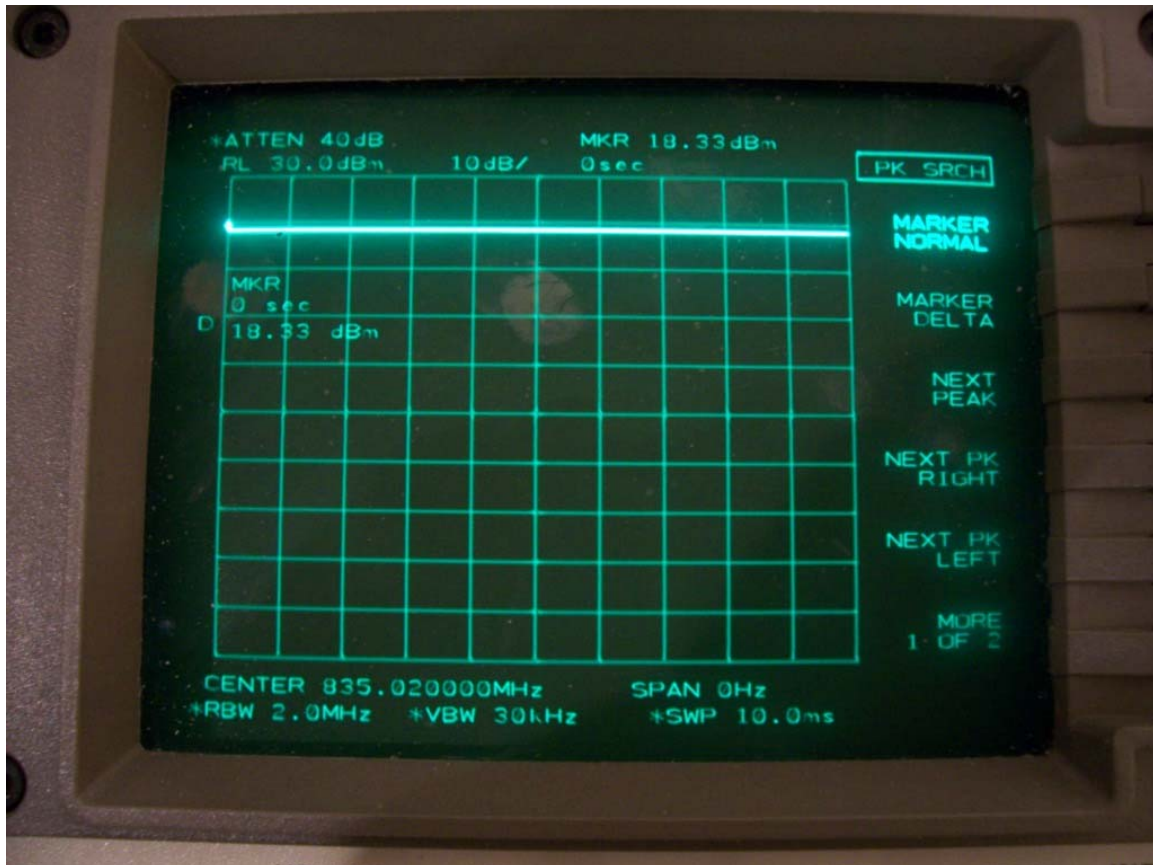


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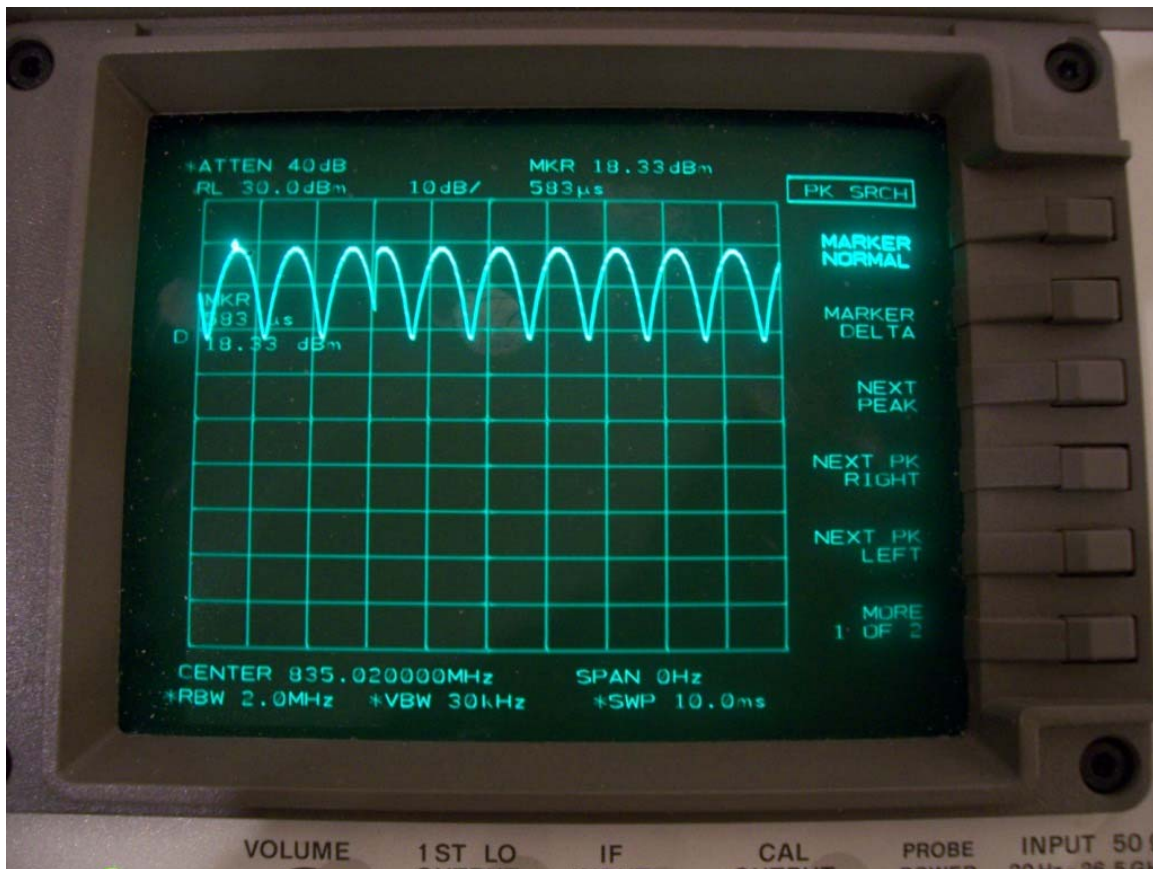
## Annex A: Measurement plots and data

### A.1 Spectrum analyser plots: CW, 80% AM and CDMA signals



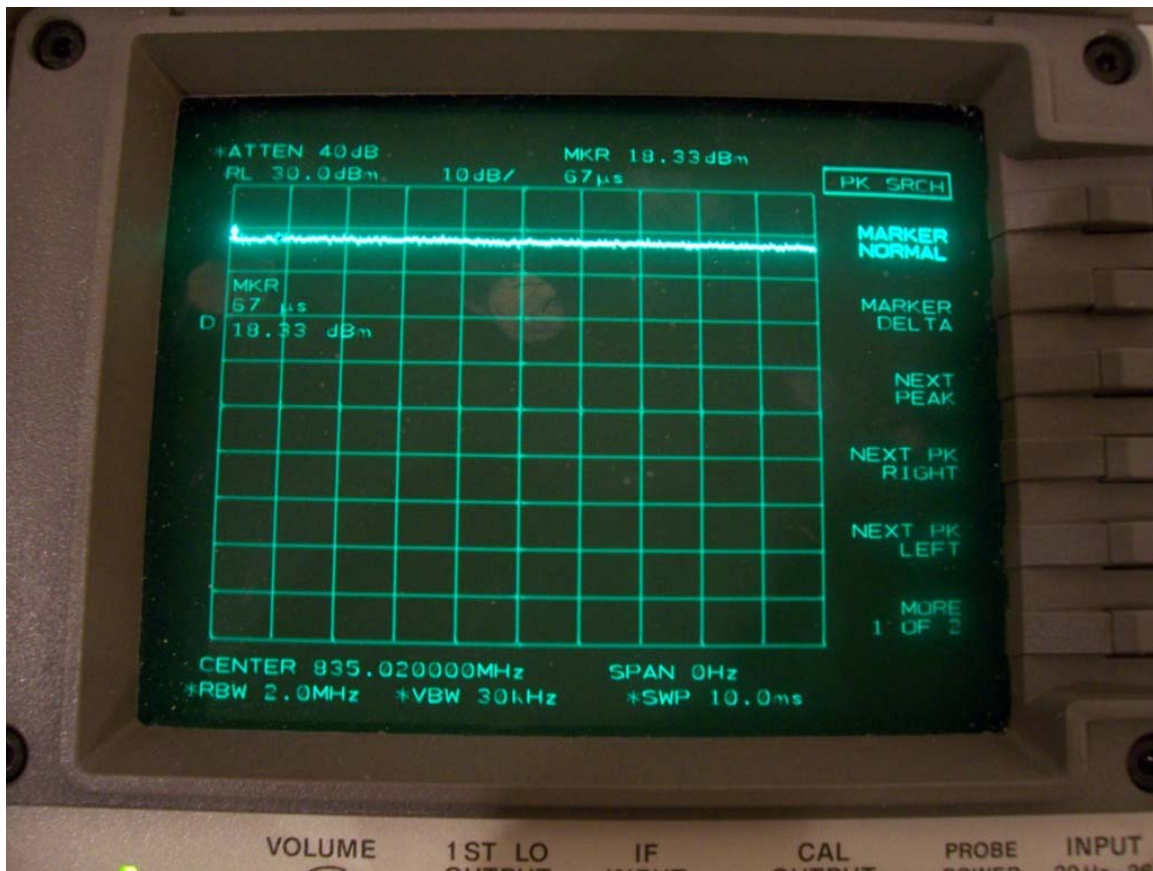
0 Hz Span CW Plot (835MHz)

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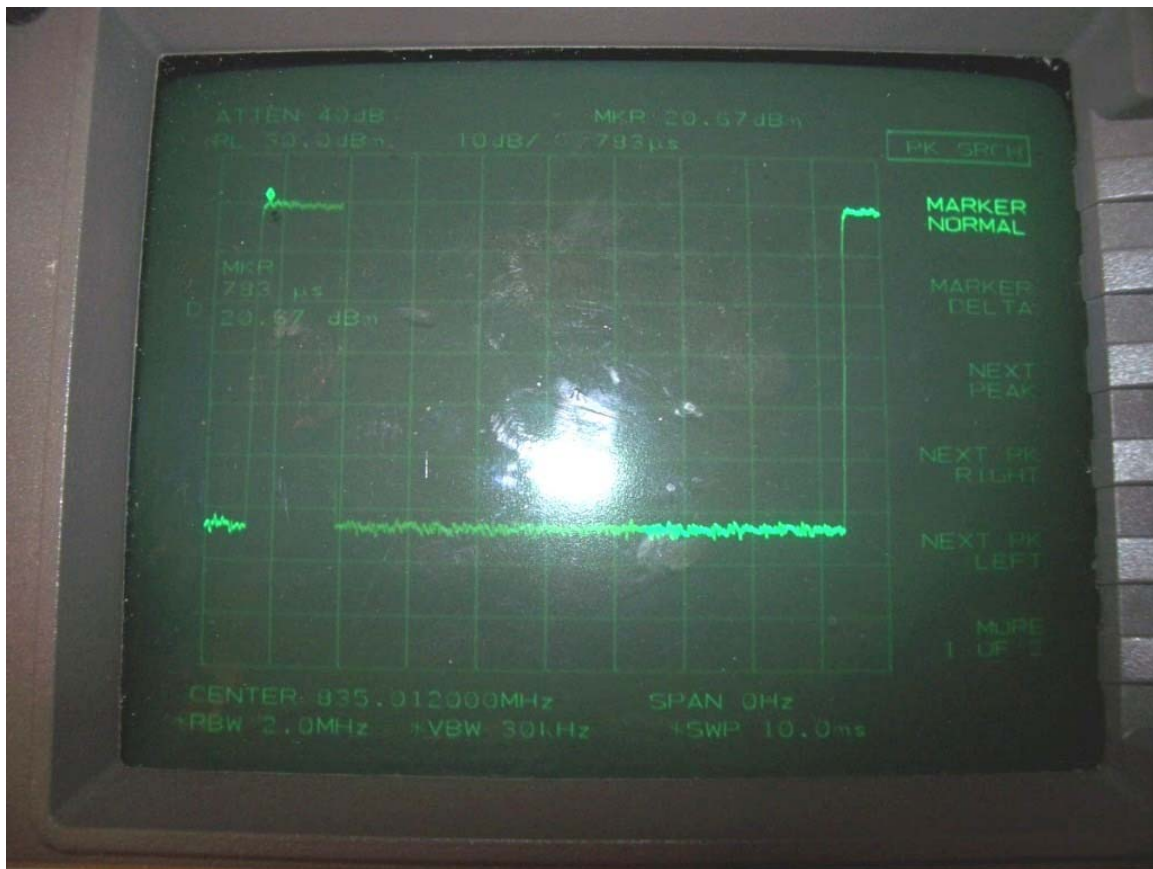
0 Hz Span 80% AM Plot (835MHz)

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**0 Hz Span CDMA Full Rate (835MHz)**

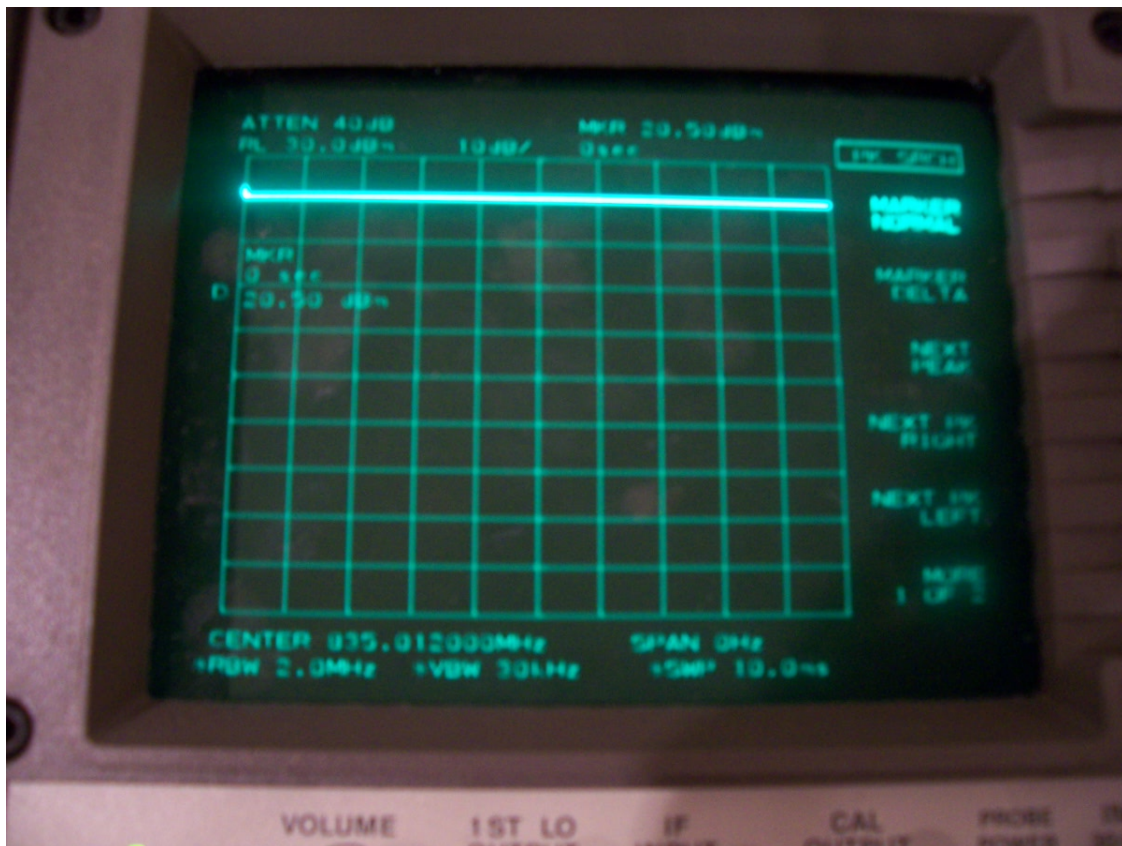
<b>RTS</b> RIM Testing Services	Document <b>Annex A to Hearing Aid Compatibility RF Emissions Test  Report for BlackBerry® Smartphone Model RBS21CW</b>			Page <b>4(69)</b>
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**0 Hz Span CDMA 1/8 Rate (835MHz)**

