

# HAC Annex Report

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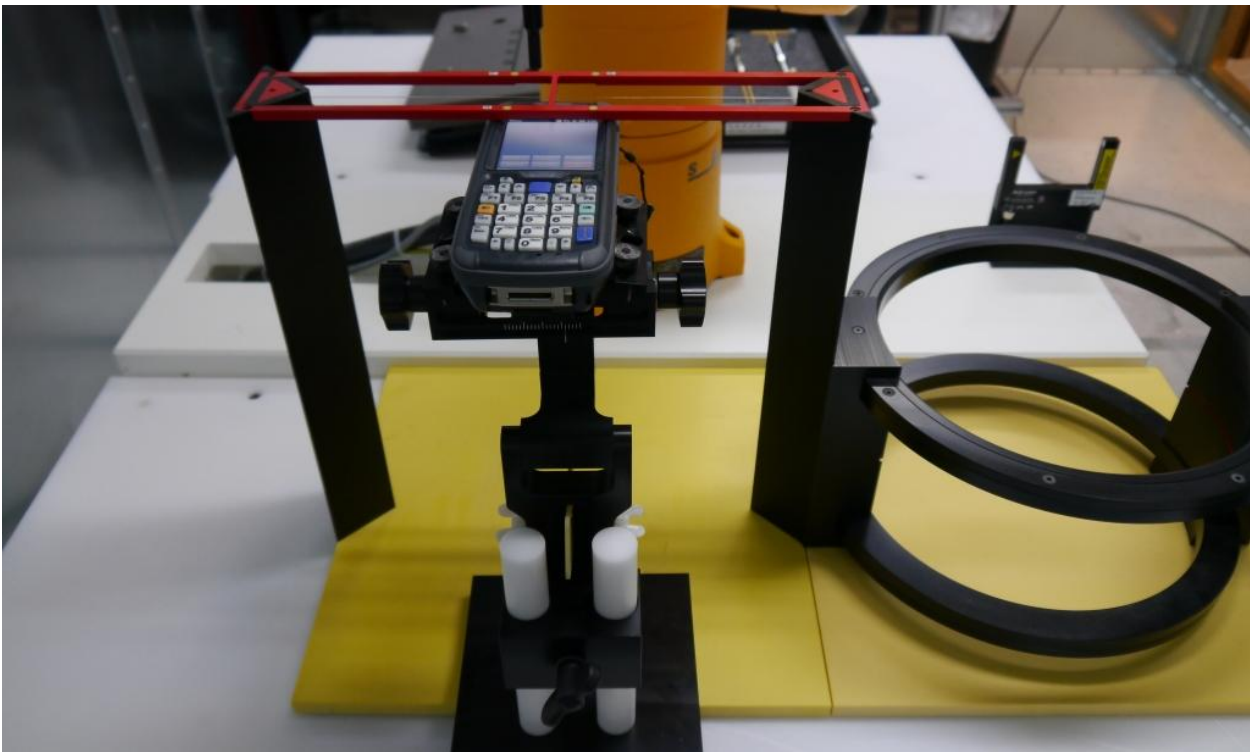
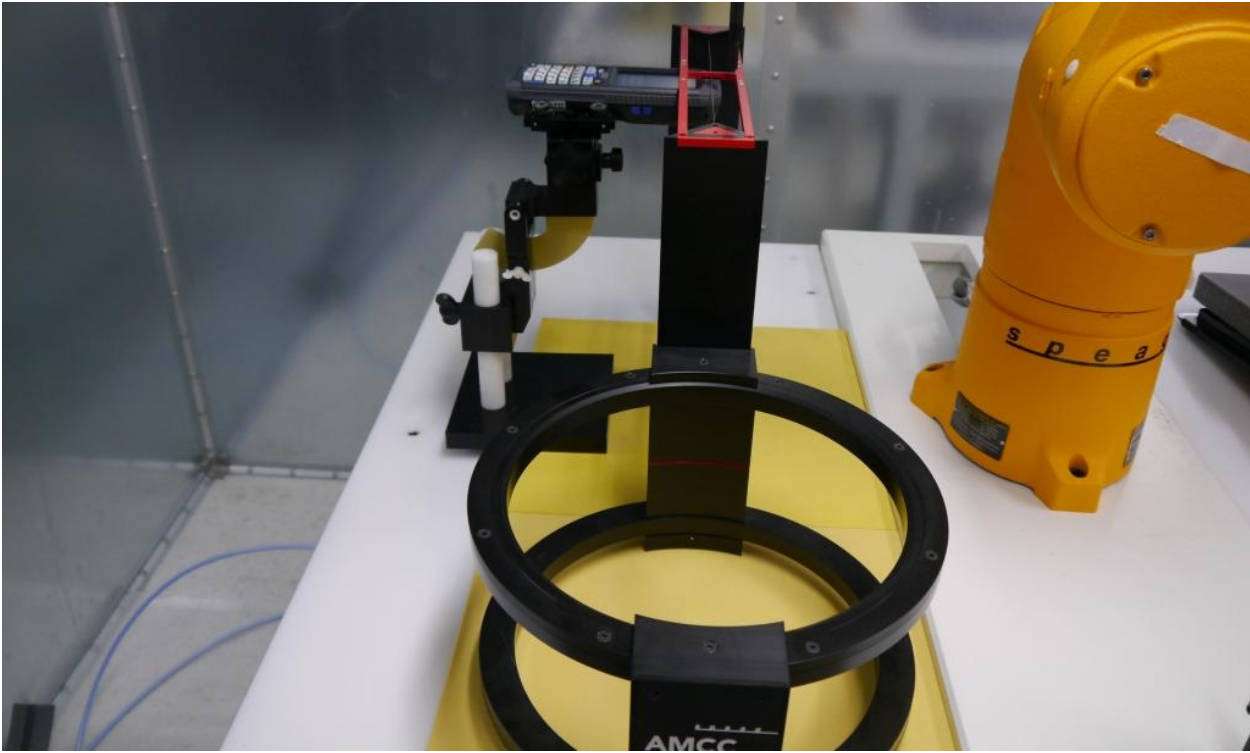
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Remarks:

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or Testing done by SGS International Electrical Approvals in connection with distribution or use of the product described in this report must be approved by SGS international Electrical Approvals in writing.

# 1 SETUP PHOTOGRAPHS



## 2 SYSTEM VALIDATION REPORTS

Date/Time: 12/11/2014 8:17:16 AM

Test Laboratory: SGS North America

### HAC RF E-Field System Check

**DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: 1060**

Communication System: UID 0, CW; Communication System Band: ITD835 (835.0 MHz); Frequency: 835 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>

Phantom section: RF Section

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

DASY Configuration:

- Probe: ER3DV6 - SN2308; ConvF(1, 1, 1); Calibrated: 1/17/2014;
- Sensor-Surface: (Fix Surface),  $z = 9.7$
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: NA
- DASYS 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Dipole E-Field measurement (E-field scan for ANSI C63.19-2011 compliance)/E Scan - measurement distance from the probe sensor center to CD835 = 10mm & 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 = 126.7 V/m; Power Drift = -0.19 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 102.2 V/m

**Near-field category: M4 (AWF 0 dB)**

PMF scaled E-field

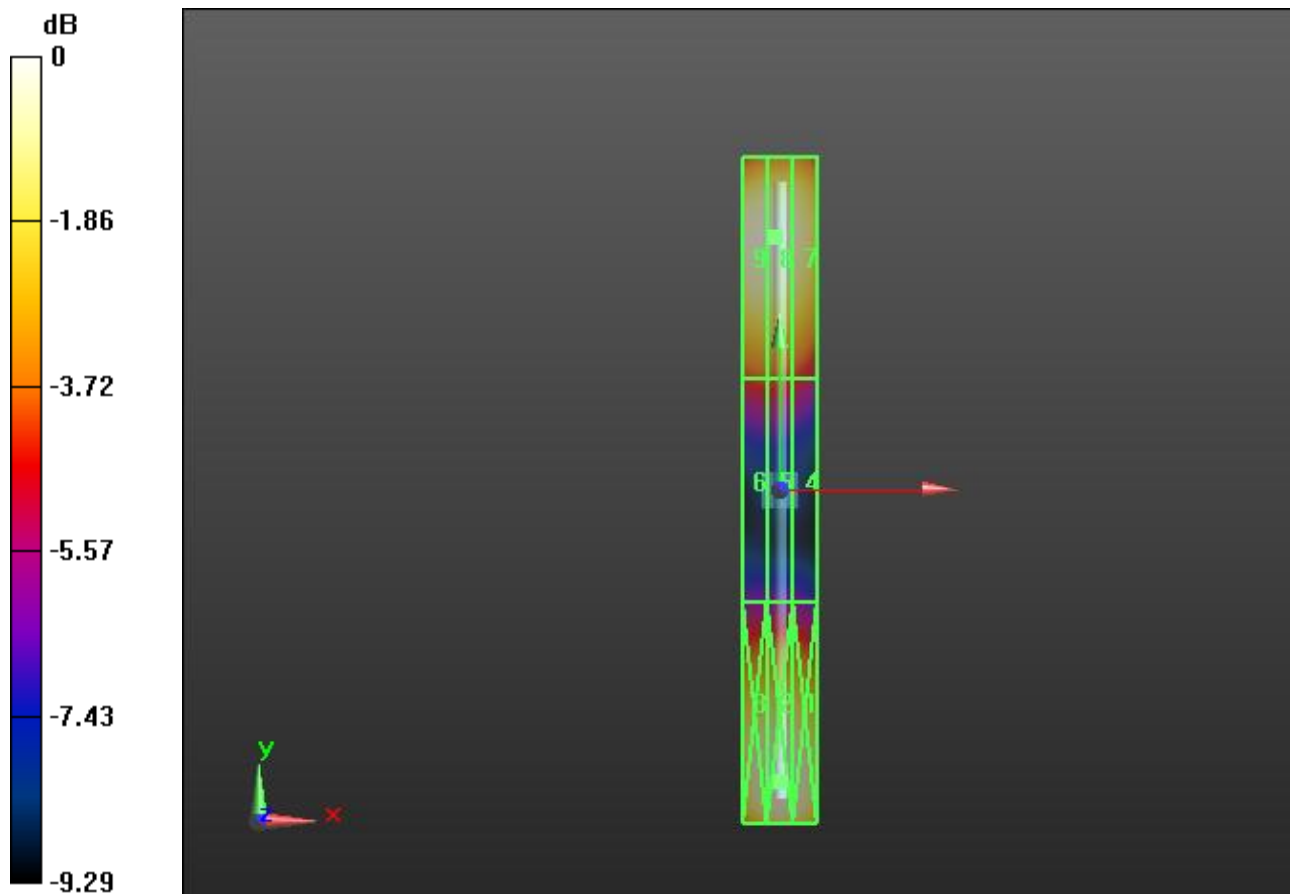
<b>Grid 1 M4</b> <b>101.5 V/m</b>	<b>Grid 2 M4</b> <b>103.3 V/m</b>	<b>Grid 3 M4</b> <b>99.64 V/m</b>
<b>Grid 4 M4</b> <b>62.44 V/m</b>	<b>Grid 5 M4</b> <b>64.60 V/m</b>	<b>Grid 6 M4</b> <b>64.60 V/m</b>
<b>Grid 7 M4</b> <b>97.67 V/m</b>	<b>Grid 8 M4</b> <b>102.2 V/m</b>	<b>Grid 9 M4</b> <b>101.8 V/m</b>

