Annex A: Measurement data and plots

A.1 MIF validation plots

Test Laboratory: RIM Testing Services

MIF_measurements

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 333CB445

Communication System: UID 0 - n/a
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
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

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

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

Configuration/MIF Measurements/MIF_WCDMA_RMC_Measurement 2

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

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

Configuration/MIF Measurements/MIF_CDMA FR_Speech_Service_SO3_RC3_Measurement

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

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

Configuration/MIF Measurements/MIF_CDMA_1_8th_Speech_Service_SO3_RC1_mute

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

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

Configuration/MIF Measurements/MIF_802.11b_Rate_1Mbps

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

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

Configuration/MIF Measurements/MIF_802.11b_Rate_2Mbps

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

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

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

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

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

Configuration/MIF Measurements/MIF_802.11b_Rate_11Mbps

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

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

Configuration/MIF Measurements/MIF_802.11g_Rate_6Mbps

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

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

Configuration/MIF Measurements/MIF_802.11g_Rate_9Mbps

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

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

Configuration/MIF Measurements/MIF_802.11g_Rate_18Mbps

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

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

Configuration/MIF Measurements/MIF_802.11g_Rate_54Mbps

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

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

Configuration/MIF Measurements/MIF_802.11a_Rate_6Mbps

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

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

Configuration/MIF Measurements/MIF_802.11a_Rate_24Mbps

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

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

Configuration/MIF Measurements/MIF_802.11a_Rate_54Mbps

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

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

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

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

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

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)

A.2 Dipole validation

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, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
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):

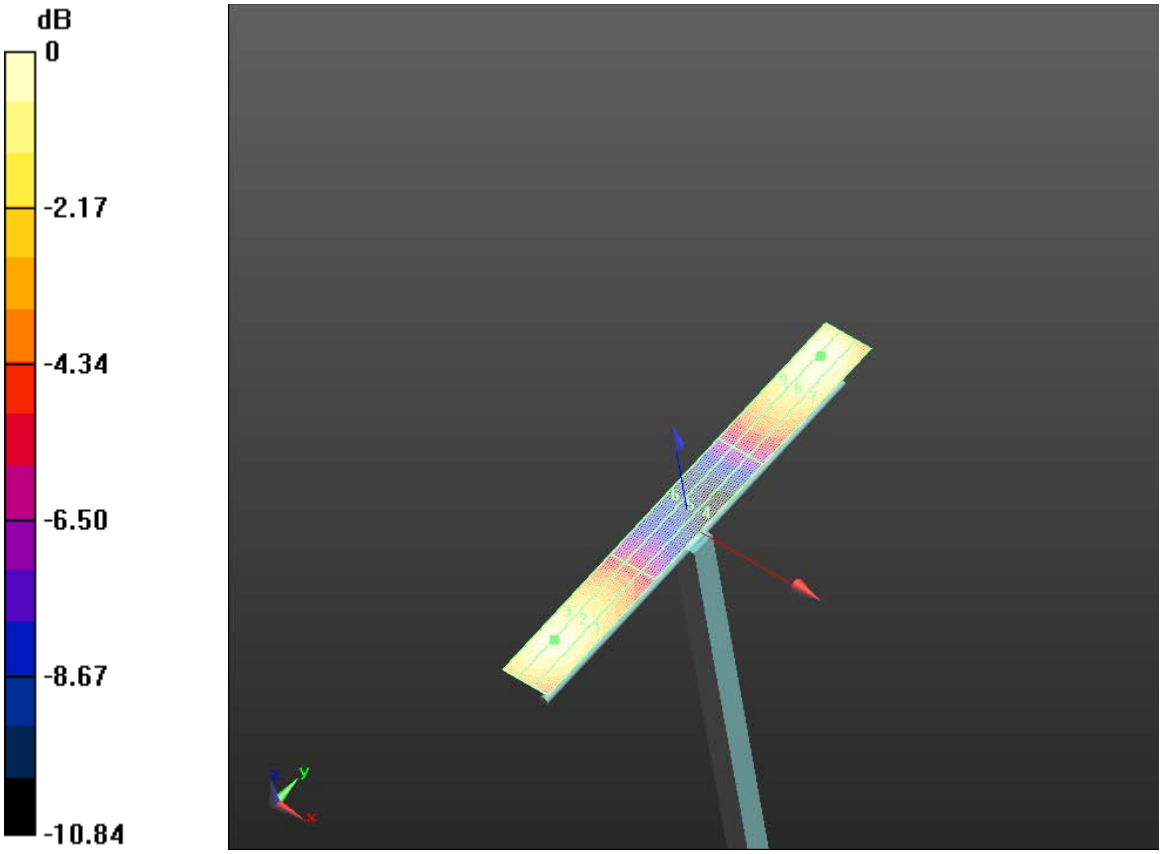
Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 107.6 V/m; Power Drift = -0.07 dB
PMR not calibrated. PMF = 1.000 is applied.
E-field emissions = 110.3 V/m
Near-field category: M4 (AWF 0 dB)

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**

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

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, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
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):

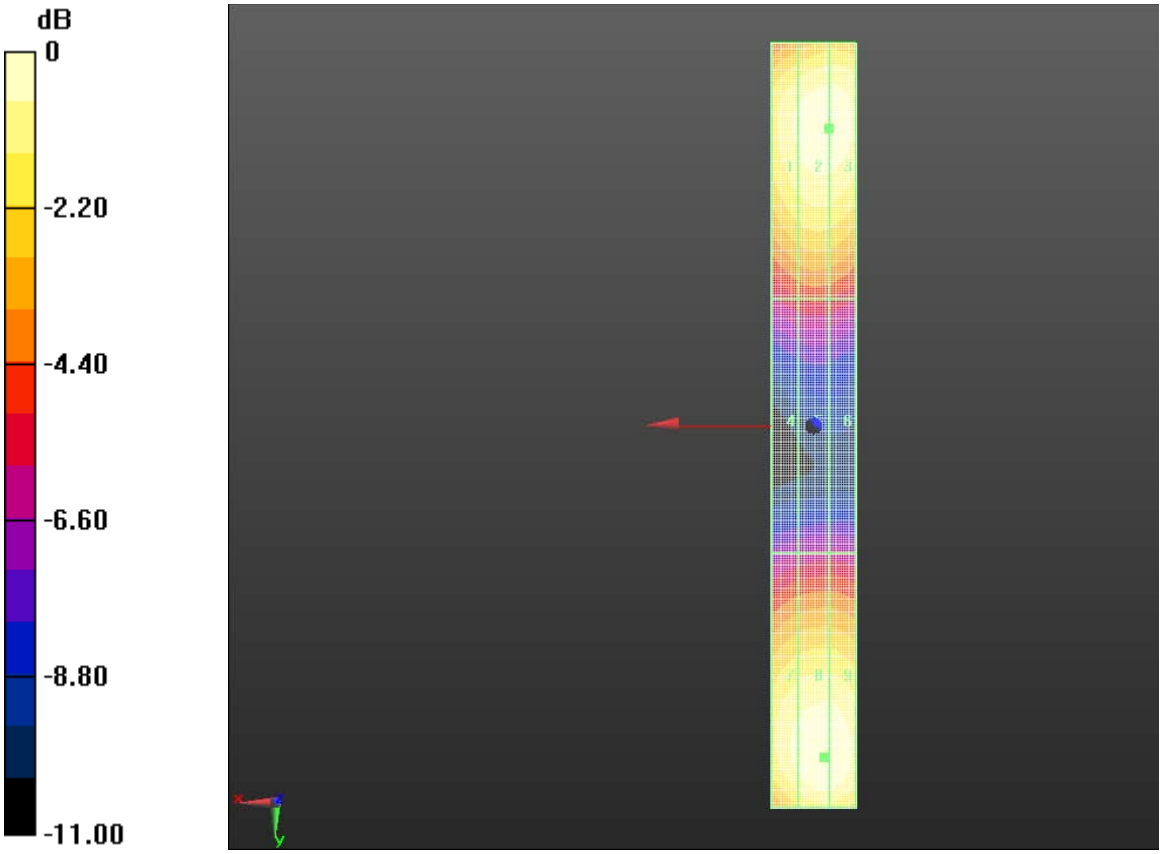
Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 103.6 V/m; Power Drift = -0.00 dB
PMR not calibrated. PMF = 1.000 is applied.
E-field emissions = 108.2 V/m
Near-field category: M4 (AWF 0 dB)

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**

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

Cursor:
Total = 108.2 V/m
E Category: M4
Location: -2.5, 78, 9.7 mm



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

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, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
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):

