	Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 1 (50)
	Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32

Annex A: Measurement data and plots

A.1 MIF validation plots

Test Laboratory: RIM Testing Services

MIF_measurements

DUT: BlackBerry Smartphone

Communication System: UID 0 - n/a
 Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
 Phantom section: TCoil Section
 Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: AM1DV3 - 3062; ; Calibrated: 1/10/2013
- Sensor-Surface: 0mm (Fix Surface), z = 3.0
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; DASYS52 52.8.6(1115); SEMCAD X 14.6.9(7117)

Configuration/MIF Measurements/MIF_AM80%_1KHz_Measurement

Calibration Factors: 1.089, 1.089; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-1.31 dB		0.00 dB	Power OK
PMF	3.78 dB	1.545	0.00 dB	Power OK
Detector Level	0.21 dBm		0.00 dB	Power OK
RFAIP	-1.10 dBm		0.00 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_AM10%_1KHz_Measurement

Calibration Factors: 1.089, 1.089; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-9.33 dB		0.00 dB	Power OK

PMF	0.76 dB	1.092	0.00 dB	Power OK
Detector Level	0.51 dBm		0.00 dB	Power OK
RFAIP	-8.83 dBm		0.00 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_AM1%_1KHz_Measurement

Calibration Factors: 1.090, 1.090; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-19.30 dB		0.00 dB	Power OK
PMF	0.08 dB	1.010	0.00 dB	Power OK
Detector Level	0.48 dBm		0.00 dB	Power OK
RFAIP	-18.82 dBm		0.00 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_GSM_Measurement

Calibration Factors: 1.090, 1.090; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	3.46 dB		0.00 dB	Power OK
PMF	9.81 dB	3.093	0.01 dB	Power OK
Detector Level	-2.01 dBm		0.00 dB	Power OK
RFAIP	1.45 dBm		0.01 dB	(MIF+CF+Detector Level)

Configuration/MIF

Measurements/MIF_WCDMA_Voice_AMR12_2kps_Measurement

Calibration Factors: 1.089, 1.089; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-15.38 dB		0.05 dB	Power OK
PMF	0.09 dB	1.010	0.00 dB	Power OK
Detector Level	6.96 dBm		0.00 dB	Power OK
RFAIP	-8.42 dBm		0.06 dB	(MIF+CF+Detector Level)

Configuration/MIF

Measurements/MIF_WCDMA_voice_AMR4_75kps_Measurement

Calibration Factors: 1.090, 1.090; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB



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Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-14.47 dB		0.13 dB	Power OK
PMF	0.09 dB	1.011	0.01 dB	Power OK
Detector Level	6.94 dBm		0.03 dB	Power OK
RFAIP	-7.53 dBm		0.15 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_WCDMA_RMC_Measurement 2

Calibration Factors: 1.090, 1.090; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-25.43 dB		0.21 dB	Power OK
PMF	0.07 dB	1.009	0.01 dB	Power OK
Detector Level	6.99 dBm		0.00 dB	Power OK
RFAIP	-18.43 dBm		0.21 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_CDMA

FR_Speech_Service_SO3_RC3_Measurement

Calibration Factors: 1.089, 1.089; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-19.71 dB		0.34 dB	Power OK
PMF	0.32 dB	1.037	0.03 dB	Power OK
Detector Level	6.74 dBm		0.03 dB	Power OK
RFAIP	-12.97 dBm		0.38 dB	(MIF+CF+Detector Level)

Configuration/MIF

Measurements/MIF_CDMA_1_8th_Speech_Service_SO3_RC1_mute

Calibration Factors: 1.090, 1.090; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	2.76 dB		0.69 dB	Power OK
PMF	9.07 dB	2.840	0.72 dB	Power OK
Detector Level	-1.75 dBm		1.13 dB	Power OK
RFAIP	1.01 dBm		1.83 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_802.11b_Rate_1Mbps

Calibration Factors: 1.090, 1.090; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-12.67 dB		0.03 dB	Power OK
PMF	0.41 dB	1.049	0.02 dB	Power OK
Detector Level	1.45 dBm		0.01 dB	Power OK
RFAIP	-11.22 dBm		0.03 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_802.11b_Rate_2Mbps

Calibration Factors: 1.089, 1.089; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-12.01 dB		0.02 dB	Power OK
PMF	0.47 dB	1.055	0.01 dB	Power OK
Detector Level	1.32 dBm		0.01 dB	Power OK
RFAIP	-10.69 dBm		0.03 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_802.11b_Rate_5.5Mbps

Calibration Factors: 1.089, 1.089; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-9.59 dB		0.03 dB	Power OK
PMF	0.64 dB	1.077	0.02 dB	Power OK
Detector Level	1.22 dBm		0.00 dB	Power OK
RFAIP	-8.37 dBm		0.03 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_802.11b_Rate_11Mbps

Calibration Factors: 1.089, 1.089; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-8.79 dB		0.00 dB	Power OK
PMF	0.77 dB	1.092	0.02 dB	Power OK
Detector Level	1.15 dBm		0.02 dB	Power OK
RFAIP	-7.64 dBm		0.02 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_802.11g_Rate_6Mbps

Calibration Factors: 1.089, 1.089; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.32 dB		0.03 dB	Power OK
PMF	0.85 dB	1.103	0.03 dB	Power OK
Detector Level	1.39 dBm		0.09 dB	Power OK
RFAIP	-8.94 dBm		0.12 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_802.11g_Rate_9Mbps

Calibration Factors: 1.090, 1.089; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-9.58 dB		0.02 dB	Power OK
PMF	0.95 dB	1.116	0.03 dB	Power OK
Detector Level	1.31 dBm		0.00 dB	Power OK
RFAIP	-8.27 dBm		0.02 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_802.11g_Rate_18Mbps

Calibration Factors: 1.089, 1.089; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-8.34 dB		0.01 dB	Power OK
PMF	1.07 dB	1.130	0.03 dB	Power OK
Detector Level	5.96 dBm		0.00 dB	Power OK
RFAIP	-2.38 dBm		0.02 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_802.11g_Rate_54Mbps

Calibration Factors: 1.090, 1.090; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-8.67 dB		0.02 dB	Power OK
PMF	1.96 dB	1.253	0.06 dB	Power OK
Detector Level	2.96 dBm		0.01 dB	Power OK
RFAIP	-5.70 dBm		0.04 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_802.11a_Rate_6Mbps

Calibration Factors: 1.089, 1.089; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.44 dB		0.02 dB	Power OK
PMF	0.82 dB	1.099	0.02 dB	Power OK
Detector Level	1.28 dBm		0.01 dB	Power OK
RFAIP	-9.16 dBm		0.03 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_802.11a_Rate_24Mbps

Calibration Factors: 1.090, 1.090; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-8.21 dB		0.03 dB	Power OK
PMF	1.36 dB	1.169	0.03 dB	Power OK
Detector Level	-0.37 dBm		0.02 dB	Power OK
RFAIP	-8.58 dBm		0.05 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_802.11a_Rate_54Mbps


Calibration Factors: 1.090, 1.090; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-8.99 dB		0.01 dB	Power OK
PMF	1.83 dB	1.234	0.03 dB	Power OK
Detector Level	-2.09 dBm		0.01 dB	Power OK
RFAIP	-11.08 dBm		0.02 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_802.11n_Rate_6.5Mbps

Calibration Factors: 1.089, 1.089; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.33 dB		0.01 dB	Power OK
PMF	0.93 dB	1.113	0.01 dB	Power OK
Detector Level	-1.38 dBm		0.01 dB	Power OK
RFAIP	-11.70 dBm		0.02 dB	(MIF+CF+Detector Level)

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Configuration/MIF Measurements/MIF_802.11n_Rate_39Mbps


Calibration Factors: 1.090, 1.090; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-8.25 dB		0.01 dB	Power OK
PMF	1.45 dB	1.182	0.01 dB	Power OK
Detector Level	-4.27 dBm		0.01 dB	Power OK
RFAIP	-12.51 dBm		0.02 dB	(MIF+CF+Detector Level)


Configuration/MIF Measurements/MIF_802.11n_Rate_65Mbps

Calibration Factors: 1.089, 1.089; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-9.05 dB		0.01 dB	Power OK
PMF	1.86 dB	1.238	0.01 dB	Power OK
Detector Level	-5.76 dBm		0.01 dB	Power OK
RFAIP	-14.81 dBm		0.01 dB	(MIF+CF+Detector Level)

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A.2 Dipole validation

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Date/Time: 6/14/2013 12:57:02 AM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_validation_835 MHz_06_13_13

DUT: HAC-Dipole 835 MHz; Type: CD835V3; Serial: 1089

Communication System: UID 0 - n/a, CW For MIF; Frequency: 835 MHz
Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
Phantom section: RF Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/11/2013;
- Sensor-Surface: (Fix Surface), z = 9.7
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASY52 52.8.6(1115); SEMCAD X 14.6.9(7117)

CD835 Dipole E-Field measurement (E-field scan for ANSI C63.19-2011 compliance)/E Scan - measurement distance from the probe sensor center to CD835 = 15mm/Hearing Aid Compatibility Test at 15mm distance (41x361x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 107.6 V/m; Power Drift = -0.07 dB
PMR not calibrated. PMF = 1.000 is applied.
E-field emissions = 110.3 V/m

Near-field category: M4 (AWF 0 dB)

PMF scaled E-field

Grid 1 M4 101.3 V/m	Grid 2 M4 106.1 V/m	Grid 3 M4 106.0 V/m
Grid 4 M4 60.13 V/m	Grid 5 M4 61.71 V/m	Grid 6 M4 61.10 V/m



Author Data
Daoud Attayi

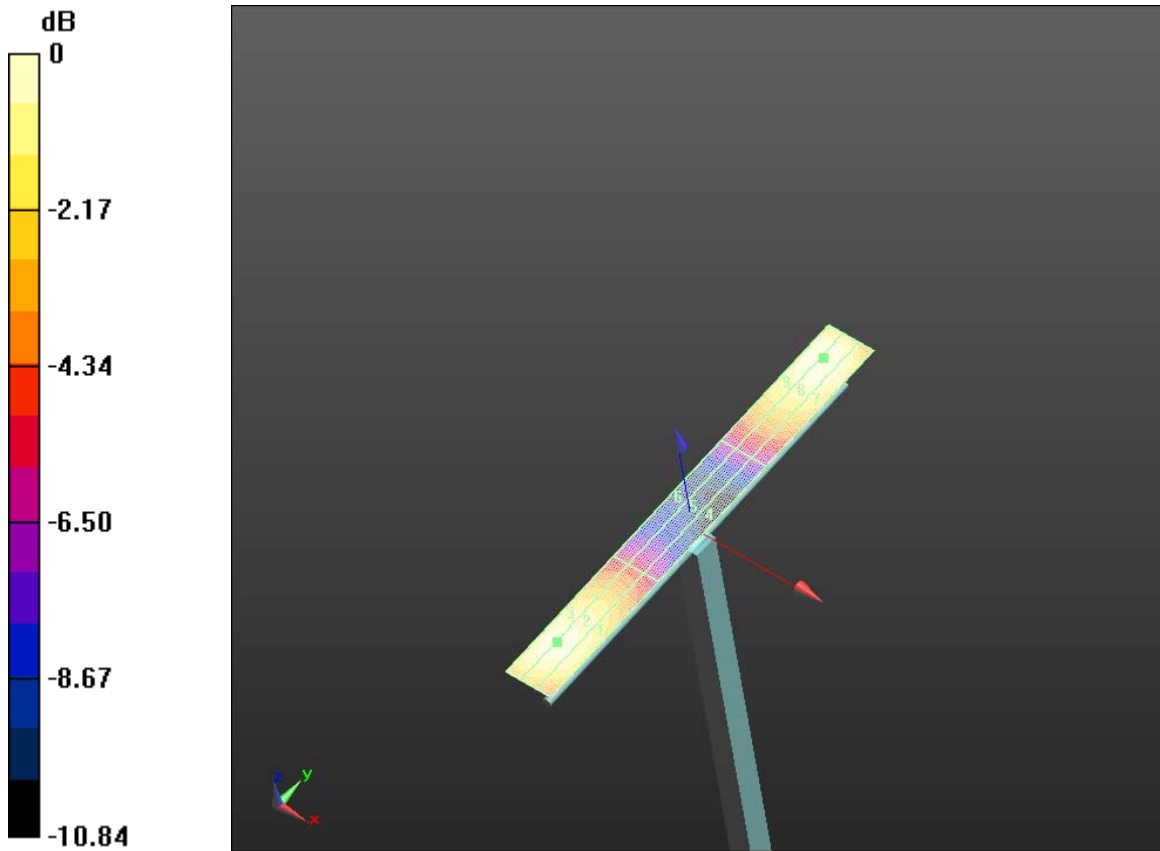
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L6ARFV120LW

