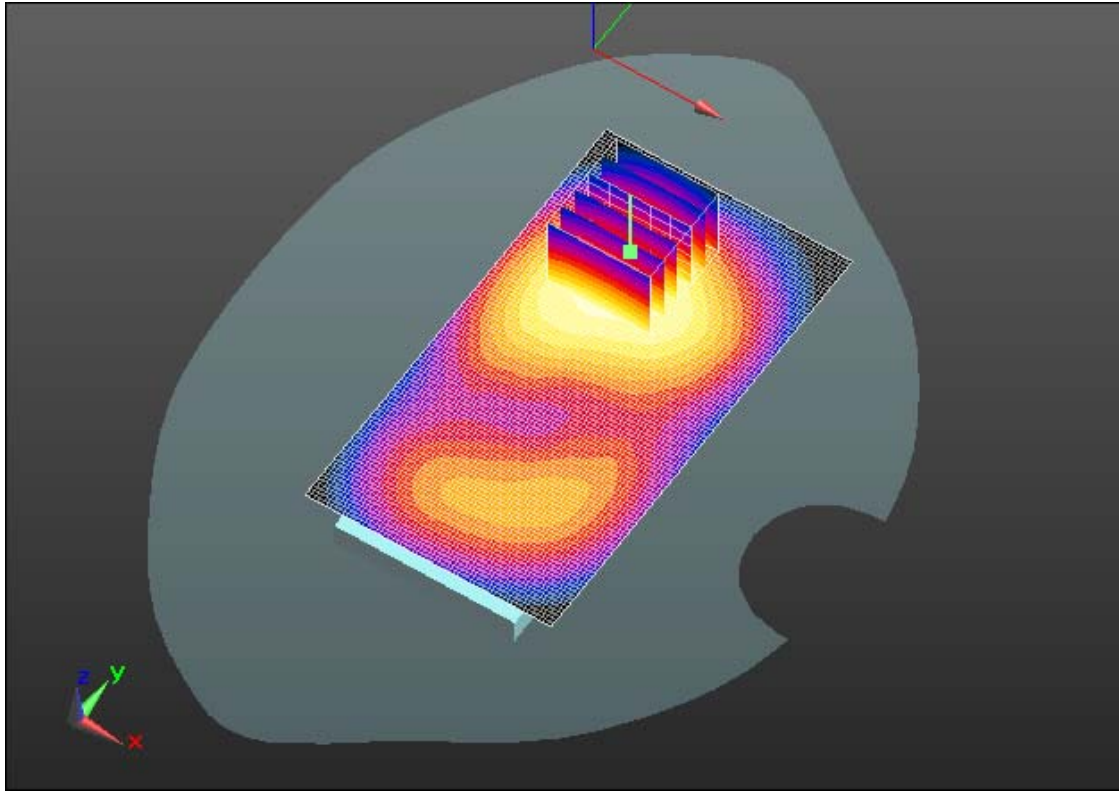
Peak SAR (extrapolated) = 2.4780

SAR(1 g) = 1.49 mW/g; SAR(10 g) = 0.894 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.777 mW/g

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0 dB = 1.780mW/g = 5.01 dB mW/g

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Date/Time: 6/18/2012 7:53:34 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_4_mid_chan_QPSK_BW_5_RB_1_Offs
et_0_amb_temp_22.9_liq_temp_21.9C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.484$ mho/m; $\epsilon_r = 50.989$;
 $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 2.198 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 11.772 V/m; Power Drift = 0.03 dB

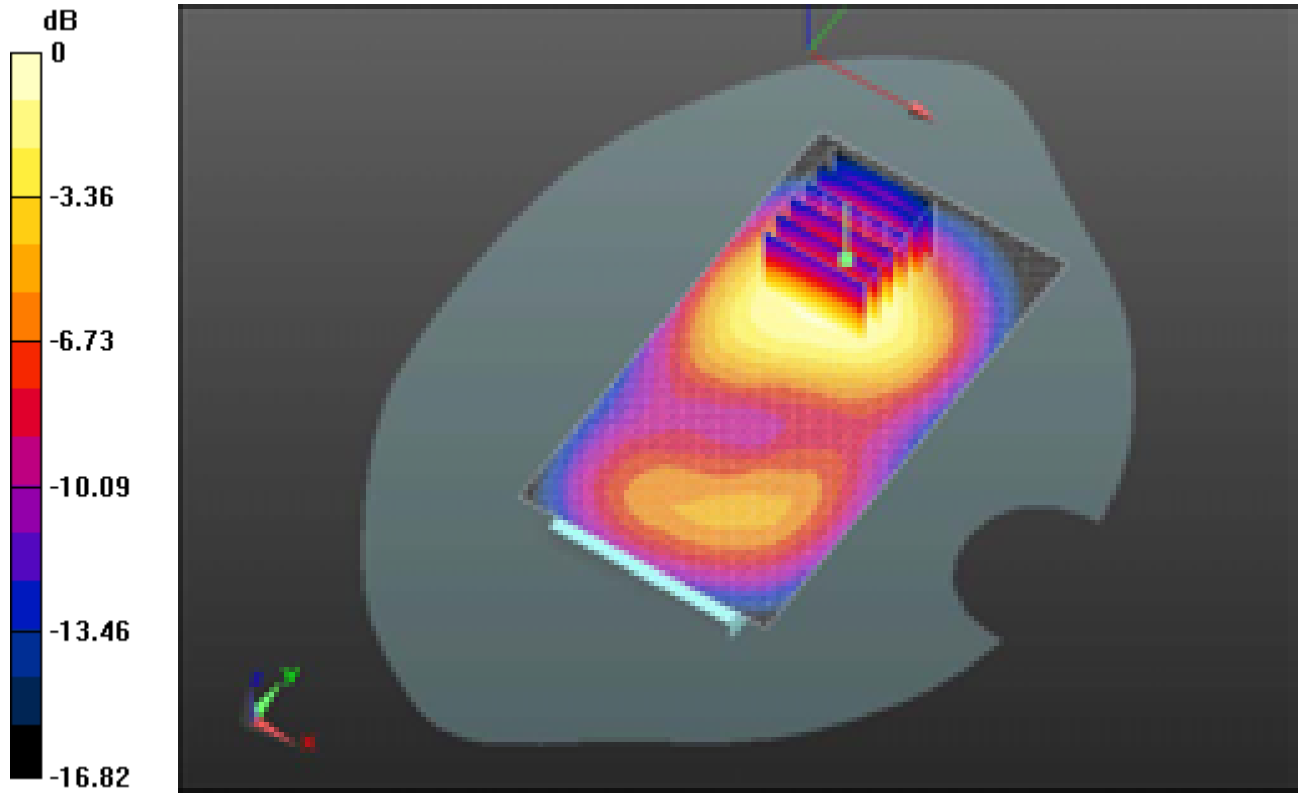
Peak SAR (extrapolated) = 2.5130

SAR(1 g) = 1.49 mW/g; SAR(10 g) = 0.895 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.797 mW/g

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0 dB = 1.800mW/g = 5.11 dB mW/g

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Date/Time: 6/18/2012 8:13:23 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_4_mid_chan_QPSK_BW_3_RB_1_Offs
et_0_amb_temp_22.7_liq_temp_21.9C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.484$ mho/m; $\epsilon_r = 50.989$;
 $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 2.228 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 11.731 V/m; Power Drift = -0.07 dB

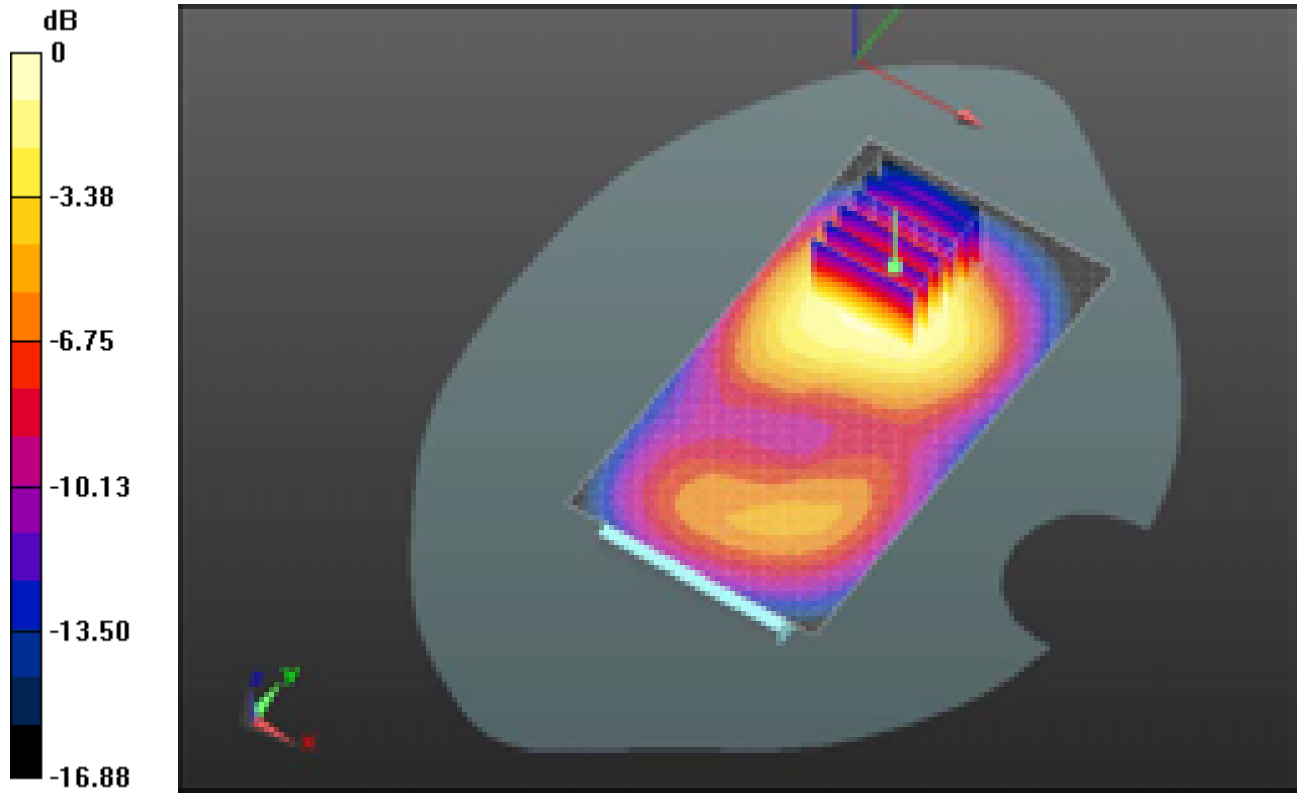
Peak SAR (extrapolated) = 2.5150

SAR(1 g) = 1.5 mW/g; SAR(10 g) = 0.899 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.801 mW/g

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0 dB = 1.800mW/g = 5.11 dB mW/g

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Date/Time: 6/18/2012 8:36:09 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_4_mid_chan_QPSK_BW_1.4_RB_1_Of
fset_0_amb_temp_22.7_liq_temp_21.9C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.484$ mho/m; $\epsilon_r = 50.989$;
 $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 2.239 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 11.651 V/m; Power Drift = 0.04 dB

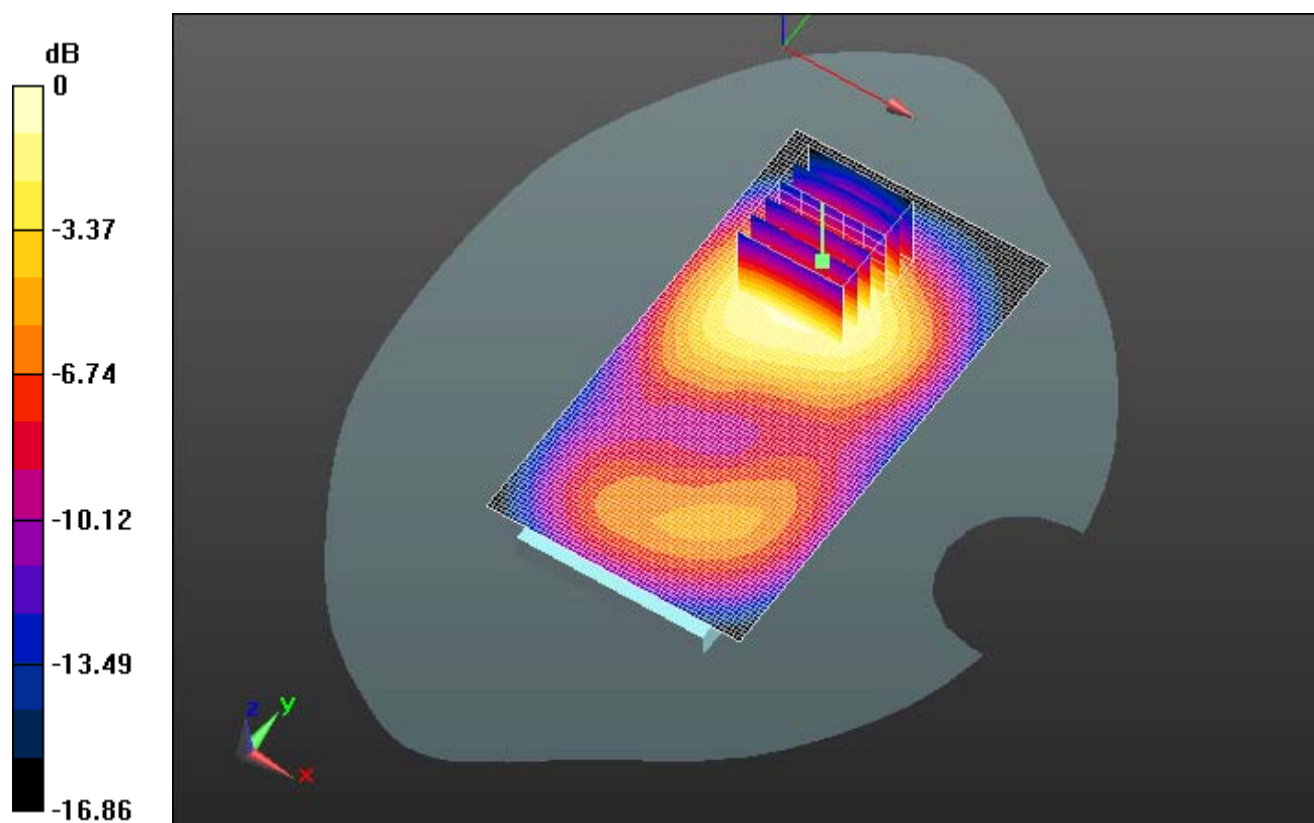
Peak SAR (extrapolated) = 2.5200

SAR(1 g) = 1.5 mW/g; SAR(10 g) = 0.902 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.801 mW/g

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0 dB = 1.800mW/g = 5.11 dB mW/g

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Date/Time: 6/18/2012 9:21:26 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_4_mid_chan_QPSK_BW_20_RB_100_Offset_0_amb_temp_22.6_liq_temp_21.9C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.484$ mho/m; $\epsilon_r = 50.989$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.684 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 11.984 V/m; Power Drift = -0.12 dB

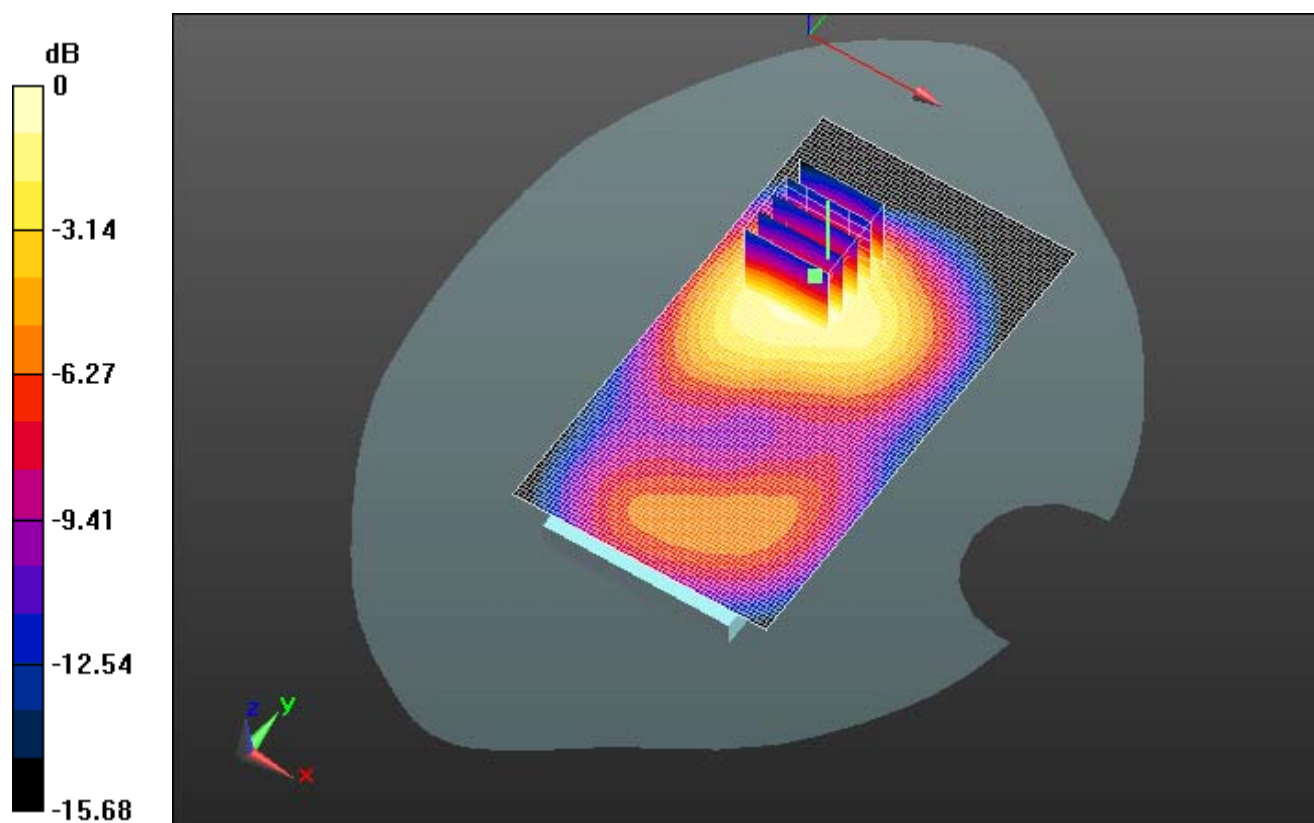
Peak SAR (extrapolated) = 2.2910

SAR(1 g) = 1.29 mW/g; SAR(10 g) = 0.764 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.561 mW/g

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0 dB = 1.560mW/g = 3.86 dB mW/g

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Date/Time: 10/25/2012 9:02:13 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_4_mid_chan_QPSK_RB_1_Offset_0_a
mb_temp_23.2_liq_temp_21.8C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 51.292$;
 $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.310 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 10.970 V/m; Power Drift = -0.01 dB

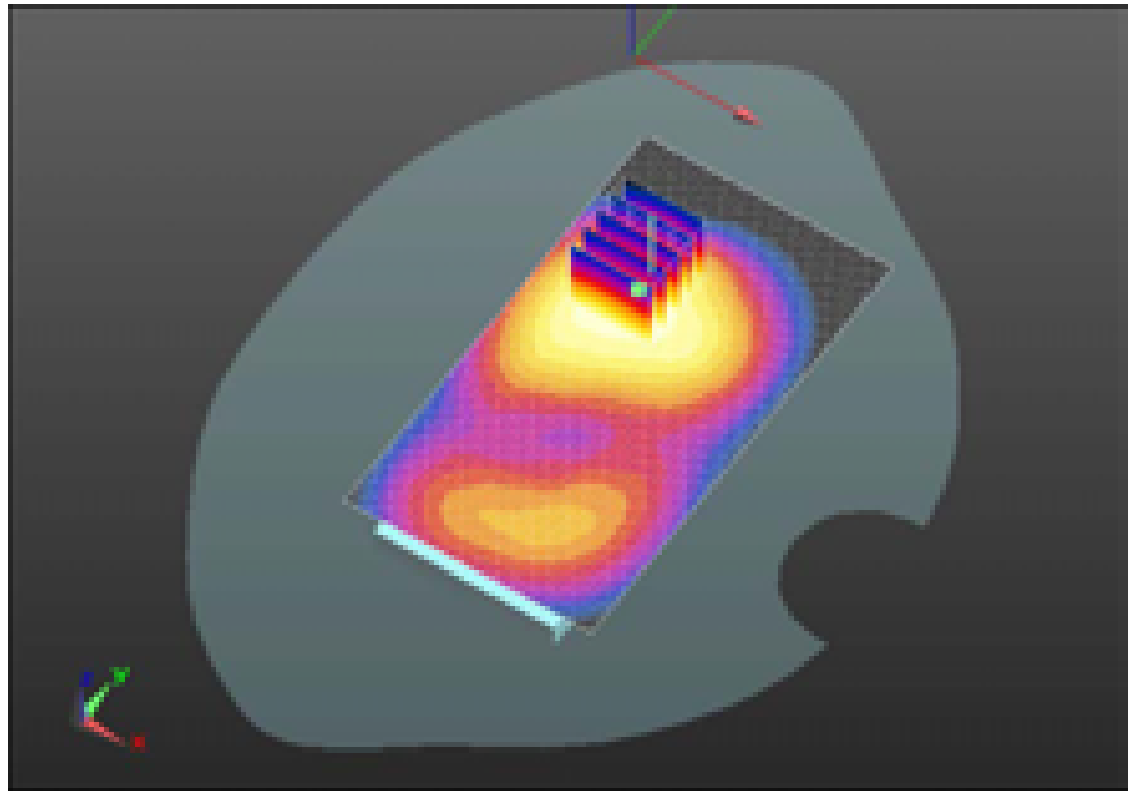
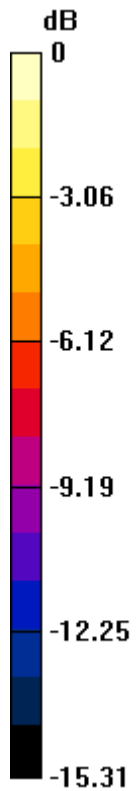
Peak SAR (extrapolated) = 1.7540

SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.630 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.216 mW/g

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0 dB = 1.220mW/g = 1.73 dB mW/g

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Date/Time: 10/25/2012 9:20:28 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_4_mid_chan_QPSK_RB_1_Offset_99_amb_temp_23.2_liq_temp_21.8C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 51.292$;
 $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15$ mm, $dy=15$ mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.243 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 10.678 V/m; Power Drift = -0.02 dB

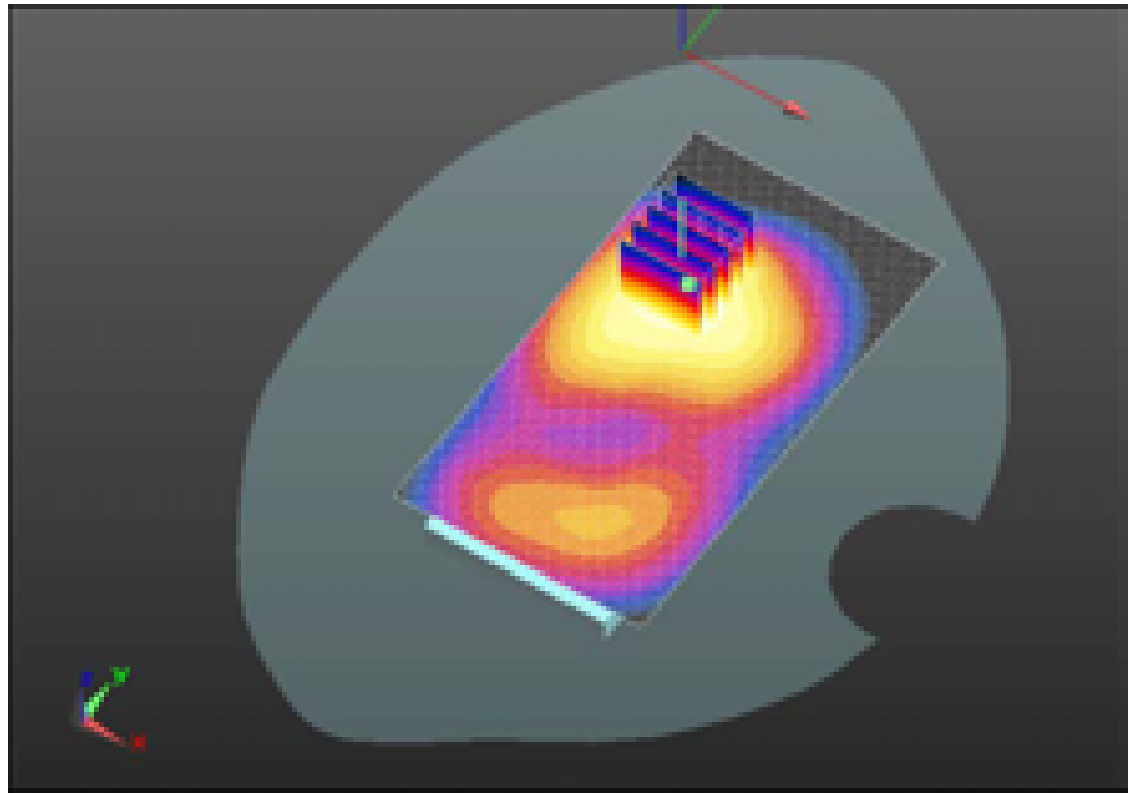
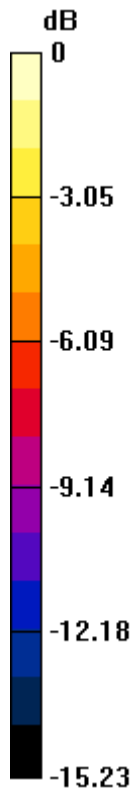
Peak SAR (extrapolated) = 1.7030

SAR(1 g) = 0.977 mW/g; SAR(10 g) = 0.580 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.171 mW/g

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0 dB = 1.170mW/g = 1.36 dB mW/g

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Date/Time: 10/25/2012 9:40:50 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_4_mid_chan_QPSK_RB_50_Offset_0_amb_temp_23.2_liq_temp_21.8C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 51.292$;
 $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15$ mm, $dy=15$ mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.315 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 11.023 V/m; Power Drift = 0.02 dB

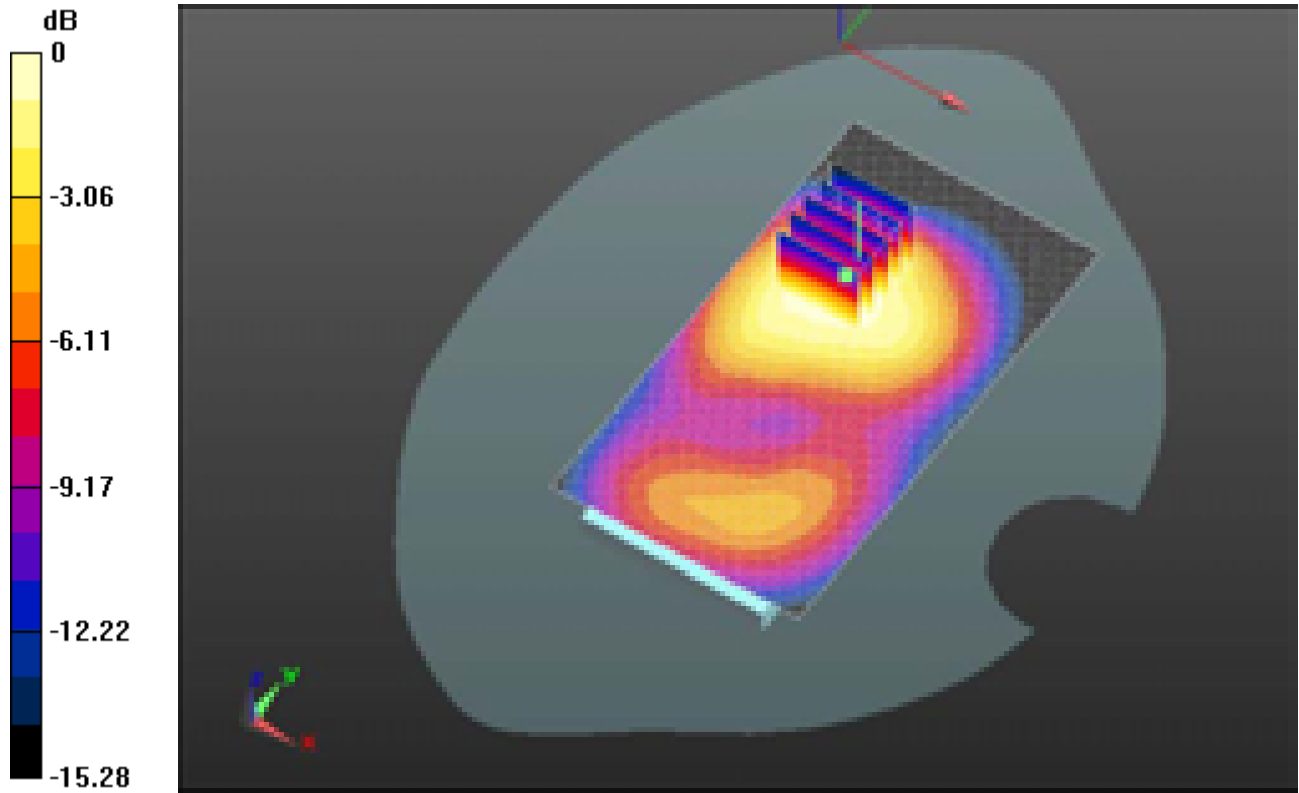
Peak SAR (extrapolated) = 1.7900

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.632 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.232 mW/g