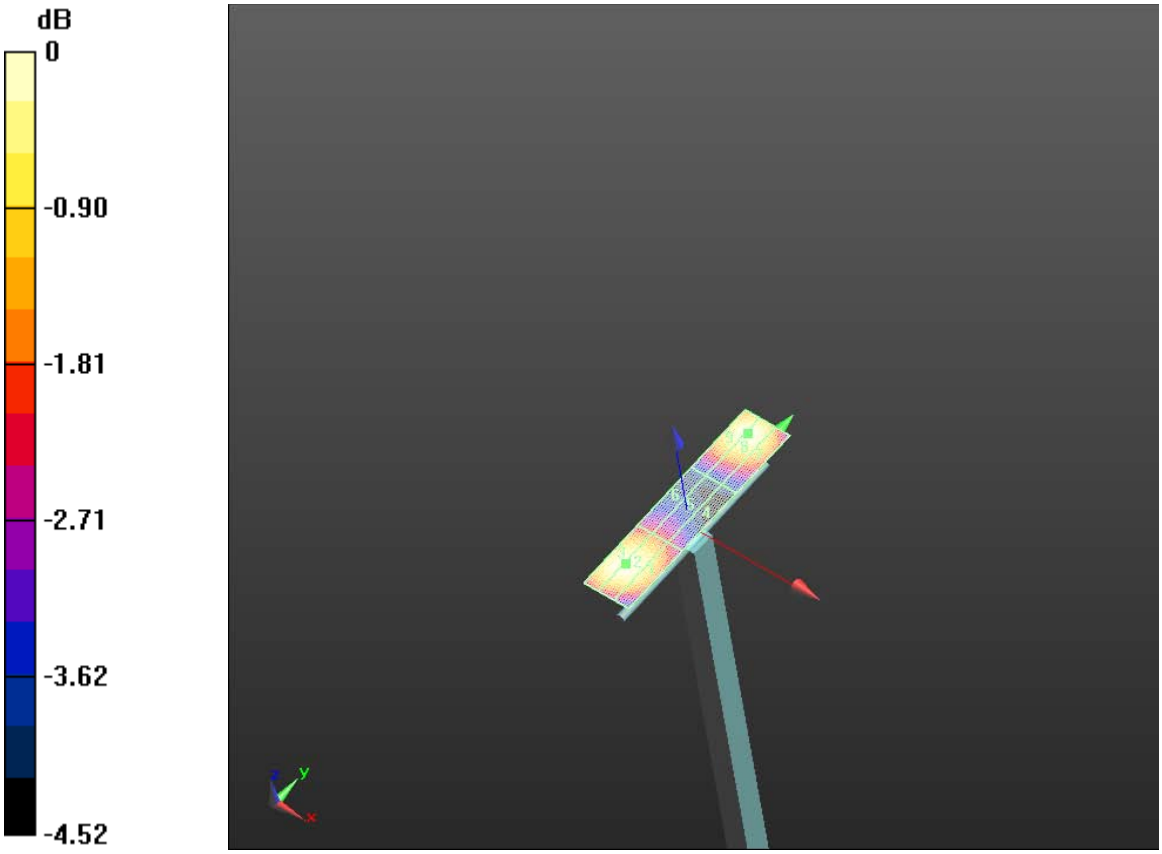
Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 148.5 V/m; Power Drift = 0.00 dB
PMR not calibrated. PMF = 1.000 is applied.
E-field emissions = 85.34 V/m
Near-field category: M3 (AWF 0 dB)

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**

Grid 7 **M3**	Grid 8 **M3**	Grid 9 **M3**
80.57 V/m	**85.33 V/m**	**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

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, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
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):

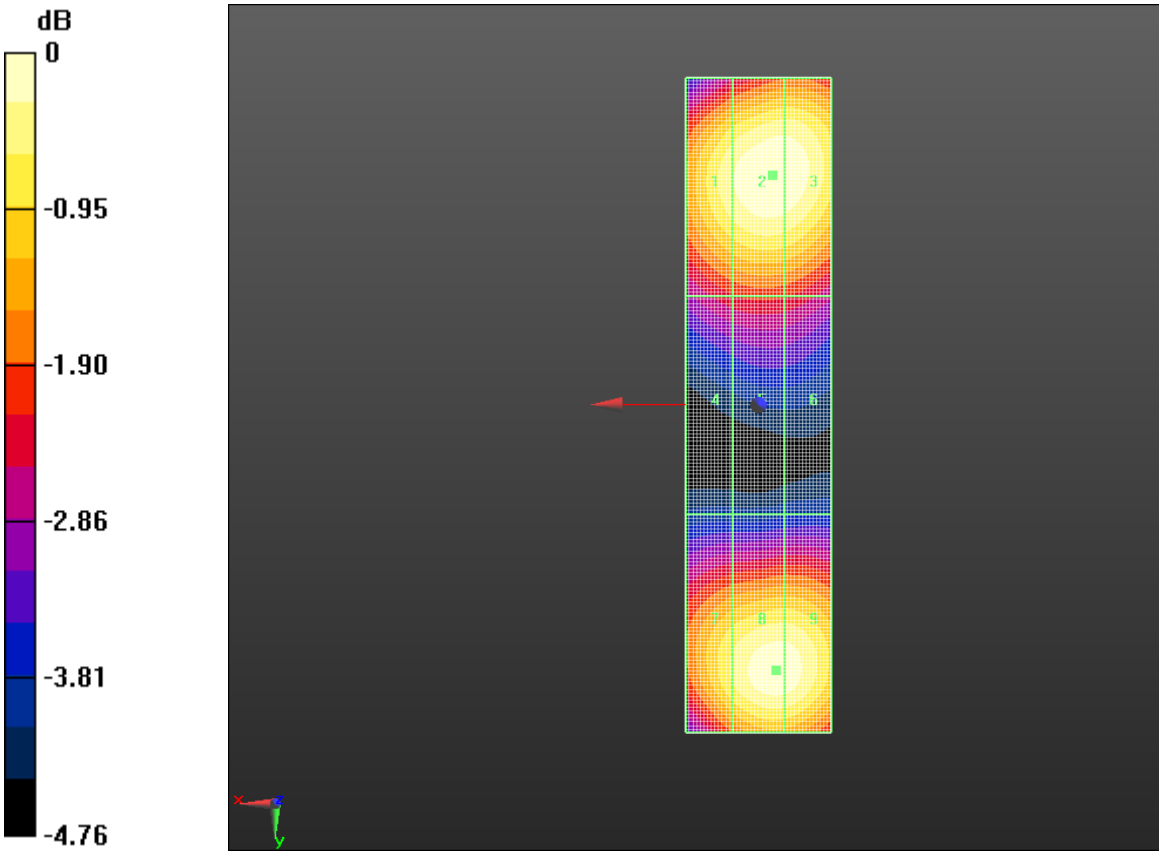
Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 148.9 V/m; Power Drift = -0.02 dB
PMR not calibrated. PMF = 1.000 is applied.
E-field emissions = 86.20 V/m
Near-field category: M3 (AWF 0 dB)

PMF scaled E-field

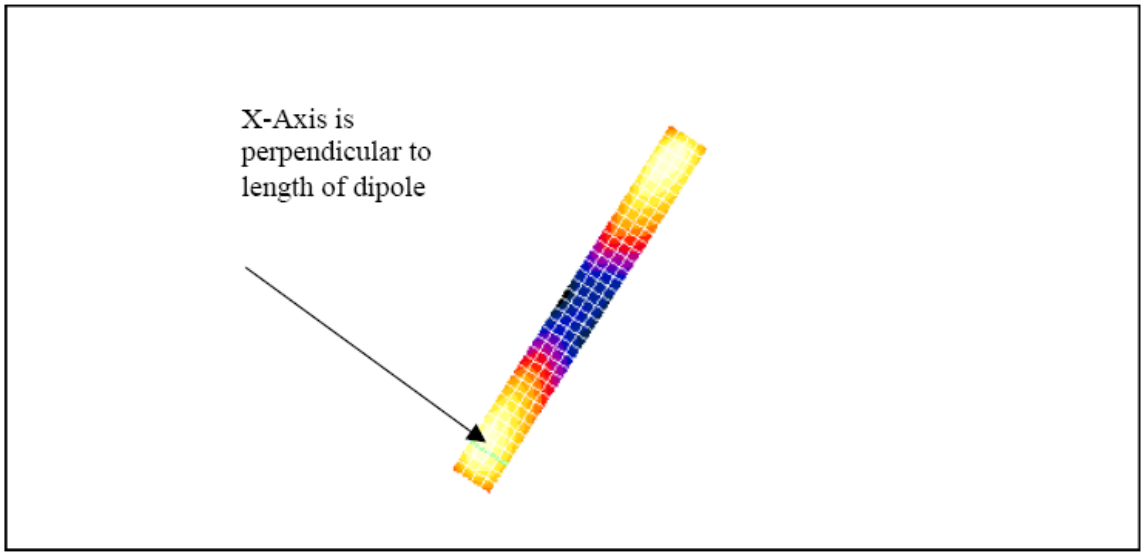
Grid 1 **M3** **83.02 V/m**	Grid 2 **M3** **86.20 V/m**	Grid 3 **M3** **85.98 V/m**
Grid 4 **M3** **66.61 V/m**	Grid 5 **M3** **67.81 V/m**	Grid 6 **M3** **67.24 V/m**
Grid 7 **M3**	Grid 8 **M3**	Grid 9 **M3**

80.74 V/m	**85.21 V/m**	**85.02 V/m**

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



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



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

Comparison of 5mm and 2mm step sizes

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

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, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
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)

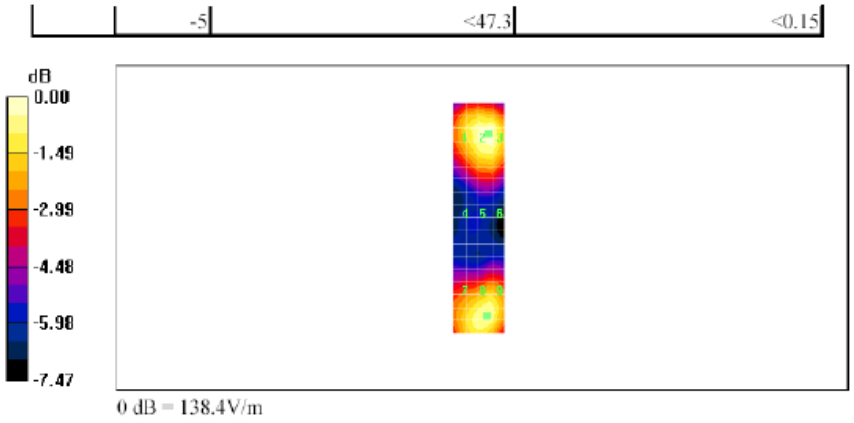
E in V/m (Time averaged)

Grid 1 **123.2**	Grid 2 **138.1**	Grid 3 **138.4**
Grid 4 **80.9**	Grid 5 **92.3**	Grid 6 **92.2**
Grid 7 **119.8**	Grid 8 **131.0**	Grid 9 **130.7**

E in V/m (Slot averaged)