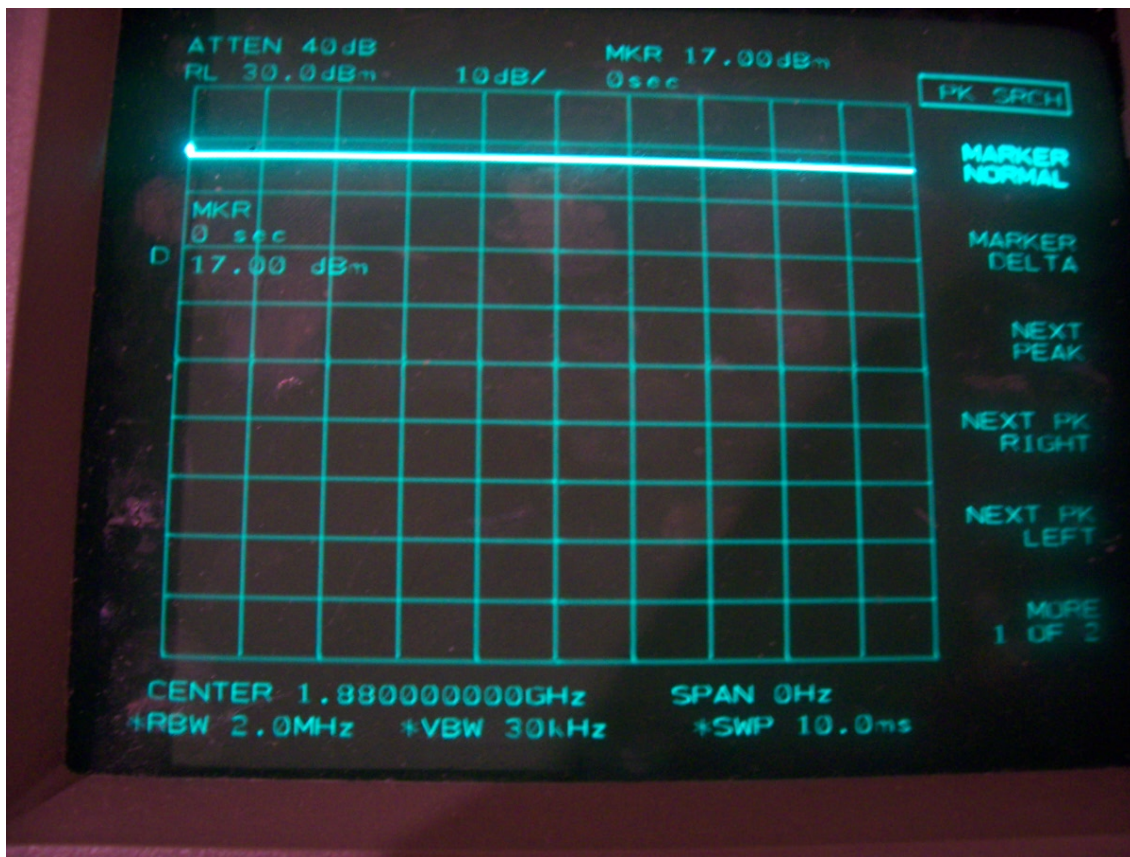


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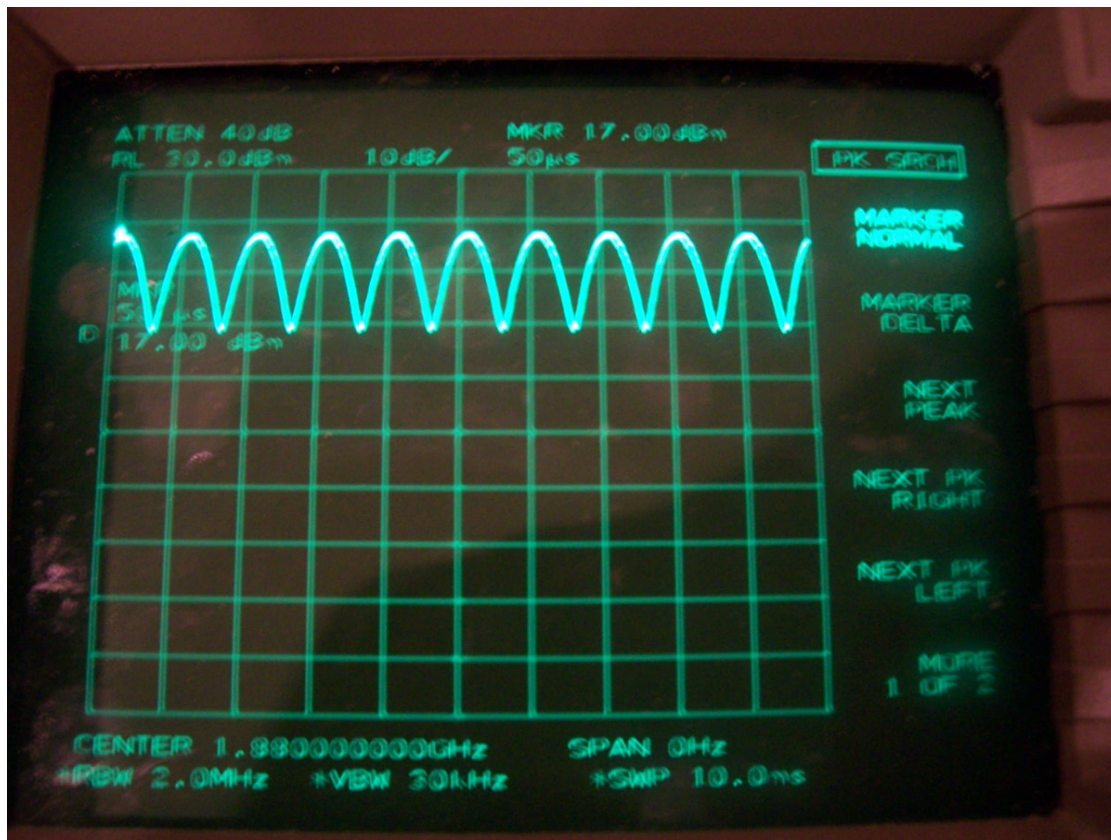
0 Hz Span CW for CDMA 1/8 Rate (835MHz)

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0 Hz Span CW Plot (1880MHz)

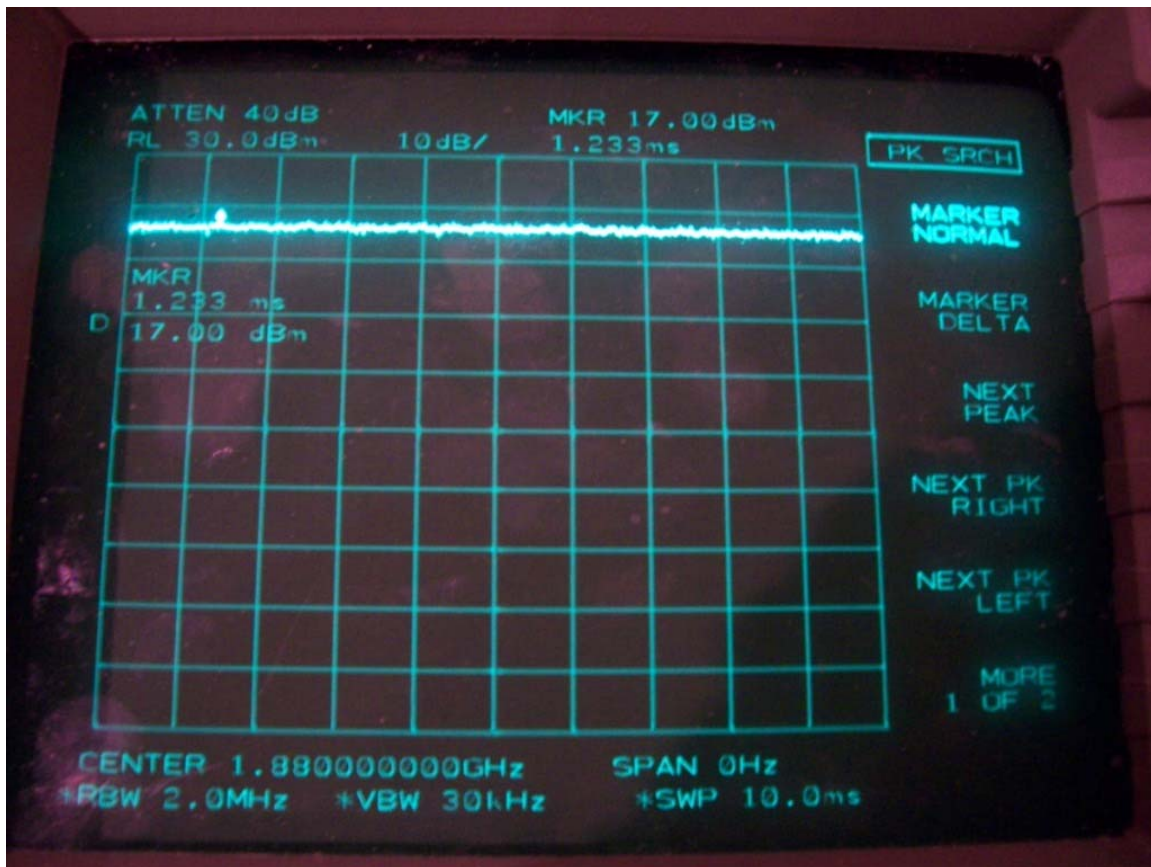
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0 Hz Span 80% AM Plot (1880MHz)



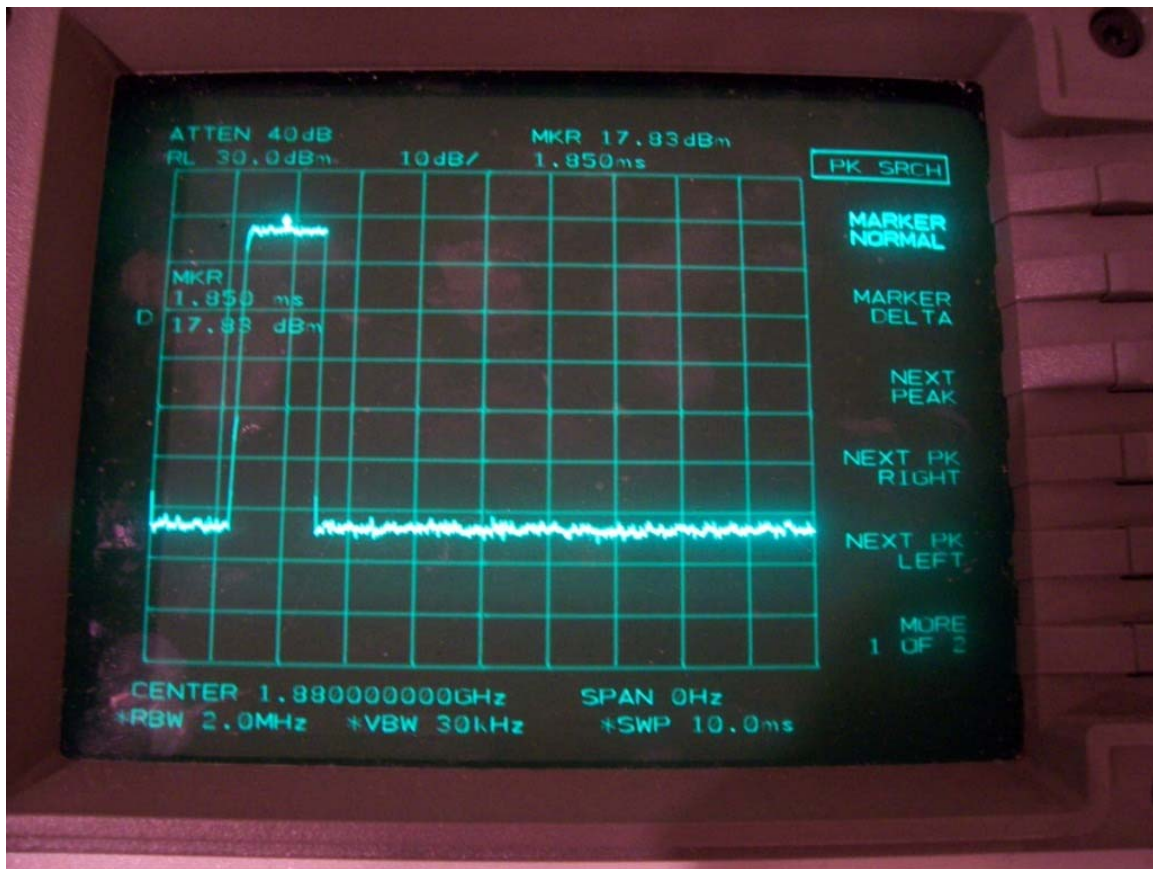
<b>RTS</b> RIM Testing Services	Document <b>Annex A to Hearing Aid Compatibility RF Emissions Test  Report for BlackBerry® Smartphone Model RBS21CW</b>			Page <b>8(69)</b>
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**0 Hz Span CDMA Full Rate (1880MHz)**

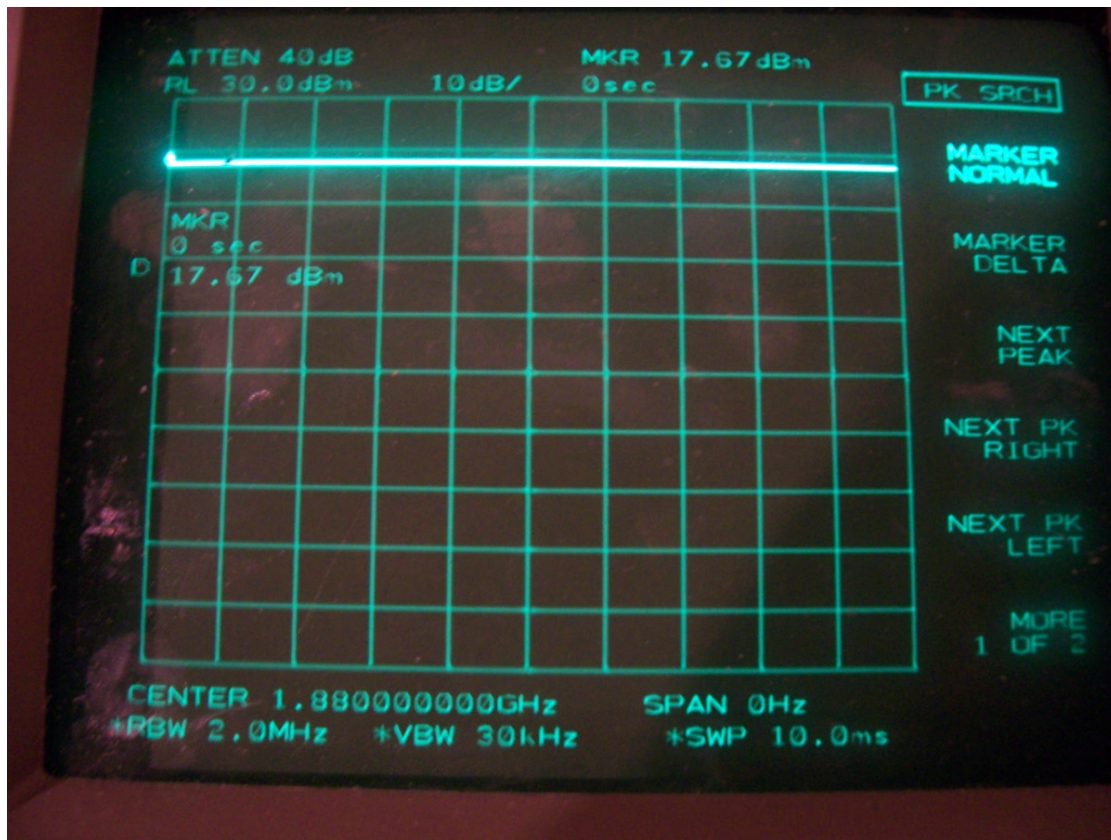


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**0 Hz Span CDMA 1/8 Rate (1880MHz)**

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0 Hz Span CW for CDMA 1/8 Rate (1880MHz)

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## A.2 Dipole validation and probe modulation factor plots



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Date/Time: 21/08/2007 1:25:56 PM

Test Laboratory: RTS

HAC\_E\_835MHz\_CW\_20dBm

**DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: Not Specified**

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 12/03/2007
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**E Scan - ER probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(5x37x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 58.9 V/m; Power Drift = 0.001 dB

Maximum value of Total (measured) = 174.3 V/m

**E Scan - ER probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(41x361x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 177.3 V/m

Probe Modulation Factor = 1.00

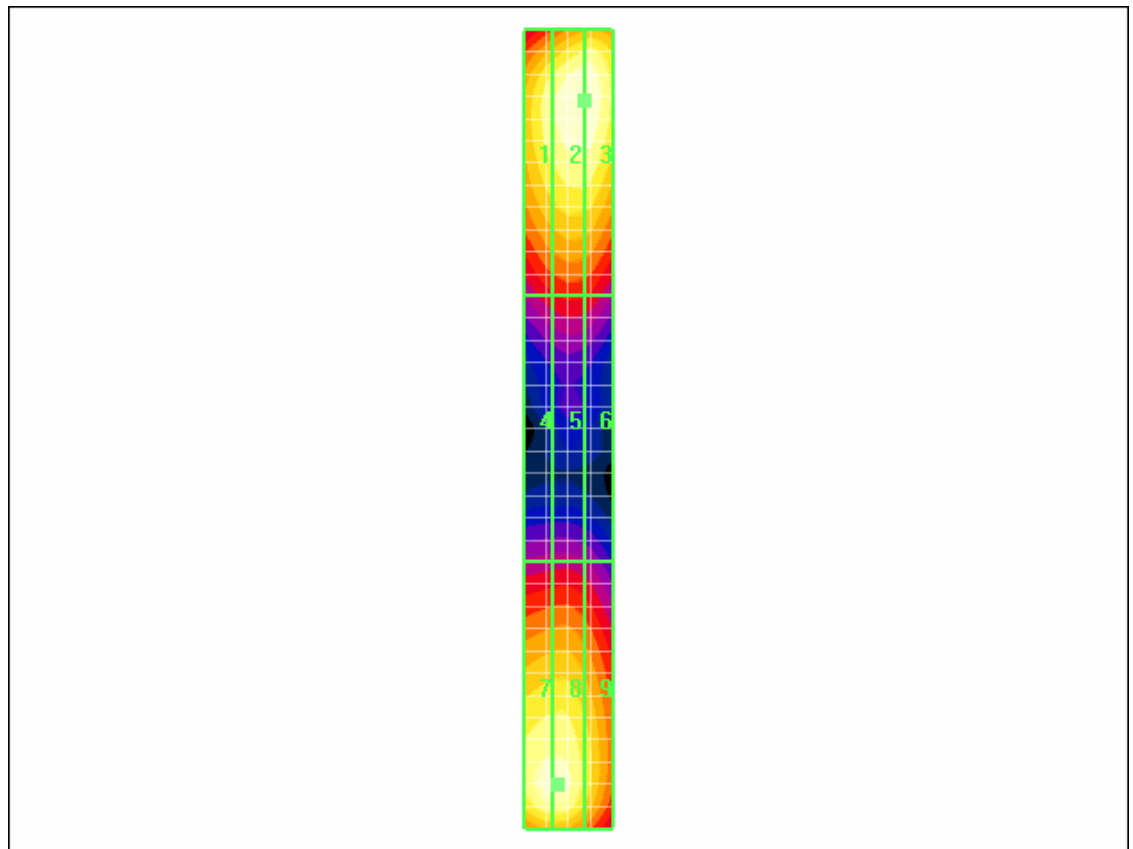
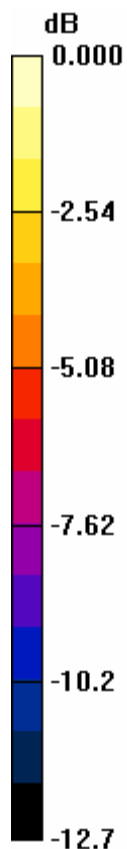
Reference Value = 58.9 V/m; Power Drift = 0.001 dB

