

		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	FCC ID L6ARFV120LW	

Annex A: Measurement data and plots

A.1 MIF validation plots

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 2 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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: DASY5 (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; DASY52 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

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		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 3 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 4 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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)

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 5 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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)

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		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 6 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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)

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 7 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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)

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 8 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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)

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 9 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

A.2 Dipole validation

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 10 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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

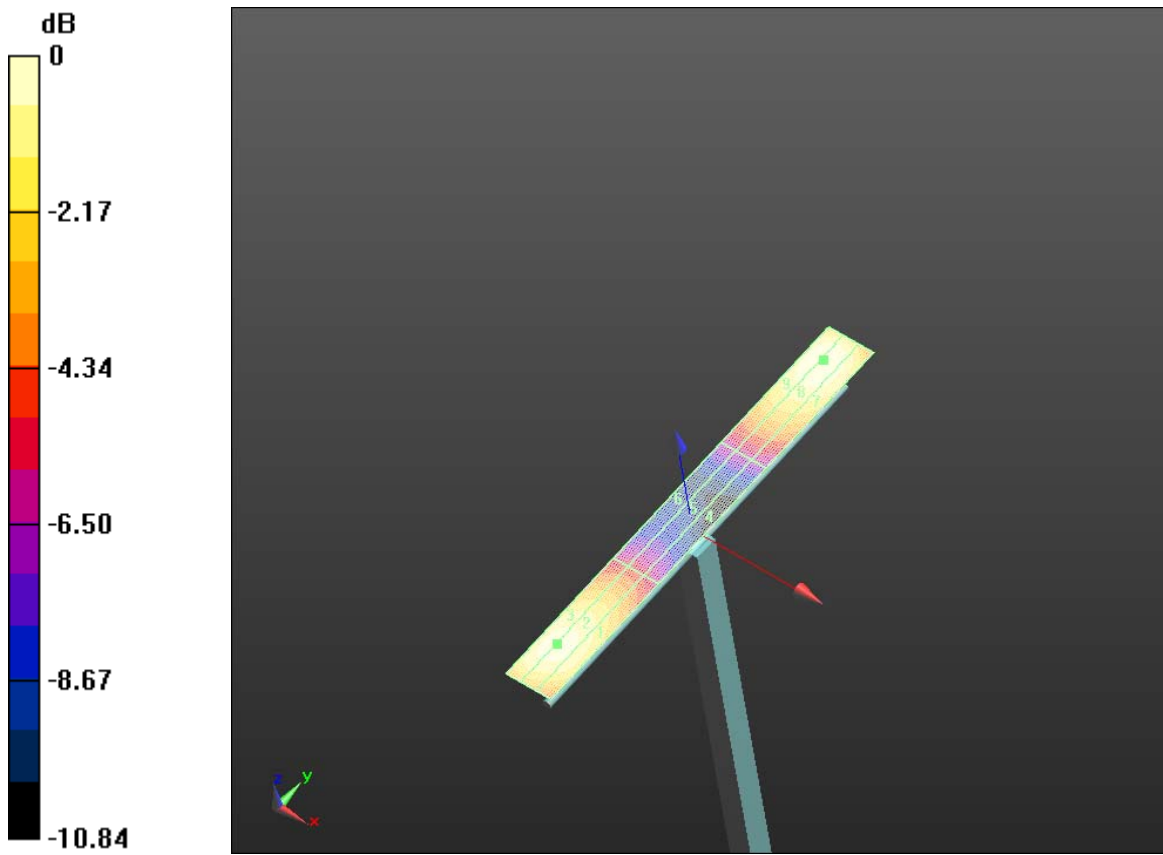
Near-field category: M4 (AWF 0 dB)

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

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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 12 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

Date/Time: 7/3/2013 6:23:02 PM

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: 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 = 103.6 V/m; Power Drift = -0.00 dB

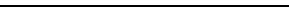
PMR not calibrated. PMF = 1.000 is applied.

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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 13 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013		Report No RTS-6046-1310-32	FCC ID L6ARFV120LW

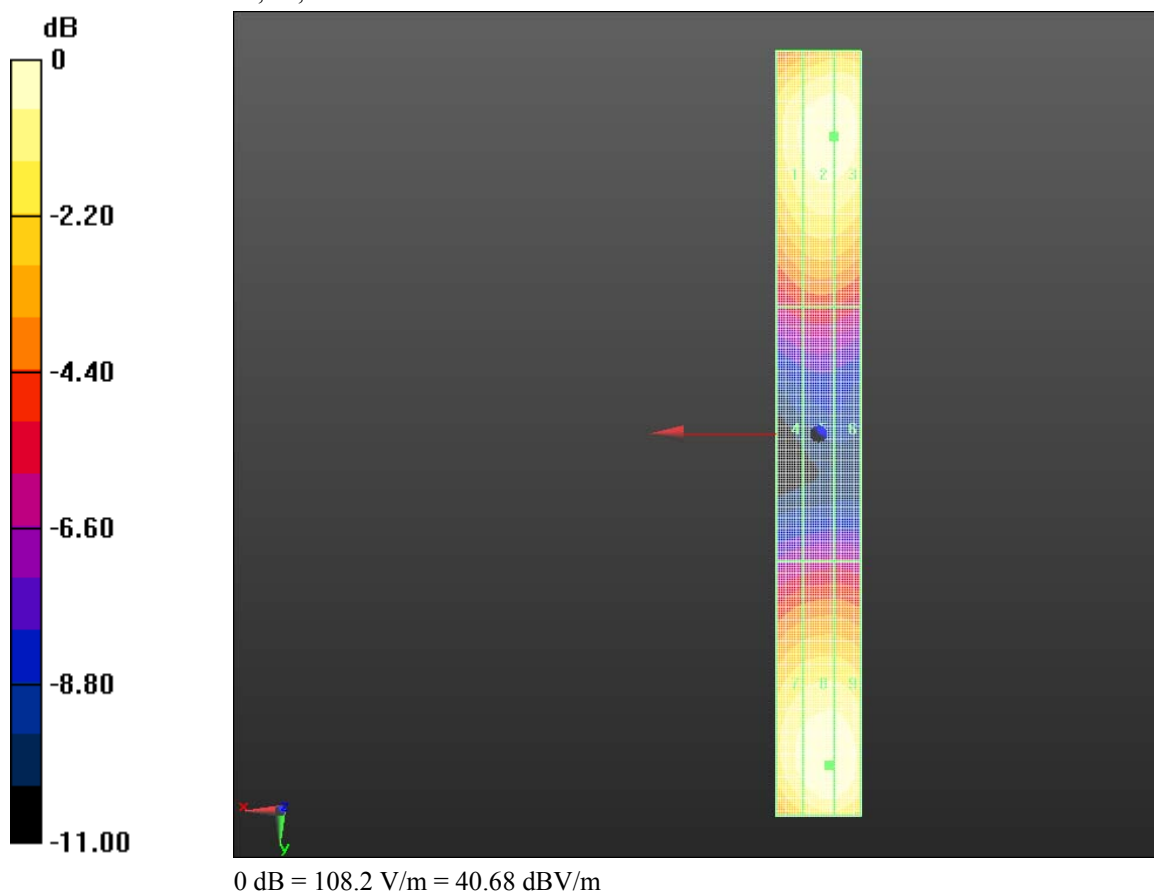
Grid 7 M4 103.2 V/m	Grid 8 M4 108.2 V/m	Grid 9 M4 108.0 V/m
--------------------------------------	--------------------------------------	--------------------------------------

Cursor:

Total = 108.2 V/m

E Category: M4

Location: -2.5, 78, 9.7 mm



		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 14 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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: 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)

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.