Grid 7 M4 105.3 V/m	Grid 8 M4 110.3 V/m	Grid 9 M4 110.0 V/m
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Cursor:
Total = 110.3 V/m
E Category: M4
Location: -2.5, 78, 9.7 mm



0 dB = 110.3 V/m = 40.85 dBV/m

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Test Laboratory: RIM Testing Services

HAC RF_E-Field_835_validation_07_03_13

DUT: HAC-Dipole 835 MHz; Type: CD835V3; Serial: 1089

Communication System: UID 0 - n/a, CW For MIF; Frequency: 835 MHz

Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³

Phantom section: RF Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/11/2013;
- Sensor-Surface: (Fix Surface), z = 9.7
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASYS2 52.8.6(1115); SEMCAD X 14.6.9(7117)

CD835 Dipole E-Field measurement (E-field scan for ANSI C63.19-2011 compliance)/E Scan - measurement distance from the probe sensor center to CD835 = 15mm/Hearing Aid Compatibility Test at 15mm distance (41x361x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 103.6 V/m; Power Drift = -0.00 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 108.2 V/m

Near-field category: M4 (AWF 0 dB)

PMF scaled E-field

Grid 1 M4 101.7 V/m	Grid 2 M4 106.6 V/m	Grid 3 M4 106.6 V/m
Grid 4 M4 60.00 V/m	Grid 5 M4 61.35 V/m	Grid 6 M4 60.51 V/m



Author Data
Daoud Attayi

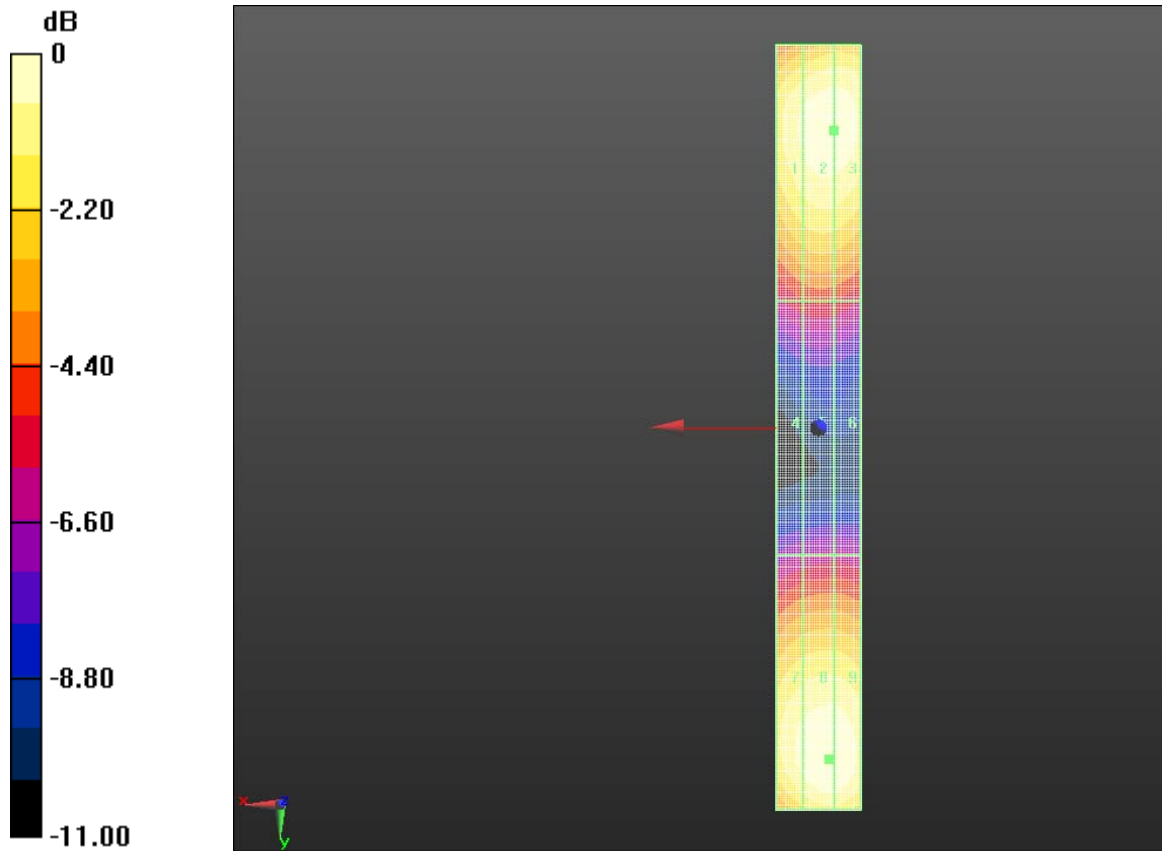
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Grid 7 M4 103.2 V/m	Grid 8 M4 108.2 V/m	Grid 9 M4 108.0 V/m
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Cursor:
Total = 108.2 V/m
E Category: M4
Location: -2.5, 78, 9.7 mm



0 dB = 108.2 V/m = 40.68 dBV/m

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Date/Time: 6/14/2013 12:22:28 AM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_validation_1880 MHz_06_13_13

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1068

Communication System: UID 0 - n/a, CW For MIF; Frequency: 1880 MHz
Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
Phantom section: RF Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/11/2013;
- Sensor-Surface: (Fix Surface), z = 9.7
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASYS2 52.8.6(1115); SEMCAD X 14.6.9(7117)

CD1880 Dipole E-Field measurement (E-field scan for ANSI C63.19-2011 compliance)/E Scan - measurement distance from the probe sensor center to CD1880 = 15mm/Hearing Aid Compatibility Test at 15mm distance (41x181x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 148.5 V/m; Power Drift = 0.00 dB
PMR not calibrated. PMF = 1.000 is applied.
E-field emissions = 85.34 V/m

Near-field category: M3 (AWF 0 dB)

PMF scaled E-field

Grid 1 M3 81.19 V/m	Grid 2 M3 84.90 V/m	Grid 3 M3 84.87 V/m
Grid 4 M3 67.01 V/m	Grid 5 M3 68.62 V/m	Grid 6 M3 68.24 V/m



Author Data
Daoud Attayi

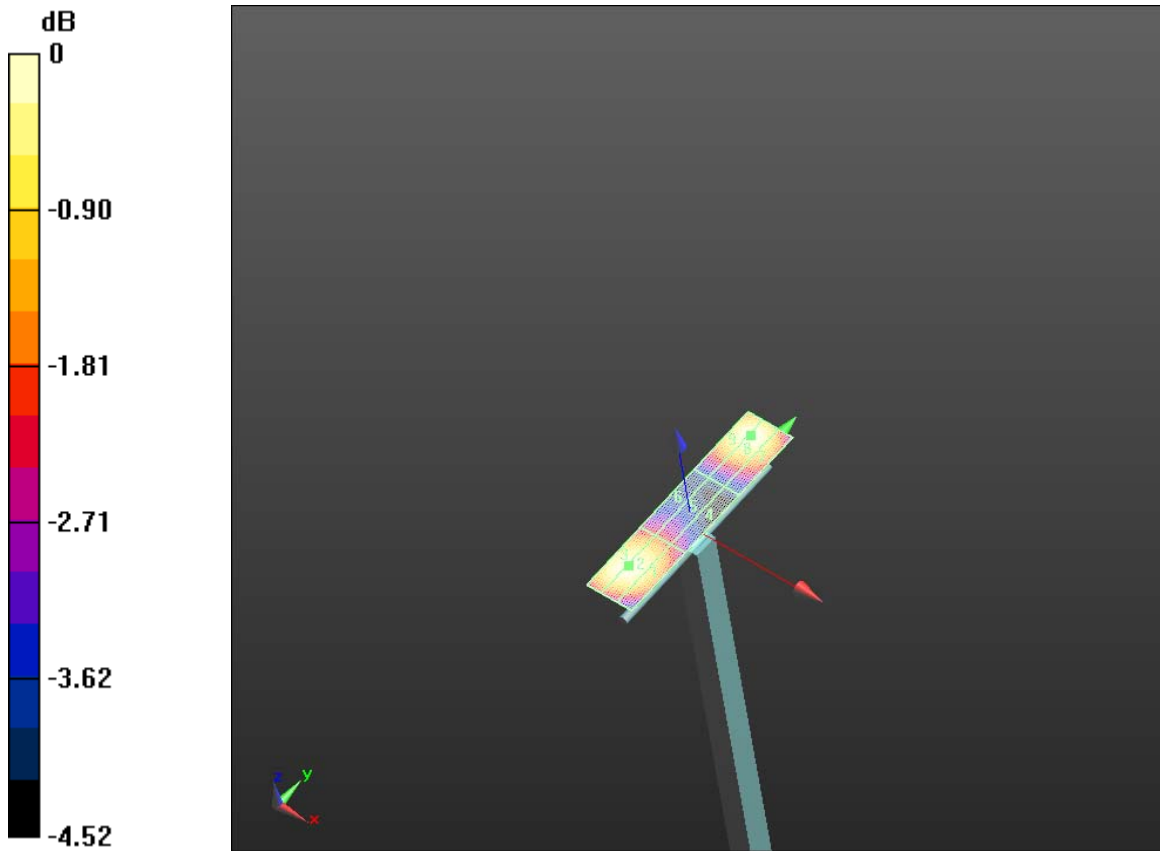
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Grid 7 M3 80.57 V/m	Grid 8 M3 85.33 V/m	Grid 9 M3 85.16 V/m
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Cursor:
Total = 85.33 V/m
E Category: M3
Location: -2.5, 37.5, 9.7 mm



0 dB = 85.33 V/m = 38.62 dBV/m

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Date/Time: 7/3/2013 6:59:51 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_1880_validation_07_03_13

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1068

Communication System: UID 0 - n/a, CW For MIF; Frequency: 1880 MHz

Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³

Phantom section: RF Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/11/2013;
- Sensor-Surface: (Fix Surface), z = 9.7
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASYS 52.8.6(1115); SEMCAD X 14.6.9(7117)

CD1880 Dipole E-Field measurement (E-field scan for ANSI C63.19-2011 compliance)/E Scan - measurement distance from the probe sensor center to CD1880 = 15mm/Hearing Aid Compatibility Test at 15mm distance (41x181x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 148.9 V/m; Power Drift = -0.02 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 86.20 V/m

Near-field category: M3 (AWF 0 dB)

PMF scaled E-field

Grid 1 M3 83.02 V/m	Grid 2 M3 86.20 V/m	Grid 3 M3 85.98 V/m
Grid 4 M3 66.61 V/m	Grid 5 M3 67.81 V/m	Grid 6 M3 67.24 V/m
Grid 7 M3	Grid 8 M3	Grid 9 M3