Grid 1 **123.2**	Grid 2 **138.1**	Grid 3 **138.4**
Grid 4 **80.9**	Grid 5 **92.3**	Grid 6 **92.2**
Grid 7 **119.8**	Grid 8 **131.0**	Grid 9 **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



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, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
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)

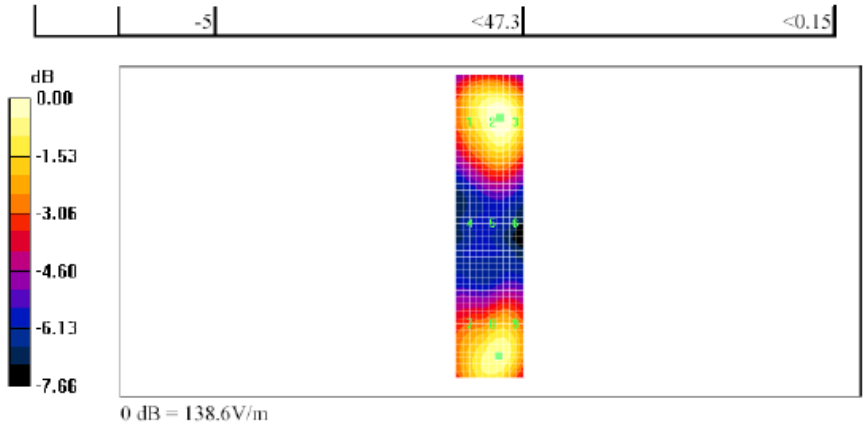
Grid 1 **123.1**	Grid 2 **138.6**	Grid 3 **138.6**
Grid 4 **81.4**	Grid 5 **92.1**	Grid 6 **91.6**
Grid 7 **121.3**	Grid 8 **131.2**	Grid 9 **131.0**

E in V/m (Slot averaged)

Grid 1 **123.1**	Grid 2 **138.6**	Grid 3 **138.6**
Grid 4 **81.4**	Grid 5 **92.1**	Grid 6 **91.6**
Grid 7 **121.3**	Grid 8 **131.2**	Grid 9 **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

Date/Time: 14/07/2005 11:44:51 AM Page 2 of 2



0 dB = 138.6V/m

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

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, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
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)

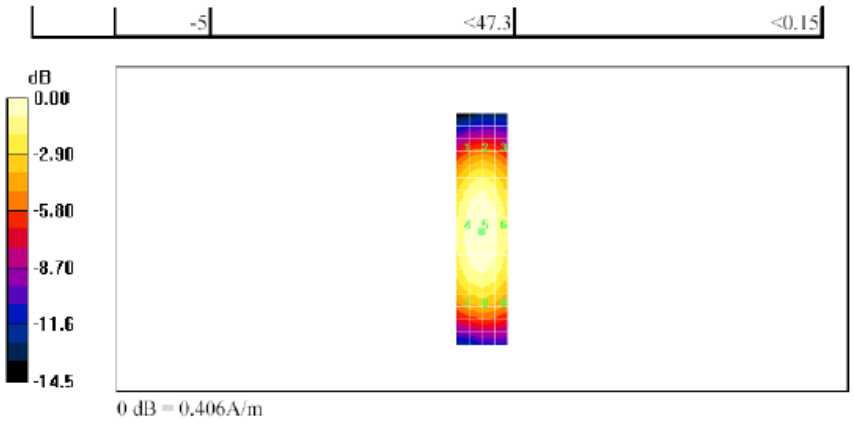
Grid 1 **0.342**	Grid 2 **0.359**	Grid 3 **0.344**
Grid 4 **0.389**	Grid 5 **0.406**	Grid 6 **0.389**
Grid 7 **0.363**	Grid 8 **0.378**	Grid 9 **0.363**

H in A/m (Slot averaged)

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

Date/Time: 14/07/2005 12:43:02 PM Page 2 of 2



0 dB = 0.406A/m

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

A.3 RF emission field plots

Date/Time: 7/4/2013 9:41:05 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_GSM850

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFFE461

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, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
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 = 73.39 V/m; Power Drift = 0.08 dB
Applied MIF = 3.46 dB
RF audio interference level = 39.01 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 **M4** **37.62 dBV/m**	Grid 2 **M4** **38.44 dBV/m**	Grid 3 **M4** **38.32 dBV/m**
Grid 4 **M4** **38.21 dBV/m**	Grid 5 **M4** **39.01 dBV/m**	Grid 6 **M4** **38.84 dBV/m**

Grid 7 **M4** **38.7 dBV/m**	Grid 8 **M4** **39.24 dBV/m**	Grid 9 **M4** **38.88 dBV/m**

Cursor:
Total = 39.24 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 = 76.14 V/m; Power Drift = -0.06 dB
Applied MIF = 3.46 dB
RF audio interference level = 39.45 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 **M4** **37.59 dBV/m**	Grid 2 **M4** **38.74 dBV/m**	Grid 3 **M4** **38.71 dBV/m**
Grid 4 **M4** **38.32 dBV/m**	Grid 5 **M4** **39.45 dBV/m**	Grid 6 **M4** **39.39 dBV/m**
Grid 7 **M4** **38.88 dBV/m**	Grid 8 **M4** **39.73 dBV/m**	Grid 9 **M4** **39.5 dBV/m**

Cursor:
Total = 39.73 dBV/m
E Category: M4
Location: -3, 25, 8.7 mm

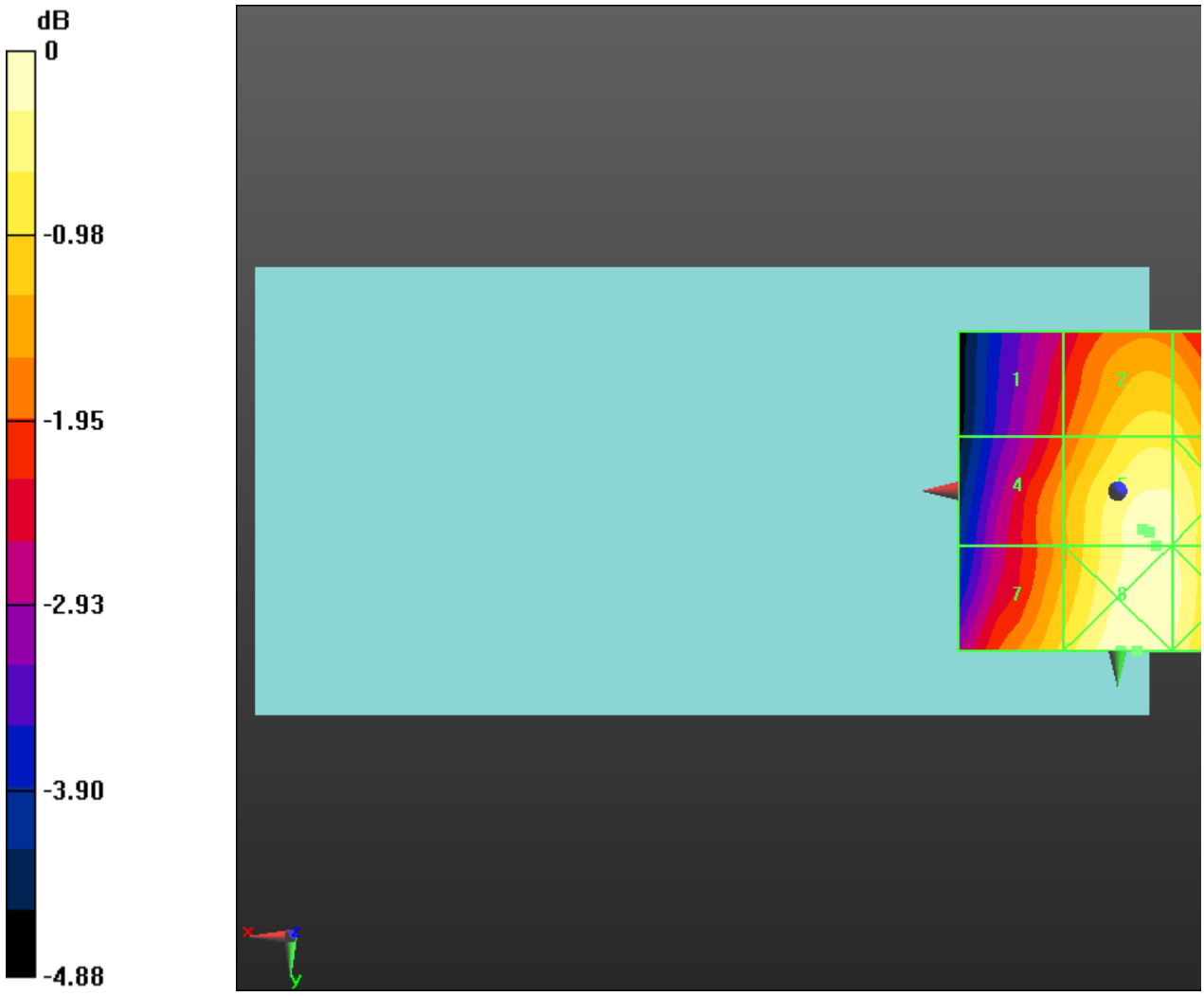
Device E-Field GSM850 measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_High_Chan/Hearing Aid Compatibility Test (101x101x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 78.30 V/m; Power Drift = -0.06 dB
Applied MIF = 3.46 dB
RF audio interference level = 39.57 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 **M4** **37.77 dBV/m**	Grid 2 **M4** **38.99 dBV/m**	Grid 3 **M4** **38.93 dBV/m**
Grid 4 **M4** **38.39 dBV/m**	Grid 5 **M4** **39.57 dBV/m**	Grid 6 **M4** **39.48 dBV/m**
Grid 7 **M4** **38.86 dBV/m**	Grid 8 **M4** **39.7 dBV/m**	Grid 9 **M4** **39.52 dBV/m**

Cursor:
Total = 39.70 dBV/m
E Category: M4
Location: -3, 25, 8.7 mm



0 dB = 91.66 V/m = 39.24 dBV/m

Date/Time: 7/4/2013 9:54:19 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_GSM850_Telecoil