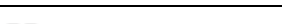
E-field emissions = 85.34 V/m

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

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		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 15 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013		Report No RTS-6046-1310-32	FCC ID L6ARFV120LW

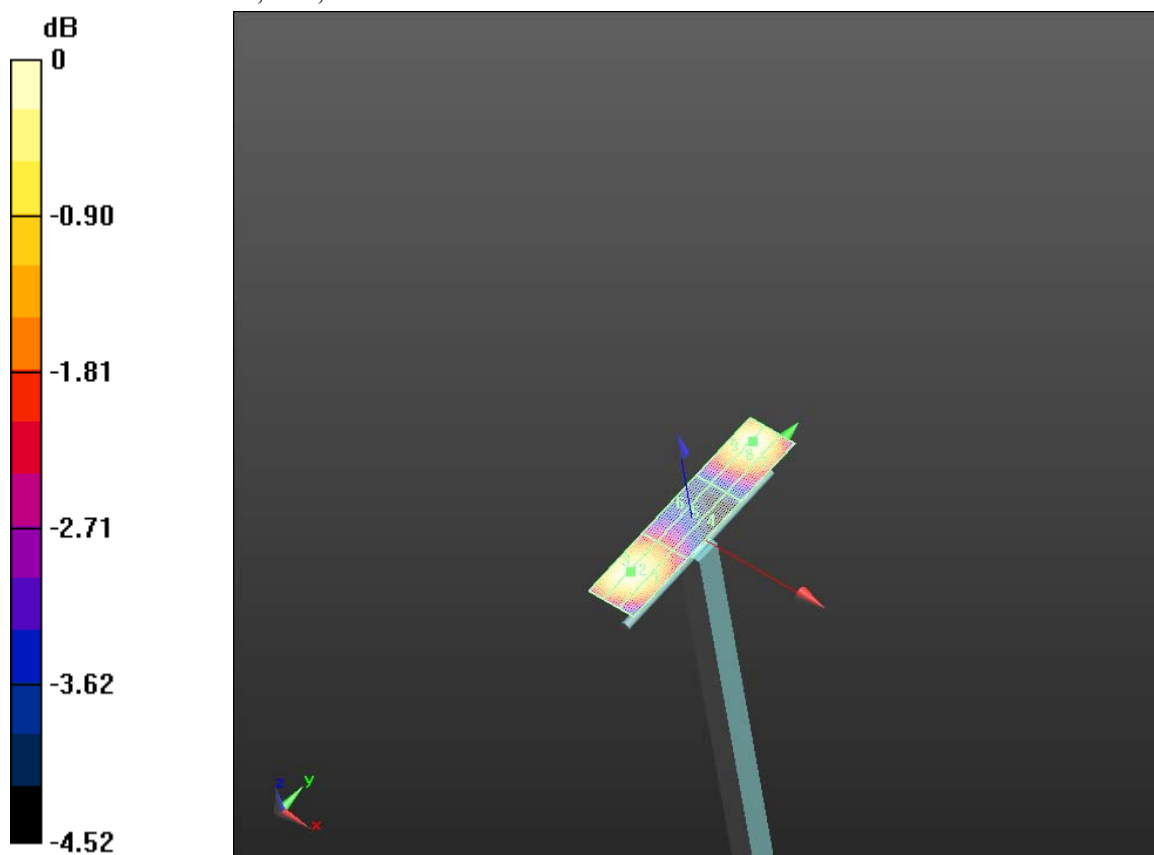
Grid 7 M3 80.57 V/m	Grid 8 M3 85.33 V/m	Grid 9 M3 85.16 V/m
--------------------------------------	--------------------------------------	--------------------------------------

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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 16 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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: 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)

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

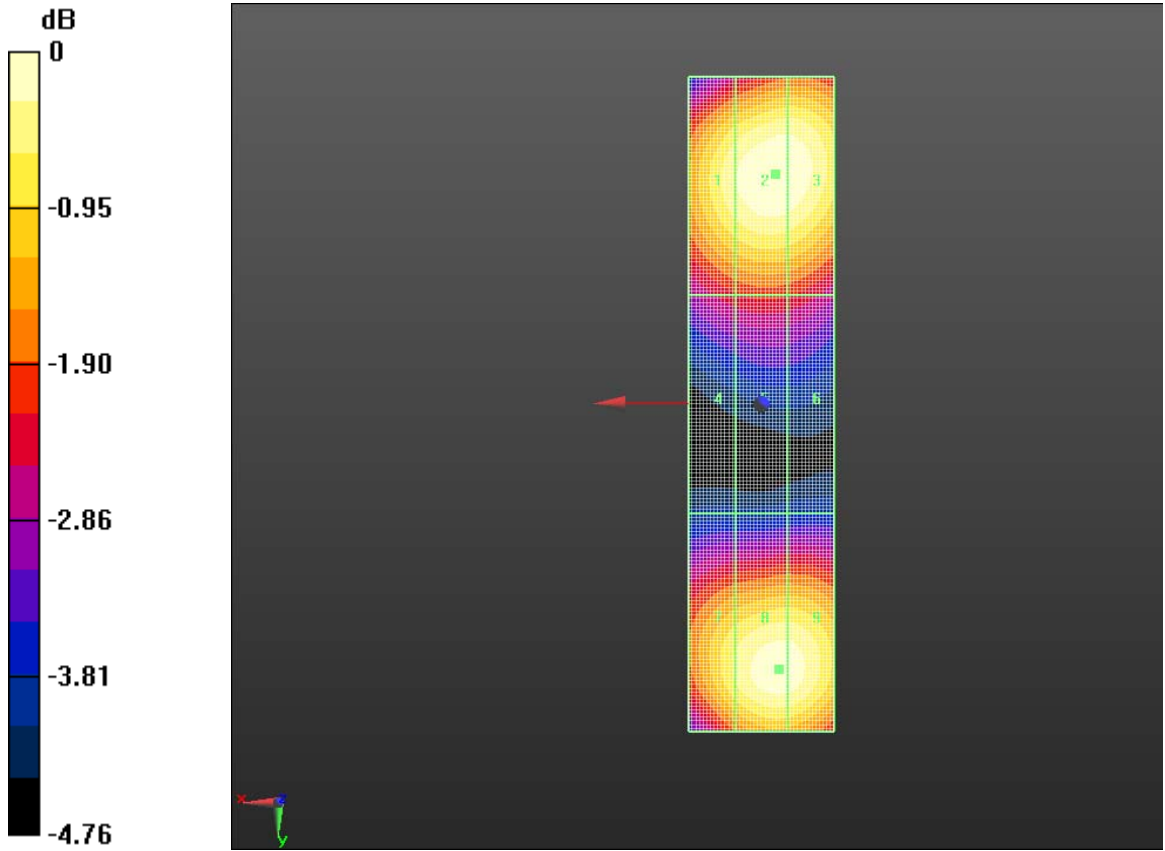
Near-field category: M3 (AWF 0 dB)

