

<b>RTS</b> RIM Testing Services	Document <b>Annex A to Hearing Aid Compatibility RF Emissions Test  Report for BlackBerry Wireless Handheld Model RBF20CW</b>			Page <b>1(111)</b>
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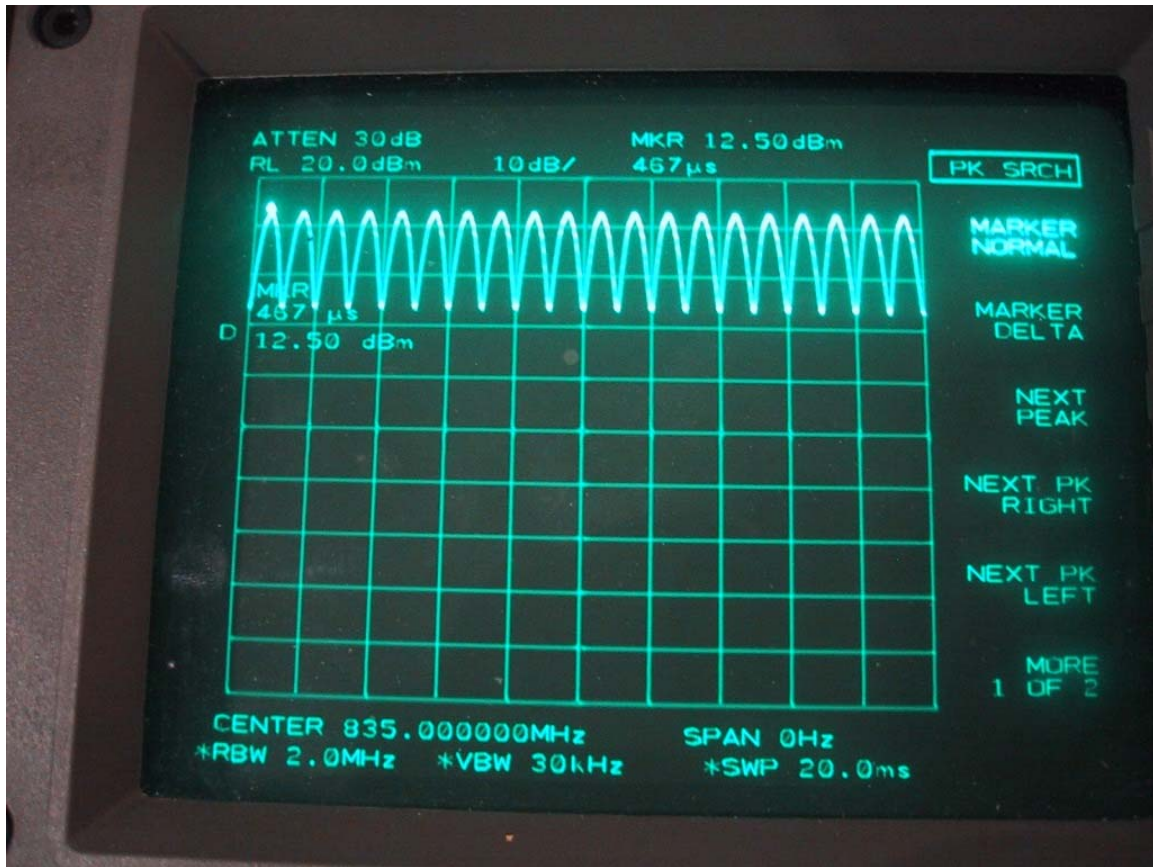
## Annex A: Measurement plots and data

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



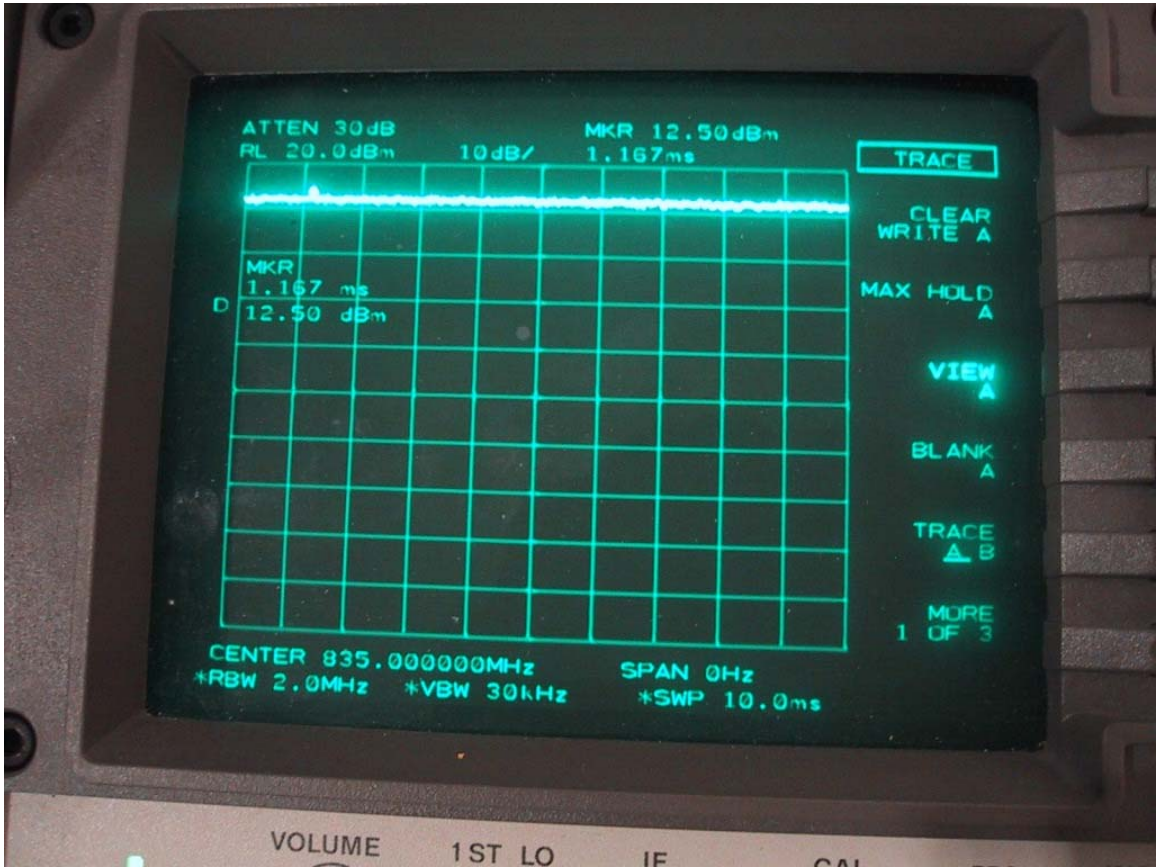
0 Hz Span CW Plot (835MHz)

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0 Hz Span 80% AM Plot (835MHz)

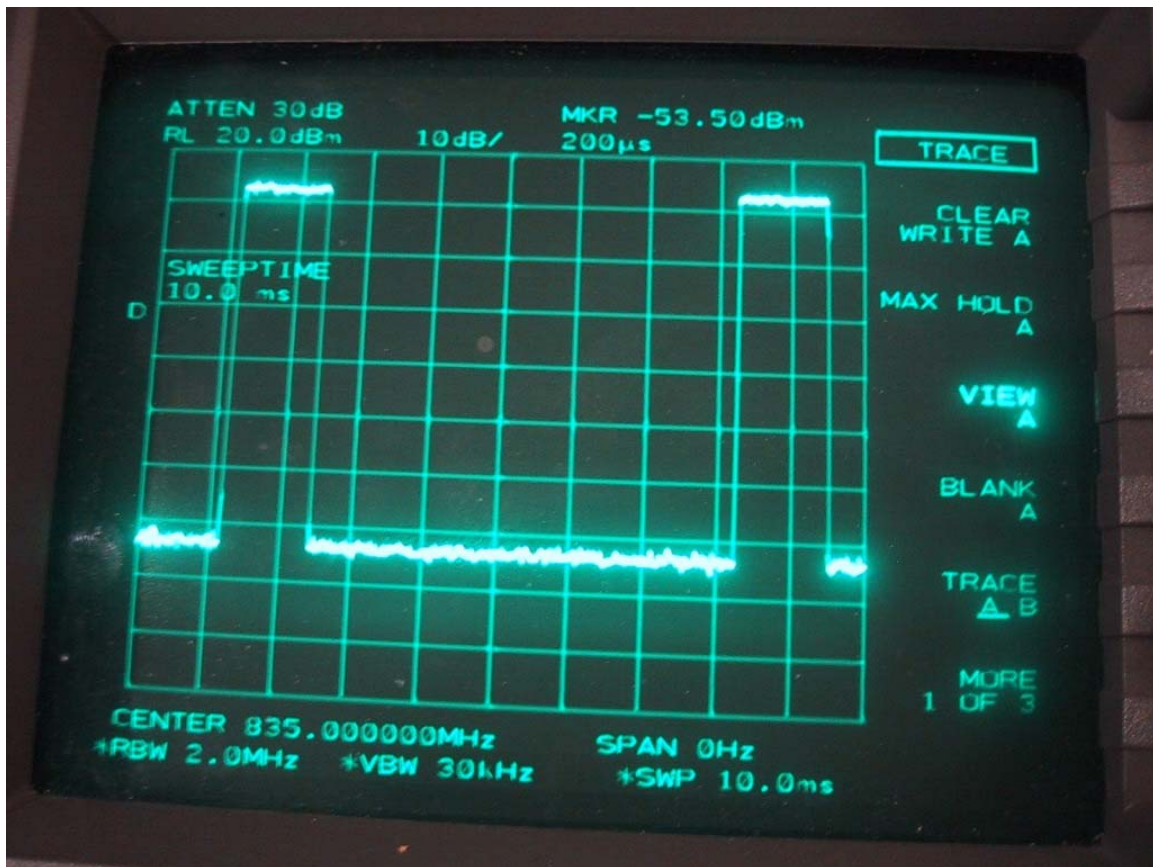
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0 Hz Span CDMA Full Rate (835MHz)

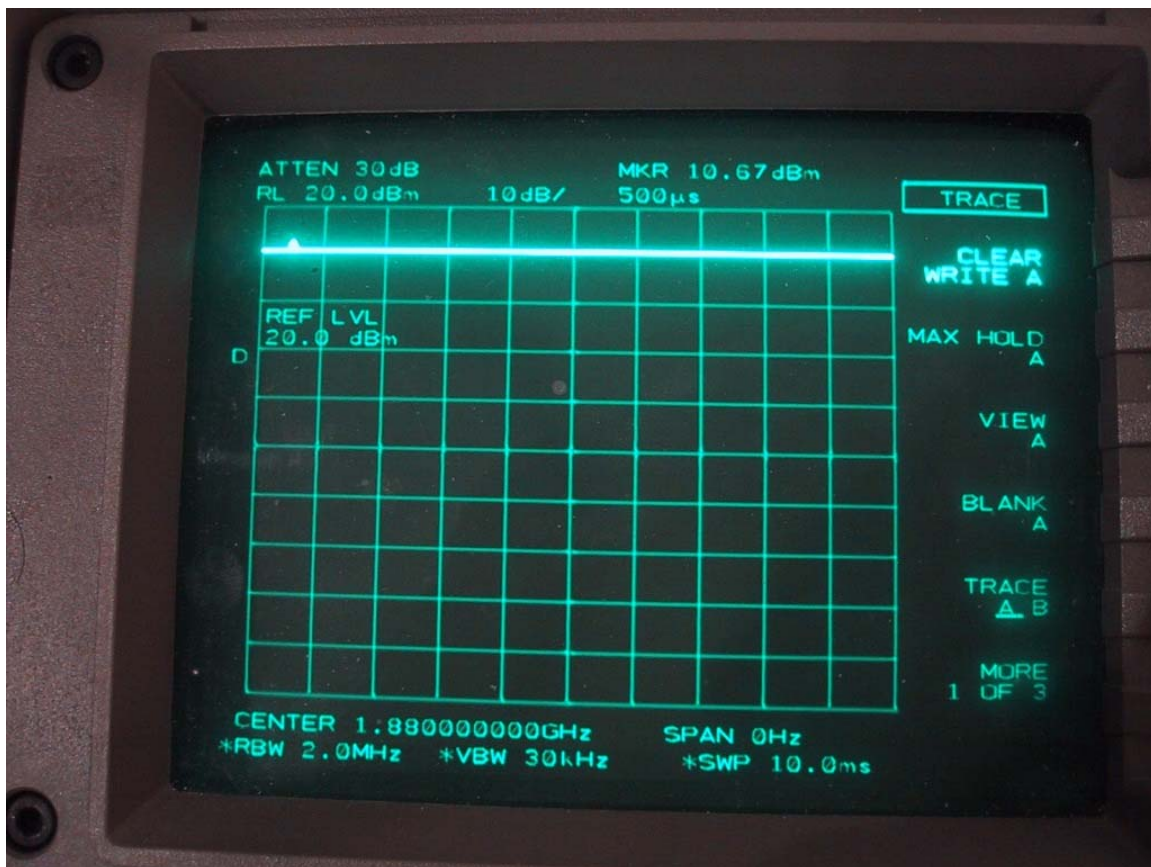


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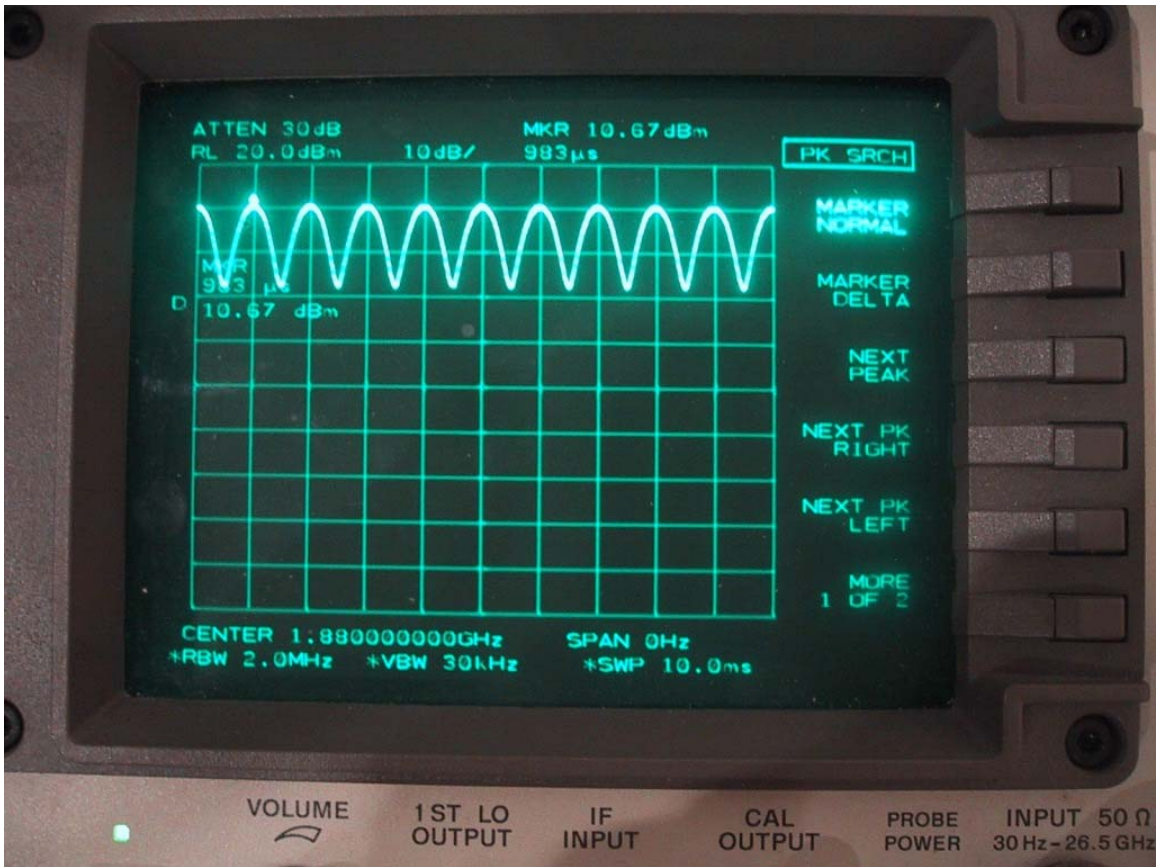
0 Hz Span CDMA 1/8 Rate (835MHz)

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**0 Hz Span CW Plot (1880MHz)**

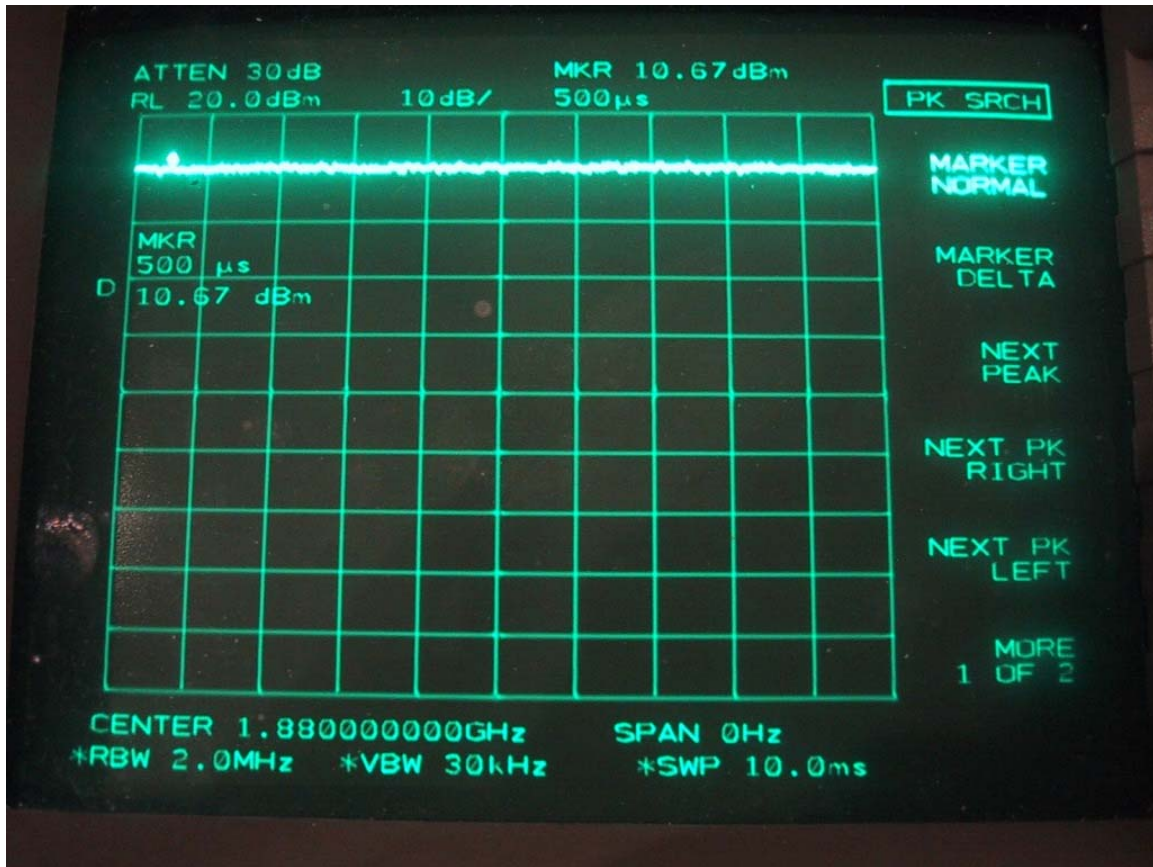
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0 Hz Span 80% AM Plot (1880MHz)