**Cursor:**

Total = 103.3 V/m

E Category: M4

Location: 0.5, -78.5, 9.7 mm



0 dB = 103.3 V/m = 40.28 dBV/m

Date/Time: 12/11/2014 9:57:00 AM

Test Laboratory: SGS North America

## HAC RF E-Field System Check

**DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1047**

Communication System: UID 0, CW; Communication System Band: CD1880 (1880.0 MHz);

Frequency: 1880 MHz;Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>

Phantom section: RF Section

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

DASY Configuration:

- Probe: ER3DV6 - SN2308; ConvF(1, 1, 1); Calibrated: 1/17/2014;
- Sensor-Surface: (Fix Surface),  $z = 9.7$
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: NA
- DASYS2 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Dipole E-Field measurement (E-field scan for ANSI C63.19-2011 compliance)/E Scan - measurement distance from the probe sensor center to CD1880 = 10mm &**

**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 = 135.1 V/m; Power Drift = 0.10 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 84.53 V/m

**Near-field category: M3 (AWF 0 dB)**

PMF scaled E-field

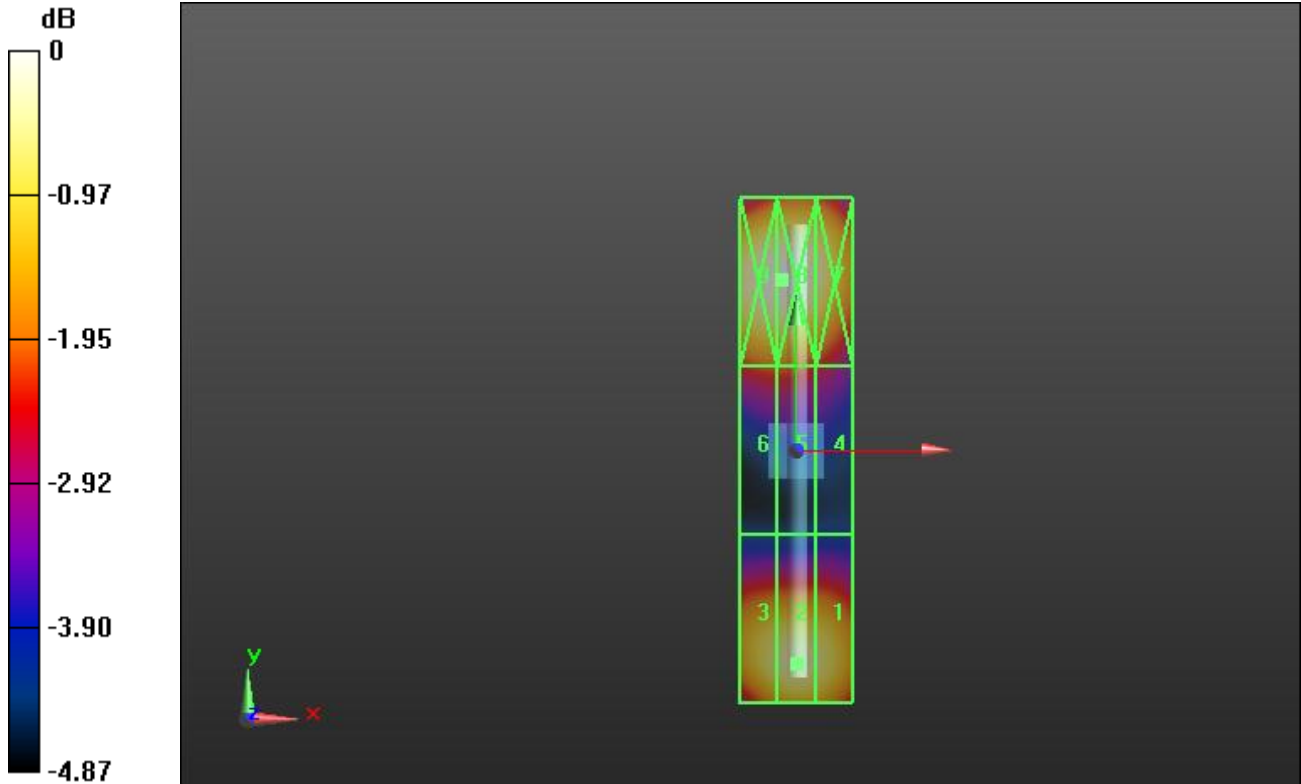
Grid 1 <b>M3</b> <b>83.06 V/m</b>	Grid 2 <b>M3</b> <b>84.53 V/m</b>	Grid 3 <b>M3</b> <b>82.76 V/m</b>
Grid 4 <b>M3</b> <b>66.97 V/m</b>	Grid 5 <b>M3</b> <b>70.06 V/m</b>	Grid 6 <b>M3</b> <b>70.03 V/m</b>
Grid 7 <b>M3</b> <b>84.16 V/m</b>	Grid 8 <b>M3</b> <b>88.22 V/m</b>	Grid 9 <b>M3</b> <b>88.19 V/m</b>

**Cursor:**

Total = 88.22 V/m

E Category: M3

Location: -2.5, 30.5, 9.7 mm



0 dB = 88.22 V/m = 38.91 dBV/m

### 3 HAC RF EMISSIONS TEST PLOTS

Scan W1

Date/Time: 12/11/2014 1:27:37 PM

Test Laboratory: SGS North America

**11Dec2014 WCDMA II W1****DUT: Intermec CN70e; Type: Handheld PC; Serial: NA**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Communication System Band: Band 2, UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1852.4 MHz; Communication System PAR: 2.91 dB; PMF: 1.00231

Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>

Phantom section: RF Section

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

DASY Configuration:

- Probe: ER3DV6 - SN2308; ConvF(1, 1, 1); Calibrated: 1/17/2014;
- Sensor-Surface: (Fix Surface),  $z = 8.7$
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: NA
- DASYS 52.8.8(1222); SEMCAD X 14.6.10(7331)

#### **Device E-Field measurement (E-field scan for ANSI C63.19-2011 compliance)/E Scan - ER3D: 15 mm from Probe Center to the Device/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 = 45.17 V/m; Power Drift = 0.01 dB

PMR calibrated. Calibrated PMF = 1.002 is applied.

E-field emissions = 28.41 V/m

**Near-field category: M4 (AWF 0 dB)**

PMF scaled E-field

<b>Grid 1 M4</b> <b>44.45 V/m</b>	<b>Grid 2 M4</b> <b>45.79 V/m</b>	<b>Grid 3 M4</b> <b>42.77 V/m</b>
<b>Grid 4 M4</b> <b>27.51 V/m</b>	<b>Grid 5 M4</b> <b>28.41 V/m</b>	<b>Grid 6 M4</b> <b>27.32 V/m</b>
<b>Grid 7 M4</b> <b>13.68 V/m</b>	<b>Grid 8 M4</b> <b>14.29 V/m</b>	<b>Grid 9 M4</b> <b>14.11 V/m</b>

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz
M1	0	199.5 - 354.8
	-5	149.6 - 266.1
M2	0	112.2 - 199.5
	-5	84.1 - 149.6
M3	0	63.1 - 112.2
	-5	47.3 - 84.1
M4	0	<63.1
	-5	<47.3

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz
M1	0	631 - 1122
	-5	473.2 - 841.4
M2	0	354.8 - 631
	-5	266.1 - 473.2
M3	0	199.5 - 354.8
	-5	149.6 - 266.1
M4	0	<199.5
	-5	<149.6