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

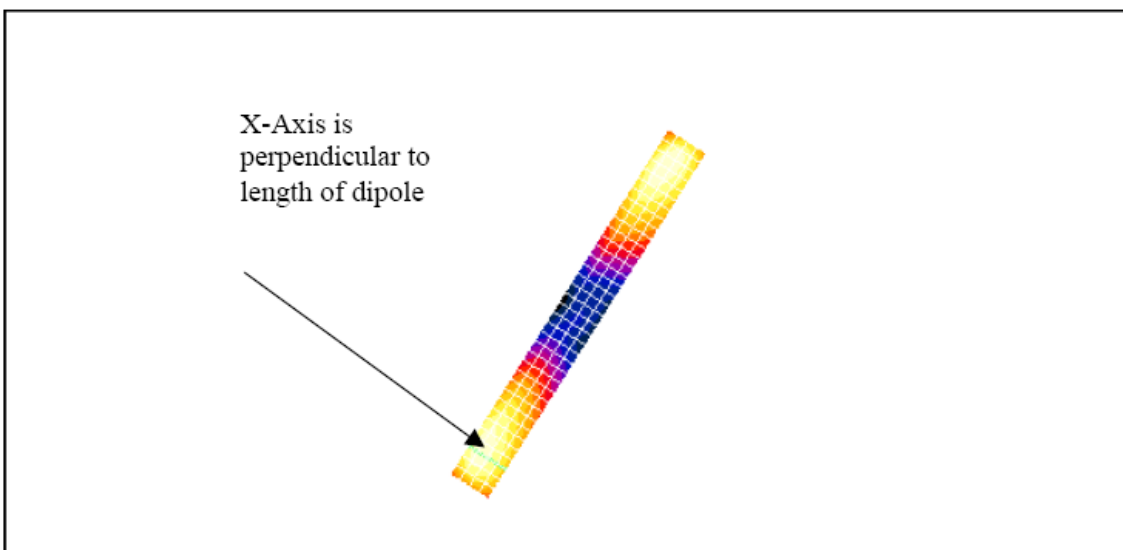
80.74 V/m	85.21 V/m	85.02 V/m
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Cursor:
 Total = 86.20 V/m
 E Category: M3
 Location: -2, -31.5, 9.7 mm



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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 18 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013		Report No RTS-6046-1310-32	FCC ID L6ARFV120LW



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.

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 19 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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

Page 1 of 2

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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		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 21 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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

Page 1 of 2

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

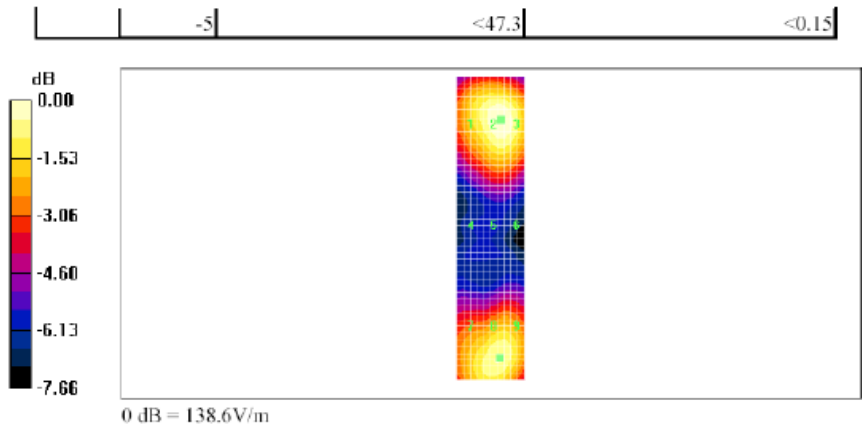
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		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 22 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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

Page 2 of 2



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		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 23 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

Date/Time: 14/07/2005 12:43:02 PM

Page 1 of 2

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

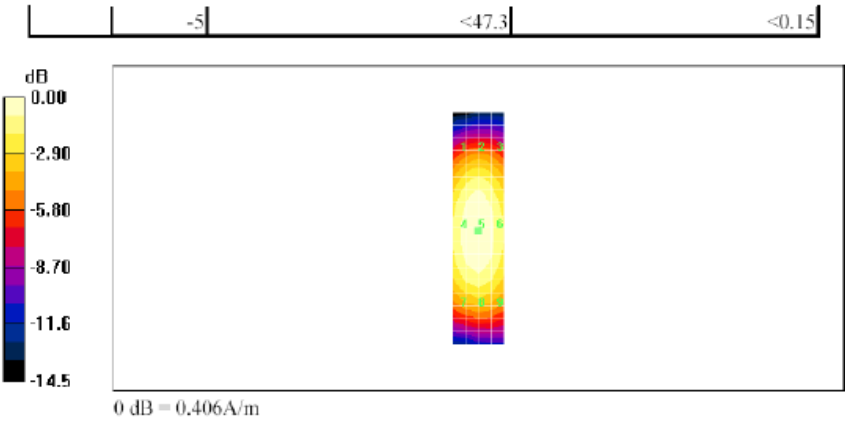
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 24 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

Date/Time: 14/07/2005 12:43:02 PM

Page 2 of 2



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		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 25 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

A.3 RF emission field plots

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 26 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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: 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_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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 27 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

Grid 7 M4 38.73 dBV/m	Grid 8 M4 39.3 dBV/m	Grid 9 M4 38.98 dBV/m
--	---------------------------------------	--

**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

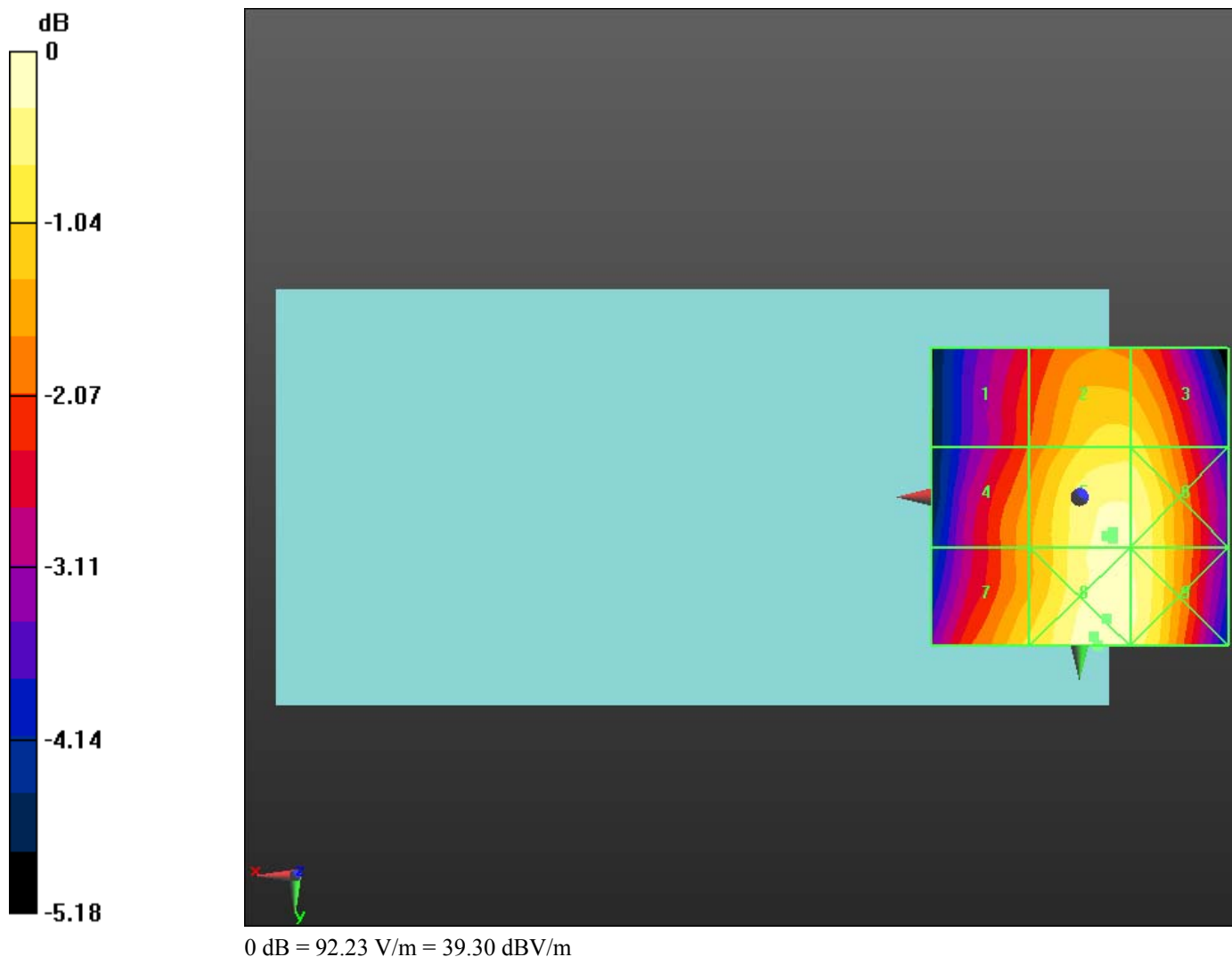
RF audio interference level = 39.59 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
------------------	------------------	------------------