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0 dB = 1.230mW/g = 1.80 dB mW/g

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Date/Time: 10/25/2012 10:41:38 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_4_mid_chan_16QAM_RB_1_Offset_0_amb_temp_22.9_liq_temp_21.8C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 51.292$;
 $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.347 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.849 V/m; Power Drift = 0.09 dB

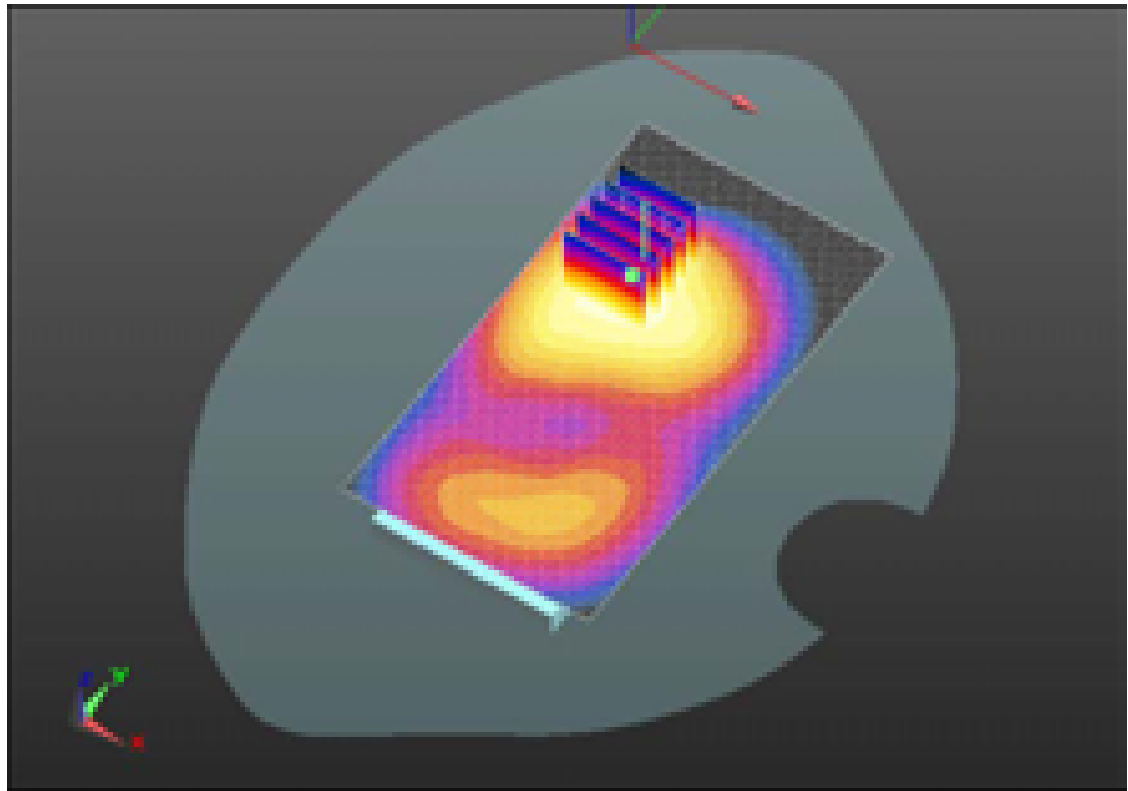
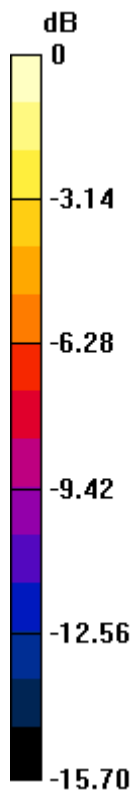
Peak SAR (extrapolated) = 1.8490

SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.651 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.300 mW/g

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0 dB = 1.300mW/g = 2.28 dB mW/g

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Date/Time: 10/25/2012 11:12:58 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_4_mid_chan_16QAM_RB_1_Offset_99
_amb_temp_22.9_liq_temp_21.8C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 51.292$;
 $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.277 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.714 V/m; Power Drift = 0.03 dB

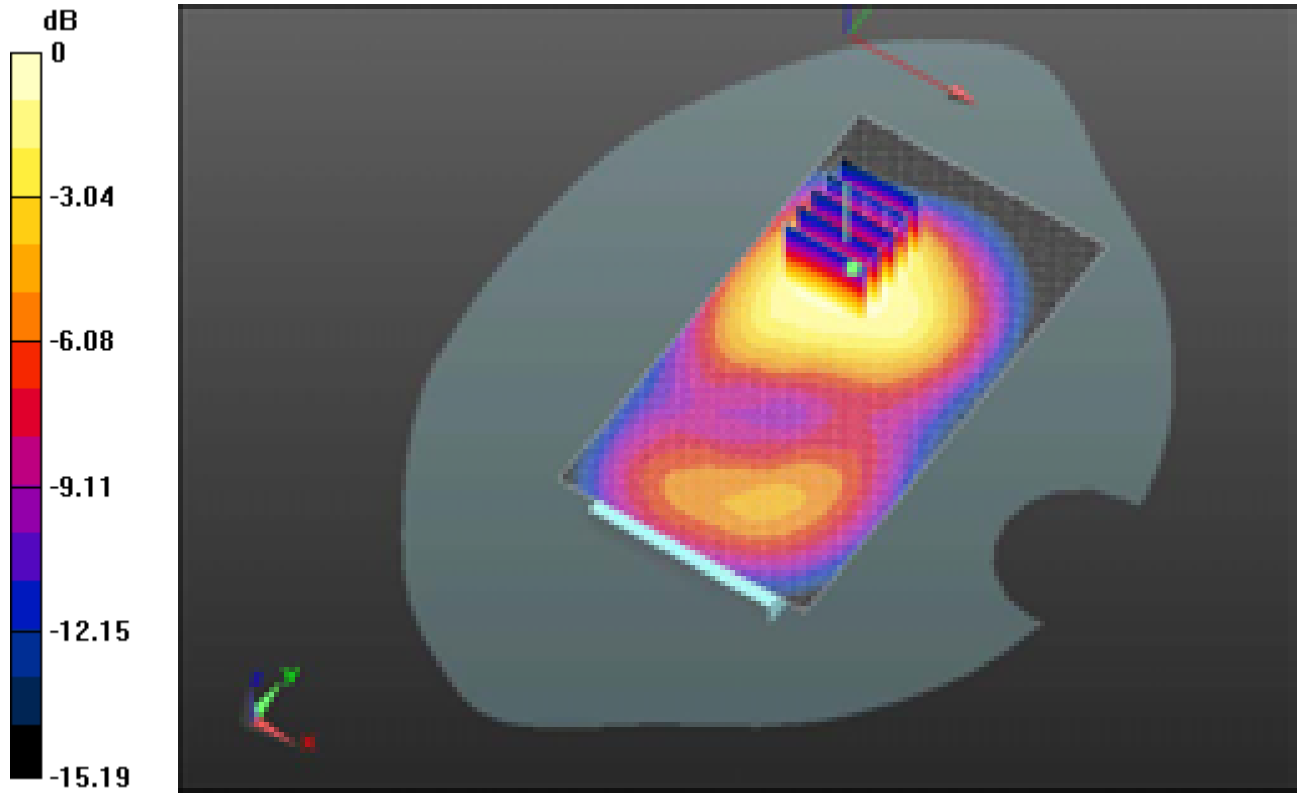
Peak SAR (extrapolated) = 1.7820

SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.630 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.248 mW/g

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0 dB = 1.250mW/g = 1.94 dB mW/g

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Date/Time: 10/25/2012 10:19:09 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_4_mid_chan_16QAM_RB_75_Offset_0
_amb_temp_23.2_liq_temp_21.8C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 51.292$;
 $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.283 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.901 V/m; Power Drift = -0.06 dB

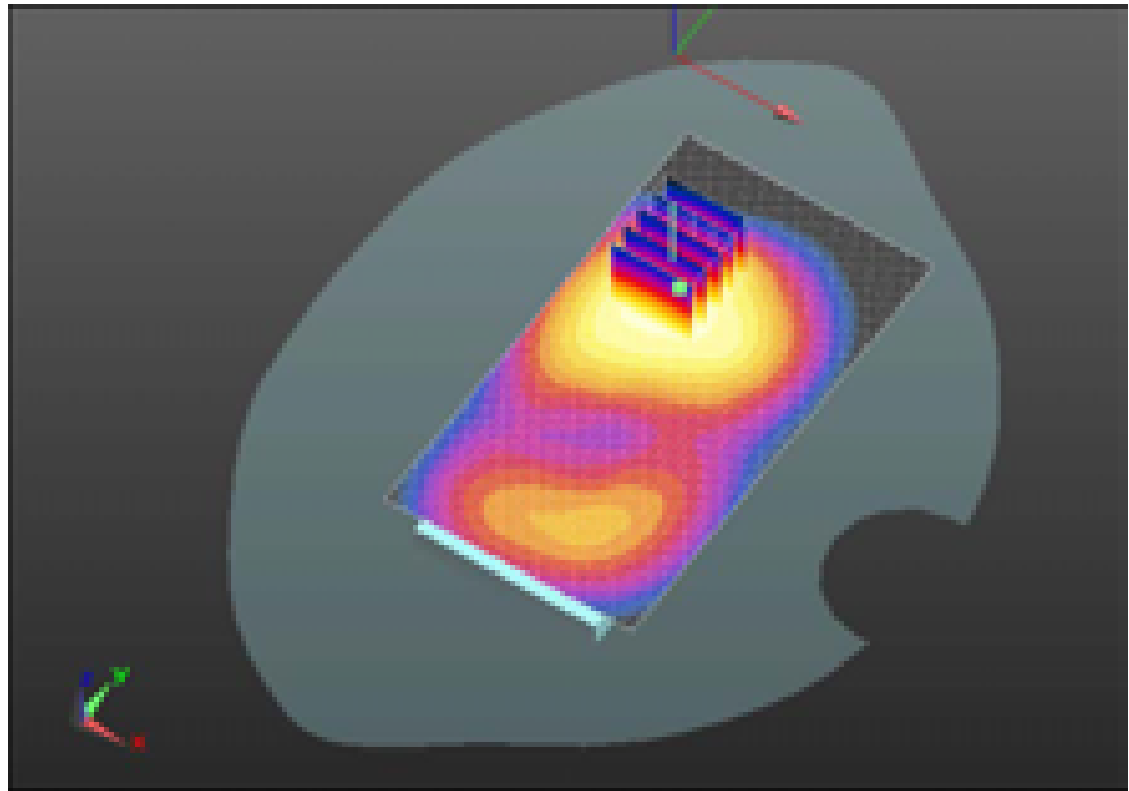
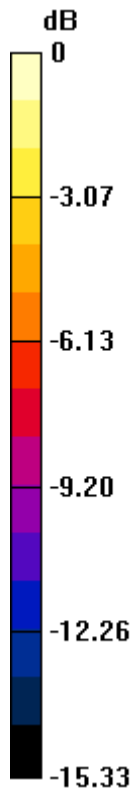
Peak SAR (extrapolated) = 1.8160

SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.622 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.240 mW/g

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0 dB = 1.240mW/g = 1.87 dB mW/g

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Date/Time: 10/26/2012 1:43:14 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_4_low_chan_16QAM_RB_1_Offset_0_amb_temp_22.9_liq_temp_21.8C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: LTE 1800_Band 4; Frequency: 1720 MHz

Medium parameters used: $f = 1720$ MHz; $\sigma = 1.494$ mho/m; $\epsilon_r = 51.296$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.332 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

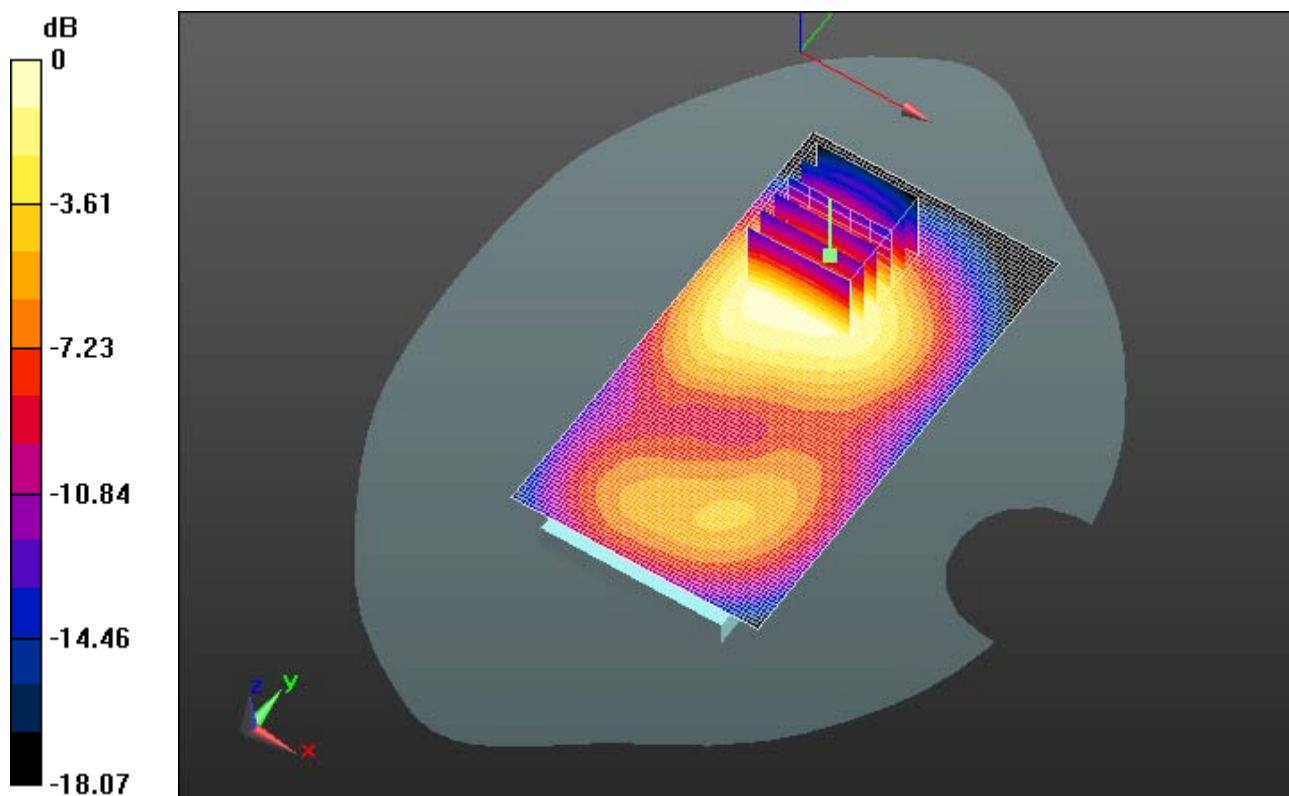
Reference Value = 10.930 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.8060

SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.638 mW/g

Maximum value of SAR (measured) = 1.229 mW/g

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0 dB = 1.230mW/g = 1.80 dB mW/g

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Date/Time: 10/26/2012 2:05:51 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_4_high_chan_16QAM_RB_1_Offset_0_amb_temp_22.8_liq_temp_21.8C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: LTE 1800_Band 4; Frequency: 1749 MHz

Medium parameters used (interpolated): $f = 1749$ MHz; $\sigma = 1.522$ mho/m; $\epsilon_r = 51.297$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.232 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.047 V/m; Power Drift = -0.01 dB

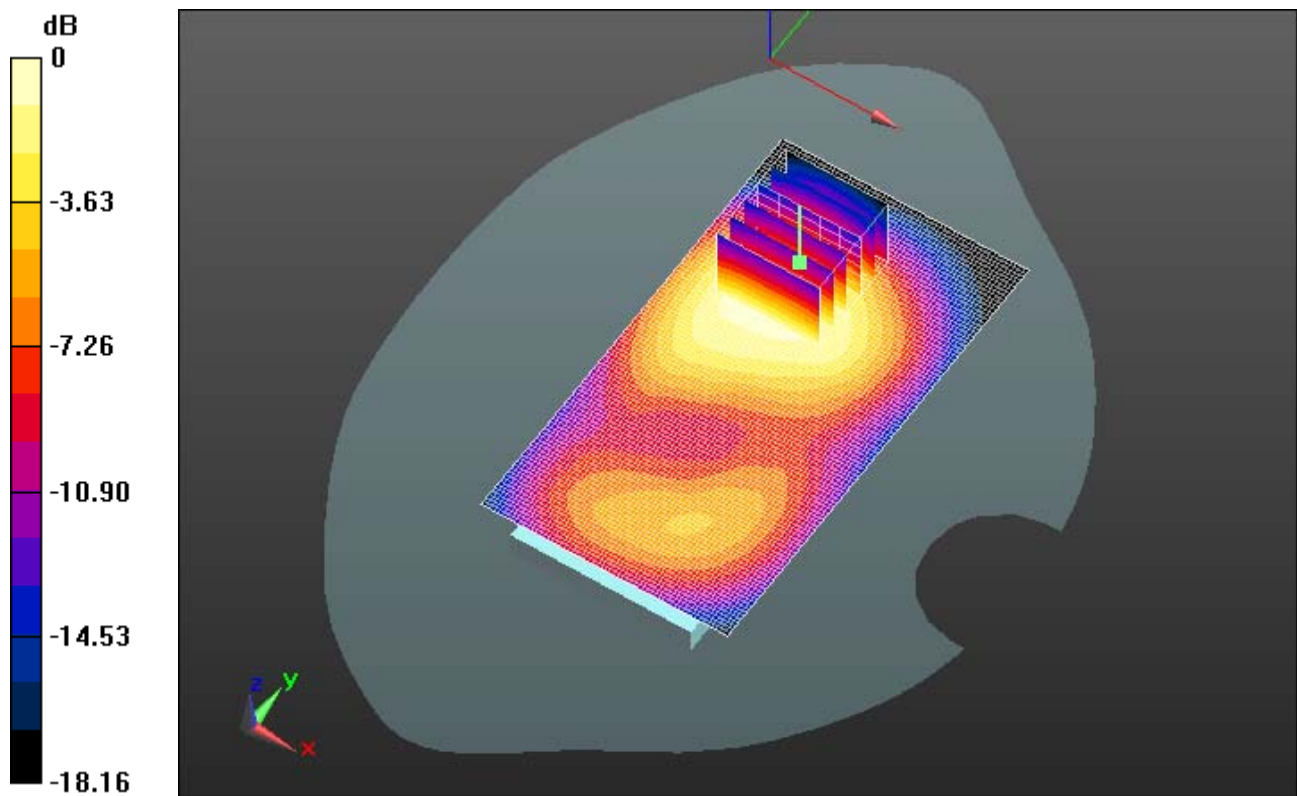
Peak SAR (extrapolated) = 1.5970

SAR(1 g) = 0.944 mW/g; SAR(10 g) = 0.555 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.141 mW/g

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0 dB = 1.140mW/g = 1.14 dB mW/g

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Date/Time: 10/26/2012 11:43:25 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Left_LTE_4_mid_chan_16QAM_RB_1_Offset_0_a
mb_temp_22.9_liq_temp_22.2C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: LTE 1800_Band 4; Frequency: 1732.5 MHz
Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 51.292$;
 $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.574 mW/g

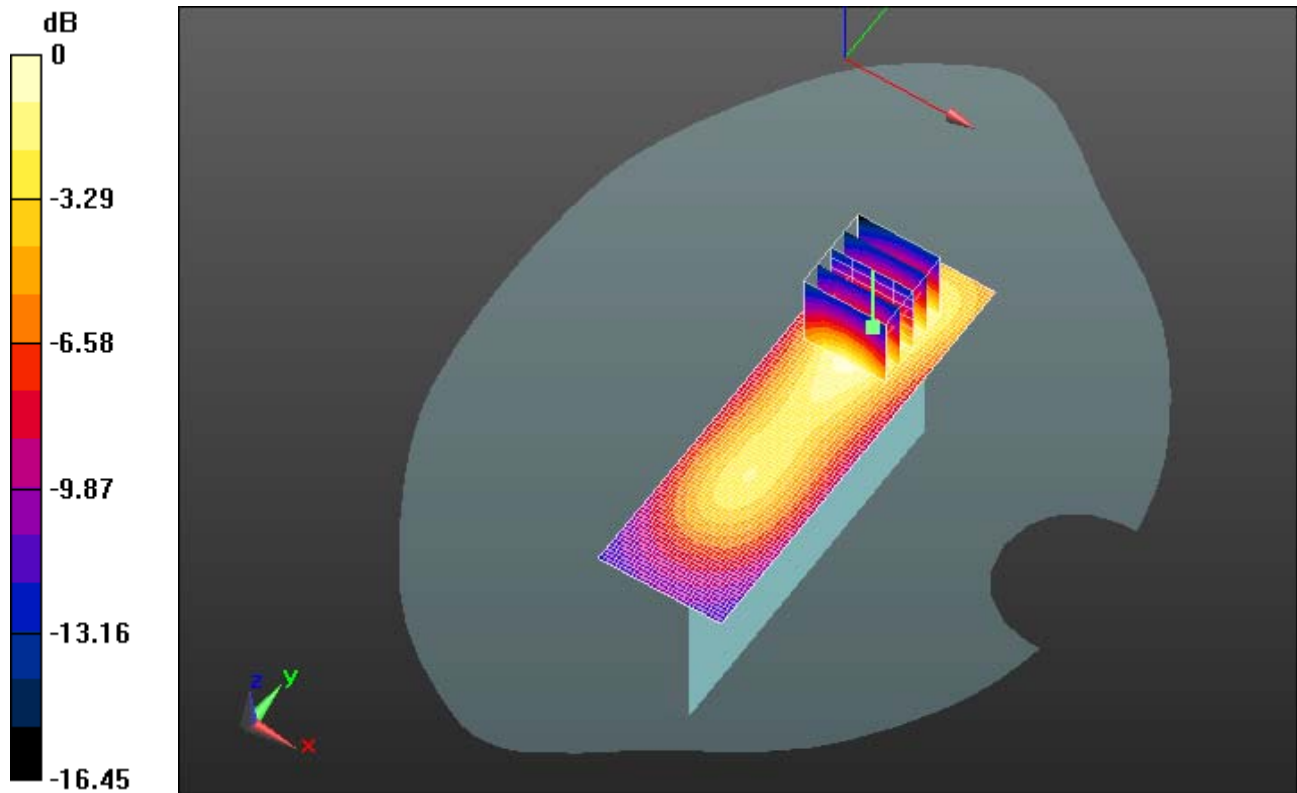
Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$
Reference Value = 14.525 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.7510
SAR(1 g) = 0.450 mW/g; SAR(10 g) = 0.258 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.546 mW/g

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0 dB = 0.550mW/g = -5.19 dB mW/g

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Date/Time: 10/26/2012 2:07:54 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Right_LTE_4_mid_chan_16QAM_RB_1_Offset_0

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: LTE 1800_Band 4; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 51.292$;
 $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.273 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.525 V/m; Power Drift = -0.03 dB

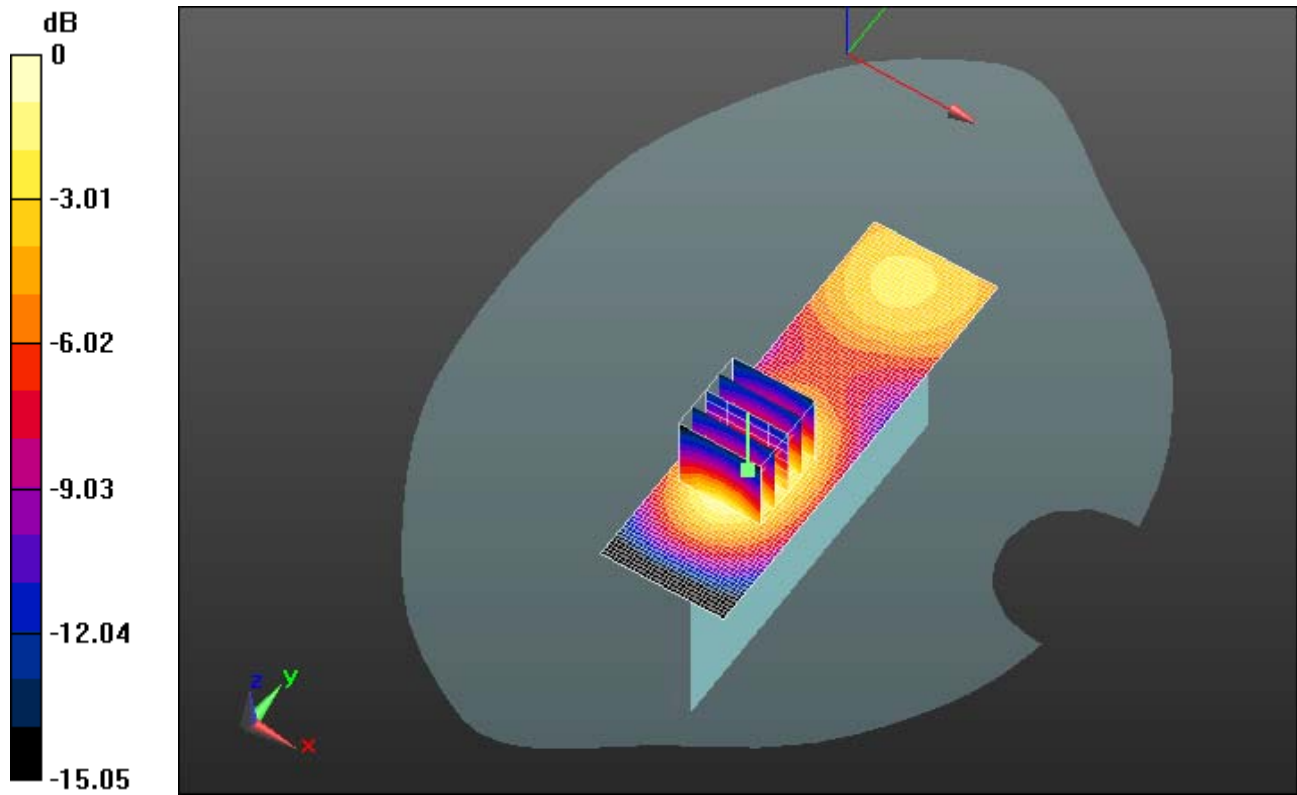
Peak SAR (extrapolated) = 0.3560

SAR(1 g) = 0.221 mW/g; SAR(10 g) = 0.130 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.266 mW/g

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0 dB = 0.270mW/g = -11.37 dB mW/g

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Date/Time: 10/26/2012 11:11:41 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Bottom_LTE_4_mid_chan_16QAM_RB_1_Offset_0_amb_temp_22.9_liq_temp_22.4C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A8C7018

Communication System: LTE Band 4; Frequency: 1732.6 MHz

Medium parameters used (interpolated): $f = 1732.6$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 51.29$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (41x61x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.596 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 19.646 V/m; Power Drift = 0.07 dB

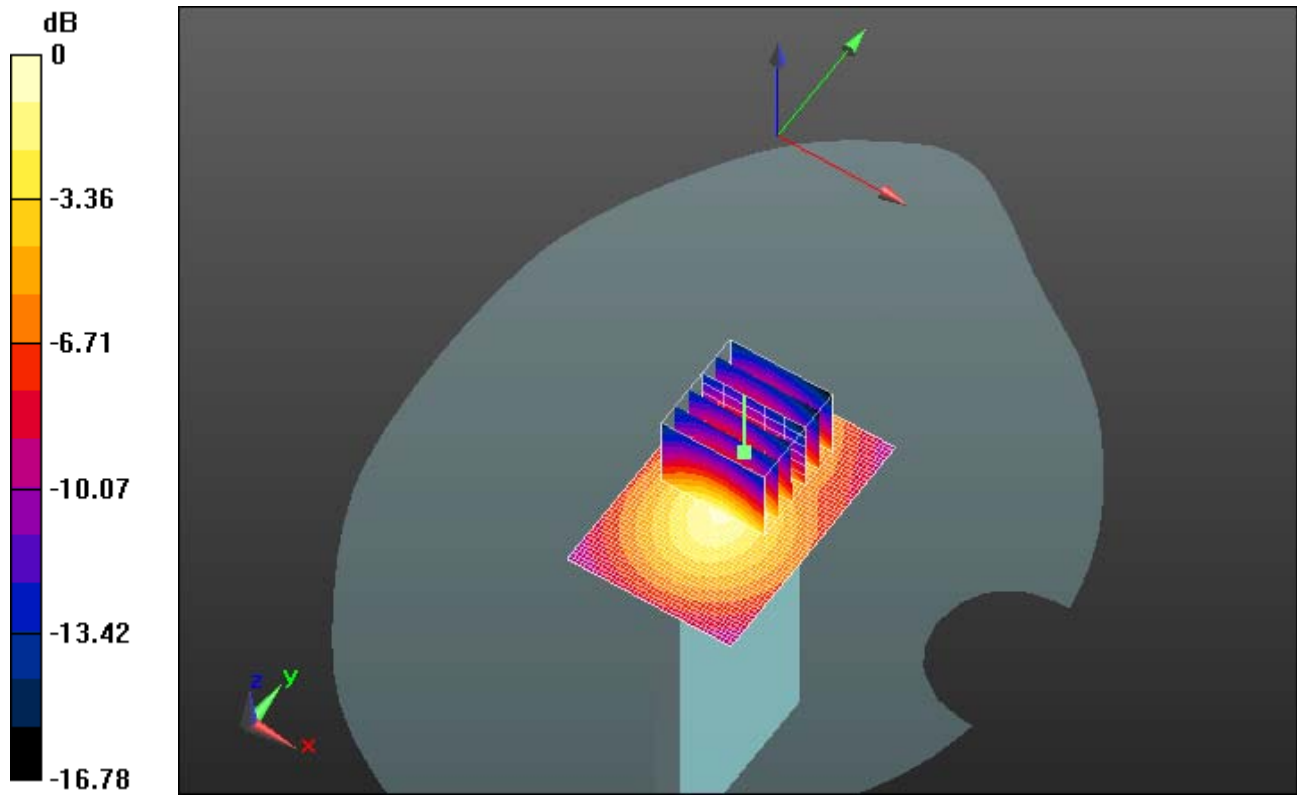
Peak SAR (extrapolated) = 0.8490

SAR(1 g) = 0.502 mW/g; SAR(10 g) = 0.283 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.621 mW/g

