

BlackBerry RTS		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RGF111LW	Page 1 (51)
Author Data Daoud Attayi	Dates of Test Sep. 19-20, 2013	Report No RTS-6050-1309-28	FCC ID L6ARGF110LW

Annex A: Measurement data and plots

A.1 MIF validation plots

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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:

- 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
PMF	0.76 dB	1.092	0.00 dB	Power OK
Detector Level	0.51 dBm		0.00 dB	Power OK

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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

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-14.47 dB		0.13 dB	Power OK

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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

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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

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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

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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)

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

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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: 9/19/2013 6:43:59 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_validation_835MHz_09_19_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 C63.19-2007)

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 = 106.5 V/m; Power Drift = 0.02 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 109.0 V/m

Near-field category: M4 (AWF 0 dB)

PMF scaled E-field

Grid 1 M4 103.5 V/m	Grid 2 M4 106.9 V/m	Grid 3 M4 106.8 V/m
Grid 4 M4 61.00 V/m	Grid 5 M4 62.16 V/m	Grid 6 M4 61.29 V/m

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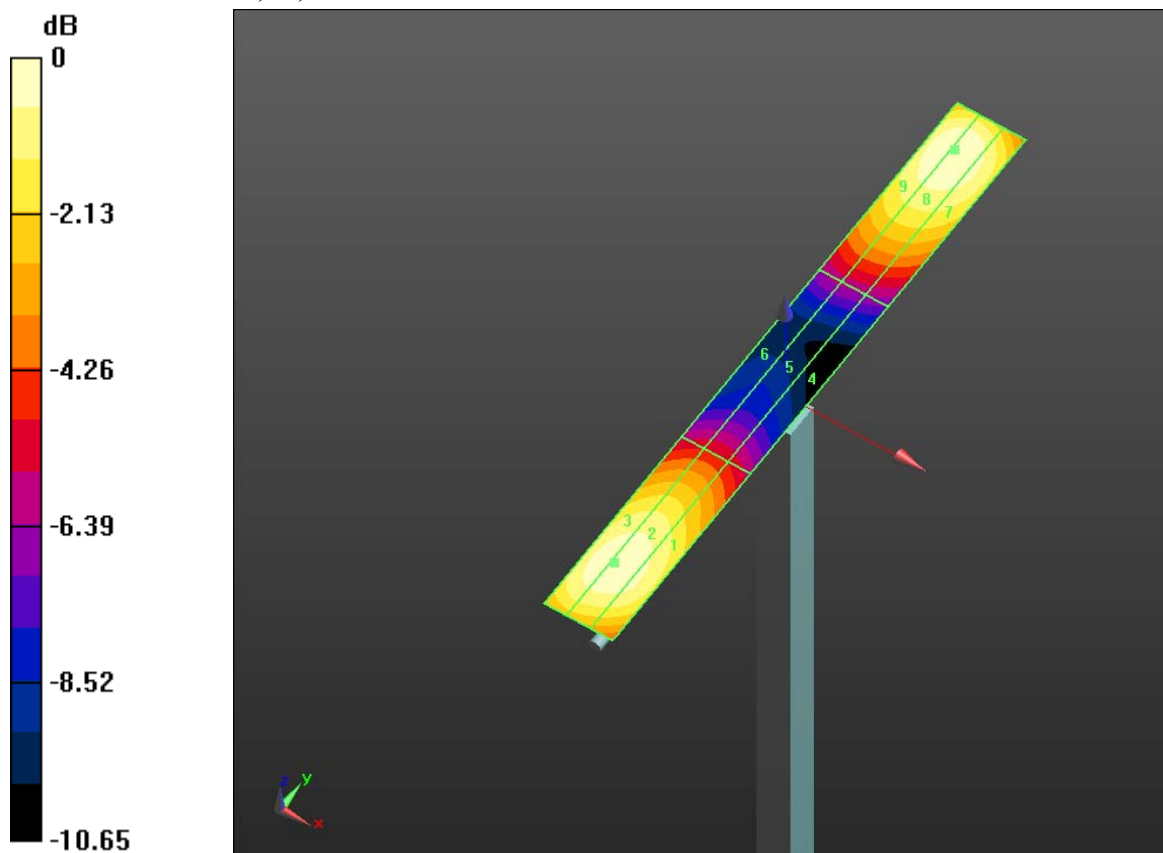
Grid 7 M4 104.1 V/m	Grid 8 M4 109.0 V/m	Grid 9 M4 108.7 V/m
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Cursor:

Total = 109.0 V/m

E Category: M4

Location: -2.5, 78, 9.7 mm



0 dB = 109.0 V/m = 40.75 dBV/m

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Date/Time: 9/19/2013 6:47:20 AM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_validation_1880MHz_09_19_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 C63.19-2007)

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 = 143.6 V/m; Power Drift = -0.01 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 84.82 V/m

Near-field category: M3 (AWF 0 dB)

PMF scaled E-field

Grid 1 M3 81.51 V/m	Grid 2 M3 84.82 V/m	Grid 3 M3 84.69 V/m
Grid 4 M3 64.62 V/m	Grid 5 M3 66.01 V/m	Grid 6 M3 65.64 V/m
Grid 7 M3	Grid 8 M3	Grid 9 M3

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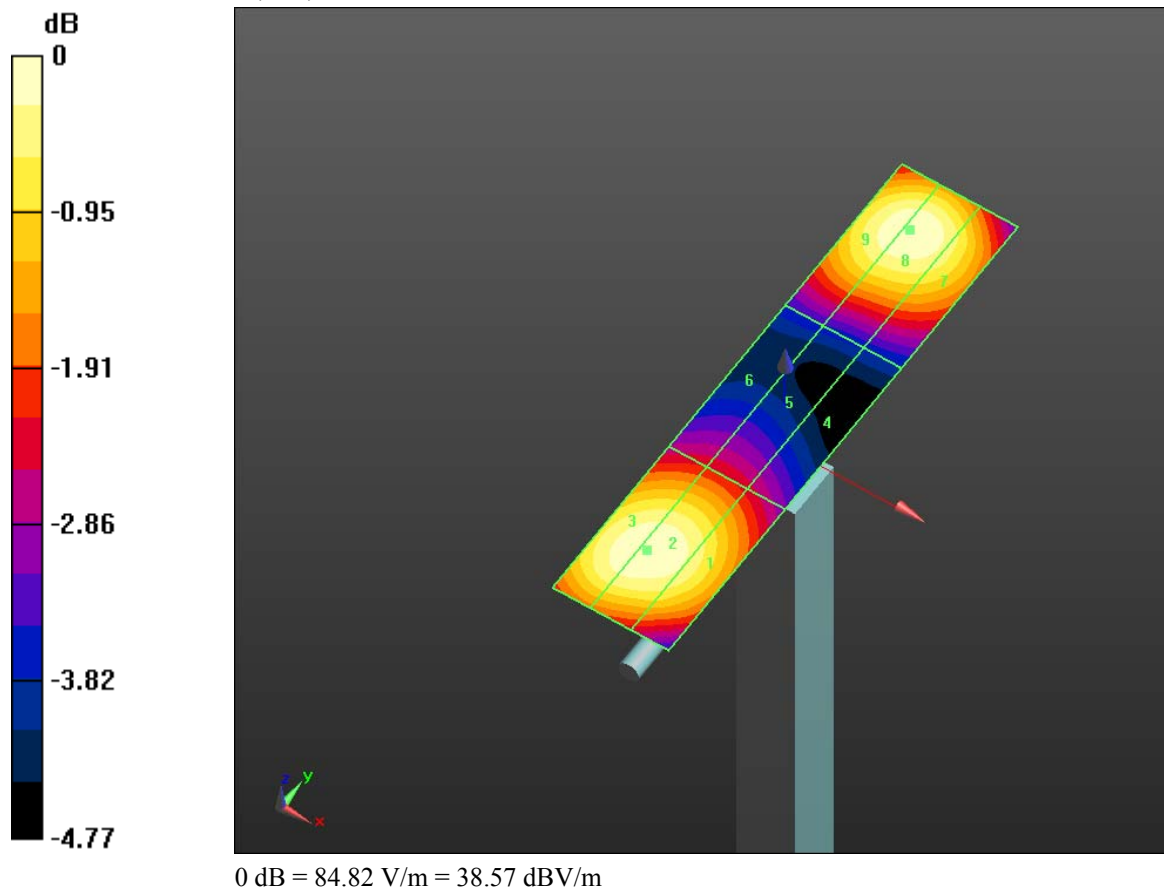
80.77 V/m	84.68 V/m	84.45 V/m
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Cursor:

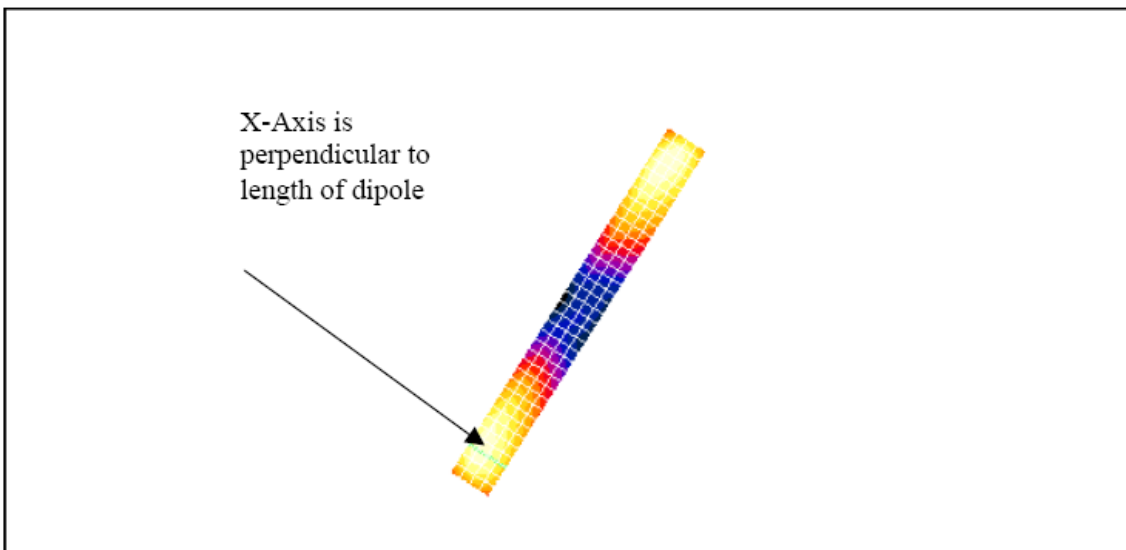
Total = 84.82 V/m

E Category: M3

Location: -2.5, -32, 9.7 mm



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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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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

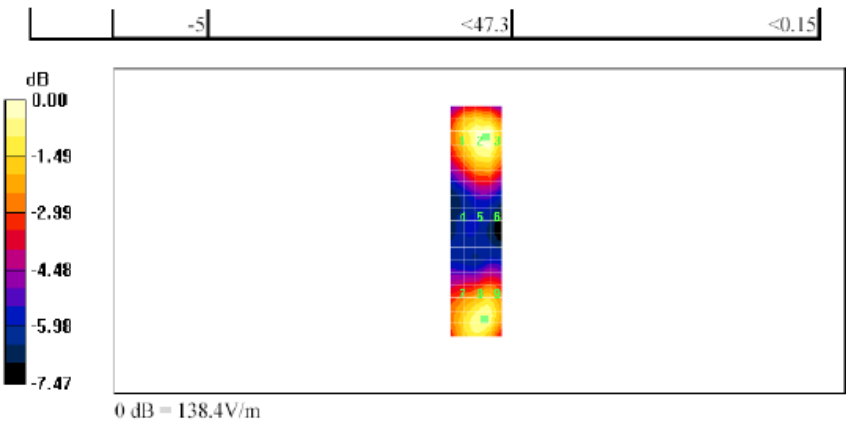
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

file://C:\Program%20Files\DASY4\Print_Templates\Dipole%20Validation%201880%20... 14/07/2005

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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

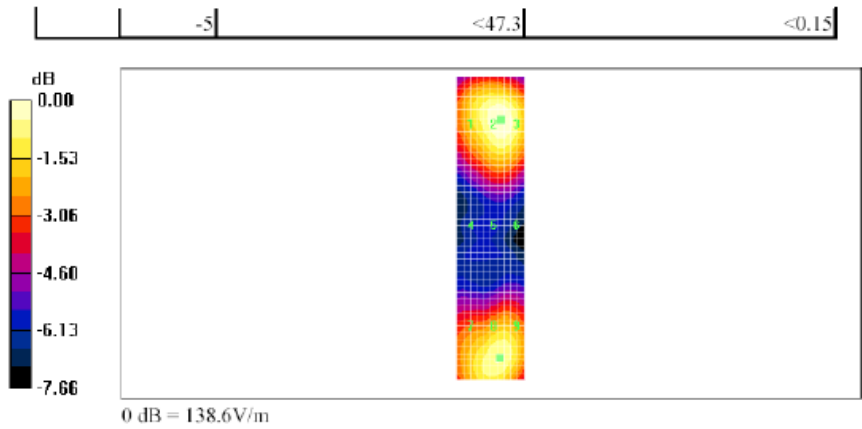
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

file://C:\Program%20Files\DASY4\Print_Templates\Dipole%20Validation%201880%20... 14/07/2005

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

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file://C:\Program%20Files\DASY4\Print_Templates\Dipole%20Validation%201880%20... 14/07/2005

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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

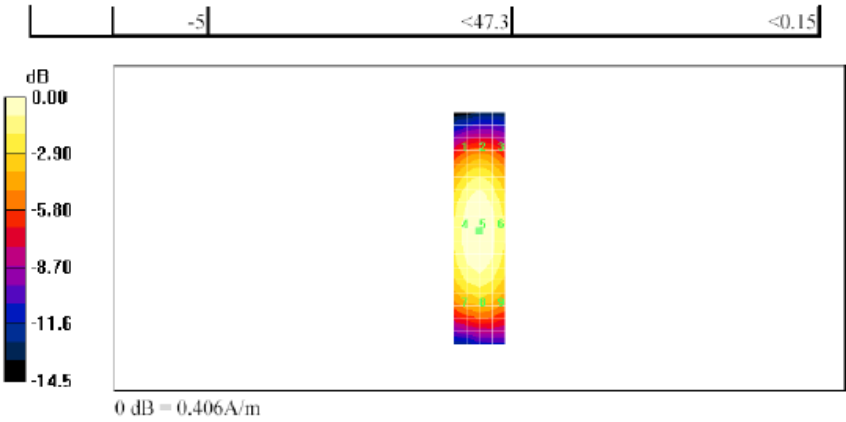
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

file://C:\Program%20Files\DASY4\Print_Templates\HAC_H_Dipole_CW%201880_5%... 14/07/2005

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file://C:\Program%20Files\DASY4\Print_Templates\HAC_H_Dipole_CW%201880_5%... 14/07/2005

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A.3 RF emission field plots

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Date/Time: 9/19/2013 4:47:34 AM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_GSM850

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFF5DF6

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 = 64.58 V/m; Power Drift = -0.11 dB

Applied MIF = 3.46 dB

RF audio interference level = 38.06 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 36.05 dBV/m	Grid 2 M4 37.1 dBV/m	Grid 3 M4 37.01 dBV/m
Grid 4 M4 37.33 dBV/m	Grid 5 M4 38.06 dBV/m	Grid 6 M4 37.87 dBV/m

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Grid 7 M4 38.51 dBV/m	Grid 8 M4 39.03 dBV/m	Grid 9 M4 38.64 dBV/m
--	--	--

Cursor:

Total = 39.03 dBV/m

E Category: M4

Location: -0.5, 25, 8.7 mm

**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 = 61.82 V/m; Power Drift = -0.14 dB

Applied MIF = 3.46 dB

RF audio interference level = 37.83 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 35.31 dBV/m	Grid 2 M4 36.67 dBV/m	Grid 3 M4 36.67 dBV/m
Grid 4 M4 36.85 dBV/m	Grid 5 M4 37.83 dBV/m	Grid 6 M4 37.77 dBV/m
Grid 7 M4 38.33 dBV/m	Grid 8 M4 38.95 dBV/m	Grid 9 M4 38.58 dBV/m