Author Data
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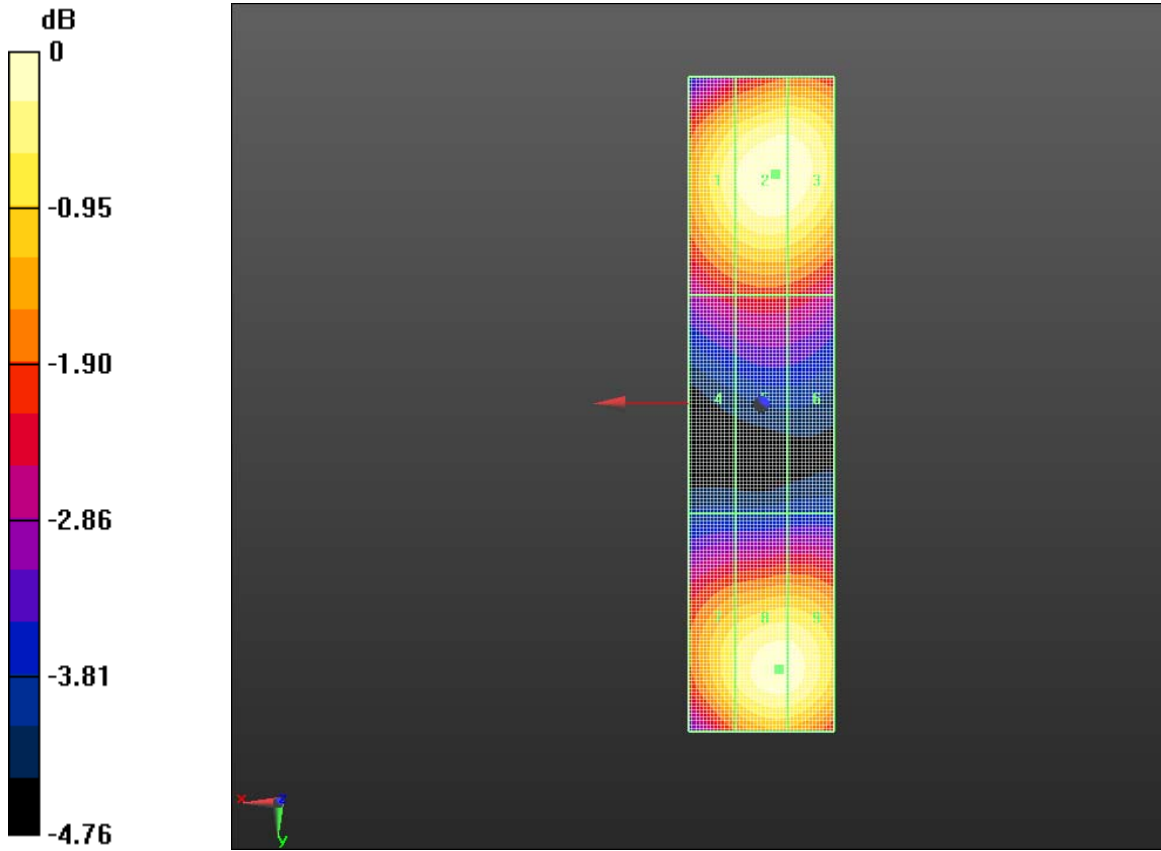
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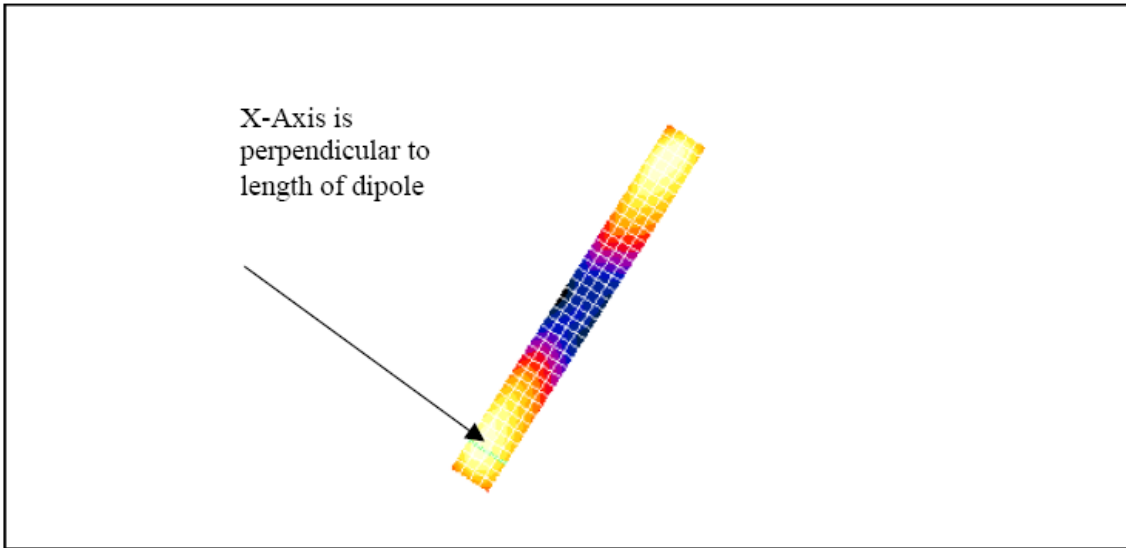
FCC ID
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80.74 V/m	85.21 V/m	85.02 V/m
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Cursor:
Total = 86.20 V/m
E Category: M3
Location: -2, -31.5, 9.7 mm



0 dB = 86.20 V/m = 38.71 dBV/m



The green line in this figure shows the axis along which the points lie.

Comparison of 5mm and 2mm step sizes

An additional set of measurements was taken: dipole validations were performed using 5mm and 2mm step sizes. The delta between the two readings is insignificant for both field types (< 0.4% for E and 0% for H), demonstrating that 5mm is sufficient. The plots follow.



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Date/Time: 14/07/2005 11:35:24 AM

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Date/Time: 14/07/2005 11:35:24 AM

Lab: RIM Testing Services (RTS)

Dipole Validation 1880 MHz_E-Field 07_14_05

DUT: HAC Dipole 1880 MHz; Type: CD1880V3

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1
 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: H Device Section

DASY4 Configuration:
 - Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 10/12/2004
 - Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
 - Electronics: DAE3 Sn472; Calibrated: 03/01/2005
 - Phantom: HAC Test Arch; Type: SD HAC P01 BA;
 - Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

E Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (5x19x1):

Measurement grid: dx=5mm, dy=5mm
 Maximum value of Total (measured) = 134.8 V/m

E Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (41x181x1):

Measurement grid: dx=5mm, dy=5mm
 Maximum value of Total field (slot averaged) = 131.0 V/m

Hearing Aid Near-Field Category: M2 (AWF 0 dB)

E in V/m (Time averaged)			E in V/m (Slot averaged)		
Grid 1	Grid 2	Grid 3	Grid 1	Grid 2	Grid 3
123.2	138.1	138.4	123.2	138.1	138.4
Grid 4	Grid 5	Grid 6	Grid 4	Grid 5	Grid 6
80.9	92.3	92.2	80.9	92.3	92.2
Grid 7	Grid 8	Grid 9	Grid 7	Grid 8	Grid 9
119.8	131.0	130.7	119.8	131.0	130.7

Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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Author Data
Daoud Attayi

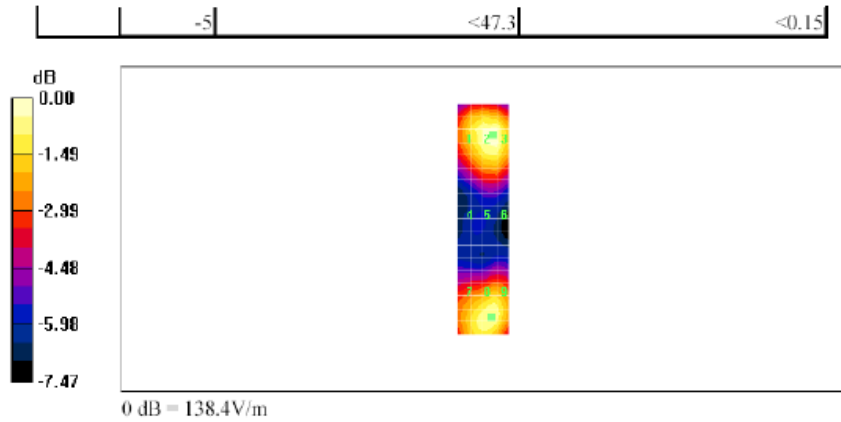
Dates of Test
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Date/Time: 14/07/2005 11:35:24 AM

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Date/Time: 14/07/2005 11:44:51 AM

Lab: RIM Testing Services (RTS)

Dipole Validation 1880 MHz_2mm step_E-Field 07_14_05

DUT: HAC Dipole 1880 MHz; Type: CD1880V3

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1
 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: H Device Section

DASY4 Configuration:
 - Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 10/12/2004
 - Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
 - Electronics: DAE3 Sn472; Calibrated: 03/01/2005
 - Phantom: HAC Test Arch; Type: SD HAC P01 BA;
 - Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

E Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (11x46x1):

Measurement grid: dx=2mm, dy=2mm
 Maximum value of Total (measured) = 138.0 V/m

E Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (101x451x1):

Measurement grid: dx=2mm, dy=2mm
 Maximum value of Total field (slot averaged) = 131.2 V/m

Hearing Aid Near-Field Category: M2 (AWF 0 dB)

E in V/m (Time averaged)			E in V/m (Slot averaged)		
Grid 1	Grid 2	Grid 3	Grid 1	Grid 2	Grid 3
123.1	138.6	138.6	123.1	138.6	138.6
Grid 4	Grid 5	Grid 6	Grid 4	Grid 5	Grid 6
81.4	92.1	91.6	81.4	92.1	91.6
Grid 7	Grid 8	Grid 9	Grid 7	Grid 8	Grid 9
121.3	131.2	131.0	121.3	131.2	131.0

Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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Author Data
Daoud Attayi

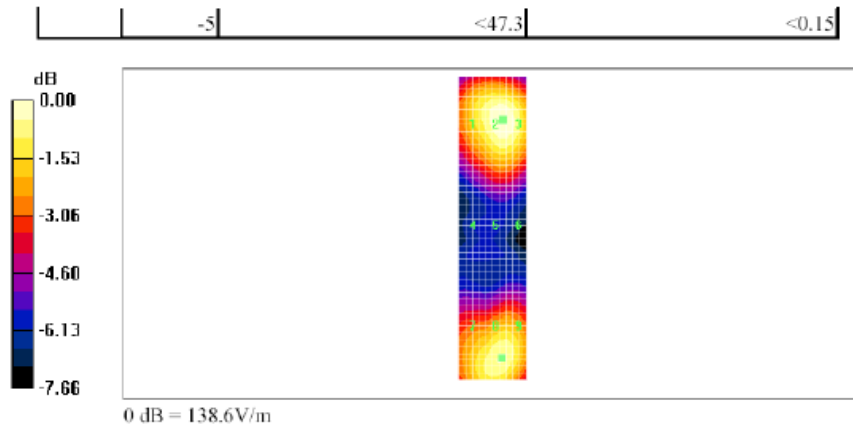
Dates of Test
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Date/Time: 14/07/2005 12:43:02 PM

Lab: RIM Testing Services (RTS)

HAC_H_Dipole_CW 1880_5 mm step_07_14_05

DUT: HAC Dipole 1880 MHz; Type: CD1880V3

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: H Dipole Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 10/12/2004

- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)

- Electronics: DAE3 Sn472; Calibrated: 03/01/2005

- Phantom: HAC Test Arch; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

H Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (5x19x1):

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

Maximum value of Total (measured) = 0.406 A/m

H Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (41x181x1):