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0 dB = 0.620mW/g = -4.15 dB mW/g

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Date/Time: 10/26/2012 2:33:41 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_HS_Back_LTE_4_mid_chan_16QAM_RB_1_Offset
_0_amb_temp_22.9_liq_temp_21.8C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: LTE; Frequency: 1732.5 MHz

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 51.292$;
 $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.414 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.613 V/m; Power Drift = 0.06 dB

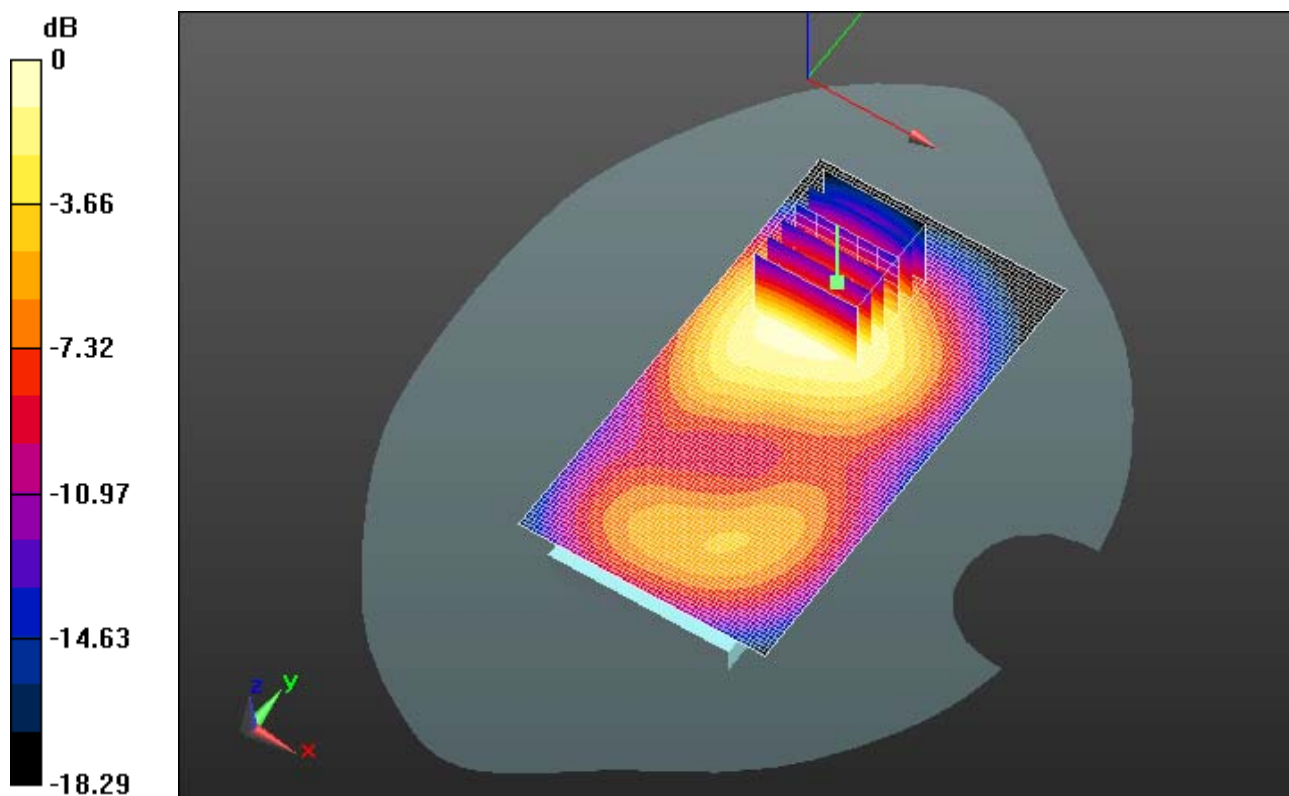
Peak SAR (extrapolated) = 1.8830

SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.662 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.322 mW/g

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0 dB = 1.320mW/g = 2.41 dB mW/g

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Date/Time: 6/11/2012 2:57:58 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_2_mid_chan_QPSK_RB_1_Offset_0_A
mb_temp_23.0_liq_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE ; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.523 \text{ mho/m}$; $\epsilon_r = 50.843$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.688 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

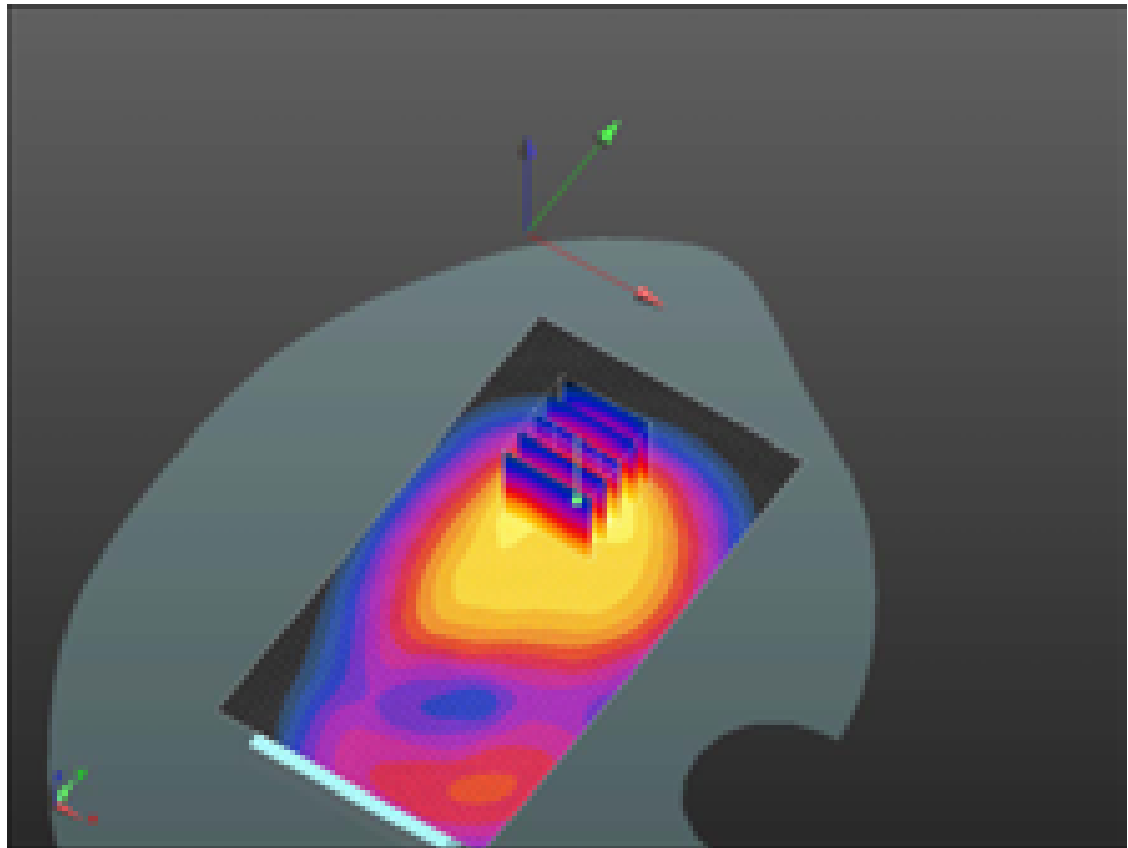
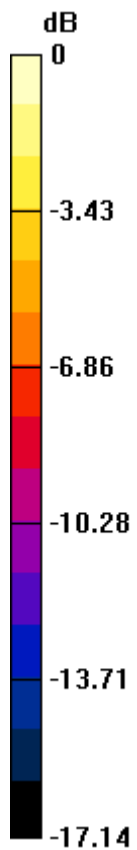
Reference Value = 17.623 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 2.4260

SAR(1 g) = 1.36 mW/g; SAR(10 g) = 0.708 mW/g

Maximum value of SAR (measured) = 1.675 mW/g

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0 dB = 1.680mW/g = 4.51 dB mW/g

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Date/Time: 6/11/2012 3:16:03 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_2_mid_chan_QPSK_RB_1_Offset_99_amb_temp_23.1_liq_temp_21.7C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE ; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.523 \text{ mho/m}$; $\epsilon_r = 50.843$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS2 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.665 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

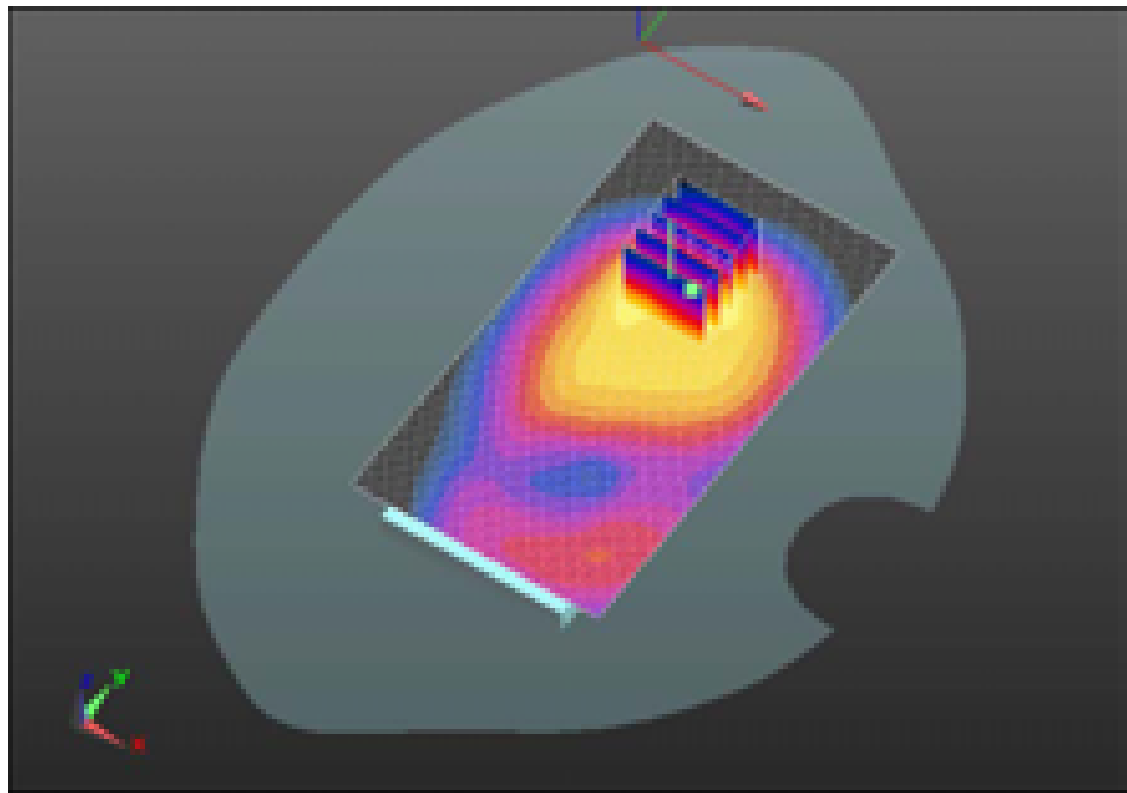
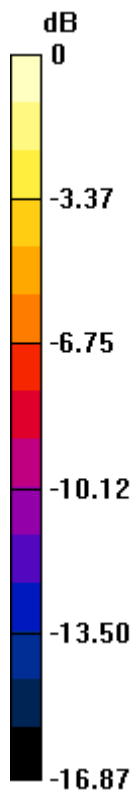
Reference Value = 17.425 V/m ; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 2.3780

SAR(1 g) = 1.33 mW/g ; SAR(10 g) = 0.690 mW/g

Maximum value of SAR (measured) = 1.650 mW/g

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0 dB = 1.650mW/g = 4.35 dB mW/g

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Date/Time: 6/11/2012 3:37:37 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_2_mid_chan_QPSK_RB_50_Offset_0_amb_temp_23.1_liq_temp_21.8C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE ; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.523 \text{ mho/m}$; $\epsilon_r = 50.843$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.443 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

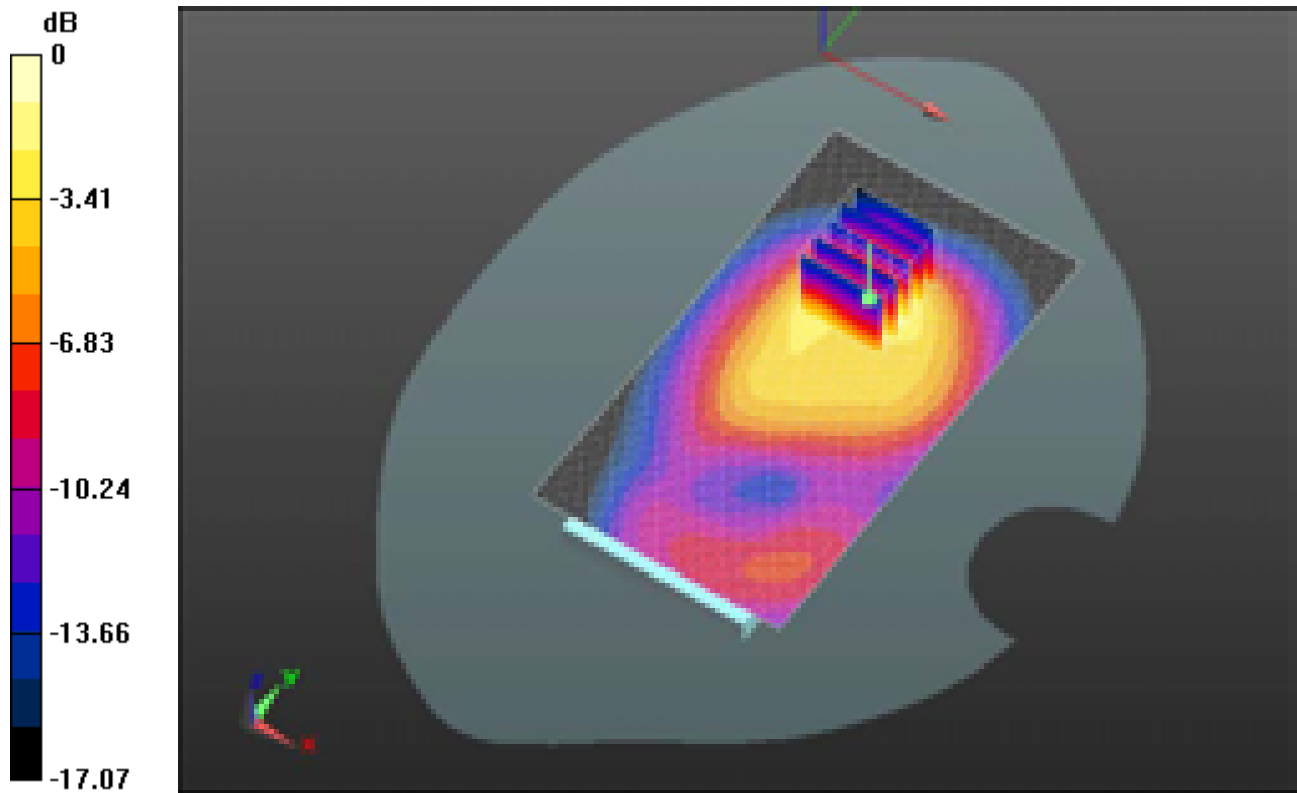
Reference Value = 16.359 V/m ; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 2.0630

SAR(1 g) = 1.16 mW/g ; SAR(10 g) = 0.604 mW/g

Maximum value of SAR (measured) = 1.413 mW/g

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0 dB = 1.410mW/g = 2.98 dB mW/g

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Date/Time: 6/11/2012 7:44:34 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_2_mid_chan_16QAM_RB_1_Offset_0_amb_temp_23.1_liq_temp_21.4C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.523 \text{ mho/m}$; $\epsilon_r = 50.843$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.307 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

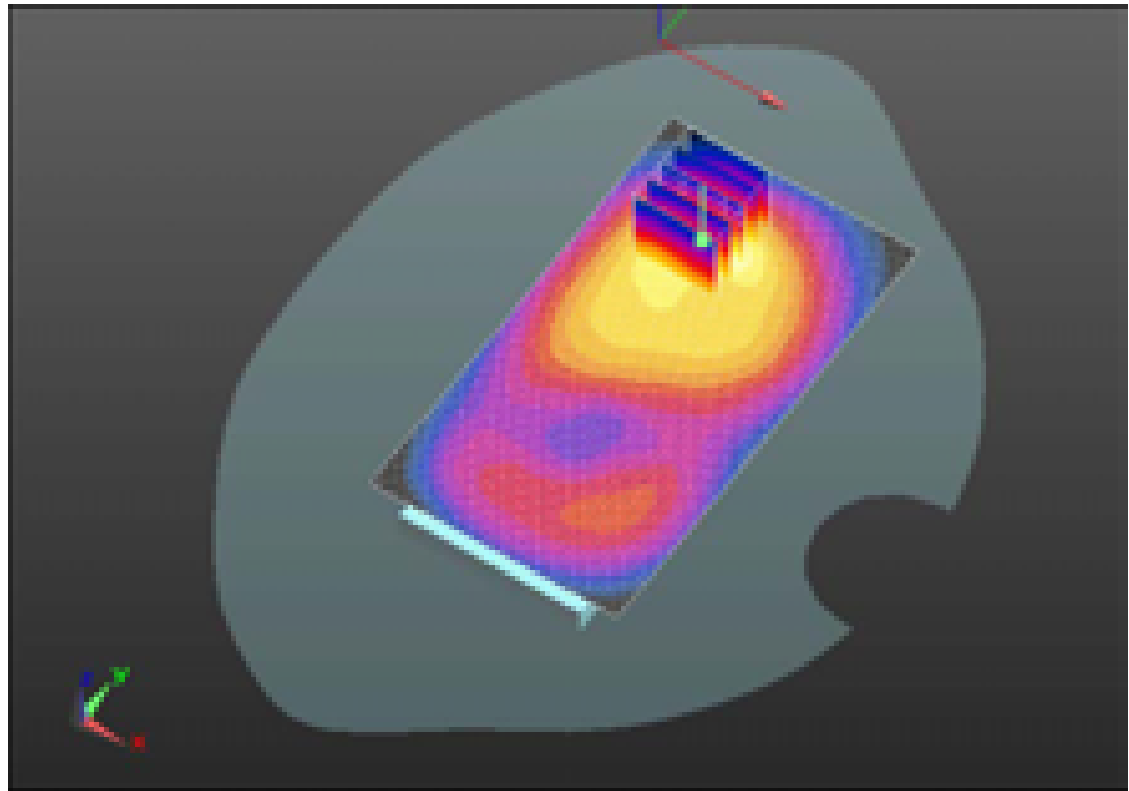
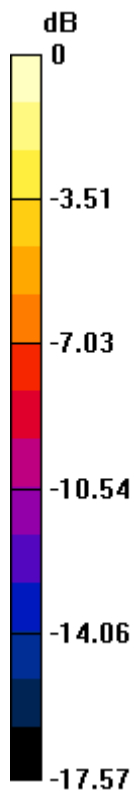
Reference Value = 8.833 V/m ; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 1.6790

SAR(1 g) = 0.973 mW/g ; SAR(10 g) = 0.512 mW/g

Maximum value of SAR (measured) = 1.232 mW/g

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0 dB = 1.230mW/g = 1.80 dB mW/g

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Date/Time: 6/11/2012 8:01:17 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_2_mid_chan_16QAM_RB_1_Offset_99
_amb_temp_22.8_liq_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.523 \text{ mho/m}$; $\epsilon_r = 50.843$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.453 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

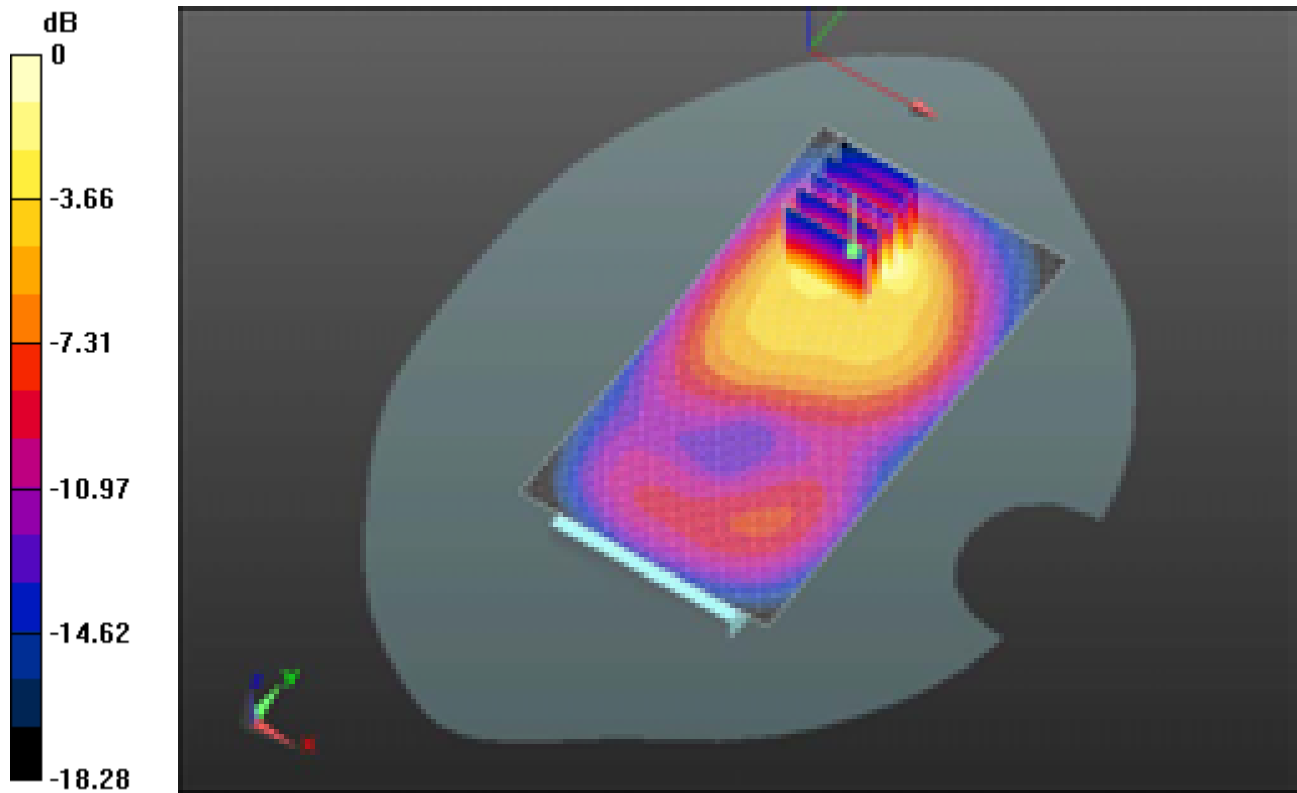
Reference Value = 8.854 V/m ; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 2.0670

SAR(1 g) = 1.1 mW/g ; SAR(10 g) = 0.569 mW/g

Maximum value of SAR (measured) = 1.422 mW/g

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0 dB = 1.420mW/g = 3.05 dB mW/g

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Date/Time: 6/11/2012 9:23:25 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_2_mid_chan_16QAM_RB_75_Offset_0
_amb_temp_22.6_liq_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.523 \text{ mho/m}$; $\epsilon_r = 50.843$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.031 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

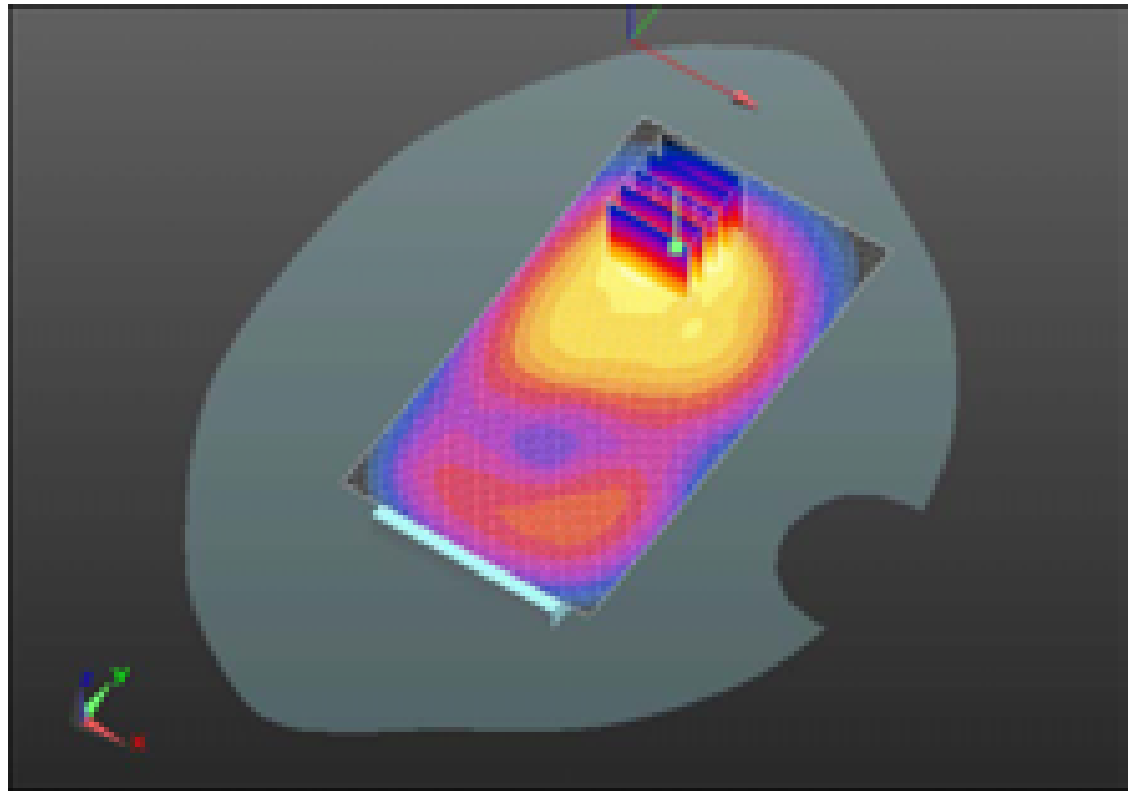
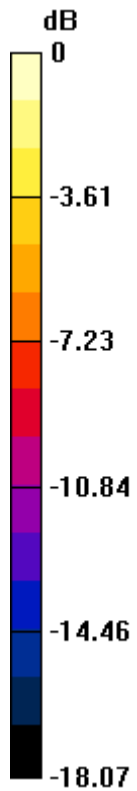
Reference Value = 9.034 V/m ; Power Drift = -0.0036 dB

Peak SAR (extrapolated) = 1.4220

SAR(1 g) = 0.799 mW/g ; SAR(10 g) = 0.424 mW/g

Maximum value of SAR (measured) = 1.025 mW/g

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0 dB = 1.020mW/g = 0.17 dB mW/g

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Date/Time: 6/11/2012 4:07:41 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_2_low_chan_QPSK_RB_1_Offset_0_a
mb_temp_23.0_liq_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1860 MHz

Medium parameters used: $f = 1860 \text{ MHz}$; $\sigma = 1.499 \text{ mho/m}$; $\epsilon_r = 50.873$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS2 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.353 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

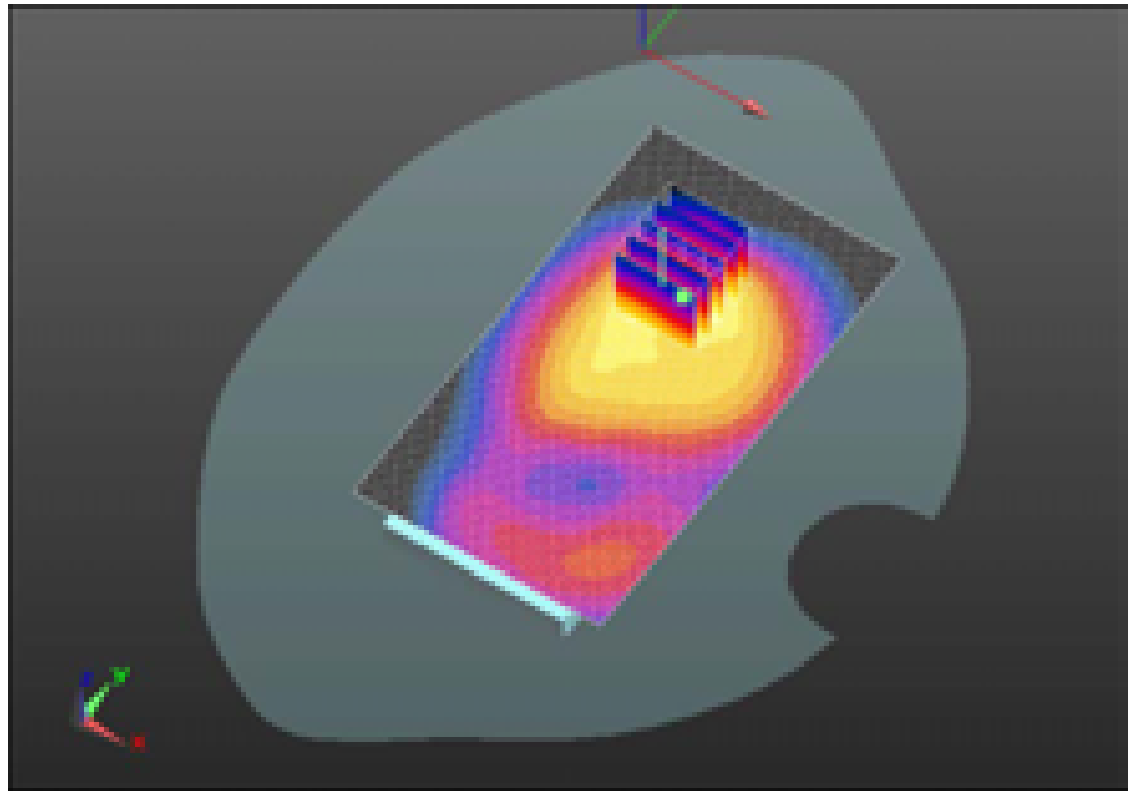
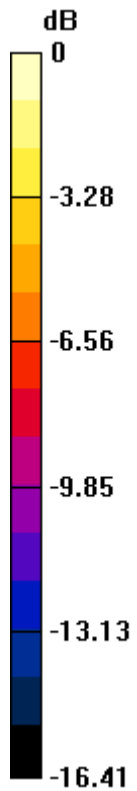
Reference Value = 16.568 V/m ; Power Drift = -0.23 dB