**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

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Peak E-field in V/m

Grid	Grid	Grid
<b>160.8</b>	<b>177.3</b>	<b>177.3</b>
Grid	Grid	Grid
<b>88.2</b>	<b>92.4</b>	<b>91.0</b>
Grid	Grid	Grid
<b>169.3</b>	<b>169.6</b>	<b>144.7</b>



0 dB = 177.3V/m

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Date/Time: 21/08/2007 1:33:27 PM

Test Laboratory: RTS

HAC\_E\_835MHz\_CW\_18\_33dBm

**DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: Not Specified**

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 12/03/2007
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**E Scan - ER probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(5x37x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 46.2 V/m; Power Drift = -0.033 dB

Maximum value of Total (measured) = 137.5 V/m

**E Scan - ER probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(41x361x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 139.7 V/m

Probe Modulation Factor = 1.00

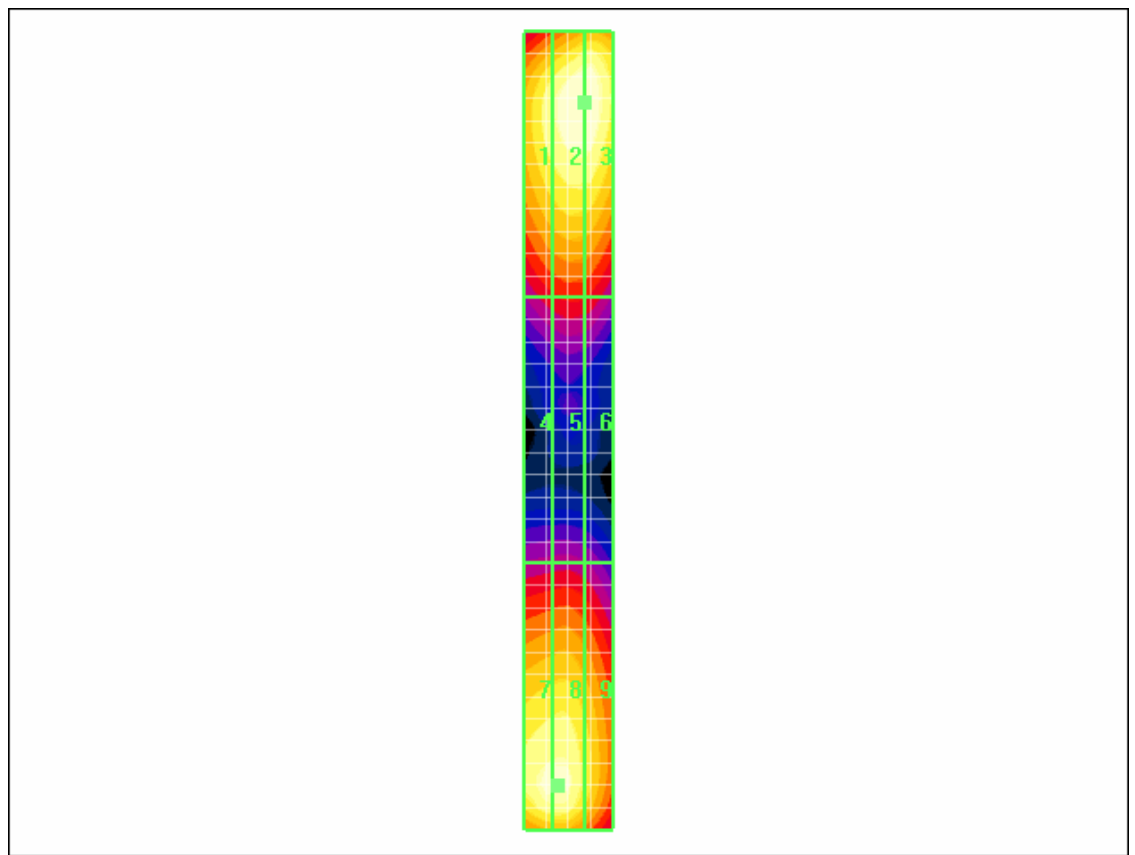
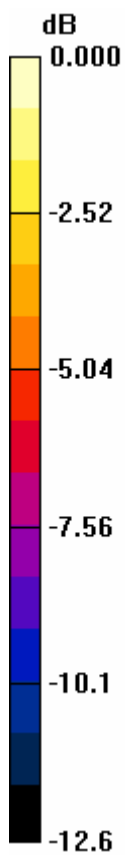
Reference Value = 46.2 V/m; Power Drift = -0.033 dB

**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**



Peak E-field in V/m

Grid	Grid	Grid
126.0	139.7	139.7
Grid	Grid	Grid
69.6	72.7	71.9
Grid	Grid	Grid
132.5	133.0	114.4



0 dB = 139.7V/m

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Date/Time: 21/08/2007 1:51:57 PM

Test Laboratory: RTS

HAC\_E\_CDMA835MHz\_FullRate\_18\_3dBm

**DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 12/03/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**E Scan - ER probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(5x37x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 46.1 V/m; Power Drift = -0.105 dB

Maximum value of Total (measured) = 138.6 V/m

**E Scan - ER probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(41x361x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 141.8 V/m

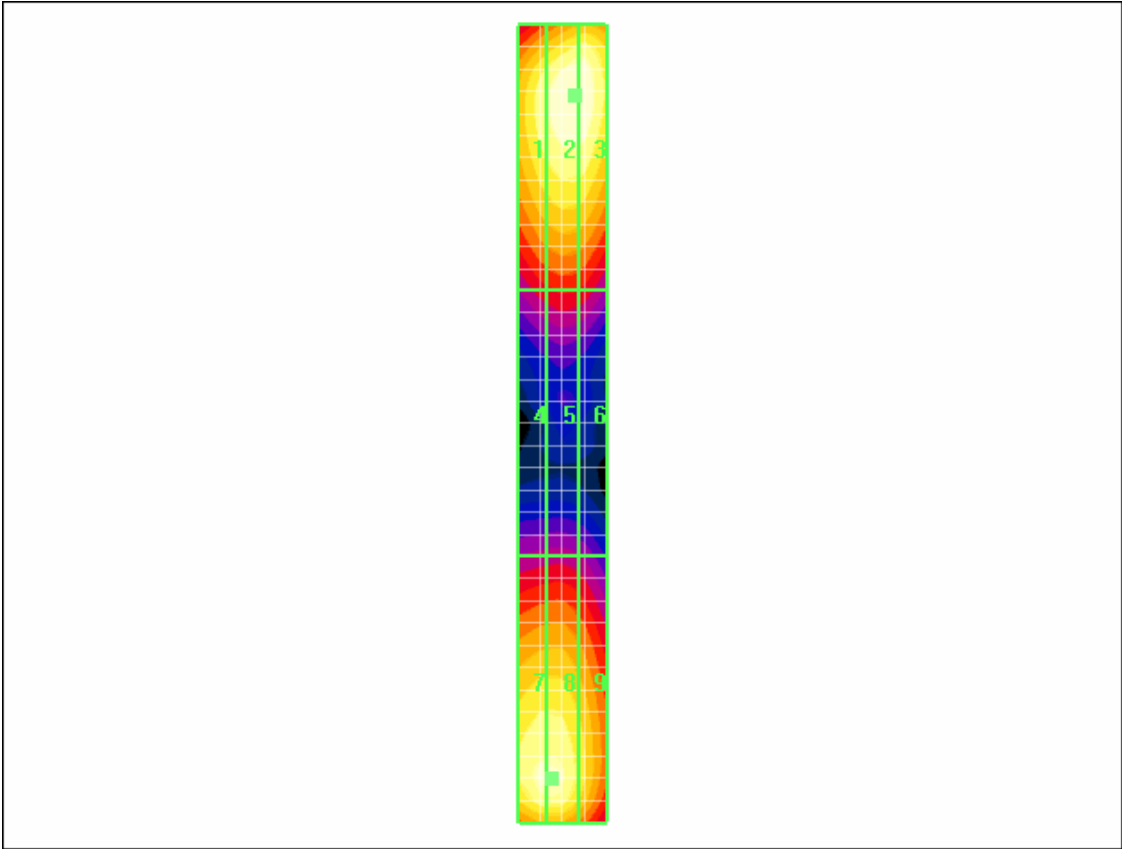
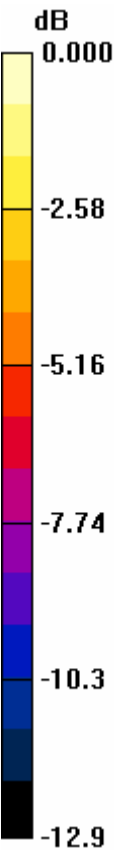
Probe Modulation Factor = 1.00

Reference Value = 46.1 V/m; Power Drift = -0.105 dB

**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
129.0	141.8	141.6
Grid	Grid	Grid
69.6	72.5	71.2
Grid	Grid	Grid
133.3	133.7	115.3



0 dB = 141.8V/m



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Date/Time: 21/08/2007 1:40:48 PM

Test Laboratory: RTS

HAC\_E\_835MHz\_AM80%\_18\_33dBm

**DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: Not Specified**

Communication System: 80 % AM; Frequency: 835 MHz;Duty Cycle: 1:1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 12/03/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**E Scan - ER probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(5x37x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 29.7 V/m; Power Drift = 0.011 dB

Maximum value of Total (measured) = 87.3 V/m

**E Scan - ER probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(41x361x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 88.5 V/m

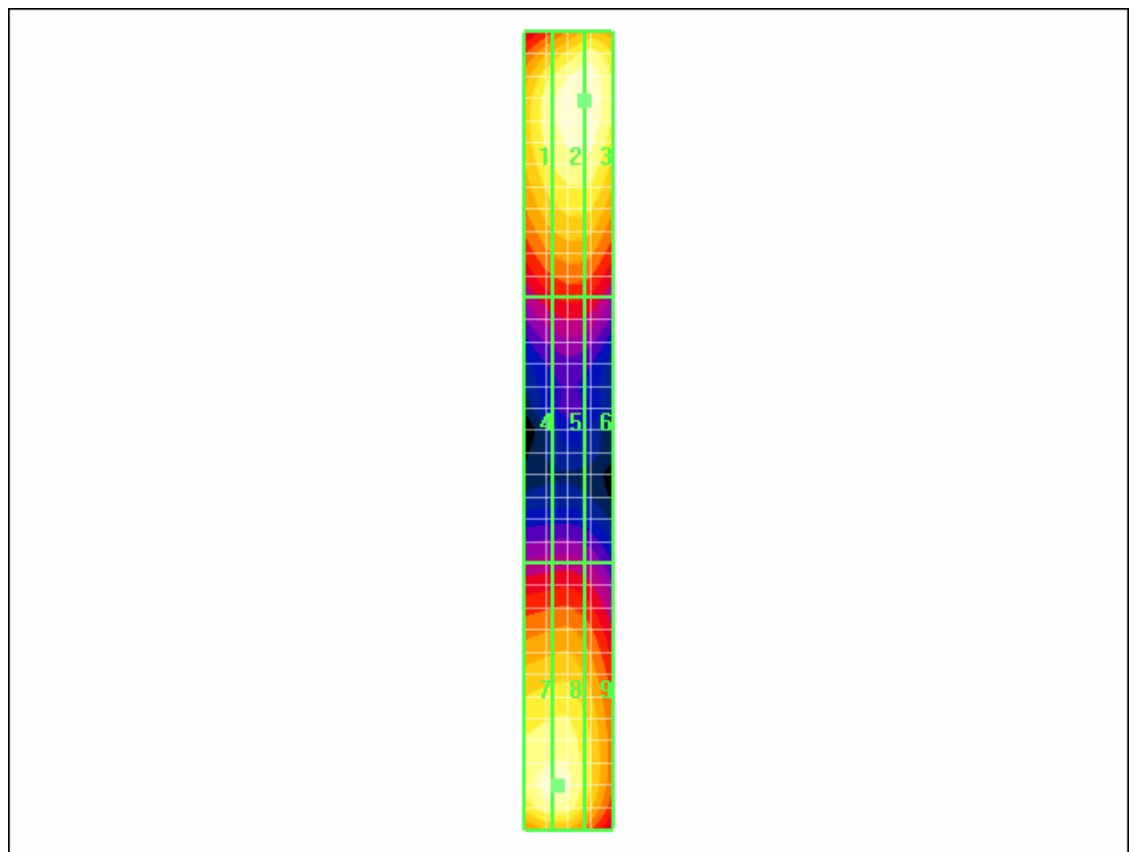
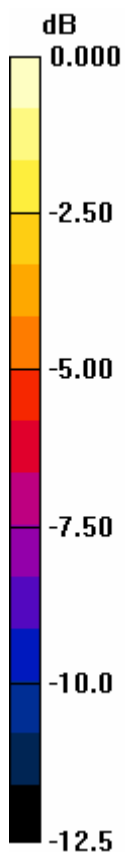
Probe Modulation Factor = 1.00

Reference Value = 29.7 V/m; Power Drift = 0.011 dB

**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
<b>80.3</b>	<b>88.5</b>	<b>88.5</b>
Grid	Grid	Grid
<b>44.8</b>	<b>46.8</b>	<b>46.2</b>
Grid	Grid	Grid
<b>83.8</b>	<b>84.3</b>	<b>72.6</b>



0 dB = 88.5V/m

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Date/Time: 22/08/2007 9:37:47 AM

Test Laboratory: RTS

HAC\_E\_835MHz\_CW\_20\_67dBm

**DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: Not Specified**

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 12/03/2007
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**E Scan - ER probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(5x37x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 62.1 V/m; Power Drift = -0.015 dB

Maximum value of Total (measured) = 186.6 V/m

**E Scan - ER probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(41x361x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 189.9 V/m

Probe Modulation Factor = 1.00

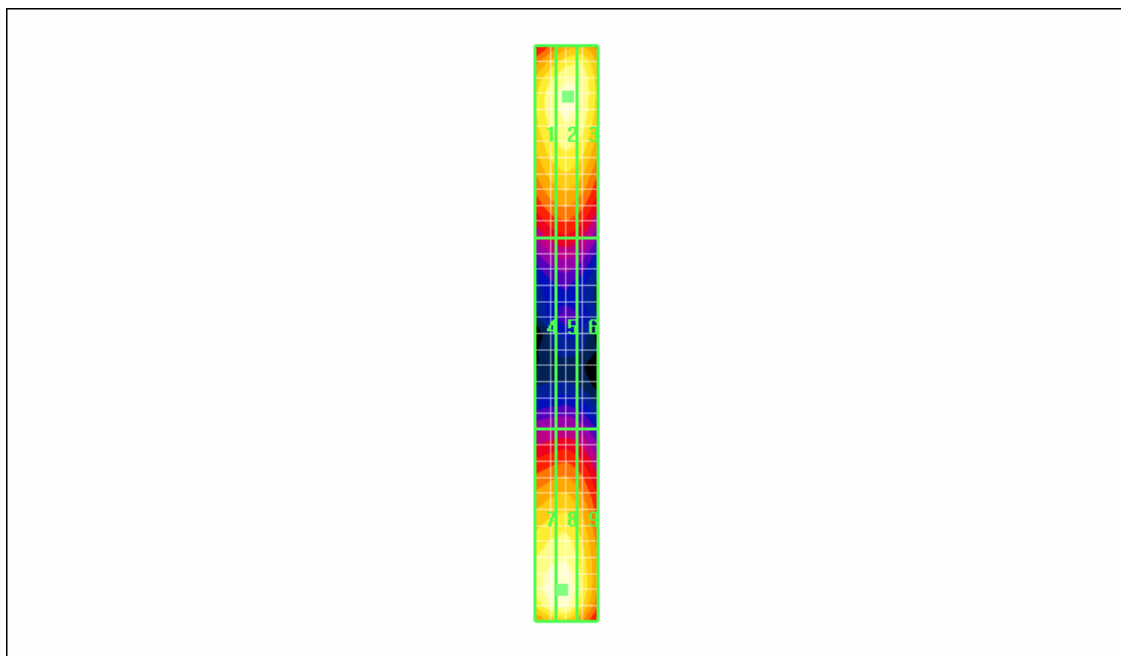
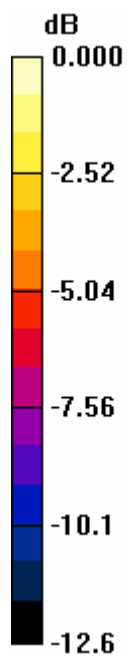
Reference Value = 62.1 V/m; Power Drift = -0.015 dB

**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

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Peak E-field in V/m

Grid	Grid	Grid
<b>172.0</b>	<b>180.1</b>	<b>177.3</b>
Grid	Grid	Grid
<b>92.7</b>	<b>95.1</b>	<b>90.9</b>
Grid	Grid	Grid
<b>186.9</b>	<b>189.9</b>	<b>166.7</b>



0 dB = 189.9V/m

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Date/Time: 21/08/2007 2:13:46 PM

Test Laboratory: RTS

HAC\_E\_CDMA835MHz\_eighth\_20\_67dBm

**DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 835 MHz;Duty Cycle: 1:8

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 12/03/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**E Scan - ER probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(5x37x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 20.5 V/m; Power Drift = 0.131 dB

Maximum value of Total (measured) = 65.4 V/m

**E Scan - ER probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(41x361x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 65.7 V/m