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Cursor:

Total = 38.95 dBV/m

E Category: M4

Location: -1.5, 25, 8.7 mm

**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 = 65.43 V/m; Power Drift = 0.09 dB

Applied MIF = 3.46 dB

RF audio interference level = 38.33 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 36.13 dBV/m	Grid 2 M4 37.68 dBV/m	Grid 3 M4 37.68 dBV/m
Grid 4 M4 37.08 dBV/m	Grid 5 M4 38.33 dBV/m	Grid 6 M4 38.3 dBV/m
Grid 7 M4 38.13 dBV/m	Grid 8 M4 38.96 dBV/m	Grid 9 M4 38.74 dBV/m

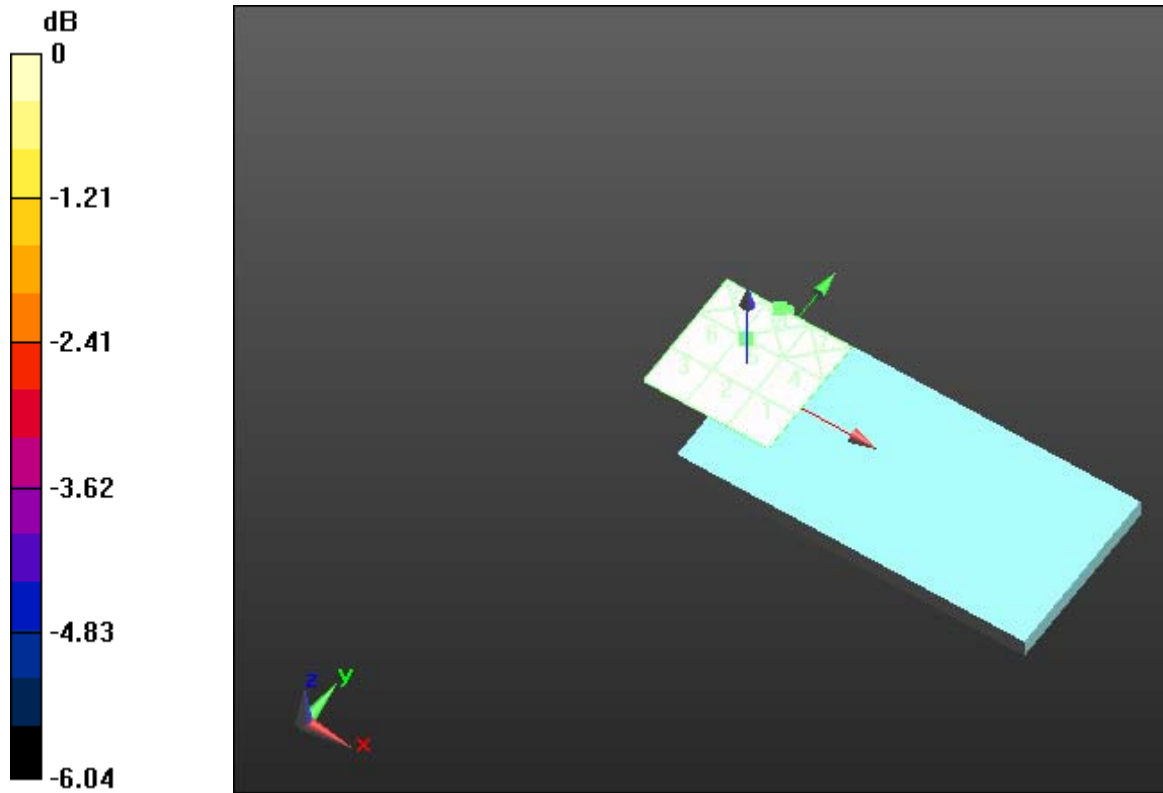
Cursor:

Total = 38.96 dBV/m

E Category: M4

Location: -3.5, 25, 8.7 mm

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0 dB = 89.41 V/m = 39.03 dBV/m

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Date/Time: 9/19/2013 9:33:50 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_GSM850_Telecoil

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFF5DF6

Communication System: UID 0 - n/a, GSM 850; 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_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 = 65.79 V/m; Power Drift = -0.18 dB

Applied MIF = 3.46 dB

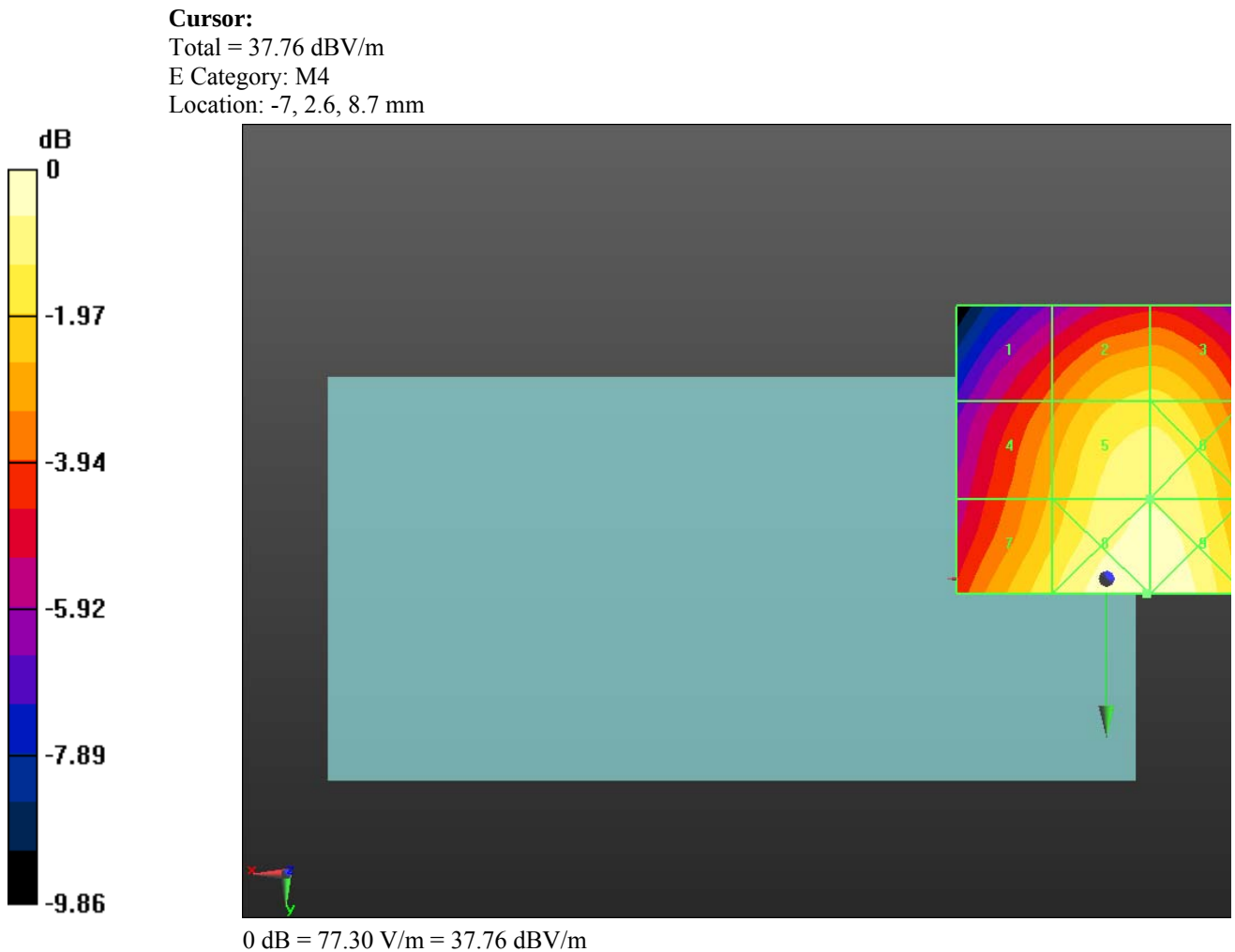
RF audio interference level = 37.07 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 34.15 dBV/m	Grid 2 M4 36.04 dBV/m	Grid 3 M4 36.05 dBV/m
Grid 4 M4 35.29 dBV/m	Grid 5 M4 37.07 dBV/m	Grid 6 M4 37.07 dBV/m
Grid 7 M4 36.38 dBV/m	Grid 8 M4 37.76 dBV/m	Grid 9 M4 37.76 dBV/m