Peak SAR (extrapolated) = 1.9480

SAR(1 g) = 1.11 mW/g ; SAR(10 g) = 0.584 mW/g

Maximum value of SAR (measured) = 1.300 mW/g

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0 dB = 1.300mW/g = 2.28 dB mW/g

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Date/Time: 6/11/2012 7:19:25 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_LTE_2_high_chan_QPSK_RB_1_Offset_0_a
mb_temp_23.1_liq_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1900 MHz

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.547 \text{ mho/m}$; $\epsilon_r = 50.764$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS2 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.691 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

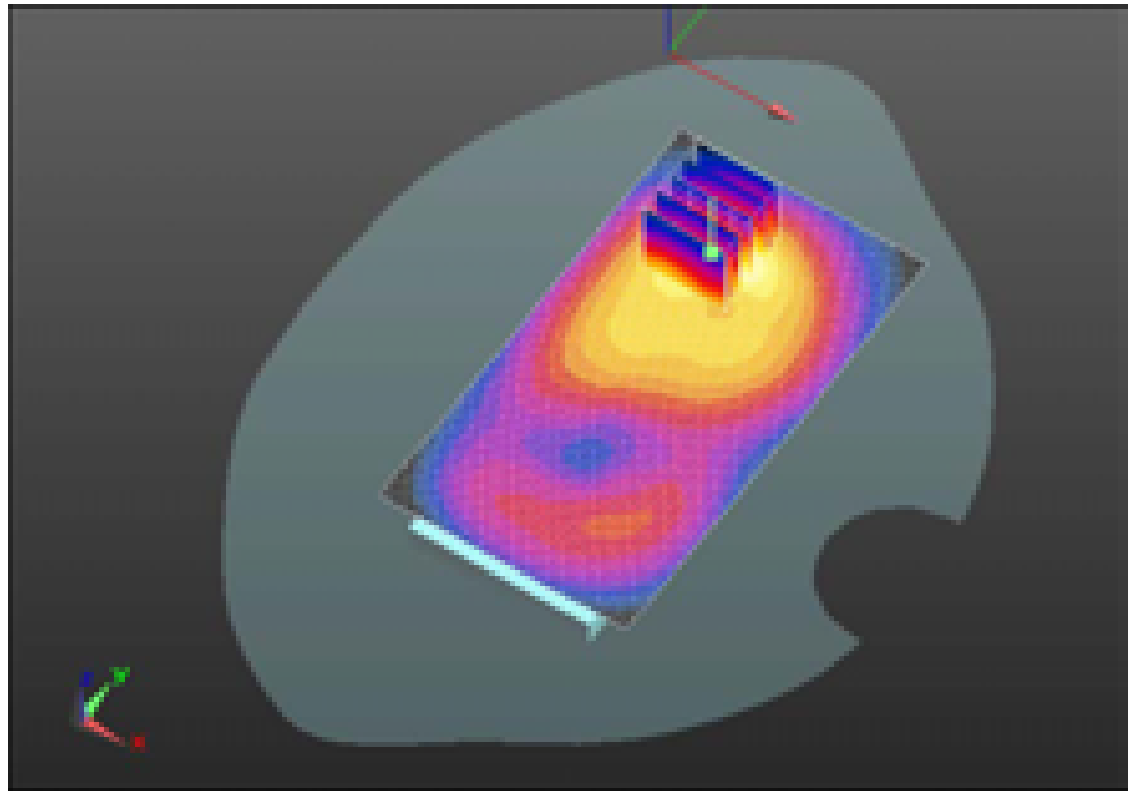
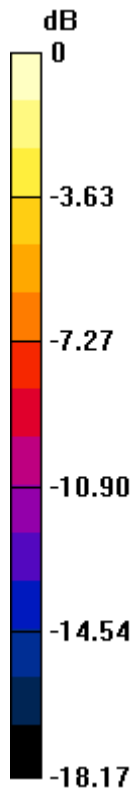
Reference Value = 9.546 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 2.2950

SAR(1 g) = 1.26 mW/g; SAR(10 g) = 0.641 mW/g

Maximum value of SAR (measured) = 1.604 mW/g

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0 dB = 1.600mW/g = 4.08 dB mW/g

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	Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			172(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/11/2012 10:27:49 PM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Front_LTE_2_mid_chan_QPSK_RB_1_Offset_0_a
mb_temp_22.8_liq_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: LTE; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.523 \text{ mho/m}$; $\epsilon_r = 50.843$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.661 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

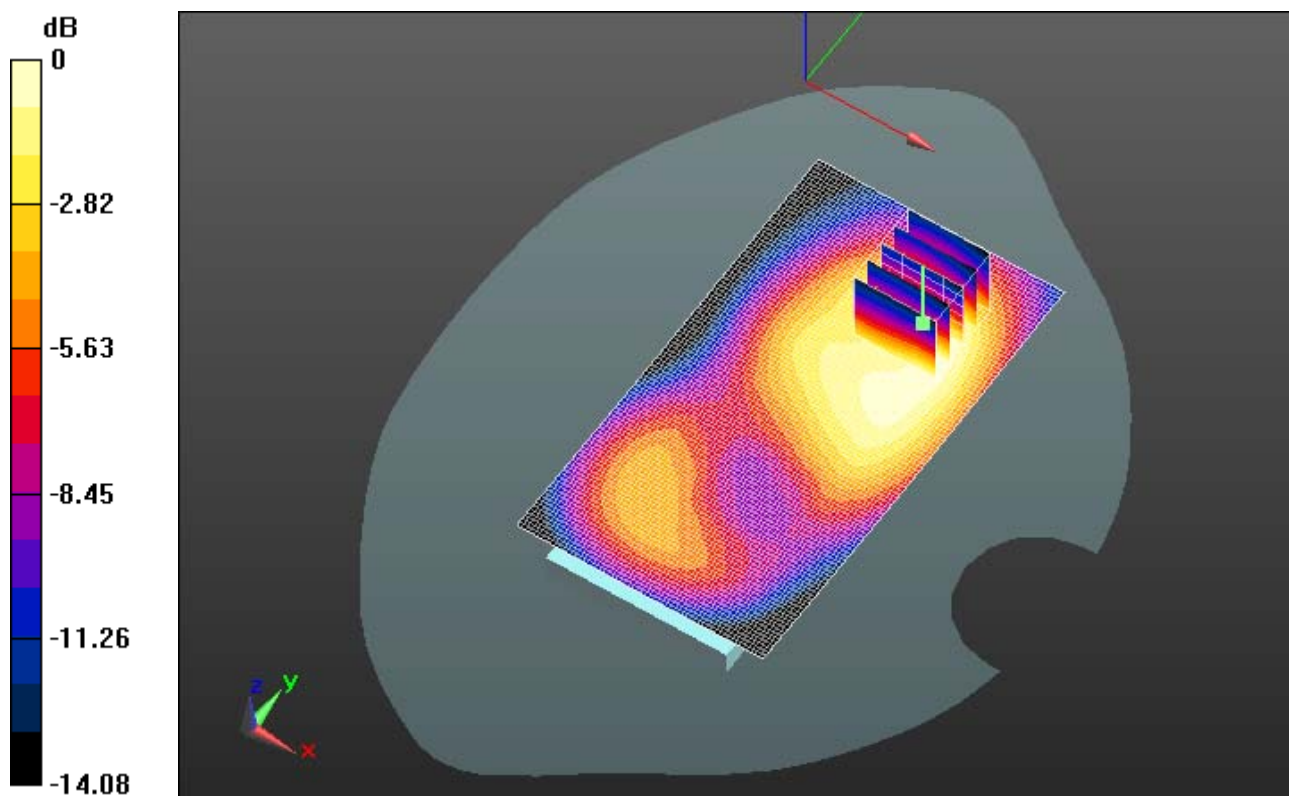
Reference Value = 8.385 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.8420

SAR(1 g) = 0.537 mW/g; SAR(10 g) = 0.321 mW/g

Maximum value of SAR (measured) = 0.624 mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 0.620mW/g = -4.15 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/12/2012 1:00:31 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Left_LTE_2_mid_chan_QPSK_RB_1_Offset_0_am
b_temp_22.7_liq_temp_21.5C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: LTE; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.523 \text{ mho/m}$; $\epsilon_r = 50.843$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.427 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

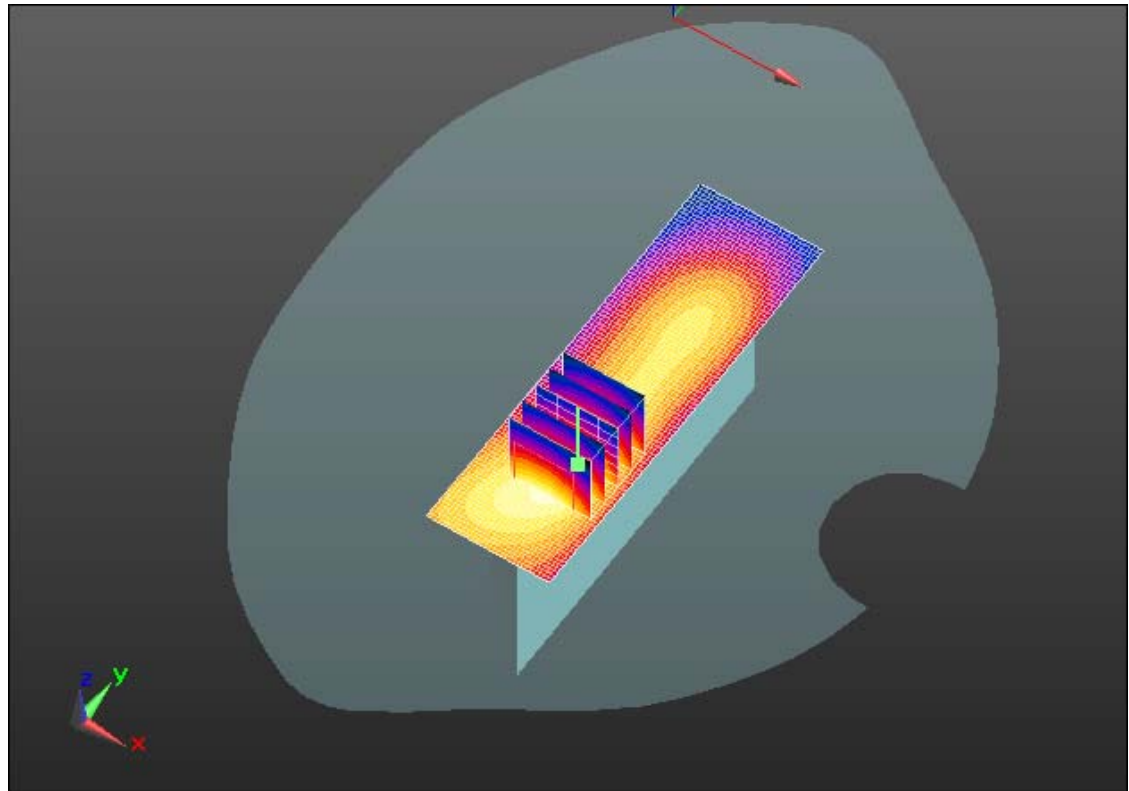
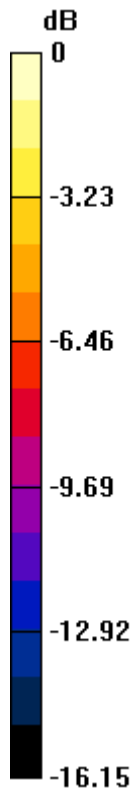
Reference Value = 12.343 V/m ; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.5720

SAR(1 g) = 0.339 mW/g ; SAR(10 g) = 0.190 mW/g

Maximum value of SAR (measured) = 0.415 mW/g

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0 dB = 0.410mW/g = -7.74 dB mW/g

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	Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			176(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/12/2012 1:13:46 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Right_LTE_2_mid_chan_QPSK_RB_1_Offset_0_a
mb_temp_23.1_liq_temp_21.5C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: LTE; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.523 \text{ mho/m}$; $\epsilon_r = 50.843$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.210 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

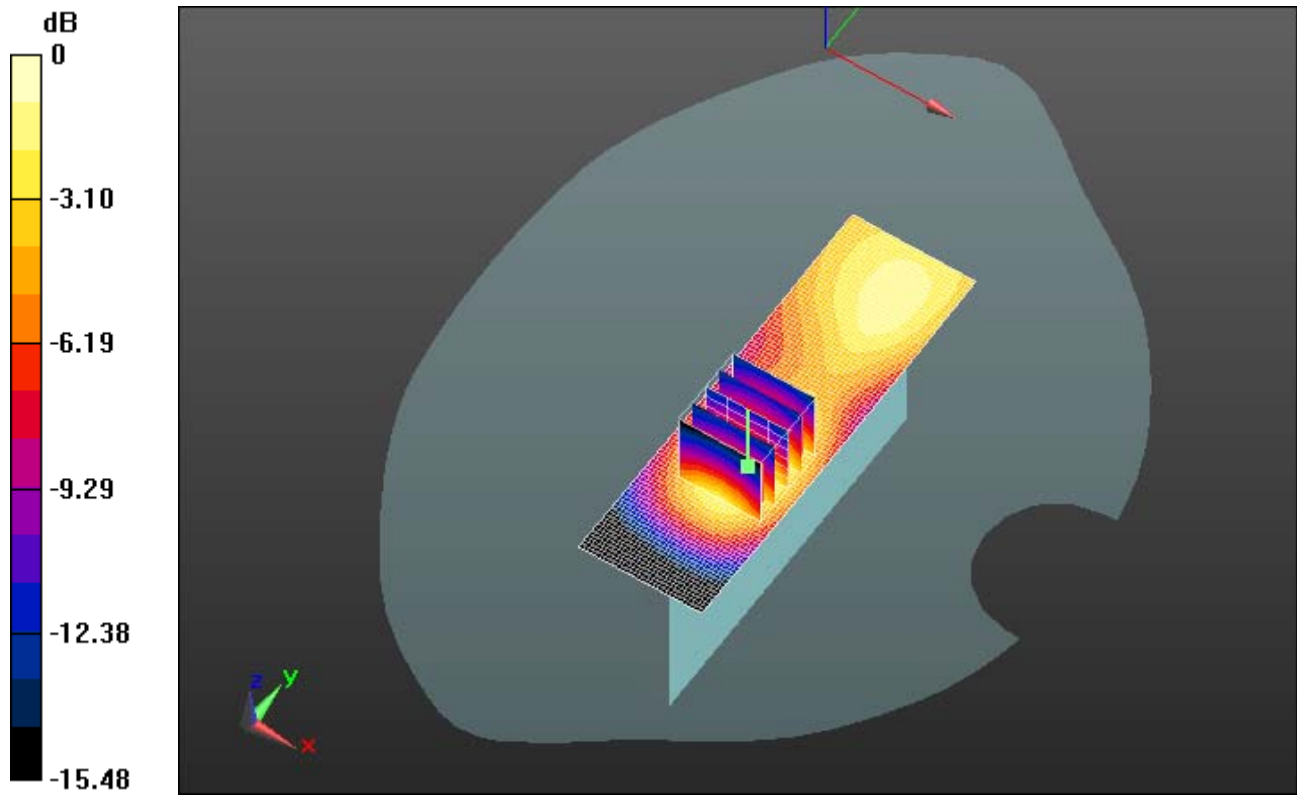
Reference Value = 10.233 V/m ; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.2790

SAR(1 g) = 0.174 mW/g ; SAR(10 g) = 0.100 mW/g

Maximum value of SAR (measured) = 0.211 mW/g

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0 dB = 0.210mW/g = -13.56 dB mW/g

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Date/Time: 6/12/2012 12:32:17 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Bottom_LTE_2_low_chan_QPSK_RB_1_Offset_0_amb_temp_23.0_liq_temp_21.4C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A211C01

Communication System: LTE; Frequency: 1860 MHz

Medium parameters used: $f = 1860 \text{ MHz}$; $\sigma = 1.499 \text{ mho/m}$; $\epsilon_r = 50.873$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (41x61x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.978 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

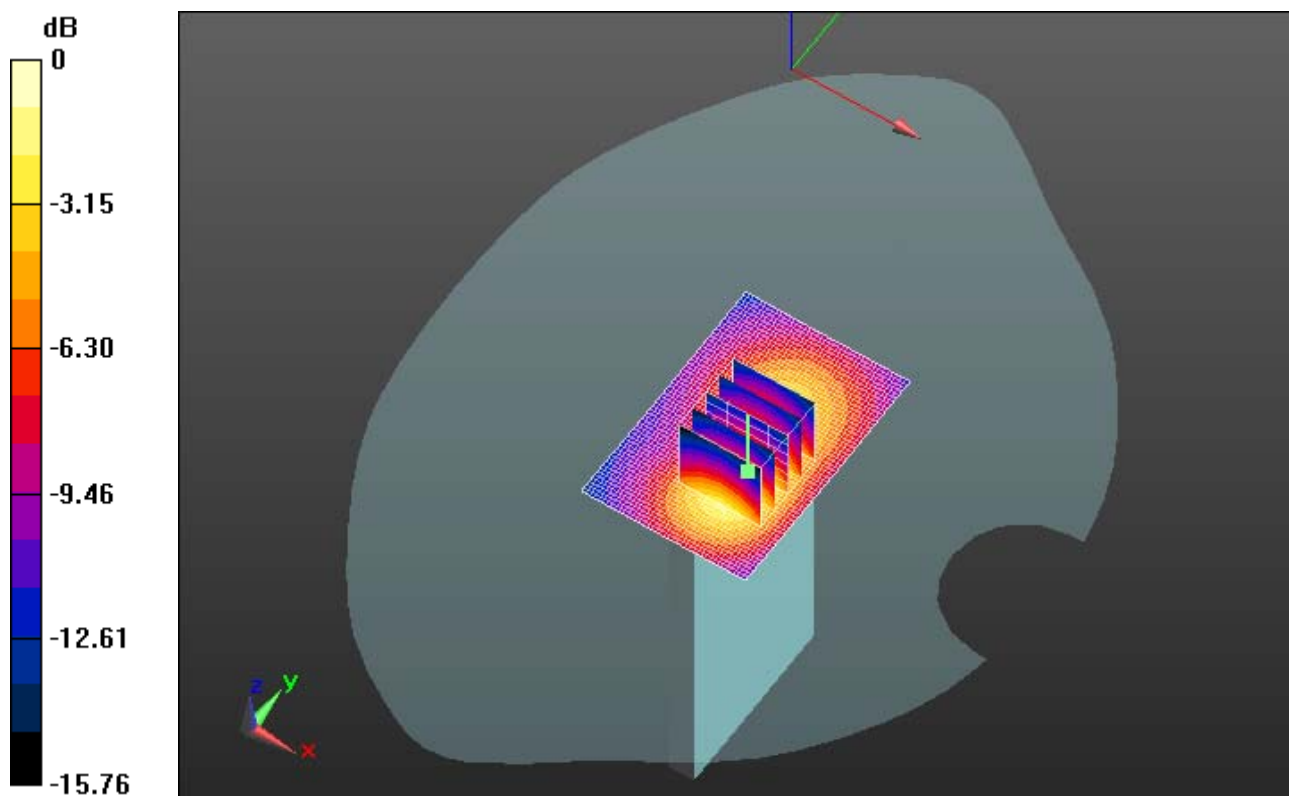
Reference Value = 24.841 V/m ; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 1.3950

SAR(1 g) = 0.838 mW/g ; SAR(10 g) = 0.467 mW/g

Maximum value of SAR (measured) = 1.048 mW/g

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

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/11/2012 11:51:56 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Bottom_LTE_2_mid_chan_QPSK_RB_1_Offset_0_amb_temp_22.7_liq_temp_21.4C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A211C01

Communication System: LTE; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.523 \text{ mho/m}$; $\epsilon_r = 50.843$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (41x61x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.972 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

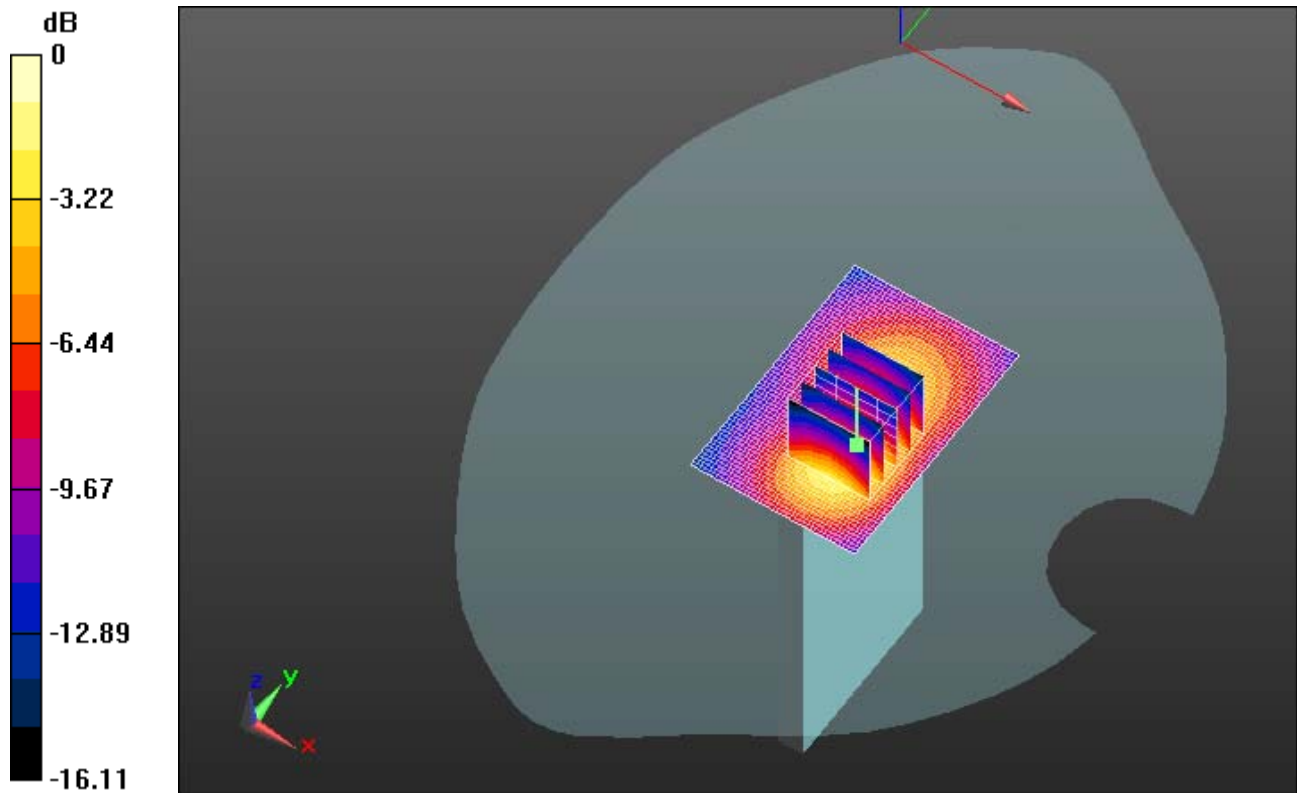
Reference Value = 24.550 V/m ; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.4300

SAR(1 g) = 0.831 mW/g ; SAR(10 g) = 0.456 mW/g

Maximum value of SAR (measured) = 1.058 mW/g

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0 dB = 1.060mW/g = 0.51 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/12/2012 12:44:03 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Bottom_LTE_2_high_chan_QPSK_RB_1_Offset_0
_amb_temp_22.8_liq_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A211C01

Communication System: LTE; Frequency: 1900 MHz

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.547 \text{ mho/m}$; $\epsilon_r = 50.764$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (41x61x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.061 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

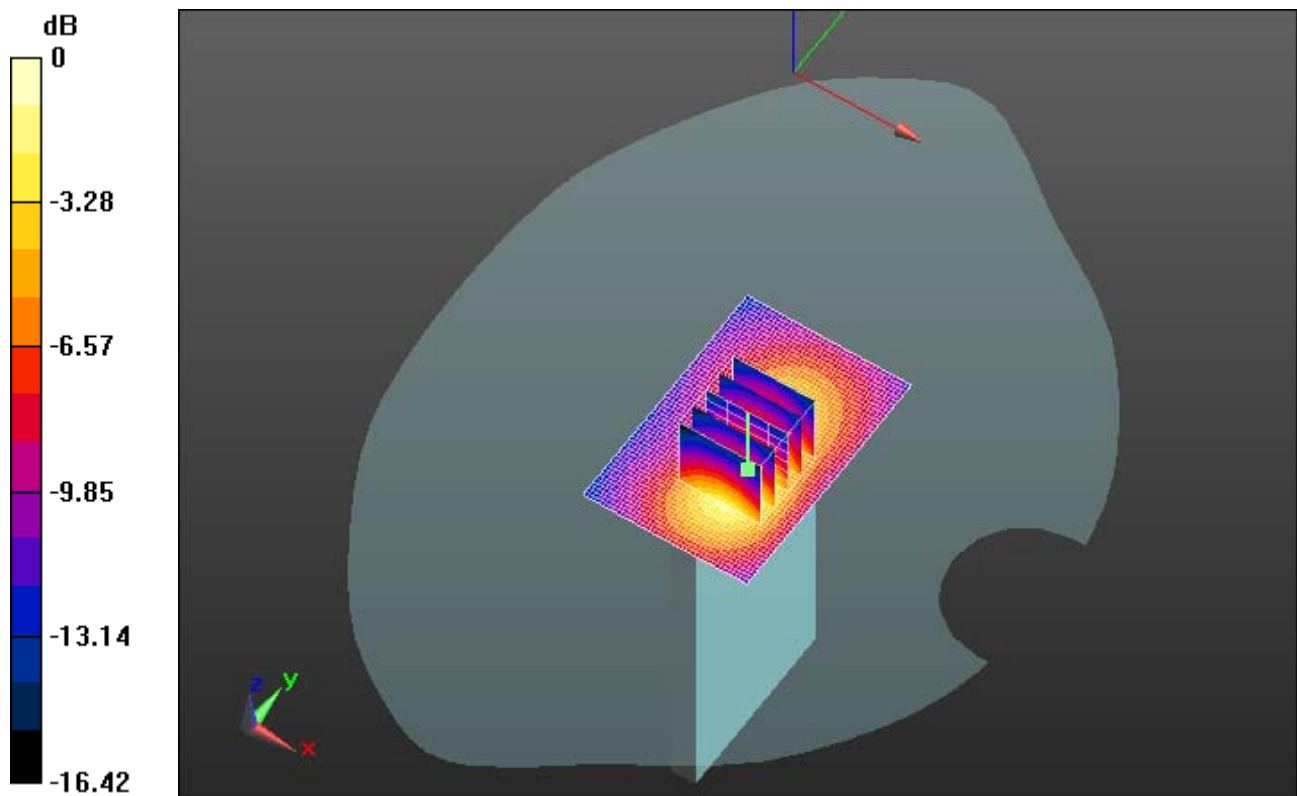
Reference Value = 25.172 V/m; Power Drift = 0.0025 dB

Peak SAR (extrapolated) = 1.5140

SAR(1 g) = 0.895 mW/g; SAR(10 g) = 0.488 mW/g

Maximum value of SAR (measured) = 1.126 mW/g

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0 dB = 1.130mW/g = 1.06 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/12/2012 2:22:56 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_Headset_LTE_2_mid_chan_QPSK_RB_1_Offset_0_amb_temp_23.2_liq_temp_21.4C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: LTE; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.523 \text{ mho/m}$; $\epsilon_r = 50.843$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.786 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