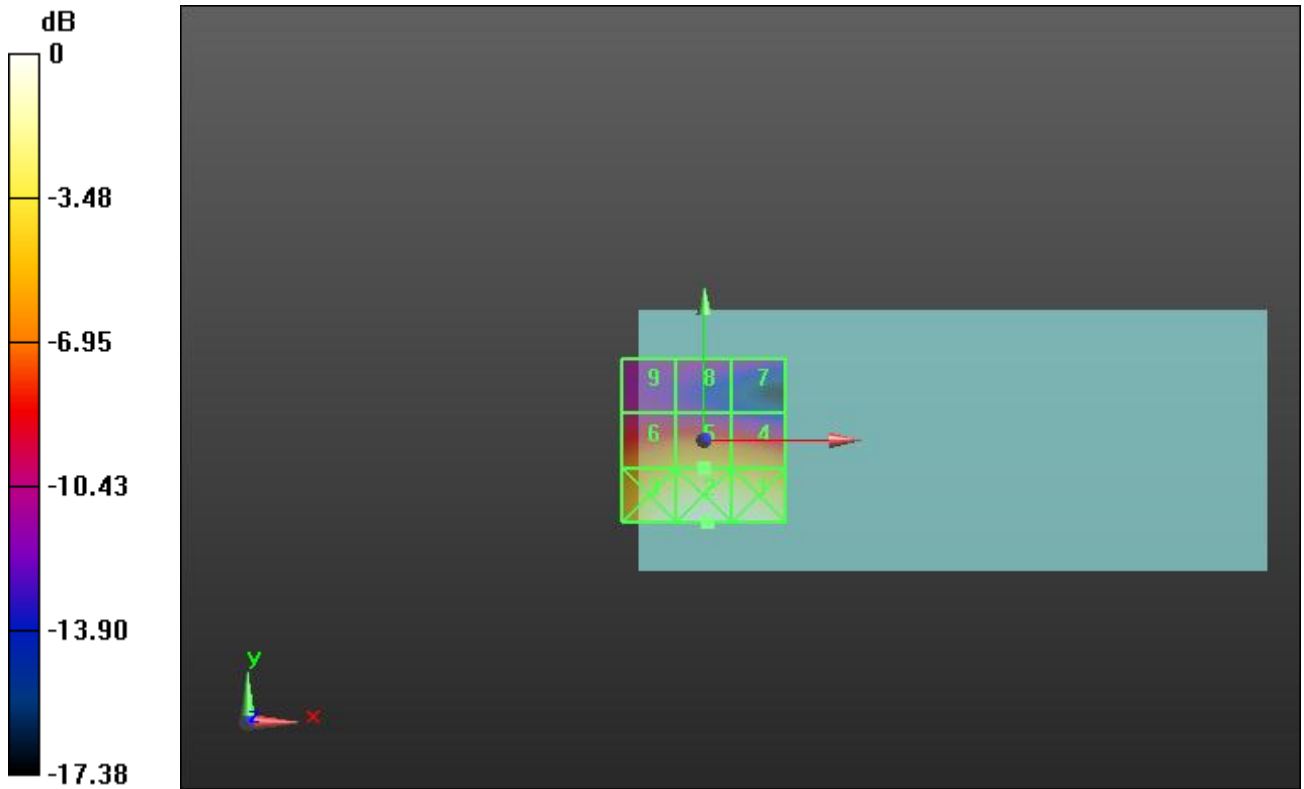
**Cursor:**

Total = 45.79 V/m

E Category: M4

Location: 1, -25, 8.7 mm





0 dB = 45.79 V/m = 33.22 dBV/m

Scan W2

Date/Time: 12/11/2014 1:35:01 PM

Test Laboratory: SGS North America

**11Dec2014 WCDMA II W2**

**DUT: Intermec CN70e; Type: Handheld PC; Serial: NA**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Communication System Band: Band 2, UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Communication System PAR: 2.91 dB; PMF: 1.00231

Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>

Phantom section: RF Section

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

DASY Configuration:

- Probe: ER3DV6 - SN2308; ConvF(1, 1, 1); Calibrated: 1/17/2014;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: NA
- DASYS 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Device E-Field measurement (E-field scan for ANSI C63.19-2011 compliance)/E Scan - ER3D: 15 mm from Probe Center to the Device/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 = 50.01 V/m; Power Drift = -0.06 dB

PMR calibrated. Calibrated PMF = 1.002 is applied.

E-field emissions = 33.28 V/m

**Near-field category: M4 (AWF 0 dB)**

PMF scaled E-field

<b>Grid 1 M4</b>	<b>Grid 2 M4</b>	<b>Grid 3 M4</b>
<b>49.63 V/m</b>	<b>50.13 V/m</b>	<b>46.10 V/m</b>
<b>Grid 4 M4</b>	<b>Grid 5 M4</b>	<b>Grid 6 M4</b>
<b>32.82 V/m</b>	<b>33.28 V/m</b>	<b>31.71 V/m</b>
<b>Grid 7 M4</b>	<b>Grid 8 M4</b>	<b>Grid 9 M4</b>
<b>15.24 V/m</b>	<b>17.23 V/m</b>	<b>18.63 V/m</b>

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz
M1	0	199.5 - 354.8
	-5	149.6 - 266.1
M2	0	112.2 - 199.5
	-5	84.1 - 149.6
M3	0	63.1 - 112.2
	-5	47.3 - 84.1
M4	0	<63.1
	-5	<47.3

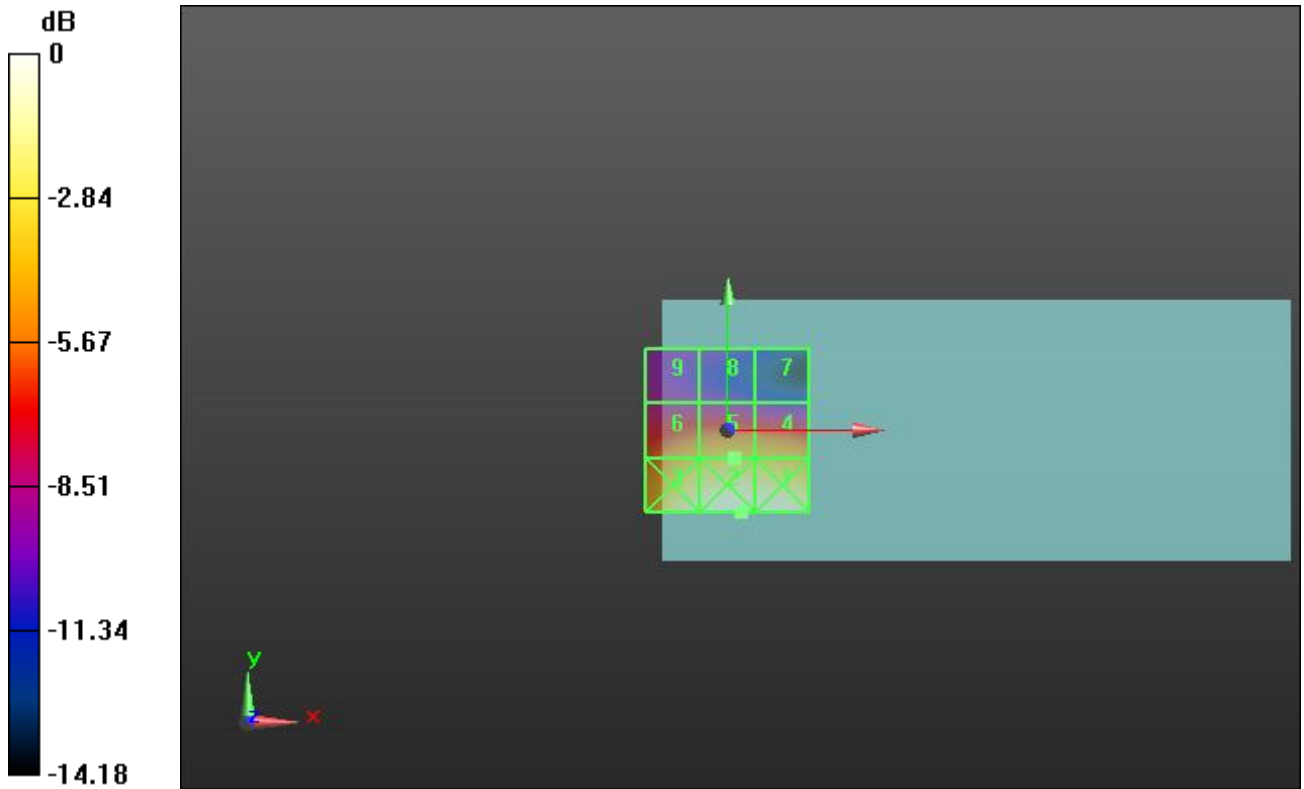
Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz
M1	0	631 - 1122
	-5	473.2 - 841.4
M2	0	354.8 - 631
	-5	266.1 - 473.2
M3	0	199.5 - 354.8
	-5	149.6 - 266.1
M4	0	<199.5
	-5	<149.6

**Cursor:**

Total = 50.13 V/m

E Category: M4

Location: 4, -25, 8.7 mm



0 dB = 50.13 V/m = 34.00 dBV/m

Scan W3

Date/Time: 12/11/2014 1:42:16 PM

Test Laboratory: SGS North America

**11Dec2014 WCDMA II W3**

**DUT: Intermec CN70e; Type: Handheld PC; Serial: NA**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Communication System Band: Band 2, UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1907.6 MHz; Communication System PAR: 2.91 dB; PMF: 1.00231

Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>

Phantom section: RF Section

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

DASY Configuration:

- Probe: ER3DV6 - SN2308; ConvF(1, 1, 1); Calibrated: 1/17/2014;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: NA
- DASYS 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Device E-Field measurement (E-field scan for ANSI C63.19-2011 compliance)/E Scan - ER3D: 15 mm from Probe Center to the Device/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 = 38.42 V/m; Power Drift = 0.16 dB

PMR calibrated. Calibrated PMF = 1.002 is applied.

E-field emissions = 27.38 V/m

**Near-field category: M4 (AWF 0 dB)**

PMF scaled E-field

<b>Grid 1 M4</b>	<b>Grid 2 M4</b>	<b>Grid 3 M4</b>
<b>38.58 V/m</b>	<b>40.01 V/m</b>	<b>38.19 V/m</b>
<b>Grid 4 M4</b>	<b>Grid 5 M4</b>	<b>Grid 6 M4</b>
<b>26.51 V/m</b>	<b>27.38 V/m</b>	<b>26.34 V/m</b>
<b>Grid 7 M4</b>	<b>Grid 8 M4</b>	<b>Grid 9 M4</b>
<b>13.03 V/m</b>	<b>13.89 V/m</b>	<b>13.83 V/m</b>

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz
M1	0	199.5 - 354.8
	-5	149.6 - 266.1
M2	0	112.2 - 199.5
	-5	84.1 - 149.6
M3	0	63.1 - 112.2
	-5	47.3 - 84.1
M4	0	<63.1
	-5	<47.3