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



		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 29 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

Date/Time: 7/4/2013 3:50:36 PM

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

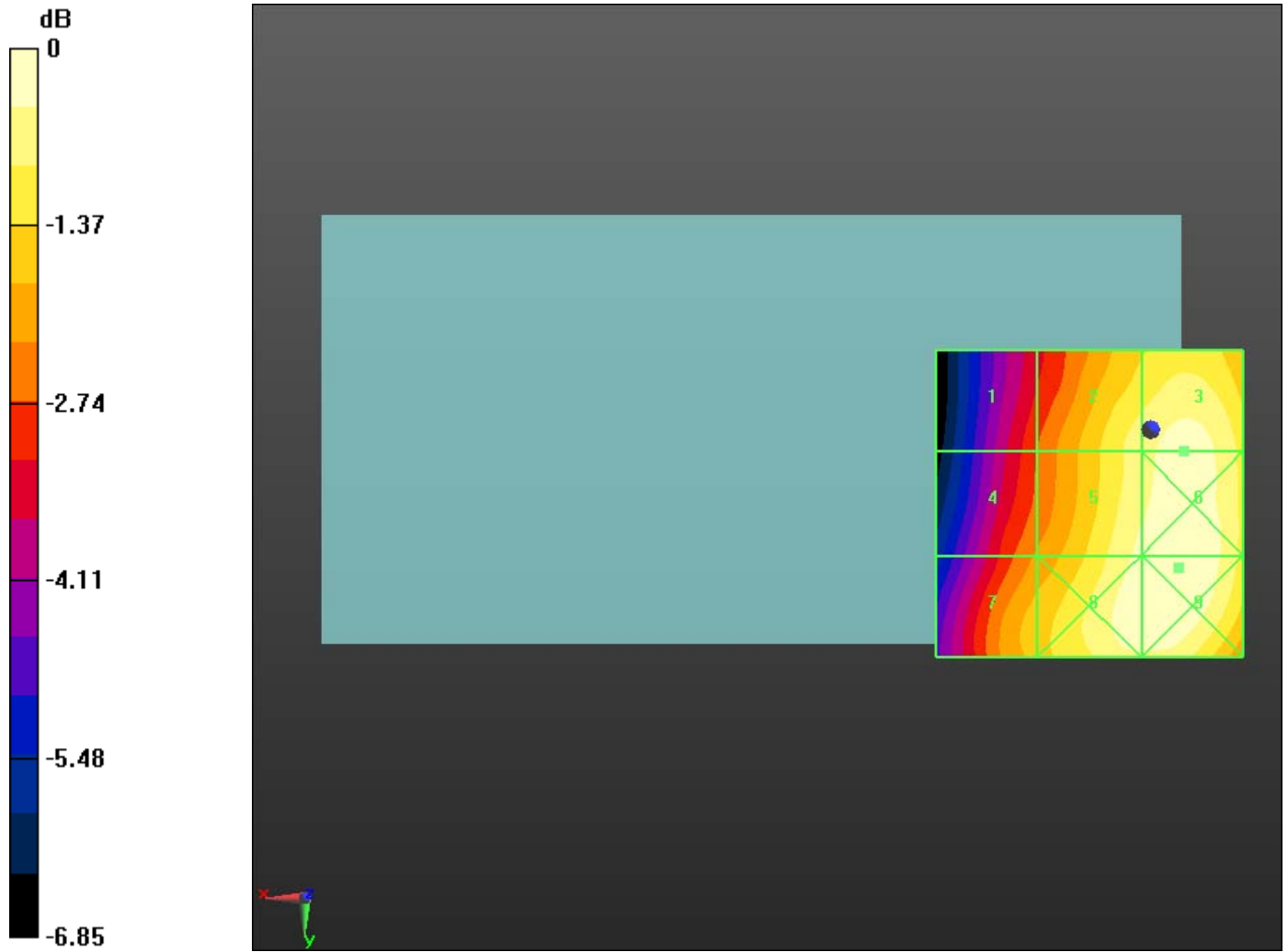
RF audio interference level = 39.71 dBV/m

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

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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 31 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

Date/Time: 7/4/2013 5:24:53 PM

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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 32 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

20.05 dBV/m	20.69 dBV/m	20.45 dBV/m
--------------------	--------------------	--------------------

**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

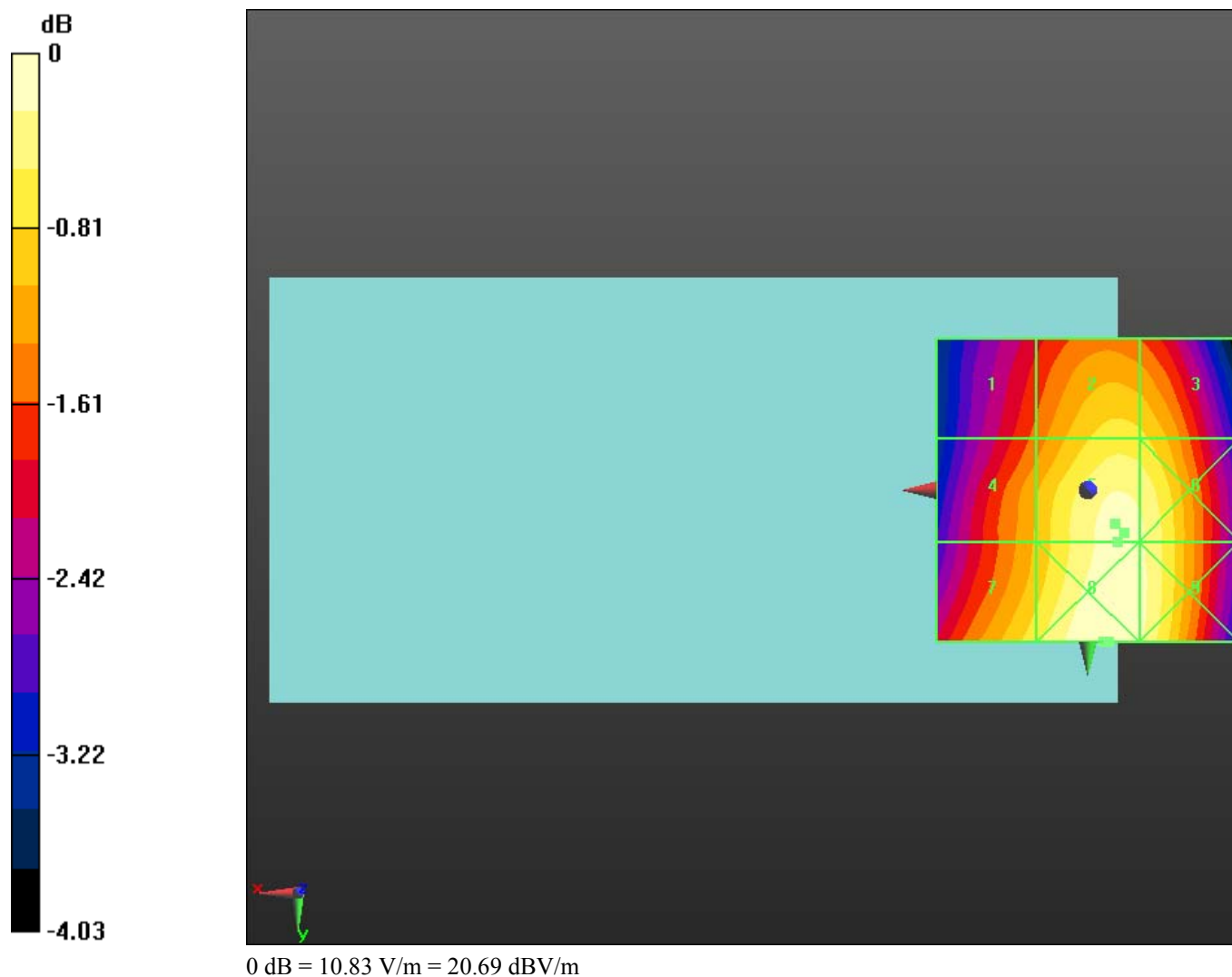
RF audio interference level = 21.34 dBV/m