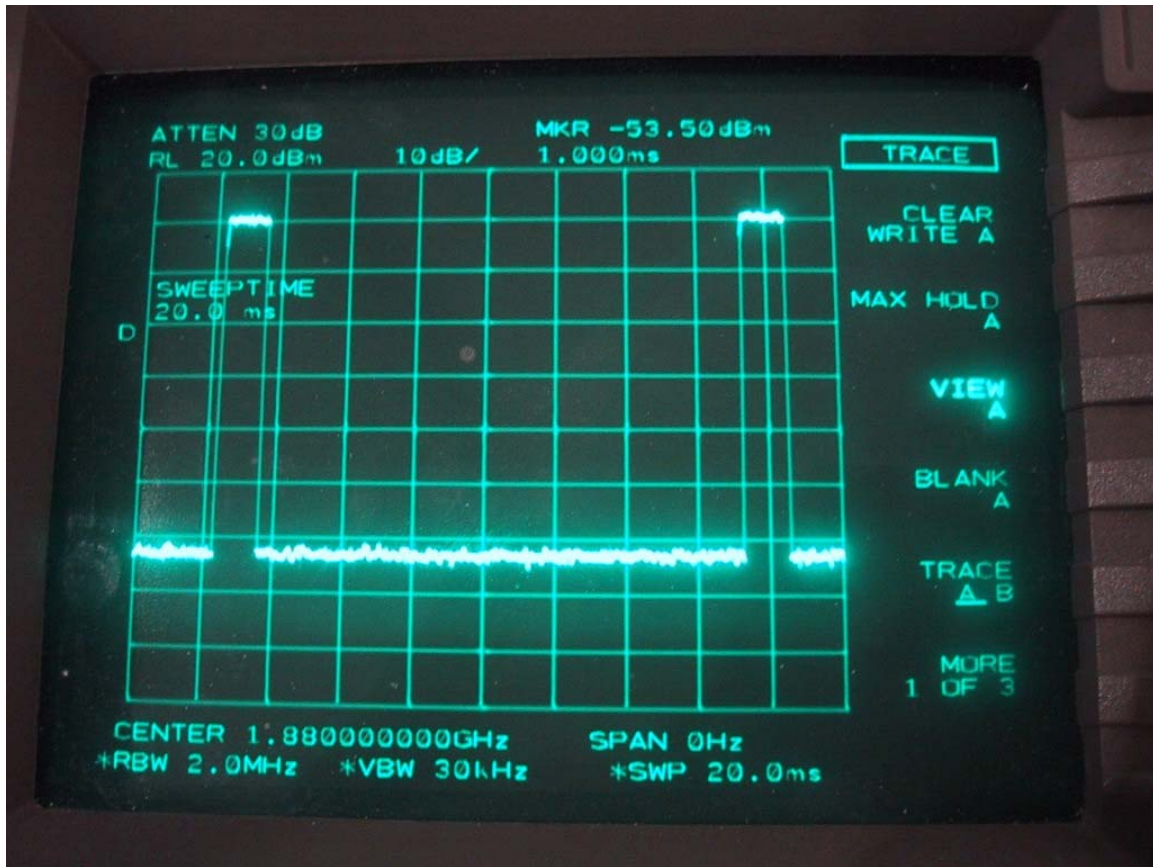


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**0 Hz Span CDMA Full Rate (1880MHz)**

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



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

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Date/Time: 17/07/2006 10:34:32 AM

Test Laboratory: RTS

HAC\_E\_Dipole\_835 MHz\_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: H Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Probe Modulation Factor = 1.00

Reference Value = 53.7 V/m; Power Drift = 0.038 dB

Maximum value of Total (measured) = 171.7 V/m

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

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

Maximum value of peak Total field = 174.2 V/m

Probe Modulation Factor = 1.00

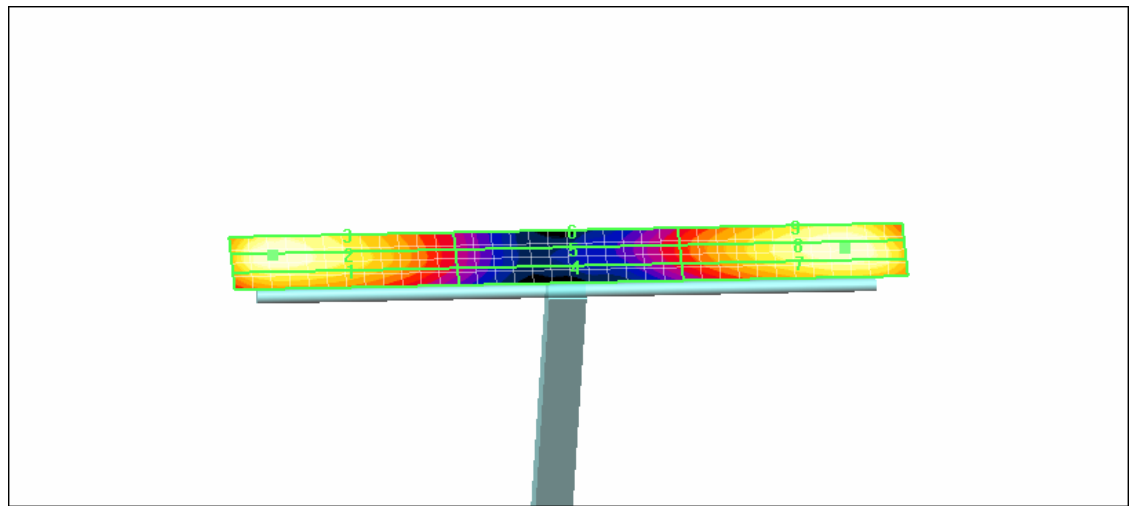
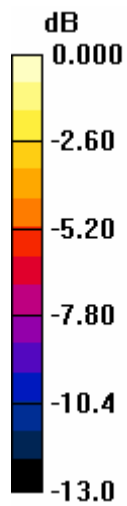
Reference Value = 53.7 V/m; Power Drift = 0.038 dB

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

Peak E-field in V/m

Grid	Grid	Grid
<b>152.7</b>	<b>174.2</b>	<b>174.1</b>
Grid	Grid	Grid
<b>85.6</b>	<b>91.0</b>	<b>90.2</b>
Grid	Grid	Grid

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0 dB = 174.2V/m



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Date/Time: 17/07/2006 12:47:20 PM

Test Laboratory: RTS

HAC\_E\_Dipole\_835 MHz\_CW\_12.5dBm

**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: H Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Probe Modulation Factor = 1.00

Reference Value = 22.5 V/m; Power Drift = 0.006 dB

Maximum value of Total (measured) = 74.7 V/m

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

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

Maximum value of peak Total field = 75.8 V/m

Probe Modulation Factor = 1.00

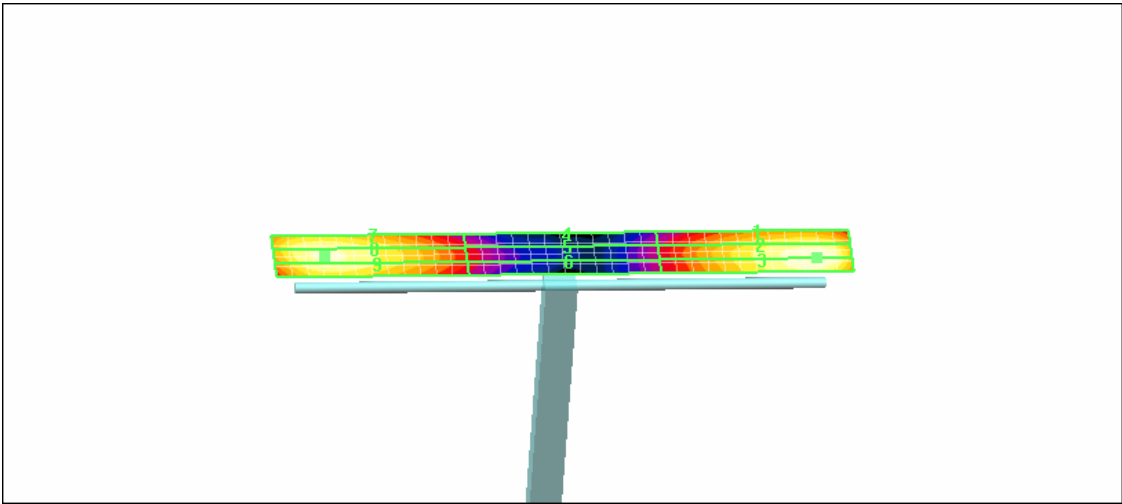
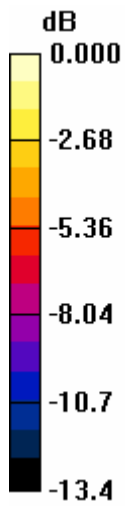
Reference Value = 22.5 V/m; Power Drift = 0.006 dB

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

Peak E-field in V/m

Grid	Grid	Grid
<b>64.6</b>	<b>75.8</b>	<b>75.8</b>
Grid	Grid	Grid
<b>36.2</b>	<b>37.8</b>	<b>37.2</b>
Grid	Grid	Grid

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0 dB = 75.8V/m

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Date/Time: 17/07/2006 12:55:40 PM

Test Laboratory: RTS

HAC\_E\_Dipole\_835 MHz\_AM80%\_12.5dBm

**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: H Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Probe Modulation Factor = 1.00

Reference Value = 13.8 V/m; Power Drift = 0.081 dB

Maximum value of Total (measured) = 45.6 V/m

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

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

Maximum value of peak Total field = 46.2 V/m

Probe Modulation Factor = 1.00

Reference Value = 13.8 V/m; Power Drift = 0.081 dB

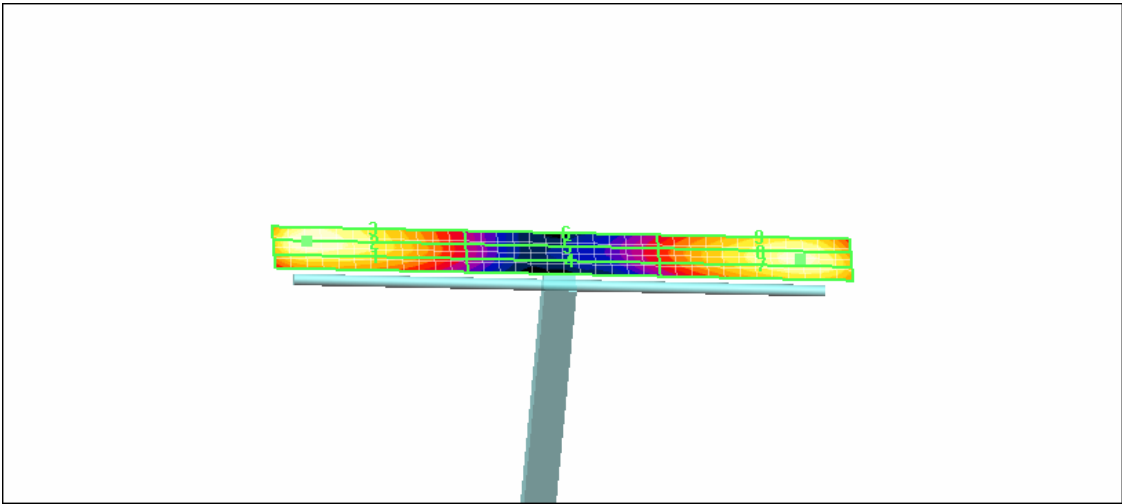
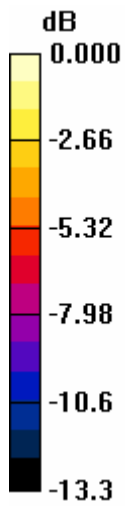
**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
<b>39.6</b>	<b>46.2</b>	<b>46.2</b>
Grid	Grid	Grid
<b>22.2</b>	<b>23.4</b>	<b>23.1</b>
Grid	Grid	Grid



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0 dB = 46.2V/m

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Date/Time: 17/07/2006 11:26:09 AM

Test Laboratory: RTS

HAC\_E\_Dipole\_835 MHz\_CDMA\_Full\_12.5dBm

**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,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: H Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Probe Modulation Factor = 1.00

Reference Value = 23.1 V/m; Power Drift = 0.010 dB

Maximum value of Total (measured) = 73.4 V/m

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

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

Maximum value of peak Total field = 73.8 V/m

Probe Modulation Factor = 1.00

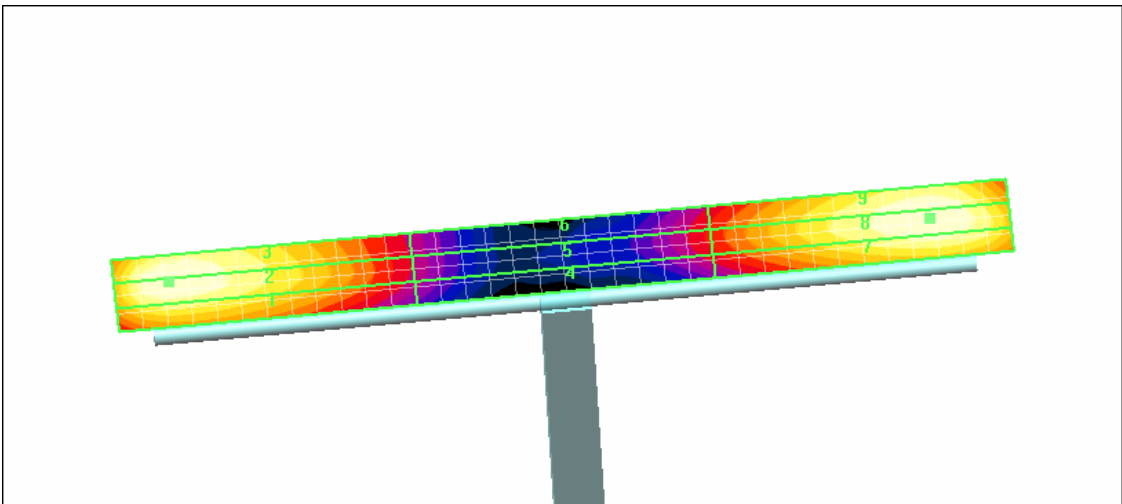
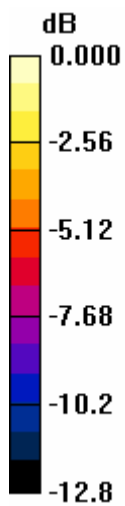
Reference Value = 23.1 V/m; Power Drift = 0.010 dB

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

Peak E-field in V/m

Grid	Grid	Grid
<b>64.6</b>	<b>73.8</b>	<b>73.6</b>
Grid	Grid	Grid
<b>36.4</b>	<b>38.6</b>	<b>38.3</b>
Grid	Grid	Grid

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0 dB = 73.8V/m



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Date/Time: 17/07/2006 11:35:24 AM

Test Laboratory: RTS

HAC\_E\_Dipole\_835 MHz\_CDMA\_1/8th\_R\_12.5dBm

**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: H Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Probe Modulation Factor = 1.00

Reference Value = 8.45 V/m; Power Drift = 0.066 dB

Maximum value of Total (measured) = 36.8 V/m

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

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

Maximum value of peak Total field = 37.1 V/m

Probe Modulation Factor = 1.00

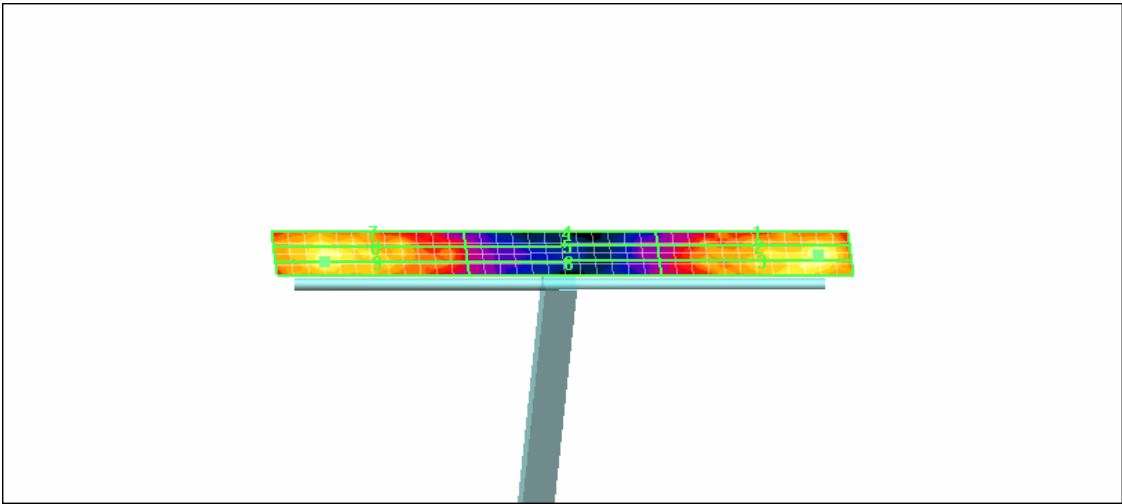
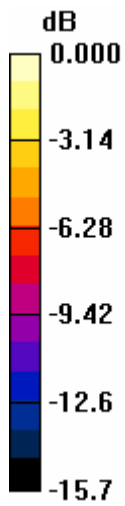
Reference Value = 8.45 V/m; Power Drift = 0.066 dB

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

Peak E-field in V/m

Grid	Grid	Grid
<b>28.3</b>	<b>37.1</b>	<b>33.0</b>
Grid	Grid	Grid
<b>14.7</b>	<b>14.7</b>	<b>14.8</b>
Grid	Grid	Grid

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0 dB = 37.1V/m

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**Date/Time: 17/07/2006 2:29:02 PM**

Test Laboratory: RTS

HAC\_H\_Dipole\_835 MHz\_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: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**H Scan - H3DV6 probe tip 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

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

Probe Modulation Factor = 1.00

Reference Value = 0.532 A/m; Power Drift = -0.067 dB

Maximum value of Total (measured) = 0.458 A/m

**H Scan - H3DV6 probe tip 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

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

Maximum value of peak Total field = 0.460 A/m

Probe Modulation Factor = 1.00

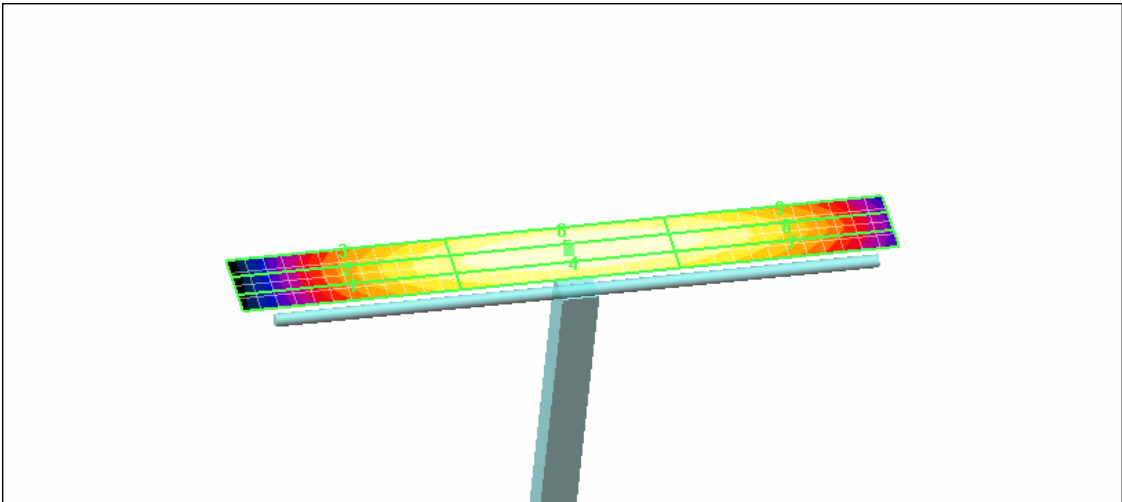
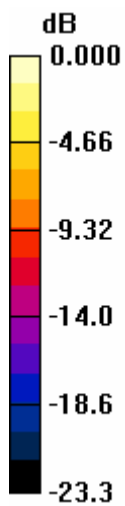
Reference Value = 0.532 A/m; Power Drift = -0.067 dB