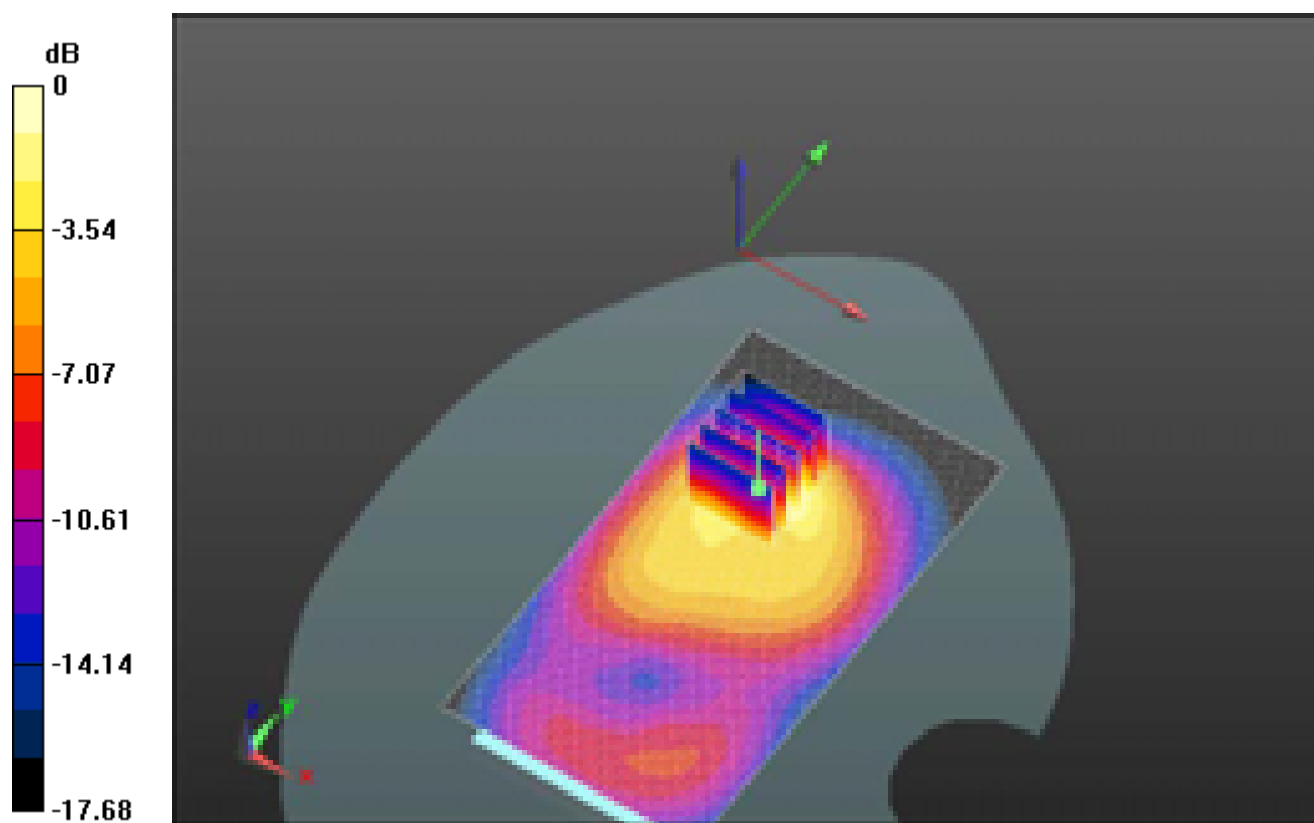
Reference Value = 14.575 V/m; Power Drift = -0.27 dB

Peak SAR (extrapolated) = 2.3220

SAR(1 g) = 1.28 mW/g; SAR(10 g) = 0.663 mW/g

Maximum value of SAR (measured) = 1.577 mW/g

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0 dB = 1.580mW/g = 3.97 dB mW/g

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	Appendix C2 for the BlackBerry® Smartphone Model RFF91LW SAR Report			186(246)
Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 9/27/2012 3:57:31 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_2_mid_chan_QPSK_RB_1_Offset_0_amb_temp_23.7_liq_temp_22.6C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: LTE ; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.568 \text{ mho/m}$; $\epsilon_r = 51.052$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.626 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

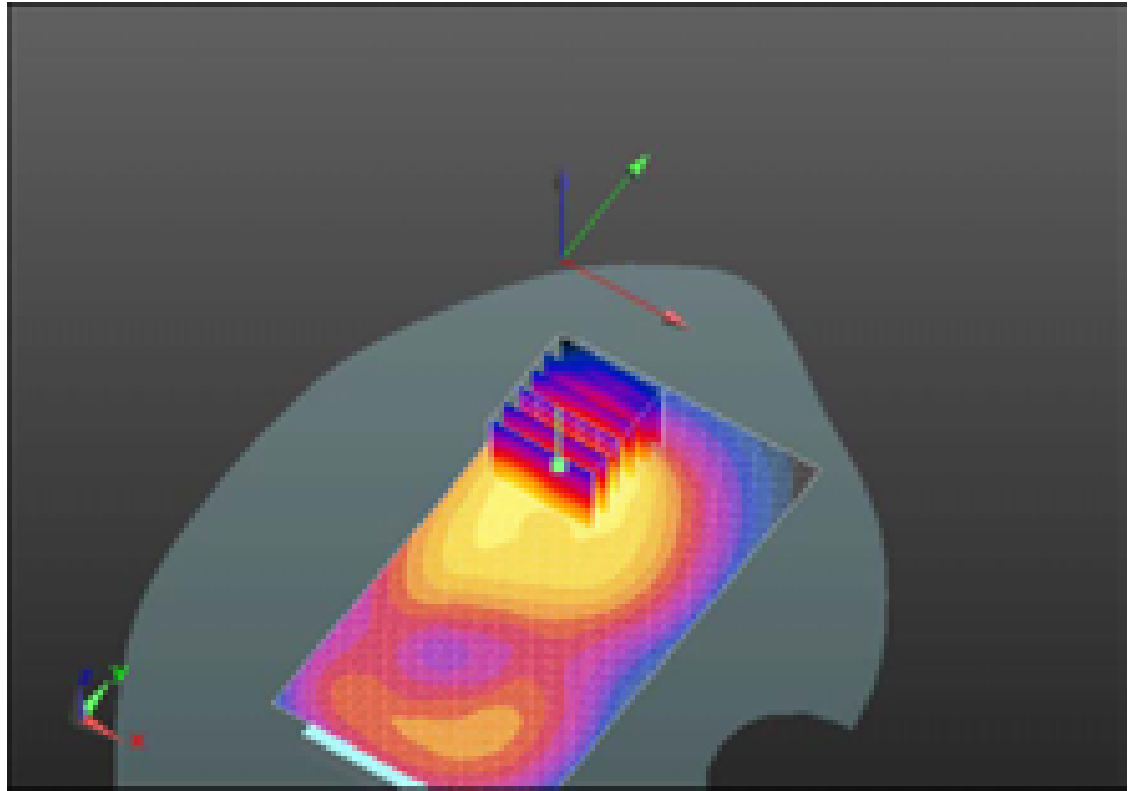
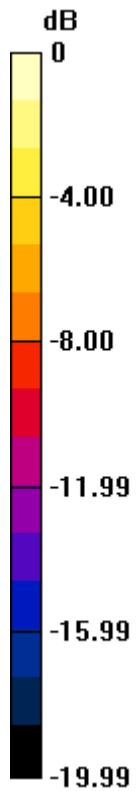
Reference Value = 12.365 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 2.6070

SAR(1 g) = 1.45 mW/g; SAR(10 g) = 0.762 mW/g

Maximum value of SAR (measured) = 1.804 mW/g

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0 dB = 1.800mW/g = 5.11 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 10/23/2012 10:50:26 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_LTE_2_mid_chan_QPSK_RB_1_Offset_0_amb_temp_23.8_liq_temp_22.9C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: LTE 1900_Band 2; Frequency: 1880 MHz

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.485$ mho/m; $\epsilon_r = 51.584$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.398 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

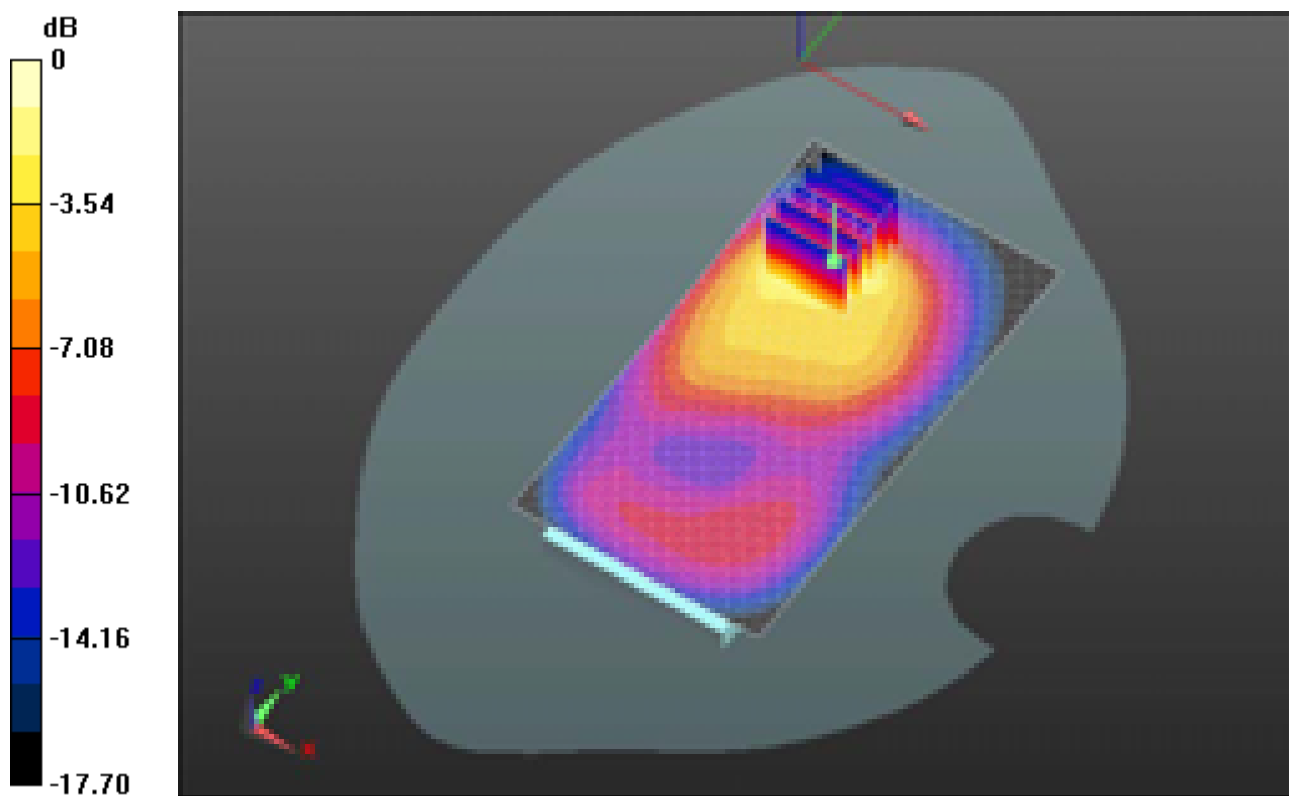
Reference Value = 9.737 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 1.9940

SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.574 mW/g

Maximum value of SAR (measured) = 1.405 mW/g

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0 dB = 1.410mW/g = 2.98 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/13/2012 2:53:39 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_GPRS1900_low_chan_amb_temp_22.6_liq_
temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A211C01

Communication System: GPRS 1900; Frequency: 1850.2 MHz

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.506$ mho/m; $\epsilon_r = 50.949$;
 $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.382 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 13.244 V/m; Power Drift = -0.04 dB

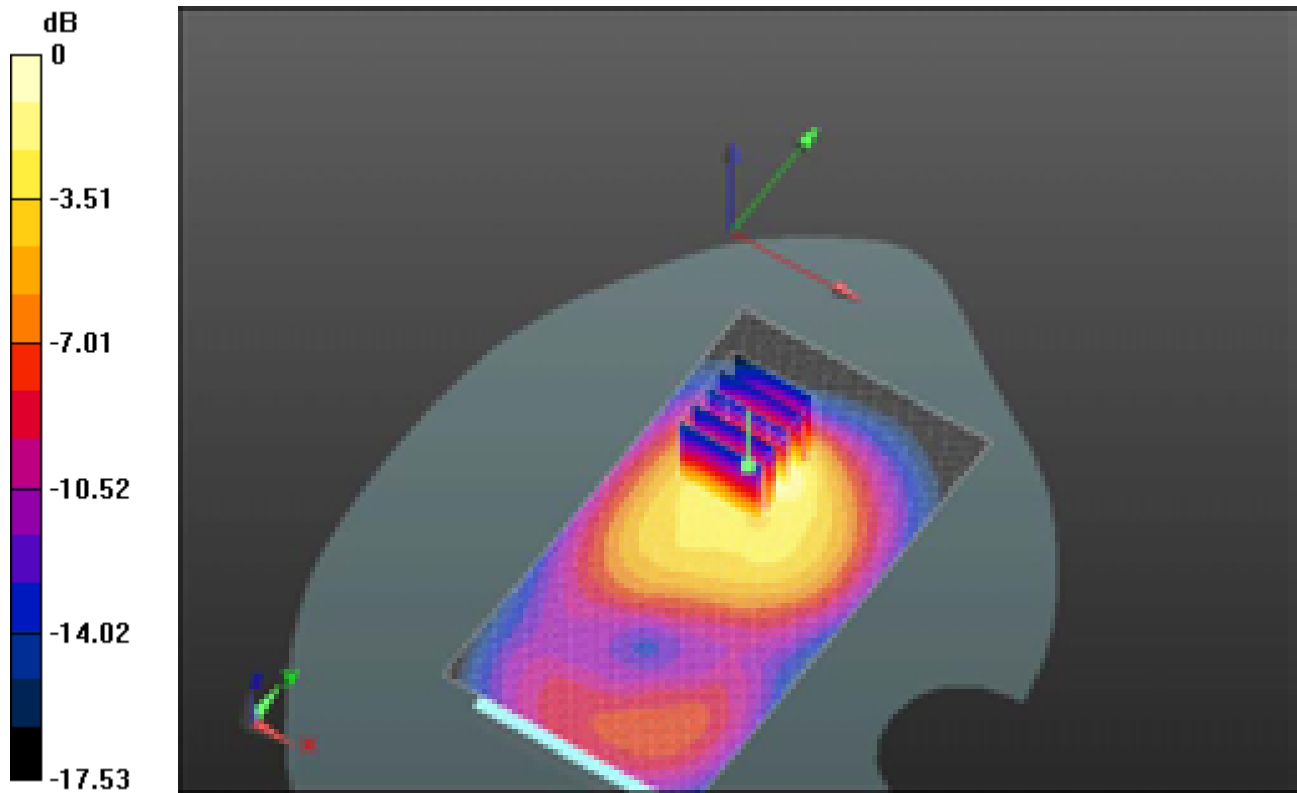
Peak SAR (extrapolated) = 1.7850

SAR(1 g) = 0.983 mW/g; SAR(10 g) = 0.515 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.197 mW/g

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0 dB = 1.200mW/g = 1.58 dB mW/g

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Date/Time: 6/13/2012 2:35:36 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_GPRS1900_mid_chan_amb_temp_23.1_liq_
temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A211C01

Communication System: GPRS 1900; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 50.837$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.357 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

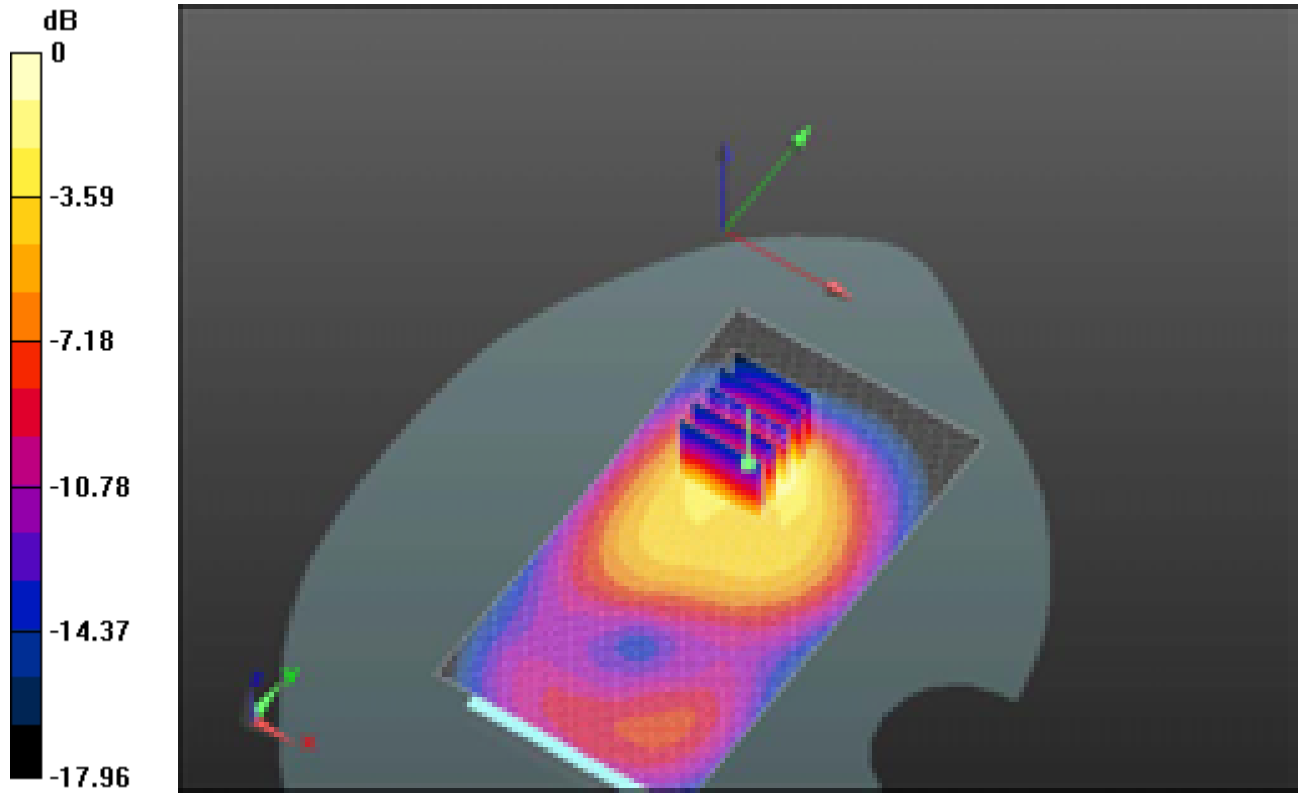
Reference Value = 12.975 V/m; Power Drift = -0.22 dB

Peak SAR (extrapolated) = 1.7690

SAR(1 g) = 0.972 mW/g; SAR(10 g) = 0.500 mW/g

Maximum value of SAR (measured) = 1.226 mW/g

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0 dB = 1.230mW/g = 1.80 dB mW/g

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Date/Time: 6/13/2012 3:11:00 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_GPRS1900_high_chan_amb_temp_22.5_liq
_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A211C01

Communication System: GPRS 1900; Frequency: 1909.8 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.575$ mho/m; $\epsilon_r = 50.701$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS2 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.413 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

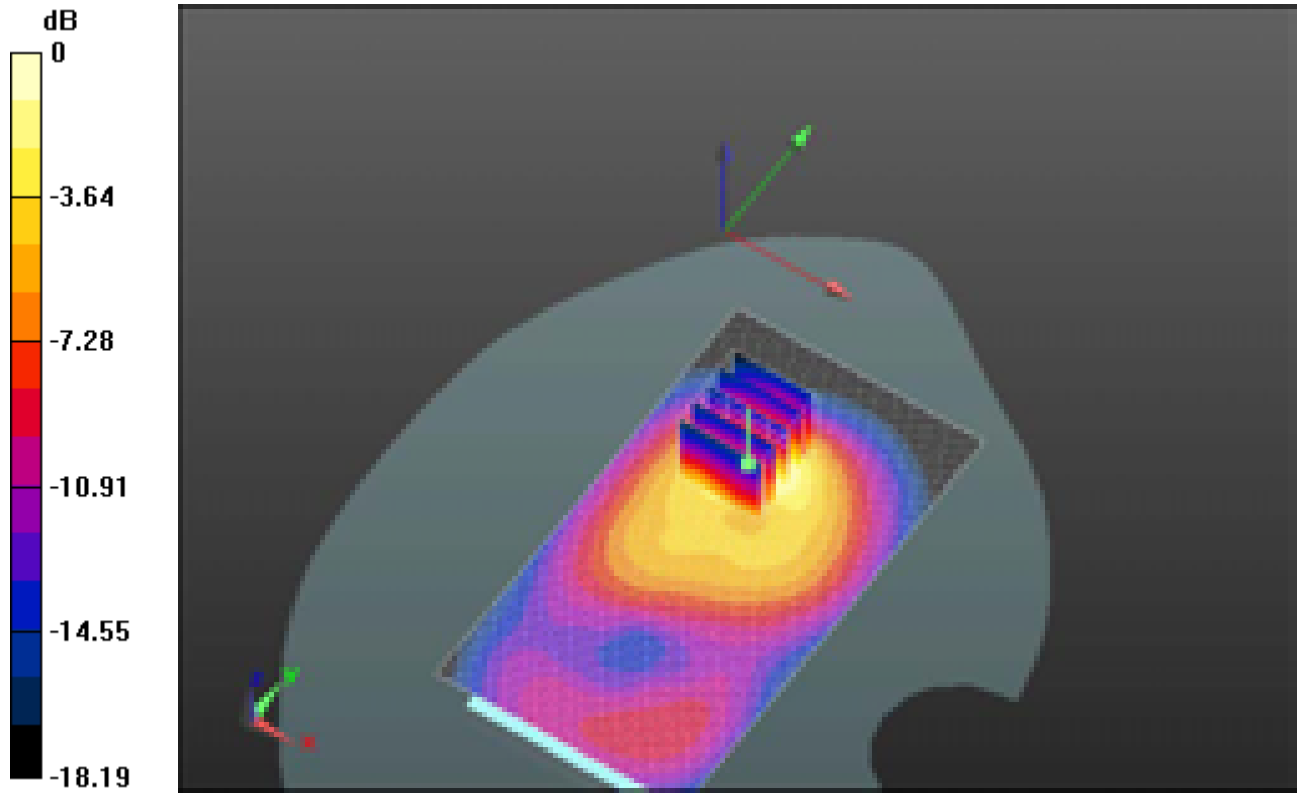
Reference Value = 12.278 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.9730

SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.517 mW/g

Maximum value of SAR (measured) = 1.297 mW/g

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0 dB = 1.300mW/g = 2.28 dB mW/g

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Date/Time: 6/13/2012 4:06:00 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Front_GPRS1900_mid_chan_amb_temp_22.5_liq_
temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A211C01

Communication System: GPRS 1900; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 50.837$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.487 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

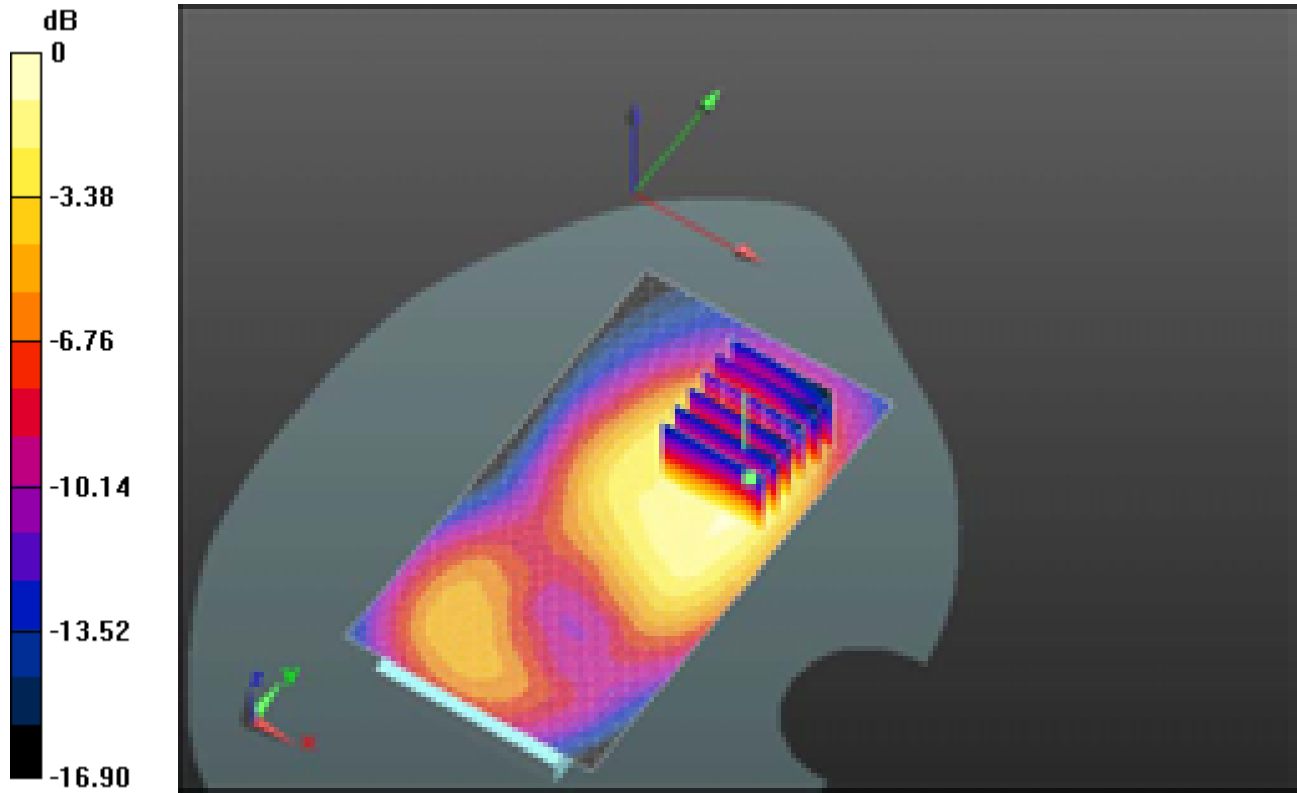
Reference Value = 8.903 V/m ; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.6960

SAR(1 g) = 0.429 mW/g ; SAR(10 g) = 0.250 mW/g

Maximum value of SAR (measured) = 0.521 mW/g

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0 dB = 0.520mW/g = -5.68 dB mW/g

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Date/Time: 6/13/2012 6:02:03 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Left_GPRS1900_mid_chan_amb_temp_22.5C_liq
_temp_21.5C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: GPRS 1900; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 50.837$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.277 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

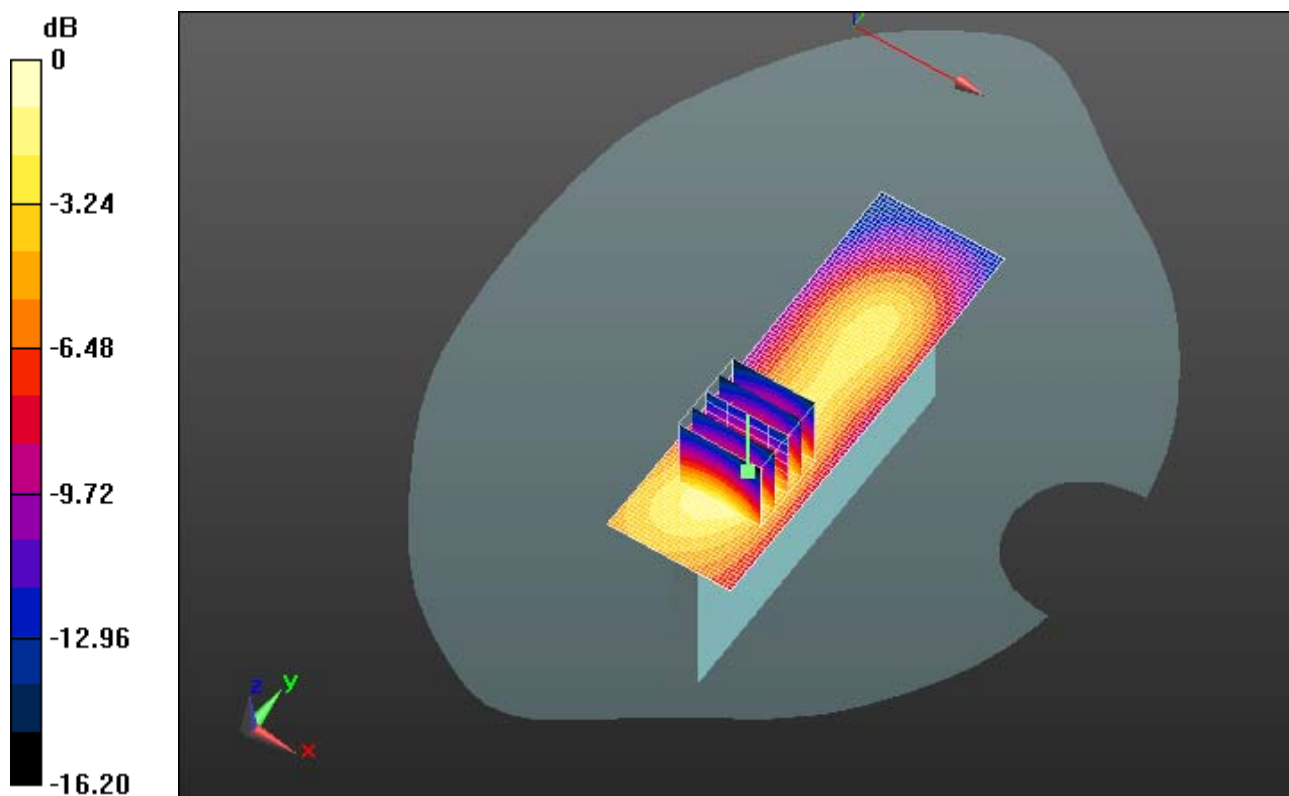
Reference Value = 10.388 V/m ; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.4010

SAR(1 g) = 0.234 mW/g ; SAR(10 g) = 0.129 mW/g

Maximum value of SAR (measured) = 0.294 mW/g

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0 dB = 0.290mW/g = -10.75 dB mW/g