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

Maximum value of Total field (slot averaged) = 0.406 A/m

Hearing Aid Near-Field Category: M2 (AWF 0 dB)

H in A/m (Time averaged) H in A/m (Slot averaged)

Grid 1	Grid 2	Grid 3	Grid 1	Grid 2	Grid 3
0.342	0.359	0.344	0.342	0.359	0.344
Grid 4	Grid 5	Grid 6	Grid 4	Grid 5	Grid 6
0.389	0.406	0.389	0.389	0.406	0.389
Grid 7	Grid 8	Grid 9	Grid 7	Grid 8	Grid 9
0.363	0.378	0.363	0.363	0.378	0.363

Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19



Author Data
Daoud Attayi

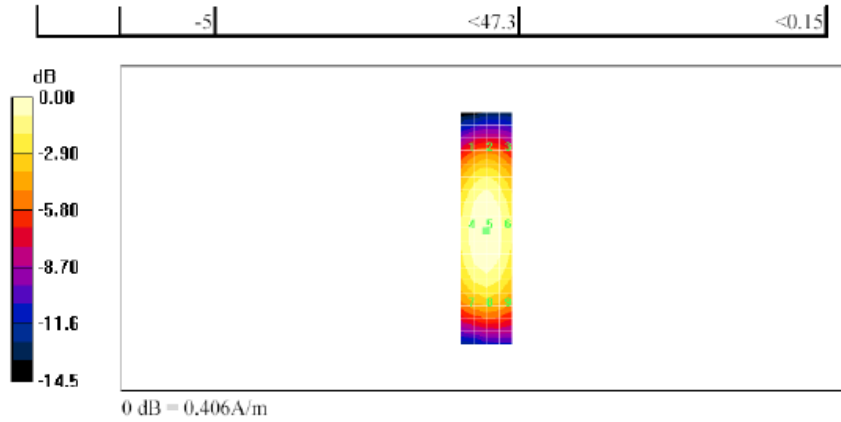
Dates of Test
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A.3 RF emission field plots

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Date/Time: 7/4/2013 3:30:51 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_GSM850

DUT: BlackBerry Smartphone; Type: Sample

Communication System: UID 0 - n/a, GSM 850; Frequency: 824.2 MHz, Frequency: 836.8 MHz, Frequency: 848.8 MHz
 Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
 Phantom section: RF Section
 Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/11/2013;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASYS2 52.8.6(1115); SEMCAD X 14.6.9(7117)

Device E-Field GSM850 measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Low_Chan/Hearing Aid Compatibility

Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
 Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 75.44 V/m; Power Drift = -0.09 dB
 Applied MIF = 3.46 dB
 RF audio interference level = 39.10 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 37.77 dBV/m	Grid 2 M4 38.44 dBV/m	Grid 3 M4 38.33 dBV/m
Grid 4 M4 38.31 dBV/m	Grid 5 M4 39.1 dBV/m	Grid 6 M4 38.93 dBV/m

Grid 7 M4 38.73 dBV/m	Grid 8 M4 39.3 dBV/m	Grid 9 M4 38.98 dBV/m
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Device E-Field GSM850 measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Mid_Chan/Hearing Aid Compatibility Test (101x101x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
 Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 79.86 V/m; Power Drift = -0.04 dB
 Applied MIF = 3.46 dB
 RF audio interference level = 39.80 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 38.03 dBV/m	Grid 2 M4 39.11 dBV/m	Grid 3 M4 39.08 dBV/m
Grid 4 M4 38.6 dBV/m	Grid 5 M4 39.8 dBV/m	Grid 6 M4 39.77 dBV/m
Grid 7 M4 39.1 dBV/m	Grid 8 M4 39.98 dBV/m	Grid 9 M4 39.82 dBV/m

Device E-Field GSM850 measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_High_Chan/Hearing Aid Compatibility Test (101x101x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
 Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 79.25 V/m; Power Drift = -0.01 dB
 Applied MIF = 3.46 dB
 RF audio interference level = 39.59 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
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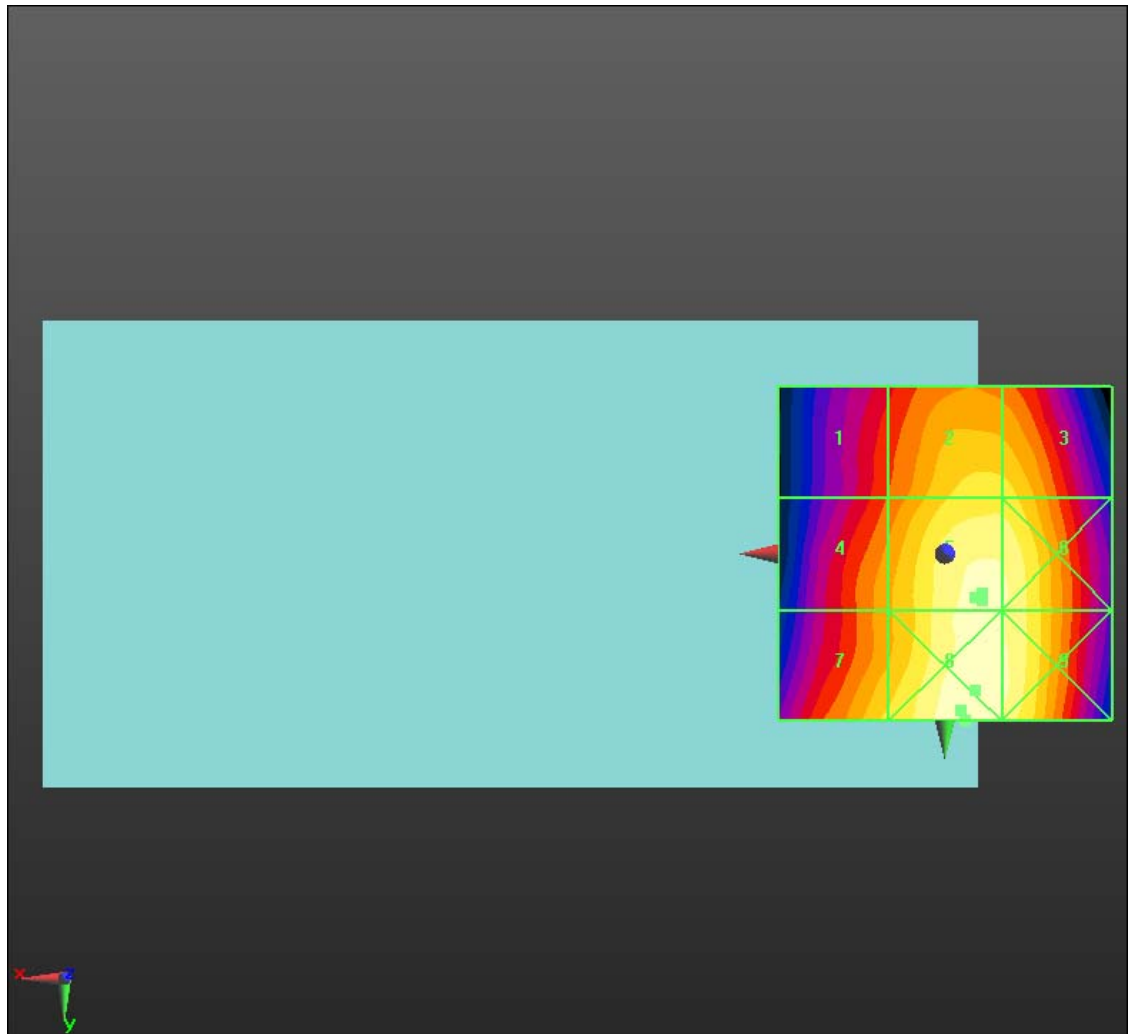
Author Data
Daoud Attayi

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37.95 dBV/m	39.06 dBV/m	39.04 dBV/m
Grid 4 M4 38.5 dBV/m	Grid 5 M4 39.59 dBV/m	Grid 6 M4 39.56 dBV/m
Grid 7 M4 38.97 dBV/m	Grid 8 M4 39.81 dBV/m	Grid 9 M4 39.6 dBV/m



0 dB = 92.23 V/m = 39.30 dBV/m

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Test Laboratory: RIM Testing Services

HAC RF_E-Field_GSM850_Telecoil

DUT: BlackBerry Smartphone; Type: Sample

Communication System: UID 0 - n/a, GSM 850; Frequency: 836.8 MHz
Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
Phantom section: RF Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/11/2013;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASY52 52.8.6(1115); SEMCAD X 14.6.9(7117)

Device E-Field GSM850 measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Mid_Chan_telecoil/Hearing Aid

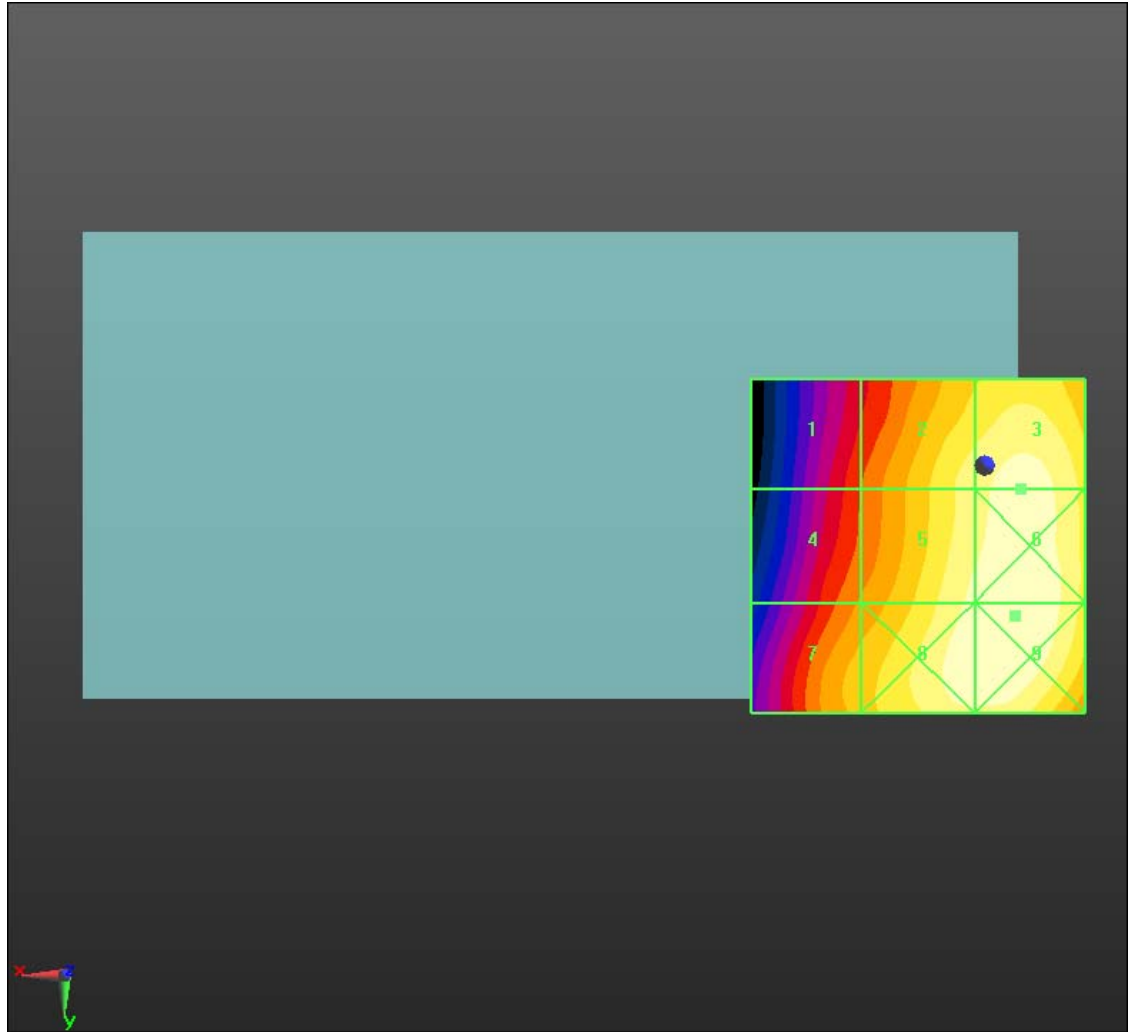
Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm
Reference Value = 79.70 V/m; Power Drift = -0.02 dB
Applied MIF = 3.46 dB
RF audio interference level = 39.71 dBV/m