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

Peak H-field in A/m

Grid	Grid	Grid
<b>0.354</b>	<b>0.376</b>	<b>0.366</b>
Grid	Grid	Grid
<b>0.427</b>	<b>0.460</b>	<b>0.451</b>
Grid	Grid	Grid

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0 dB = 0.460A/m



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Date/Time: 17/07/2006 1:54:14 PM

Test Laboratory: RTS

HAC\_H\_Dipole\_835 MHz\_CW\_12.5dBm

**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: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### **H Scan - H3DV6 probe tip 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

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

Probe Modulation Factor = 1.00

Reference Value = 0.219 A/m; Power Drift = -0.012 dB

Maximum value of Total (measured) = 0.226 A/m

#### **H Scan - H3DV6 probe tip 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

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

Maximum value of peak Total field = 0.226 A/m

Probe Modulation Factor = 1.00

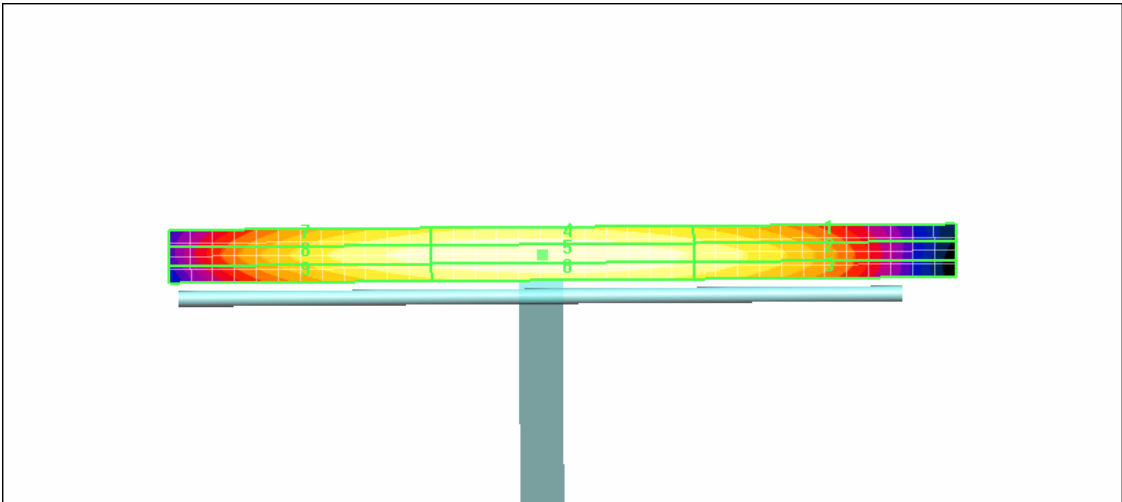
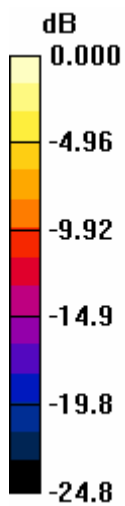
Reference Value = 0.219 A/m; Power Drift = -0.012 dB

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

Peak H-field in A/m

Grid	Grid	Grid
<b>0.165</b>	<b>0.185</b>	<b>0.182</b>
Grid	Grid	Grid
<b>0.205</b>	<b>0.226</b>	<b>0.216</b>
Grid	Grid	Grid

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0 dB = 0.226A/m

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Date/Time: 17/07/2006 1:44:36 PM

Test Laboratory: RTS

HAC\_H\_Dipole\_835 MHz\_AM80%\_12.5dBm

**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: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### **H Scan - H3DV6 probe tip 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

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

Probe Modulation Factor = 1.00

Reference Value = 0.134 A/m; Power Drift = 0.040 dB

Maximum value of Total (measured) = 0.139 A/m

#### **H Scan - H3DV6 probe tip 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

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

Maximum value of peak Total field = 0.140 A/m

Probe Modulation Factor = 1.00

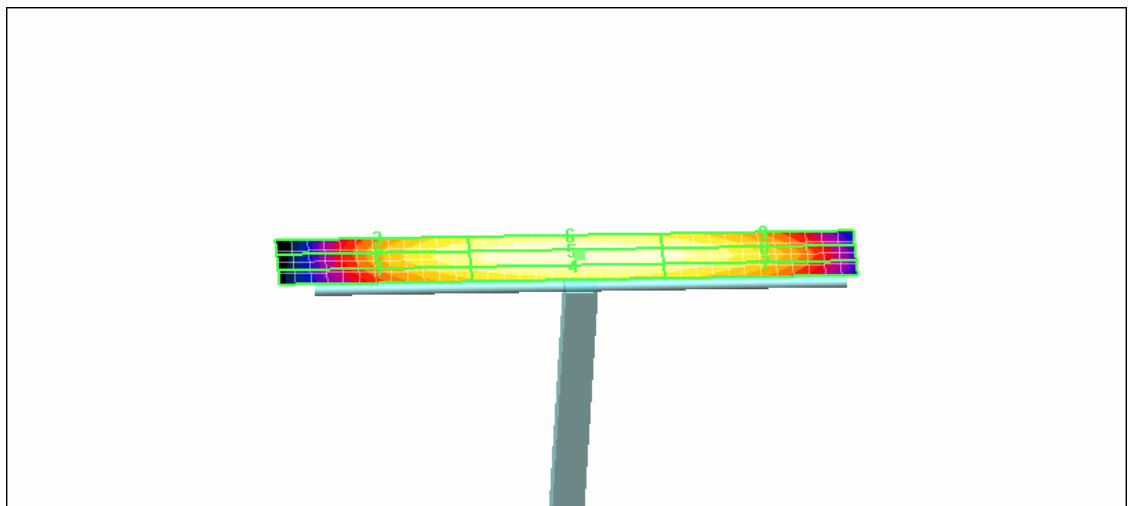
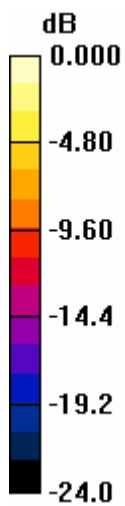
Reference Value = 0.134 A/m; Power Drift = 0.040 dB

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

Peak H-field in A/m

Grid	Grid	Grid
<b>0.102</b>	<b>0.115</b>	<b>0.113</b>
Grid	Grid	Grid
<b>0.126</b>	<b>0.140</b>	<b>0.134</b>
Grid	Grid	Grid

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0 dB = 0.140A/m

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Date/Time: 17/07/2006 2:42:01 PM

Test Laboratory: RTS

HAC\_H\_Dipole\_835 MHz\_CDMA\_12.5dBm

**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: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### **H Scan - H3DV6 probe tip 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

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

Probe Modulation Factor = 1.00

Reference Value = 0.219 A/m; Power Drift = 0.037 dB

Maximum value of Total (measured) = 0.226 A/m

#### **H Scan - H3DV6 probe tip 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

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

Maximum value of peak Total field = 0.227 A/m

Probe Modulation Factor = 1.00

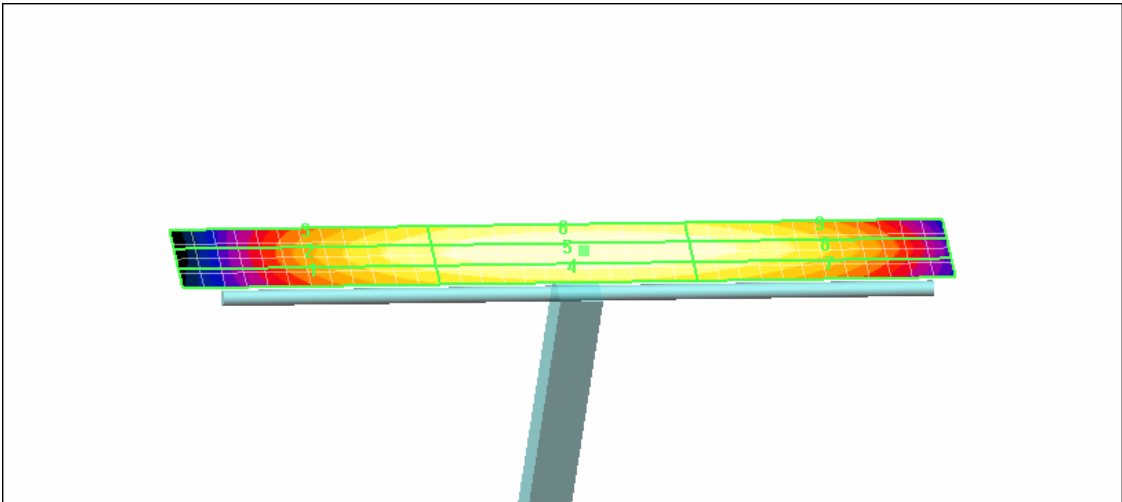
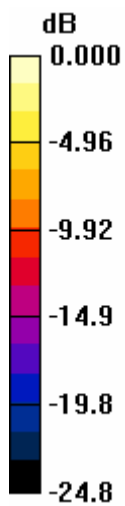
Reference Value = 0.219 A/m; Power Drift = 0.037 dB

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

Peak H-field in A/m

Grid	Grid	Grid
<b>0.169</b>	<b>0.185</b>	<b>0.179</b>
Grid	Grid	Grid
<b>0.205</b>	<b>0.227</b>	<b>0.219</b>
Grid	Grid	Grid

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0 dB = 0.227A/m



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Date/Time: 31/07/2006 9:38:48 AM

Test Laboratory: RTS

HAC\_H\_Dipole\_835 MHz\_CDMA\_1/8th\_12.5dBm

**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: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### **H Scan - H3DV6 probe tip 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

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

Probe Modulation Factor = 1.00

Reference Value = 0.083 A/m; Power Drift = -0.011 dB

Maximum value of Total (measured) = 0.096 A/m

#### **H Scan - H3DV6 probe tip 10mm above CD835 Dipole/Hearing Aid Compatibility Test**

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

Maximum value of peak Total field = 0.096 A/m

Probe Modulation Factor = 1.00

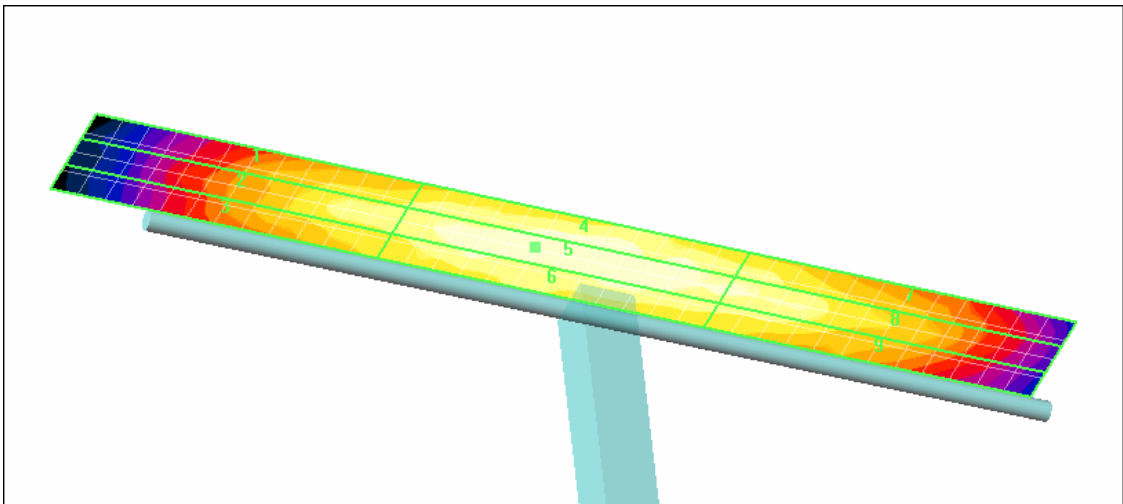
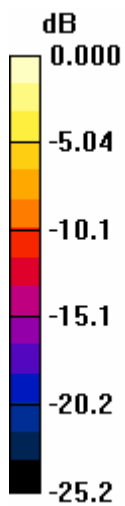
Reference Value = 0.083 A/m; Power Drift = -0.011 dB

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

Peak H-field in A/m

Grid	Grid	Grid
<b>0.069</b>	<b>0.075</b>	<b>0.065</b>
Grid	Grid	Grid
<b>0.091</b>	<b>0.096</b>	<b>0.085</b>
Grid	Grid	Grid

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0 dB = 0.096A/m

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Date/Time: 13/07/2006 2:40:05 PM

Test Laboratory: RTS

HAC\_E\_Dipole\_1880 MHz\_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: H Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Probe Modulation Factor = 1.00

Reference Value = 72.9 V/m; Power Drift = 0.031 dB

Maximum value of Total (measured) = 130.3 V/m

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

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

Maximum value of peak Total field = 132.4 V/m

Probe Modulation Factor = 1.00

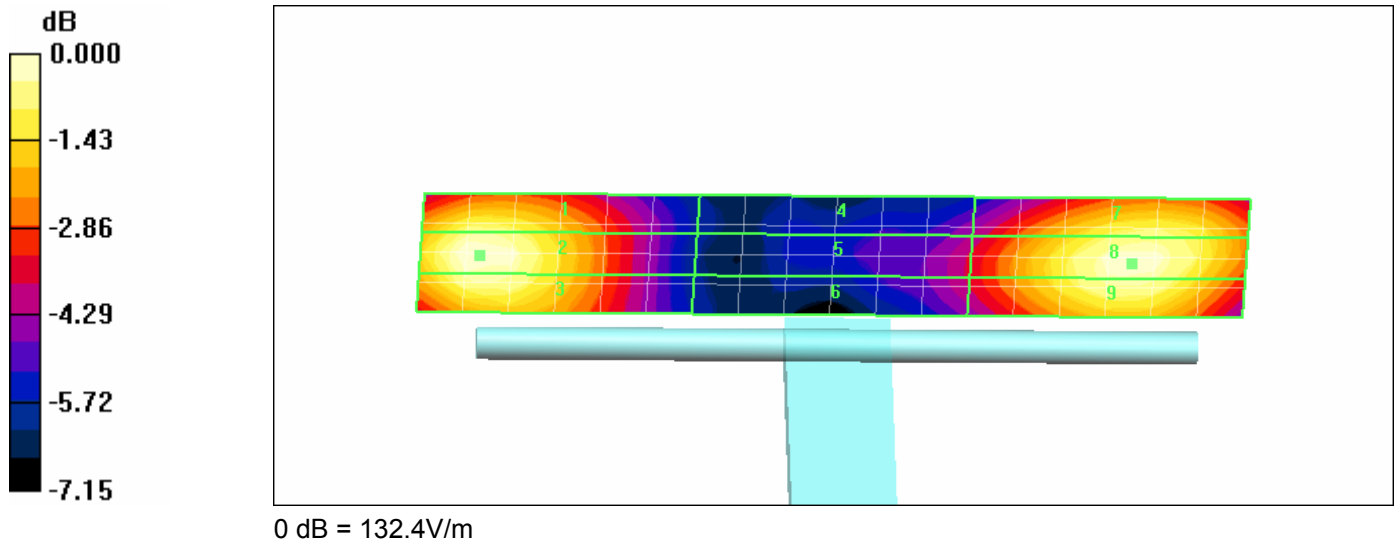
Reference Value = 72.9 V/m; Power Drift = 0.031 dB

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

Peak E-field in V/m

Grid	Grid	Grid
<b>125.2</b>	<b>132.4</b>	<b>129.3</b>
Grid	Grid	Grid
<b>81.9</b>	<b>87.3</b>	<b>87.0</b>
Grid	Grid	Grid

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Date/Time: 13/07/2006 2:46:28 PM

Test Laboratory: RTS

HAC\_E\_Dipole\_1880 MHz\_CW\_10.67dBm

**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,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: H Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Probe Modulation Factor = 1.00

Reference Value = 24.8 V/m; Power Drift = -0.017 dB

Maximum value of Total (measured) = 44.4 V/m

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

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

Maximum value of peak Total field = 45.1 V/m

Probe Modulation Factor = 1.00

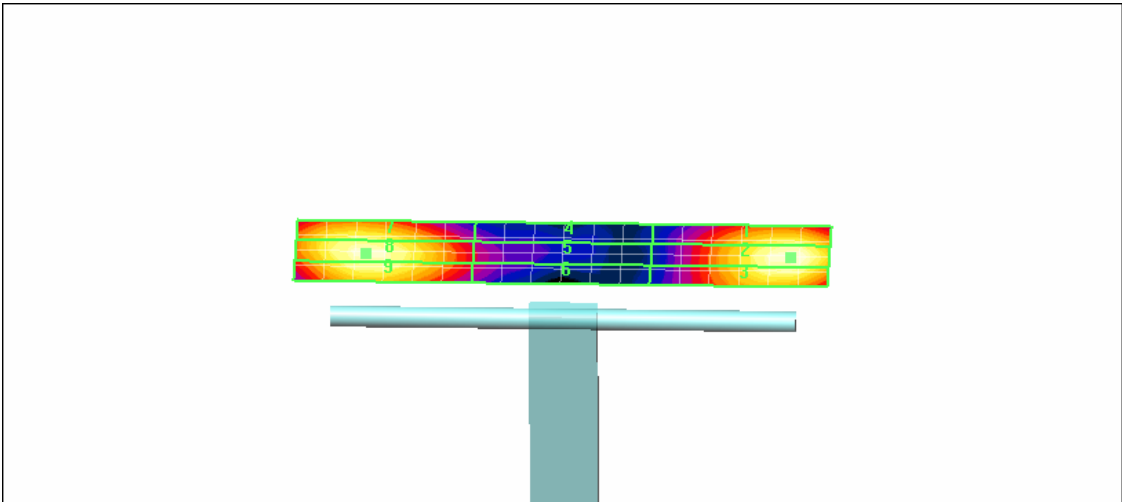
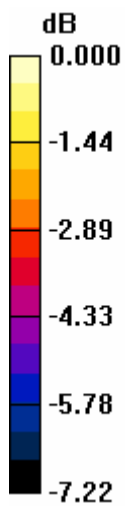
Reference Value = 24.8 V/m; Power Drift = -0.017 dB

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

Peak E-field in V/m

Grid	Grid	Grid
<b>42.6</b>	<b>45.1</b>	<b>43.9</b>
Grid	Grid	Grid
<b>27.9</b>	<b>29.7</b>	<b>29.5</b>
Grid	Grid	Grid

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0 dB = 45.1V/m



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Date/Time: 13/07/2006 2:53:15 PM

Test Laboratory: RTS

HAC\_E\_Dipole\_1880 MHz\_80%AM\_10.67dBm

**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,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: H Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Probe Modulation Factor = 1.00