Probe Modulation Factor = 1.00

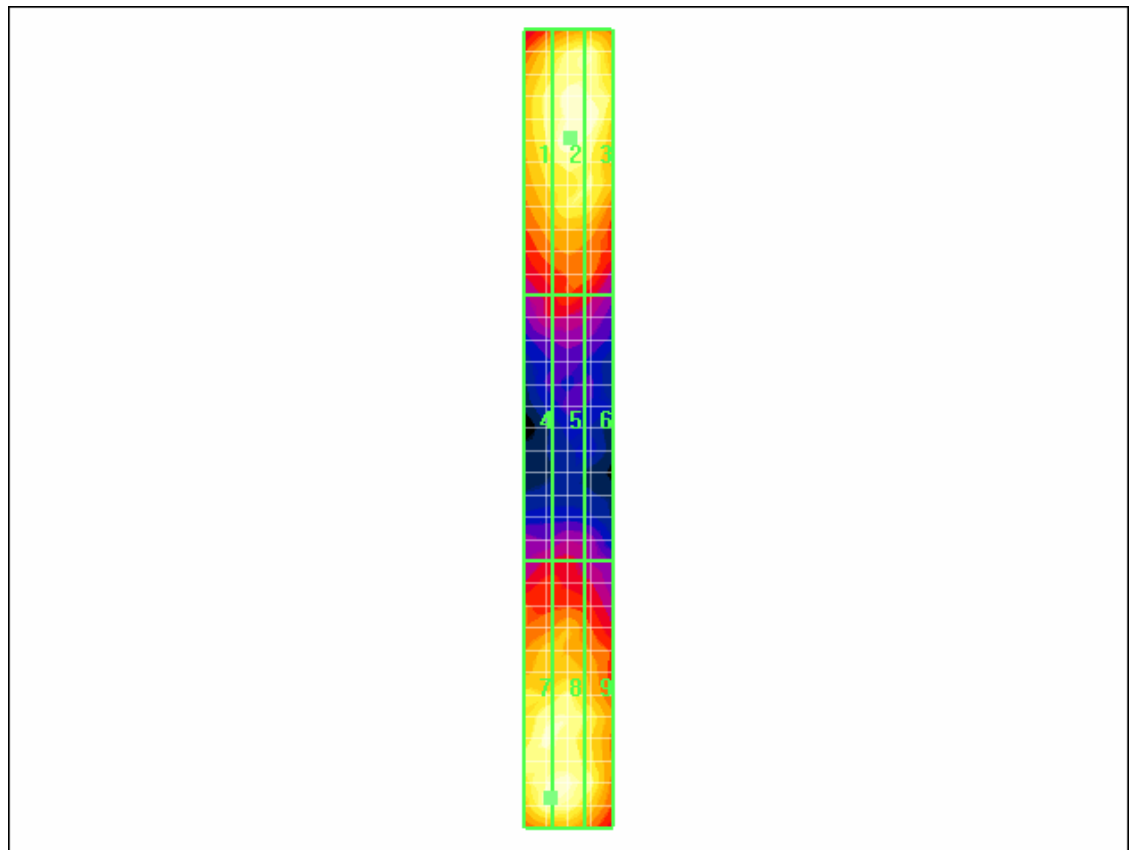
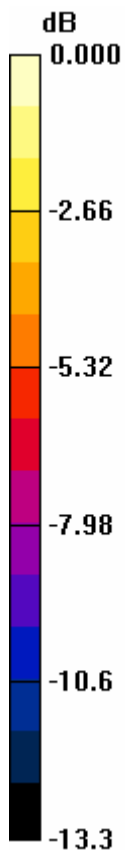
Reference Value = 20.5 V/m; Power Drift = 0.131 dB

**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**



Peak E-field in V/m

Grid	Grid	Grid
<b>57.7</b>	<b>65.7</b>	<b>65.6</b>
Grid	Grid	Grid
<b>31.5</b>	<b>35.2</b>	<b>32.0</b>
Grid	Grid	Grid
<b>63.0</b>	<b>62.9</b>	<b>58.8</b>



0 dB = 65.7V/m

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Date/Time: 21/08/2007 12:18:58 PM

Test Laboratory: RTS

HAC\_E\_1880MHz\_CW\_20dBm

**DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: Not Specified**

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

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 12/03/2007
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**E Scan - ER probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(5x19x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 73.1 V/m; Power Drift = 0.035 dB

Maximum value of Total (measured) = 141.2 V/m

**E Scan - ER probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(41x181x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 144.1 V/m

Probe Modulation Factor = 1.00

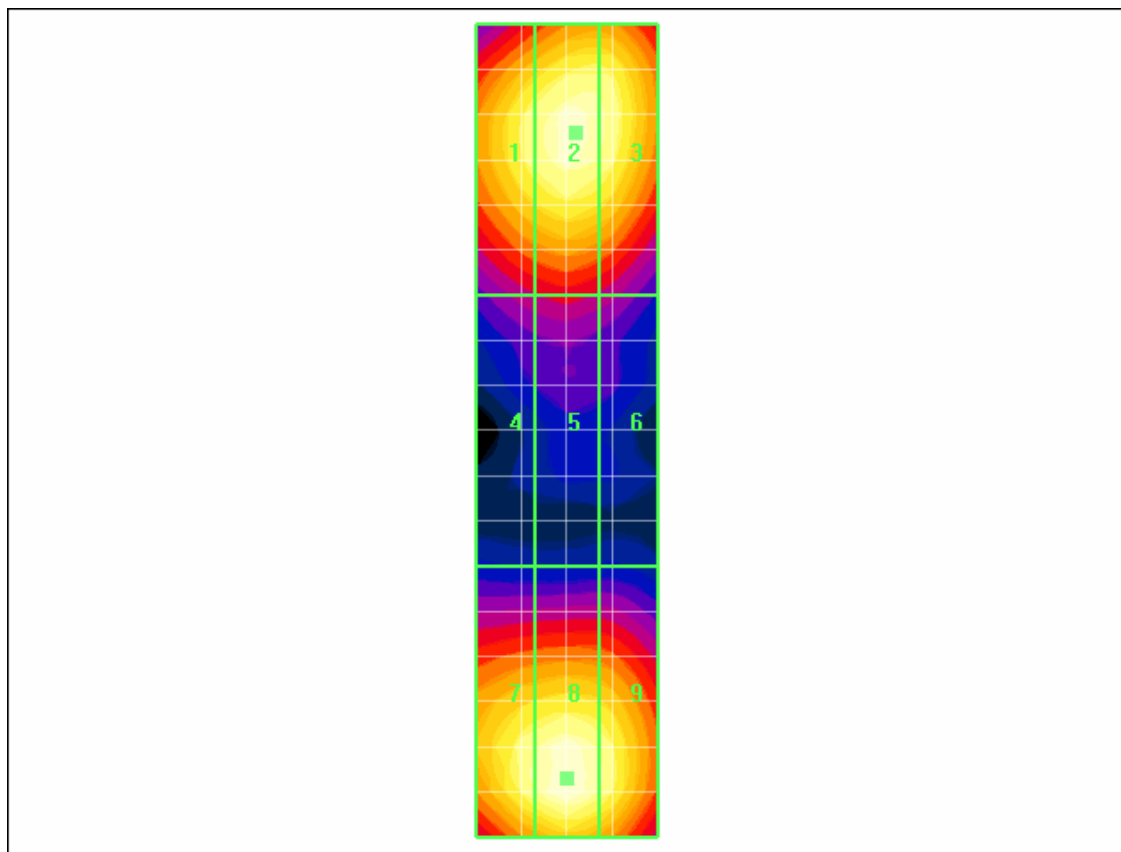
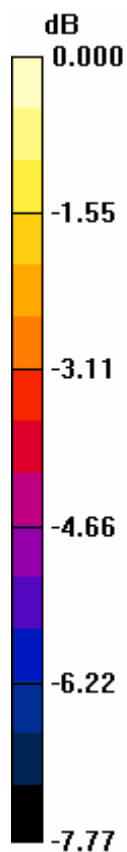
Reference Value = 73.1 V/m; Power Drift = 0.035 dB

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

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Peak E-field in V/m

Grid	Grid	Grid
<b>133.8</b>	<b>139.7</b>	<b>137.8</b>
Grid	Grid	Grid
<b>89.2</b>	<b>92.4</b>	<b>88.7</b>
Grid	Grid	Grid
<b>137.7</b>	<b>144.1</b>	<b>137.8</b>



0 dB = 144.1V/m

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Test Laboratory: RTS

HAC\_E\_1880MHz\_CW\_17\_0dBm

**DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: Not Specified**

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

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 12/03/2007
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**E Scan - ER probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(5x19x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 50.0 V/m; Power Drift = 0.061 dB

Maximum value of Total (measured) = 96.3 V/m

**E Scan - ER probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(41x181x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 95.2 V/m

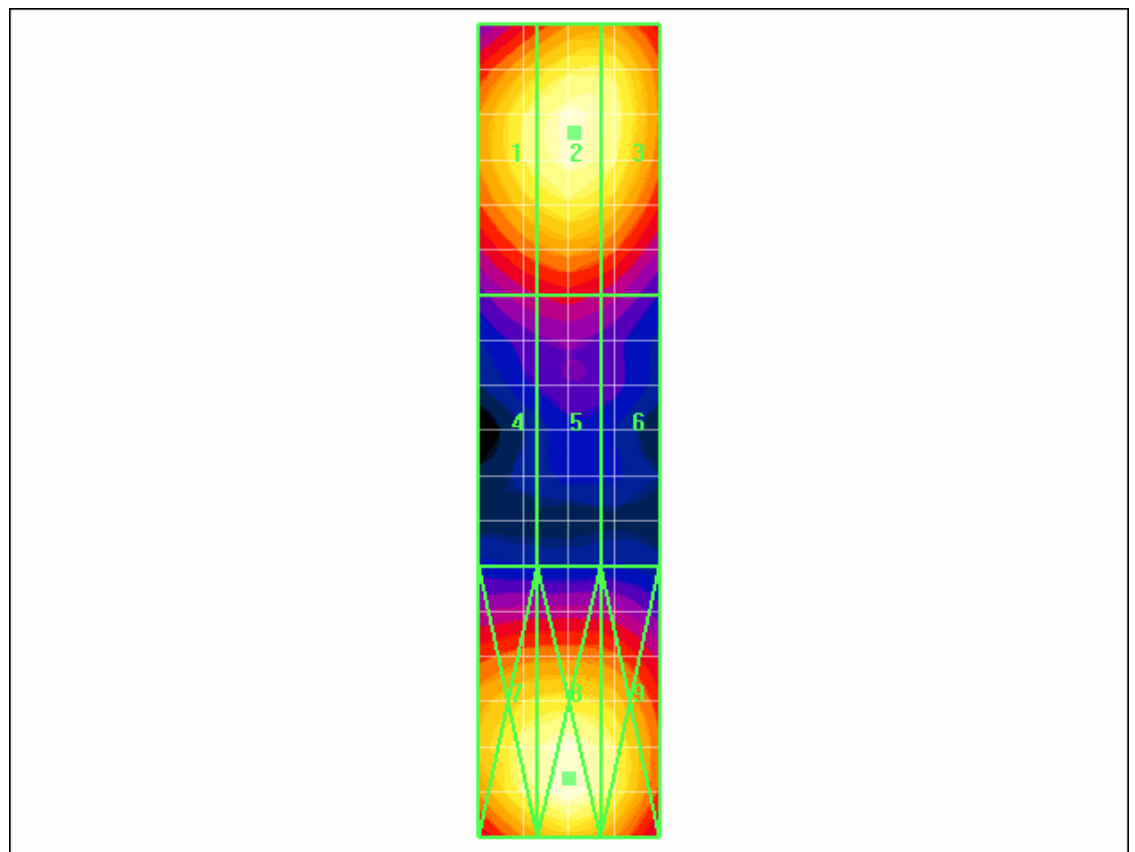
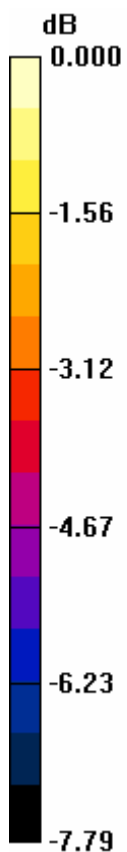
Probe Modulation Factor = 1.00

Reference Value = 50.0 V/m; Power Drift = 0.061 dB

**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
<b>91.4</b>	<b>95.2</b>	<b>93.5</b>
Grid	Grid	Grid
<b>61.1</b>	<b>63.1</b>	<b>60.4</b>
Grid	Grid	Grid
<b>94.5</b>	<b>98.3</b>	<b>93.8</b>



0 dB = 98.3V/m



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Test Laboratory: RTS

HAC\_E\_CDMA1880MHz\_FullRate\_17\_0dBm

**DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: Not Specified**

Communication System: CDMA 1900; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 12/03/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**E Scan - ER probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(5x19x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 52.4 V/m; Power Drift = -0.229 dB

Maximum value of Total (measured) = 98.9 V/m

**E Scan - ER probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(41x181x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 101.0 V/m

Probe Modulation Factor = 1.00

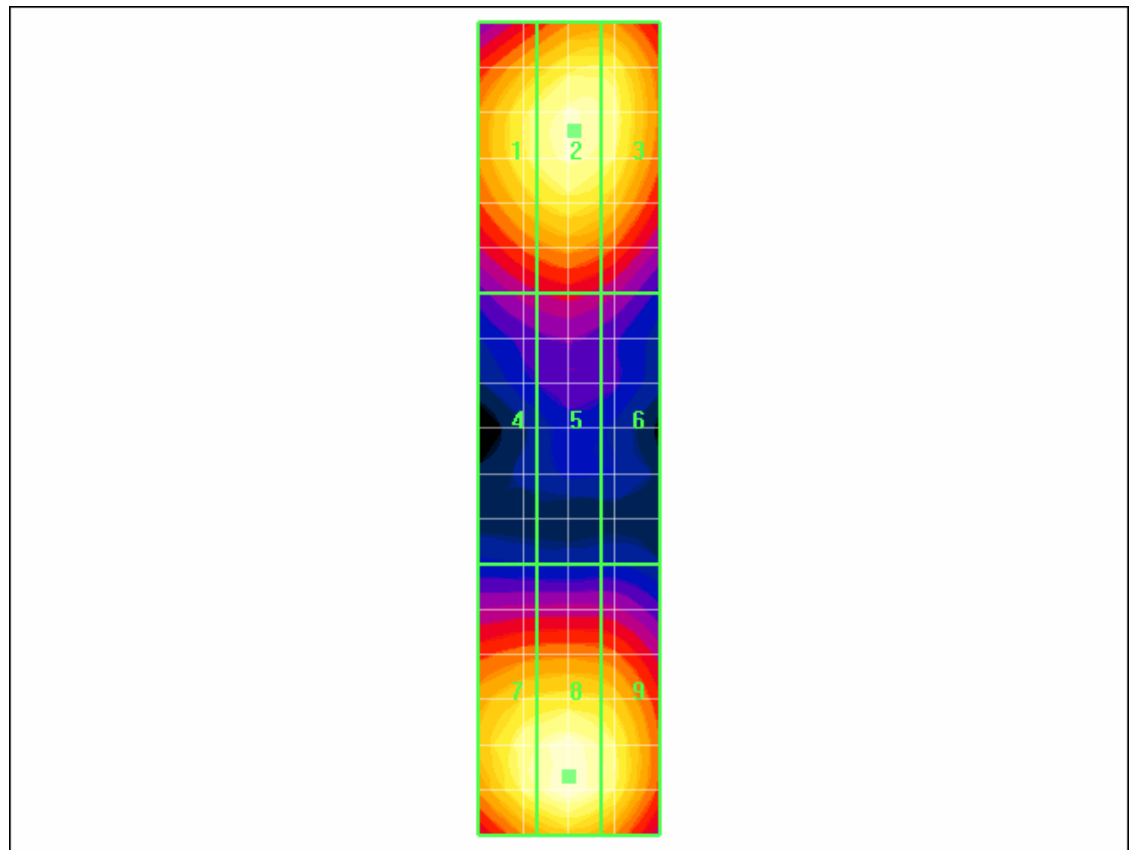
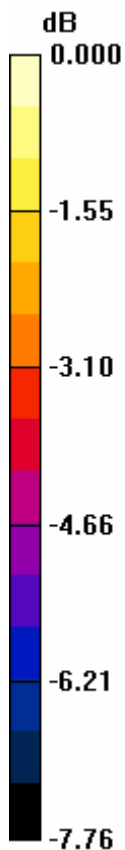
Reference Value = 52.4 V/m; Power Drift = -0.229 dB

**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

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Peak E-field in V/m

Grid	Grid	Grid
<b>93.1</b>	<b>97.2</b>	<b>95.6</b>
Grid	Grid	Grid
<b>62.4</b>	<b>64.5</b>	<b>61.8</b>
Grid	Grid	Grid
<b>97.1</b>	<b>101.0</b>	<b>96.6</b>



0 dB = 101.0V/m

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Date/Time: 21/08/2007 12:30:58 PM

Test Laboratory: RTS

HAC\_E\_1880MHz\_80%AM\_17\_0dBm

**DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: Not Specified**

Communication System: 80% AM; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 12/03/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**E Scan - ER probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(5x19x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 32.0 V/m; Power Drift = -0.004 dB

Maximum value of Total (measured) = 61.2 V/m

**E Scan - ER probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(41x181x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 62.4 V/m