Emission category: M4

MIF scaled E-field

Grid 1 M4 37.24 dBV/m	Grid 2 M4 39.34 dBV/m	Grid 3 M4 39.71 dBV/m
Grid 4 M4 37.77 dBV/m	Grid 5 M4 39.65 dBV/m	Grid 6 M4 39.95 dBV/m
Grid 7 M4 38.45 dBV/m	Grid 8 M4 39.84 dBV/m	Grid 9 M4 39.97 dBV/m



0 dB = 99.66 V/m = 39.97 dBV/m

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Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_Band_V

DUT: BlackBerry Smartphone; Type: Sample

Communication System: UID 0 - n/a, WCDMA FDD V; Frequency: 826.4 MHz, Frequency: 836.4 MHz, Frequency: 846.6 MHz
Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
Phantom section: RF Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/11/2013;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASY52 52.8.6(1115); SEMCAD X 14.6.9(7117)

Device E-Field UMTS band V measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Low_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 75.88 V/m; Power Drift = 0.10 dB
Applied MIF = -15.38 dB
RF audio interference level = 20.58 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 M4 18.97 dBV/m	Grid 2 M4 20.26 dBV/m	Grid 3 M4 20.25 dBV/m
Grid 4 M4 19.58 dBV/m	Grid 5 M4 20.58 dBV/m	Grid 6 M4 20.5 dBV/m
Grid 7 M4	Grid 8 M4	Grid 9 M4

20.05 dBV/m	20.69 dBV/m	20.45 dBV/m
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Device E-Field UMTS band V measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Mid_Chan/Hearing Aid Compatibility Test (101x101x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
 Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 75.58 V/m; Power Drift = -0.02 dB
 Applied MIF = -15.38 dB
 RF audio interference level = 20.51 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 M4 18.65 dBV/m	Grid 2 M4 19.96 dBV/m	Grid 3 M4 19.94 dBV/m
Grid 4 M4 19.44 dBV/m	Grid 5 M4 20.51 dBV/m	Grid 6 M4 20.48 dBV/m
Grid 7 M4 20.07 dBV/m	Grid 8 M4 20.78 dBV/m	Grid 9 M4 20.55 dBV/m

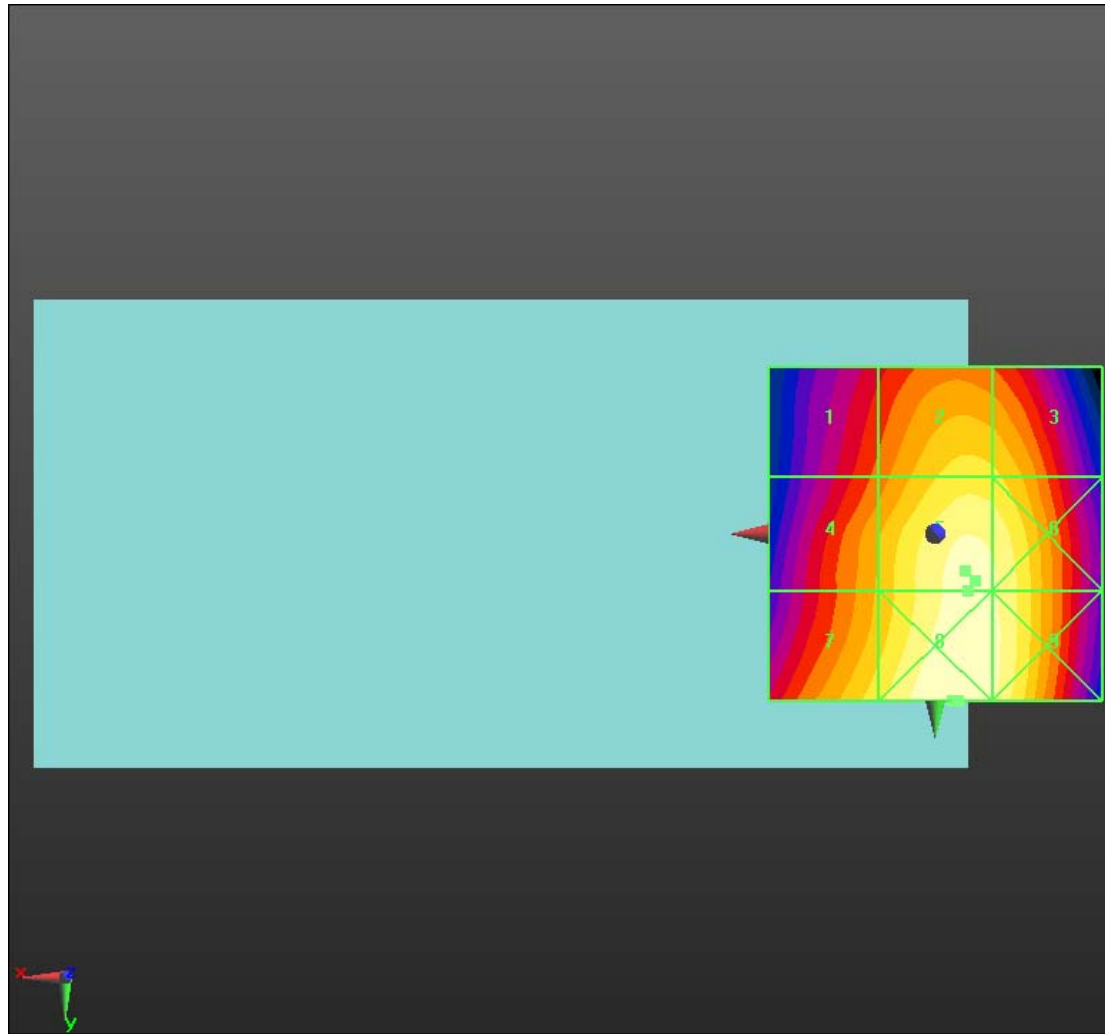
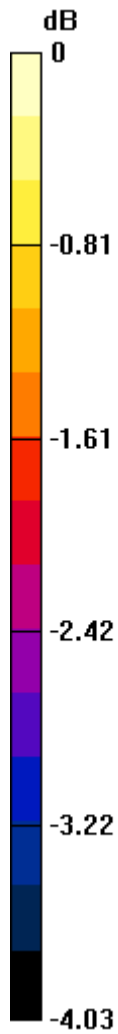
Device E-Field UMTS band V measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_High_Chan/Hearing Aid Compatibility Test (101x101x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
 Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 82.98 V/m; Power Drift = 0.06 dB
 Applied MIF = -15.38 dB
 RF audio interference level = 21.34 dBV/m
Emission category: M4


MIF scaled E-field

Grid 1 M4 19.69 dBV/m	Grid 2 M4 20.73 dBV/m	Grid 3 M4 20.64 dBV/m
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Grid 4 M4 20.27 dBV/m	Grid 5 M4 21.34 dBV/m	Grid 6 M4 21.26 dBV/m
Grid 7 M4 20.78 dBV/m	Grid 8 M4 21.53 dBV/m	Grid 9 M4 21.33 dBV/m



0 dB = 10.83 V/m = 20.69 dBV/m

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Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_Band_V_Telecoil

DUT: BlackBerry Smartphone; Type: Sample

Communication System: UID 0 - n/a, WCDMA FDD V; Frequency: 846.6 MHz
 Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
 Phantom section: RF Section
 Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/11/2013;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASYS 52.8.6(1115); SEMCAD X 14.6.9(7117)

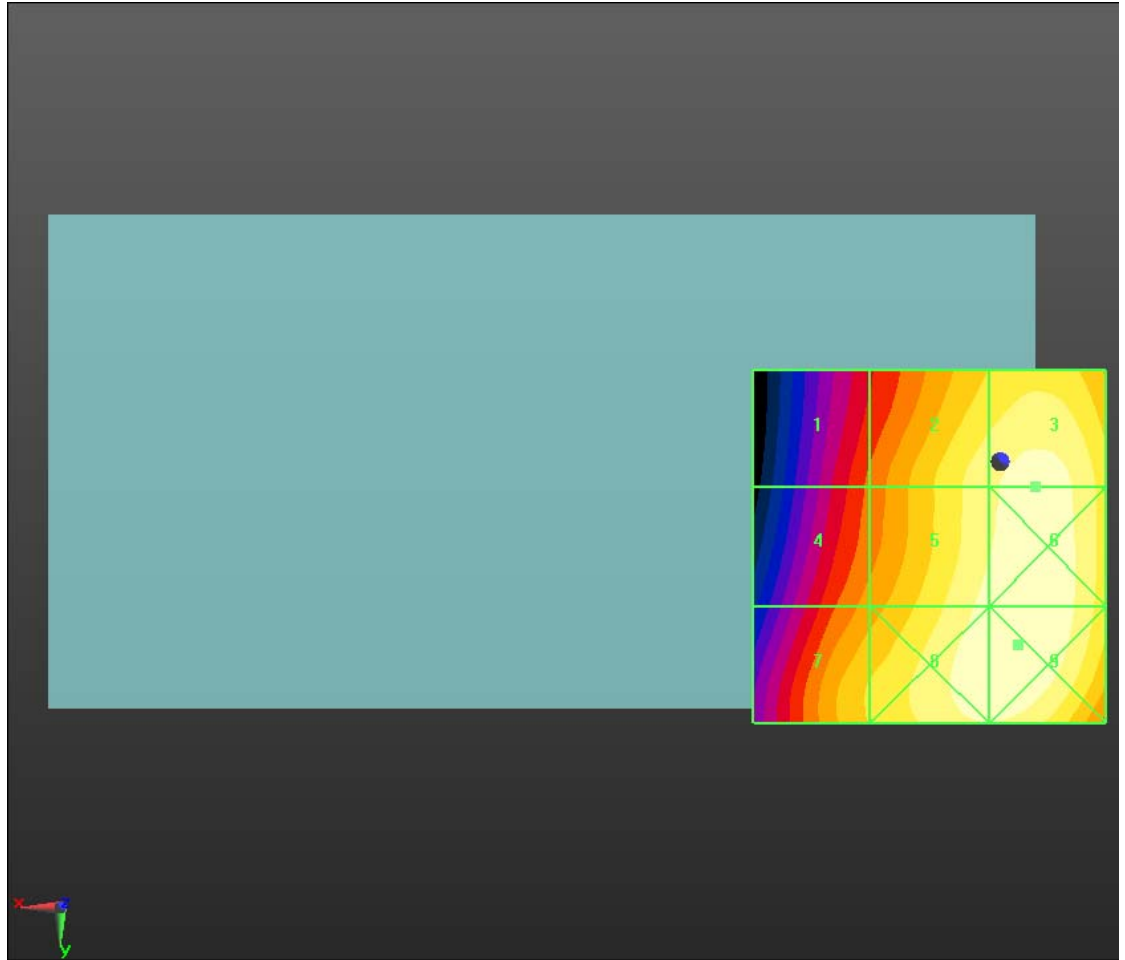
Device E-Field UMTS band V measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_High_Chan_telecoil/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 83.28 V/m; Power Drift = -0.00 dB
 Applied MIF = -15.38 dB
 RF audio interference level = 21.25 dBV/m