Reference Value = 15.4 V/m; Power Drift = -0.009 dB

Maximum value of Total (measured) = 27.7 V/m

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

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

Maximum value of peak Total field = 28.1 V/m

Probe Modulation Factor = 1.00

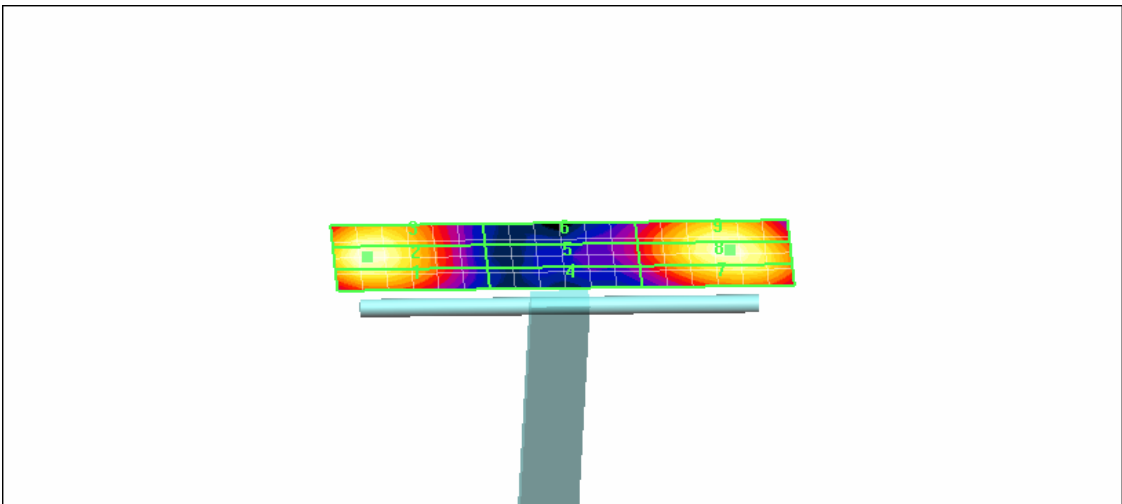
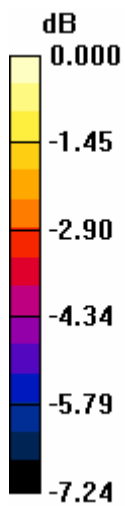
Reference Value = 15.4 V/m; Power Drift = -0.009 dB

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

Peak E-field in V/m

Grid	Grid	Grid
<b>26.7</b>	<b>28.1</b>	<b>27.4</b>
Grid	Grid	Grid
<b>17.4</b>	<b>18.5</b>	<b>18.4</b>
Grid	Grid	Grid

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0 dB = 28.1V/m

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Date/Time: 13/07/2006 3:03:30 PM

Test Laboratory: RTS

HAC\_E\_Dipole\_1880 MHz\_CDMA\_FR\_10.67dBm

**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: H Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Probe Modulation Factor = 1.00

Reference Value = 25.5 V/m; Power Drift = -0.088 dB

Maximum value of Total (measured) = 45.1 V/m

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

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

Maximum value of peak Total field = 45.8 V/m

Probe Modulation Factor = 1.00

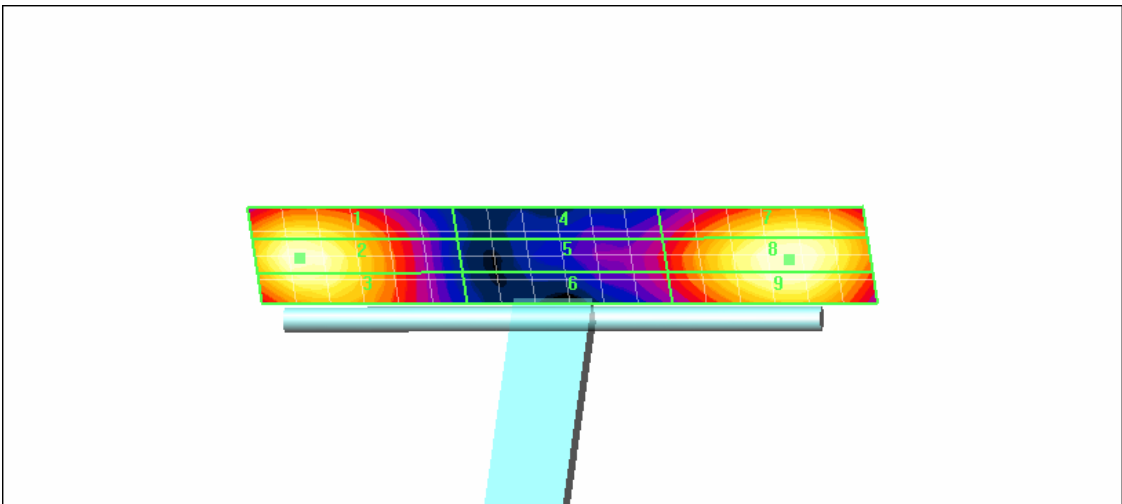
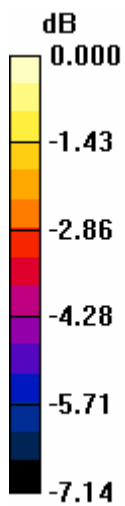
Reference Value = 25.5 V/m; Power Drift = -0.088 dB

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

Peak E-field in V/m

Grid	Grid	Grid
<b>43.1</b>	<b>45.8</b>	<b>44.5</b>
Grid	Grid	Grid
<b>28.7</b>	<b>30.7</b>	<b>30.5</b>
Grid	Grid	Grid

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0 dB = 45.8V/m

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Date/Time: 31/07/2006 10:26:14 AM

Test Laboratory: RTS

HAC\_E\_Dipole\_1880 MHz\_CDMA\_eigth\_10.67dBm\_07\_31\_06

**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: H Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Probe Modulation Factor = 1.00

Reference Value = 9.47 V/m; Power Drift = -0.005 dB

Maximum value of Total (measured) = 19.0 V/m

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

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

Maximum value of peak Total field = 19.2 V/m

Probe Modulation Factor = 1.00

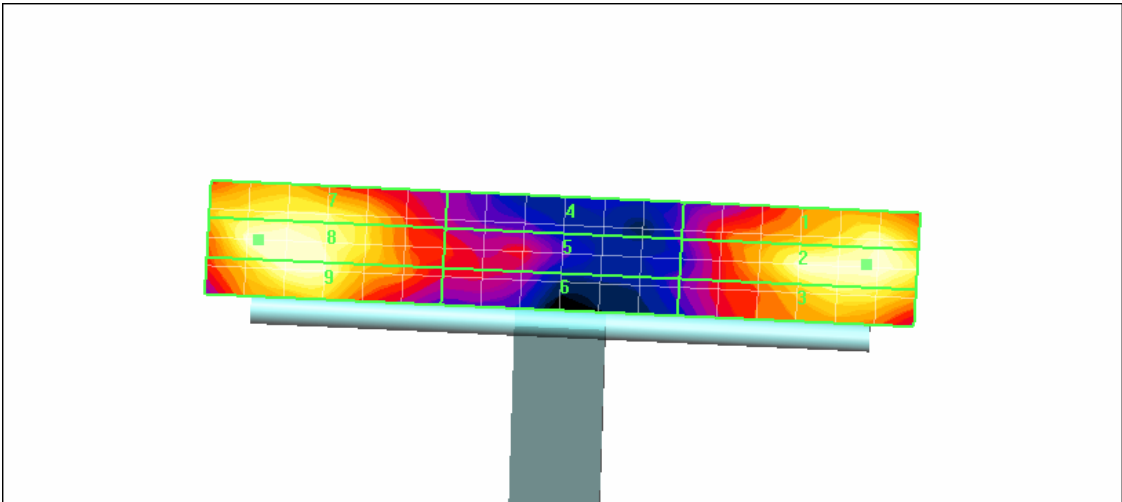
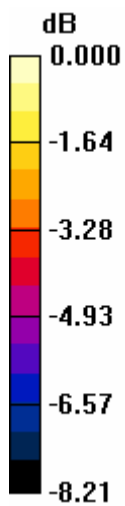
Reference Value = 9.47 V/m; Power Drift = -0.005 dB

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

Peak E-field in V/m

Grid	Grid	Grid
<b>18.6</b>	<b>19.1</b>	<b>17.7</b>
Grid	Grid	Grid
<b>11.4</b>	<b>12.7</b>	<b>12.1</b>
Grid	Grid	Grid

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0 dB = 19.2V/m



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Date/Time: 14/07/2006 4:00:34 PM

Test Laboratory: RTS

HAC\_H\_Dipole\_1880 MHz\_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: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### **H Scan - H3DV6 probe tip 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

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

Probe Modulation Factor = 1.00

Reference Value = 0.478 A/m; Power Drift = -0.003 dB

Maximum value of Total (measured) = 0.491 A/m

#### **H Scan - H3DV6 probe tip 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

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

Maximum value of peak Total field = 0.492 A/m

Probe Modulation Factor = 1.00

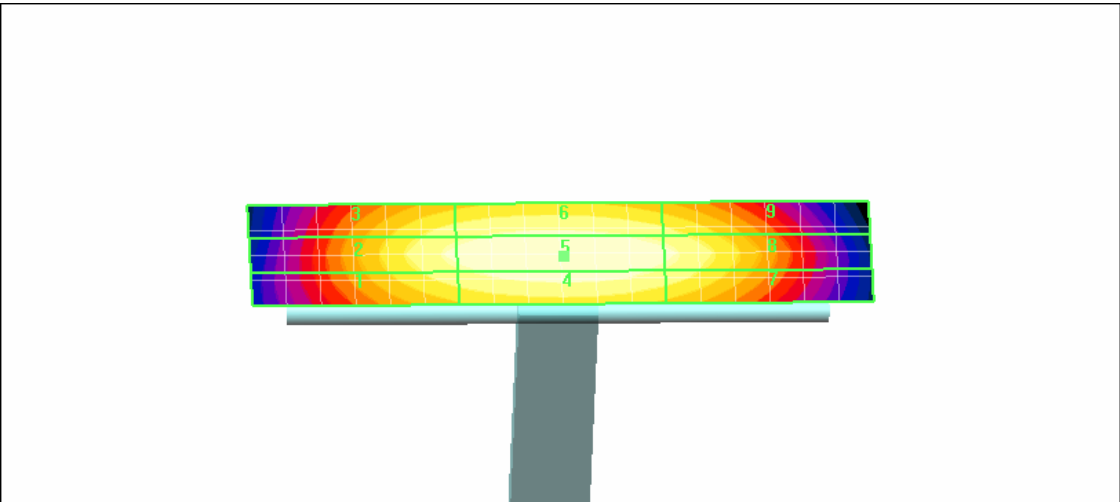
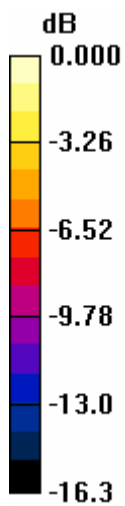
Reference Value = 0.478 A/m; Power Drift = -0.003 dB

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

Peak H-field in A/m

Grid	Grid	Grid
<b>0.425</b>	<b>0.451</b>	<b>0.422</b>
Grid	Grid	Grid
<b>0.468</b>	<b>0.492</b>	<b>0.454</b>
Grid	Grid	Grid

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0 dB = 0.492A/m

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Date/Time: 14/07/2006 4:09:14 PM

Test Laboratory: RTS

HAC\_H\_Dipole\_1880 MHz\_CW\_10.67dBm

**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: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### **H Scan - H3DV6 probe tip 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

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

Probe Modulation Factor = 1.00

Reference Value = 0.161 A/m; Power Drift = -0.020 dB

Maximum value of Total (measured) = 0.165 A/m

#### **H Scan - H3DV6 probe tip 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

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

Maximum value of peak Total field = 0.165 A/m

Probe Modulation Factor = 1.00

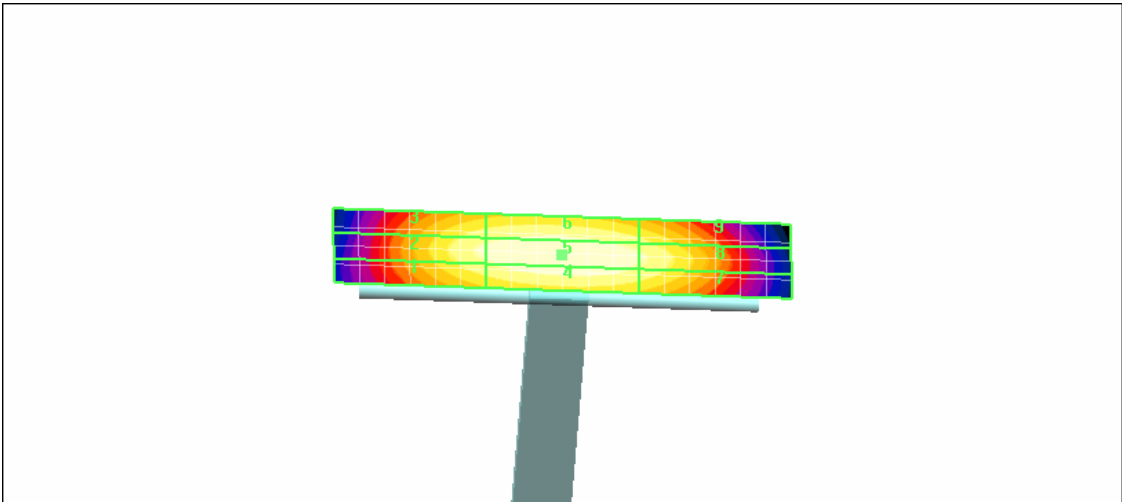
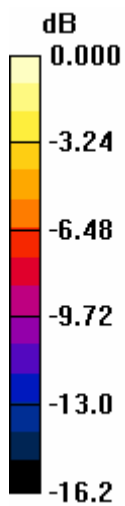
Reference Value = 0.161 A/m; Power Drift = -0.020 dB

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

Peak H-field in A/m

Grid	Grid	Grid
<b>0.144</b>	<b>0.152</b>	<b>0.142</b>
Grid	Grid	Grid
<b>0.158</b>	<b>0.165</b>	<b>0.152</b>
Grid	Grid	Grid

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0 dB = 0.165A/m

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Date/Time: 14/07/2006 4:16:07 PM

Test Laboratory: RTS

HAC\_H\_Dipole\_1880 MHz\_80%AM\_10.67dBm

**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: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### **H Scan - H3DV6 probe tip 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

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

Probe Modulation Factor = 1.00

Reference Value = 0.101 A/m; Power Drift = -0.049 dB

Maximum value of Total (measured) = 0.103 A/m

#### **H Scan - H3DV6 probe tip 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

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

Maximum value of peak Total field = 0.103 A/m

Probe Modulation Factor = 1.00

Reference Value = 0.101 A/m; Power Drift = -0.049 dB

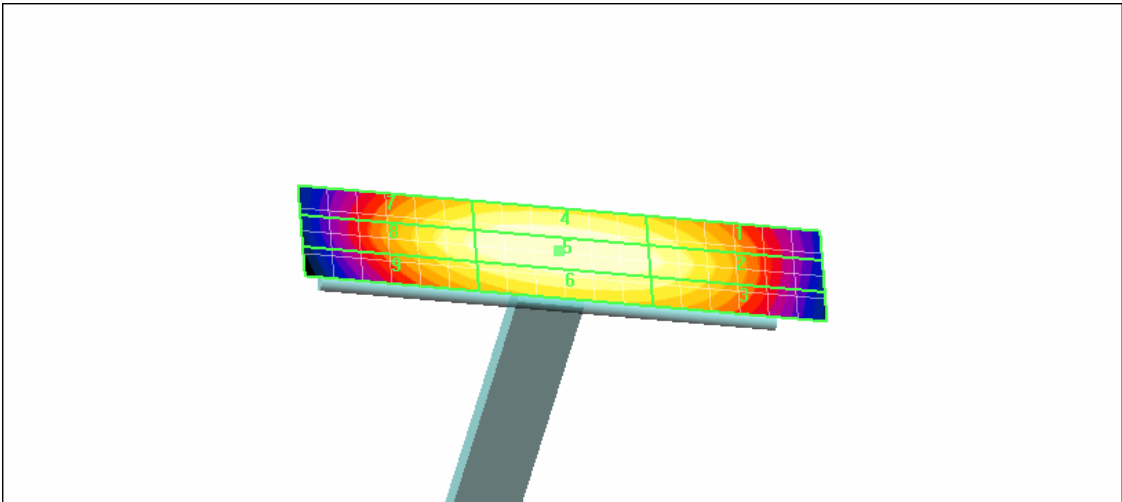
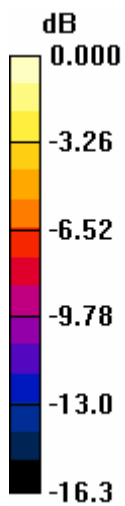
**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak H-field in A/m

Grid	Grid	Grid
<b>0.090</b>	<b>0.095</b>	<b>0.088</b>
Grid	Grid	Grid
<b>0.099</b>	<b>0.103</b>	<b>0.095</b>
Grid	Grid	Grid



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0 dB = 0.103A/m

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Date/Time: 14/07/2006 4:30:14 PM

Test Laboratory: RTS

HAC\_H\_Dipole\_1880 MHz\_CDMA\_Full\_10.67dBm

**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: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### **H Scan - H3DV6 probe tip 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

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

Probe Modulation Factor = 1.00

Reference Value = 0.167 A/m; Power Drift = -0.071 dB

Maximum value of Total (measured) = 0.171 A/m

#### **H Scan - H3DV6 probe tip 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

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

Maximum value of peak Total field = 0.171 A/m

Probe Modulation Factor = 1.00

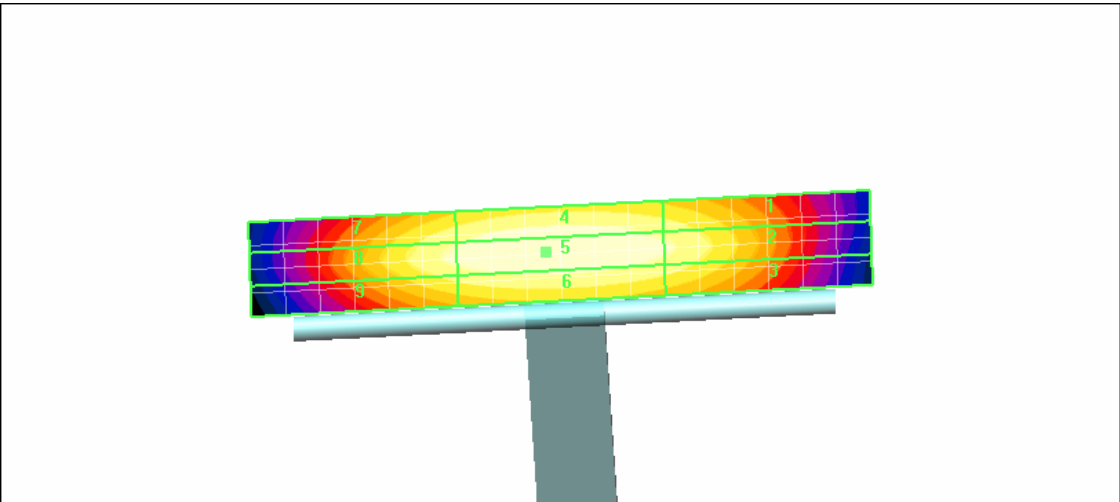
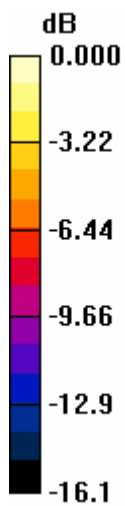
Reference Value = 0.167 A/m; Power Drift = -0.071 dB