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFFE461

Communication System: UID 0 - n/a, GSM 850; Frequency: 836.8 MHz
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
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)

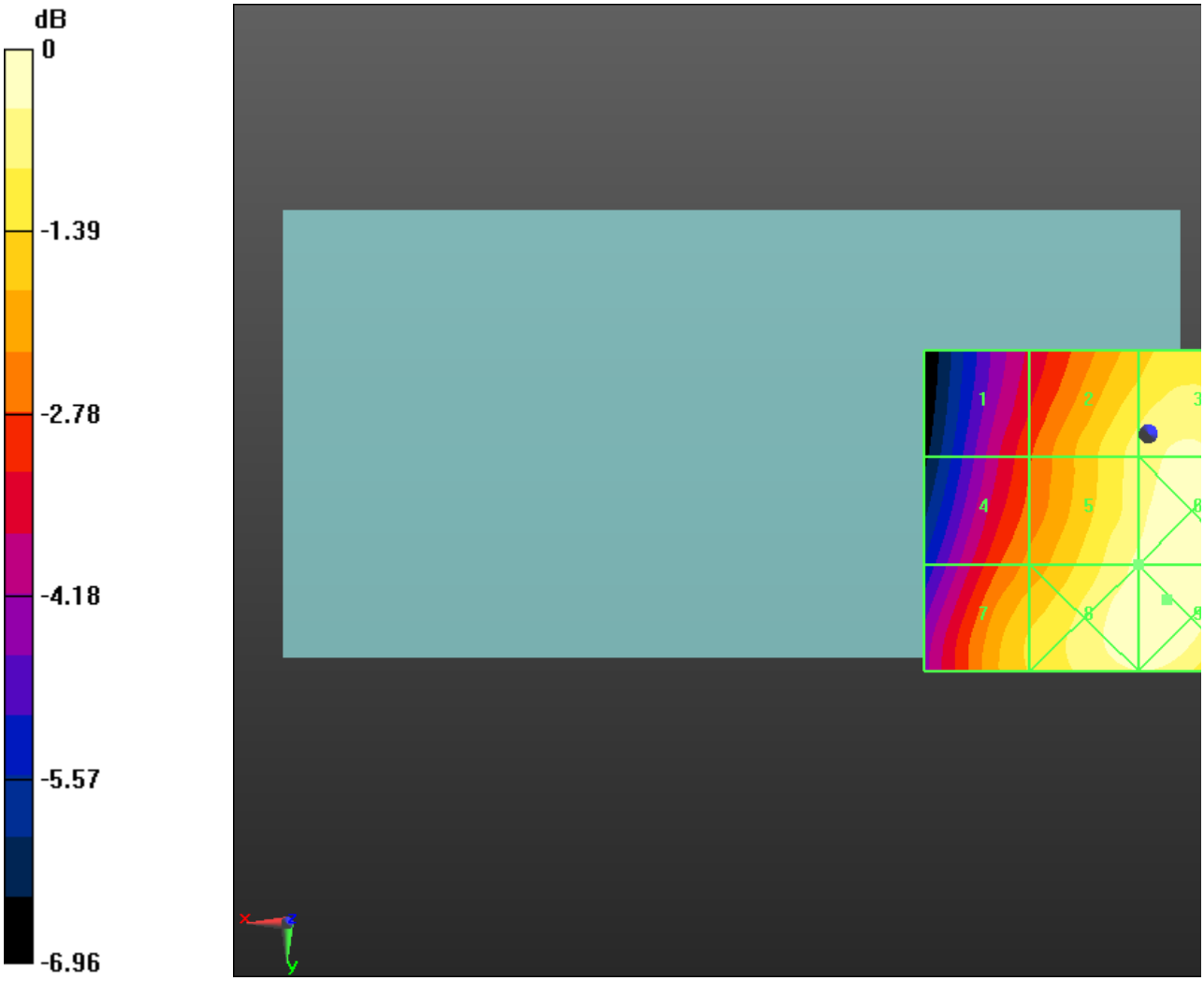
Device E-Field GSM850 measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Mid_Chan_telecoil/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 75.98 V/m; Power Drift = -0.03 dB
Applied MIF = 3.46 dB
RF audio interference level = 39.36 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 **M4** **36.85 dBV/m**	Grid 2 **M4** **38.95 dBV/m**	Grid 3 **M4** **39.3 dBV/m**
Grid 4 **M4** **37.54 dBV/m**	Grid 5 **M4** **39.36 dBV/m**	Grid 6 **M4** **39.62 dBV/m**
Grid 7 **M4**	Grid 8 **M4**	Grid 9 **M4**

38.37 dBV/m	**39.59 dBV/m**	**39.68 dBV/m**

Cursor:
Total = 39.68 dBV/m
E Category: M4
Location: -3, 26, 8.7 mm



0 dB = 96.34 V/m = 39.68 dBV/m

Date/Time: 7/4/2013 10:20:56 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_Band_V

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFFE461

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, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
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 = 79.87 V/m; Power Drift = -0.09 dB
Applied MIF = -15.38 dB
RF audio interference level = 20.81 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 **M4** **19.37 dBV/m**	Grid 2 **M4** **20.33 dBV/m**	Grid 3 **M4** **20.26 dBV/m**
Grid 4 **M4** **19.98 dBV/m**	Grid 5 **M4** **20.81 dBV/m**	Grid 6 **M4** **20.69 dBV/m**

Grid 7 **M4** **20.46 dBV/m**	Grid 8 **M4** **20.97 dBV/m**	Grid 9 **M4** **20.69 dBV/m**

Cursor:
Total = 20.97 dBV/m
E Category: M4
Location: -1.5, 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_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 = 77.24 V/m; Power Drift = 0.07 dB
Applied MIF = -15.38 dB
RF audio interference level = 20.71 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 **M4** **18.88 dBV/m**	Grid 2 **M4** **20.21 dBV/m**	Grid 3 **M4** **20.17 dBV/m**
Grid 4 **M4** **19.6 dBV/m**	Grid 5 **M4** **20.71 dBV/m**	Grid 6 **M4** **20.7 dBV/m**
Grid 7 **M4** **20.17 dBV/m**	Grid 8 **M4** **20.99 dBV/m**	Grid 9 **M4** **20.79 dBV/m**

Cursor:
Total = 20.99 dBV/m
E Category: M4
Location: -4, 25, 8.7 mm

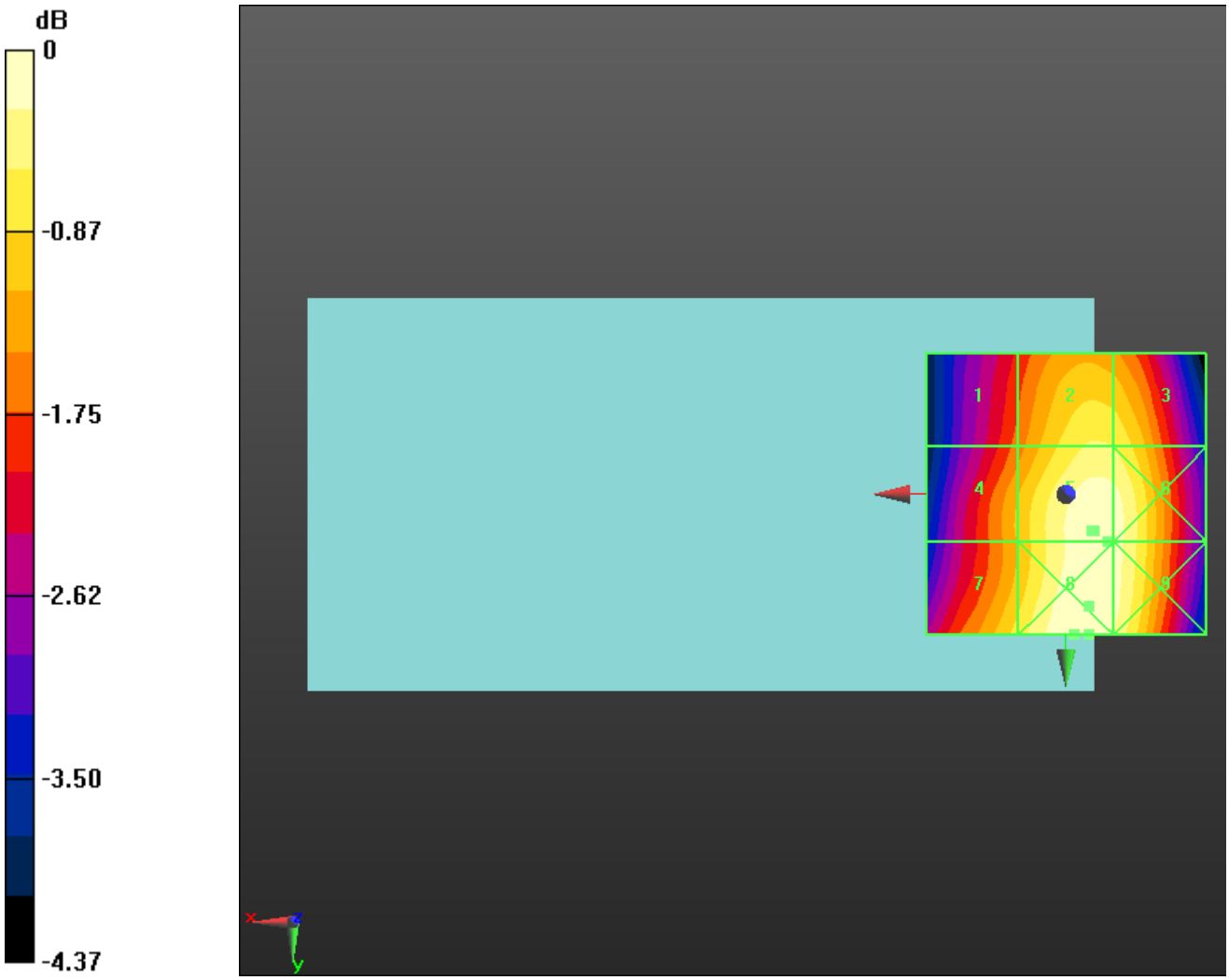
Device E-Field UMTS band V measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_High_Chan/Hearing Aid Compatibility Test (101x101x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 85.43 V/m; Power Drift = -0.06 dB
Applied MIF = -15.38 dB
RF audio interference level = 21.45 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 **M4** **19.88 dBV/m**	Grid 2 **M4** **20.96 dBV/m**	Grid 3 **M4** **20.91 dBV/m**
Grid 4 **M4** **20.4 dBV/m**	Grid 5 **M4** **21.45 dBV/m**	Grid 6 **M4** **21.38 dBV/m**
Grid 7 **M4** **20.77 dBV/m**	Grid 8 **M4** **21.51 dBV/m**	Grid 9 **M4** **21.36 dBV/m**