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Date/Time: 9/19/2013 4:24:41 AM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_GSM1900

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFF5DF6

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 = 9.680 V/m; Power Drift = -0.19 dB

Applied MIF = 3.46 dB

RF audio interference level = 28.58 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 28.42 dBV/m	Grid 2 M4 28.58 dBV/m	Grid 3 M4 27.67 dBV/m
Grid 4 M4 25.18 dBV/m	Grid 5 M4 28.53 dBV/m	Grid 6 M4 28.9 dBV/m
Grid 7 M4	Grid 8 M3	Grid 9 M3

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28 dBV/m	32.25 dBV/m	32.27 dBV/m
-----------------	--------------------	--------------------

Cursor:

Total = 32.27 dBV/m

E Category: M3

Location: -9.5, 25, 8.7 mm

**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 = 10.55 V/m; Power Drift = 0.12 dB

Applied MIF = 3.46 dB

RF audio interference level = 28.54 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 27.15 dBV/m	Grid 2 M4 26.7 dBV/m	Grid 3 M4 26.04 dBV/m
Grid 4 M4 24.28 dBV/m	Grid 5 M4 28.54 dBV/m	Grid 6 M4 28.85 dBV/m
Grid 7 M4 27.69 dBV/m	Grid 8 M3 31.76 dBV/m	Grid 9 M3 31.76 dBV/m

Cursor:

Total = 31.76 dBV/m

E Category: M3

Location: -8.5, 25, 8.7 mm

**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 = 7.599 V/m; Power Drift = -0.10 dB

Applied MIF = 3.46 dB

RF audio interference level = 27.69 dBV/m

Emission category: M4

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MIF scaled E-field

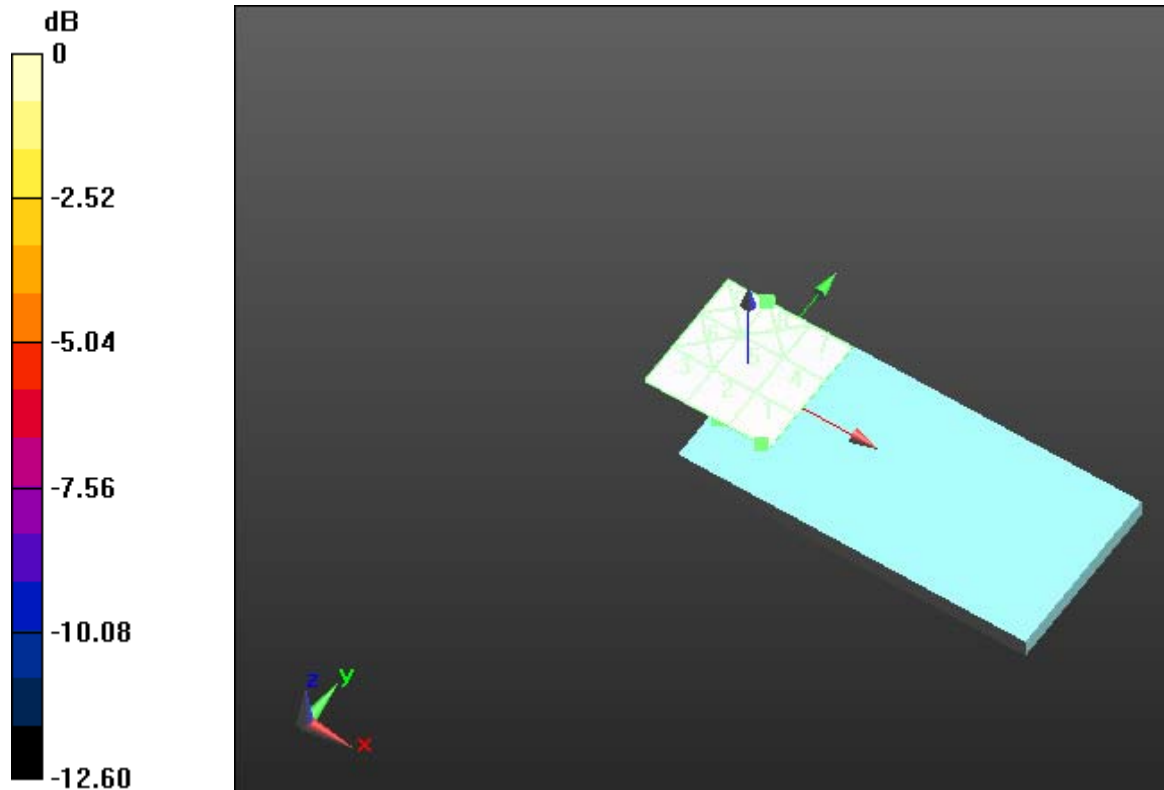
Grid 1 M4 27.69 dBV/m	Grid 2 M4 27.19 dBV/m	Grid 3 M4 26.24 dBV/m
Grid 4 M4 26.09 dBV/m	Grid 5 M4 26.55 dBV/m	Grid 6 M4 26.99 dBV/m
Grid 7 M4 25.99 dBV/m	Grid 8 M3 30.82 dBV/m	Grid 9 M3 30.82 dBV/m

Cursor:

Total = 30.82 dBV/m

E Category: M3

Location: -9.5, 25, 8.7 mm



0 dB = 41.05 V/m = 32.27 dBV/m

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Date/Time: 9/19/2013 3:57:11 AM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_V

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFF5DF6

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 = 67.36 V/m; Power Drift = 0.10 dB

Applied MIF = -15.38 dB

RF audio interference level = 19.61 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 17.65 dBV/m	Grid 2 M4 18.78 dBV/m	Grid 3 M4 18.77 dBV/m
Grid 4 M4 18.8 dBV/m	Grid 5 M4 19.61 dBV/m	Grid 6 M4 19.54 dBV/m
Grid 7 M4	Grid 8 M4	Grid 9 M4

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19.98 dBV/m	20.45 dBV/m	20.06 dBV/m
--------------------	--------------------	--------------------

Cursor:

Total = 20.45 dBV/m

E Category: M4

Location: -1, 25, 8.7 mm

**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 = 62.50 V/m; Power Drift = -0.06 dB

Applied MIF = -15.38 dB

RF audio interference level = 19.03 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 16.64 dBV/m	Grid 2 M4 18.01 dBV/m	Grid 3 M4 18 dBV/m
Grid 4 M4 18.01 dBV/m	Grid 5 M4 19.03 dBV/m	Grid 6 M4 18.96 dBV/m
Grid 7 M4 19.38 dBV/m	Grid 8 M4 20.01 dBV/m	Grid 9 M4 19.68 dBV/m

Cursor:

Total = 20.01 dBV/m

E Category: M4

Location: -2.5, 25, 8.7 mm

**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 = 72.39 V/m; Power Drift = -0.19 dB

Applied MIF = -15.38 dB

RF audio interference level = 20.21 dBV/m

Emission category: M4

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MIF scaled E-field

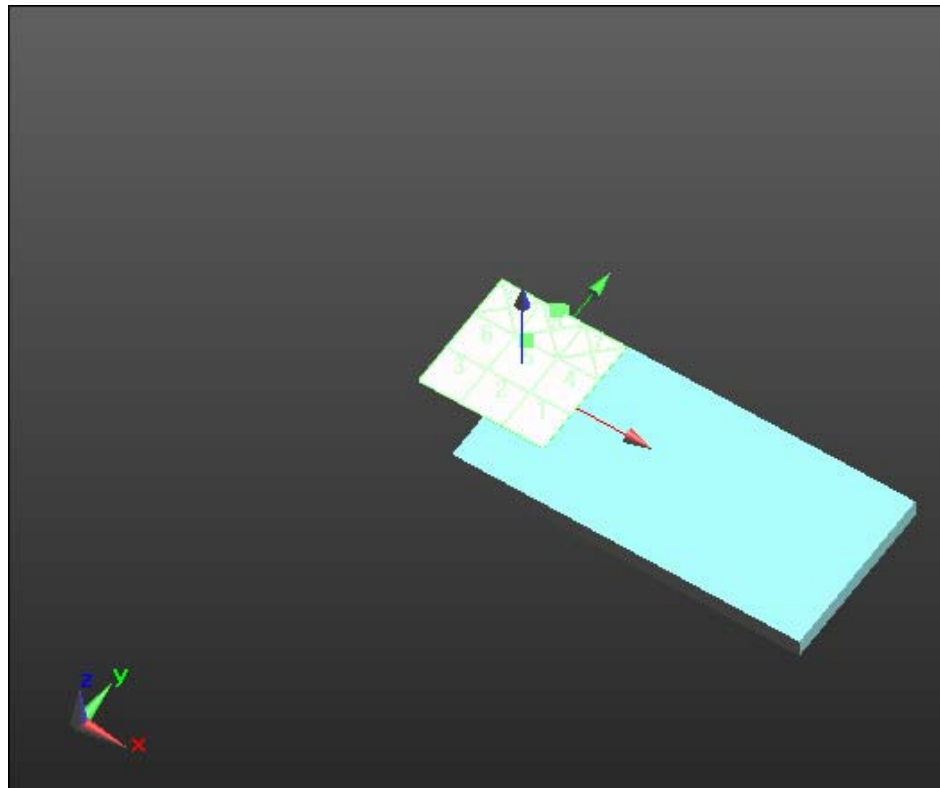
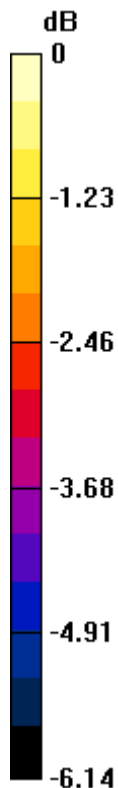
Grid 1 M4 18.14 dBV/m	Grid 2 M4 19.39 dBV/m	Grid 3 M4 19.29 dBV/m
Grid 4 M4 19.21 dBV/m	Grid 5 M4 20.21 dBV/m	Grid 6 M4 20.01 dBV/m
Grid 7 M4 20.34 dBV/m	Grid 8 M4 21 dBV/m	Grid 9 M4 20.71 dBV/m

Cursor:

Total = 21.00 dBV/m

E Category: M4

Location: -3, 25, 8.7 mm



0 dB = 10.54 V/m = 20.46 dBV/m

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Date/Time: 9/19/2013 4:15:21 AM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_V_Telecoil

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFF5DF6

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 = 71.61 V/m; Power Drift = -0.08 dB

Applied MIF = -15.38 dB

RF audio interference level = 19.04 dBV/m

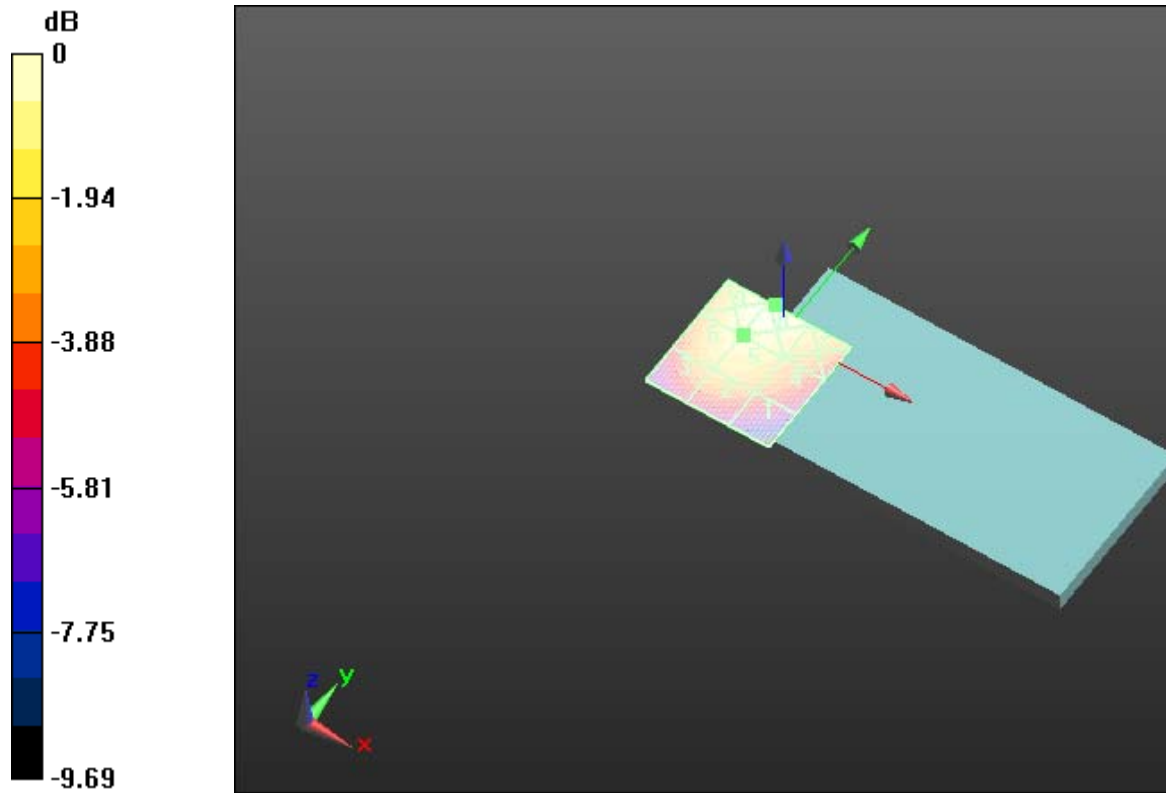
Emission category: M4

MIF scaled E-field

Grid 1 M4 16.37 dBV/m	Grid 2 M4 17.63 dBV/m	Grid 3 M4 17.63 dBV/m
Grid 4 M4 17.67 dBV/m	Grid 5 M4 19.04 dBV/m	Grid 6 M4 19.04 dBV/m
Grid 7 M4 18.85 dBV/m	Grid 8 M4 19.85 dBV/m	Grid 9 M4 19.82 dBV/m

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Cursor:
 Total = 19.85 dBV/m
 E Category: M4
 Location: -5, 2.6, 8.7 mm



$$0\text{ dB} = 9.829\text{ V/m} = 19.85\text{ dBV/m}$$

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Date/Time: 9/19/2013 7:26:13 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_band_IV

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFF5DF6

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 = 27.57 V/m; Power Drift = -0.11 dB

Applied MIF = -15.38 dB

RF audio interference level = 17.03 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 15.93 dBV/m	Grid 2 M4 14.62 dBV/m	Grid 3 M4 12.43 dBV/m
Grid 4 M4 12.37 dBV/m	Grid 5 M4 16.89 dBV/m	Grid 6 M4 17.03 dBV/m
Grid 7 M4	Grid 8 M4	Grid 9 M4

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17.44 dBV/m	20.05 dBV/m	20.01 dBV/m
--------------------	--------------------	--------------------

Cursor:

Total = 20.05 dBV/m

E Category: M4

Location: -6.5, 25, 8.7 mm

**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 = 25.44 V/m; Power Drift = -0.01 dB

Applied MIF = -15.38 dB

RF audio interference level = 17.23 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 16.34 dBV/m	Grid 2 M4 15.45 dBV/m	Grid 3 M4 12.97 dBV/m
Grid 4 M4 12.29 dBV/m	Grid 5 M4 17.02 dBV/m	Grid 6 M4 17.23 dBV/m
Grid 7 M4 17.22 dBV/m	Grid 8 M4 20.16 dBV/m	Grid 9 M4 20.13 dBV/m

Cursor:

Total = 20.16 dBV/m

E Category: M4

Location: -7, 25, 8.7 mm

**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 = 21.39 V/m; Power Drift = -0.01 dB

Applied MIF = -15.38 dB

RF audio interference level = 16.08 dBV/m

Emission category: M4

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MIF scaled E-field

Grid 1 M4 15.2 dBV/m	Grid 2 M4 14.75 dBV/m	Grid 3 M4 12.64 dBV/m
Grid 4 M4 11.55 dBV/m	Grid 5 M4 15.83 dBV/m	Grid 6 M4 16.08 dBV/m
Grid 7 M4 16.17 dBV/m	Grid 8 M4 19.2 dBV/m	Grid 9 M4 19.19 dBV/m