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
--	--	--

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



		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 34 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

Date/Time: 7/4/2013 5:41:24 PM

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: 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_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

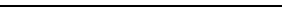
RF audio interference level = 21.25 dBV/m

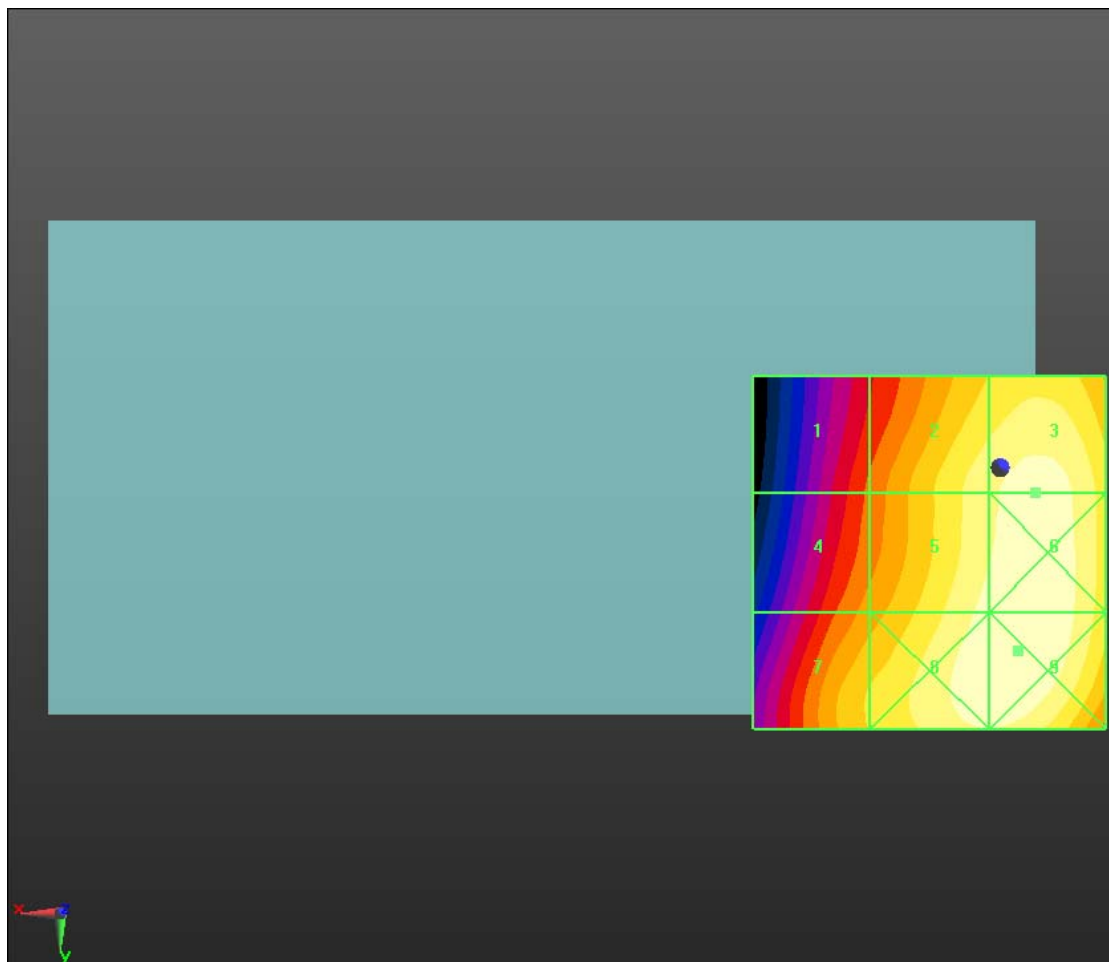
Emission category: M4

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

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		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 35 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013		Report No RTS-6046-1310-32	FCC ID L6ARFV120LW



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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 36 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

Date/Time: 7/4/2013 3:56:05 PM

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: 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 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

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		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 37 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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