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Date/Time: 6/13/2012 6:16:04 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Right_GPRS1900_mid_chan_amb_temp_22.7C_li
q_temp_21.5C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: GPRS 1900; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 50.837$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.125 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

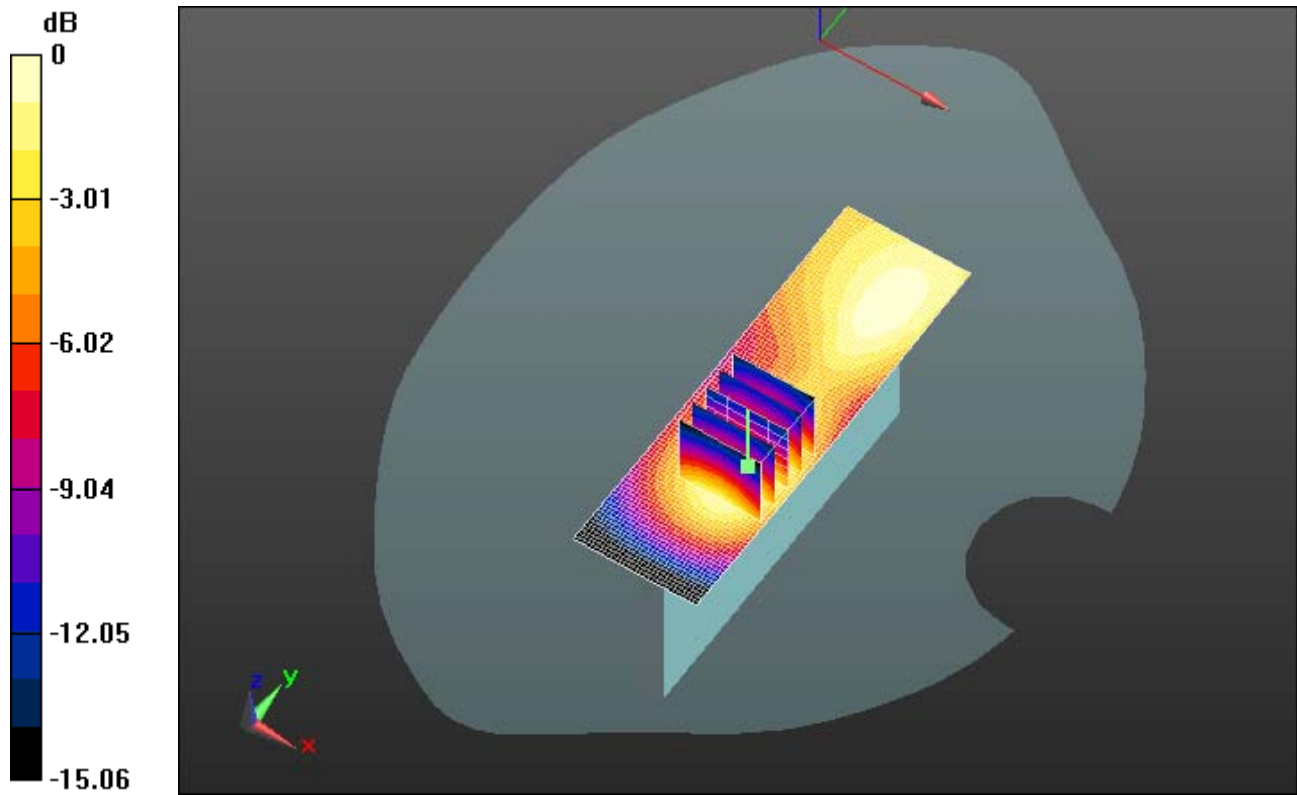
Reference Value = 7.116 V/m ; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.1640

SAR(1 g) = 0.100 mW/g ; SAR(10 g) = 0.059 mW/g

Maximum value of SAR (measured) = 0.122 mW/g

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0 dB = 0.120mW/g = -18.42 dB mW/g

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Date/Time: 6/13/2012 5:45:42 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Bottom_GPRS1900_mid_chan_amb_temp_22.5_li
q_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: GPRS 1900; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 50.837$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (41x61x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.731 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

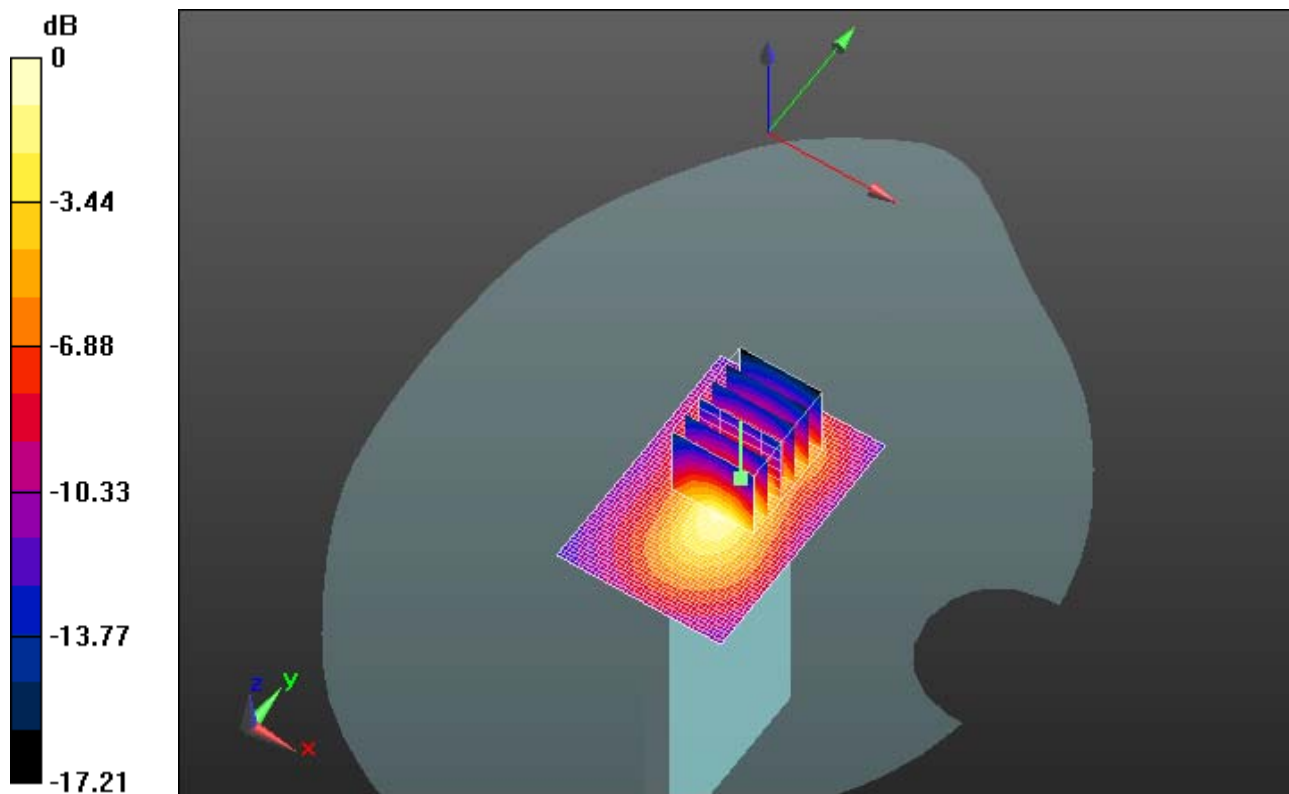
Reference Value = 21.915 V/m ; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 1.0510

SAR(1 g) = 0.600 mW/g ; SAR(10 g) = 0.326 mW/g

Maximum value of SAR (measured) = 0.756 mW/g

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0 dB = 0.760mW/g = -2.38 dB mW/g

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Date/Time: 6/13/2012 3:29:37 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_Headset_GPRS1900_high_chan_amb_temp
_22.5_liq_temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A211C01

Communication System: GPRS 1900; Frequency: 1909.8 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.575$ mho/m; $\epsilon_r = 50.701$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.394 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

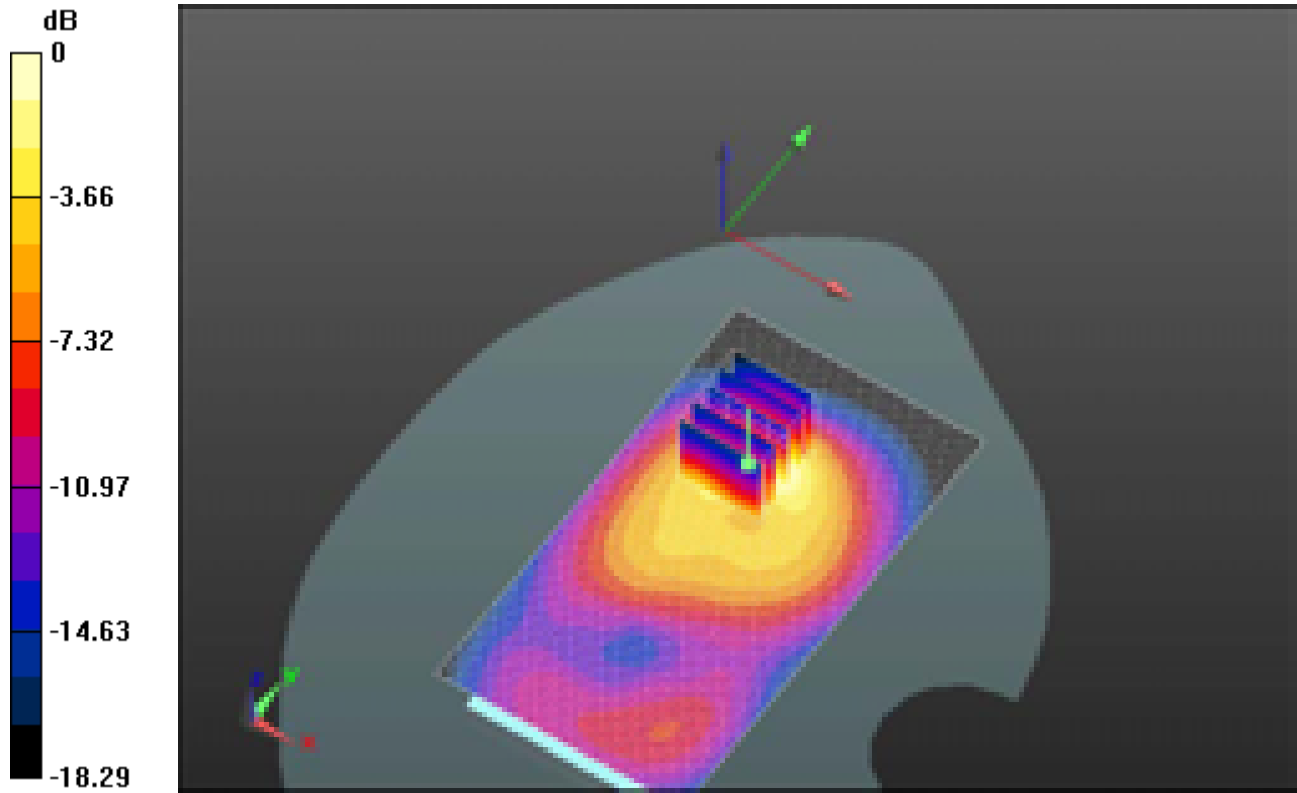
Reference Value = 12.355 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.9260

SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.508 mW/g

Maximum value of SAR (measured) = 1.274 mW/g

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0 dB = 1.270mW/g = 2.08 dB mW/g

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Date/Time: 6/13/2012 4:28:16 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_GPRS1900_3slots_high_chan_amb_temp_2
2.5_liq_temp_21.3C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A211C01

Communication System: GPRS 1900 (3-slots); Frequency: 1909.8 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.575$ mho/m; $\epsilon_r = 50.701$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS2 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.896 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

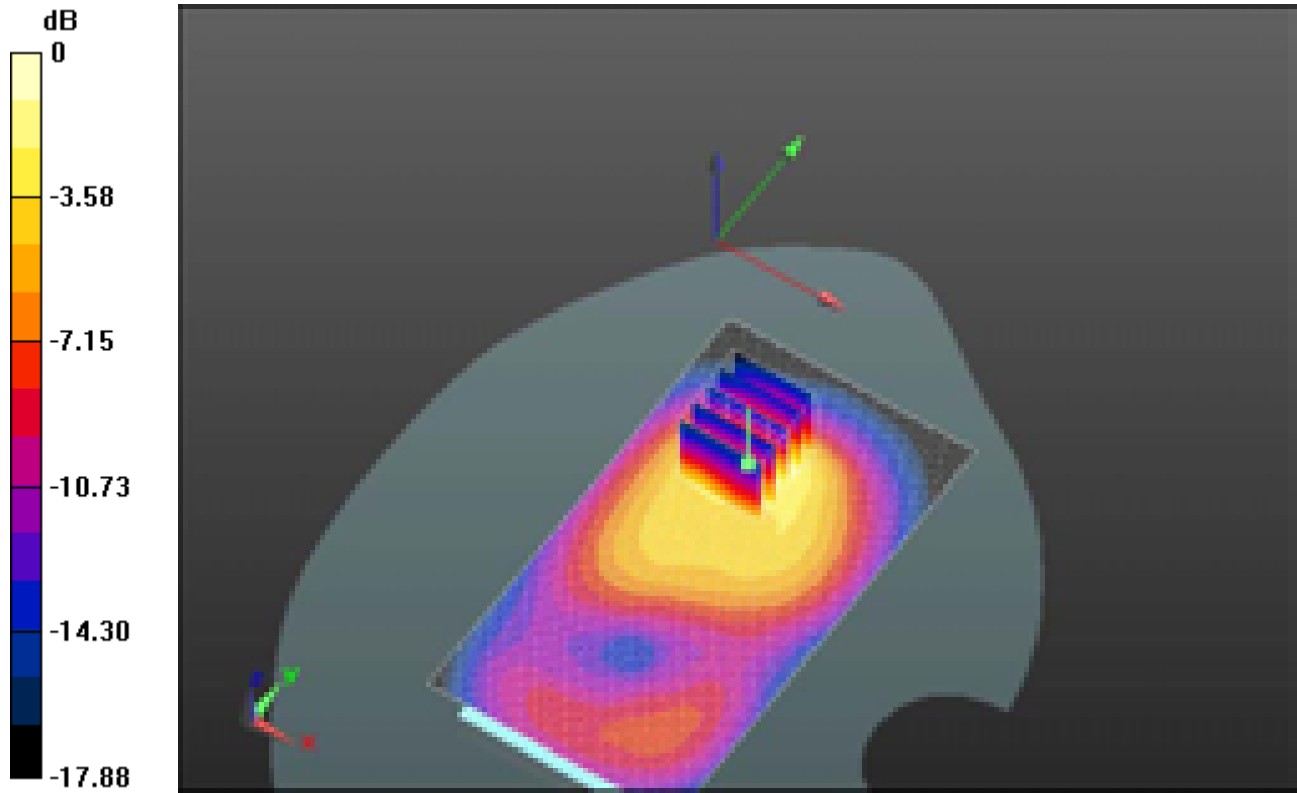
Reference Value = 9.860 V/m; Power Drift = 0.0067 dB

Peak SAR (extrapolated) = 1.3220

SAR(1 g) = 0.728 mW/g; SAR(10 g) = 0.374 mW/g

Maximum value of SAR (measured) = 0.922 mW/g

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0 dB = 0.920mW/g = -0.72 dB mW/g

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Date/Time: 6/13/2012 4:44:24 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_GPRS1900_4-slots_high_chan_amb_temp_22.5_liq_temp_21.4C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A211C01

Communication System: GPRS 1900 (4-slots); Frequency: 1909.8 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.575$ mho/m; $\epsilon_r = 50.701$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS2 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.027 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

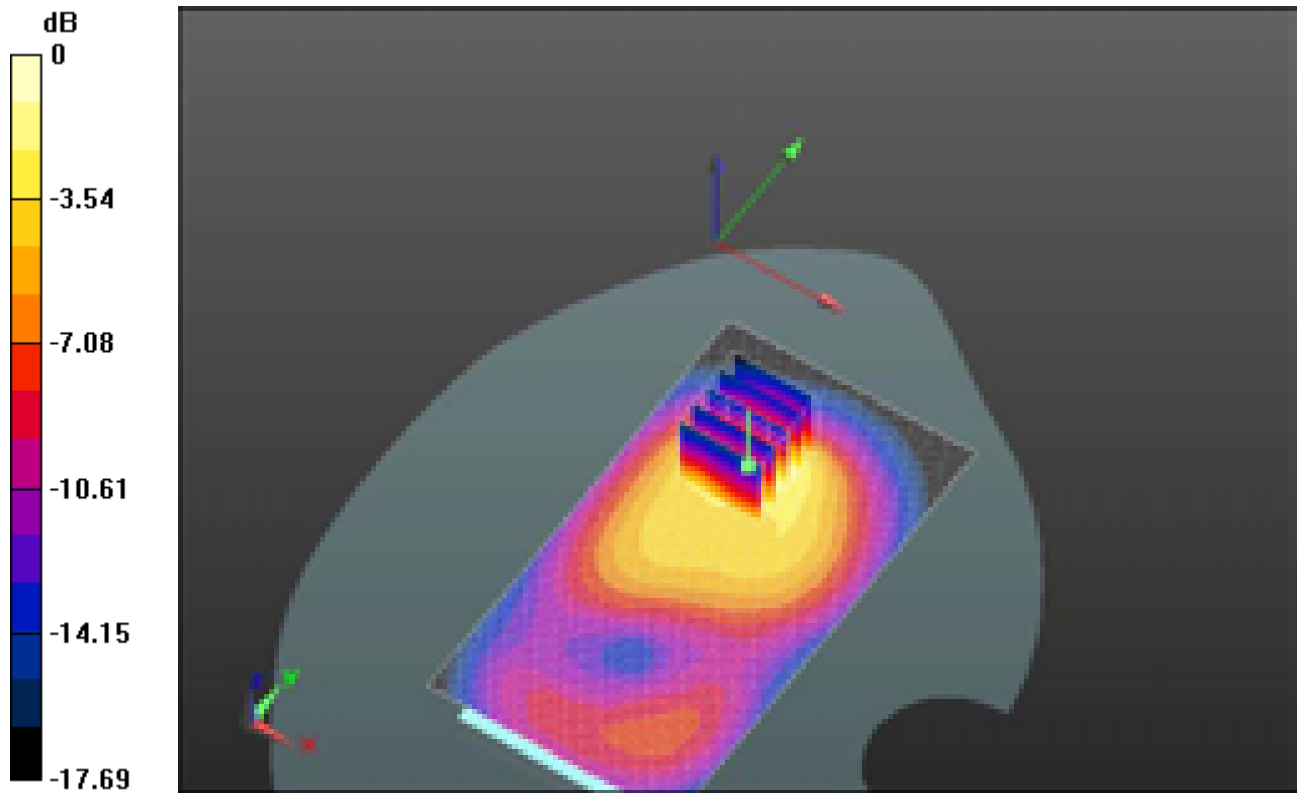
Reference Value = 10.680 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.5280

SAR(1 g) = 0.836 mW/g; SAR(10 g) = 0.429 mW/g

Maximum value of SAR (measured) = 1.043 mW/g

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0 dB = 1.040mW/g = 0.34 dB mW/g

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Date/Time: 9/28/2012 12:28:09 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_GPRS1900_high_chan_amb_temp_23.8_liq
_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: GPRS 1900; Frequency: 1909.8 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.593$ mho/m; $\epsilon_r = 50.906$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.504 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

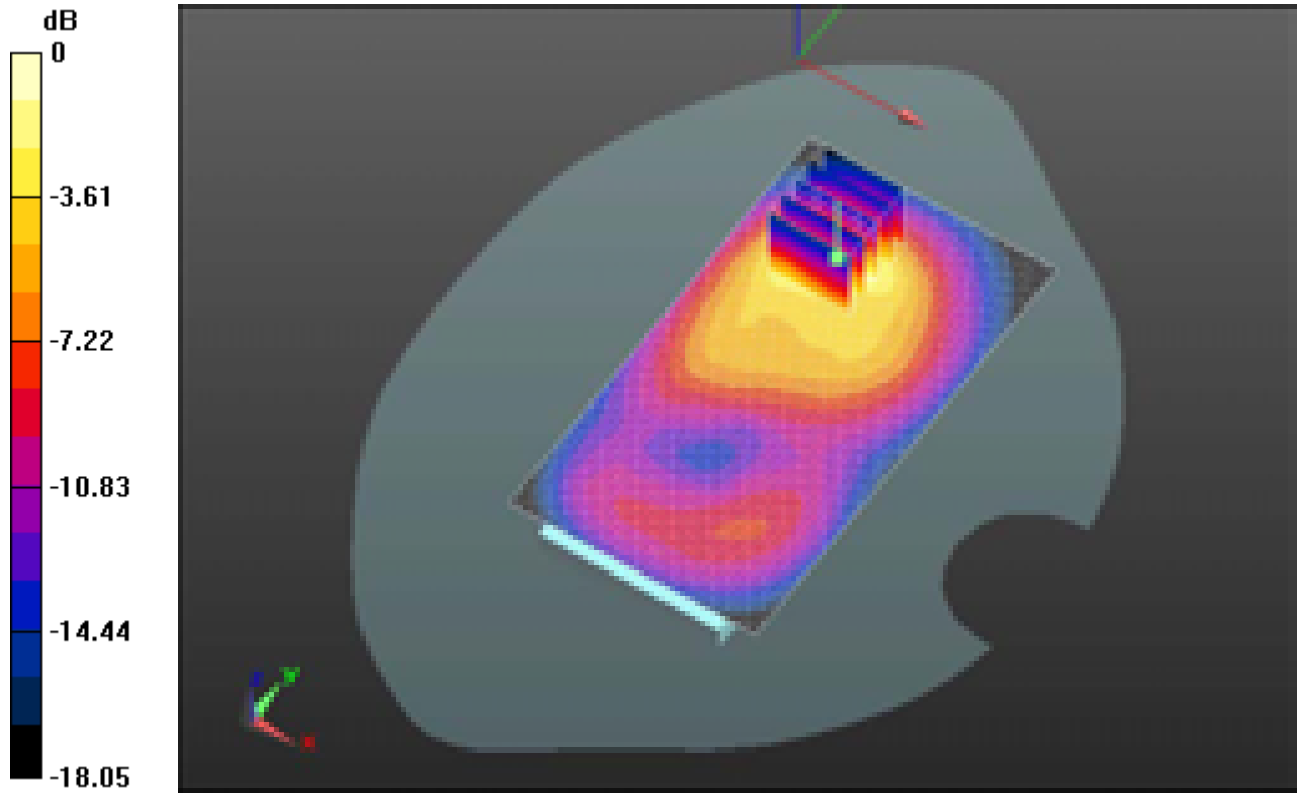
Reference Value = 8.737 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 2.0890

SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.576 mW/g

Maximum value of SAR (measured) = 1.490 mW/g

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0 dB = 1.490mW/g = 3.46 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/12/2012 4:12:03 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_UMTS_Band_II_low_chan_amb_temp_22.6_liq_temp_21.4C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: WCDMA FDD II; Frequency: 1852.4 MHz

Medium parameters used (interpolated): $f = 1852.4 \text{ MHz}$; $\sigma = 1.491 \text{ mho/m}$; $\epsilon_r = 50.891$;
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.846 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 16.704 V/m; Power Drift = -0.04 dB

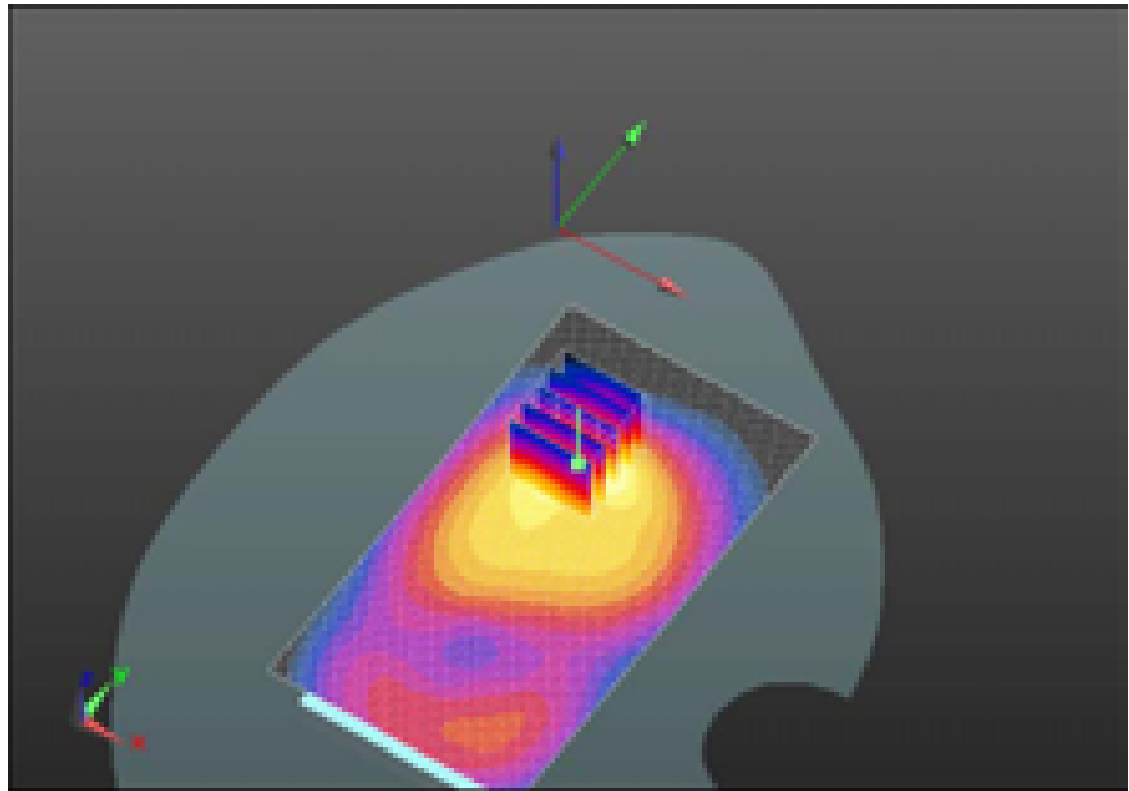
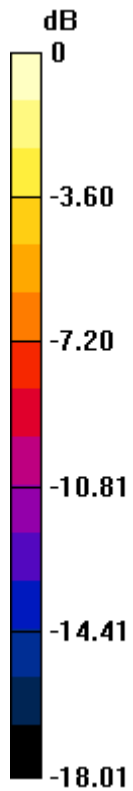
Peak SAR (extrapolated) = 2.5050

SAR(1 g) = 1.37 mW/g; SAR(10 g) = 0.714 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.778 mW/g

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0 dB = 1.780mW/g = 5.01 dB mW/g

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Date/Time: 6/12/2012 3:52:25 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_UMTS_Band_II_mid_chan_amb_temp_22.3
_liq_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: WCDMA FDD II; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.523 \text{ mho/m}$; $\epsilon_r = 50.843$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.726 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

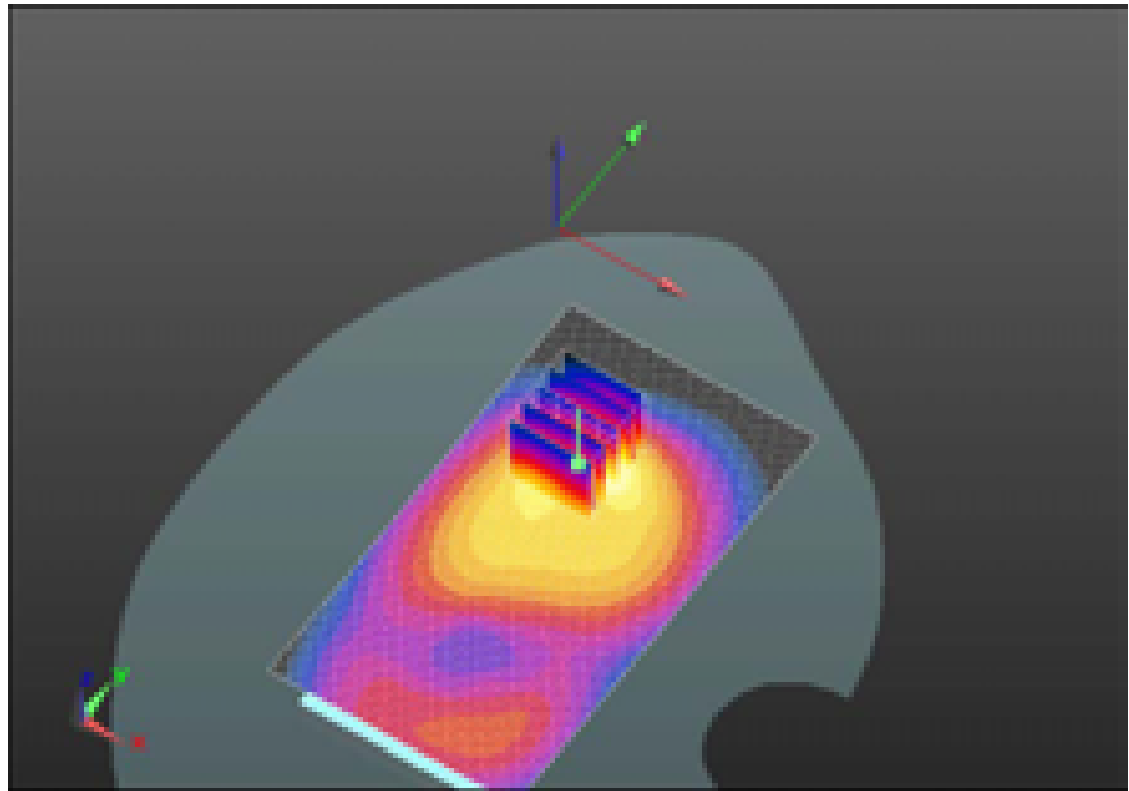
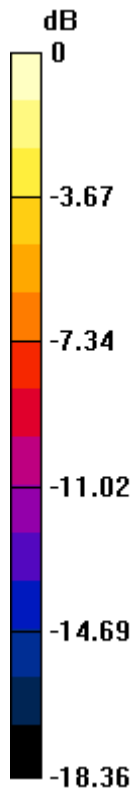
Reference Value = 15.347 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 2.3320