Emission category: M4

MIF scaled E-field

Grid 1 M4 18.92 dBV/m	Grid 2 M4 20.94 dBV/m	Grid 3 M4 21.25 dBV/m
Grid 4 M4 19.48 dBV/m	Grid 5 M4 21.23 dBV/m	Grid 6 M4 21.45 dBV/m
Grid 7 M4 20.2 dBV/m	Grid 8 M4 21.4 dBV/m	Grid 9 M4 21.48 dBV/m



0 dB = 11.86 V/m = 21.48 dBV/m

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Test Laboratory: RIM Testing Services

HAC RF_E-Field_GSM1900

DUT: BlackBerry Smartphone; Type: Sample

Communication System: UID 0 - n/a, GSM 1900; Frequency: 1850.2 MHz, Frequency: 1880 MHz, Frequency: 1909.8 MHz
 Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
 Phantom section: RF Section
 Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/11/2013;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASYS2 52.8.6(1115); SEMCAD X 14.6.9(7117)

Device E-Field GSM 1900 measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Low_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 11.89 V/m; Power Drift = 0.04 dB
 Applied MIF = 3.46 dB
 RF audio interference level = 31.49 dBV/m

Emission category: M3

MIF scaled E-field

Grid 1 M3 31.19 dBV/m	Grid 2 M3 31.49 dBV/m	Grid 3 M3 30.68 dBV/m
Grid 4 M4 26.35 dBV/m	Grid 5 M4 27.73 dBV/m	Grid 6 M4 27.79 dBV/m
Grid 7 M4	Grid 8 M3	Grid 9 M3

30 dBV/m	31.76 dBV/m	31.64 dBV/m
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Device E-Field GSM 1900 measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Mid_Chan/Hearing Aid Compatibility Test (101x101x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
 Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 12.50 V/m; Power Drift = 0.09 dB
 Applied MIF = 3.46 dB
 RF audio interference level = 29.87 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 29.03 dBV/m	Grid 2 M4 29.87 dBV/m	Grid 3 M4 29.55 dBV/m
Grid 4 M4 24.66 dBV/m	Grid 5 M4 26.31 dBV/m	Grid 6 M4 26.41 dBV/m
Grid 7 M4 27.28 dBV/m	Grid 8 M4 29.65 dBV/m	Grid 9 M4 29.54 dBV/m

Device E-Field GSM 1900 measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_High_Chan/Hearing Aid Compatibility Test (101x101x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
 Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 10.44 V/m; Power Drift = 0.14 dB
 Applied MIF = 3.46 dB
 RF audio interference level = 30.15 dBV/m

Emission category: M3

MIF scaled E-field

Grid 1 M4 29.47 dBV/m	Grid 2 M3 30.15 dBV/m	Grid 3 M4 29.75 dBV/m
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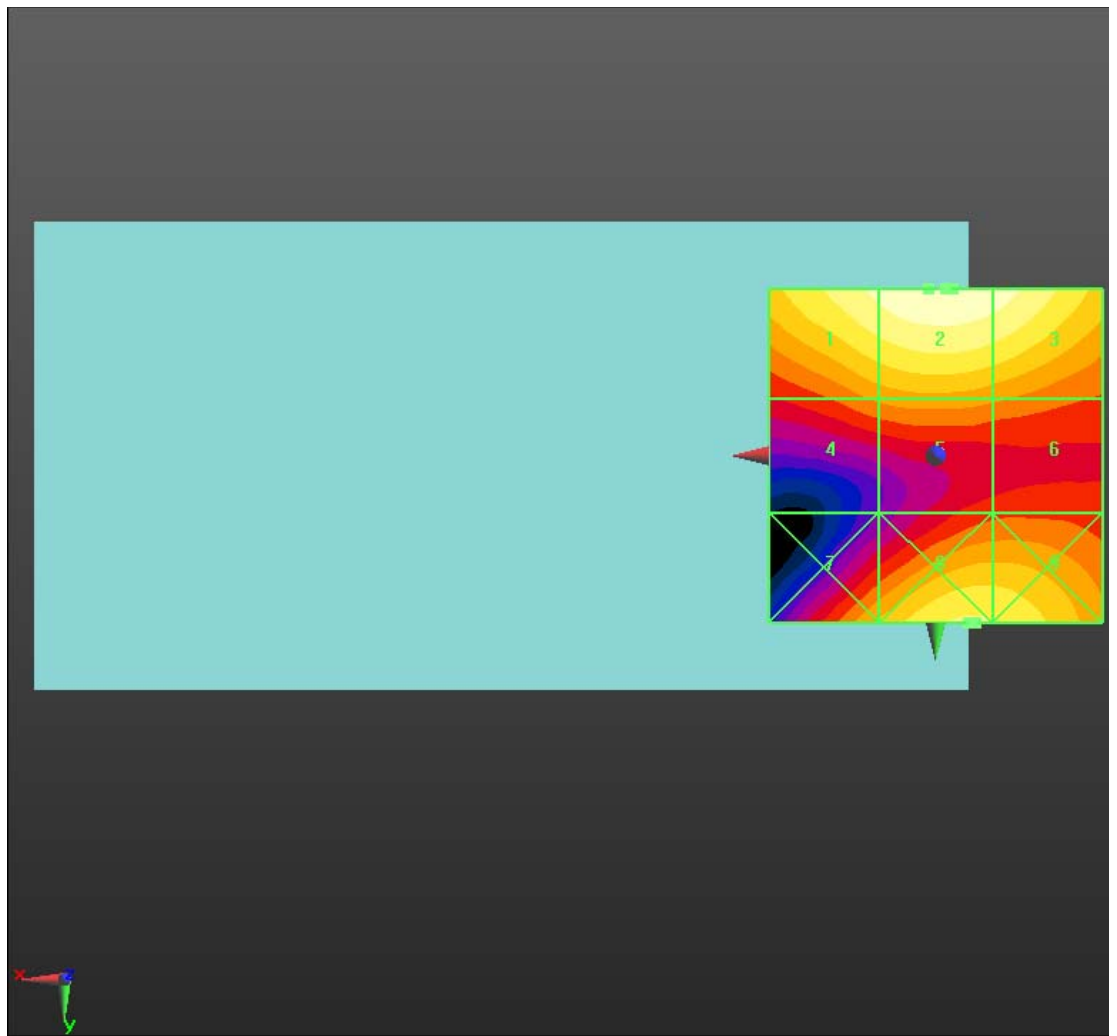
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Daoud Attayi

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FCC ID
L6ARFV120LW

Grid 4 M4 25.41 dBV/m	Grid 5 M4 25.84 dBV/m	Grid 6 M4 25.44 dBV/m
Grid 7 M4 26.45 dBV/m	Grid 8 M4 28.36 dBV/m	Grid 9 M4 28.23 dBV/m



0 dB = 38.74 V/m = 31.76 dBV/m

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Date/Time: 7/4/2013 4:08:06 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_GSM1900_Telecoil

DUT: BlackBerry Smartphone; Type: Sample

Communication System: UID 0 - n/a, GSM 1900; Frequency: 1880 MHz
Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
Phantom section: RF Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/11/2013;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASYS 52.8.6(1115); SEMCAD X 14.6.9(7117)

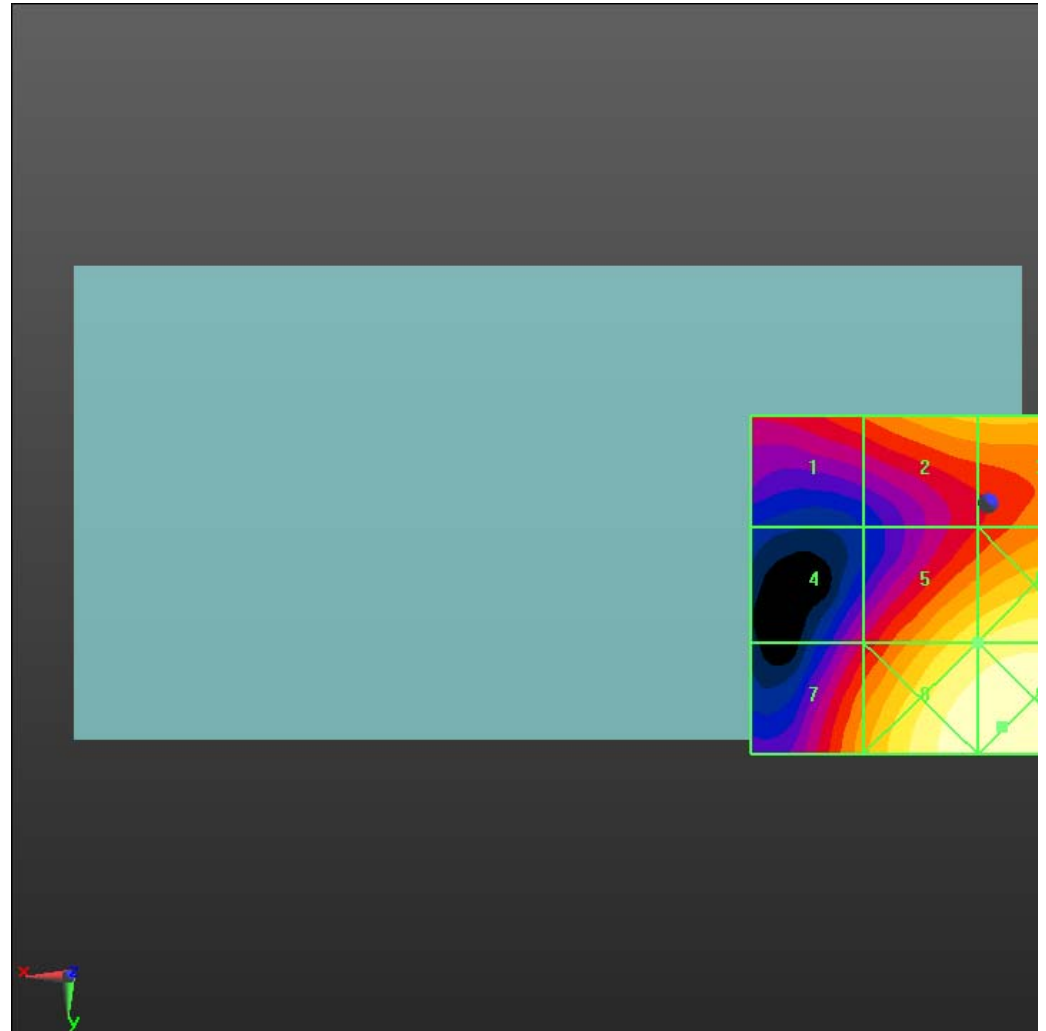
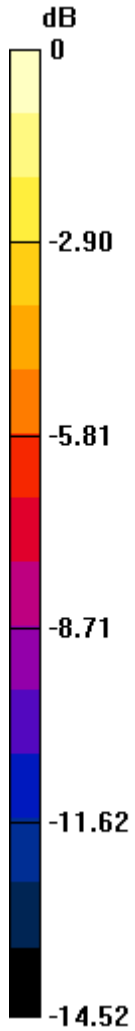
**Device E-Field GSM 1900 measurement with ER probe/E Scan - ER3D - 2011:
15 mm from Probe Center to the Device_Mid_Chan_telecoil/Hearing Aid
Compatibility Test (101x101x1):** Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm
Reference Value = 11.70 V/m; Power Drift = 0.32 dB
Applied MIF = 3.46 dB
RF audio interference level = 28.35 dBV/m


Emission category: M4

MIF scaled E-field

Grid 1 M4 24.66 dBV/m	Grid 2 M4 26.86 dBV/m	Grid 3 M4 26.97 dBV/m
Grid 4 M4 22.66 dBV/m	Grid 5 M4 28.35 dBV/m	Grid 6 M4 29.09 dBV/m
Grid 7 M4 26.09 dBV/m	Grid 8 M3 30.16 dBV/m	Grid 9 M3 30.32 dBV/m