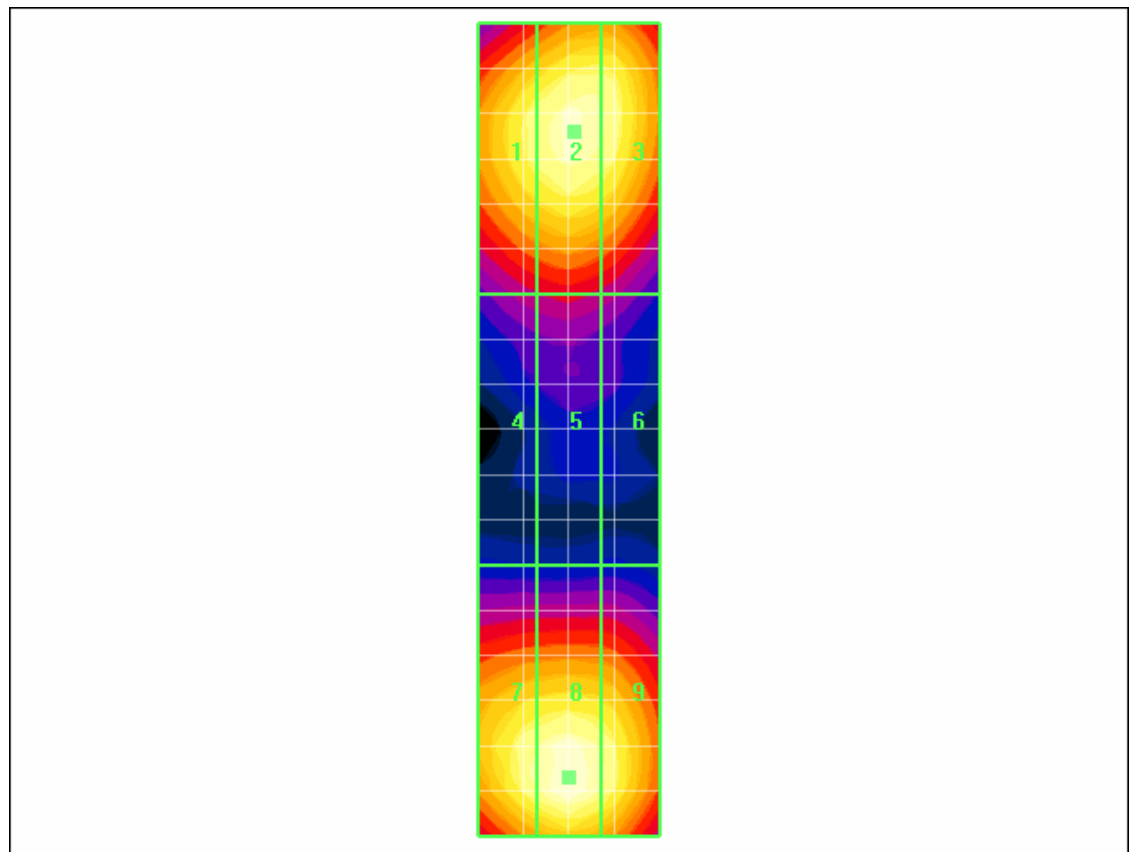
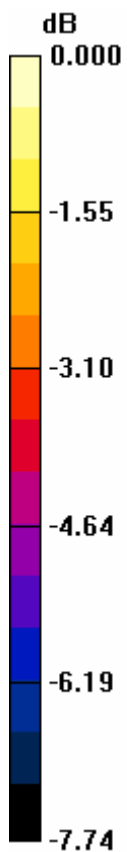
Probe Modulation Factor = 1.00

Reference Value = 32.0 V/m; Power Drift = -0.004 dB

**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
<b>57.7</b>	<b>60.1</b>	<b>59.3</b>
Grid	Grid	Grid
<b>38.7</b>	<b>40.0</b>	<b>38.3</b>
Grid	Grid	Grid
<b>59.8</b>	<b>62.4</b>	<b>59.6</b>



0 dB = 62.4V/m

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Date/Time: 22/08/2007 9:22:38 AM

Test Laboratory: RTS

HAC\_E\_1880MHz\_CW\_17\_8dBm

**DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: Not Specified**

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

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 12/03/2007
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**E Scan - ER probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(5x19x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 57.0 V/m; Power Drift = 0.004 dB

Maximum value of Total (measured) = 109.5 V/m

**E Scan - ER probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(41x181x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 112.8 V/m

Probe Modulation Factor = 1.00

Reference Value = 57.0 V/m; Power Drift = 0.004 dB

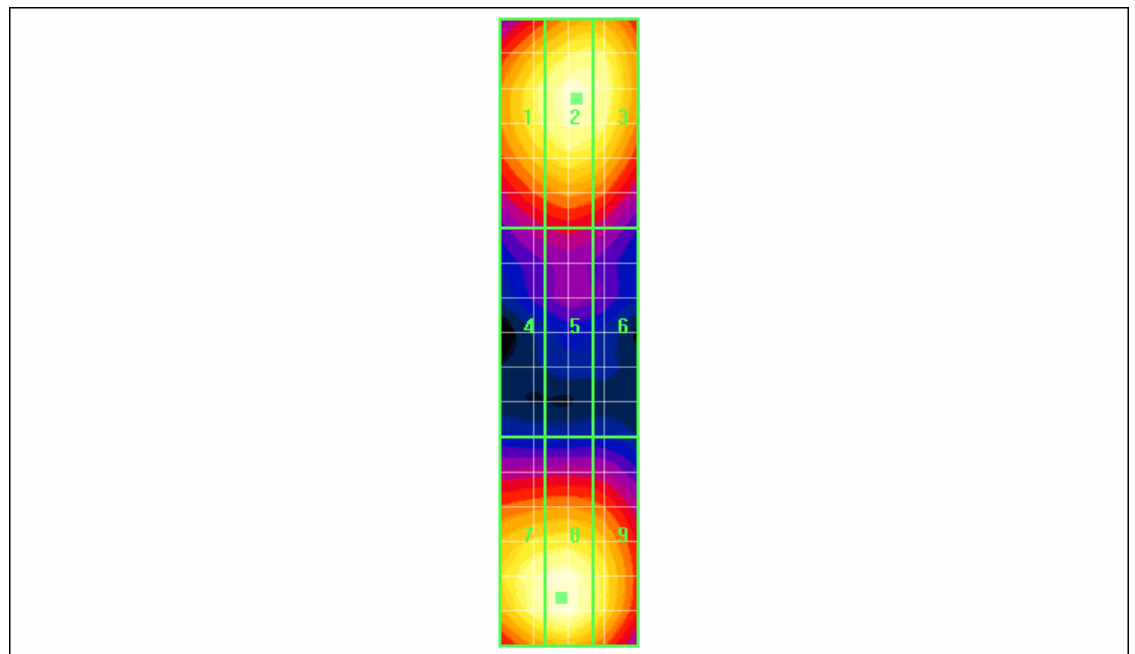
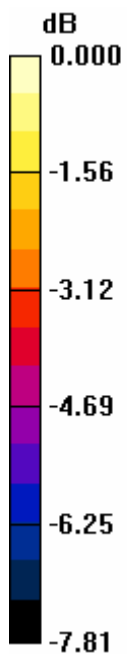
**Hearing Aid Near-Field Category: M2 (AWF 0 dB)**



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Peak E-field in V/m

Grid	Grid	Grid
<b>104.0</b>	<b>109.4</b>	<b>108.3</b>
Grid	Grid	Grid
<b>69.4</b>	<b>72.0</b>	<b>69.2</b>
Grid	Grid	Grid
<b>110.0</b>	<b>112.8</b>	<b>104.6</b>



0 dB = 112.8V/m

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Date/Time: 21/08/2007 12:43:38 PM

Test Laboratory: RTS

HAC\_E\_CDMA1880MHz\_eighth\_17\_8dBm

**DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: Not Specified**

Communication System: CDMA 1900; Frequency: 1880 MHz;Duty Cycle: 1:8

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 12/03/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**E Scan - ER probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(5x19x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 19.7 V/m; Power Drift = 0.112 dB

Maximum value of Total (measured) = 39.5 V/m

**E Scan - ER probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(41x181x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 41.2 V/m

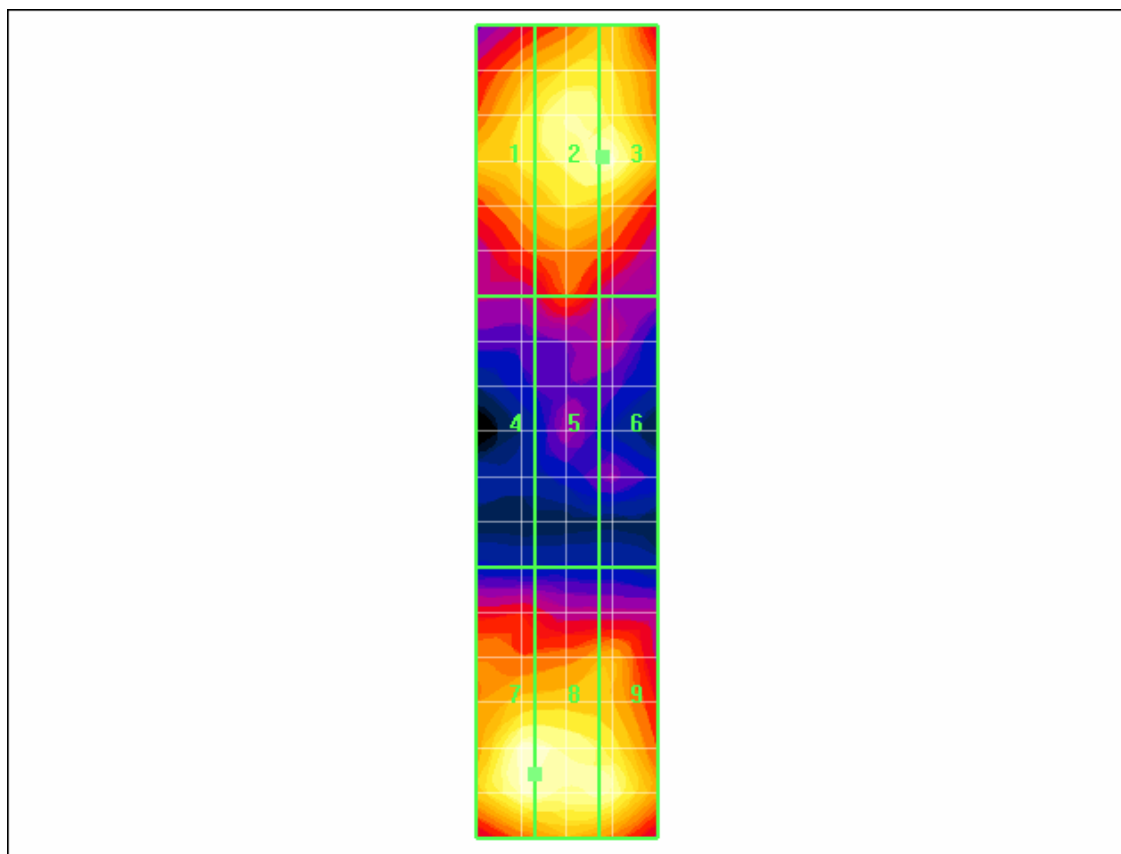
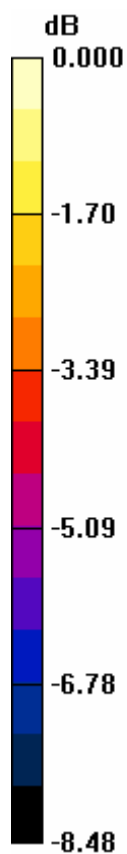
Probe Modulation Factor = 1.00

Reference Value = 19.7 V/m; Power Drift = 0.112 dB

**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
<b>36.0</b>	<b>40.0</b>	<b>40.1</b>
Grid	Grid	Grid
<b>24.1</b>	<b>27.9</b>	<b>24.1</b>
Grid	Grid	Grid
<b>41.2</b>	<b>41.2</b>	<b>39.7</b>



0 dB = 41.2V/m

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Date/Time: 21/08/2007 2:51:01 PM

Test Laboratory: RTS

HAC\_H\_835MHz\_CW\_20dBm

**DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: Not Specified**

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

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

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 15/11/2006
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**H Scan - H3DV5 probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(5x15x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 0.489 A/m; Power Drift = 0.027 dB

Maximum value of Total (measured) = 0.460 A/m

**H Scan - H3DV5 probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(41x141x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.461 A/m

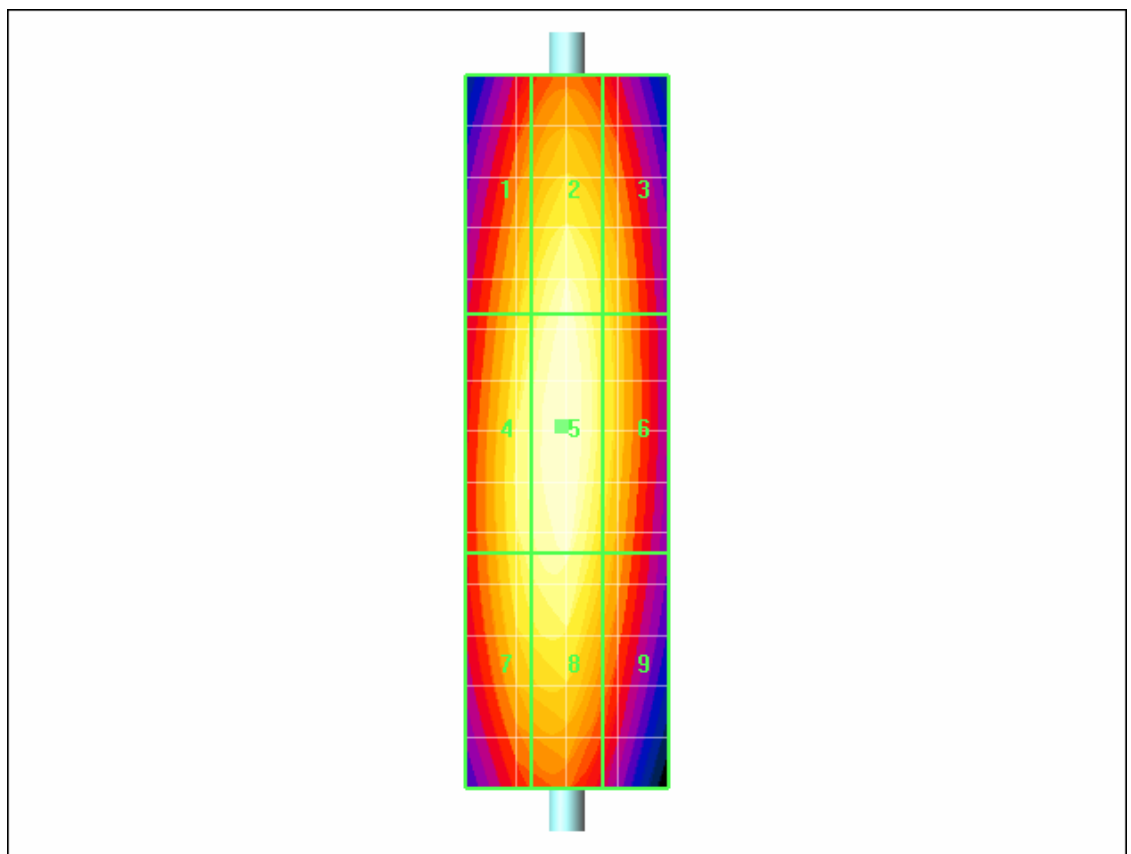
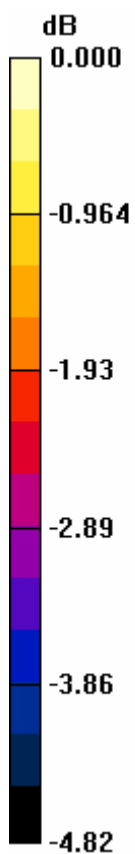
Probe Modulation Factor = 1.00

Reference Value = 0.489 A/m; Power Drift = 0.027 dB

**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak H-field in A/m

Grid	Grid	Grid
<b>0.430</b>	<b>0.451</b>	<b>0.428</b>
Grid	Grid	Grid
<b>0.448</b>	<b>0.461</b>	<b>0.432</b>
Grid	Grid	Grid
<b>0.440</b>	<b>0.449</b>	<b>0.415</b>



0 dB = 0.461A/m



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Date/Time: 21/08/2007 2:42:10 PM

Test Laboratory: RTS

HAC\_H\_835MHz\_CW\_18\_33dBm

**DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: Not Specified**

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

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

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 15/11/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**H Scan - H3DV5 probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(5x15x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 0.381 A/m; Power Drift = 0.047 dB

Maximum value of Total (measured) = 0.361 A/m

**H Scan - H3DV5 probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(41x141x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.362 A/m

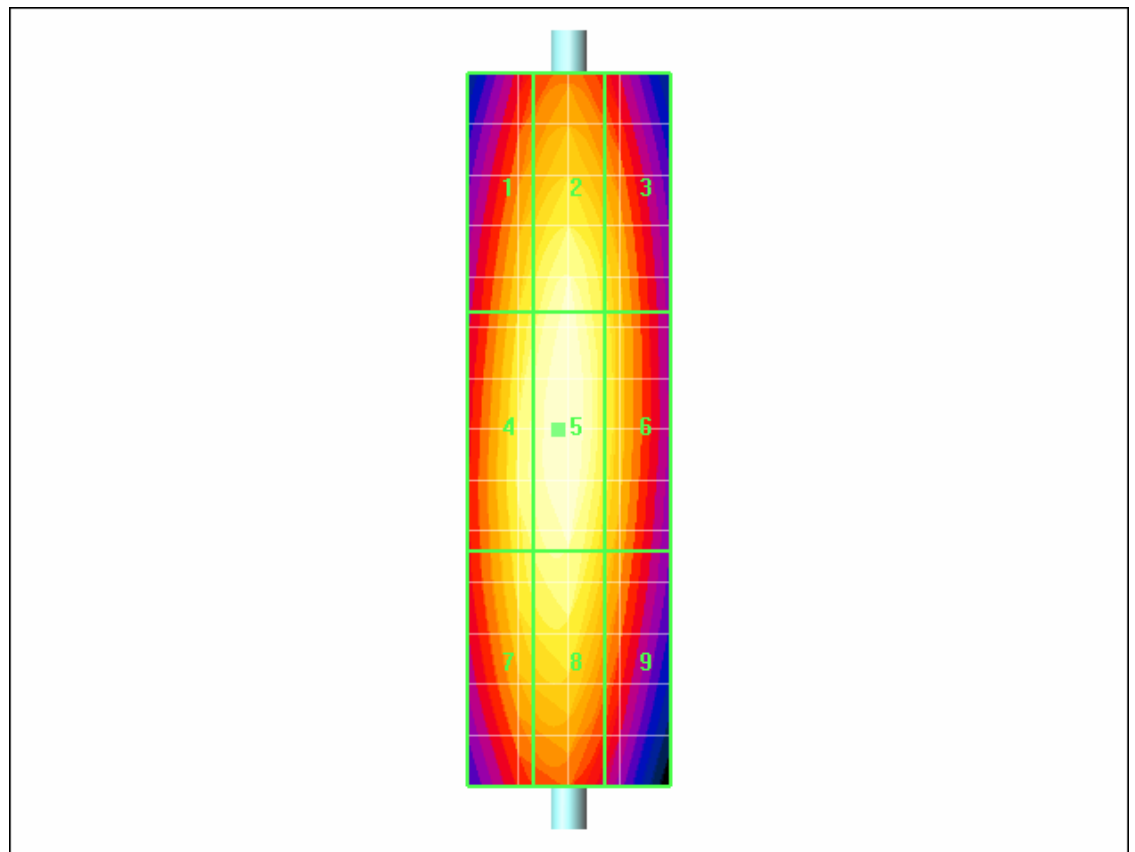
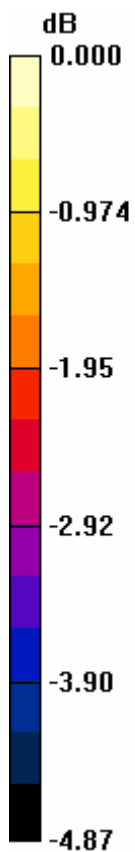
Probe Modulation Factor = 1.00