Cursor:
Total = 21.51 dBV/m
E Category: M4
Location: -4, 20, 8.7 mm



0 dB = 11.19 V/m = 20.98 dBV/m

Date/Time: 7/4/2013 10:35:30 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_Band_V_Telecoil

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFFE461

Communication System: UID 0 - n/a, WCDMA FDD V; Frequency: 846.6 MHz
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
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; Serial: Not Specified
- DASY52 52.8.6(1115); SEMCAD X 14.6.9(7117)

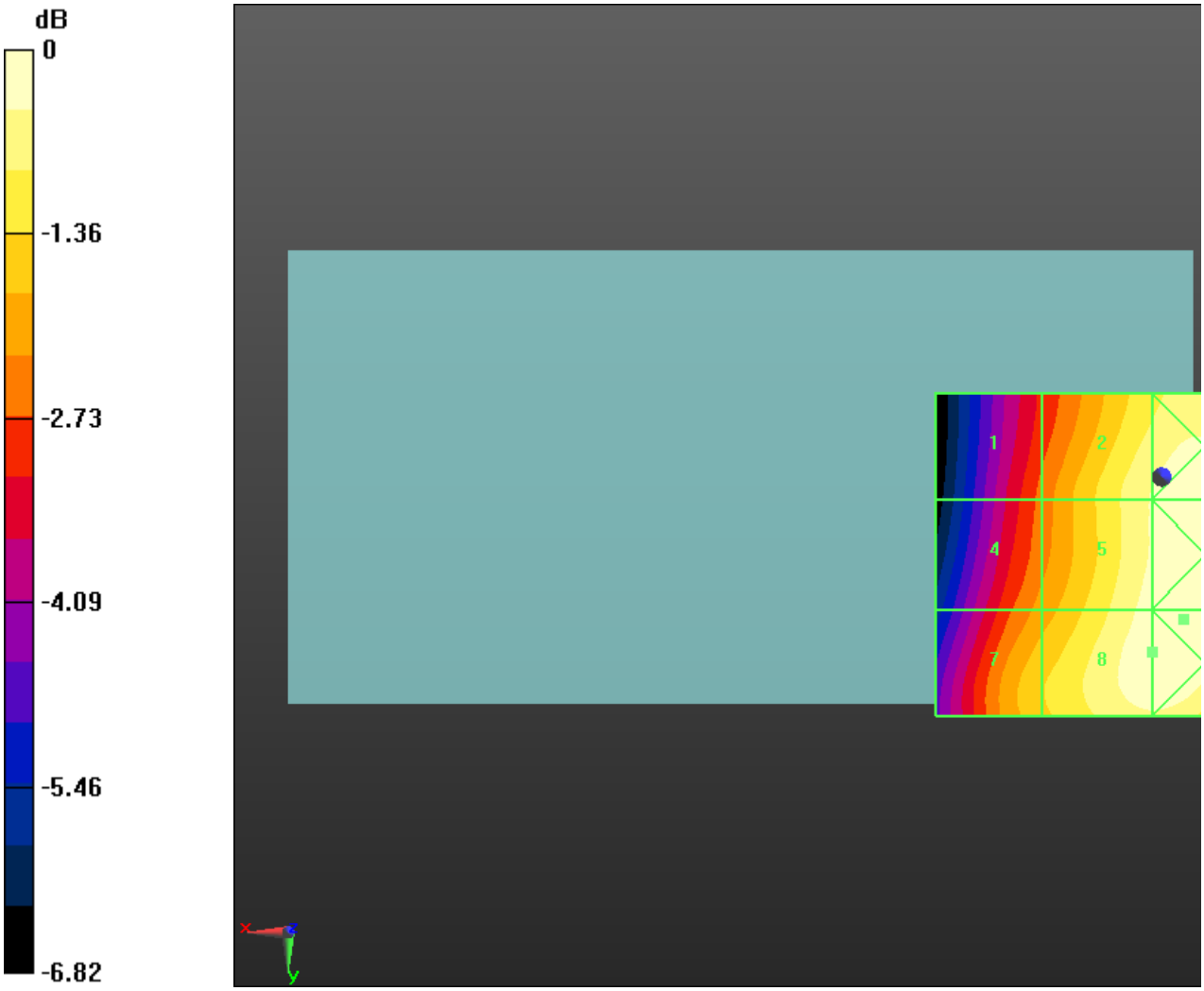
Device E-Field UMTS band V measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_High_Chan_telecoil/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 84.72 V/m; Power Drift = -0.02 dB
Applied MIF = -15.38 dB
RF audio interference level = 21.37 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 **M4** **18.94 dBV/m**	Grid 2 **M4** **21.06 dBV/m**	Grid 3 **M4** **21.39 dBV/m**
Grid 4 **M4** **19.42 dBV/m**	Grid 5 **M4** **21.25 dBV/m**	Grid 6 **M4** **21.47 dBV/m**
Grid 7 **M4**	Grid 8 **M4**	Grid 9 **M4**

20.09 dBV/m	21.37 dBV/m	21.47 dBV/m

Cursor:
Total = 21.47 dBV/m
E Category: M4
Location: -3.5, 22, 8.7 mm



0 dB = 11.85 V/m = 21.47 dBV/m

Date/Time: 7/4/2013 10:02:48 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_GSM1900

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFFE461

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, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
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 = 17.56 V/m; Power Drift = -0.10 dB
Applied MIF = 3.46 dB
RF audio interference level = 32.34 dBV/m
Emission category: M3

MIF scaled E-field

Grid 1 **M3** **32.12 dBV/m**	Grid 2 **M3** **32.34 dBV/m**	Grid 3 **M3** **31.48 dBV/m**
Grid 4 **M4** **27.81 dBV/m**	Grid 5 **M3** **30.07 dBV/m**	Grid 6 **M3** **30.12 dBV/m**

Grid 7 **M3** **30.75 dBV/m**	Grid 8 **M3** **33.05 dBV/m**	Grid 9 **M3** **32.97 dBV/m**

Cursor:
Total = 33.05 dBV/m
E Category: M3
Location: -6, 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 = 18.25 V/m; Power Drift = -0.09 dB
Applied MIF = 3.46 dB
RF audio interference level = 31.50 dBV/m
Emission category: M3

MIF scaled E-field

Grid 1 **M3** **31.1 dBV/m**	Grid 2 **M3** **31.5 dBV/m**	Grid 3 **M3** **31 dBV/m**
Grid 4 **M4** **26.92 dBV/m**	Grid 5 **M4** **29.47 dBV/m**	Grid 6 **M4** **29.55 dBV/m**
Grid 7 **M4** **29.19 dBV/m**	Grid 8 **M3** **31.75 dBV/m**	Grid 9 **M3** **31.68 dBV/m**

Cursor:
Total = 31.75 dBV/m
E Category: M3
Location: -6, 25, 8.7 mm

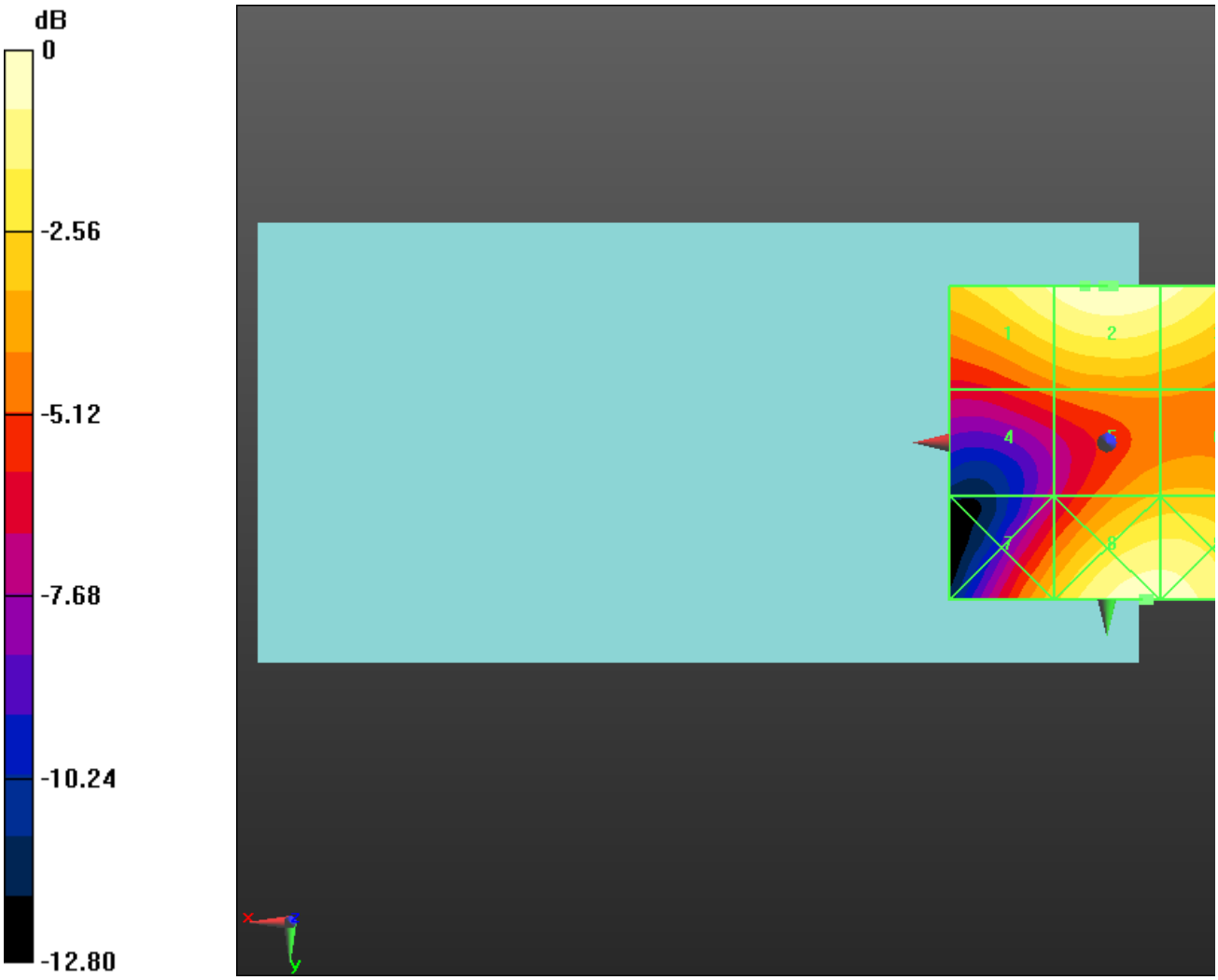
Device E-Field GSM 1900 measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_High_Chan/Hearing Aid Compatibility Test (101x101x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 14.93 V/m; Power Drift = -0.02 dB
Applied MIF = 3.46 dB
RF audio interference level = 31.42 dBV/m
Emission category: M3