0 dB = 32.80 V/m = 30.32 dBV/m

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Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_Band_IV

DUT: BlackBerry Smartphone; Type: Sample

Communication System: UID 0 - n/a, WCDMA FDD IV; Frequency: 1712.4 MHz, Frequency: 1732.6 MHz, Frequency: 1752.6 MHz
 Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
 Phantom section: RF Section
 Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/11/2013;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASYS2 52.8.6(1115); SEMCAD X 14.6.9(7117)

Device E-Field UMTS band IV measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Low_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
 Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 26.72 V/m; Power Drift = -0.04 dB
 Applied MIF = -15.38 dB
 RF audio interference level = 14.99 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 M4 14.57 dBV/m	Grid 2 M4 14.62 dBV/m	Grid 3 M4 13.45 dBV/m
Grid 4 M4 11.76 dBV/m	Grid 5 M4 14.96 dBV/m	Grid 6 M4 14.99 dBV/m

Grid 7 M4 15.77 dBV/m	Grid 8 M4 17.54 dBV/m	Grid 9 M4 17.47 dBV/m
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Device E-Field UMTS band IV measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Mid_Chan/Hearing Aid Compatibility Test (101x101x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
 Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 22.98 V/m; Power Drift = -0.00 dB
 Applied MIF = -15.38 dB
 RF audio interference level = 14.77 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 14.76 dBV/m	Grid 2 M4 14.77 dBV/m	Grid 3 M4 13.33 dBV/m
Grid 4 M4 10.3 dBV/m	Grid 5 M4 13.68 dBV/m	Grid 6 M4 13.73 dBV/m
Grid 7 M4 14.43 dBV/m	Grid 8 M4 16.29 dBV/m	Grid 9 M4 16.22 dBV/m

Device E-Field UMTS band IV measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_High_Chan/Hearing Aid Compatibility Test (101x101x1):

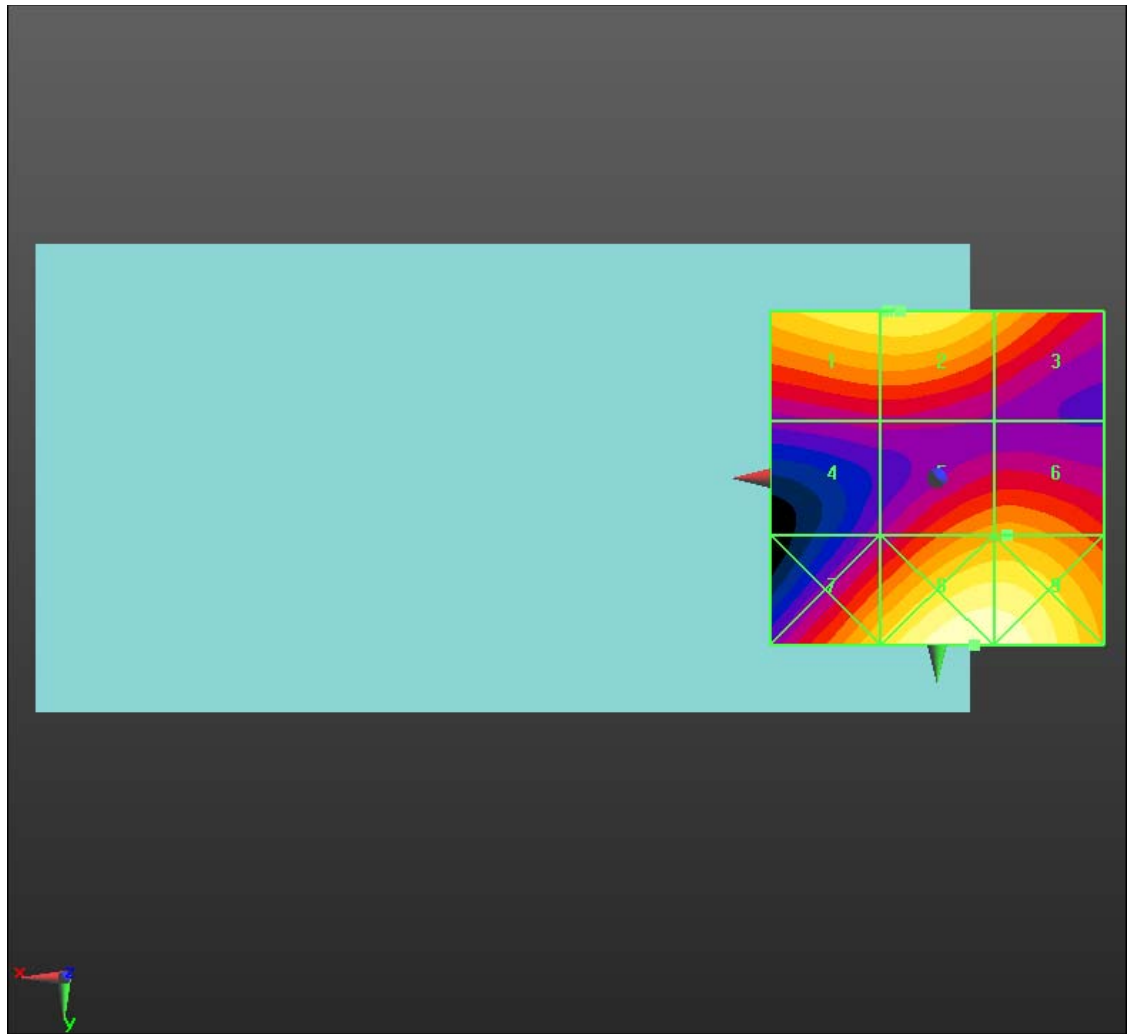
Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
 Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 20.59 V/m; Power Drift = -0.04 dB
 Applied MIF = -15.38 dB
 RF audio interference level = 14.05 dBV/m

Emission category: M4


MIF scaled E-field

Grid 1 M4 13.96 dBV/m	Grid 2 M4 14.05 dBV/m	Grid 3 M4 12.87 dBV/m
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Grid 4 M4 9.66 dBV/m	Grid 5 M4 12.36 dBV/m	Grid 6 M4 12.41 dBV/m
Grid 7 M4 13.43 dBV/m	Grid 8 M4 15.3 dBV/m	Grid 9 M4 15.22 dBV/m



0 dB = 7.531 V/m = 17.54 dBV/m

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Date/Time: 7/4/2013 6:15:00 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_Band_IV_Telecoil

DUT: BlackBerry Smartphone; Type: Sample

Communication System: UID 0 - n/a, WCDMA FDD IV; Frequency: 1712.4 MHz
 Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
 Phantom section: RF Section
 Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/11/2013;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASYS 52.8.6(1115); SEMCAD X 14.6.9(7117)

Device E-Field UMTS band IV measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Low_Chan_telecoil/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 26.70 V/m; Power Drift = 0.02 dB
 Applied MIF = -15.38 dB
 RF audio interference level = 16.34 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 10.85 dBV/m	Grid 2 M4 12.12 dBV/m	Grid 3 M4 13.84 dBV/m
Grid 4 M4 12.11 dBV/m	Grid 5 M4 16.34 dBV/m	Grid 6 M4 17.09 dBV/m
Grid 7 M4 15.13 dBV/m	Grid 8 M4 17.69 dBV/m	Grid 9 M4 17.85 dBV/m

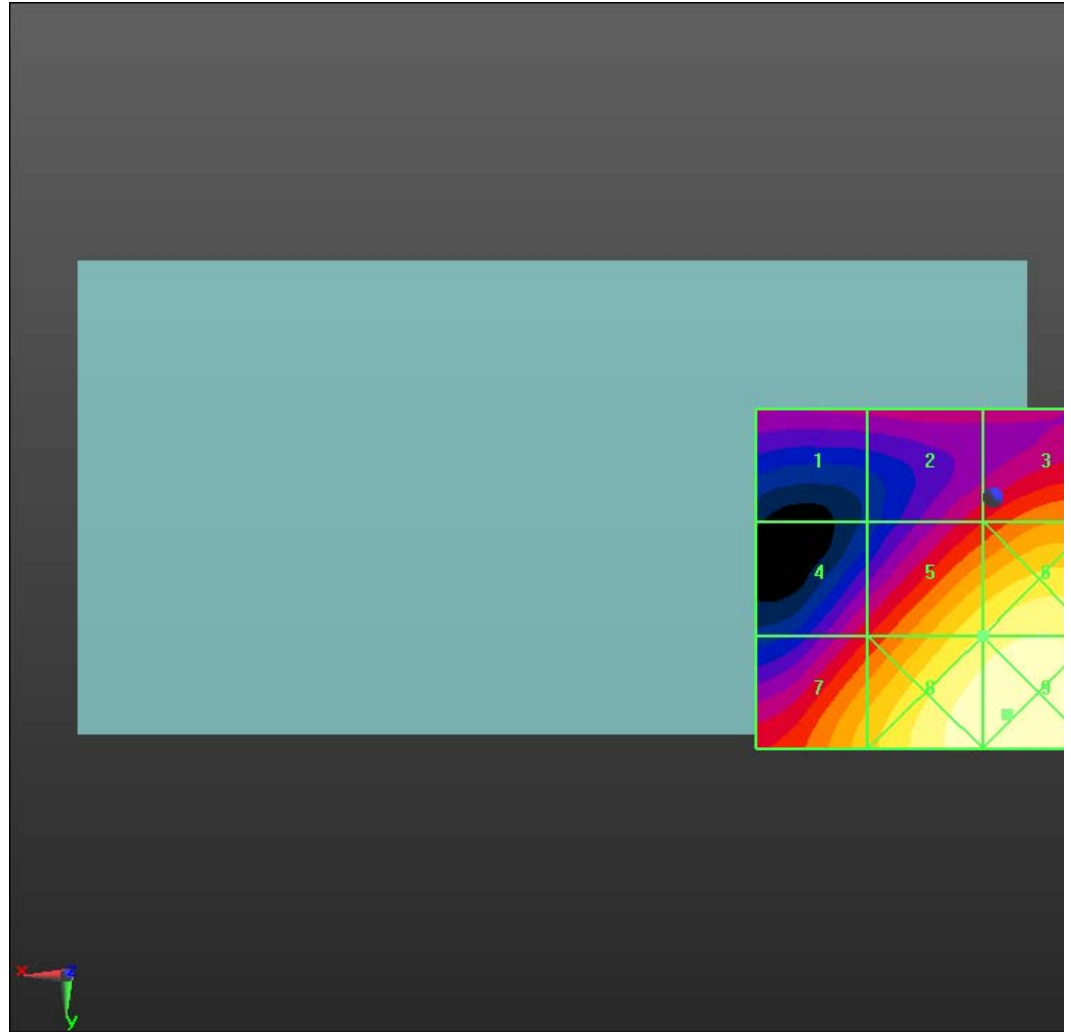
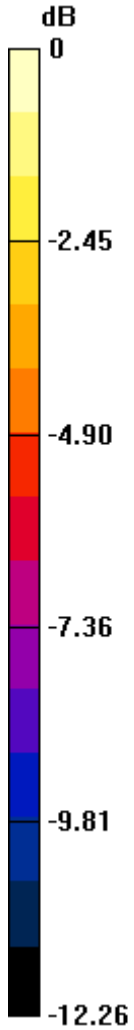


Author Data
Daoud Attayi


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FCC ID
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0 dB = 7.808 V/m = 17.85 dBV/m

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Date/Time: 7/4/2013 5:46:04 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_Band_II