SAR(1 g) = 1.27 mW/g; SAR(10 g) = 0.656 mW/g

Maximum value of SAR (measured) = 1.622 mW/g

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0 dB = 1.620mW/g = 4.19 dB mW/g

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Date/Time: 6/12/2012 4:29:21 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_UMTS_Band_II_high_chan_amb_temp_22.3
_liq_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: WCDMA FDD II; Frequency: 1907.6 MHz

Medium parameters used (interpolated): $f = 1907.6 \text{ MHz}$; $\sigma = 1.556 \text{ mho/m}$; $\epsilon_r = 50.725$;
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.848 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 15.153 V/m ; Power Drift = -0.06 dB

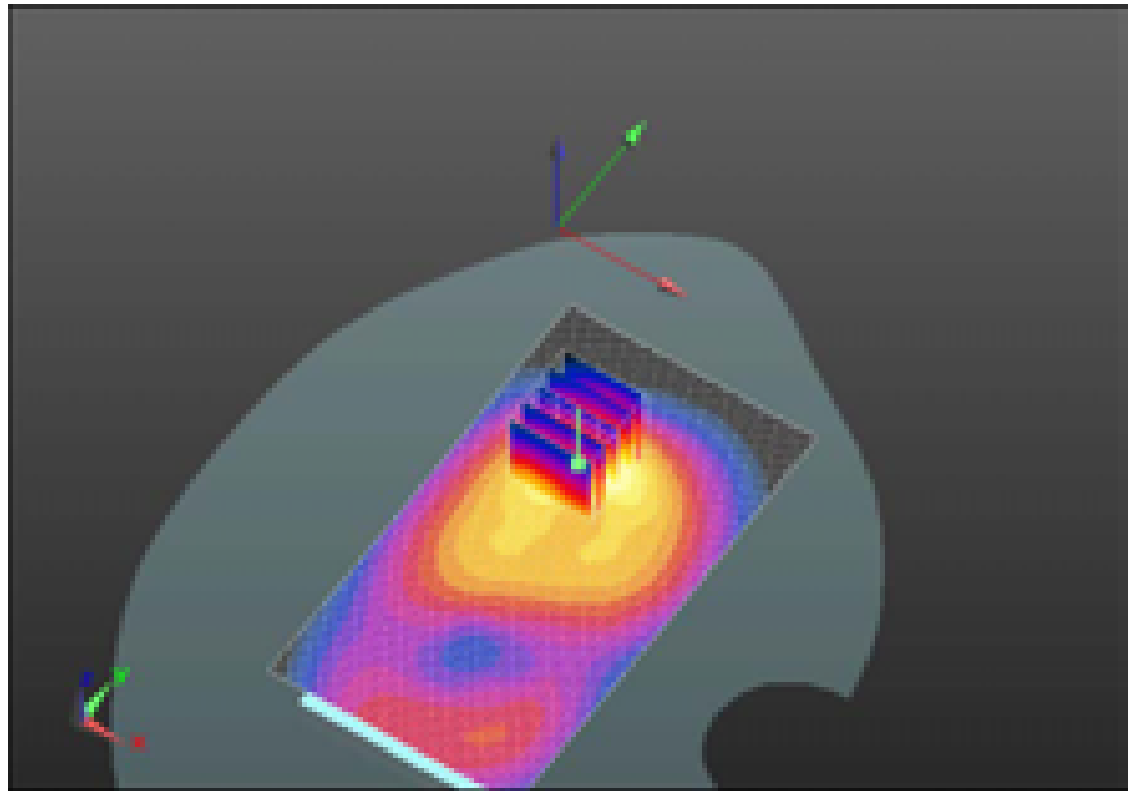
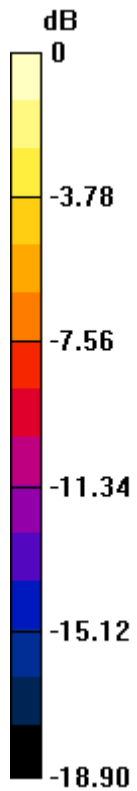
Peak SAR (extrapolated) = 2.6740

SAR(1 g) = 1.43 mW/g ; SAR(10 g) = 0.712 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.838 mW/g

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0 dB = 1.840mW/g = 5.30 dB mW/g

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Date/Time: 6/12/2012 7:08:06 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Left_UMTS_Band_II_mid_chan_amb_temp_22.9C
_liq_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: WCDMA FDD II; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.523 \text{ mho/m}$; $\epsilon_r = 50.843$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.443 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

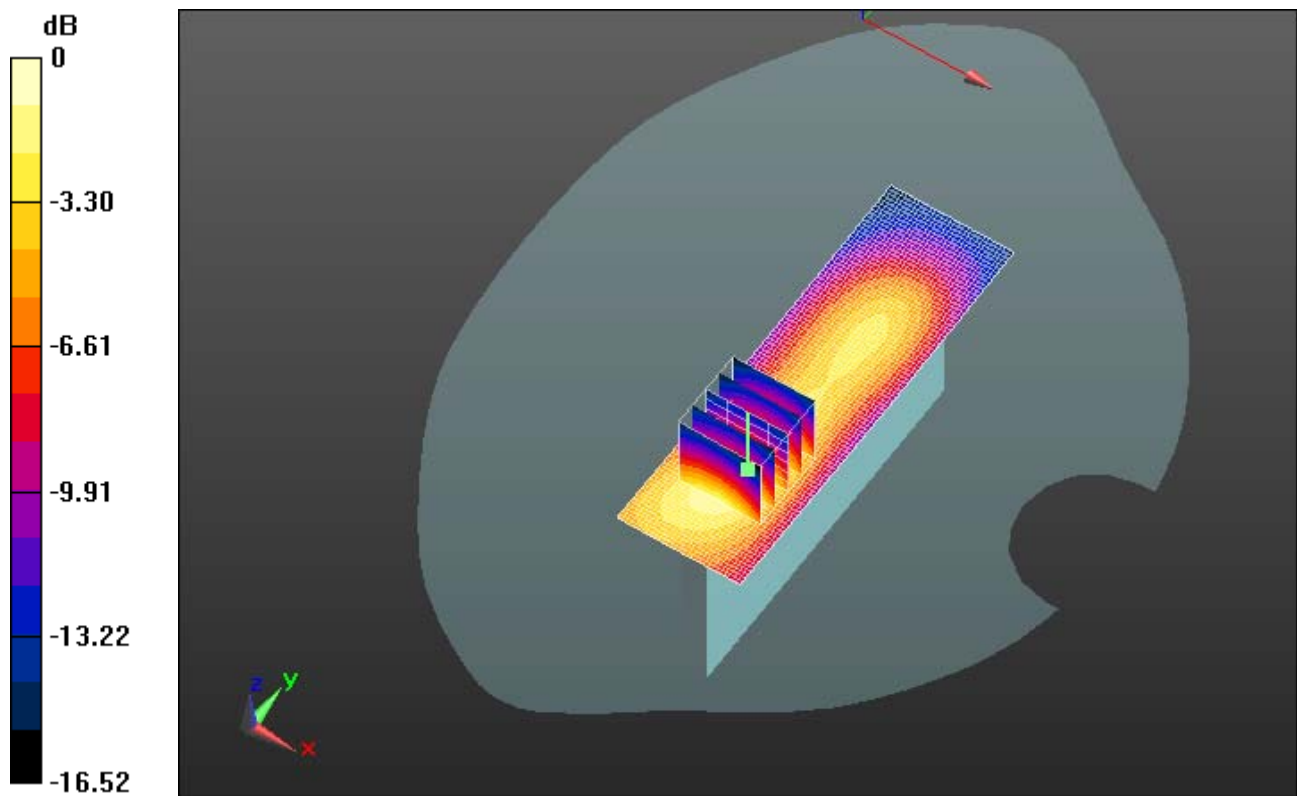
Reference Value = 13.053 V/m ; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.6740

SAR(1 g) = 0.387 mW/g ; SAR(10 g) = 0.210 mW/g

Maximum value of SAR (measured) = 0.493 mW/g

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0 dB = 0.490mW/g = -6.20 dB mW/g

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Date/Time: 6/12/2012 7:29:30 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Right_UMTS_Band_II_mid_chan_amb_temp_22.5
C_liq_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A20270D

Communication System: WCDMA FDD II; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.523 \text{ mho/m}$; $\epsilon_r = 50.843$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.186 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

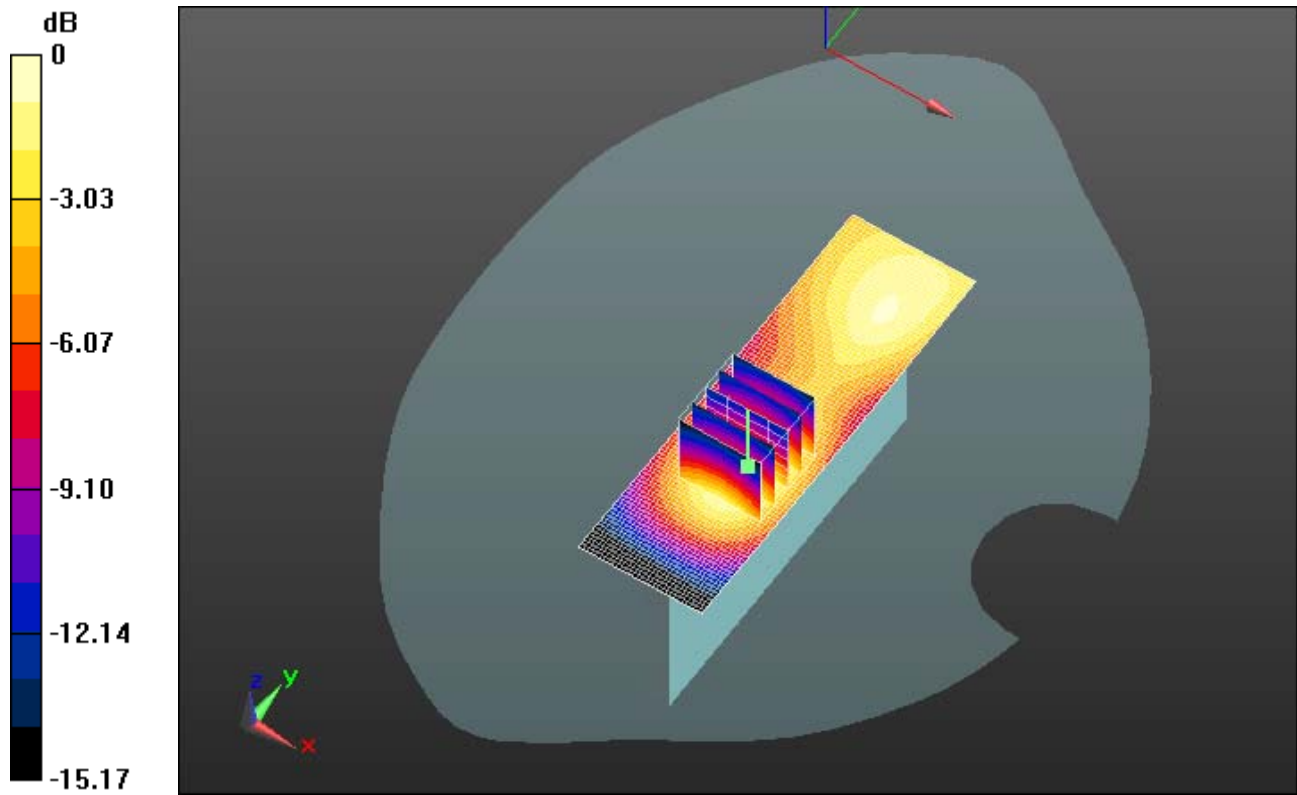
Reference Value = 9.420 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.2430

SAR(1 g) = 0.150 mW/g; SAR(10 g) = 0.088 mW/g

Maximum value of SAR (measured) = 0.183 mW/g

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0 dB = 0.180mW/g = -14.89 dB mW/g

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Date/Time: 6/12/2012 6:52:41 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Bottom_UMTS_Band_II_mid_chan_amb_temp_22.
2_liq_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: WCDMA FDD II; Frequency: 1880 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.523 \text{ mho/m}$; $\epsilon_r = 50.843$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (41x61x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.783 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

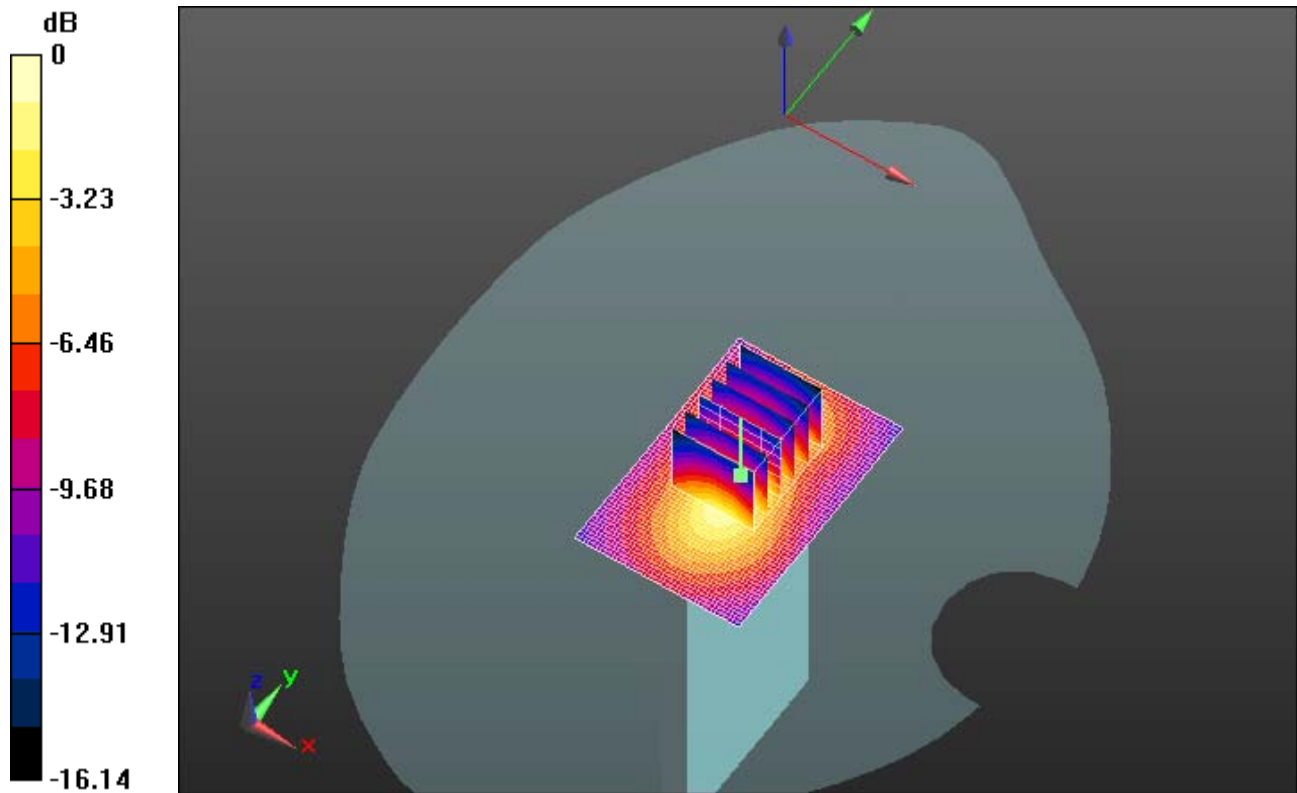
Reference Value = 23.384 V/m; Power Drift = -0.0062 dB

Peak SAR (extrapolated) = 1.0780

SAR(1 g) = 0.642 mW/g; SAR(10 g) = 0.357 mW/g

Maximum value of SAR (measured) = 0.794 mW/g

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0 dB = 0.790mW/g = -2.05 dB mW/g

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Date/Time: 6/12/2012 7:49:42 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_Headset_UMTS_Band_II_mid_chan_amb_tem
p_22.4_liq_temp_21.4C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A20270D

Communication System: WCDMA FDD II; Frequency: 1907.6 MHz

Medium parameters used (interpolated): $f = 1907.6 \text{ MHz}$; $\sigma = 1.556 \text{ mho/m}$; $\epsilon_r = 50.725$;
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.838 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 14.294 V/m; Power Drift = -0.10 dB

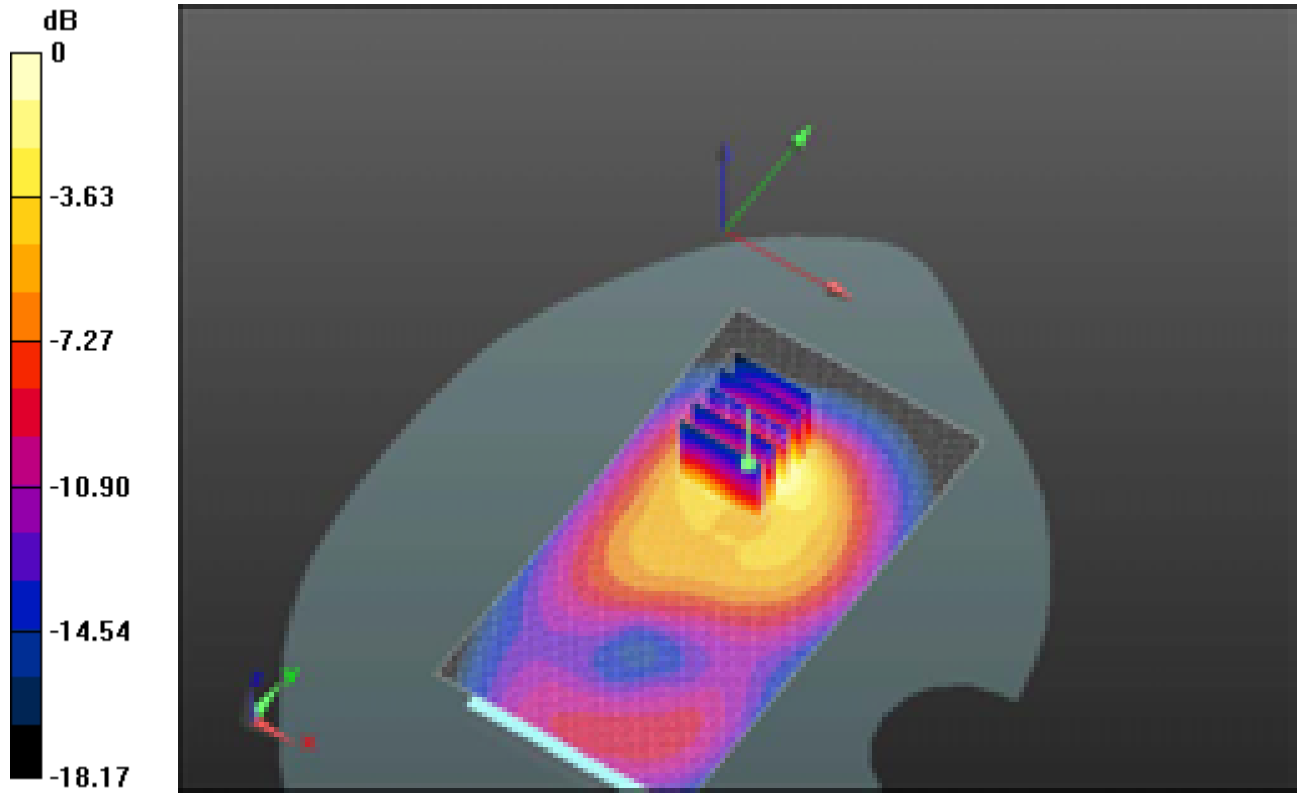
Peak SAR (extrapolated) = 2.4900

SAR(1 g) = 1.36 mW/g; SAR(10 g) = 0.690 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.733 mW/g

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0 dB = 1.730mW/g = 4.76 dB mW/g

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Date/Time: 10/23/2012 10:03:20 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_UMTS_Band_II_high_chan_amb_temp_23.8
_liq_temp_22.9C_T3**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A8C7018

Communication System: WCDMA FDD II; Frequency: 1907.6 MHz

Medium parameters used (interpolated): $f = 1907.6 \text{ MHz}$; $\sigma = 1.517 \text{ mho/m}$; $\epsilon_r = 51.569$;
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.92, 4.92, 4.92); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x111x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.783 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 9.360 V/m ; Power Drift = 0.04 dB

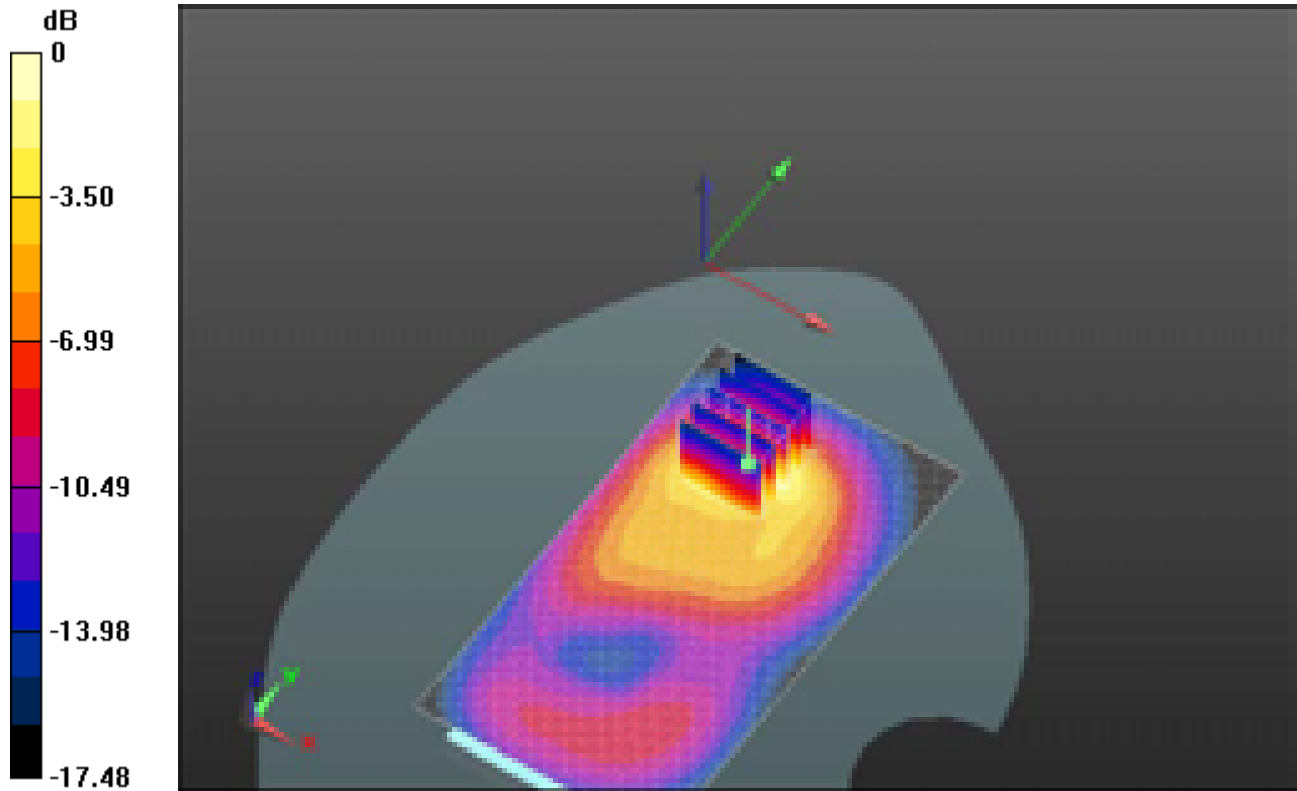
Peak SAR (extrapolated) = 2.4090

SAR(1 g) = 1.34 mW/g ; SAR(10 g) = 0.692 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.712 mW/g

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0 dB = 1.710mW/g = 4.66 dB mW/g

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Date/Time: 6/20/2012 9:47:38 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_802.11b_mid_chan_amb_temp_23.6_liq_temper_22.3C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A211C01

Communication System: 802.11 b (2450); Frequency: 2437 MHz

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.899$ mho/m; $\epsilon_r = 52.043$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.3, 4.3, 4.3); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.503 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 3.974 V/m; Power Drift = -0.04 dB

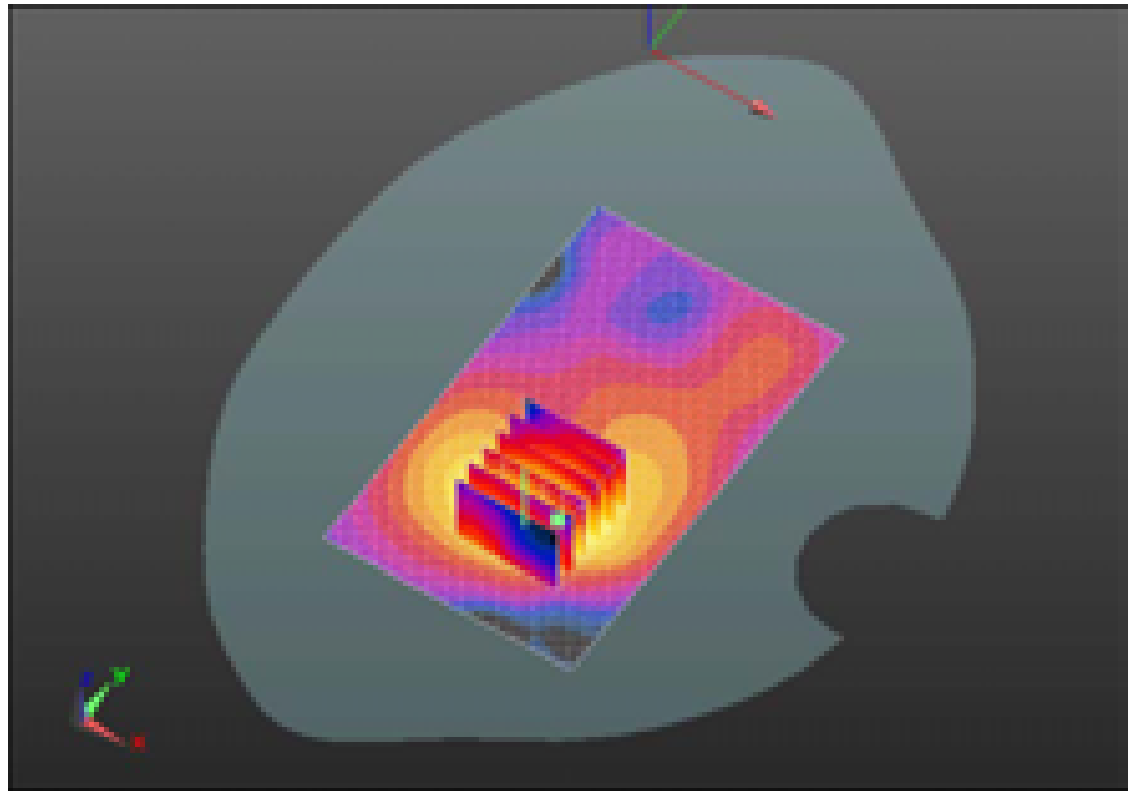
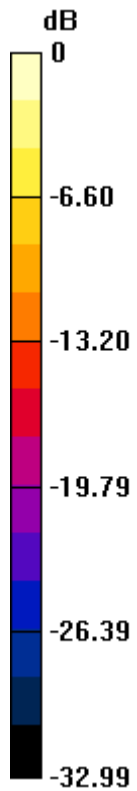
Peak SAR (extrapolated) = 1.0740

SAR(1 g) = 0.483 mW/g; SAR(10 g) = 0.204 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.620 mW/g

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0 dB = 0.620mW/g = -4.15 dB mW/g

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Date/Time: 6/20/2012 10:55:04 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Front_802.11b_mid_chan_amb_temp_22.9_liq_temper_22.3C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A211C01

Communication System: 802.11 b (2450); Frequency: 2437 MHz

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.899$ mho/m; $\epsilon_r = 52.043$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.3, 4.3, 4.3); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.087 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 3.296 V/m; Power Drift = 0.08 dB