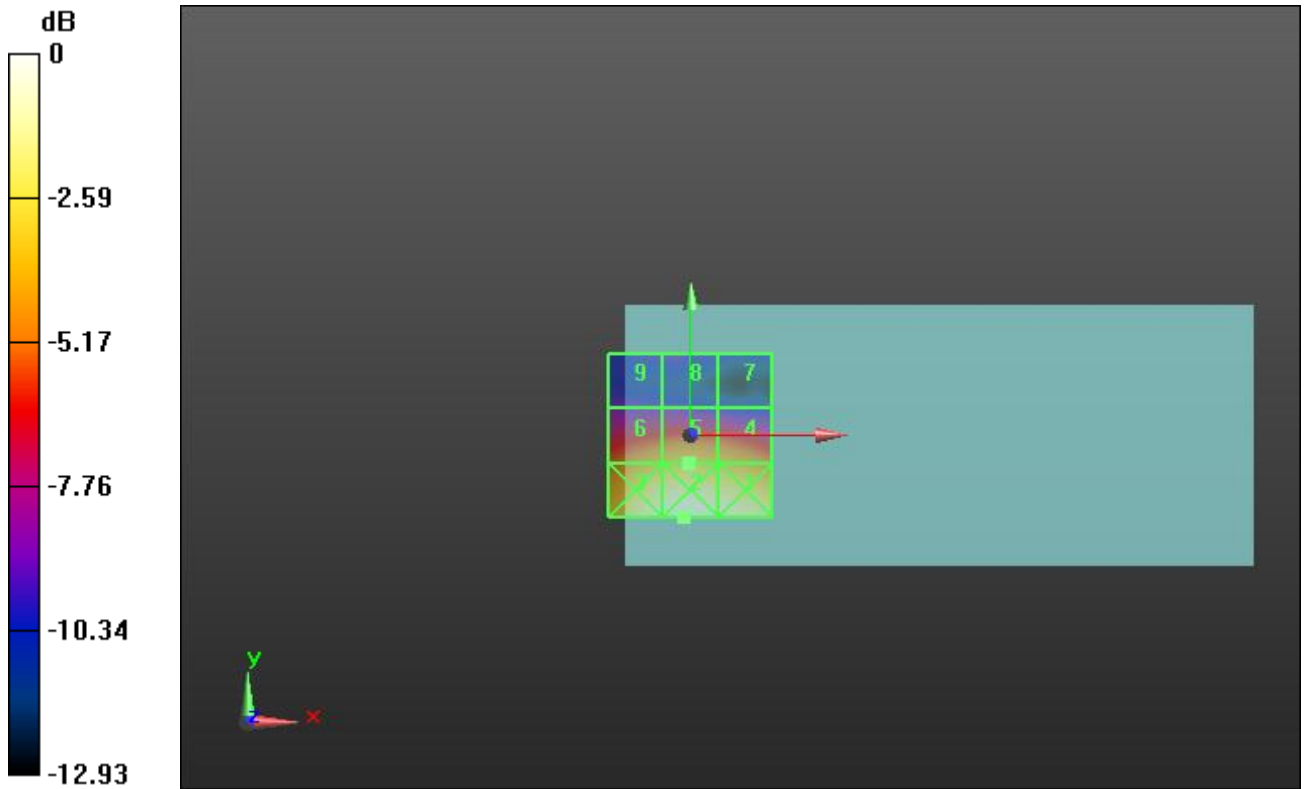
Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz
M1	0	631 - 1122
	-5	473.2 - 841.4
M2	0	354.8 - 631
	-5	266.1 - 473.2
M3	0	199.5 - 354.8
	-5	149.6 - 266.1
M4	0	<199.5
	-5	<149.6

**Cursor:**

Total = 40.01 V/m

E Category: M4

Location: -2, -25, 8.7 mm



0 dB = 40.01 V/m = 32.04 dBV/m

Scan W4

Date/Time: 12/11/2014 1:49:58 PM

Test Laboratory: SGS North America

**11Dec2014 WCDMA V W4**

**DUT: Intermec CN70e; Type: Handheld PC; Serial: NA**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Communication System Band: Band 5, UTRA/FDD (824.0 - 849.0 MHz); Frequency: 826.4 MHz; Communication System PAR: 2.91 dB; PMF: 1.00231

Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>

Phantom section: RF Section

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

DASY Configuration:

- Probe: ER3DV6 - SN2308; ConvF(1, 1, 1); Calibrated: 1/17/2014;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: NA
- DASYS 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Device E-Field measurement (E-field scan for ANSI C63.19-2011 compliance)/E Scan - ER3D: 15 mm from Probe Center to the Device/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 = 34.77 V/m; Power Drift = -0.18 dB

PMR calibrated. Calibrated PMF = 1.002 is applied.

E-field emissions = 48.06 V/m

**Near-field category: M4 (AWF 0 dB)**

PMF scaled E-field

Grid 1 <b>M4</b> <b>41.27 V/m</b>	Grid 2 <b>M4</b> <b>41.23 V/m</b>	Grid 3 <b>M4</b> <b>36.94 V/m</b>
Grid 4 <b>M4</b> <b>47.89 V/m</b>	Grid 5 <b>M4</b> <b>48.06 V/m</b>	Grid 6 <b>M4</b> <b>44.71 V/m</b>
Grid 7 <b>M4</b> <b>52.53 V/m</b>	Grid 8 <b>M4</b> <b>53.03 V/m</b>	Grid 9 <b>M4</b> <b>48.42 V/m</b>



Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz
M1	0	199.5 - 354.8
	-5	149.6 - 266.1
M2	0	112.2 - 199.5
	-5	84.1 - 149.6
M3	0	63.1 - 112.2
	-5	47.3 - 84.1
M4	0	<63.1
	-5	<47.3

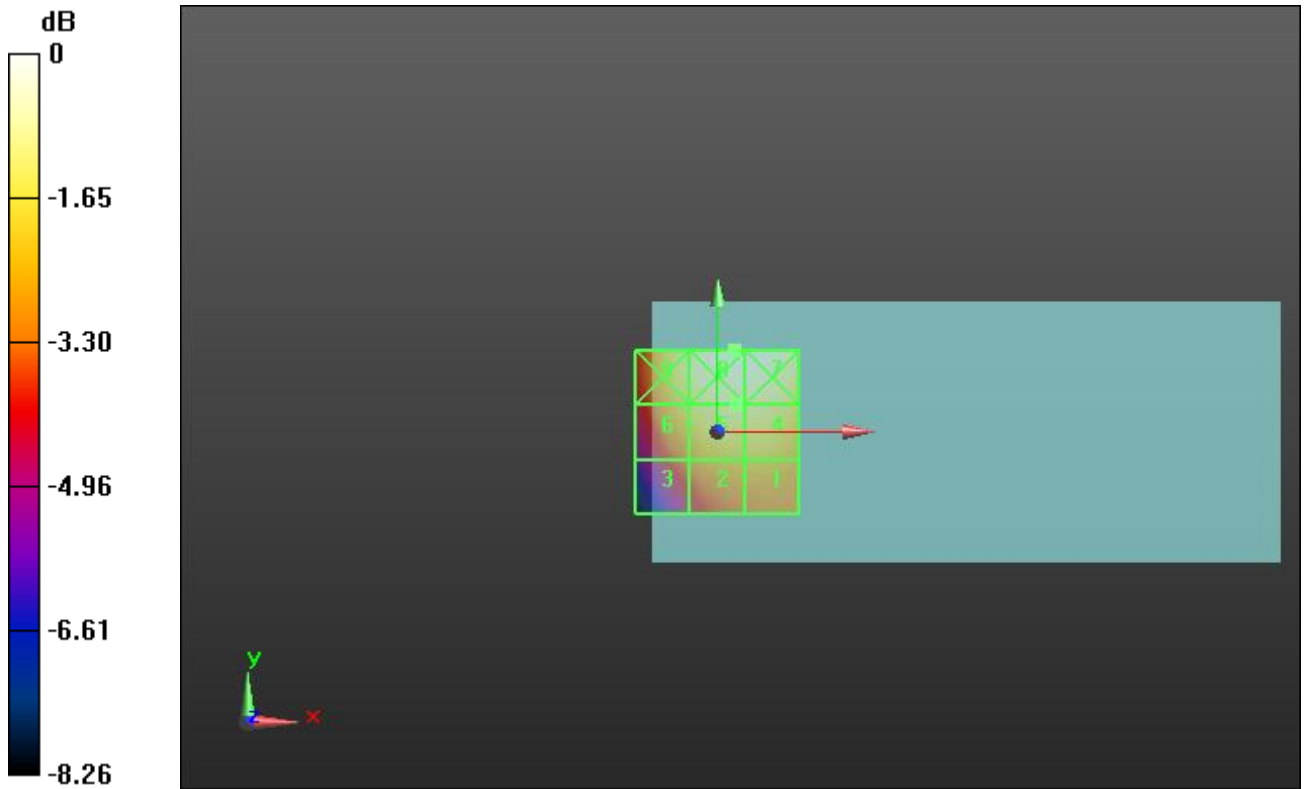
Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz
M1	0	631 - 1122
	-5	473.2 - 841.4
M2	0	354.8 - 631
	-5	266.1 - 473.2
M3	0	199.5 - 354.8
	-5	149.6 - 266.1
M4	0	<199.5
	-5	<149.6

**Cursor:**

Total = 53.03 V/m

E Category: M4

Location: 5, 25, 8.7 mm



0 dB = 53.03 V/m = 34.49 dBV/m

Scan W5

Date/Time: 12/11/2014 1:57:30 PM

Test Laboratory: SGS North America

**11Dec2014 WCDMA V W5**

**DUT: Intermec CN70e; Type: Handheld PC; Serial: NA**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Communication System Band: Band 5, UTRA/FDD (824.0 - 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 2.91 dB; PMF: 1.00231

Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>

Phantom section: RF Section

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

DASY Configuration:

- Probe: ER3DV6 - SN2308; ConvF(1, 1, 1); Calibrated: 1/17/2014;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: NA
- DASYS 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Device E-Field measurement (E-field scan for ANSI C63.19-2011 compliance)/E Scan - ER3D: 15 mm from Probe Center to the Device/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 = 51.98 V/m; Power Drift = 0.08 dB

PMR calibrated. Calibrated PMF = 1.002 is applied.