DUT: BlackBerry Smartphone; Type: Sample

Communication System: UID 0 - n/a, WCDMA FDD II; Frequency: 1852.4 MHz, Frequency: 1880 MHz, Frequency: 1907.6 MHz
Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
Phantom section: RF Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/11/2013;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASYS2 52.8.6(1115); SEMCAD X 14.6.9(7117)

Device E-Field UMTS band II measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Low_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 17.43 V/m; Power Drift = -0.21 dB
Applied MIF = -15.38 dB
RF audio interference level = 14.26 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 M4 14.29 dBV/m	Grid 2 M4 14.71 dBV/m	Grid 3 M4 14.14 dBV/m
Grid 4 M4 9.35 dBV/m	Grid 5 M4 10.7 dBV/m	Grid 6 M4 10.82 dBV/m
Grid 7 M4	Grid 8 M4	Grid 9 M4

12.11 dBV/m	14.26 dBV/m	14.21 dBV/m
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Device E-Field UMTS band II measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Mid_Chan/Hearing Aid Compatibility Test (101x101x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
 Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 15.62 V/m; Power Drift = 0.12 dB
 Applied MIF = -15.38 dB
 RF audio interference level = 13.46 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 13.01 dBV/m	Grid 2 M4 13.56 dBV/m	Grid 3 M4 13.15 dBV/m
Grid 4 M4 7.65 dBV/m	Grid 5 M4 10.07 dBV/m	Grid 6 M4 10.16 dBV/m
Grid 7 M4 11.24 dBV/m	Grid 8 M4 13.46 dBV/m	Grid 9 M4 13.4 dBV/m

Device E-Field UMTS band II measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_High_Chan/Hearing Aid Compatibility Test (101x101x1):

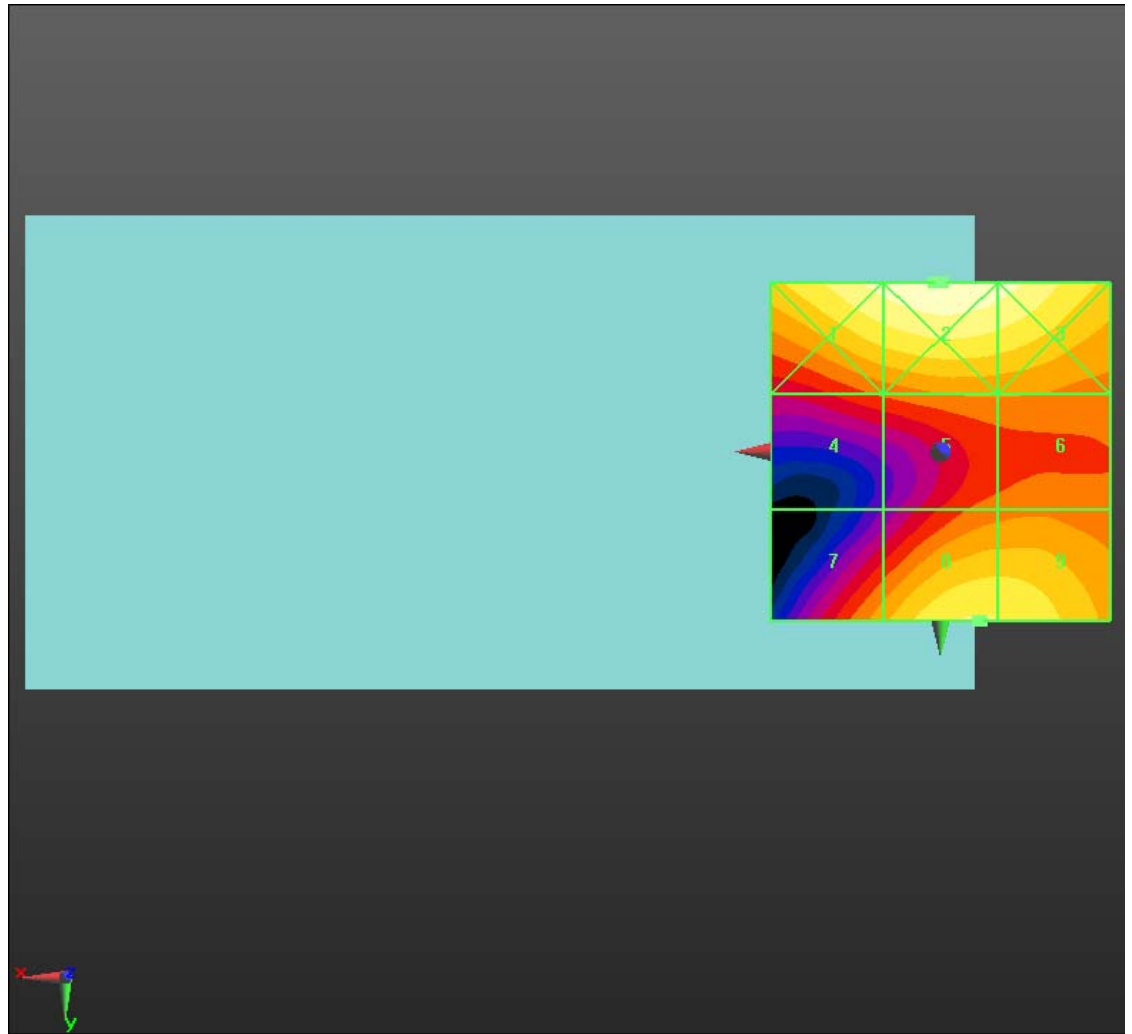
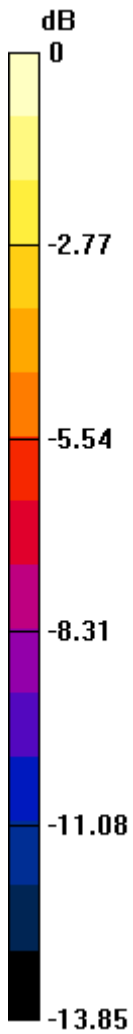
Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
 Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 13.18 V/m; Power Drift = -0.15 dB
 Applied MIF = -15.38 dB
 RF audio interference level = 11.54 dBV/m

Emission category: M4


MIF scaled E-field

Grid 1 M4 12.83 dBV/m	Grid 2 M4 13.44 dBV/m	Grid 3 M4 12.93 dBV/m
Grid 4 M4	Grid 5 M4	Grid 6 M4

7.54 dBV/m	8.52 dBV/m	8.5 dBV/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
9.14 dBV/m	11.54 dBV/m	11.44 dBV/m



0 dB = 5.436 V/m = 14.71 dBV/m

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Date/Time: 7/4/2013 5:57:30 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_Band_II_Telecoil

DUT: BlackBerry Smartphone; Type: Sample

Communication System: UID 0 - n/a, WCDMA FDD II; Frequency: 1852.4 MHz
Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
Phantom section: RF Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/11/2013;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASYS 52.8.6(1115); SEMCAD X 14.6.9(7117)

Device E-Field UMTS band II measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Low_Chan_telecoil/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm
Reference Value = 17.16 V/m; Power Drift = 0.03 dB
Applied MIF = -15.38 dB
RF audio interference level = 12.62 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 9.35 dBV/m	Grid 2 M4 11.51 dBV/m	Grid 3 M4 11.52 dBV/m
Grid 4 M4 7.01 dBV/m	Grid 5 M4 12.62 dBV/m	Grid 6 M4 13.57 dBV/m
Grid 7 M4 10.92 dBV/m	Grid 8 M4 14.68 dBV/m	Grid 9 M4 14.87 dBV/m

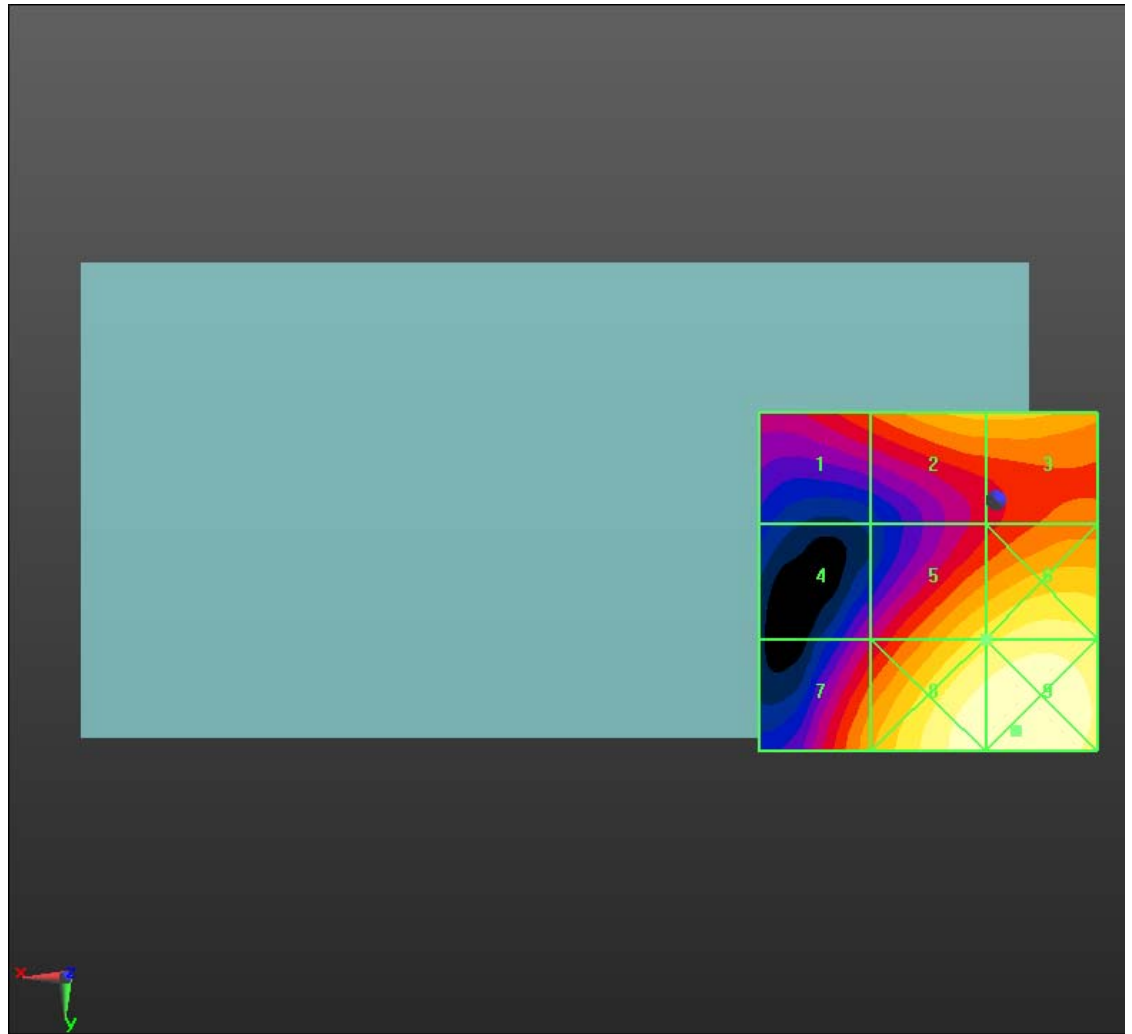
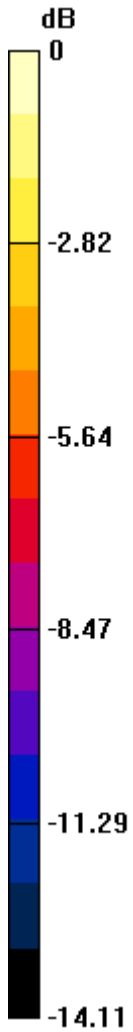


Author Data
Daoud Attayi

Dates of Test
June 13-July 04, 2013

Report No
RTS-6046-1310-32

FCC ID
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0 dB = 5.537 V/m = 14.87 dBV/m