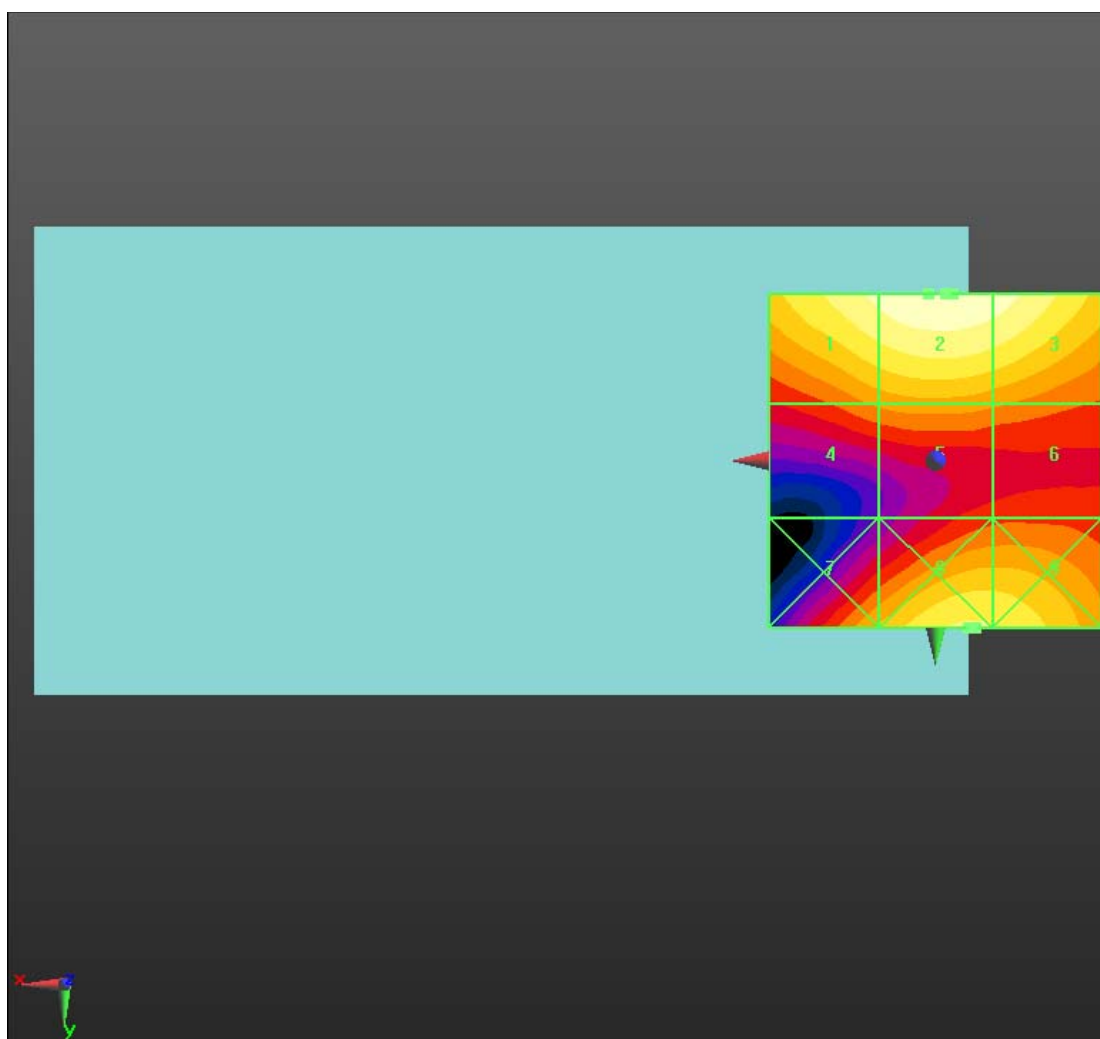
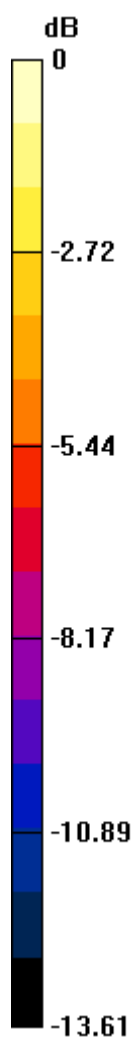
RF audio interference level = 30.15 dBV/m

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
--	--	--

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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 39 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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: 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 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

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Document

**Annex A to Hearing Aid Compatibility RF Emissions Test
Report for the BlackBerry® Smartphone model RFV121LW**

Page

40 (50)

Author Data

Daoud Attayi

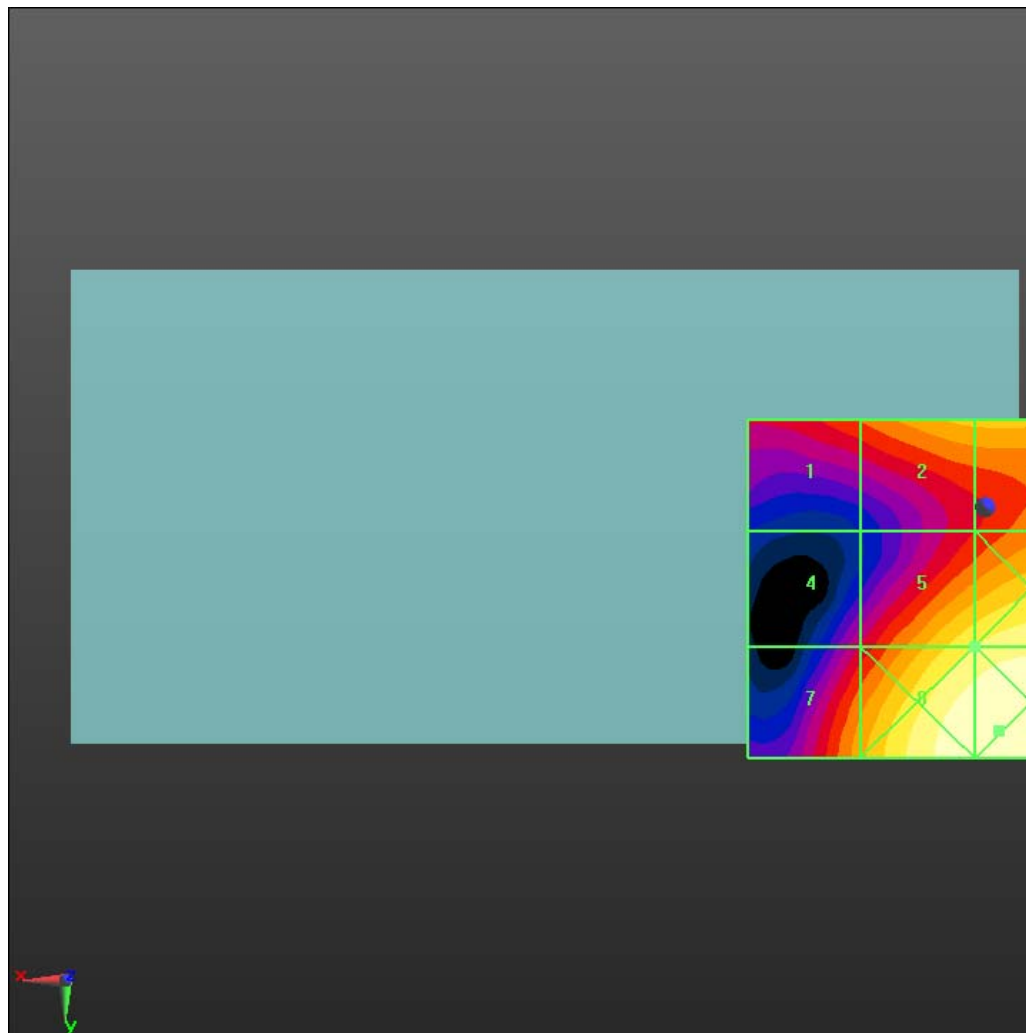
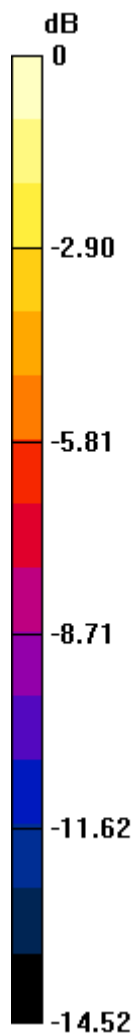
Dates of Test

June 13-July 04, 2013

Report No

RTS-6046-1310-32

FCC ID

L6ARFV120LW

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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 41 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

Date/Time: 7/4/2013 6:02:35 PM

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: 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 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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 42 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013		Report No RTS-6046-1310-32	FCC ID L6ARFV120LW