E-field emissions = 47.36 V/m

**Near-field category: M4 (AWF 0 dB)**

PMF scaled E-field

Grid 1 <b>M4</b> <b>40.04 V/m</b>	Grid 2 <b>M4</b> <b>40.40 V/m</b>	Grid 3 <b>M4</b> <b>37.36 V/m</b>
Grid 4 <b>M4</b> <b>46.56 V/m</b>	Grid 5 <b>M4</b> <b>47.36 V/m</b>	Grid 6 <b>M4</b> <b>44.46 V/m</b>
Grid 7 <b>M4</b> <b>51.31 V/m</b>	Grid 8 <b>M4</b> <b>51.85 V/m</b>	Grid 9 <b>M4</b> <b>47.67 V/m</b>

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz
M1	0	199.5 - 354.8
	-5	149.6 - 266.1
M2	0	112.2 - 199.5
	-5	84.1 - 149.6
M3	0	63.1 - 112.2
	-5	47.3 - 84.1
M4	0	<63.1
	-5	<47.3

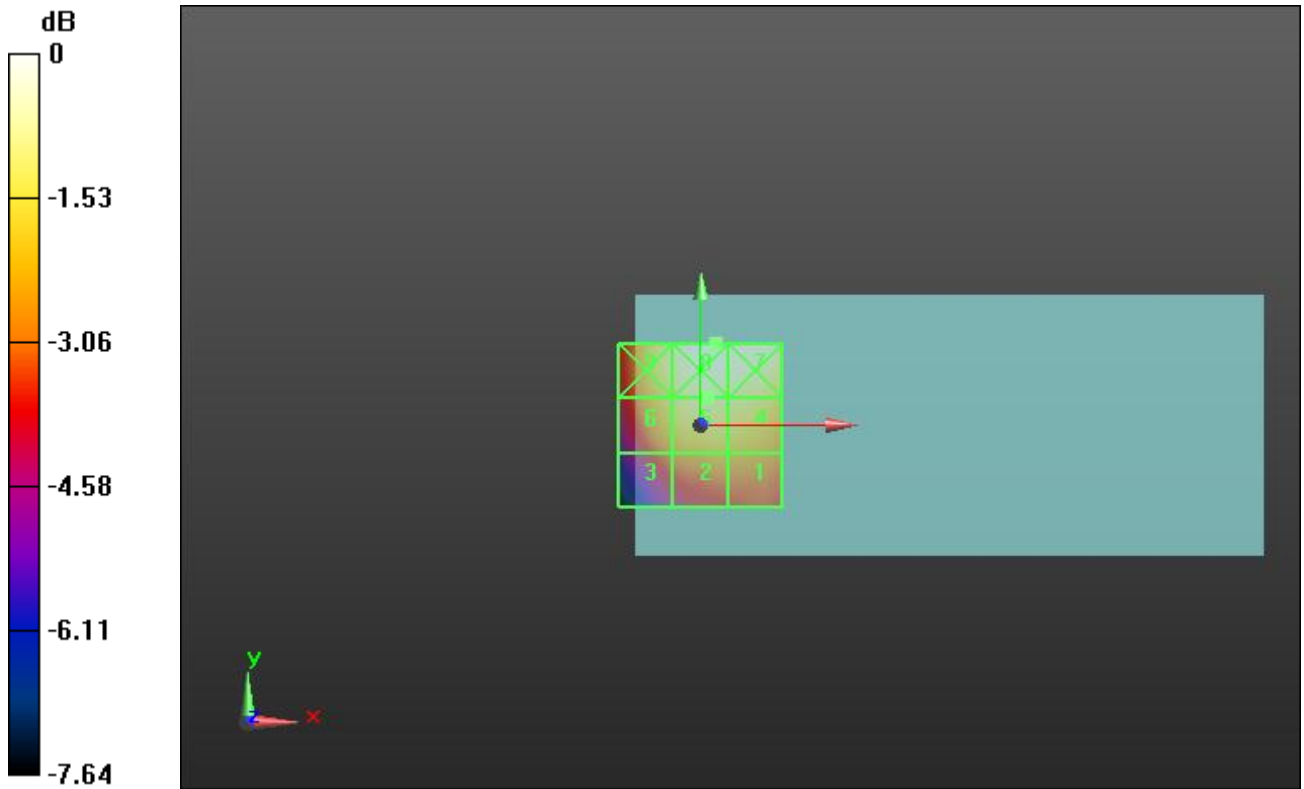
Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz
M1	0	631 - 1122
	-5	473.2 - 841.4
M2	0	354.8 - 631
	-5	266.1 - 473.2
M3	0	199.5 - 354.8
	-5	149.6 - 266.1
M4	0	<199.5
	-5	<149.6

**Cursor:**

Total = 51.85 V/m

E Category: M4

Location: 4.5, 25, 8.7 mm



0 dB = 51.85 V/m = 34.29 dBV/m

Scan W6

Date/Time: 12/11/2014 2:04:22 PM

Test Laboratory: SGS North America

**11Dec2014 WCDMA V W6**

**DUT: Intermec CN70e; Type: Handheld PC; Serial: NA**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Communication System Band: Band 5, UTRA/FDD (824.0 - 849.0 MHz); Frequency: 846.6 MHz; Communication System PAR: 2.91 dB; PMF: 1.00231

Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>

Phantom section: RF Section

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

DASY Configuration:

- Probe: ER3DV6 - SN2308; ConvF(1, 1, 1); Calibrated: 1/17/2014;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: NA
- DASYS 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Device E-Field measurement (E-field scan for ANSI C63.19-2011 compliance)/E Scan - ER3D: 15 mm from Probe Center to the Device/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 = 49.81 V/m; Power Drift = -0.07 dB

PMR calibrated. Calibrated PMF = 1.002 is applied.

E-field emissions = 44.35 V/m

**Near-field category: M4 (AWF 0 dB)**

PMF scaled E-field

Grid 1 <b>M4</b> <b>35.63 V/m</b>	Grid 2 <b>M4</b> <b>36.24 V/m</b>	Grid 3 <b>M4</b> <b>33.75 V/m</b>
Grid 4 <b>M4</b> <b>43.28 V/m</b>	Grid 5 <b>M4</b> <b>44.35 V/m</b>	Grid 6 <b>M4</b> <b>42.17 V/m</b>
Grid 7 <b>M4</b> <b>48.72 V/m</b>	Grid 8 <b>M4</b> <b>48.77 V/m</b>	Grid 9 <b>M4</b> <b>45.57 V/m</b>

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz
M1	0	199.5 - 354.8
	-5	149.6 - 266.1
M2	0	112.2 - 199.5
	-5	84.1 - 149.6
M3	0	63.1 - 112.2
	-5	47.3 - 84.1
M4	0	<63.1
	-5	<47.3

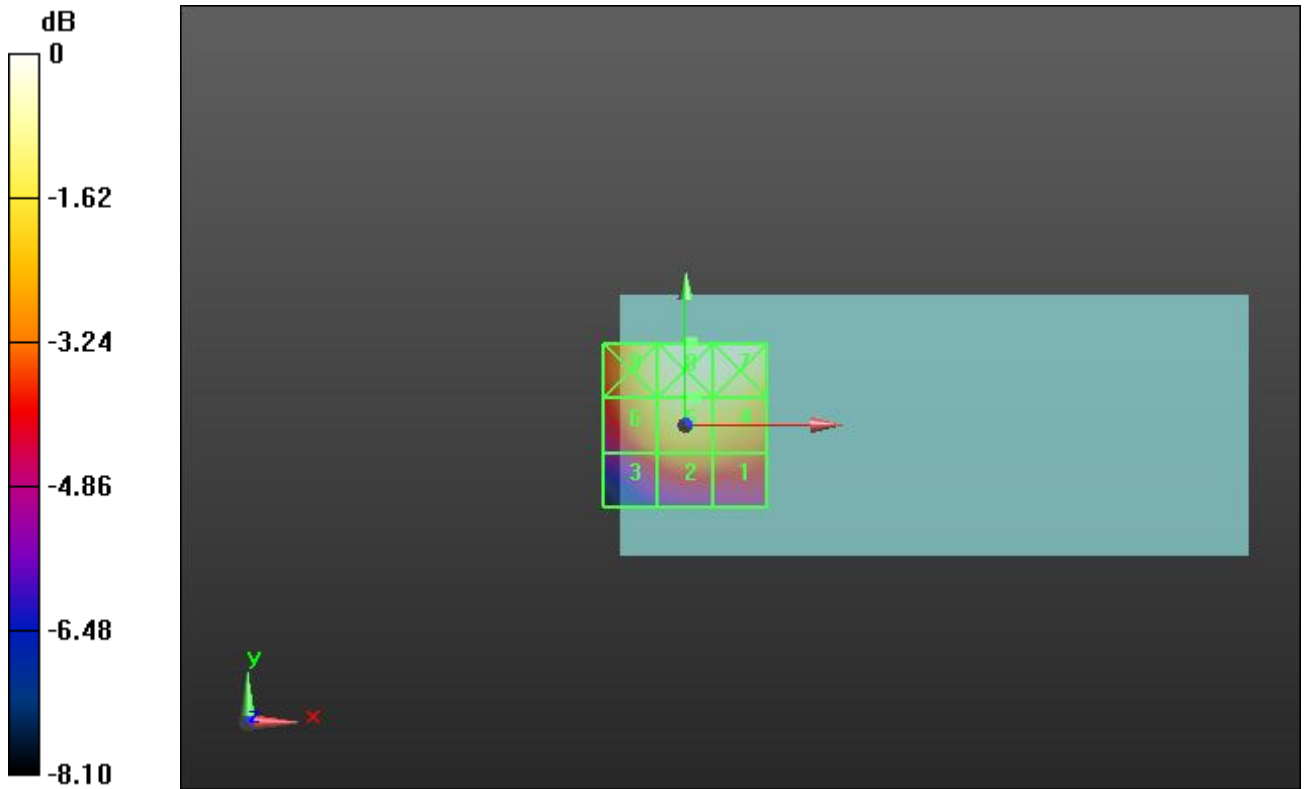
Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz
M1	0	631 - 1122
	-5	473.2 - 841.4
M2	0	354.8 - 631
	-5	266.1 - 473.2
M3	0	199.5 - 354.8
	-5	149.6 - 266.1
M4	0	<199.5
	-5	<149.6

**Cursor:**

Total = 48.77 V/m

E Category: M4

Location: 1.5, 25, 8.7 mm



0 dB = 48.77 V/m = 33.76 dBV/m



G1

Date/Time: 12/11/2014 11:11:18 AM

Test Laboratory: SGS North America

**11Dec2014 GSM G1**

**DUT: Intermec CN70e; Type: Handheld PC; Serial: NA**

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Communication System Band: GSM 850 (824.0 - 849.0 MHz); Frequency: 824.2 MHz; Communication System PAR: 9.39 dB; PMF: 2.94781

Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>

Phantom section: RF Section

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

**DASY Configuration:**

- Probe: ER3DV6 - SN2308; ConvF(1, 1, 1); Calibrated: 1/17/2014;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: NA
- DASYS 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Device E-Field measurement (E-field scan for ANSI C63.19-2007 & -2011 compliance)/E Scan - ER3D: 15 mm from Probe Center to the Device/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 = 44.72 V/m; Power Drift = -0.01 dB

PMR calibrated. Calibrated PMF = 2.948 is applied.