Reference Value = 0.381 A/m; Power Drift = 0.047 dB

**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak H-field in A/m

Grid	Grid	Grid
<b>0.340</b>	<b>0.354</b>	<b>0.334</b>
Grid	Grid	Grid
<b>0.352</b>	<b>0.362</b>	<b>0.337</b>
Grid	Grid	Grid
<b>0.343</b>	<b>0.350</b>	<b>0.323</b>



0 dB = 0.362A/m

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Date/Time: 21/08/2007 2:37:02 PM

Test Laboratory: RTS

HAC\_H\_CDMA\_835MHz\_18\_33dBm

**DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 835 MHz; Duty Cycle: 1:1

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

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 15/11/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**H Scan - H3DV5 probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(5x15x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 0.376 A/m; Power Drift = -0.040 dB

Maximum value of Total (measured) = 0.351 A/m

**H Scan - H3DV5 probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(41x141x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.351 A/m

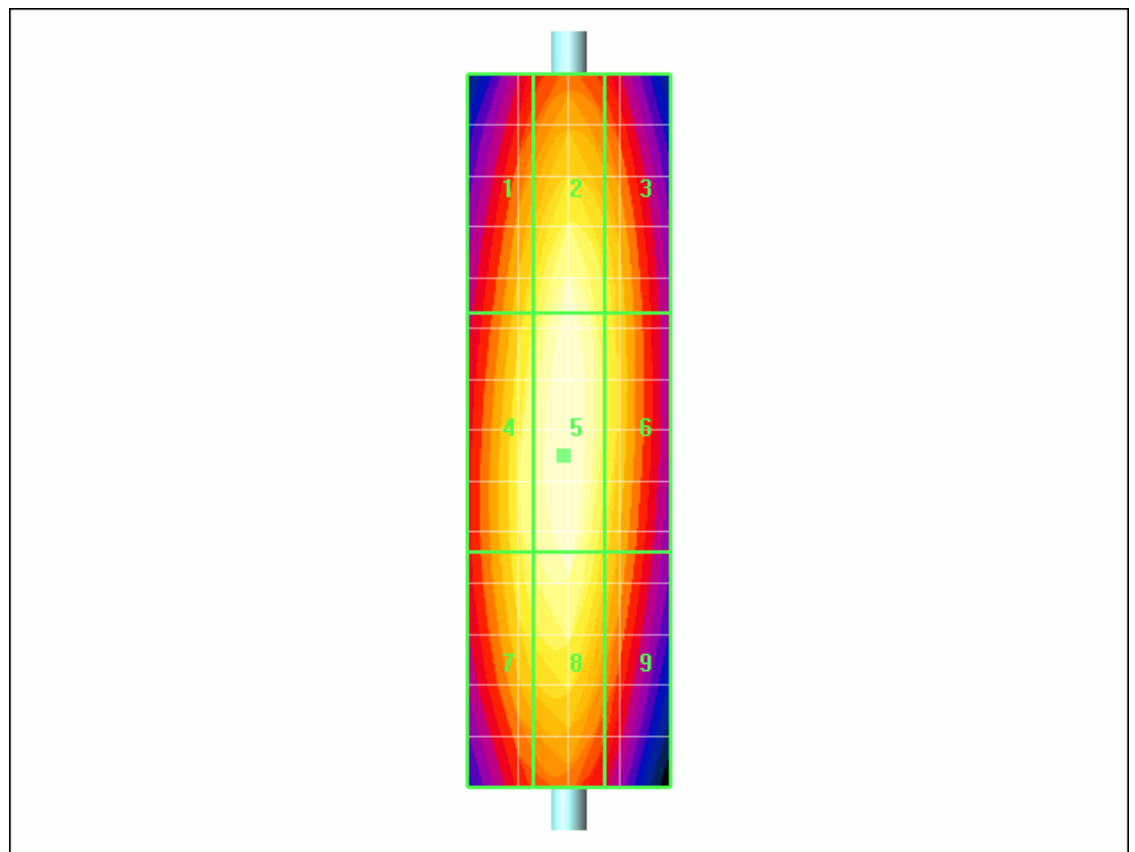
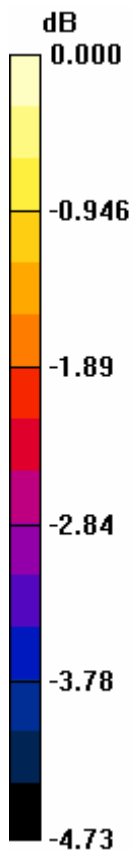
Probe Modulation Factor = 1.00

Reference Value = 0.376 A/m; Power Drift = -0.040 dB

**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak H-field in A/m

Grid	Grid	Grid
<b>0.326</b>	<b>0.344</b>	<b>0.328</b>
Grid	Grid	Grid
<b>0.340</b>	<b>0.351</b>	<b>0.331</b>
Grid	Grid	Grid
<b>0.336</b>	<b>0.344</b>	<b>0.319</b>



0 dB = 0.351A/m

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Date/Time: 21/08/2007 2:47:00 PM

Test Laboratory: RTS

HAC\_H\_835MHz\_80%am\_18\_33dBm

**DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: Not Specified**

Communication System: 80% AM; Frequency: 835 MHz; Duty Cycle: 1:1

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

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 15/11/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**H Scan - H3DV5 probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(5x15x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 0.221 A/m; Power Drift = 0.012 dB

Maximum value of Total (measured) = 0.207 A/m

**H Scan - H3DV5 probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(41x141x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.207 A/m

Probe Modulation Factor = 1.00

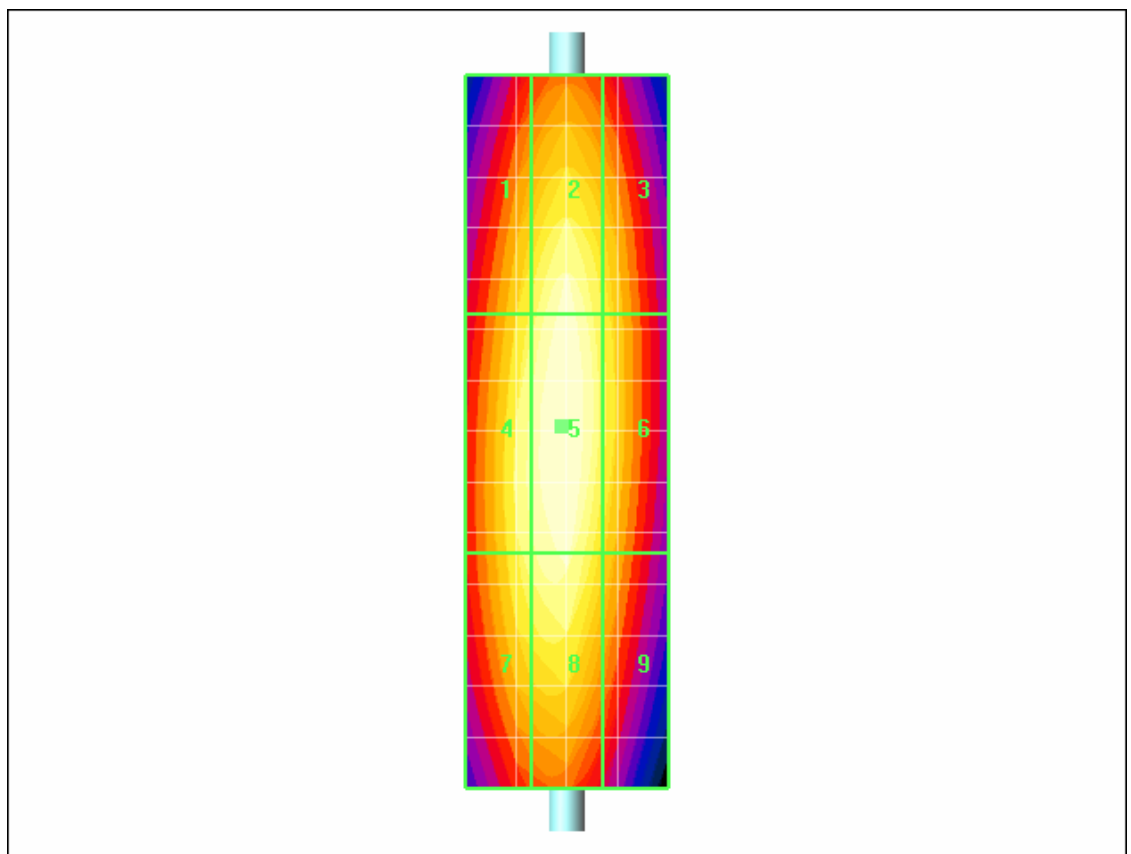
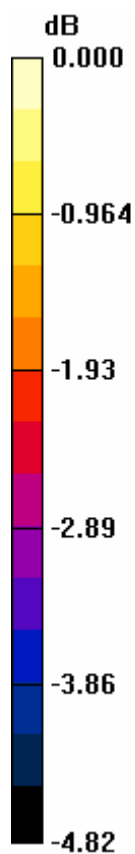
Reference Value = 0.221 A/m; Power Drift = 0.012 dB

**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

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Peak H-field in A/m

Grid	Grid	Grid
<b>0.194</b>	<b>0.203</b>	<b>0.192</b>
Grid	Grid	Grid
<b>0.202</b>	<b>0.207</b>	<b>0.195</b>
Grid	Grid	Grid
<b>0.198</b>	<b>0.202</b>	<b>0.187</b>



0 dB = 0.207A/m

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Date/Time: 22/08/2007 9:51:03 AM

Test Laboratory: RTS

HAC\_H\_835MHz\_CW\_20\_67dBm

**DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: Not Specified**

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

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

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 15/11/2006
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**H Scan - H3DV5 probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(5x15x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 0.500 A/m; Power Drift = 0.006 dB

Maximum value of Total (measured) = 0.469 A/m

**H Scan - H3DV5 probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(41x141x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.473 A/m

Probe Modulation Factor = 1.00

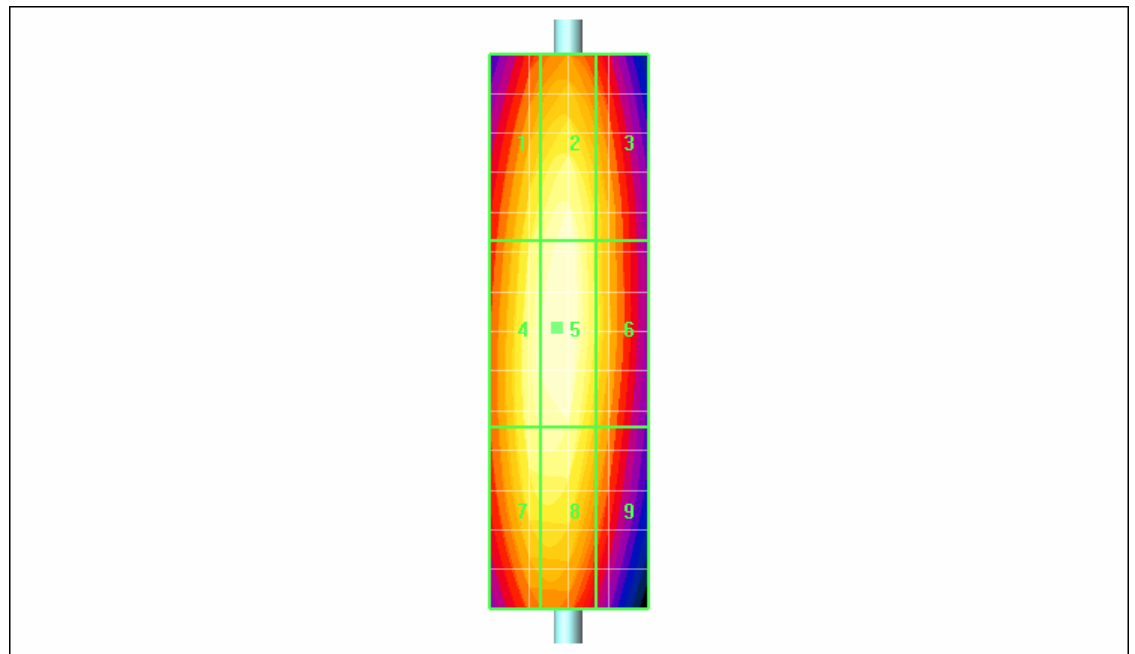
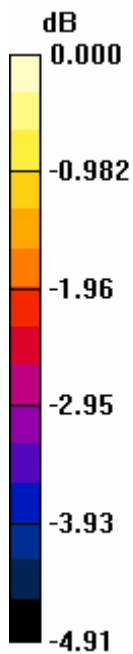
Reference Value = 0.500 A/m; Power Drift = 0.006 dB

**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**



Peak H-field in A/m

Grid	Grid	Grid
<b>0.454</b>	<b>0.466</b>	<b>0.431</b>
Grid	Grid	Grid
<b>0.467</b>	<b>0.473</b>	<b>0.436</b>
Grid	Grid	Grid
<b>0.459</b>	<b>0.461</b>	<b>0.417</b>



0 dB = 0.473A/m

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Date/Time: 21/08/2007 2:32:04 PM

Test Laboratory: RTS

HAC\_H\_CDMA\_835MHz\_eigh\_20\_67dBm

**DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 835 MHz; Duty Cycle: 1:8

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

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 15/11/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**H Scan - H3DV5 probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(5x15x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 0.171 A/m; Power Drift = -0.017 dB

Maximum value of Total (measured) = 0.174 A/m

**H Scan - H3DV5 probe center 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

**(41x141x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.175 A/m

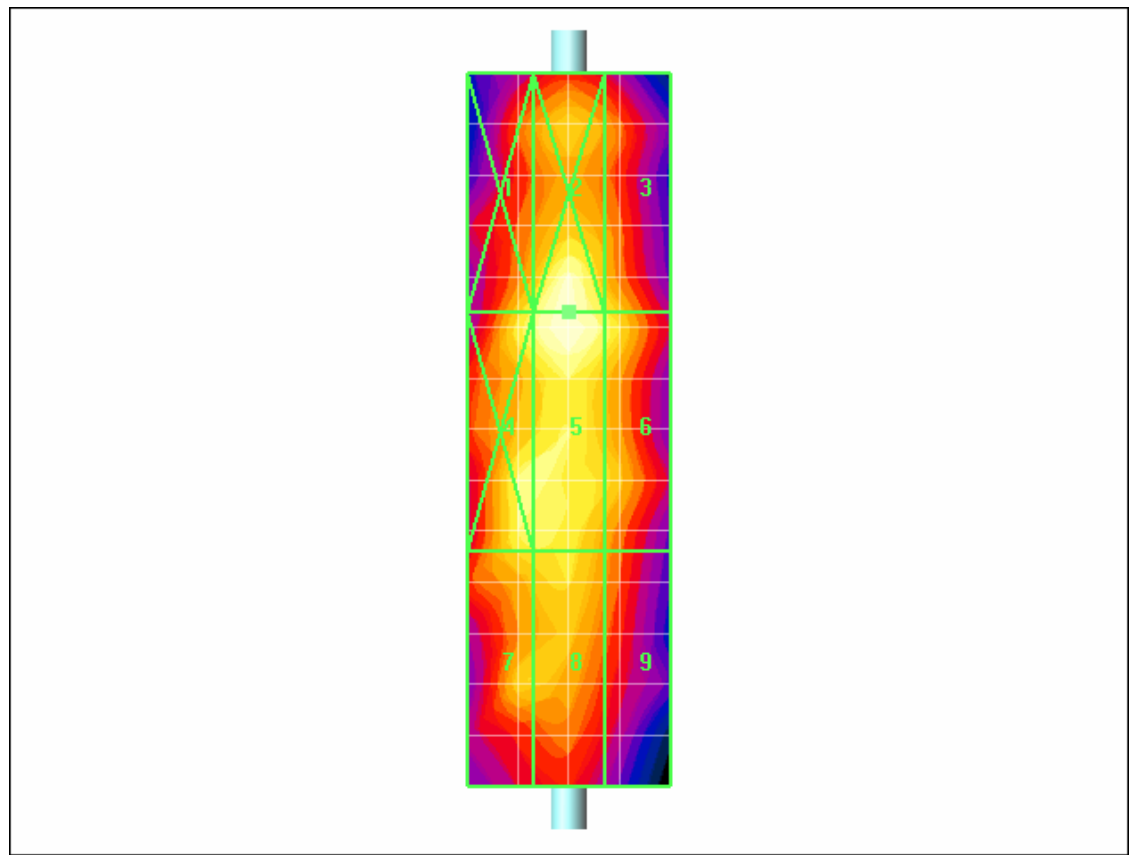
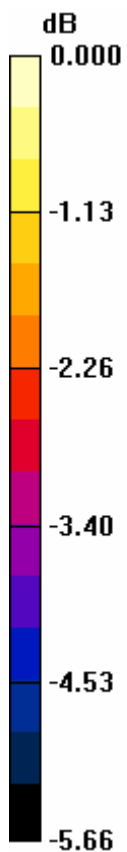
Probe Modulation Factor = 1.00

Reference Value = 0.171 A/m; Power Drift = -0.017 dB

**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak H-field in A/m

Grid <b>0.163</b>	Grid <b>0.175</b>	Grid <b>0.162</b>
Grid <b>0.168</b>	Grid <b>0.175</b>	Grid <b>0.164</b>
Grid <b>0.159</b>	Grid <b>0.160</b>	Grid <b>0.144</b>



0 dB = 0.175A/m

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Date/Time: 22/08/2007 10:15:36 AM

Test Laboratory: RTS

HAC\_H\_1880MHz\_CW\_20dBm

**DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: Not Specified**

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

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

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 15/11/2006
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**H Scan - H3DV5 probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(5x19x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 0.515 A/m; Power Drift = 0.005 dB