MIF scaled E-field

Grid 1 **M3** **30.73 dBV/m**	Grid 2 **M3** **31.42 dBV/m**	Grid 3 **M3** **31.02 dBV/m**
Grid 4 **M4** **26.4 dBV/m**	Grid 5 **M4** **27.95 dBV/m**	Grid 6 **M4** **28.09 dBV/m**
Grid 7 **M4** **28.39 dBV/m**	Grid 8 **M3** **31.14 dBV/m**	Grid 9 **M3** **31.08 dBV/m**

Cursor:
Total = 31.42 dBV/m
E Category: M3
Location: -1, -25, 8.7 mm



0 dB = 44.94 V/m = 33.05 dBV/m

Date/Time: 7/4/2013 10:15:28 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_GSM1900_Telecoil

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFFE461

Communication System: UID 0 - n/a, GSM 1900; Frequency: 1850.2 MHz
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
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)

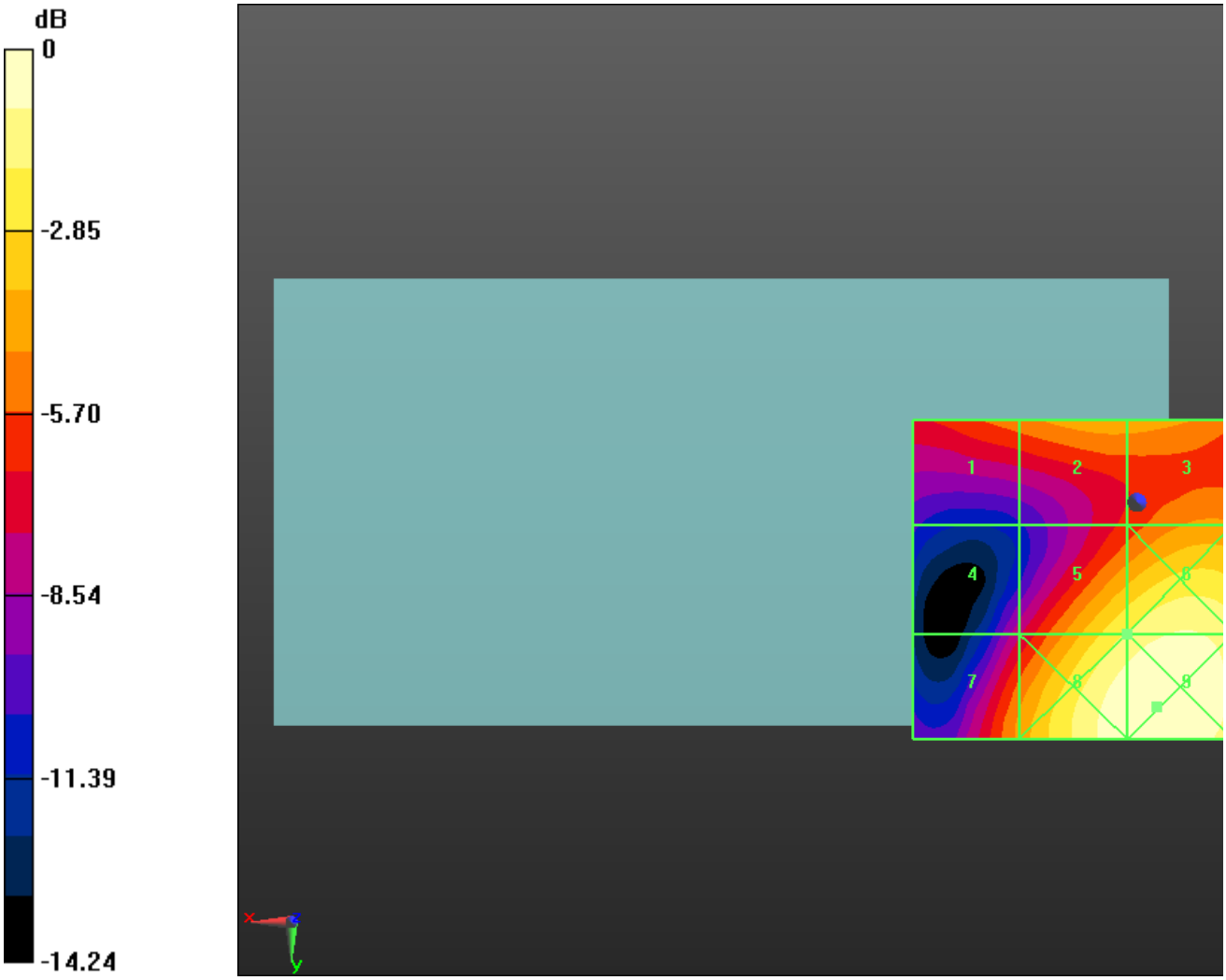
Device E-Field GSM 1900 measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Low_Chan_telecoil/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 17.42 V/m; Power Drift = -0.01 dB
Applied MIF = 3.46 dB
RF audio interference level = 31.58 dBV/m
Emission category: M3

MIF scaled E-field

Grid 1 **M4** **28.35 dBV/m**	Grid 2 **M4** **29.43 dBV/m**	Grid 3 **M4** **29.41 dBV/m**
Grid 4 **M4** **25.56 dBV/m**	Grid 5 **M3** **31.58 dBV/m**	Grid 6 **M3** **32.52 dBV/m**
Grid 7 **M4**	Grid 8 **M3**	Grid 9 **M3**

28.94 dBV/m	33.14 dBV/m	33.39 dBV/m

Cursor:
Total = 33.39 dBV/m
E Category: M3
Location: -3, 32, 8.7 mm



0 dB = 46.70 V/m = 33.39 dBV/m

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Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_Band_II

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFFE461

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, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
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; Serial: Not Specified
- 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 = 22.08 V/m; Power Drift = 0.15 dB
Applied MIF = -15.38 dB
RF audio interference level = 15.03 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 **M4** **14.65 dBV/m**	Grid 2 **M4** **15.03 dBV/m**	Grid 3 **M4** **14.2 dBV/m**
Grid 4 **M4** **10.01 dBV/m**	Grid 5 **M4** **12.9 dBV/m**	Grid 6 **M4** **12.99 dBV/m**

Grid 7 **M4** **12.26 dBV/m**	Grid 8 **M4** **15.21 dBV/m**	Grid 9 **M4** **15.17 dBV/m**

Cursor:
Total = 15.21 dBV/m
E Category: M4
Location: -7, 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 = 22.83 V/m; Power Drift = -0.02 dB
Applied MIF = -15.38 dB
RF audio interference level = 14.73 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 **M4** **14.39 dBV/m**	Grid 2 **M4** **14.73 dBV/m**	Grid 3 **M4** **14.05 dBV/m**
Grid 4 **M4** **9.49 dBV/m**	Grid 5 **M4** **12.89 dBV/m**	Grid 6 **M4** **13.01 dBV/m**
Grid 7 **M4** **12.11 dBV/m**	Grid 8 **M4** **15.02 dBV/m**	Grid 9 **M4** **15.02 dBV/m**