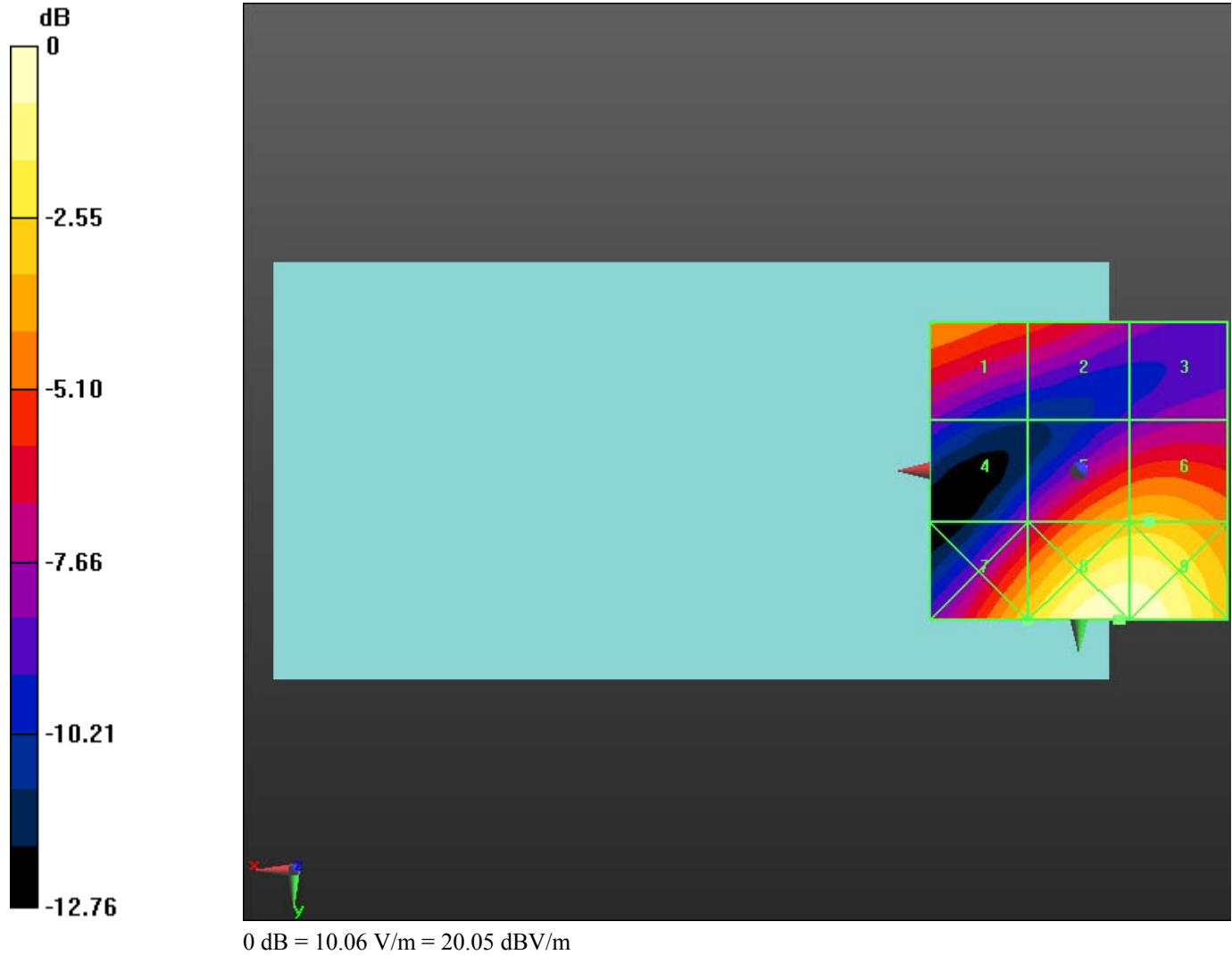
Cursor:

Total = 19.20 dBV/m

E Category: M4

Location: -7, 25, 8.7 mm

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Date/Time: 9/19/2013 8:09:28 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_band_IV_Telecoil

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFF5DF6

Communication System: UID 0 - n/a, WCDMA FDD IV; Frequency: 1732.6 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_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 = 25.08 V/m; Power Drift = -0.02 dB

Applied MIF = -15.38 dB

RF audio interference level = 16.63 dBV/m

Emission category: M4

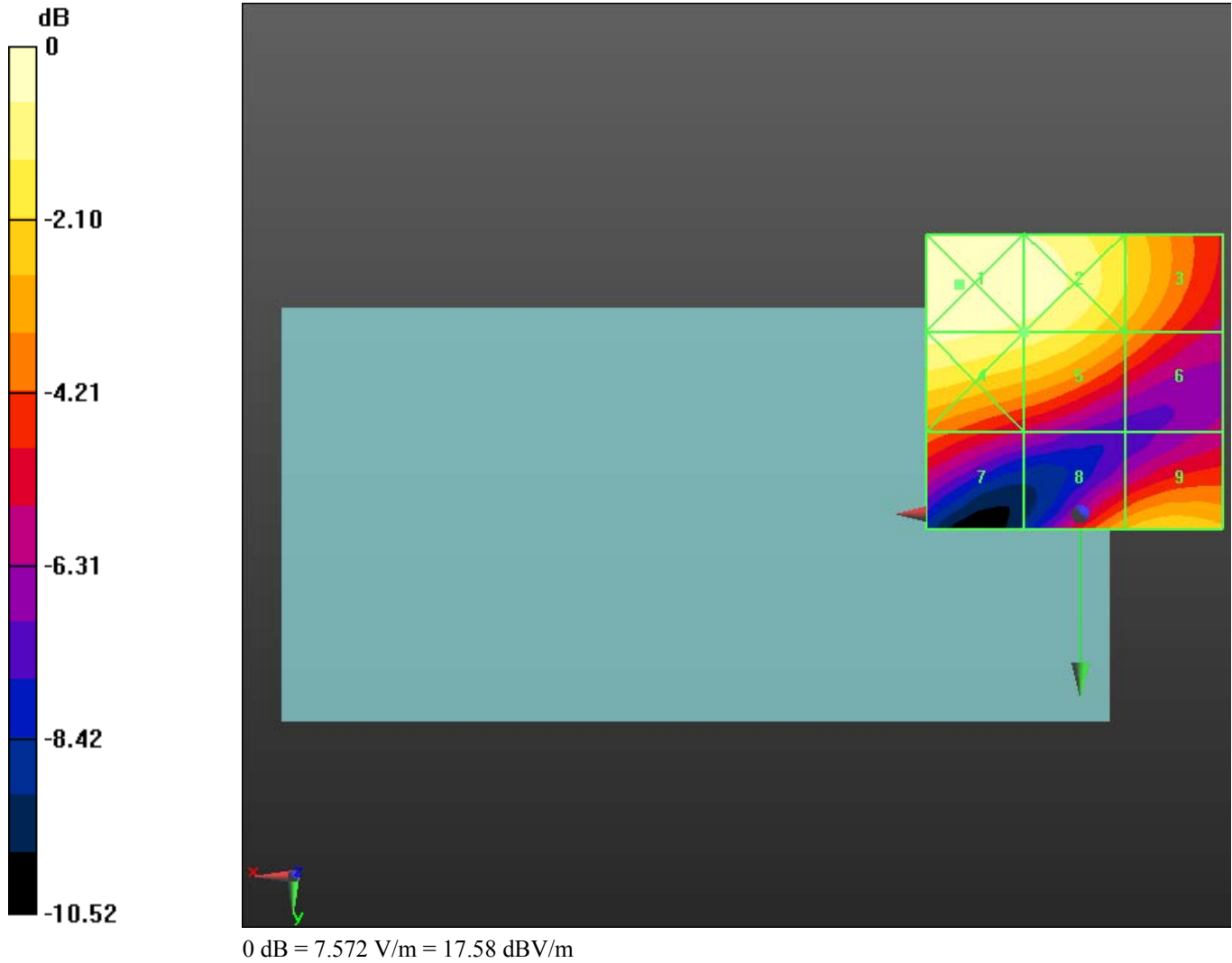
MIF scaled E-field

Grid 1 M4 17.58 dBV/m	Grid 2 M4 17.34 dBV/m	Grid 3 M4 15.59 dBV/m
Grid 4 M4 17.13 dBV/m	Grid 5 M4 16.63 dBV/m	Grid 6 M4 14.54 dBV/m
Grid 7 M4 13.9 dBV/m	Grid 8 M4 14.81 dBV/m	Grid 9 M4 15.49 dBV/m