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

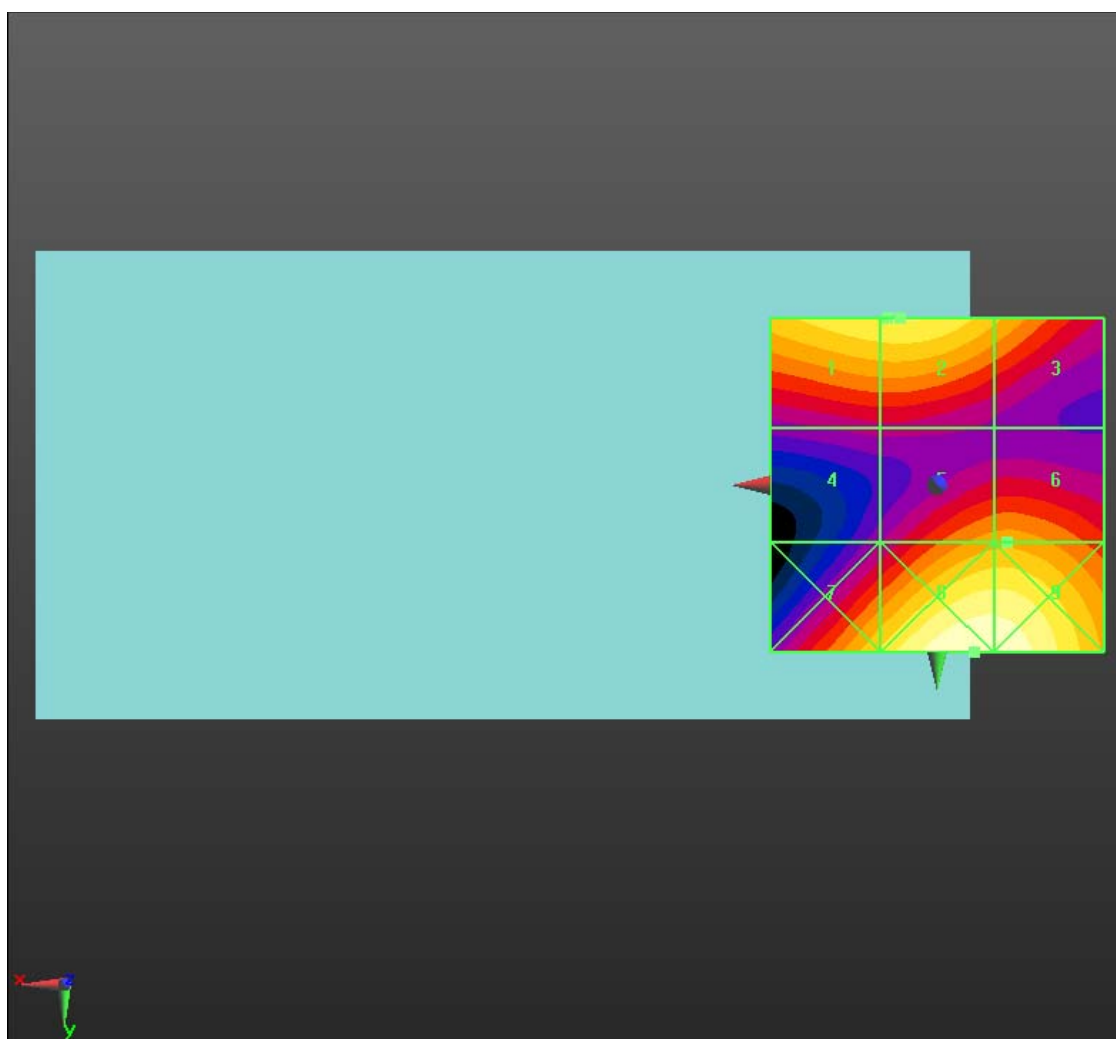
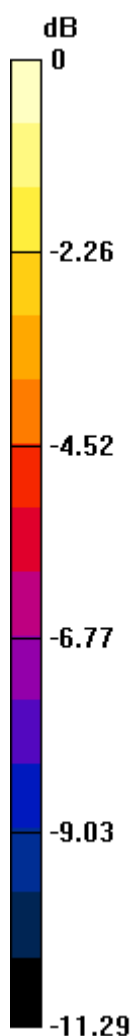
RF audio interference level = 14.05 dBV/m

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
--	--	--

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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 44 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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: 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 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

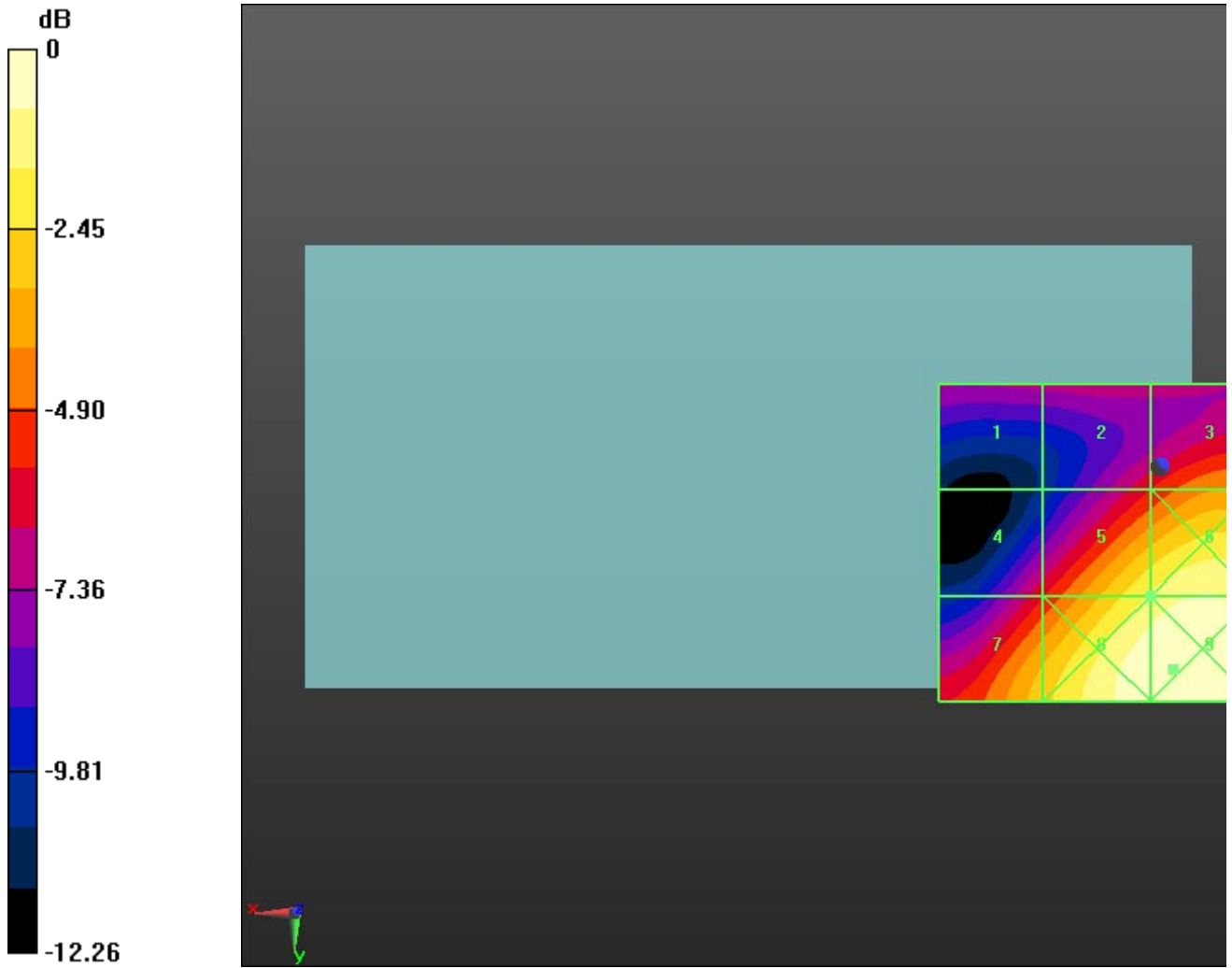
RF audio interference level = 16.34 dBV/m

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

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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 46 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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: 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 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

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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