Cursor:
Total = 15.02 dBV/m
E Category: M4
Location: -8.5, 25, 8.7 mm

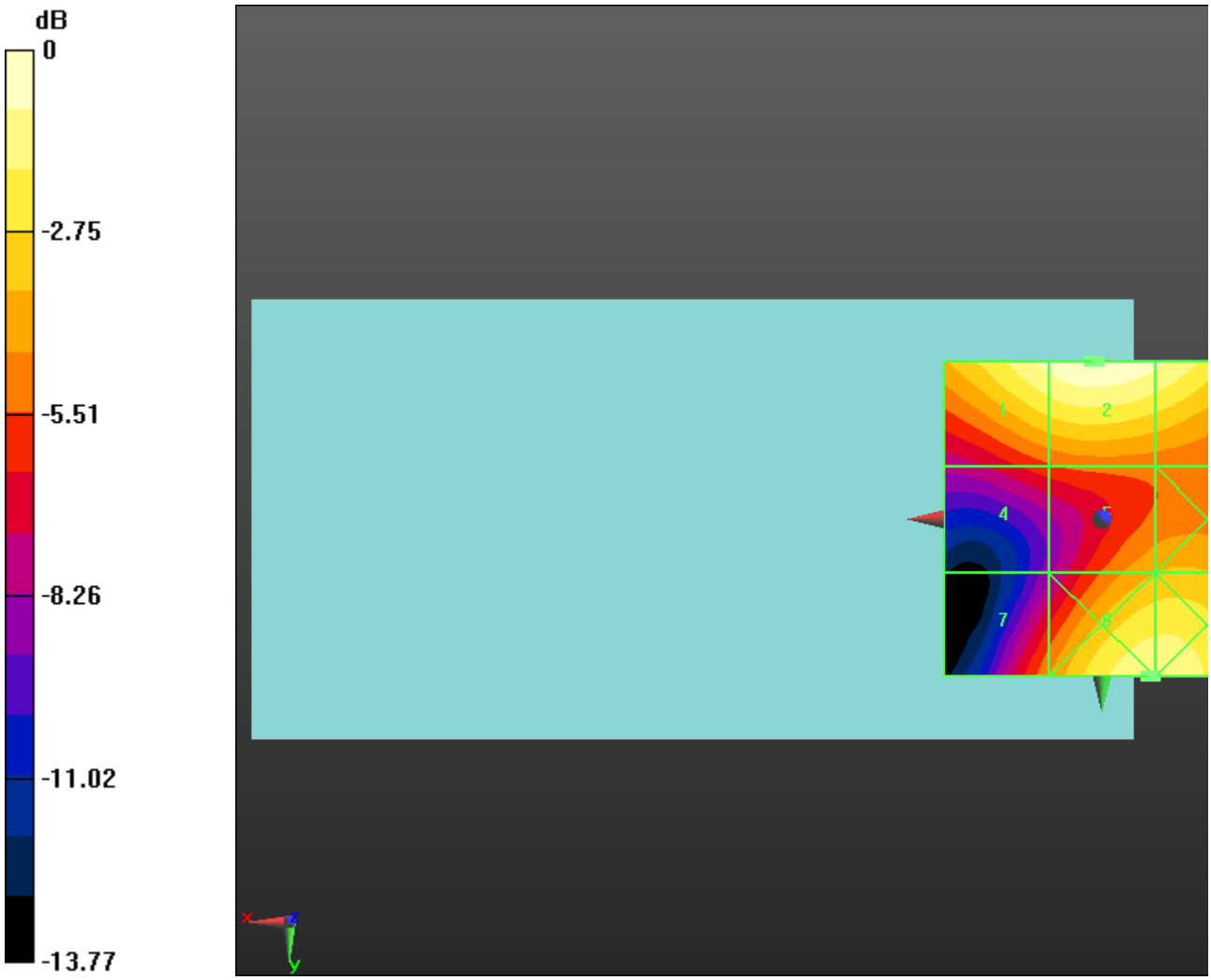
Device E-Field UMTS band II measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_High_Chan/Hearing Aid Compatibility Test (101x101x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 16.92 V/m; Power Drift = -0.02 dB
Applied MIF = -15.38 dB
RF audio interference level = 14.53 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 **M4** **13.94 dBV/m**	Grid 2 **M4** **14.53 dBV/m**	Grid 3 **M4** **13.88 dBV/m**
Grid 4 **M4** **9 dBV/m**	Grid 5 **M4** **10.92 dBV/m**	Grid 6 **M4** **11.12 dBV/m**
Grid 7 **M4** **10.05 dBV/m**	Grid 8 **M4** **13.34 dBV/m**	Grid 9 **M4** **13.34 dBV/m**

Cursor:
Total = 14.53 dBV/m
E Category: M4
Location: 0.5, -25, 8.7 mm



0 dB = 5.760 V/m = 15.21 dBV/m

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Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_Band_II_Telecoil

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFFE461

Communication System: UID 0 - n/a, WCDMA FDD II; Frequency: 1852.4 MHz
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
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)

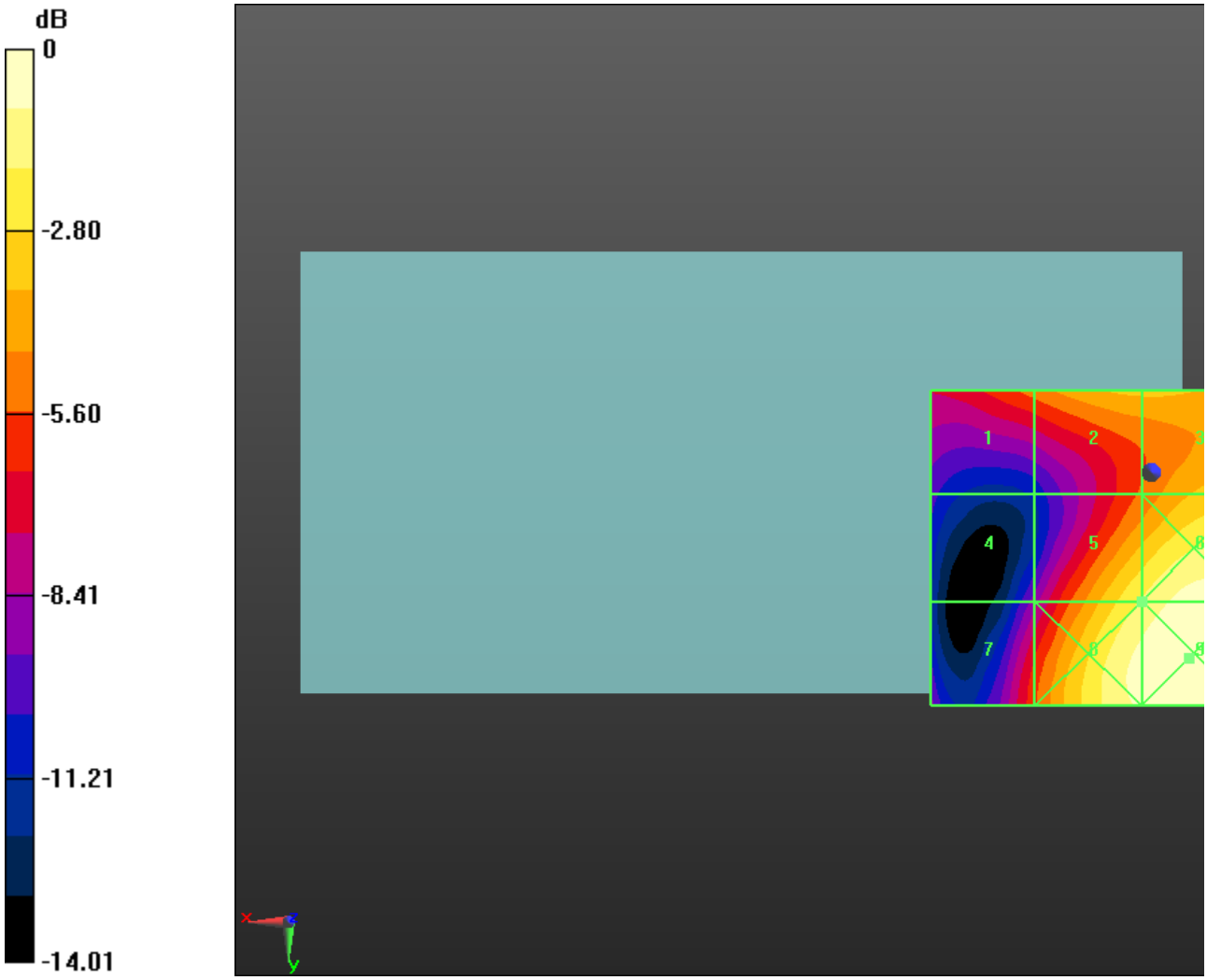
Device E-Field UMTS band II measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Low_Chan_telecoil/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 22.15 V/m; Power Drift = 0.07 dB
Applied MIF = -15.38 dB
RF audio interference level = 13.53 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 **M4** **10.19 dBV/m**	Grid 2 **M4** **11.89 dBV/m**	Grid 3 **M4** **12 dBV/m**
Grid 4 **M4** **6.52 dBV/m**	Grid 5 **M4** **13.53 dBV/m**	Grid 6 **M4** **14.8 dBV/m**
Grid 7 **M4**	Grid 8 **M4**	Grid 9 **M4**

9.53 dBV/m	14.73 dBV/m	15.29 dBV/m

Cursor:
Total = 15.29 dBV/m
E Category: M4
Location: -6, 29.5, 8.7 mm



0 dB = 5.815 V/m = 15.29 dBV/m

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Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_Band_IV

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFFE4E2

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, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
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 = 36.24 V/m; Power Drift = 0.03 dB
Applied MIF = -15.38 dB
RF audio interference level = 16.44 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 **M4** **14.61 dBV/m**	Grid 2 **M4** **14.74 dBV/m**	Grid 3 **M4** **13.94 dBV/m**
Grid 4 **M4** **13.05 dBV/m**	Grid 5 **M4** **16.44 dBV/m**	Grid 6 **M4** **16.46 dBV/m**

Grid 7 **M4** **15.71 dBV/m**	Grid 8 **M4** **17.78 dBV/m**	Grid 9 **M4** **17.75 dBV/m**

Cursor:
Total = 17.78 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 = 31.53 V/m; Power Drift = 0.10 dB
Applied MIF = -15.38 dB
RF audio interference level = 15.48 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 **M4** **14.58 dBV/m**	Grid 2 **M4** **14.62 dBV/m**	Grid 3 **M4** **13.52 dBV/m**
Grid 4 **M4** **12.06 dBV/m**	Grid 5 **M4** **15.48 dBV/m**	Grid 6 **M4** **15.5 dBV/m**
Grid 7 **M4** **14.88 dBV/m**	Grid 8 **M4** **16.87 dBV/m**	Grid 9 **M4** **16.78 dBV/m**