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Cursor:
Total = 17.58 dBV/m
E Category: M4
Location: 20.5, -38.9, 8.7 mm



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Date/Time: 9/19/2013 4:24:41 AM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_GSM1900

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFF5DF6

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 = 9.680 V/m; Power Drift = -0.19 dB

Applied MIF = 3.46 dB

RF audio interference level = 28.58 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 28.42 dBV/m	Grid 2 M4 28.58 dBV/m	Grid 3 M4 27.67 dBV/m
Grid 4 M4 25.18 dBV/m	Grid 5 M4 28.53 dBV/m	Grid 6 M4 28.9 dBV/m
Grid 7 M4	Grid 8 M3	Grid 9 M3

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28 dBV/m	32.25 dBV/m	32.27 dBV/m
-----------------	--------------------	--------------------

Cursor:

Total = 32.27 dBV/m

E Category: M3

Location: -9.5, 25, 8.7 mm

**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 = 10.55 V/m; Power Drift = 0.12 dB

Applied MIF = 3.46 dB

RF audio interference level = 28.54 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 27.15 dBV/m	Grid 2 M4 26.7 dBV/m	Grid 3 M4 26.04 dBV/m
Grid 4 M4 24.28 dBV/m	Grid 5 M4 28.54 dBV/m	Grid 6 M4 28.85 dBV/m
Grid 7 M4 27.69 dBV/m	Grid 8 M3 31.76 dBV/m	Grid 9 M3 31.76 dBV/m

Cursor:

Total = 31.76 dBV/m

E Category: M3

Location: -8.5, 25, 8.7 mm

**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 = 7.599 V/m; Power Drift = -0.10 dB

Applied MIF = 3.46 dB

RF audio interference level = 27.69 dBV/m

Emission category: M4

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MIF scaled E-field

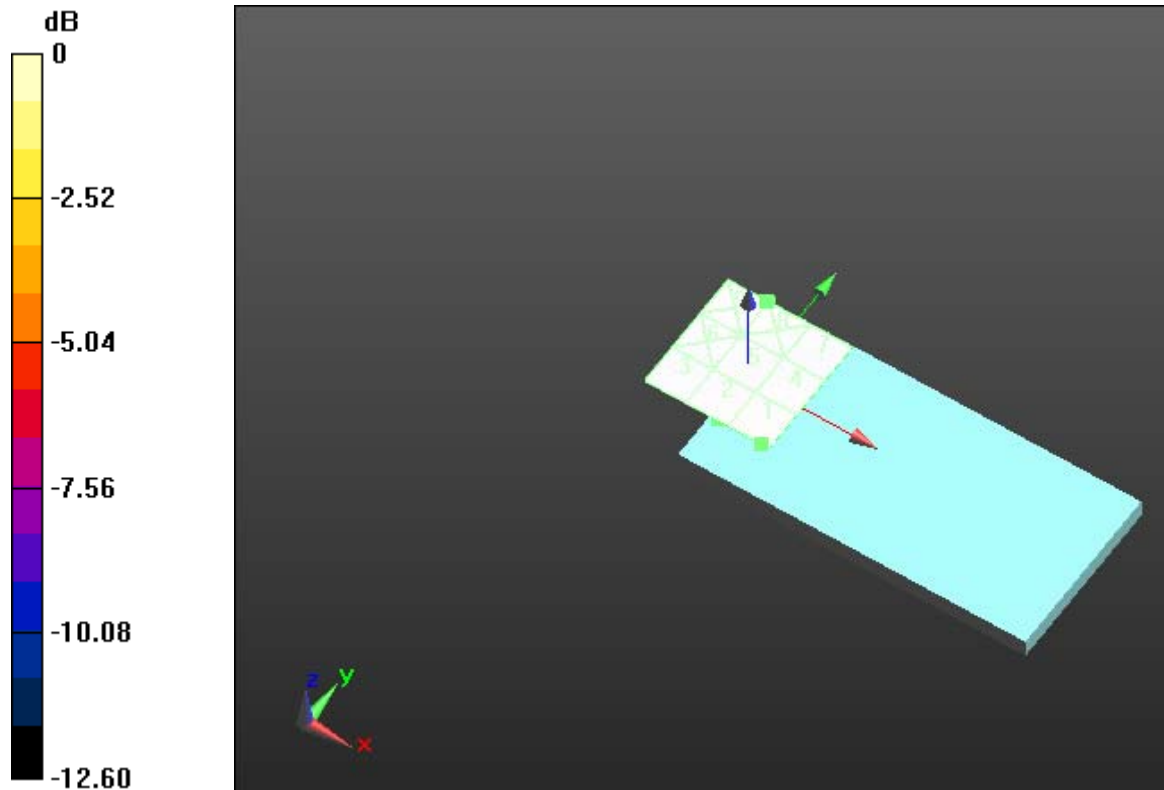
Grid 1 M4 27.69 dBV/m	Grid 2 M4 27.19 dBV/m	Grid 3 M4 26.24 dBV/m
Grid 4 M4 26.09 dBV/m	Grid 5 M4 26.55 dBV/m	Grid 6 M4 26.99 dBV/m
Grid 7 M4 25.99 dBV/m	Grid 8 M3 30.82 dBV/m	Grid 9 M3 30.82 dBV/m

Cursor:

Total = 30.82 dBV/m

E Category: M3

Location: -9.5, 25, 8.7 mm



0 dB = 41.05 V/m = 32.27 dBV/m

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Date/Time: 9/19/2013 4:41:56 AM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_GSM1900_Telecoil

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFF5DF6

Communication System: UID 0 - n/a, GSM 1900; Frequency: 1850.2 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_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 = 9.983 V/m; Power Drift = -0.06 dB

Applied MIF = 3.46 dB

RF audio interference level = 29.71 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 29.71 dBV/m	Grid 2 M4 29.9 dBV/m	Grid 3 M4 29.41 dBV/m
Grid 4 M4 29.28 dBV/m	Grid 5 M4 29.46 dBV/m	Grid 6 M4 28.83 dBV/m
Grid 7 M4	Grid 8 M4	Grid 9 M4

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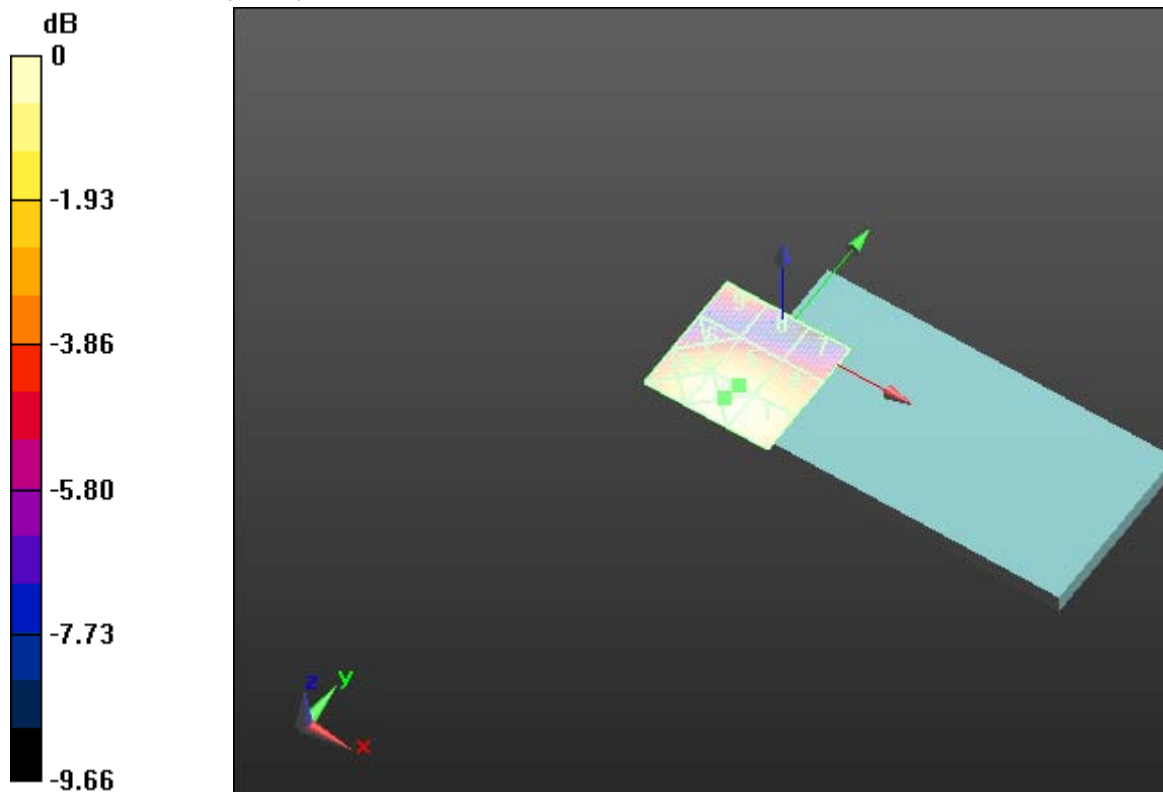
26 dBV/m	26.32 dBV/m	27.25 dBV/m
-----------------	--------------------	--------------------