Maximum value of Total (measured) = 0.485 A/m

**H Scan - H3DV5 probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(41x181x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.489 A/m

Probe Modulation Factor = 1.00

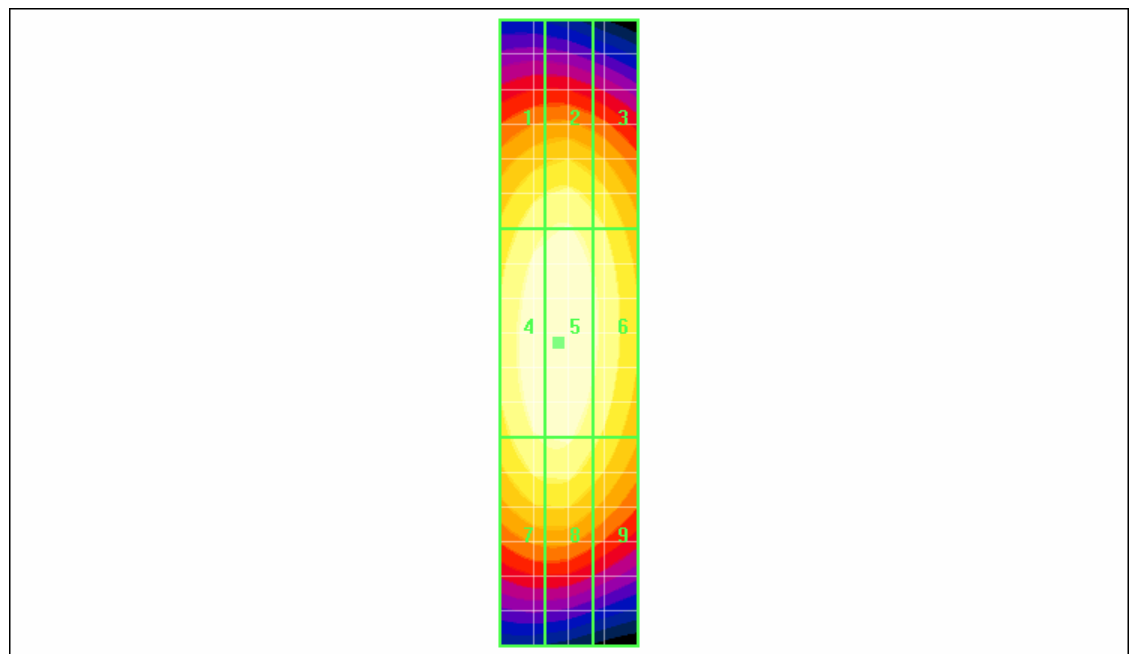
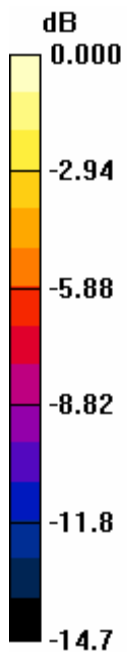
Reference Value = 0.515 A/m; Power Drift = 0.005 dB

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

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Peak H-field in A/m

Grid	Grid	Grid
<b>0.432</b>	<b>0.444</b>	<b>0.412</b>
Grid	Grid	Grid
<b>0.482</b>	<b>0.489</b>	<b>0.449</b>
Grid	Grid	Grid
<b>0.444</b>	<b>0.449</b>	<b>0.404</b>



0 dB = 0.489A/m

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Date/Time: 22/08/2007 10:02:00 AM

Test Laboratory: RTS

HAC\_H\_1880MHz\_CW\_17\_0dBm

**DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: Not Specified**

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

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

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 15/11/2006
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**H Scan - H3DV5 probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(5x19x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 0.353 A/m; Power Drift = -0.007 dB

Maximum value of Total (measured) = 0.333 A/m

**H Scan - H3DV5 probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(41x181x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.336 A/m

Probe Modulation Factor = 1.00

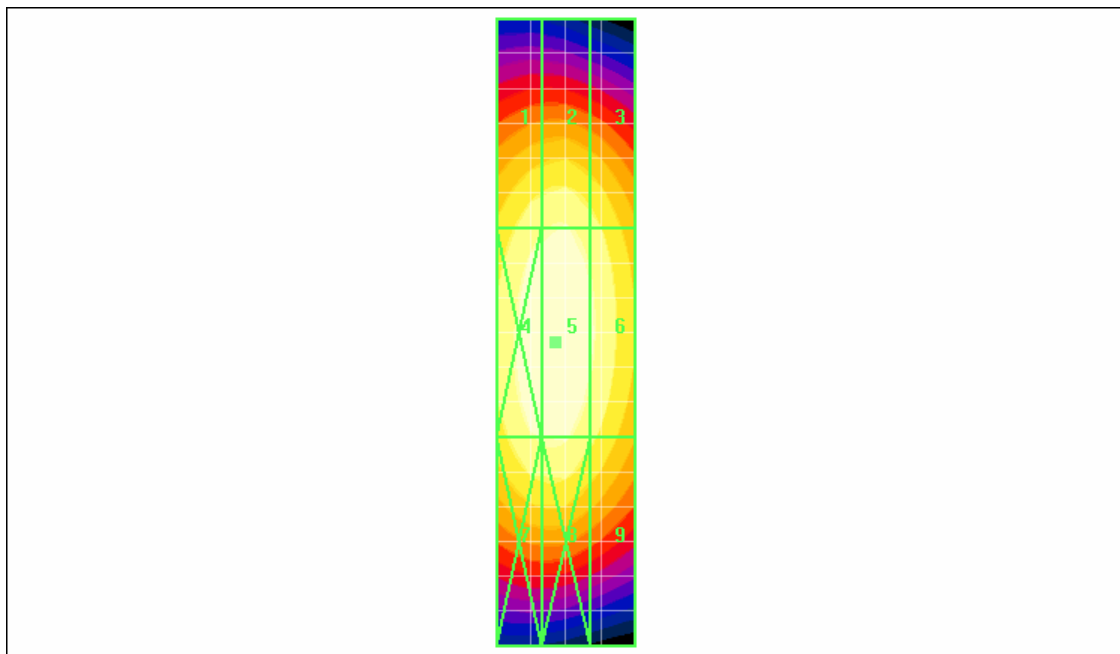
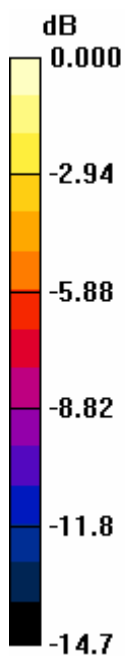
Reference Value = 0.353 A/m; Power Drift = -0.007 dB

**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

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Peak H-field in A/m

Grid	Grid	Grid
<b>0.296</b>	<b>0.304</b>	<b>0.283</b>
Grid	Grid	Grid
<b>0.331</b>	<b>0.336</b>	<b>0.308</b>
Grid	Grid	Grid
<b>0.305</b>	<b>0.308</b>	<b>0.277</b>



0 dB = 0.336A/m



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Date/Time: 21/08/2007 3:16:56 PM

Test Laboratory: RTS

HAC\_H\_CDMA1880MHz\_FullRate\_17dBm

**DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: Not Specified**

Communication System: CDMA 1900; Frequency: 1880 MHz;Duty Cycle: 1:1

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

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 15/11/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**H Scan - H3DV5 probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(5x19x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 0.346 A/m; Power Drift = -0.172 dB

Maximum value of Total (measured) = 0.321 A/m

**H Scan - H3DV5 probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(41x181x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.322 A/m

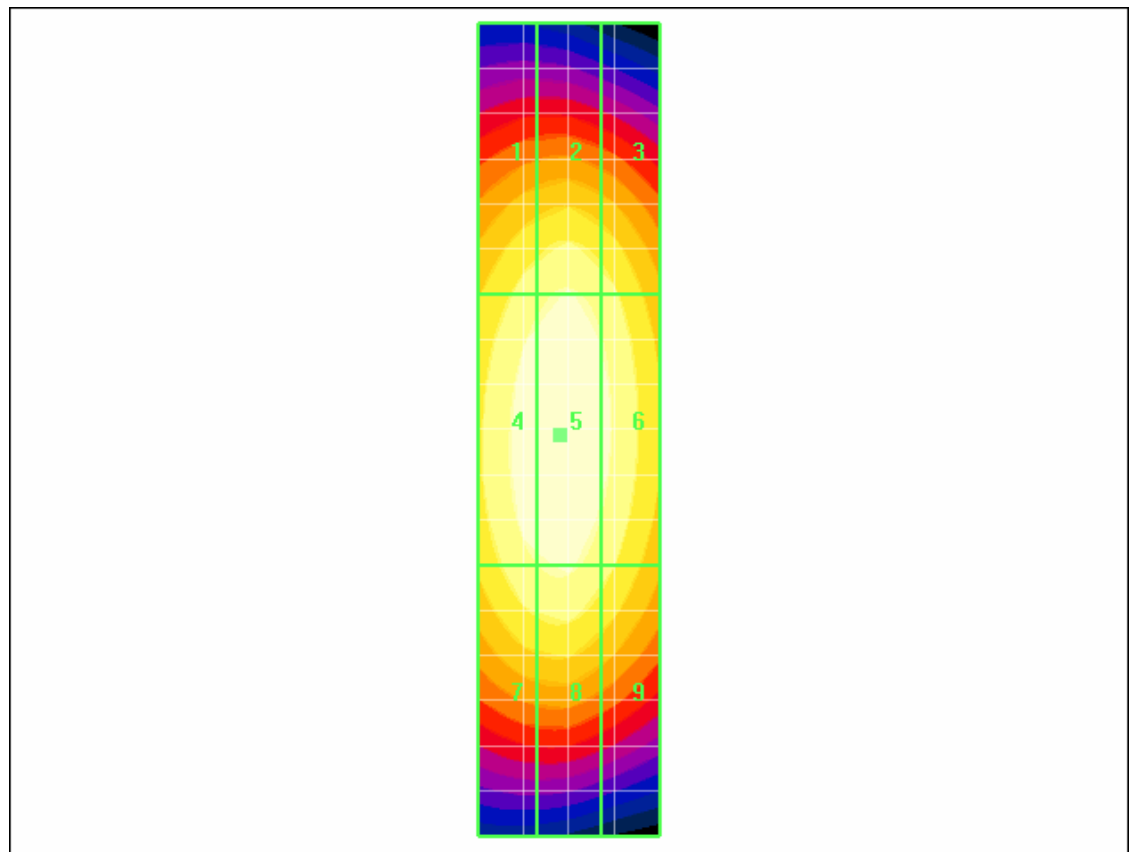
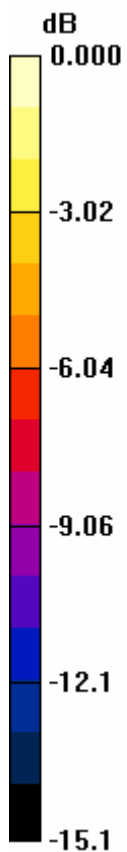
Probe Modulation Factor = 1.00

Reference Value = 0.346 A/m; Power Drift = -0.172 dB

**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

Peak H-field in A/m

Grid	Grid	Grid
<b>0.277</b>	<b>0.291</b>	<b>0.273</b>
Grid	Grid	Grid
<b>0.312</b>	<b>0.322</b>	<b>0.299</b>
Grid	Grid	Grid
<b>0.287</b>	<b>0.293</b>	<b>0.270</b>



0 dB = 0.322A/m

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Date/Time: 22/08/2007 10:11:34 AM

Test Laboratory: RTS

HAC\_H\_1880MHz\_80%AM\_17\_0dBm

**DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: Not Specified**

Communication System: 80% AM; Frequency: 1880 MHz;Duty Cycle: 1:1

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

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 15/11/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**H Scan - H3DV5 probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(5x19x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 0.226 A/m; Power Drift = 0.031 dB

Maximum value of Total (measured) = 0.213 A/m

**H Scan - H3DV5 probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(41x181x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.215 A/m

Probe Modulation Factor = 1.00

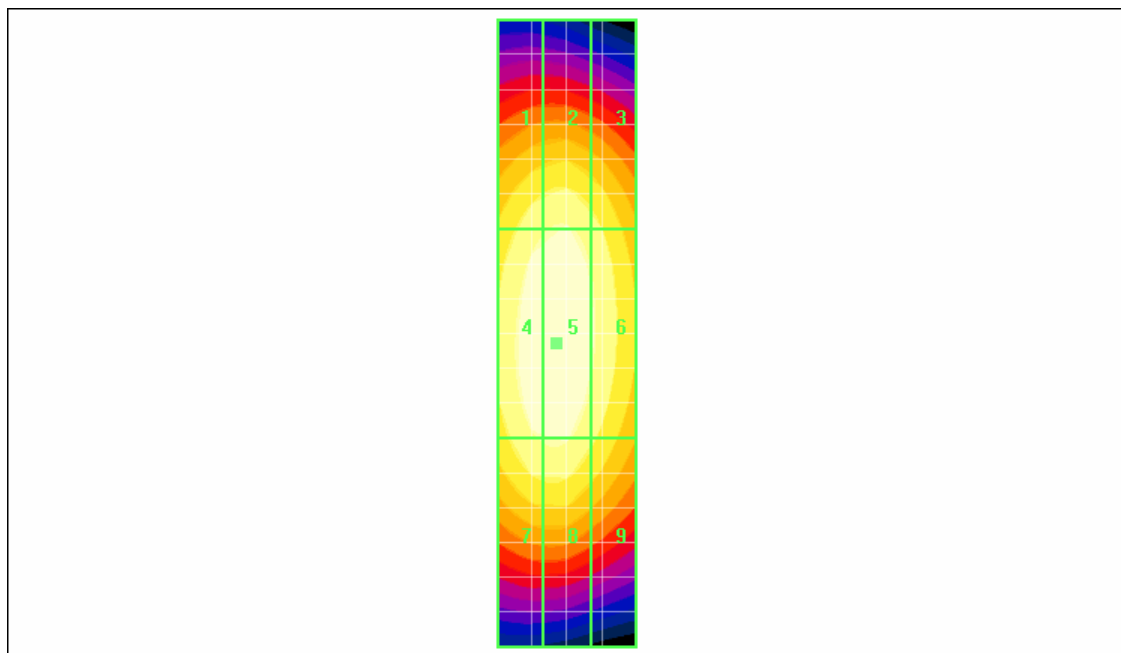
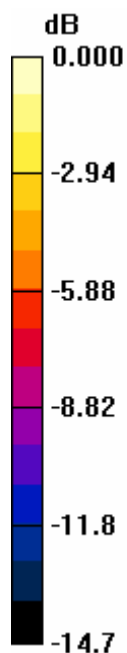
Reference Value = 0.226 A/m; Power Drift = 0.031 dB

**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

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Peak H-field in A/m

Grid	Grid	Grid
<b>0.189</b>	<b>0.195</b>	<b>0.181</b>
Grid	Grid	Grid
<b>0.211</b>	<b>0.215</b>	<b>0.196</b>
Grid	Grid	Grid
<b>0.194</b>	<b>0.196</b>	<b>0.176</b>



0 dB = 0.215A/m

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Date/Time: 22/08/2007 10:06:56 AM

Test Laboratory: RTS

HAC\_H\_1880MHz\_CW\_17\_67dBm

**DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: Not Specified**

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

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

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 15/11/2006
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**H Scan - H3DV5 probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(5x19x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 0.371 A/m; Power Drift = -0.036 dB

Maximum value of Total (measured) = 0.348 A/m

**H Scan - H3DV5 probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(41x181x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.350 A/m

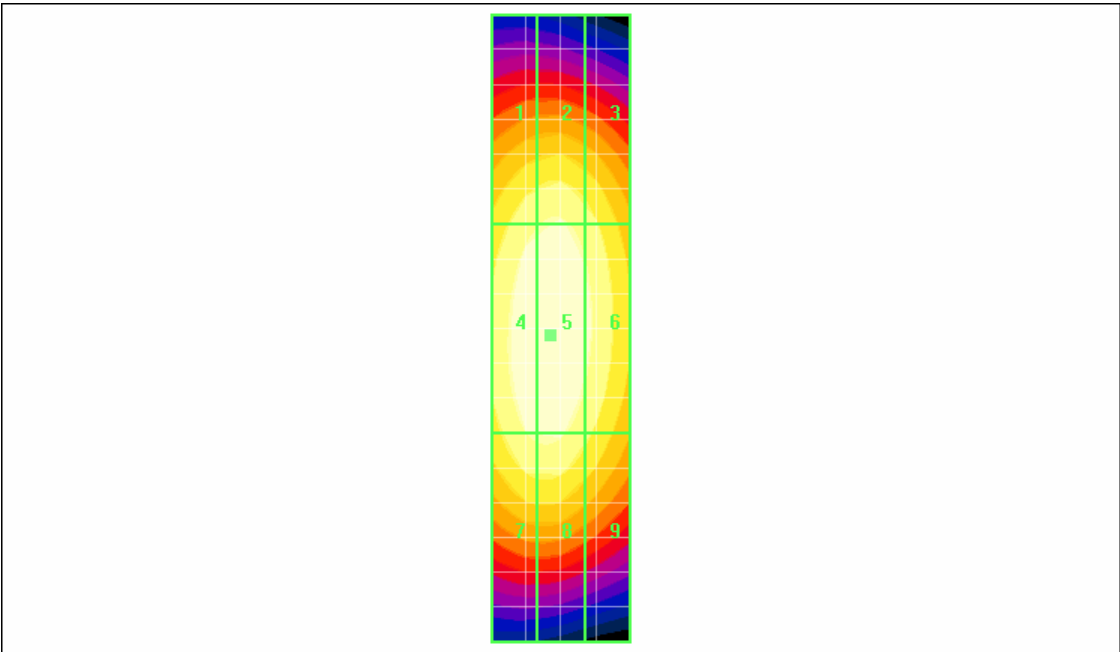
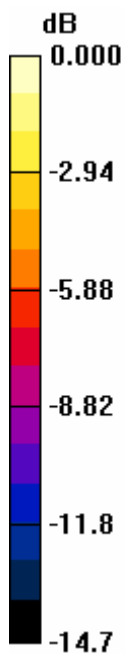
Probe Modulation Factor = 1.00