Cursor:
Total = 16.87 dBV/m
E Category: M4
Location: -5.5, 25, 8.7 mm

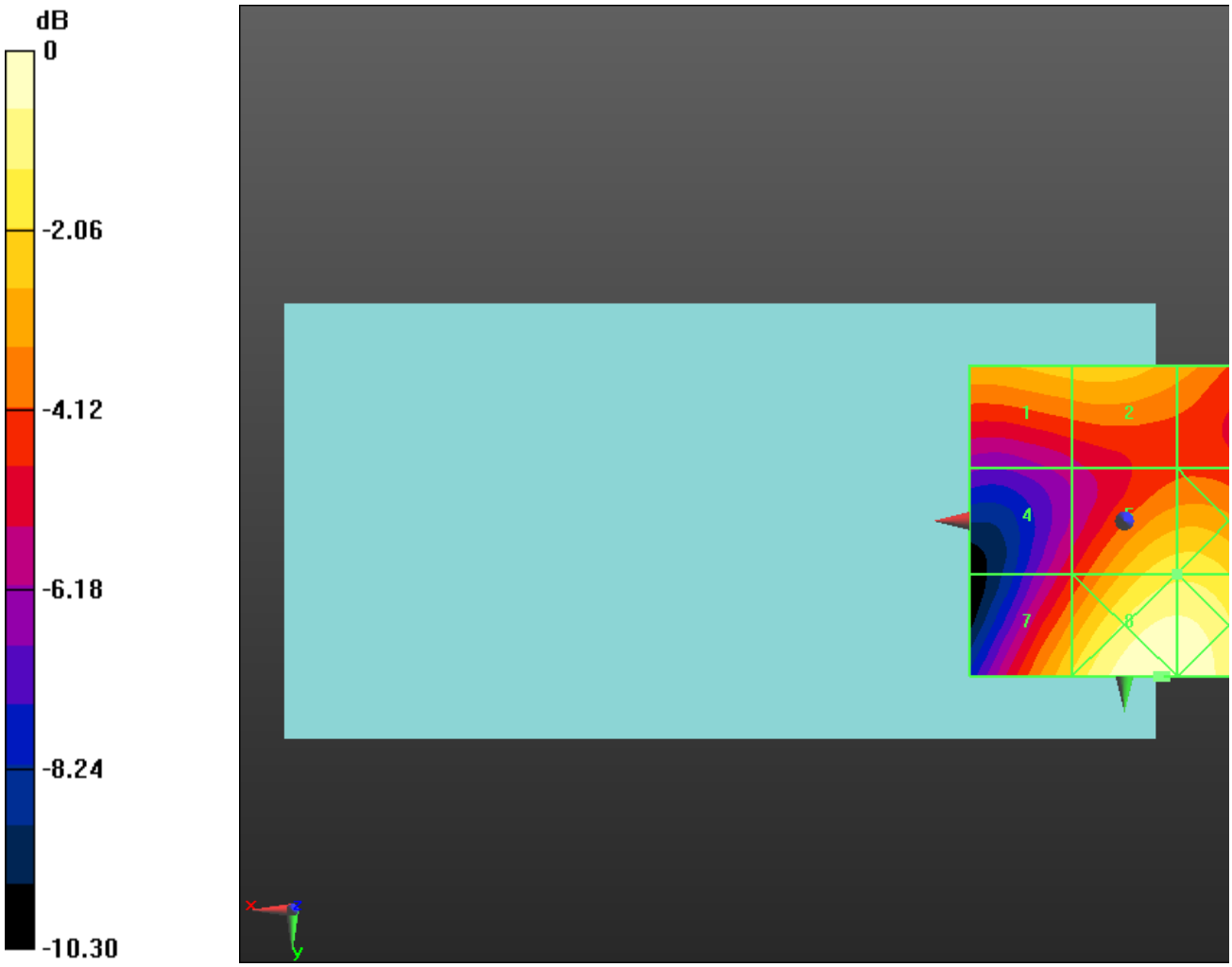
Device E-Field UMTS band IV measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_High_Chan/Hearing Aid Compatibility Test (101x101x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 31.92 V/m; Power Drift = 0.09 dB
Applied MIF = -15.38 dB
RF audio interference level = 15.73 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 **M4** **14.85 dBV/m**	Grid 2 **M4** **14.95 dBV/m**	Grid 3 **M4** **14.17 dBV/m**
Grid 4 **M4** **12.2 dBV/m**	Grid 5 **M4** **15.73 dBV/m**	Grid 6 **M4** **15.75 dBV/m**
Grid 7 **M4** **15.28 dBV/m**	Grid 8 **M4** **17.42 dBV/m**	Grid 9 **M4** **17.32 dBV/m**

Cursor:
Total = 17.42 dBV/m
E Category: M4
Location: -5.5, 25, 8.7 mm



0 dB = 7.743 V/m = 17.78 dBV/m

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Test Laboratory: RIM Testing Services

HAC RF_E-Field_UMTS_Band_IV_Telecoil

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 2FFFE4E2

Communication System: UID 0 - n/a, WCDMA FDD IV; Frequency: 1712.4 MHz
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
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)

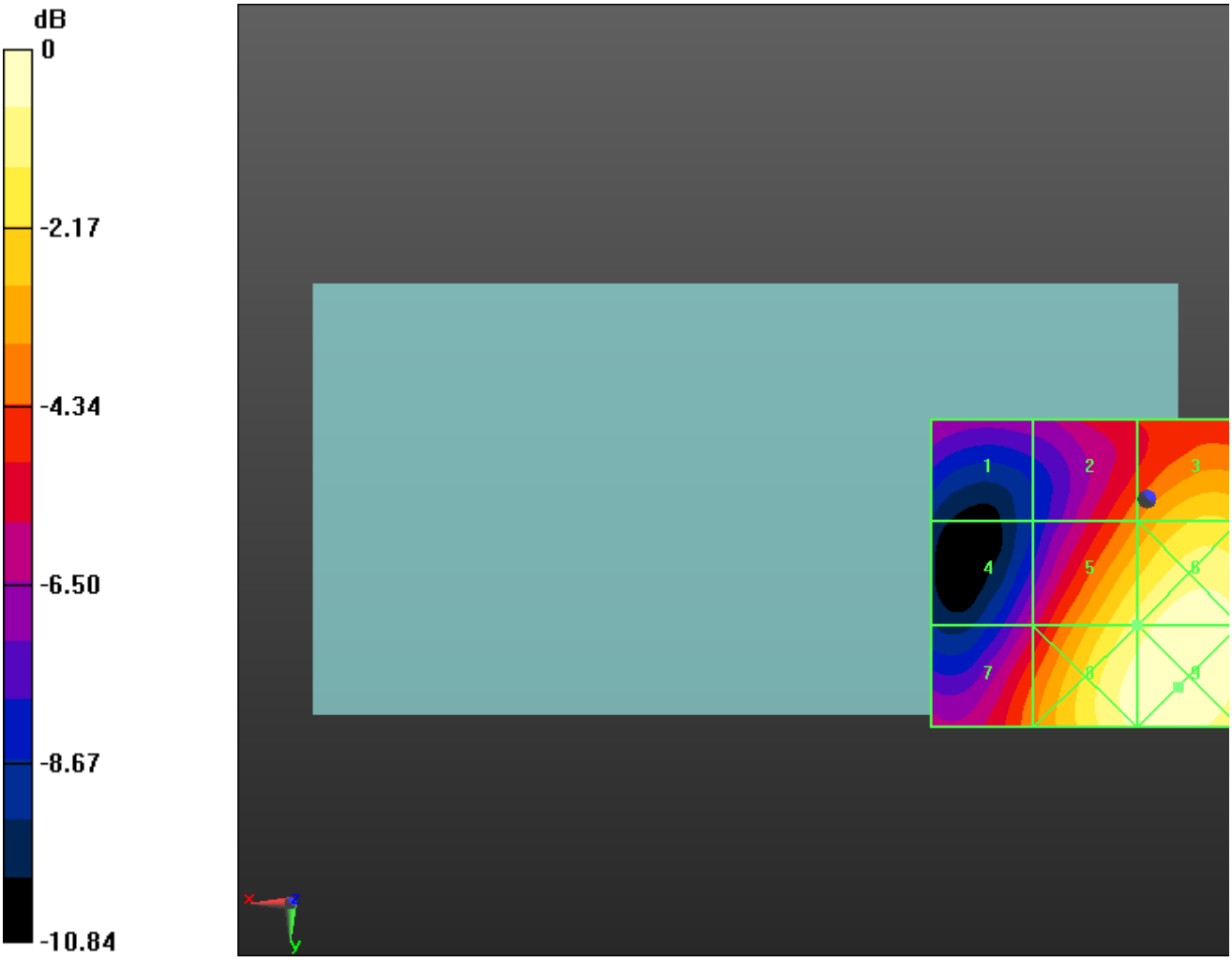
Device E-Field UMTS band IV measurement with ER probe/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Low_Chan_telecoil/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 35.95 V/m; Power Drift = 0.14 dB
Applied MIF = -15.38 dB
RF audio interference level = 16.72 dBV/m
Emission category: M4

MIF scaled E-field

Grid 1 **M4** **11.61 dBV/m**	Grid 2 **M4** **14.18 dBV/m**	Grid 3 **M4** **15.81 dBV/m**
Grid 4 **M4** **11.81 dBV/m**	Grid 5 **M4** **16.72 dBV/m**	Grid 6 **M4** **17.55 dBV/m**
Grid 7 **M4**	Grid 8 **M4**	Grid 9 **M4**

13.99 dBV/m	17.43 dBV/m	17.82 dBV/m

Cursor:
Total = 17.82 dBV/m
E Category: M4
Location: -5, 30.5, 8.7 mm



0 dB = 7.778 V/m = 17.82 dBV/m