Cursor:

Total = 29.90 dBV/m

E Category: M4

Location: 2, -37.9, 8.7 mm



0 dB = 31.26 V/m = 29.90 dBV/m

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Date/Time: 9/19/2013 8:17:30 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_Band_II

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFF5DF6

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 = 17.78 V/m; Power Drift = -0.04 dB

Applied MIF = -15.38 dB

RF audio interference level = 14.33 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 13.14 dBV/m	Grid 2 M4 13.31 dBV/m	Grid 3 M4 12.5 dBV/m
Grid 4 M4 9.57 dBV/m	Grid 5 M4 14.33 dBV/m	Grid 6 M4 14.61 dBV/m
Grid 7 M4	Grid 8 M4	Grid 9 M4

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13.68 dBV/m	17.73 dBV/m	17.73 dBV/m
--------------------	--------------------	--------------------

Cursor:

Total = 17.73 dBV/m

E Category: M4

Location: -8.5, 25, 8.7 mm

**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 = 16.36 V/m; Power Drift = 0.04 dB

Applied MIF = -15.38 dB

RF audio interference level = 14.14 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 12.76 dBV/m	Grid 2 M4 12.33 dBV/m	Grid 3 M4 11.48 dBV/m
Grid 4 M4 9.91 dBV/m	Grid 5 M4 14.14 dBV/m	Grid 6 M4 14.45 dBV/m
Grid 7 M4 13.23 dBV/m	Grid 8 M4 17.59 dBV/m	Grid 9 M4 17.59 dBV/m

Cursor:

Total = 17.59 dBV/m

E Category: M4

Location: -8.5, 25, 8.7 mm

**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 = 12.25 V/m; Power Drift = -0.00 dB

Applied MIF = -15.38 dB

RF audio interference level = 12.64 dBV/m

Emission category: M4

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MIF scaled E-field

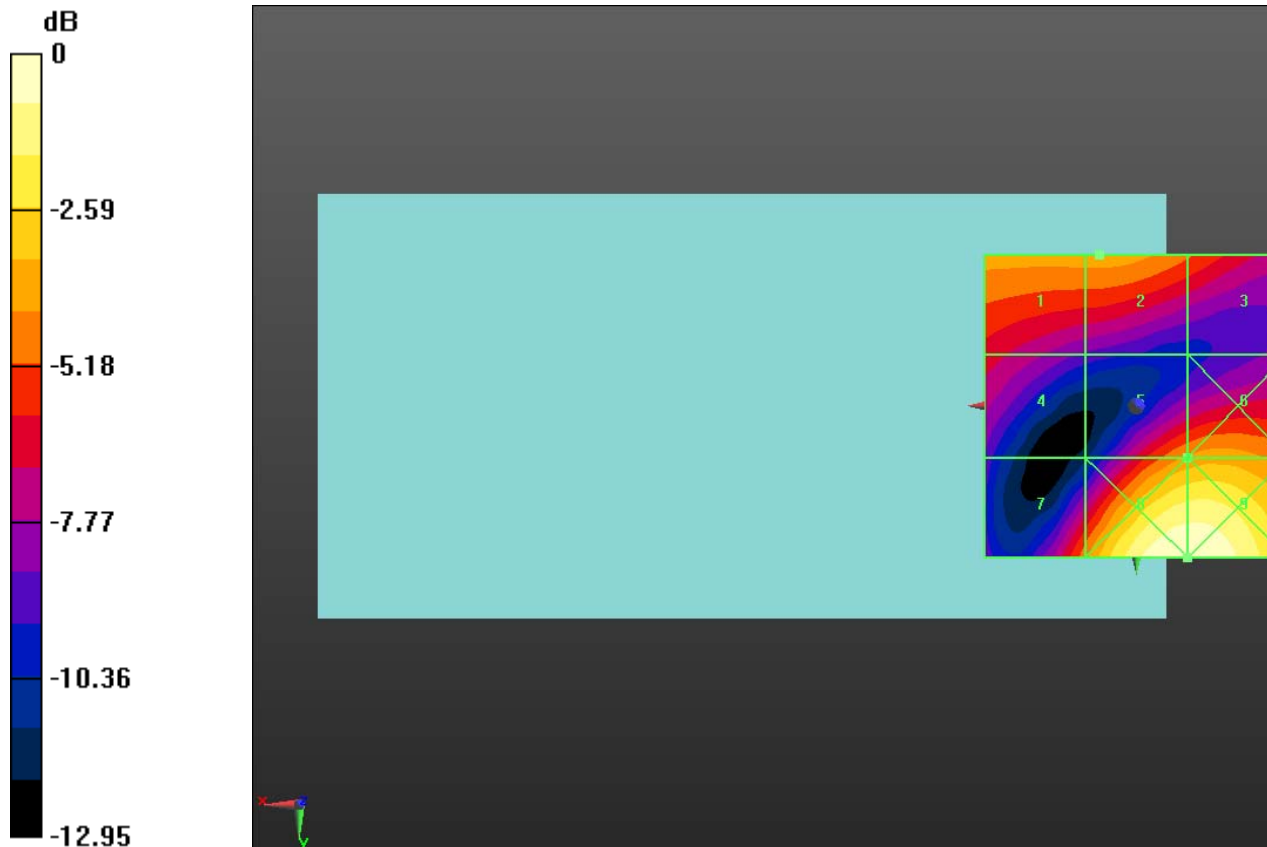
Grid 1 M4 12.61 dBV/m	Grid 2 M4 12.64 dBV/m	Grid 3 M4 11.52 dBV/m
Grid 4 M4 10.15 dBV/m	Grid 5 M4 12.33 dBV/m	Grid 6 M4 12.68 dBV/m
Grid 7 M4 11.92 dBV/m	Grid 8 M4 16.42 dBV/m	Grid 9 M4 16.42 dBV/m

Cursor:

Total = 16.42 dBV/m

E Category: M4

Location: -8.5, 25, 8.7 mm



0 dB = 7.697 V/m = 17.73 dBV/m

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Date/Time: 9/19/2013 9:09:55 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_band_II_Telecoil

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFF5DF6

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 = 17.85 V/m; Power Drift = -0.30 dB

Applied MIF = -15.38 dB

RF audio interference level = 14.37 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 14.59 dBV/m	Grid 2 M4 14.89 dBV/m	Grid 3 M4 14.6 dBV/m
Grid 4 M4 14.09 dBV/m	Grid 5 M4 14.37 dBV/m	Grid 6 M4 13.95 dBV/m
Grid 7 M4 10.5 dBV/m	Grid 8 M4 12.02 dBV/m	Grid 9 M4 12.66 dBV/m

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Cursor:
Total = 14.89 dBV/m
E Category: M4
Location: 1, -38.4, 8.7 mm