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

Peak H-field in A/m

Grid	Grid	Grid
<b>0.147</b>	<b>0.156</b>	<b>0.145</b>
Grid	Grid	Grid
<b>0.164</b>	<b>0.171</b>	<b>0.157</b>
Grid	Grid	Grid

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0 dB = 0.171A/m

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Date/Time: 31/07/2006 9:55:07 AM

Test Laboratory: RTS

HAC\_H\_Dipole\_1880 MHz\_CDMA\_Eigth\_10.67dBm

**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: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### **H Scan - H3DV6 probe tip 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

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

Probe Modulation Factor = 1.00

Reference Value = 0.069 A/m; Power Drift = 0.150 dB

Maximum value of Total (measured) = 0.079 A/m

#### **H Scan - H3DV6 probe tip 10mm above CD1880 Dipole/Hearing Aid Compatibility Test**

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

Maximum value of peak Total field = 0.079 A/m

Probe Modulation Factor = 1.00

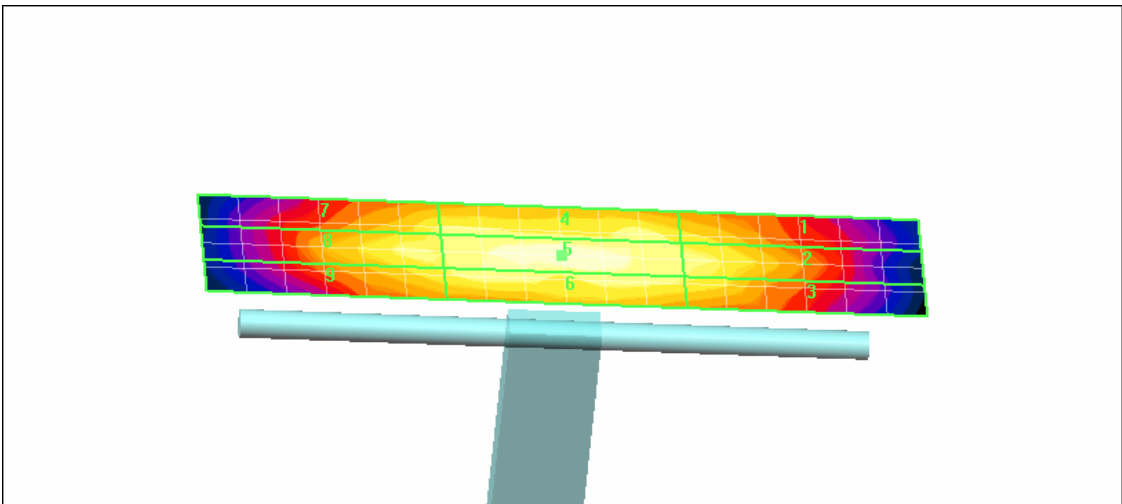
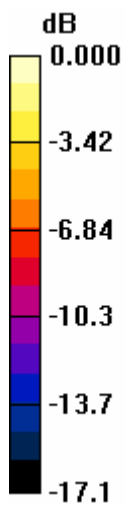
Reference Value = 0.069 A/m; Power Drift = 0.150 dB

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

Peak H-field in A/m

Grid	Grid	Grid
<b>0.060</b>	<b>0.064</b>	<b>0.063</b>
Grid	Grid	Grid
<b>0.069</b>	<b>0.079</b>	<b>0.070</b>
Grid	Grid	Grid

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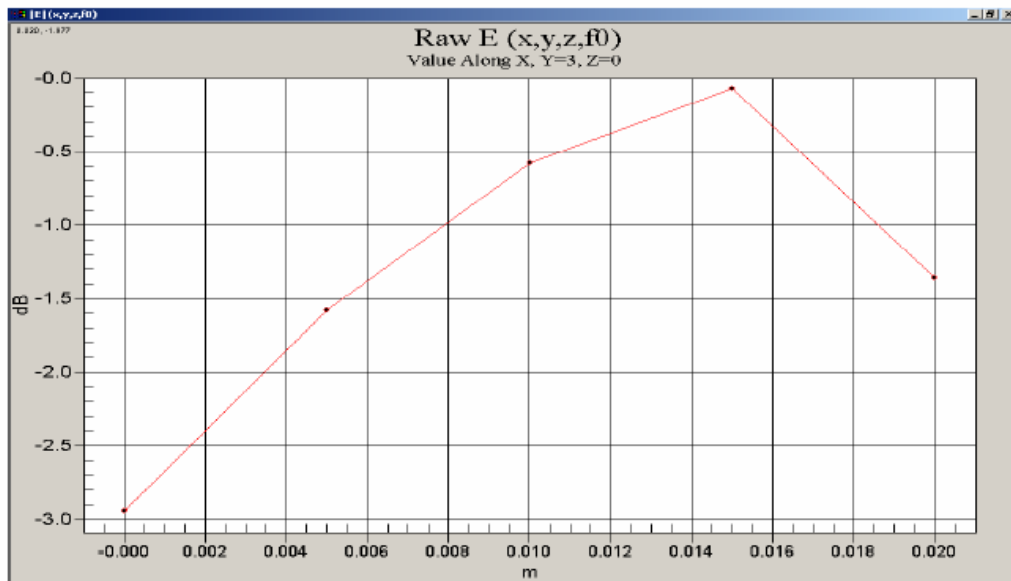


0 dB = 0.079A/m

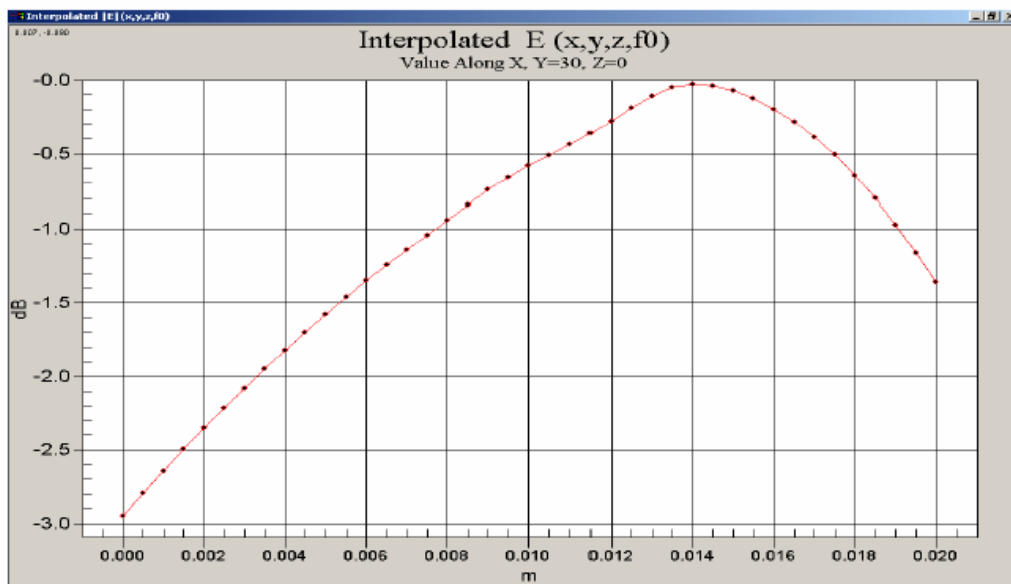
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### Justification of Step Size and Interpolation

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.

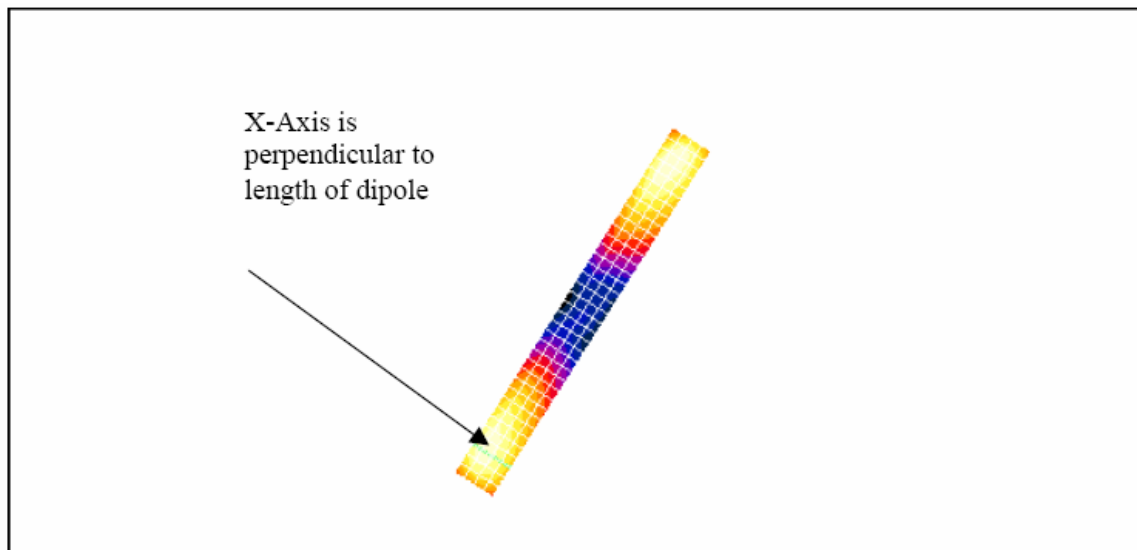


The figure above shows the raw measured field strength perpendicular to the length of the validation dipole. The TCB guidance slides require the 3dB width to be much larger than the step size. The width between -3dB points is > 21mm, at least 4 times the step size.



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

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

### **Dipole Validation 1880 MHz\_E-Field 07\_14\_05**

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

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

Medium: Air Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/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

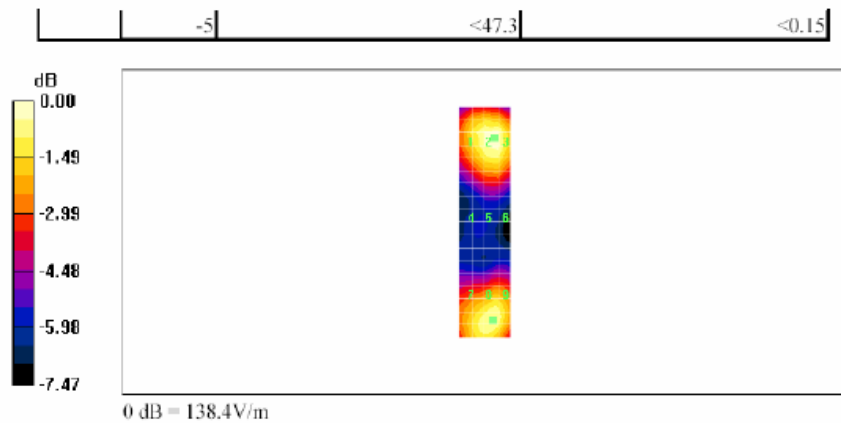
file://C:\Program%20Files\DASY4\Print\_Templates\Dipole%20Validation%201880%20... 14/07/2005



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

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

### **Dipole Validation 1880 MHz\_2mm step\_E-Field 07\_14\_05**

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

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

Medium: Air Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/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

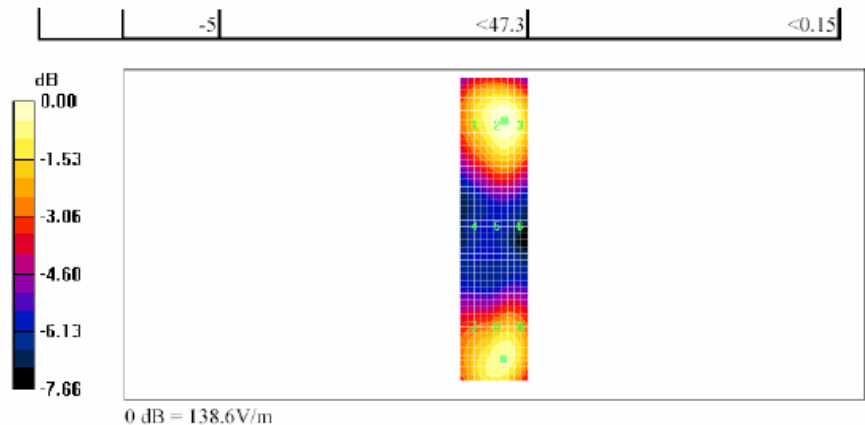
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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

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

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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>

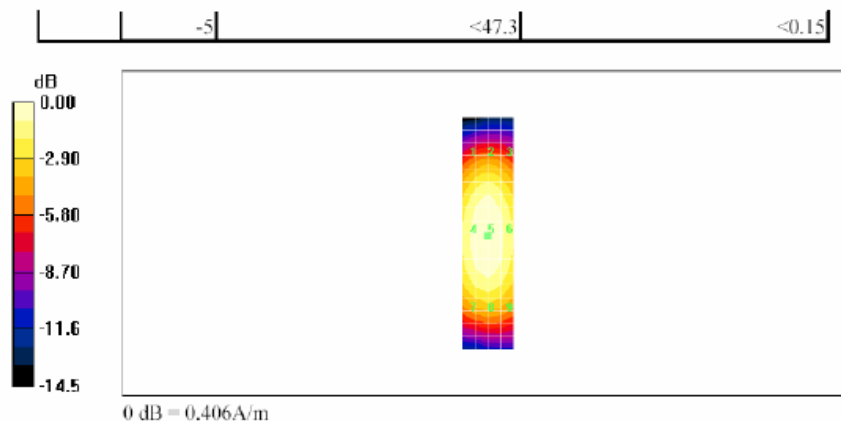
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

file:///C:/Program%20Files/DASY4/Print\_Templates/HAC\_H\_Dipole\_CW%201880\_5%... 14/07/2005

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file://C:\Program%20Files\DASY4\Print\_Templates\HAC\_H\_Dipole\_CW%201880\_5%... 14/07/2005

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**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>

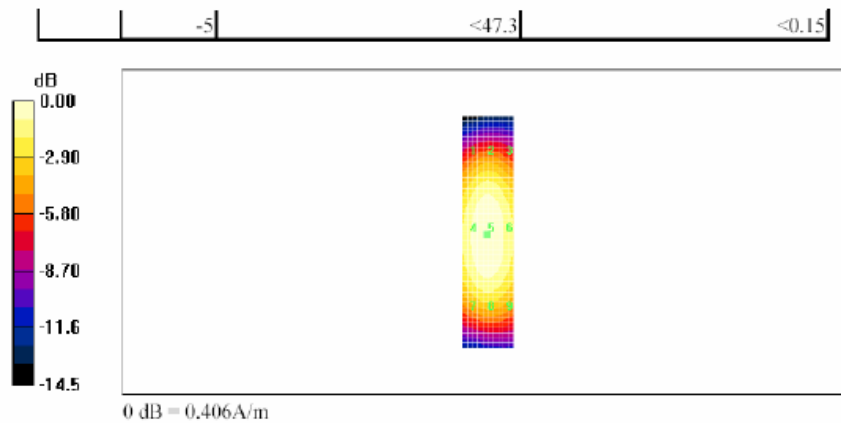
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

file://C:\Program%20Files\DASY4\Print\_Templates\HAC\_H\_Dipole\_CW%201880\_2%... 14/07/2005

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file://C:\Program%20Files\DASY4\Print\_Templates\HAC\_H\_Dipole\_CW%201880\_2%... 14/07/2005

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### A.3 RF emission field plots

For plots where the probe was rotated, an arrow is drawn to showing location of the probe rotation after the exclusion block.



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Date/Time: 18/07/2006 10:16:26 AM

Test Laboratory: RTS

HAC\_E\_Field\_CDMA800\_Spk center\_low\_chan

**DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 824.7 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: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**E Scan - ER probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid:

dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 94.4 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(11x11x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 91.9 V/m; Power Drift = -0.099 dB

Maximum value of Total (measured) = 94.8 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(101x101x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 94.4 V/m

Probe Modulation Factor = 1.00

Reference Value = 91.9 V/m; Power Drift = -0.099 dB

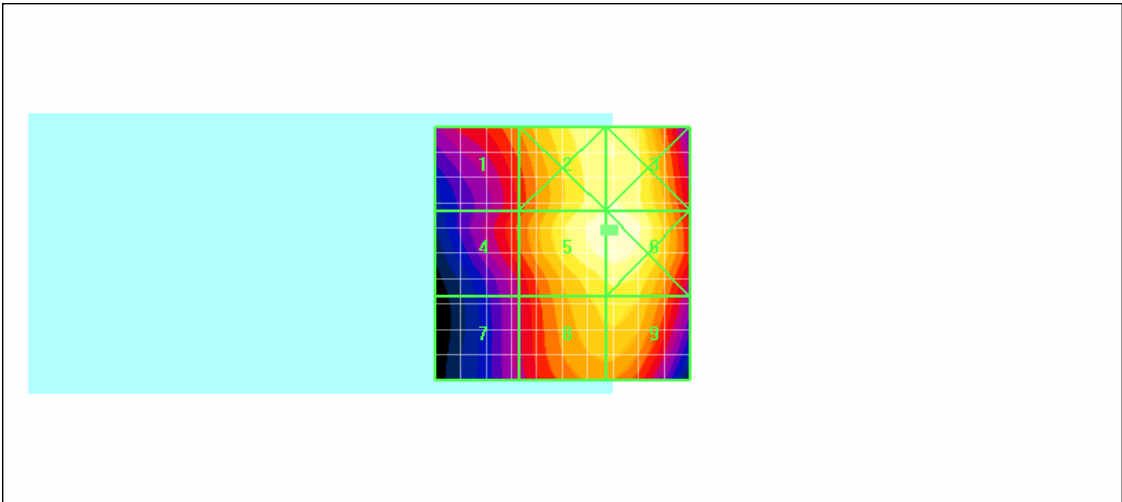
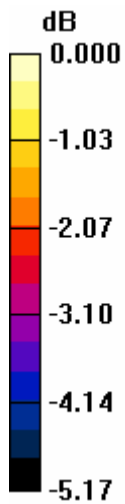
**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
78.4	91.9	92.1
Grid	Grid	Grid
75.8	94.4	94.9
Grid	Grid	Grid

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Daoud Attayi	July 13-19, 31, 2006	RTS-0373-0607-14	L6ARBF20CW	

68.9	86.3	86.7
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0 dB = 94.9V/m

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Date/Time: 18/07/2006 10:26:30 AM

Test Laboratory: RTS

HAC\_E\_Field\_CDMA800\_Spk center\_mid\_chan

**DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 836.52 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: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**E Scan - ER probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid:

dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 91.6 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(11x11x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 90.1 V/m; Power Drift = -0.103 dB

Maximum value of Total (measured) = 91.1 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(101x101x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 91.1 V/m