Reference Value = 0.371 A/m; Power Drift = -0.036 dB

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

Peak H-field in A/m

Grid	Grid	Grid
<b>0.310</b>	<b>0.318</b>	<b>0.297</b>
Grid	Grid	Grid
<b>0.345</b>	<b>0.350</b>	<b>0.323</b>
Grid	Grid	Grid
<b>0.319</b>	<b>0.321</b>	<b>0.289</b>



0 dB = 0.350A/m

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Test Laboratory: RTS

HAC\_H\_CDMA1880MHz\_eighth\_17\_83dBm

**DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: Not Specified**

Communication System: CDMA 1900; Frequency: 1880 MHz;Duty Cycle: 1:8

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

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 15/11/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 07/03/2007
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**H Scan - H3DV5 probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(5x19x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 0.147 A/m; Power Drift = -0.187 dB

Maximum value of Total (measured) = 0.145 A/m

**H Scan - H3DV5 probe center 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

**(41x181x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.145 A/m

Probe Modulation Factor = 1.00

Reference Value = 0.147 A/m; Power Drift = -0.187 dB

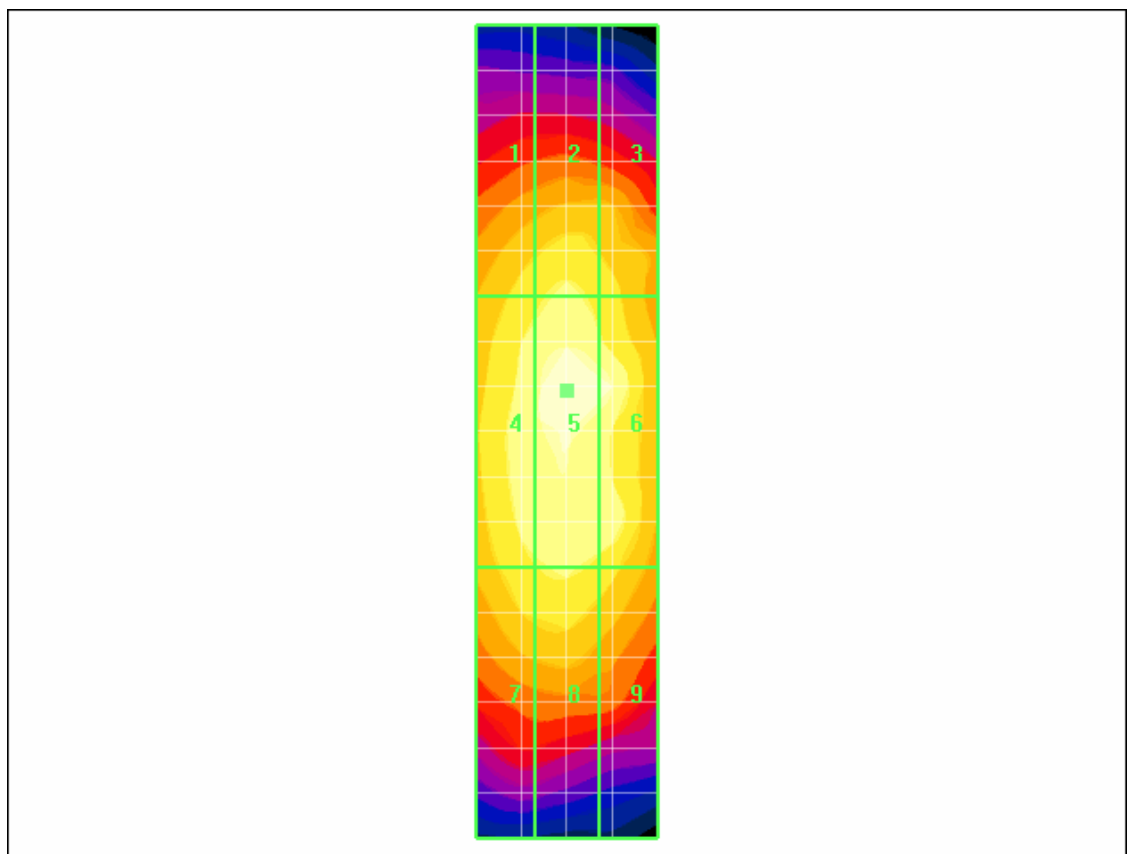
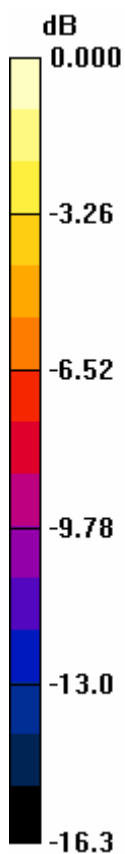
**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**



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Peak H-field in A/m

Grid	Grid	Grid
<b>0.110</b>	<b>0.117</b>	<b>0.109</b>
Grid	Grid	Grid
<b>0.126</b>	<b>0.145</b>	<b>0.136</b>
Grid	Grid	Grid
<b>0.113</b>	<b>0.116</b>	<b>0.109</b>

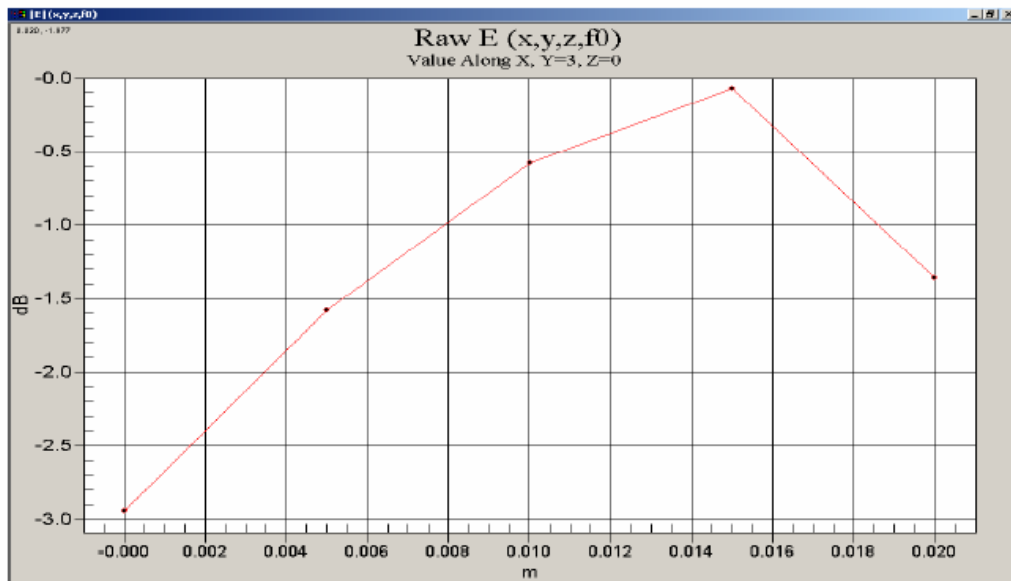


0 dB = 0.145A/m

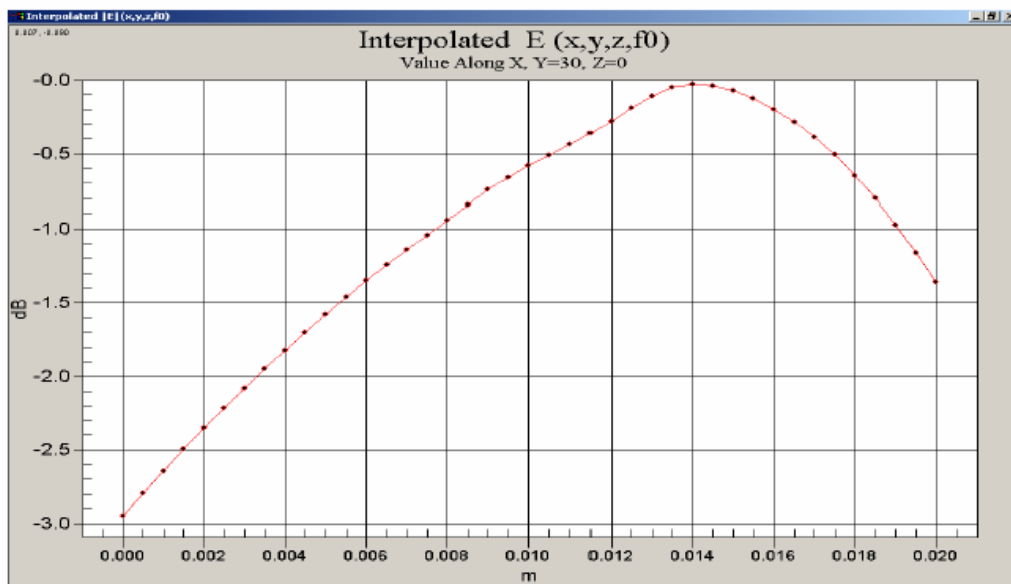
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### Justification of Step Size and Interpolation

This section demonstrates that a 5mm step size with interpolation provides sufficient resolution for RF emissions measurements. The DASY 4 uses interpolation algorithms to derive 9 interpolated points between every measured point.

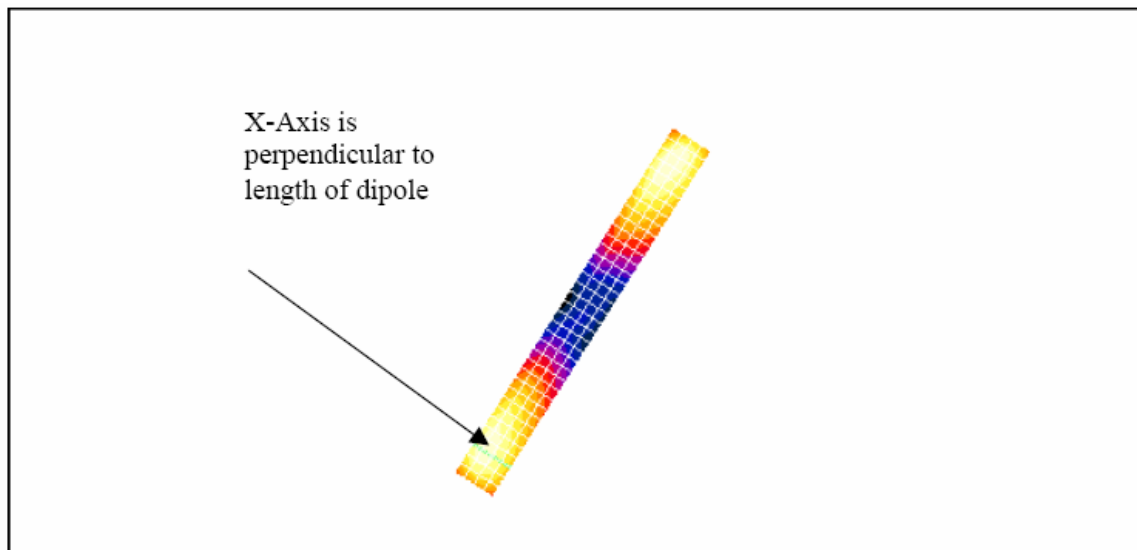


The figure above shows the raw measured field strength perpendicular to the length of the validation dipole. The TCB guidance slides require the 3dB width to be much larger than the step size. The width between -3dB points is > 21mm, at least 4 times the step size.



This figure shows the interpolated field strength perpendicular to the dipole. The interpolated points follow the raw points with no inconsistencies.

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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/m<sup>3</sup>

Phantom section: H Device Section

DASY4 Configuration:

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

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

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

Maximum value of Total (measured) = 134.8 V/m

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

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

Maximum value of Total field (slot averaged) = 131.0 V/m

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

E in V/m (Time averaged)    E in V/m (Slot averaged)

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

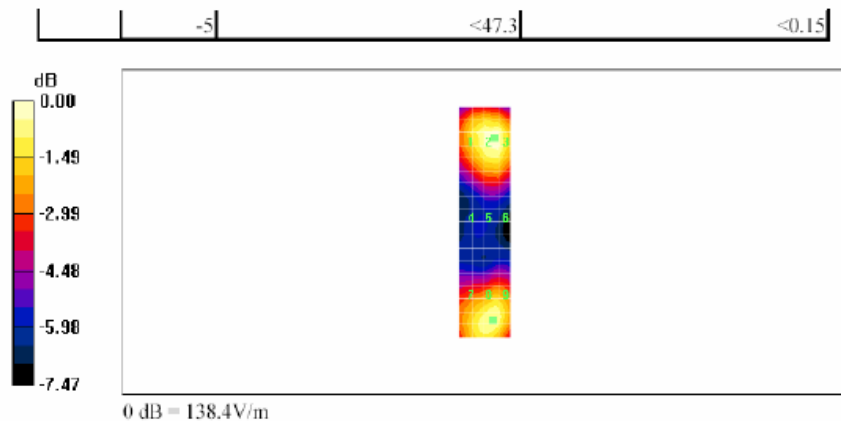
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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**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/m<sup>3</sup>

Phantom section: H Device Section

DASY4 Configuration:

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

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

Measurement grid: dx=2mm, dy=2mm

Maximum value of Total (measured) = 138.0 V/m

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

Measurement grid: dx=2mm, dy=2mm

Maximum value of Total field (slot averaged) = 131.2 V/m

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

E in V/m (Time averaged)    E in V/m (Slot averaged)

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

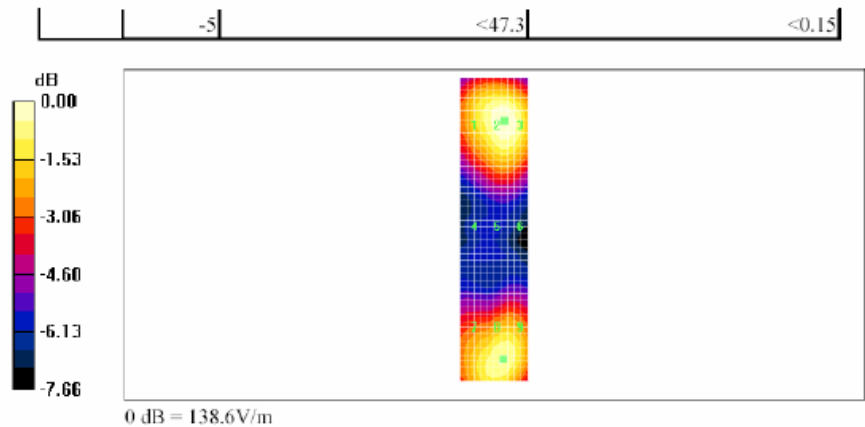
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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**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/m<sup>3</sup>

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
<b>0.342</b>	<b>0.359</b>	<b>0.344</b>	<b>0.342</b>	<b>0.359</b>	<b>0.344</b>
Grid 4	Grid 5	Grid 6	Grid 4	Grid 5	Grid 6
<b>0.389</b>	<b>0.406</b>	<b>0.389</b>	<b>0.389</b>	<b>0.406</b>	<b>0.389</b>
Grid 7	Grid 8	Grid 9	Grid 7	Grid 8	Grid 9
<b>0.363</b>	<b>0.378</b>	<b>0.363</b>	<b>0.363</b>	<b>0.378</b>	<b>0.363</b>

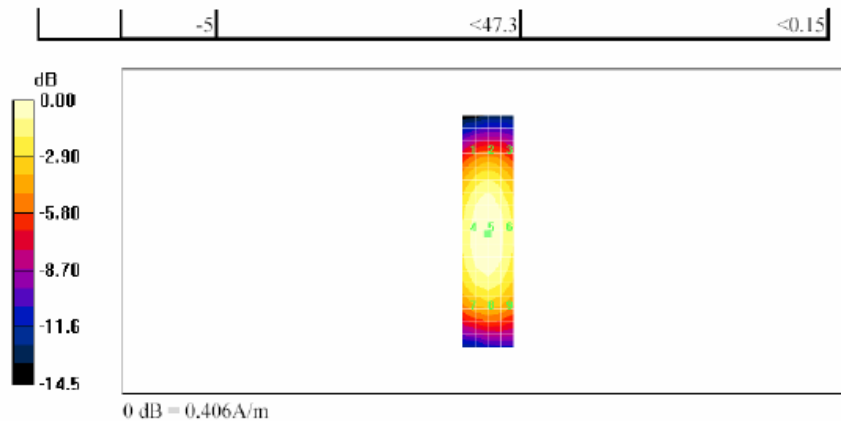
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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**Lab: RIM Testing Services (RTS)**

**HAC\_H\_Dipole\_CW 1880\_2 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/m<sup>3</sup>

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 (11x46x1):**

Measurement grid: dx=2mm, dy=2mm

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

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

Measurement grid: dx=2mm, dy=2mm

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
<b>0.347</b>	<b>0.361</b>	<b>0.348</b>	<b>0.347</b>	<b>0.361</b>	<b>0.348</b>
Grid 4	Grid 5	Grid 6	Grid 4	Grid 5	Grid 6
<b>0.394</b>	<b>0.406</b>	<b>0.391</b>	<b>0.394</b>	<b>0.406</b>	<b>0.391</b>
Grid 7	Grid 8	Grid 9	Grid 7	Grid 8	Grid 9
<b>0.367</b>	<b>0.380</b>	<b>0.365</b>	<b>0.367</b>	<b>0.380</b>	<b>0.365</b>

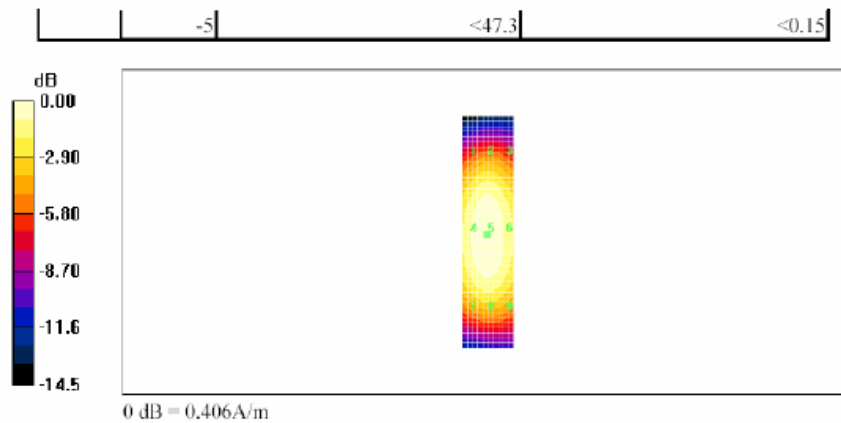
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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