E-field emissions = 119.3 V/m

**Near-field category: M4 (AWF 0 dB)**

PMF scaled E-field

Grid 1 <b>M4</b> <b>99.43 V/m</b>	Grid 2 <b>M4</b> <b>99.40 V/m</b>	Grid 3 <b>M4</b> <b>90.48 V/m</b>
Grid 4 <b>M4</b> <b>118.9 V/m</b>	Grid 5 <b>M4</b> <b>119.3 V/m</b>	Grid 6 <b>M4</b> <b>111.3 V/m</b>
Grid 7 <b>M4</b> <b>132.5 V/m</b>	Grid 8 <b>M4</b> <b>134.1 V/m</b>	Grid 9 <b>M4</b> <b>124.9 V/m</b>

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
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	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

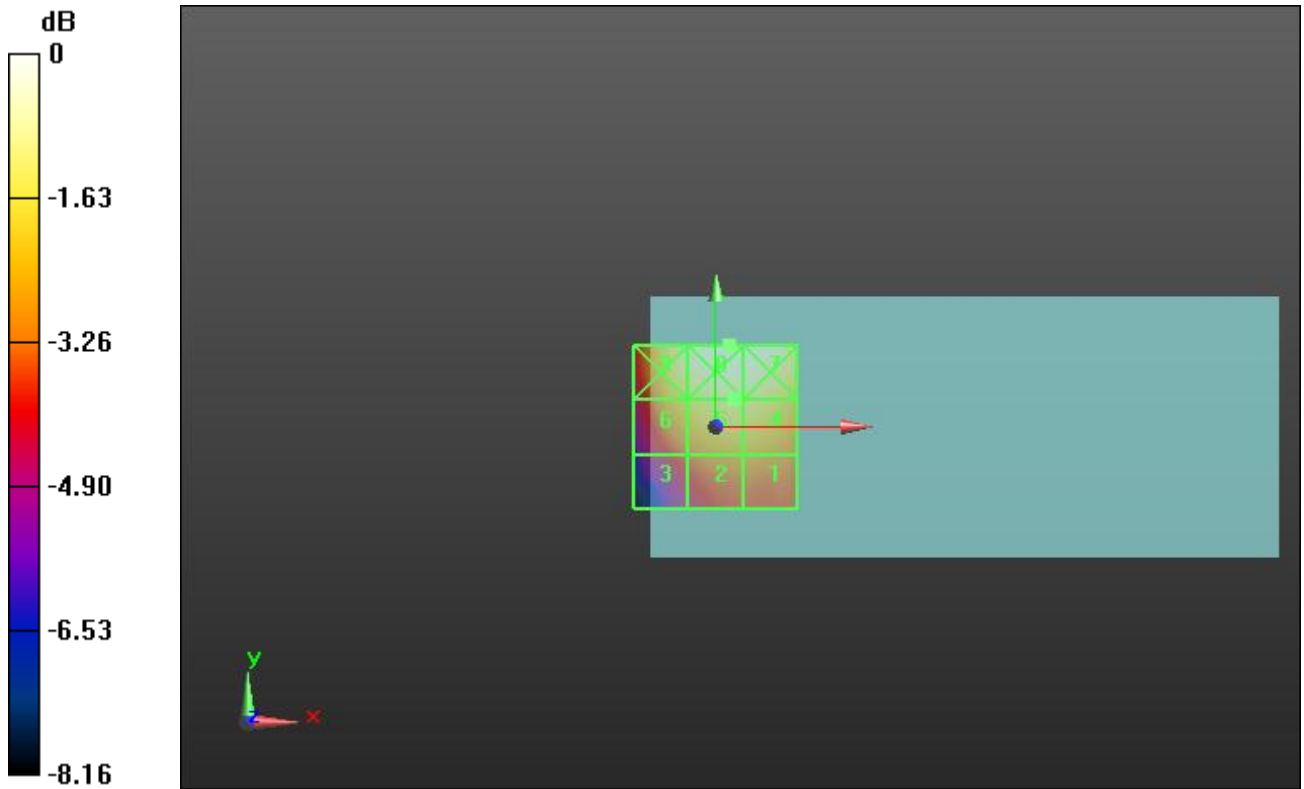
Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M4	0	<199.5	<0.6
	-5	<149.6	<0.45

**Cursor:**

Total = 134.1 V/m

E Category: M4

Location: 4, 25, 8.7 mm



0 dB = 134.1 V/m = 42.55 dBV/m

G2

Date/Time: 12/11/2014 11:21:31 AM

Test Laboratory: SGS North America

**11Dec2014 GSM G2**

**DUT: Intermec CN70e; Type: Handheld PC; Serial: NA**

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Communication System Band: GSM 850 (824.0 - 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 9.39 dB; PMF: 2.94781

Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>

Phantom section: RF Section

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

DASY Configuration:

- Probe: ER3DV6 - SN2308; ConvF(1, 1, 1); Calibrated: 1/17/2014;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: NA
- DASYS 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Device E-Field measurement (E-field scan for ANSI C63.19-2007 & -2011 compliance)/E Scan - ER3D: 15 mm from Probe Center to the Device/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 = 49.19 V/m; Power Drift = -0.02 dB

PMR calibrated. Calibrated PMF = 2.948 is applied.

E-field emissions = 132.3 V/m

**Near-field category: M4 (AWF 0 dB)**

PMF scaled E-field

Grid 1 <b>M4</b> <b>112.9 V/m</b>	Grid 2 <b>M4</b> <b>113.1 V/m</b>	Grid 3 <b>M4</b> <b>104.2 V/m</b>
Grid 4 <b>M4</b> <b>130.3 V/m</b>	Grid 5 <b>M4</b> <b>132.3 V/m</b>	Grid 6 <b>M4</b> <b>123.2 V/m</b>
Grid 7 <b>M4</b> <b>143.4 V/m</b>	Grid 8 <b>M4</b> <b>143.9 V/m</b>	Grid 9 <b>M4</b> <b>133.0 V/m</b>

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
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	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

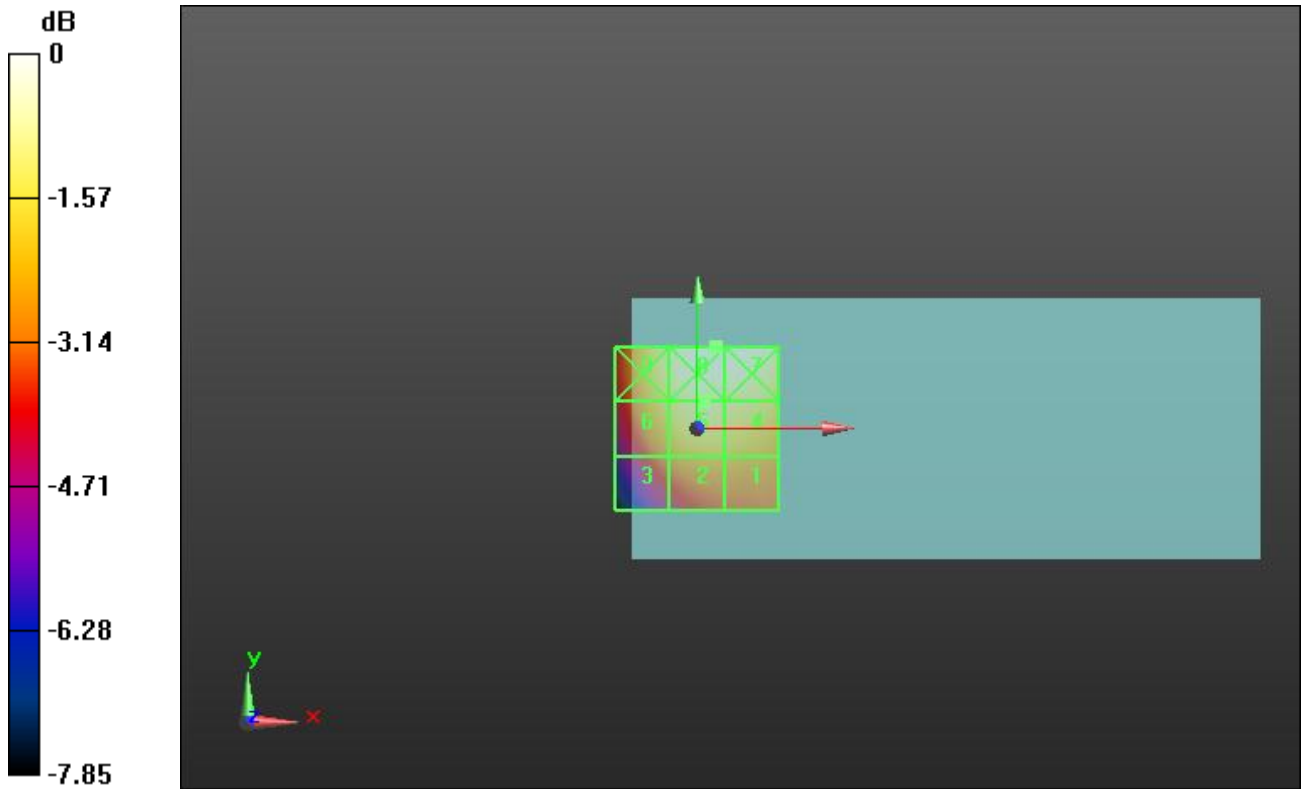
Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M4	0	<199.5	<0.6
	-5	<149.6	<0.45

**Cursor:**

Total = 143.9 V/m

E Category: M4

Location: 5.5, 25, 8.7 mm



0 dB = 143.9 V/m = 43.16 dBV/m

G3

Date/Time: 12/11/2014 11:29:14 AM

Test Laboratory: SGS North America

**11Dec2014 GSM G3**

**DUT: Intermec CN70e; Type: Handheld PC; Serial: NA**

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Communication System Band: GSM 850 (824.0 - 849.0 MHz); Frequency: 848.8 MHz; Communication System PAR: 9.39 dB; PMF: 2.94781

Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>

Phantom section: RF Section

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

DASY Configuration:

- Probe: ER3DV6 - SN2308; ConvF(1, 1, 1); Calibrated: 1/17/2014;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: NA
- DASYS 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Device E-Field measurement (E-field scan for ANSI C63.19-2007 & -2011 compliance)/E Scan - ER3D: 15 mm from Probe Center to the Device/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 = 51.73 V/m; Power Drift = 0.03 dB

PMR calibrated. Calibrated PMF = 2.948 is applied.