Probe Modulation Factor = 1.00

Reference Value = 90.1 V/m; Power Drift = -0.103 dB

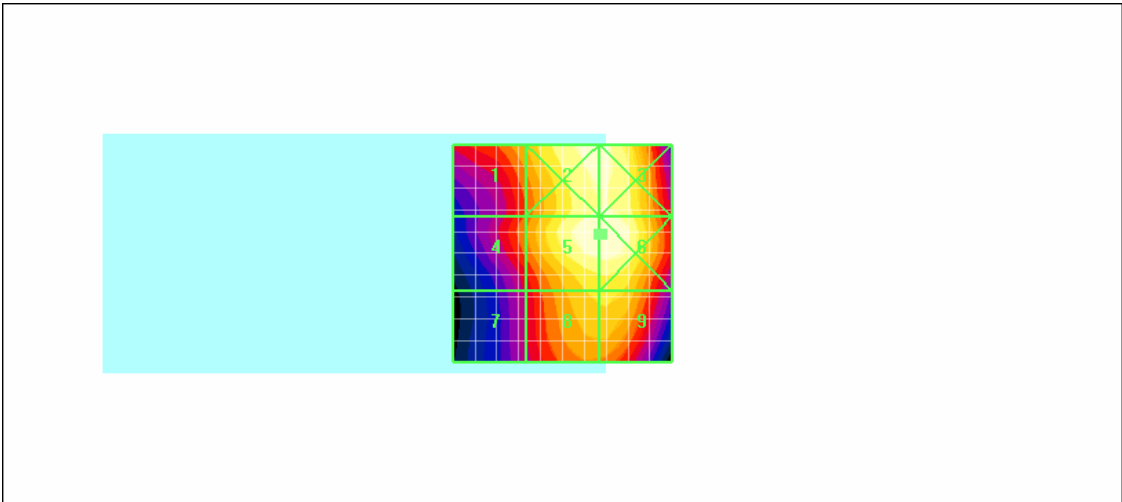
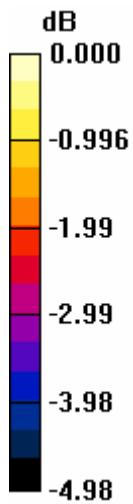
**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
<b>78.9</b>	<b>89.2</b>	<b>89.2</b>
Grid	Grid	Grid
<b>75.3</b>	<b>91.1</b>	<b>91.2</b>
Grid	Grid	Grid

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67.7	82.7	82.8
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0 dB = 91.2V/m

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Date/Time: 18/07/2006 10:48:30 AM

Test Laboratory: RTS

HAC\_E\_Field\_CDMA800\_Spk center\_high\_chan

**DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 848.52 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: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**E Scan - ER probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid:

dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 105.4 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(11x11x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 100.9 V/m; Power Drift = 0.007 dB

Maximum value of Total (measured) = 105.2 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(101x101x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 104.8 V/m

Probe Modulation Factor = 1.00

Reference Value = 100.9 V/m; Power Drift = 0.007 dB

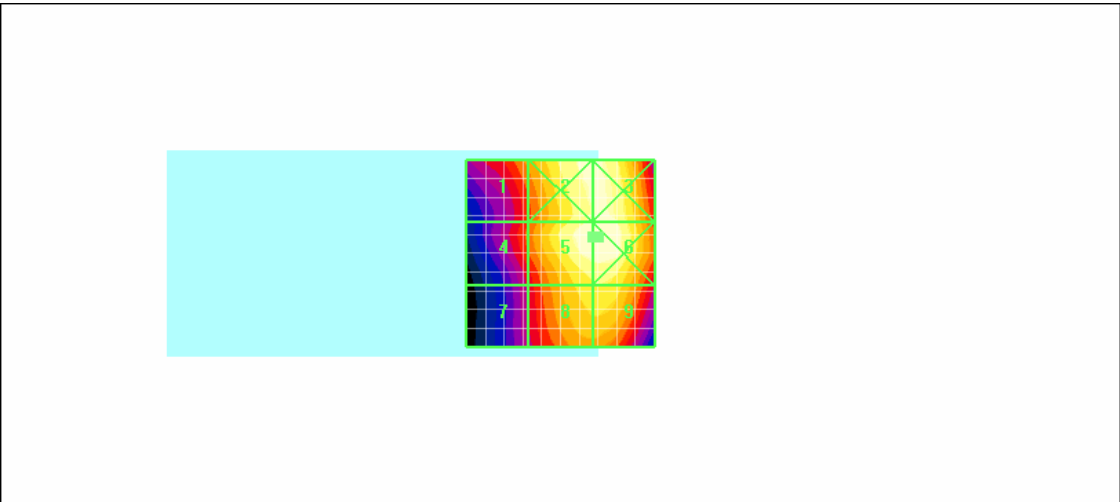
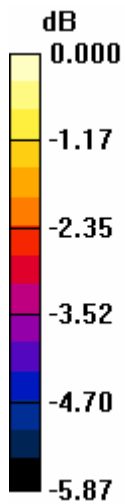
**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
<b>85.9</b>	<b>102.1</b>	<b>102.6</b>
Grid	Grid	Grid
<b>82.1</b>	<b>104.8</b>	<b>105.2</b>
Grid	Grid	Grid

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74.5	95.8	96.3
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0 dB = 105.2V/m

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Date/Time: 18/07/2006 11:08:31 AM

Test Laboratory: RTS

HAC\_E\_Field\_CDMA800\_T\_Coil center\_low\_chan

**DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 824.7 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: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**E Scan - ER probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid:

dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 94.3 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(11x11x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 90.7 V/m; Power Drift = -0.048 dB

Maximum value of Total (measured) = 92.9 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(101x101x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 93.2 V/m

Probe Modulation Factor = 1.00

Reference Value = 90.7 V/m; Power Drift = -0.048 dB

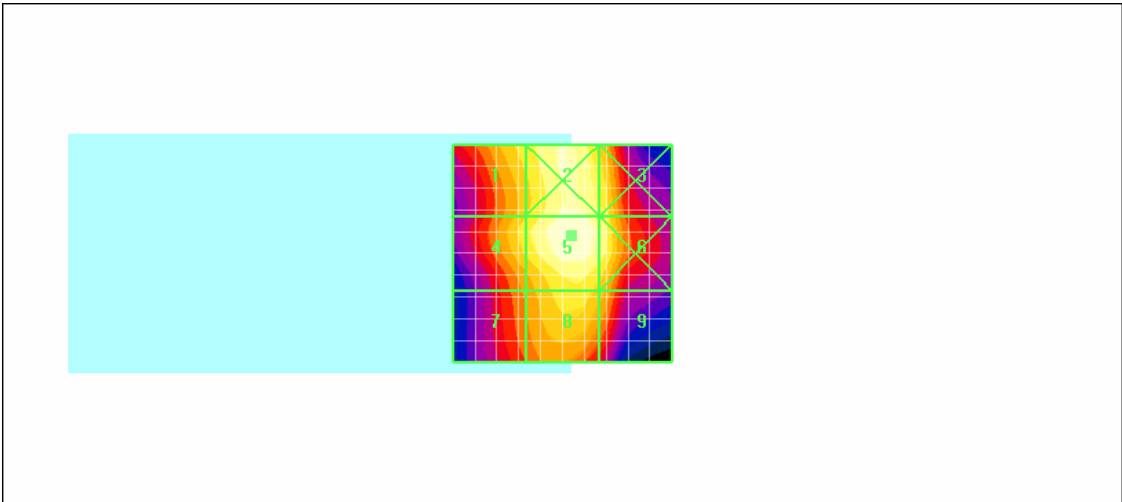
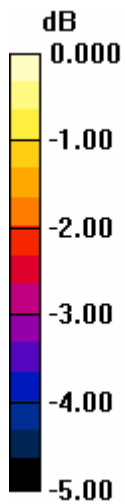
**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
<b>85.2</b>	<b>91.1</b>	<b>87.6</b>
Grid	Grid	Grid
<b>85.3</b>	<b>93.2</b>	<b>89.3</b>
Grid	Grid	Grid

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77.8	85.6	82.0
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0 dB = 93.2V/m



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Date/Time: 18/07/2006 11:18:05 AM

Test Laboratory: RTS

HAC\_E\_Field\_CDMA800\_T\_coil\_center\_mid\_chan

**DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 836.52 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: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**E Scan - ER probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid:

dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 92.4 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(11x11x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 89.2 V/m; Power Drift = -0.042 dB

Maximum value of Total (measured) = 91.9 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(101x101x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 92.5 V/m

Probe Modulation Factor = 1.00

Reference Value = 89.2 V/m; Power Drift = -0.042 dB

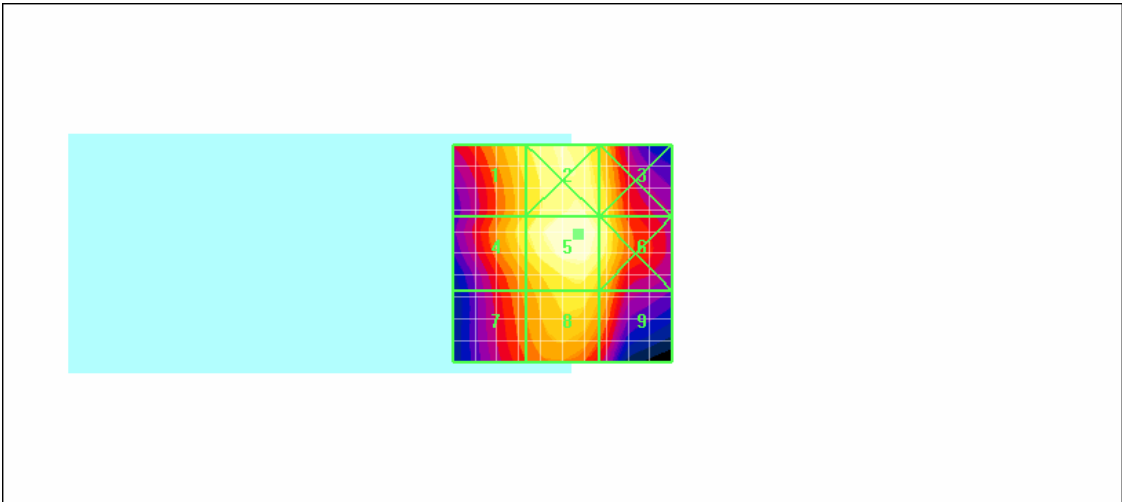
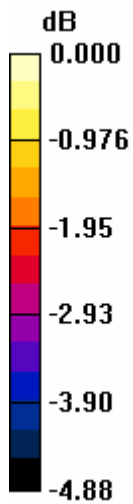
**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
<b>85.5</b>	<b>90.4</b>	<b>86.9</b>
Grid	Grid	Grid
<b>85.5</b>	<b>92.5</b>	<b>89.0</b>
Grid	Grid	Grid

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78.0	85.2	81.4
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0 dB = 92.5V/m

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Date/Time: 18/07/2006 11:28:28 AM

Test Laboratory: RTS

HAC\_E\_Field\_CDMA800\_T\_coil center\_high\_chan

**DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 848.52 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: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**E Scan - ER probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid:

dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 106.4 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(11x11x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 100.5 V/m; Power Drift = 0.000 dB

Maximum value of Total (measured) = 104.2 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(101x101x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 105.0 V/m

Probe Modulation Factor = 1.00

Reference Value = 100.5 V/m; Power Drift = 0.000 dB

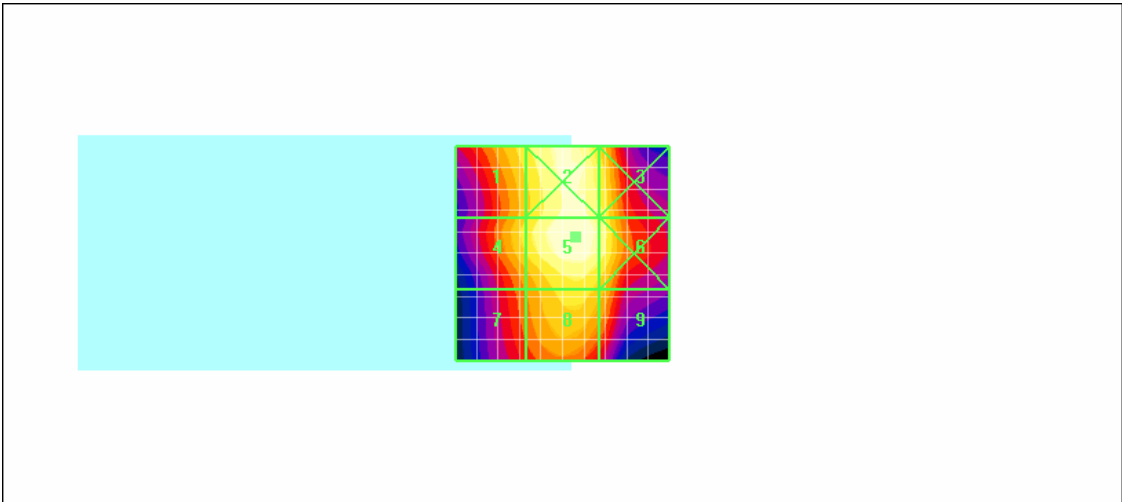
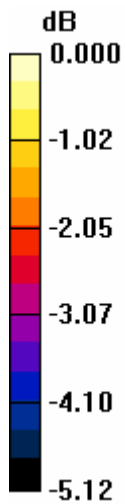
**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
<b>96.4</b>	<b>102.9</b>	<b>98.9</b>
Grid	Grid	Grid
<b>95.6</b>	<b>105.0</b>	<b>100.9</b>
Grid	Grid	Grid

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86.8	95.9	92.3
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0 dB = 105.0V/m

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Date/Time: 18/07/2006 11:46:29 AM

Test Laboratory: RTS

HAC\_E\_Field\_CDMA800\_T\_coil center\_high\_chan\_batt2

**DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 848.52 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: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**E Scan - ER probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid:

dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 107.7 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(11x11x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 100.8 V/m; Power Drift = 0.171 dB

Maximum value of Total (measured) = 106.3 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(101x101x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 106.5 V/m

Probe Modulation Factor = 1.00

Reference Value = 100.8 V/m; Power Drift = 0.171 dB

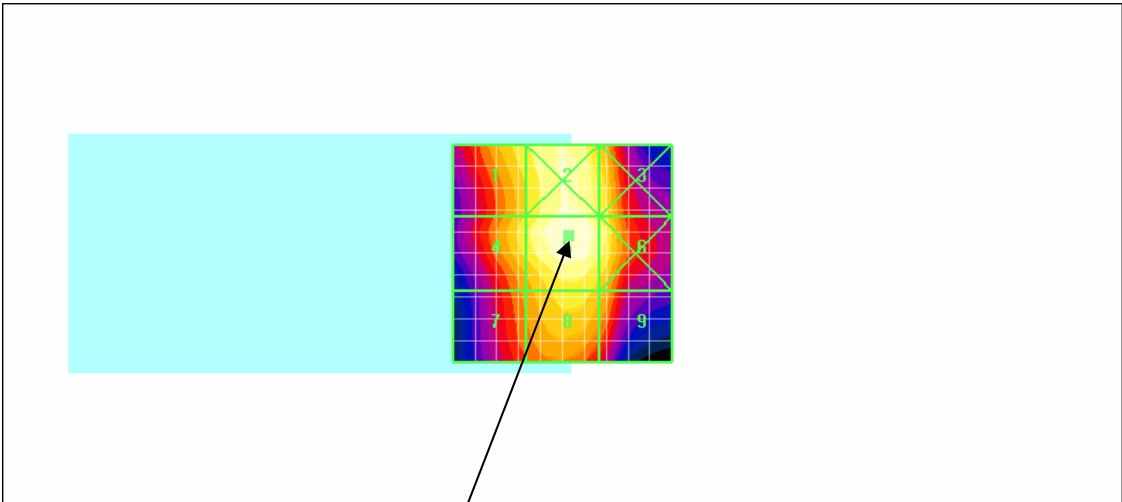
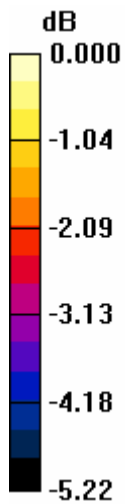
**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
<b>98.1</b>	<b>103.9</b>	<b>99.1</b>
Grid	Grid	Grid
<b>97.5</b>	<b>106.5</b>	<b>101.3</b>
Grid	Grid	Grid

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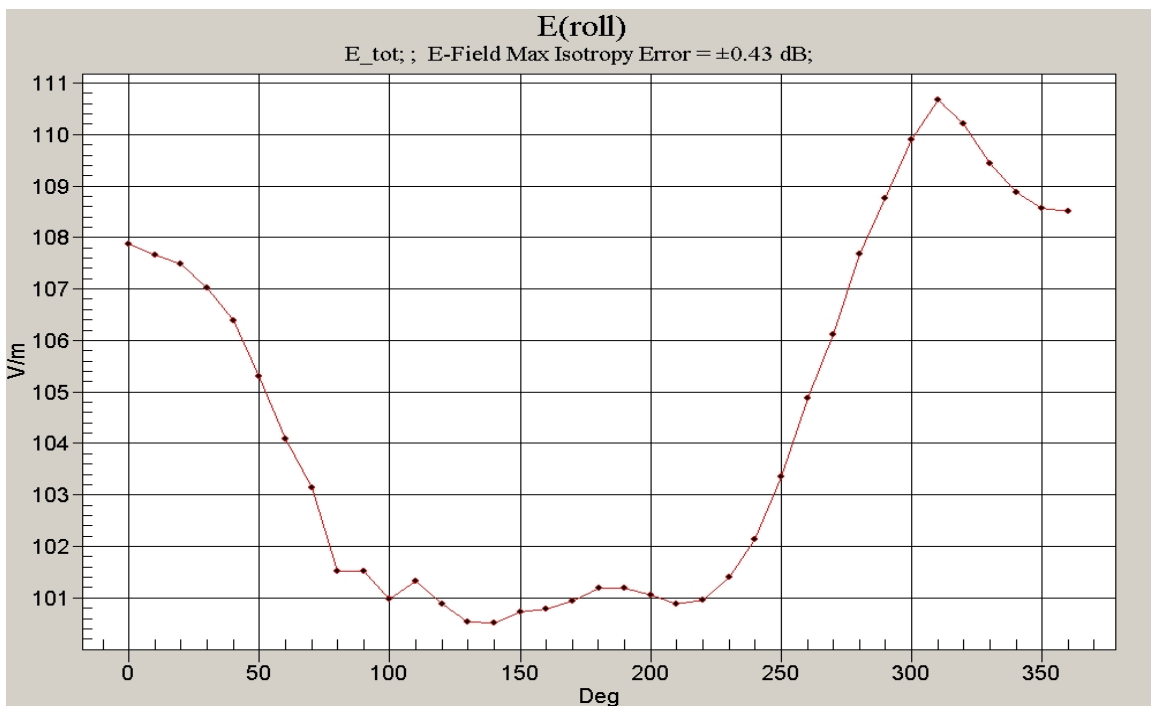
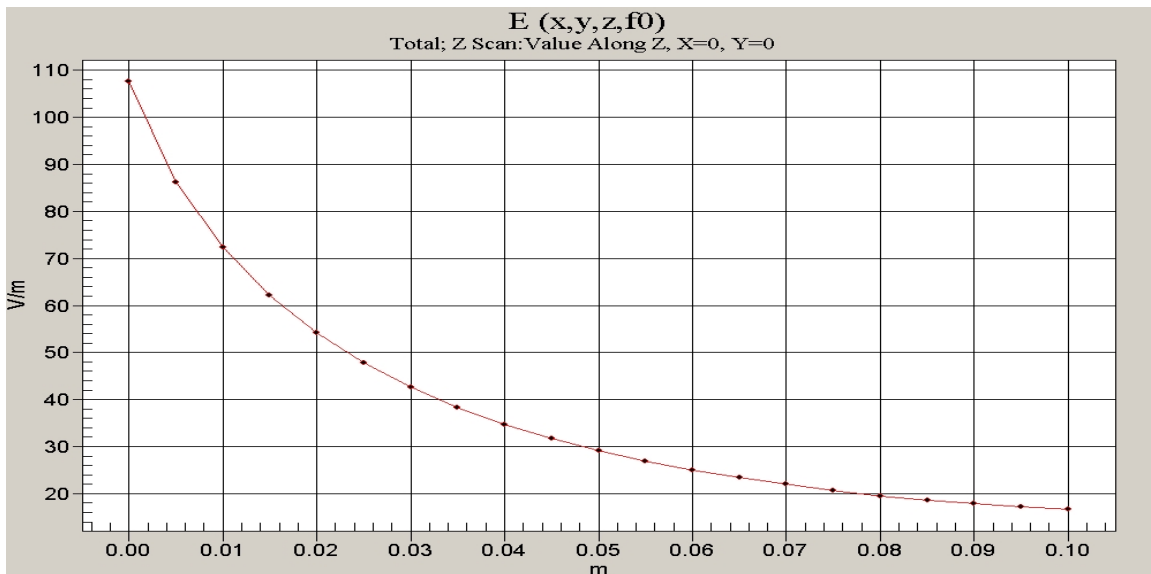
88.9	97.2	93.1
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0 dB = 106.5V/m