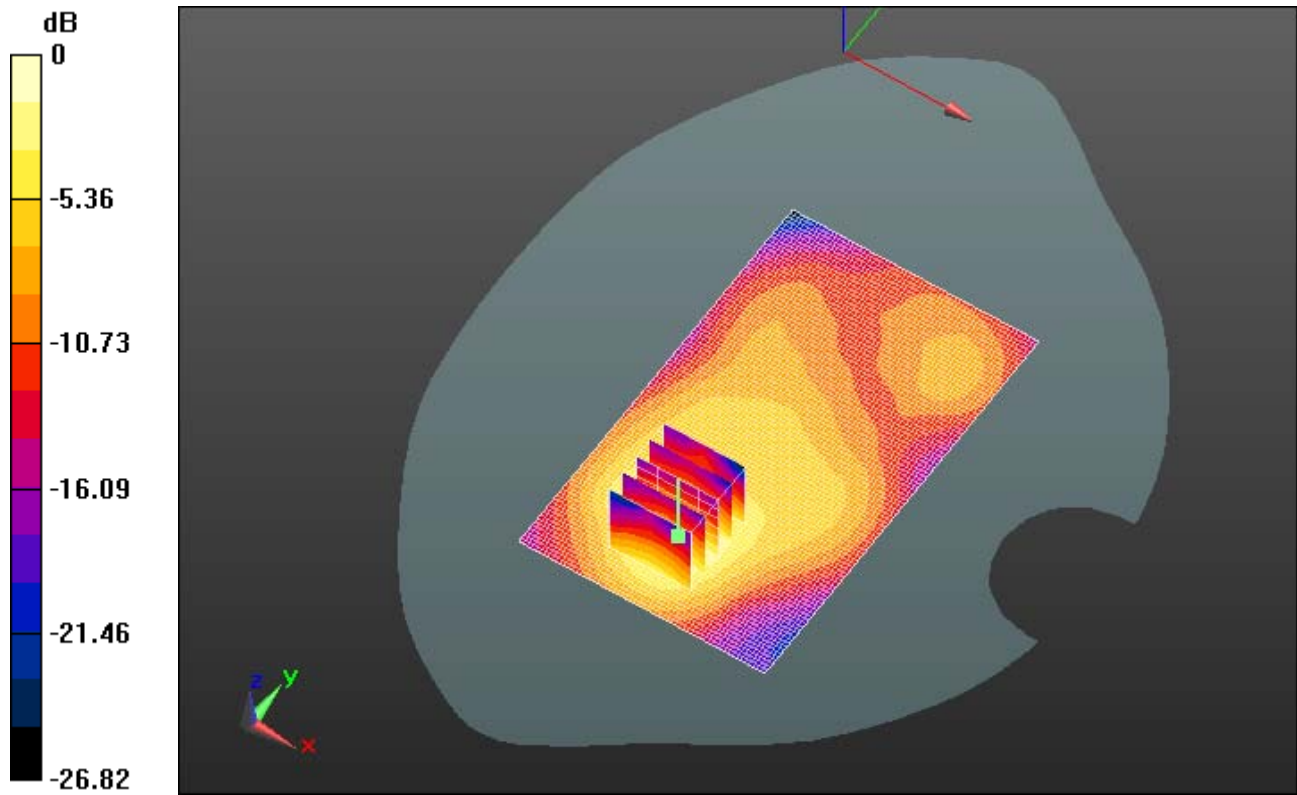
Peak SAR (extrapolated) = 0.1330

SAR(1 g) = 0.068 mW/g; SAR(10 g) = 0.035 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.087 mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 0.090mW/g = -20.92 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/21/2012 1:27:22 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Left_802.11b_mid_chan_amb_temp_22.9_liq_tem
p_22.3C**

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: 802.11 b (2450); Frequency: 2437 MHz

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.899$ mho/m; $\epsilon_r = 52.043$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.3, 4.3, 4.3); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.023 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 2.021 V/m; Power Drift = 0.36 dB

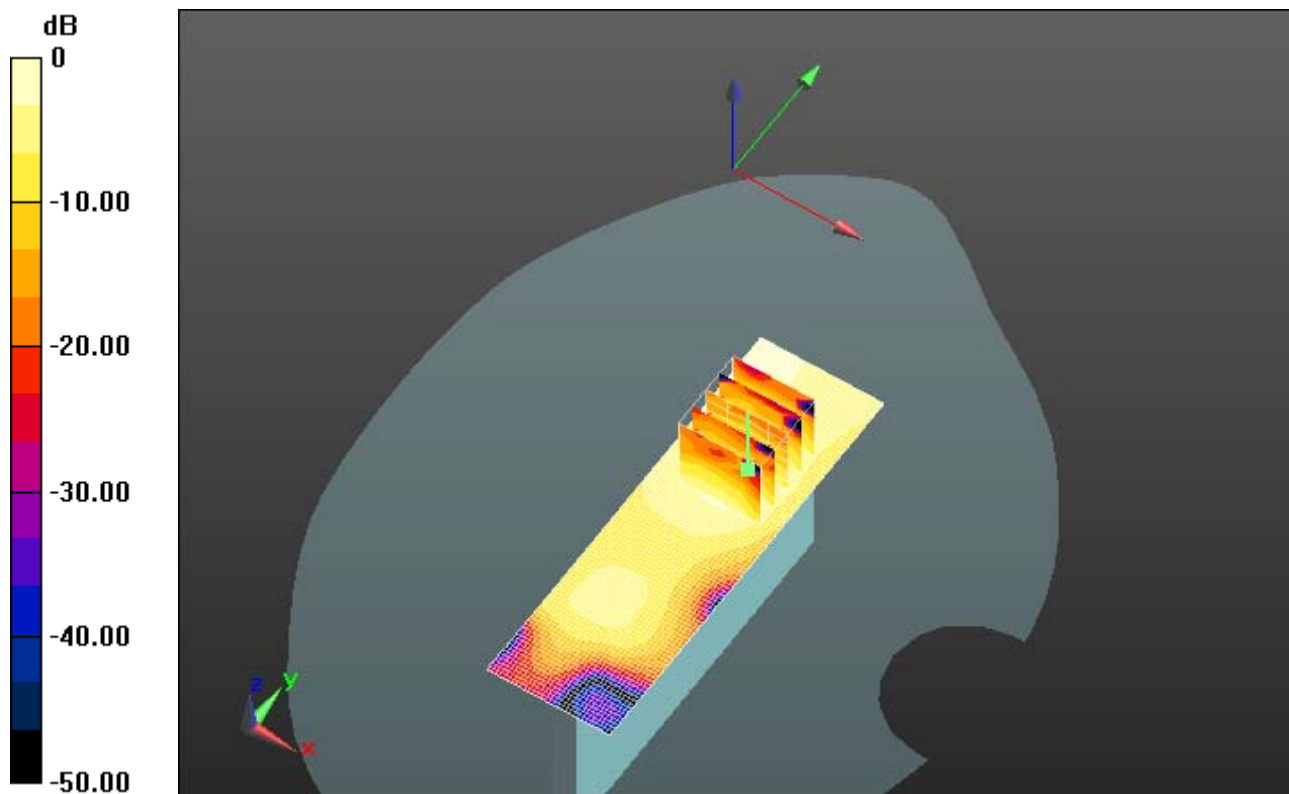
Peak SAR (extrapolated) = 0.0390

SAR(1 g) = 0.020 mW/g; SAR(10 g) = 0.011 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.025 mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW



0 dB = 0.030mW/g = -30.46 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/21/2012 2:07:15 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Right_802.11b_mid_chan_amb_temp_22.4_liq_temper_22.3C

DUT: BlackBerry Smartphone; Type: Sample; Serial: 2A211C01

Communication System: 802.11 b (2450); Frequency: 2437 MHz

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.899$ mho/m; $\epsilon_r = 52.043$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.3, 4.3, 4.3); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (31x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.026 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 2.689 V/m; Power Drift = 0.19 dB

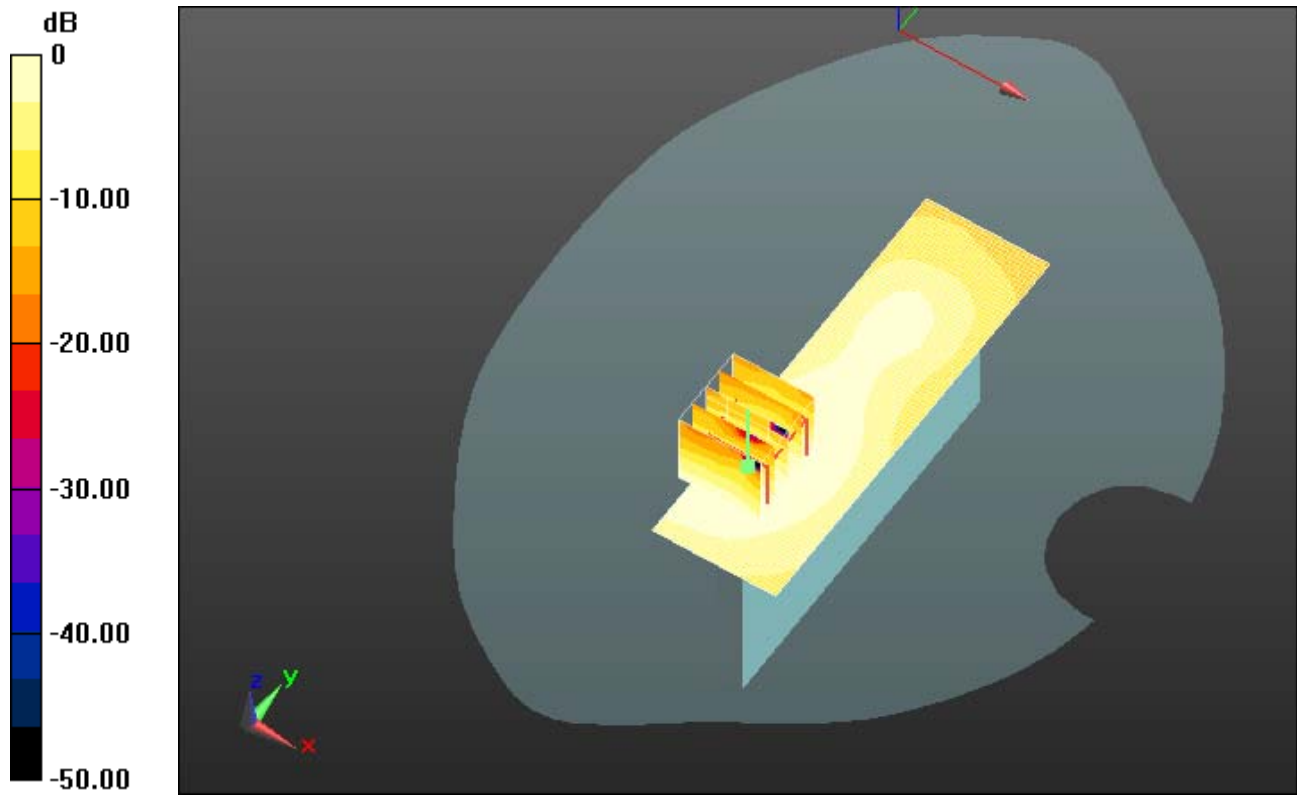
Peak SAR (extrapolated) = 0.0380

SAR(1 g) = 0.021 mW/g; SAR(10 g) = 0.012 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.025 mW/g

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0 dB = 0.020mW/g = -33.98 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/21/2012 12:49:38 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Top_802.11b_mid_chan_amb_temp_22.7_liq_tem
p_22.3C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A211C01

Communication System: 802.11 b (2450); Frequency: 2437 MHz

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.899$ mho/m; $\epsilon_r = 52.043$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.3, 4.3, 4.3); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (41x61x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.095 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 6.424 V/m; Power Drift = 0.07 dB

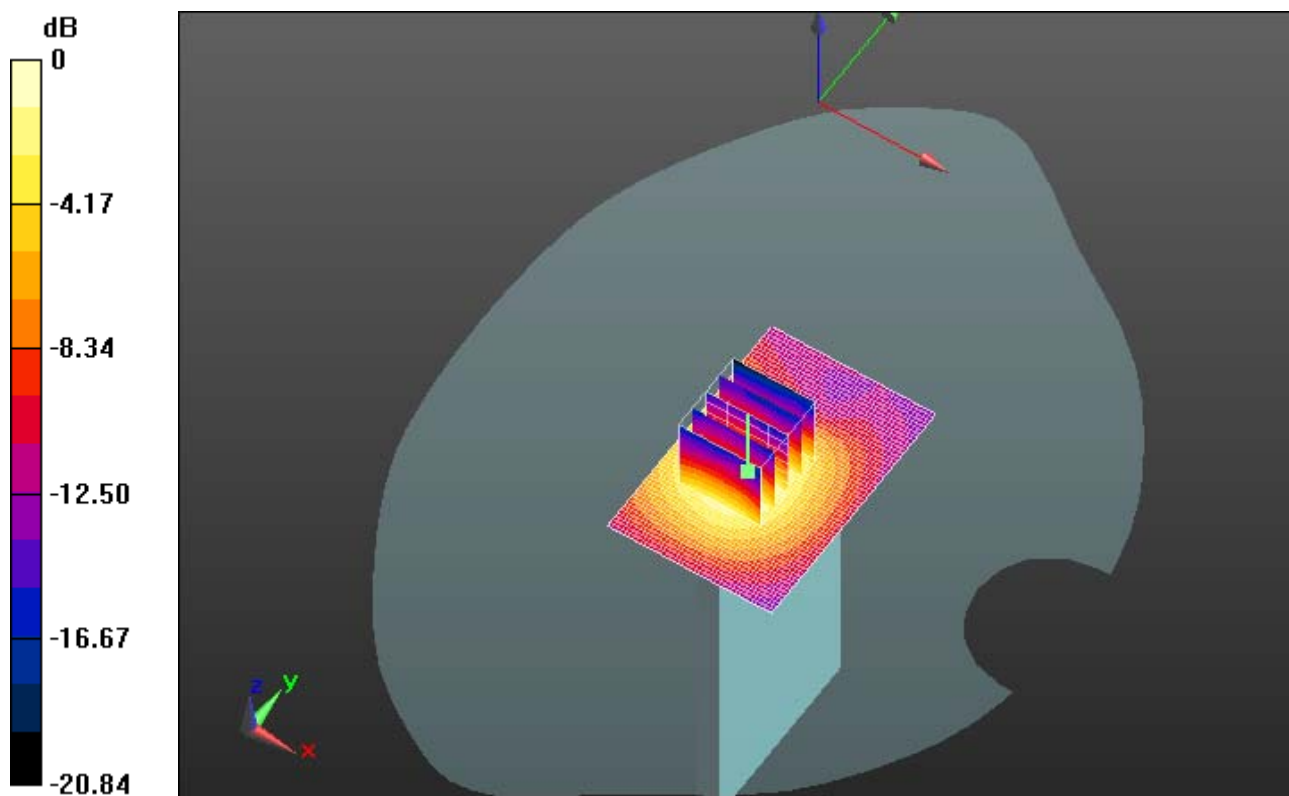
Peak SAR (extrapolated) = 0.1270

SAR(1 g) = 0.069 mW/g; SAR(10 g) = 0.038 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.085 mW/g

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0 dB = 0.090mW/g = -20.92 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 6/21/2012 2:32:12 AM

Test Laboratory: RIM Testing Services

**MHS_10mm_Spacer_Back_Headset_802.11b_mid_chan_amb_temp_22
.8_liq_temp_22.3C**

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A211C01

Communication System: 802.11 b (2450); Frequency: 2437 MHz

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.899$ mho/m; $\epsilon_r = 52.043$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.3, 4.3, 4.3); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x101x1): Measurement grid:
dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.406 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 2.709 V/m; Power Drift = 0.21 dB

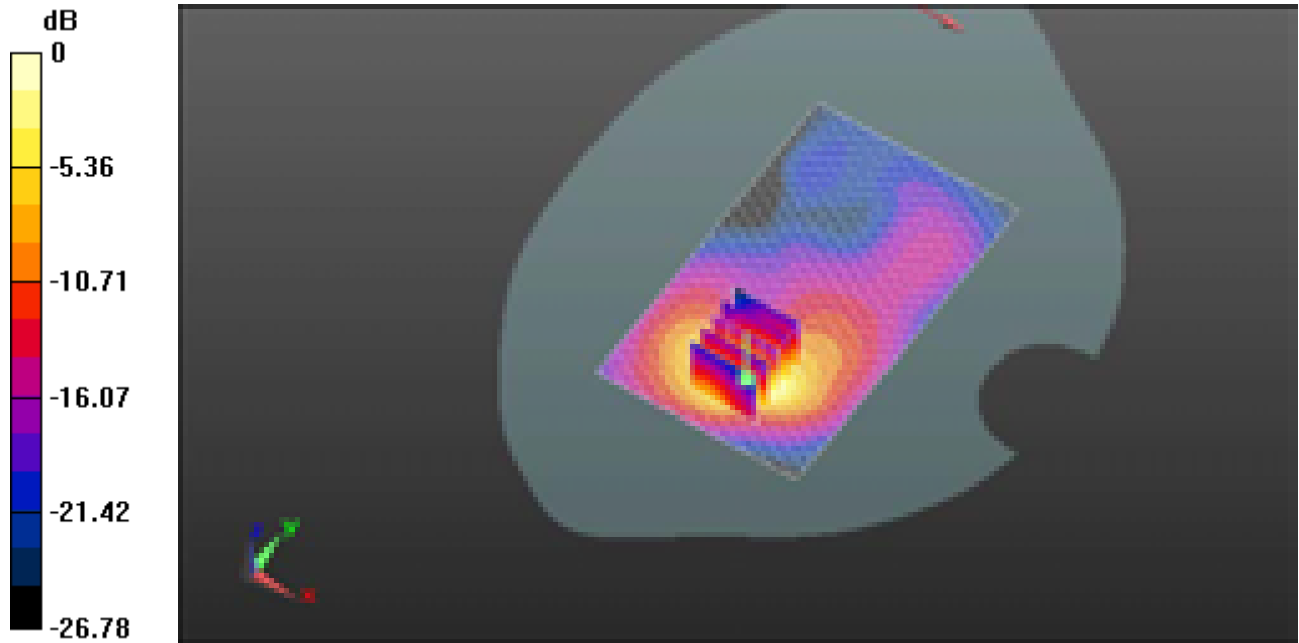
Peak SAR (extrapolated) = 0.8810

SAR(1 g) = 0.398 mW/g; SAR(10 g) = 0.170 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.514 mW/g

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0 dB = 0.510mW/g = -5.85 dB mW/g

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Date/Time: 9/13/2012 11:50:23 PM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_802.11b_low_chan

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A8C7018

Communication System: 802.11 b (2450); Frequency: 2412 MHz

Medium parameters used (interpolated): $f = 2412$ MHz; $\sigma = 1.866$ mho/m; $\epsilon_r = 52.901$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.3, 4.3, 4.3); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASYS 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x101x1): Measurement grid:
 $dx=15$ mm, $dy=15$ mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.774 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 3.922 V/m; Power Drift = 0.0063 dB

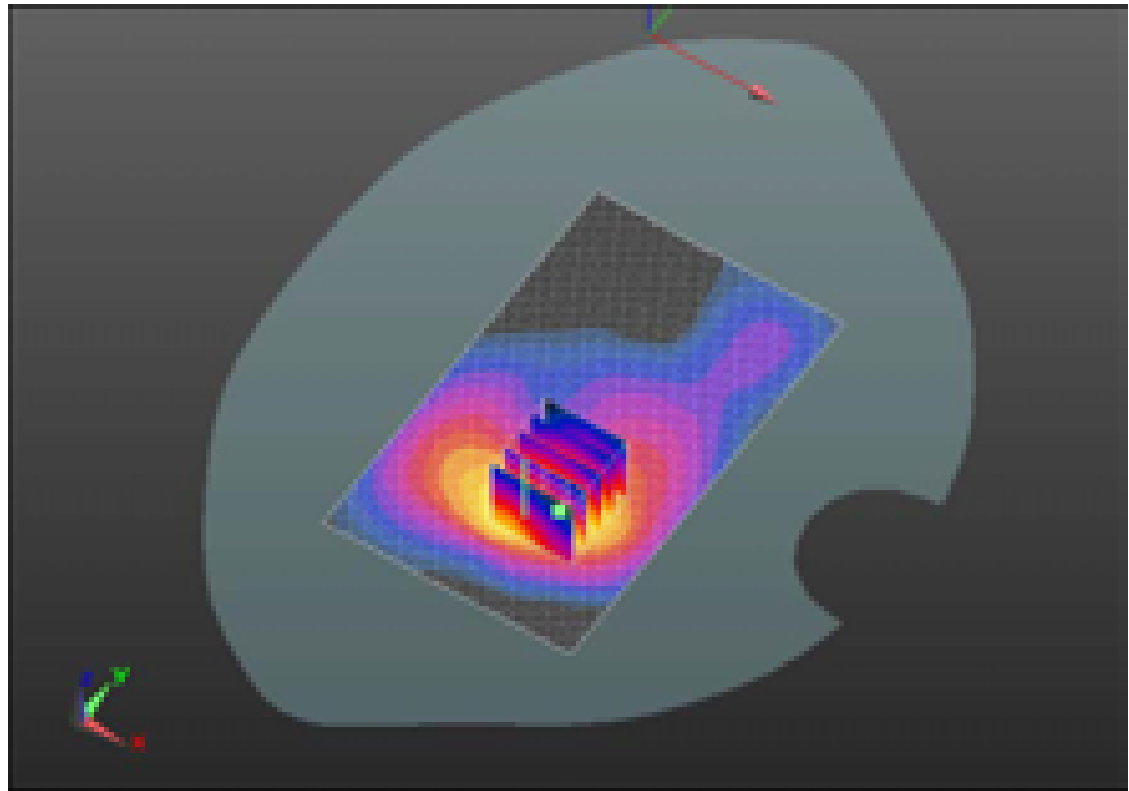
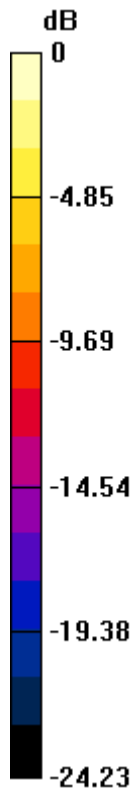
Peak SAR (extrapolated) = 1.9630

SAR(1 g) = 0.816 mW/g; SAR(10 g) = 0.325 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.031 mW/g

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

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 9/14/2012 1:00:21 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_802.11b_mid_chan_amb_temp_23.8_liq_temperatures_21.2C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A8C7018

Communication System: 802.11 b (2450); Frequency: 2437 MHz

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.896$ mho/m; $\epsilon_r = 52.825$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.3, 4.3, 4.3); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.793 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 3.695 V/m; Power Drift = 0.26 dB

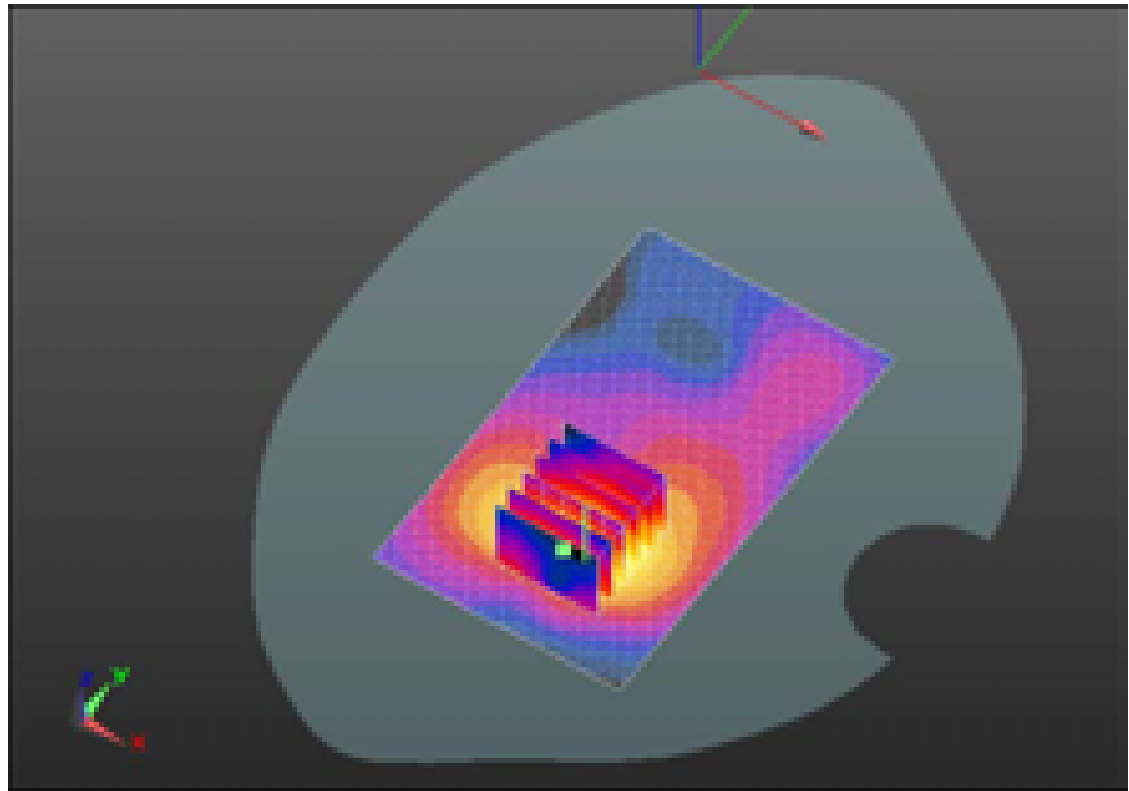
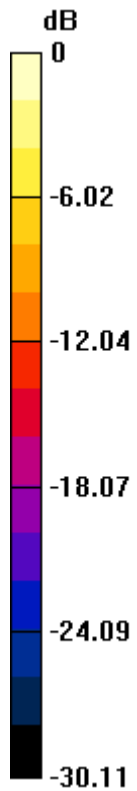
Peak SAR (extrapolated) = 1.9610

SAR(1 g) = 0.816 mW/g; SAR(10 g) = 0.320 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.000 mW/g

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0 dB = 1.000mW/g = 0 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW

Date/Time: 9/14/2012 2:10:26 AM

Test Laboratory: RIM Testing Services

MHS_10mm_Spacer_Back_802.11b_high_chan_amb_temp_23.3_liq_temper_21.1C

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2A8C7018

Communication System: 802.11 b (2450); Frequency: 2462 MHz

Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.926$ mho/m; $\epsilon_r = 52.718$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(4.3, 4.3, 4.3); Calibrated: 1/11/2012
- Sensor-Surface: 3mm (Mechanical Surface Detection), $z = 2.0, 32.0$
- Electronics: DAE3 Sn473; Calibrated: 1/13/2012
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Configuration/Touch position -/Area Scan (61x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.833 mW/g

Configuration/Touch position -/Zoom Scan (5x5x7) (6x6x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 4.398 V/m; Power Drift = -0.06 dB

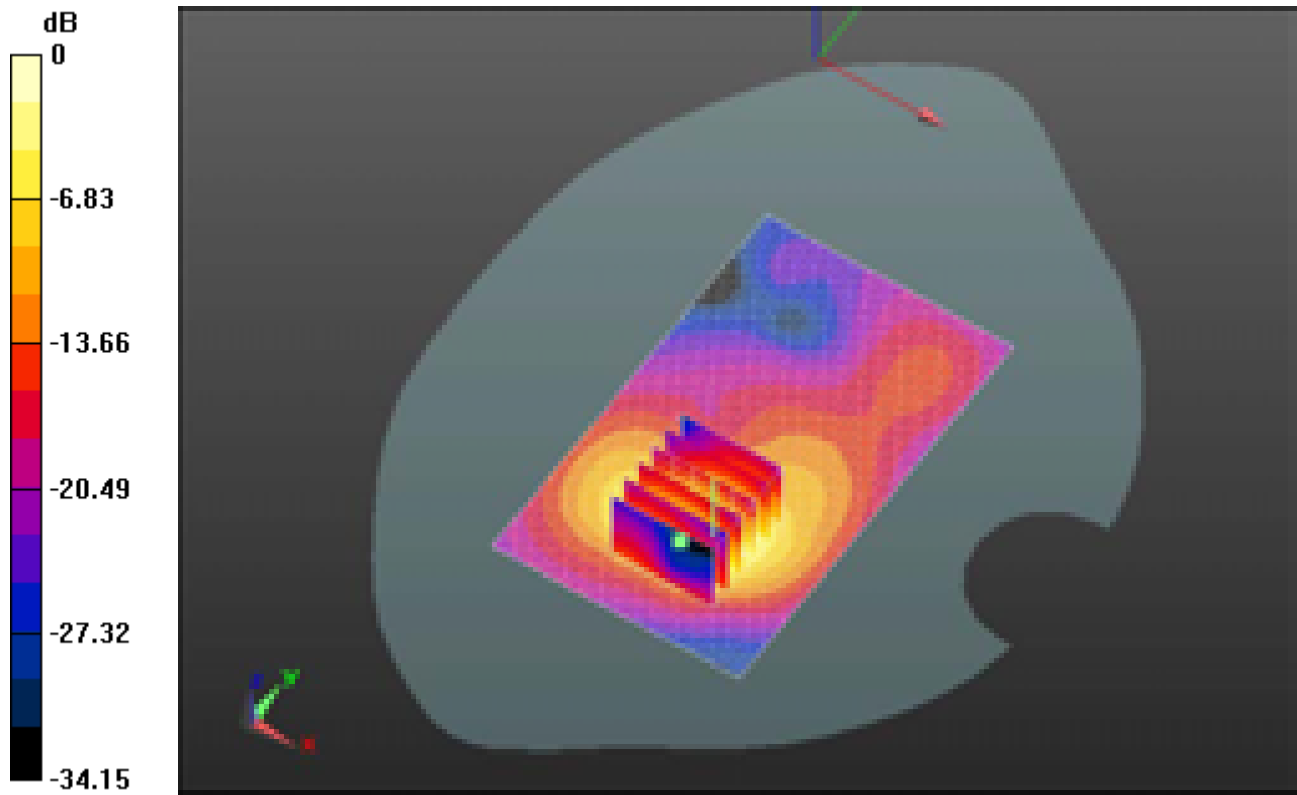
Peak SAR (extrapolated) = 1.9040

SAR(1 g) = 0.803 mW/g; SAR(10 g) = 0.323 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.962 mW/g

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0 dB = 0.960mW/g = -0.35 dB mW/g

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Author Data Andrew Becker	Dates of Test June 04 – October 29, 2012	Test Report No RTS-6012-1208-35	FCC ID: L6ARFF90LW	IC ID 2503A-RFF90LW	

Z axis plot for the worst case body configuration