E-field emissions = 132.6 V/m

**Near-field category: M4 (AWF 0 dB)**

PMF scaled E-field

Grid 1 <b>M4</b> <b>102.2 V/m</b>	Grid 2 <b>M4</b> <b>104.7 V/m</b>	Grid 3 <b>M4</b> <b>97.32 V/m</b>
Grid 4 <b>M4</b> <b>131.5 V/m</b>	Grid 5 <b>M4</b> <b>132.6 V/m</b>	Grid 6 <b>M4</b> <b>124.4 V/m</b>
Grid 7 <b>M4</b> <b>151.4 V/m</b>	Grid 8 <b>M4</b> <b>151.0 V/m</b>	Grid 9 <b>M4</b> <b>137.1 V/m</b>

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
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	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M4	0	<199.5	<0.6
	-5	<149.6	<0.45

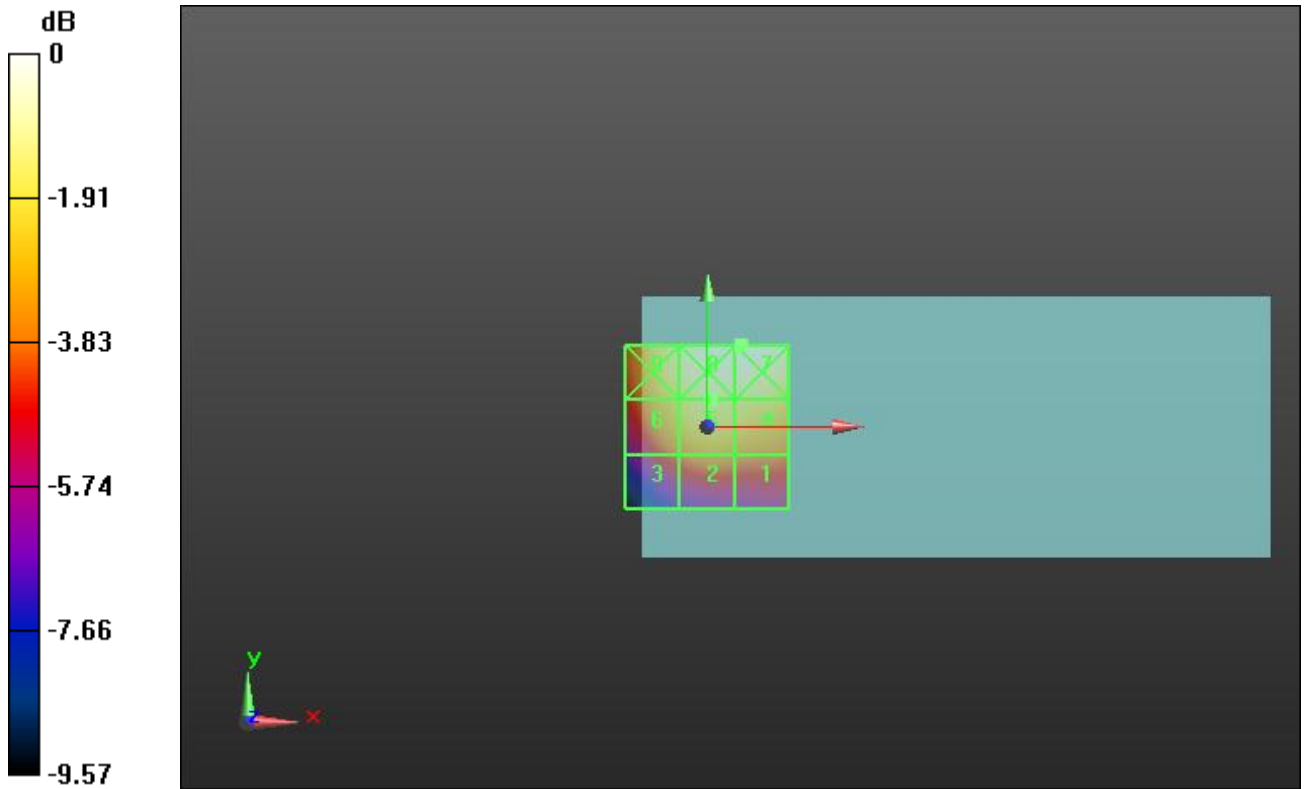
**Cursor:**

Total = 151.4 V/m

E Category: M4

Location: 10.5, 25, 8.7 mm





0 dB = 151.4 V/m = 43.60 dBV/m

G4

Date/Time: 12/11/2014 11:47:33 AM

Test Laboratory: SGS North America

**11Dec2014 GSM G4**

**DUT: Intermec CN70e; Type: Handheld PC; Serial: NA**

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1850.2 MHz; Communication System PAR: 9.39 dB; PMF: 2.94781

Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>

Phantom section: RF Section

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

DASY Configuration:

- Probe: ER3DV6 - SN2308; ConvF(1, 1, 1); Calibrated: 1/17/2014;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: NA
- DASYS 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Device E-Field measurement (E-field scan for ANSI C63.19-2007 & -2011 compliance)/E Scan - ER3D: 15 mm from Probe Center to the Device/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 = 10.75 V/m; Power Drift = -0.28 dB

PMR calibrated. Calibrated PMF = 2.948 is applied.

E-field emissions = 59.09 V/m

**Near-field category: M4 (AWF 0 dB)**

PMF scaled E-field

<b>Grid 1 M3</b>	<b>Grid 2 M3</b>	<b>Grid 3 M3</b>
<b>91.32 V/m</b>	<b>94.09 V/m</b>	<b>87.28 V/m</b>
<b>Grid 4 M4</b>	<b>Grid 5 M4</b>	<b>Grid 6 M4</b>
<b>56.91 V/m</b>	<b>59.09 V/m</b>	<b>57.00 V/m</b>
<b>Grid 7 M4</b>	<b>Grid 8 M4</b>	<b>Grid 9 M4</b>
<b>30.37 V/m</b>	<b>33.10 V/m</b>	<b>32.68 V/m</b>

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
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	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

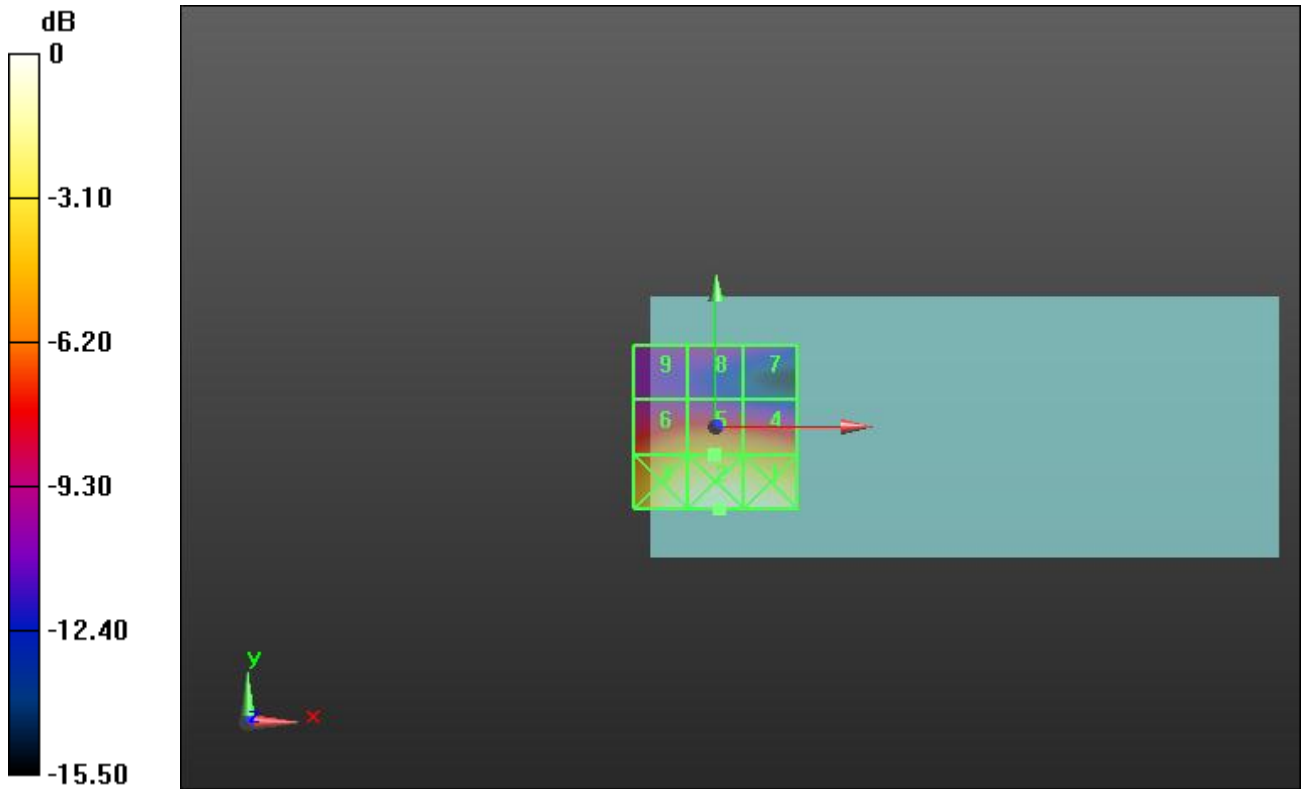
Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M4	0	<199.5	<0.6
	-5	<149.6	<0.45

**Cursor:**

Total = 94.09 V/m

E Category: M3

Location: 1, -25, 8.7 mm



0 dB = 94.09 V/m = 39.47 dBV/m

G5

Date/Time: 12/11/2014 1:02:53 PM

Test Laboratory: SGS North America

**11Dec2014 GSM G5**

**DUT: Intermec CN70e; Type: Handheld PC; Serial: NA**

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Communication System PAR: 9.39 dB; PMF: 2.94781

Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>

Phantom section: RF Section

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

DASY Configuration:

- Probe: ER3DV6 - SN2308; ConvF(1, 1, 1); Calibrated: 1/17/2014;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: NA
- DASYS 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Device E-Field measurement (E-field scan for ANSI C63.19-2007 & -2011 compliance)/E Scan - ER3D: 15 mm from Probe Center to the Device/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 = 27.04 V/m; Power Drift = 0.01 dB

PMR calibrated. Calibrated PMF = 2.948 is applied.