Location of probe rotation after applying exclusion blocks

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$$\begin{aligned}
E(\delta) &= (E_{\text{max}} - E_{\text{at zero degree}}) * \text{PMF} \\
&= (110.7 - 107.9) * 1.03 \\
&= 2.8 * 1.03 \\
&= 2.88 \text{ V/m}
\end{aligned}$$

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Date/Time: 18/07/2006 11:58:18 AM

Test Laboratory: RTS

HAC\_E\_Field\_CDMA800\_T\_coil center\_high\_chan\_batt3

**DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 848.52 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: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**E Scan - ER probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid:

dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 100.7 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(11x11x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 98.0 V/m; Power Drift = 0.112 dB

Maximum value of Total (measured) = 101.0 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(101x101x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 101.5 V/m

Probe Modulation Factor = 1.00

Reference Value = 98.0 V/m; Power Drift = 0.112 dB

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

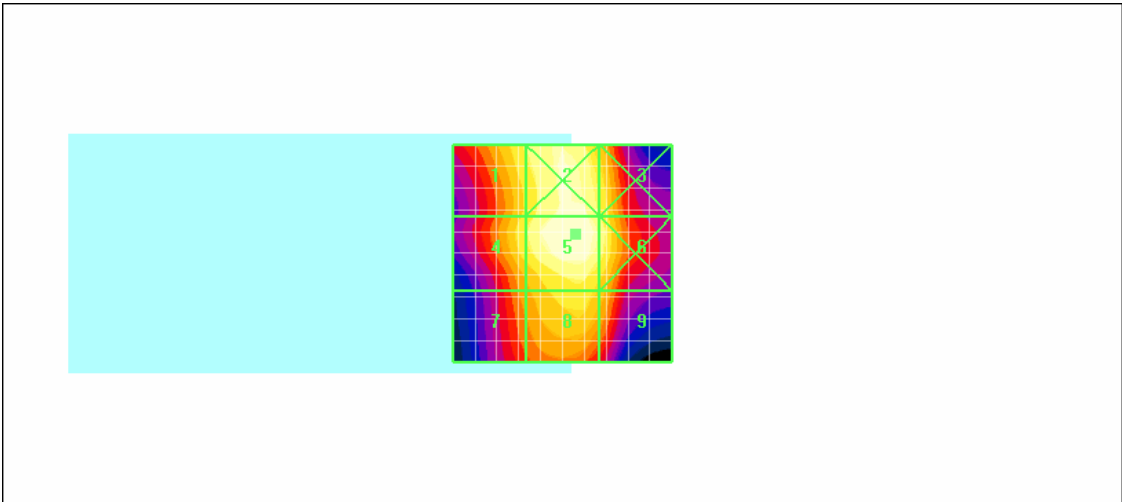
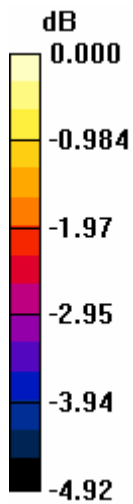
Peak E-field in V/m

Grid	Grid	Grid
<b>94.9</b>	<b>99.6</b>	<b>95.1</b>
Grid	Grid	Grid
<b>94.1</b>	<b>101.5</b>	<b>97.0</b>
Grid	Grid	Grid



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86.4	93.5	90.0
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0 dB = 101.5V/m

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Date/Time: 18/07/2006 12:16:14 PM

Test Laboratory: RTS

HAC\_E\_Field\_CDMA800\_T\_coil center\_high\_chan\_batt2\_one\_eighth\_gating.da4

**DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 848.52 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: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**E Scan - ER probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid:

dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 43.5 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(11x11x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 45.2 V/m; Power Drift = -0.193 dB

Maximum value of Total (measured) = 52.1 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(101x101x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 105.6 V/m

Probe Modulation Factor = 2.04

Reference Value = 45.2 V/m; Power Drift = -0.193 dB

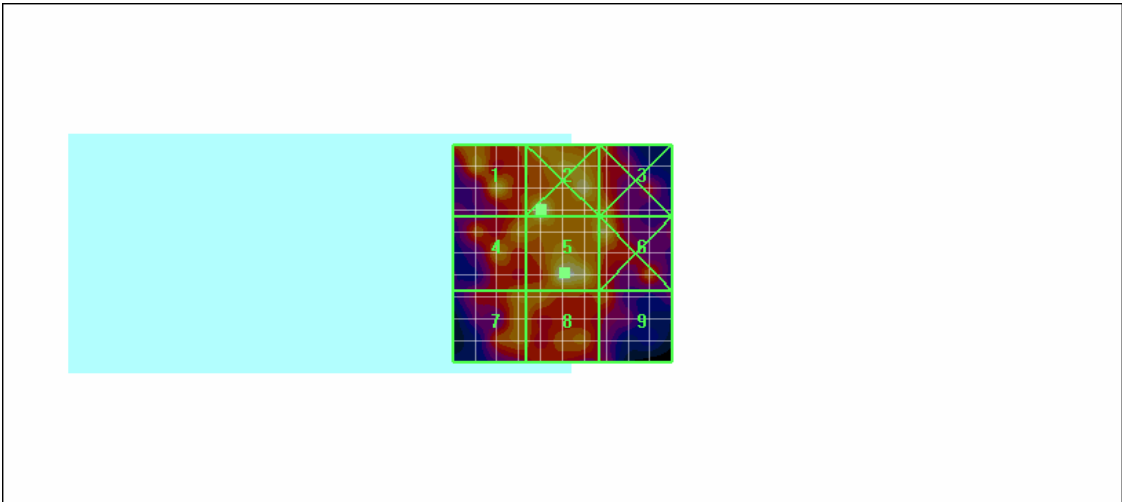
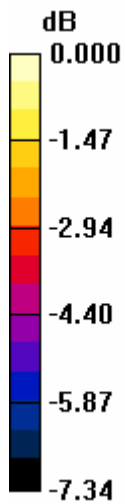
**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
<b>93.7</b>	<b>106.3</b>	<b>87.7</b>
Grid	Grid	Grid
<b>87.2</b>	<b>105.6</b>	<b>96.1</b>
Grid	Grid	Grid

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85.7	85.1	79.9
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0 dB = 106.3V/m

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Date/Time: 31/07/2006 11:00:06 AM

Test Laboratory: RTS

HAC\_E\_Field\_CDMA800\_T\_coil center\_high\_chan\_batt2\_one\_eighth\_gating\_RC1\_SO3

**DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 848.52 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: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**E Scan - ER probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid:

dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 69.1 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(11x11x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 39.2 V/m; Power Drift = -0.046 dB

Maximum value of Total (measured) = 61.7 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(101x101x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 99.5 V/m

Probe Modulation Factor = 2.04

Reference Value = 39.2 V/m; Power Drift = -0.046 dB

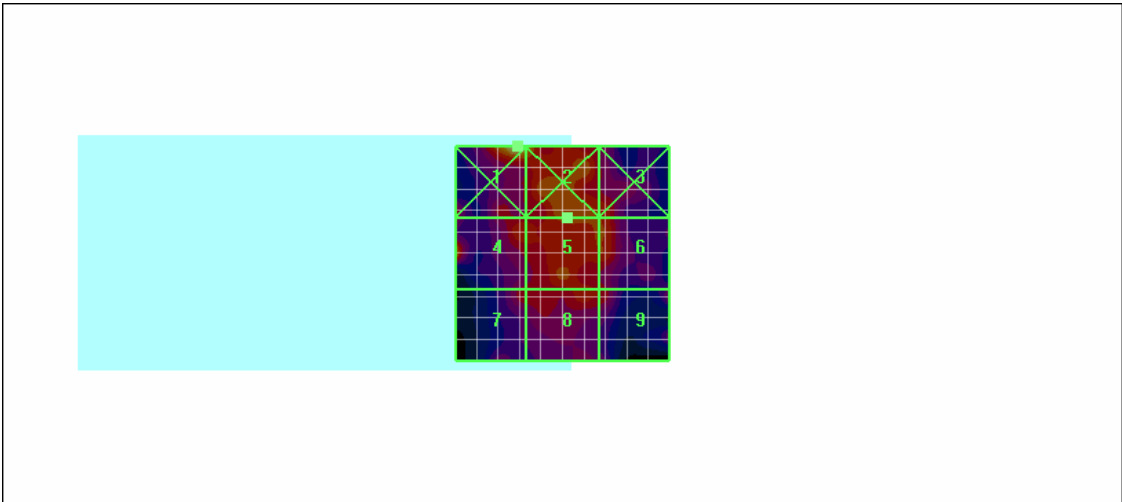
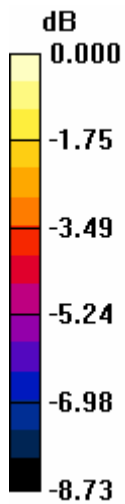
**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
<b>126.2</b>	<b>113.2</b>	<b>85.3</b>
Grid	Grid	Grid
<b>99.5</b>	<b>87.9</b>	<b>86.3</b>
Grid	Grid	Grid

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76.9	82.5	79.1
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0 dB = 126.2V/m

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Date/Time: 19/07/2006 9:37:11 AM

Test Laboratory: RTS

HAC\_H\_Field\_CDMA800\_Spk center\_low\_chan

**DUT: BlackBerry Wireless Handheld Model; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 824.7 MHz; Duty Cycle: 1:1

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: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**H Scan - H3DV6 probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm  
Maximum value of Total (measured) = 0.175 A/m

**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (11x11x1):** Measurement grid: dx=5mm, dy=5mm  
Probe Modulation Factor = 1.00  
Reference Value = 0.099 A/m; Power Drift = -0.107 dB  
Maximum value of Total (measured) = 0.174 A/m

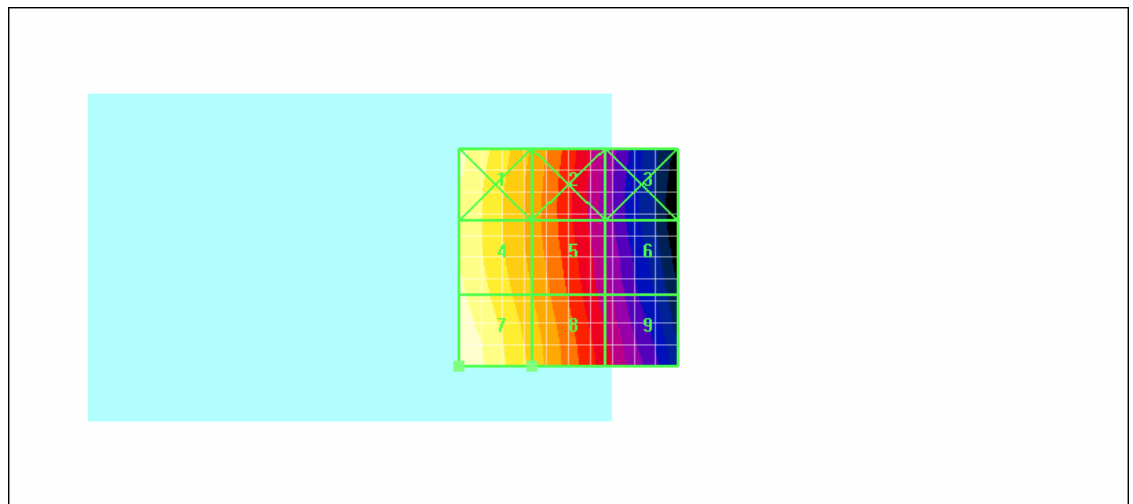
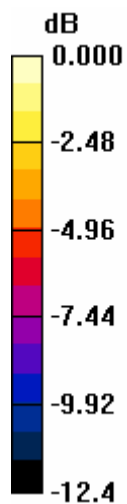
**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (101x101x1):** Measurement grid: dx=5mm, dy=5mm  
Maximum value of peak Total field = 0.174 A/m  
Probe Modulation Factor = 1.00  
Reference Value = 0.099 A/m; Power Drift = -0.107 dB  
**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak H-field in A/m

Grid	Grid	Grid
<b>0.164</b>	<b>0.118</b>	<b>0.073</b>
Grid	Grid	Grid
<b>0.162</b>	<b>0.120</b>	<b>0.077</b>
Grid	Grid	Grid

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0.174	0.128	0.085
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0 dB = 0.174A/m

<b>RTS</b> <b>RIM Testing Services</b>	Document <b>Annex A to Hearing Aid Compatibility RF Emissions Test  Report for BlackBerry Wireless Handheld Model RBF20CW</b>		Page <b>85(111)</b>
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Date/Time: 19/07/2006 9:56:10 AM

Test Laboratory: RTS

HAC\_H\_Field\_CDMA800\_Spk center\_mid\_chan

**DUT: BlackBerry Wireless Handheld Model; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 836.52 MHz; Duty Cycle: 1:1

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: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**H Scan - H3DV6 probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm  
Maximum value of Total (measured) = 0.190 A/m

**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (11x11x1):** Measurement grid: dx=5mm, dy=5mm  
Probe Modulation Factor = 1.00  
Reference Value = 0.104 A/m; Power Drift = 0.147 dB  
Maximum value of Total (measured) = 0.187 A/m

**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (101x101x1):** Measurement grid: dx=5mm, dy=5mm  
Maximum value of peak Total field = 0.187 A/m  
Probe Modulation Factor = 1.00  
Reference Value = 0.104 A/m; Power Drift = 0.147 dB  
**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

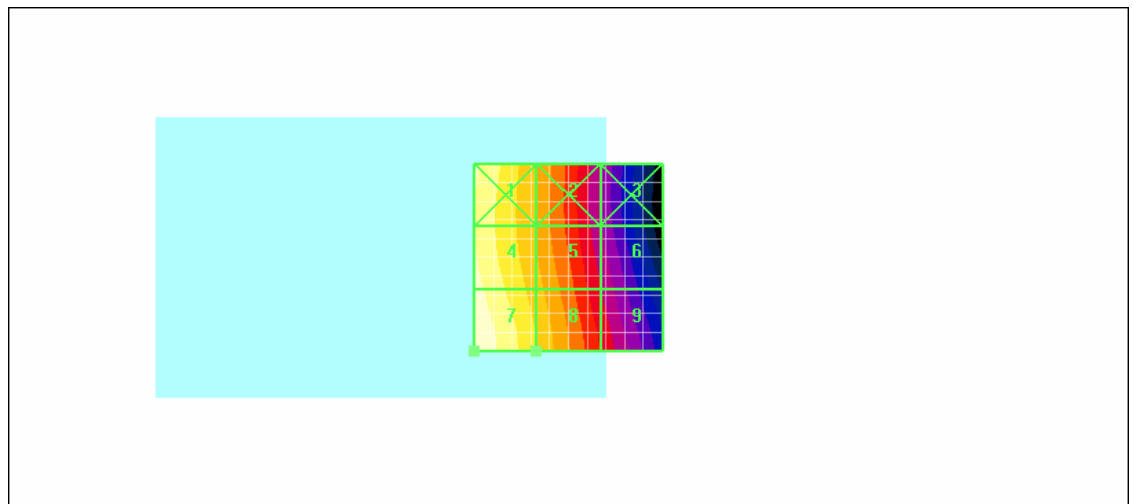
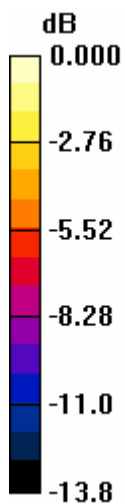
Peak H-field in A/m

Grid	Grid	Grid
<b>0.172</b>	<b>0.123</b>	<b>0.073</b>
Grid	Grid	Grid
<b>0.176</b>	<b>0.128</b>	<b>0.081</b>
Grid	Grid	Grid



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0.187	0.136	0.089
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0 dB = 0.187A/m

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Date/Time: 19/07/2006 10:05:20 AM

Test Laboratory: RTS

HAC\_H\_Field\_CDMA800\_Spk center\_high\_chan

**DUT: BlackBerry Wireless Handheld Model; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 848.52 MHz;Duty Cycle: 1:1

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: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**H Scan - H3DV6 probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm  
Maximum value of Total (measured) = 0.211 A/m

**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (11x11x1):** Measurement grid: dx=5mm, dy=5mm  
Probe Modulation Factor = 1.00  
Reference Value = 0.118 A/m; Power Drift = 0.059 dB  
Maximum value of Total (measured) = 0.209 A/m

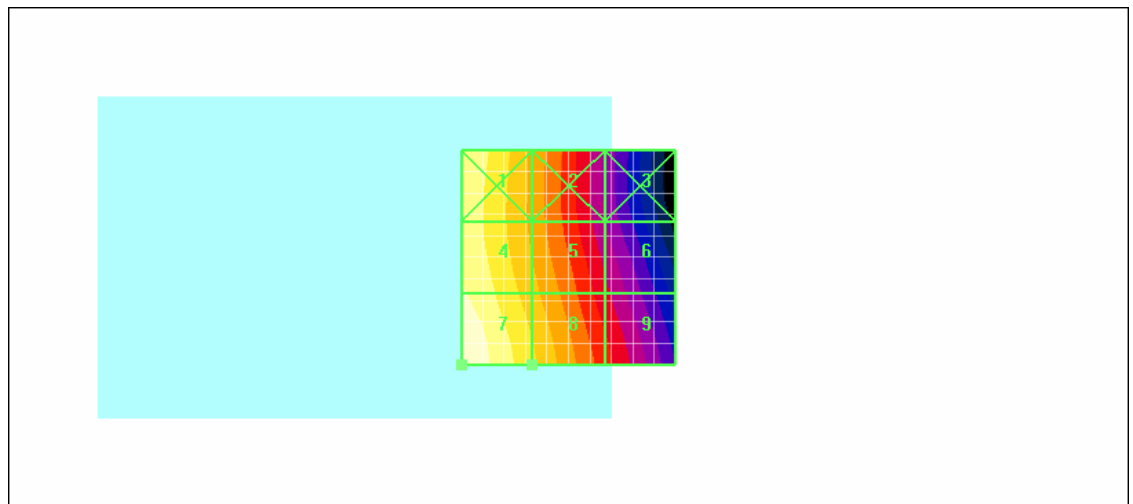
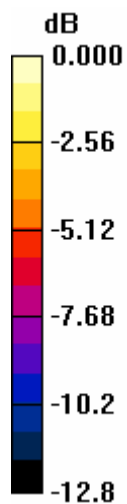
**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (101x101x1):** Measurement grid: dx=5mm, dy=5mm  
Maximum value of peak Total field = 0.209 A/m  
Probe Modulation Factor = 1.00  
Reference Value = 0.118 A/m; Power Drift = 0.059 dB  
**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