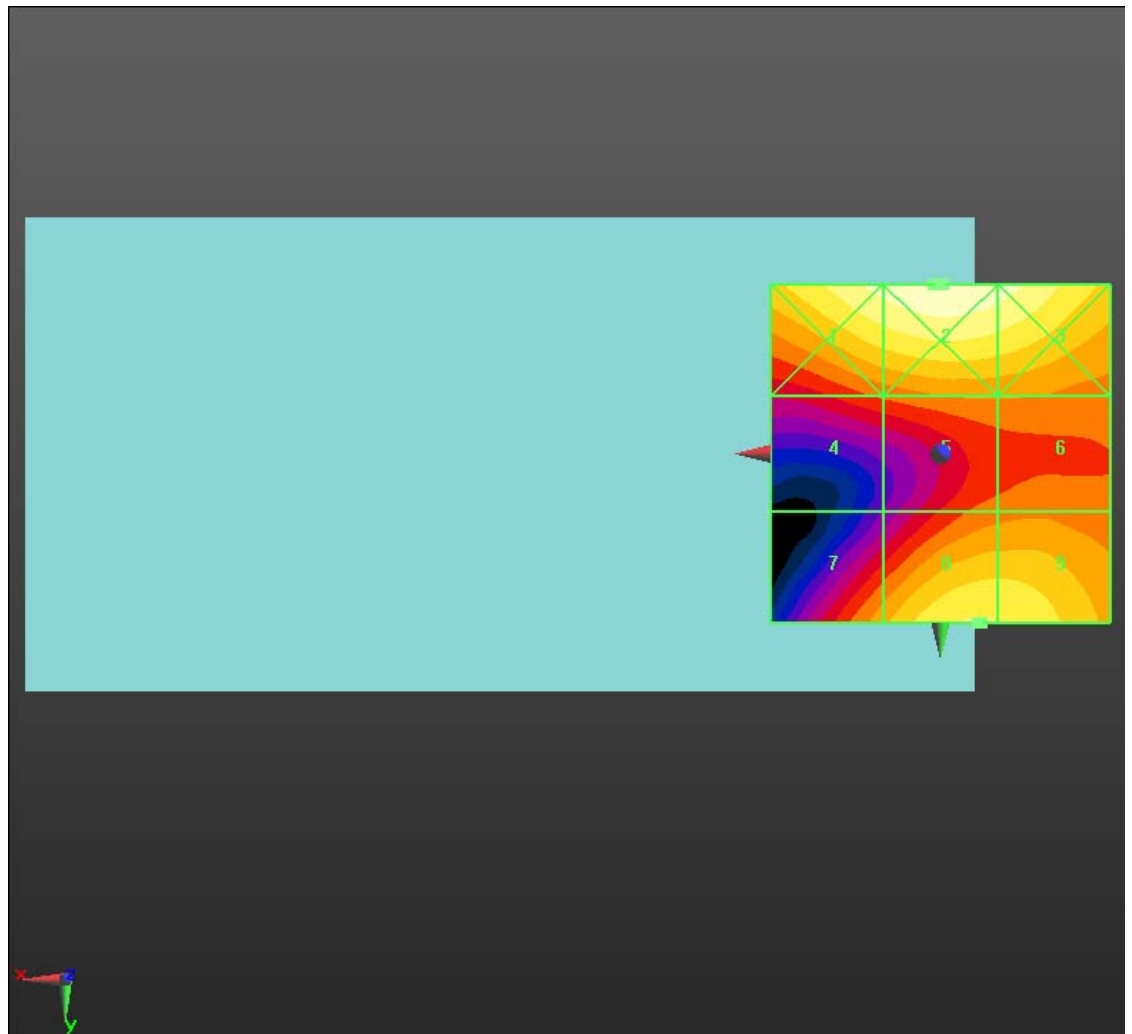
RF audio interference level = 11.54 dBV/m

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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFV121LW		Page 49 (50)
Author Data Daoud Attayi	Dates of Test June 13-July 04, 2013	Report No RTS-6046-1310-32	FCC ID L6ARFV120LW	

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: 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 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

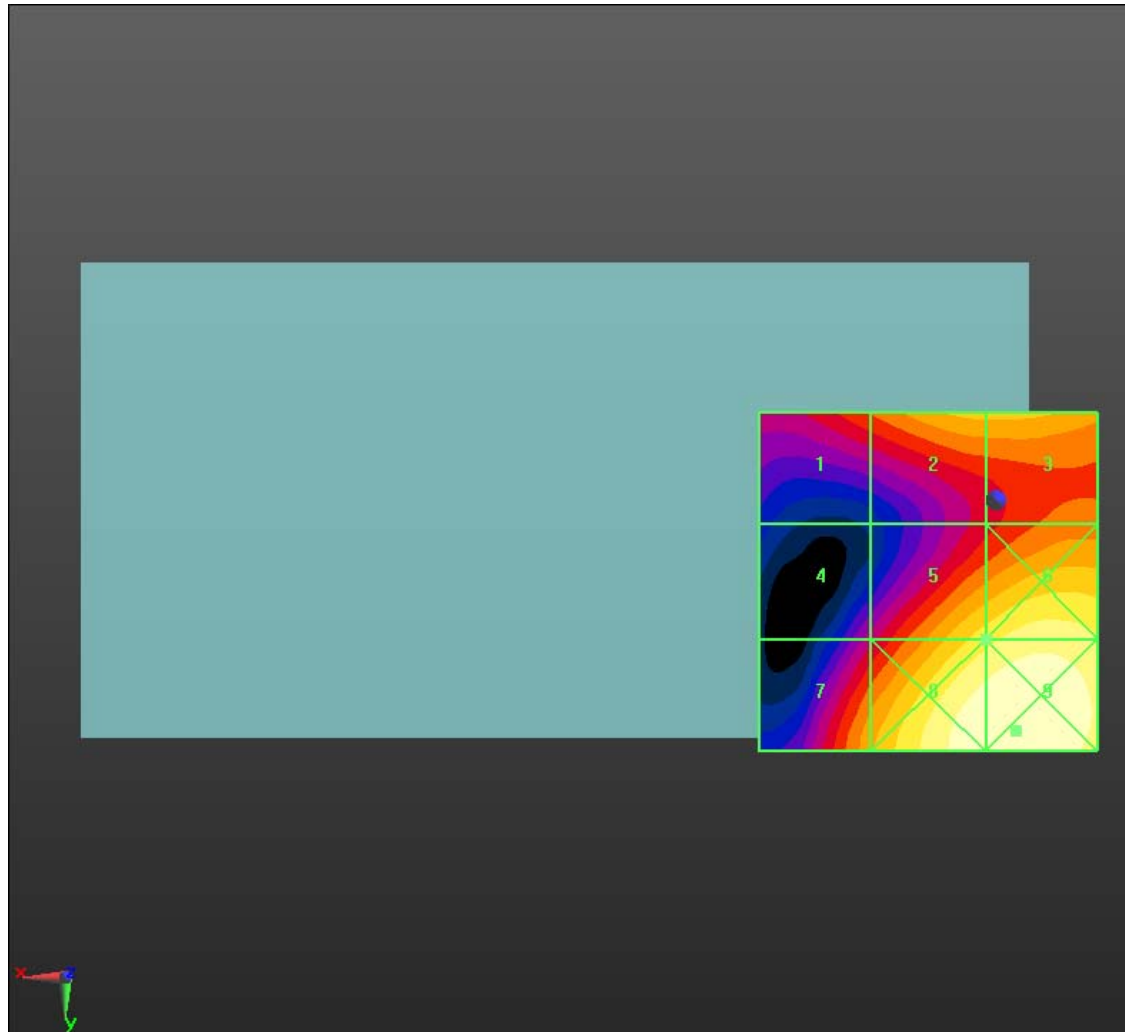
RF audio interference level = 12.62 dBV/m

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

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