E-field emissions = 53.63 V/m

**Near-field category: M4 (AWF 0 dB)**

PMF scaled E-field

<b>Grid 1 M3</b>	<b>Grid 2 M3</b>	<b>Grid 3 M3</b>
<b>79.06 V/m</b>	<b>80.88 V/m</b>	<b>74.87 V/m</b>
<b>Grid 4 M4</b>	<b>Grid 5 M4</b>	<b>Grid 6 M4</b>
<b>52.83 V/m</b>	<b>53.63 V/m</b>	<b>51.64 V/m</b>
<b>Grid 7 M4</b>	<b>Grid 8 M4</b>	<b>Grid 9 M4</b>
<b>26.36 V/m</b>	<b>30.15 V/m</b>	<b>31.99 V/m</b>

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
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	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

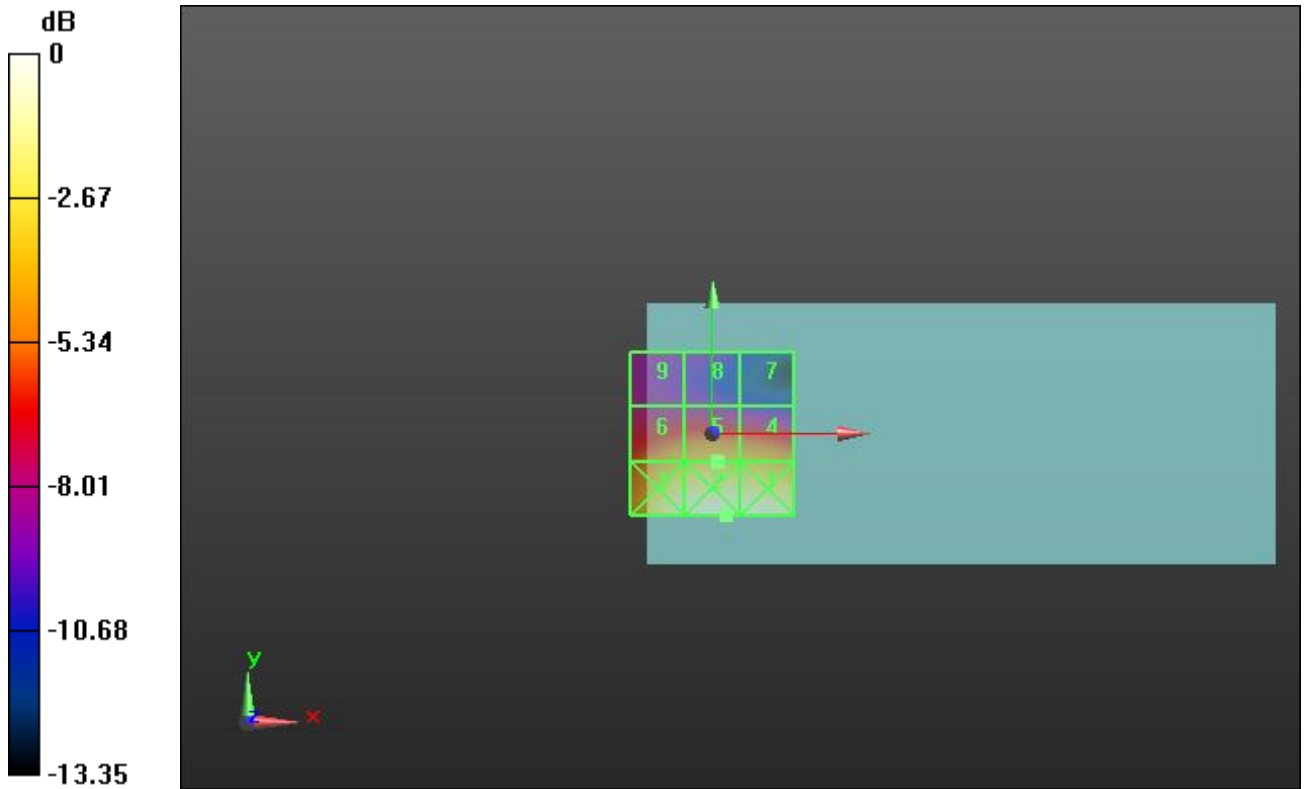
Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M4	0	<199.5	<0.6
	-5	<149.6	<0.45

**Cursor:**

Total = 80.88 V/m

E Category: M3

Location: 4, -25, 8.7 mm



0 dB = 80.88 V/m = 38.16 dBV/m

G6

Date/Time: 12/11/2014 12:55:48 PM

Test Laboratory: SGS North America

**11Dec2014 GSM G6**

**DUT: Intermec CN70e; Type: Handheld PC; Serial: NA**

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1909.8 MHz; Communication System PAR: 9.39 dB; PMF: 2.94781

Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>

Phantom section: RF Section

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

DASY Configuration:

- Probe: ER3DV6 - SN2308; ConvF(1, 1, 1); Calibrated: 1/17/2014;
- Sensor-Surface: (Fix Surface), z = 8.7
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: NA
- DASYS 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Device E-Field measurement (E-field scan for ANSI C63.19-2007 & -2011 compliance)/E Scan - ER3D: 15 mm from Probe Center to the Device/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 = 22.10 V/m; Power Drift = 0.00 dB

PMR calibrated. Calibrated PMF = 2.948 is applied.

E-field emissions = 45.44 V/m

**Near-field category: M4 (AWF 0 dB)**

PMF scaled E-field

<b>Grid 1 M3</b>	<b>Grid 2 M3</b>	<b>Grid 3 M4</b>
<b>63.75 V/m</b>	<b>64.63 V/m</b>	<b>61.63 V/m</b>
<b>Grid 4 M4</b>	<b>Grid 5 M4</b>	<b>Grid 6 M4</b>
<b>44.40 V/m</b>	<b>45.44 V/m</b>	<b>43.49 V/m</b>
<b>Grid 7 M4</b>	<b>Grid 8 M4</b>	<b>Grid 9 M4</b>
<b>23.84 V/m</b>	<b>25.06 V/m</b>	<b>24.11 V/m</b>



Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
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	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

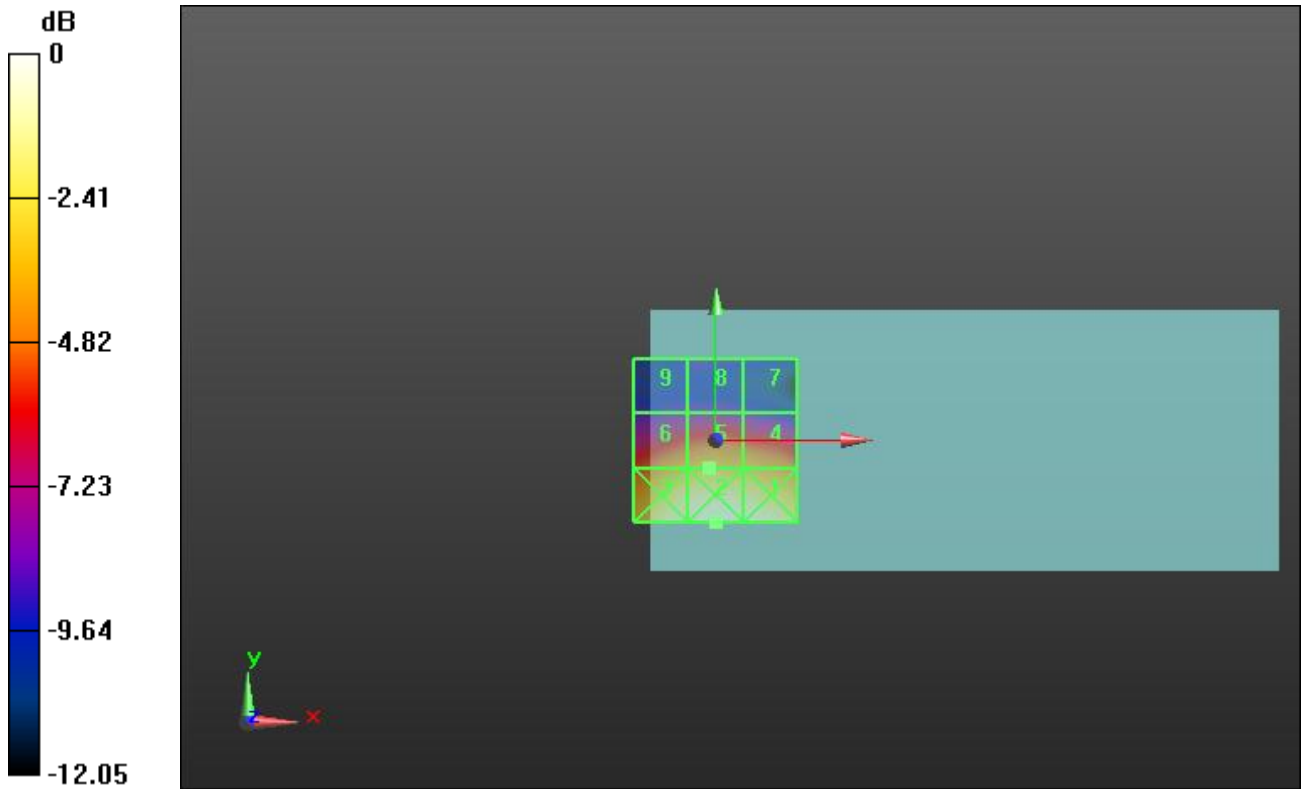
Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M4	0	<199.5	<0.6
	-5	<149.6	<0.45

**Cursor:**

Total = 64.63 V/m

E Category: M3

Location: 0, -25, 8.7 mm



0 dB = 64.63 V/m = 36.21 dBV/m