Peak H-field in A/m

Grid	Grid	Grid
<b>0.188</b>	<b>0.139</b>	<b>0.087</b>
Grid	Grid	Grid
<b>0.192</b>	<b>0.147</b>	<b>0.099</b>
Grid	Grid	Grid

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0.209	0.159	0.110
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0 dB = 0.209A/m

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Date/Time: 19/07/2006 10:28:00 AM

Test Laboratory: RTS

HAC\_H\_Field\_CDMA800\_Spk center\_high\_chan batt2

**DUT: BlackBerry Wireless Handheld Model; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 848.52 MHz; Duty Cycle: 1:1

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: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**H Scan - H3DV6 probe tip 10mm above Device Reference/Z Scan (1x1x21):**

Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 0.211 A/m

**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid**

**Compatibility Test (11x11x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 0.119 A/m; Power Drift = -0.001 dB

**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid**

**Compatibility Test (101x101x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.211 A/m

Probe Modulation Factor = 1.00

Reference Value = 0.119 A/m; Power Drift = -0.001 dB

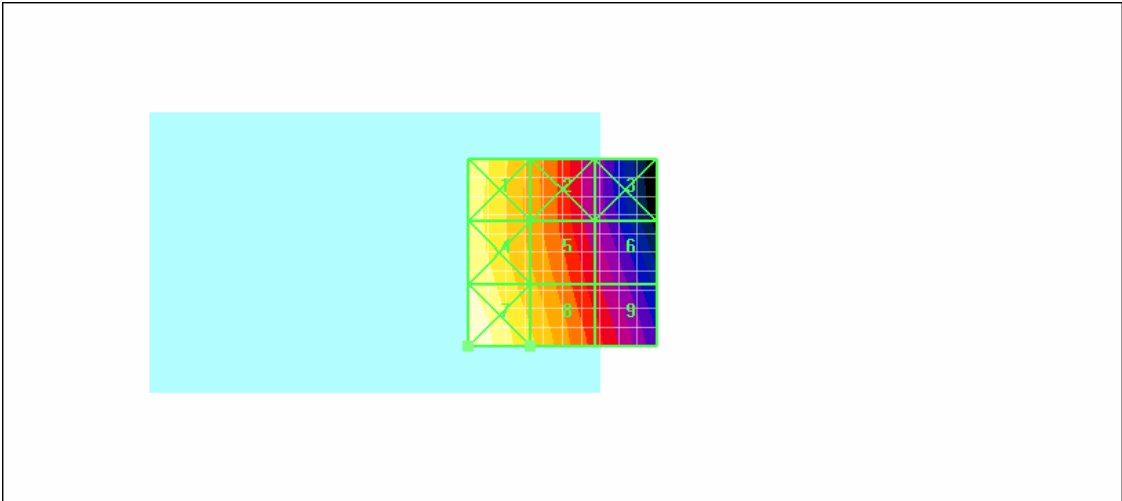
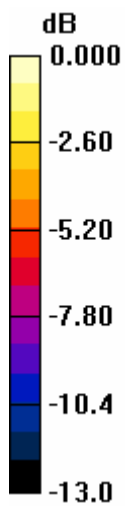
**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

Peak H-field in A/m

Grid	Grid	Grid
<b>0.189</b>	<b>0.139</b>	<b>0.087</b>
Grid	Grid	Grid
<b>0.195</b>	<b>0.146</b>	<b>0.099</b>

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Grid	Grid	Grid
0.211	0.160	0.112



0 dB = 0.211A/m

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Date/Time: 19/07/2006 10:39:26 AM

Test Laboratory: RTS

HAC\_H\_Field\_CDMA800\_Spk center\_high\_chan batt3

**DUT: BlackBerry Wireless Handheld Model; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 848.52 MHz;Duty Cycle: 1:1

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: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**H Scan - H3DV6 probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm  
Maximum value of Total (measured) = 0.203 A/m

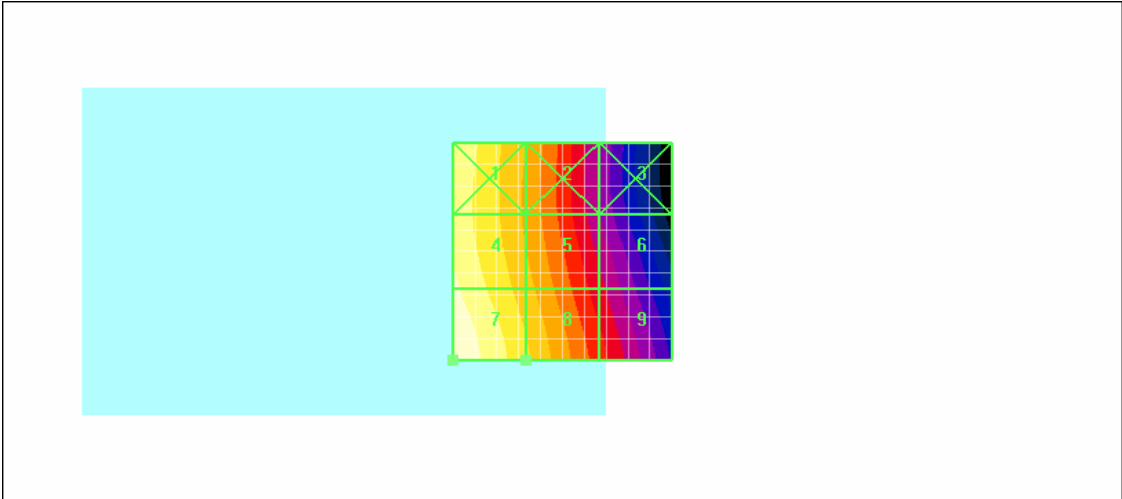
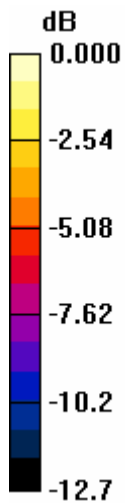
**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (11x11x1):** Measurement grid: dx=5mm, dy=5mm  
Probe Modulation Factor = 1.00  
Reference Value = 0.116 A/m; Power Drift = 0.035 dB  
Maximum value of Total (measured) = 0.204 A/m

**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (101x101x1):** Measurement grid: dx=5mm, dy=5mm  
Maximum value of peak Total field = 0.204 A/m  
Probe Modulation Factor = 1.00  
Reference Value = 0.116 A/m; Power Drift = 0.035 dB  
**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

Peak H-field in A/m		
Grid	Grid	Grid

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Grid	Grid	Grid
<b>0.190</b>	<b>0.144</b>	<b>0.097</b>
Grid	Grid	Grid



0 dB = 0.204A/m

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Date/Time: 19/07/2006 10:52:30 AM

Test Laboratory: RTS

HAC\_H\_Field\_CDMA800\_Spk center\_high\_chan batt2\_1\_8th\_rate

**DUT: BlackBerry Wireless Handheld Model; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 848.52 MHz; Duty Cycle: 1:8

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: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**H Scan - H3DV6 probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm  
Maximum value of Total (measured) = 0.075 A/m

**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (11x11x1):** Measurement grid: dx=5mm, dy=5mm  
Probe Modulation Factor = 1.00  
Reference Value = 0.046 A/m; Power Drift = -0.008 dB  
Maximum value of Total (measured) = 0.099 A/m

**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (101x101x1):** Measurement grid: dx=5mm, dy=5mm  
Maximum value of peak Total field = 0.234 A/m  
Probe Modulation Factor = 2.35  
Reference Value = 0.046 A/m; Power Drift = -0.008 dB  
**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

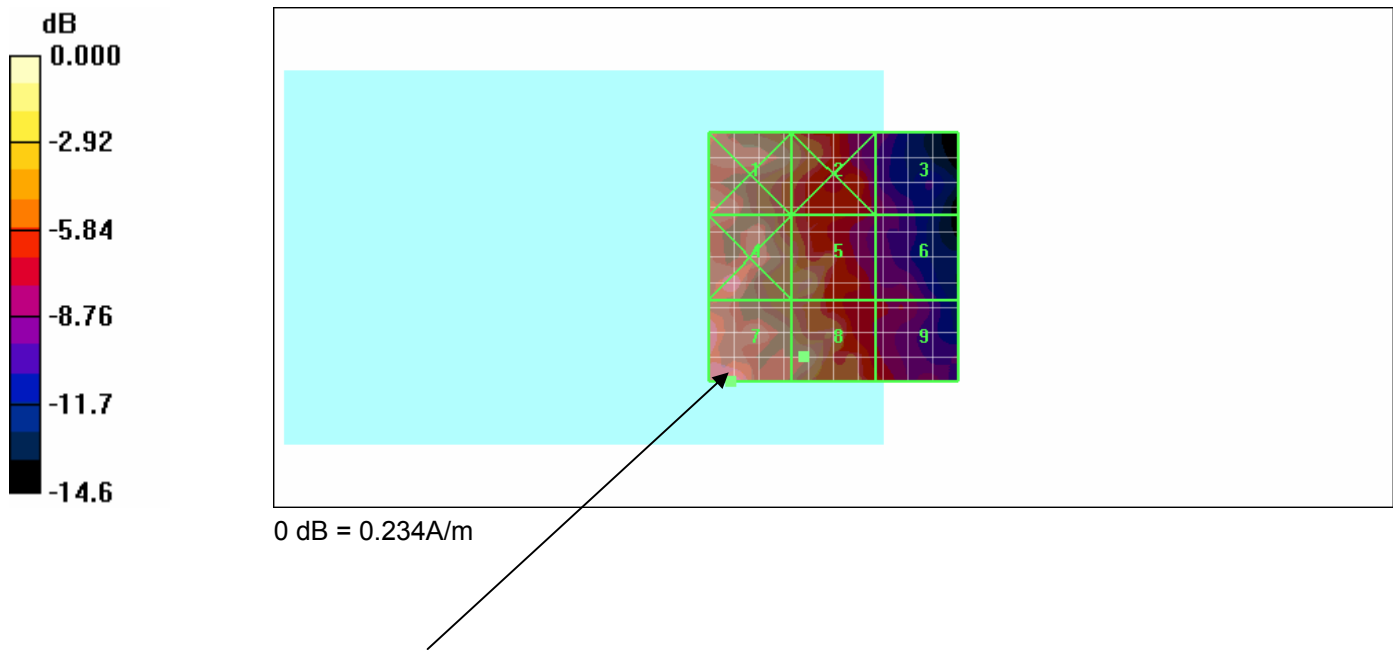
Peak H-field in A/m

Grid	Grid	Grid
<b>0.196</b>	<b>0.148</b>	<b>0.092</b>
Grid	Grid	Grid
<b>0.198</b>	<b>0.150</b>	<b>0.097</b>
Grid	Grid	Grid

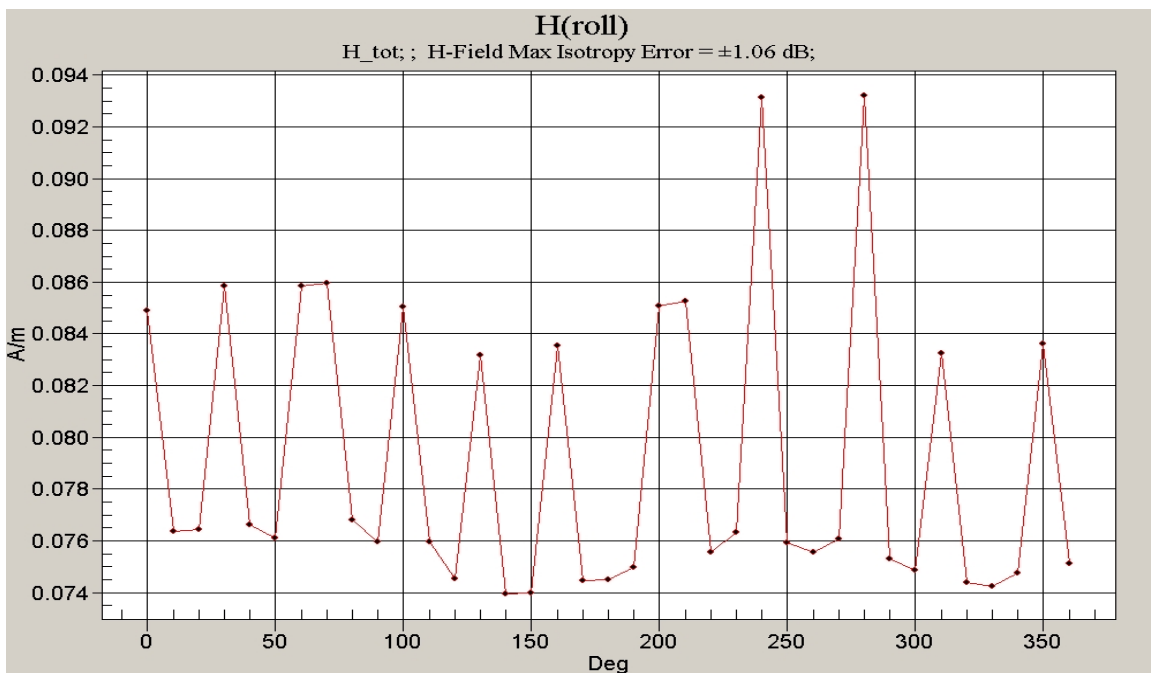
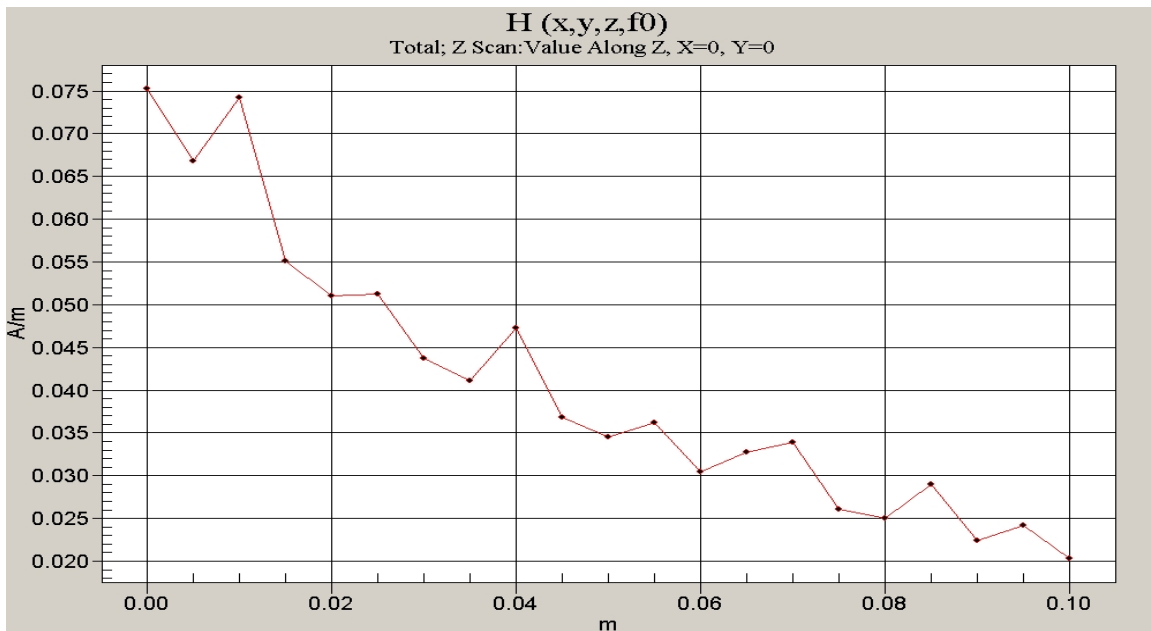


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0.234	0.165	0.113
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$$\begin{aligned}
H(\delta) &= (H_{\text{max}} - H_{\text{at zero degrees}}) * \text{PMF} \\
&= (0.093 - 0.085) * 2.35 \\
&= 0.008 * 2.35 \\
&= 0.02
\end{aligned}$$

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Date/Time: 19/07/2006 11:30:58 AM

Test Laboratory: RTS

HAC\_H\_Field\_CDMA800\_Spk center\_high\_chan batt2\_RC1\_SO3

**DUT: BlackBerry Wireless Handheld Model; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 800; Frequency: 848.52 MHz; Duty Cycle: 1:8

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: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**H Scan - H3DV6 probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm  
Maximum value of Total (measured) = 0.079 A/m

**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (11x11x1):** Measurement grid: dx=5mm, dy=5mm  
Probe Modulation Factor = 1.00  
Reference Value = 0.046 A/m; Power Drift = 0.112 dB  
Maximum value of Total (measured) = 0.088 A/m

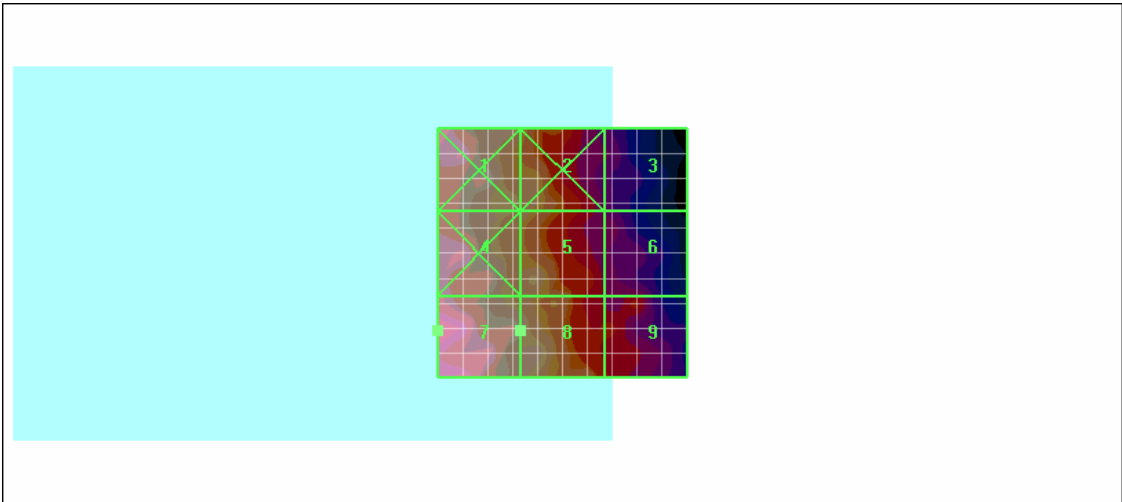
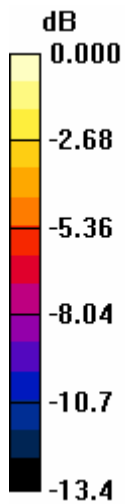
**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (101x101x1):** Measurement grid: dx=5mm, dy=5mm  
Maximum value of peak Total field = 0.208 A/m  
Probe Modulation Factor = 2.35  
Reference Value = 0.046 A/m; Power Drift = 0.112 dB  
**Hearing Aid Near-Field Category: M3 (AWF 0 dB)**

Peak H-field in A/m

Grid	Grid	Grid
<b>0.197</b>	<b>0.137</b>	<b>0.084</b>
Grid	Grid	Grid
<b>0.179</b>	<b>0.140</b>	<b>0.095</b>
Grid	Grid	Grid

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0.208	0.153	0.104
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0 dB = 0.208A/m

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Date/Time: 19/07/2006 8:35:23 AM

Test Laboratory: RTS

HAC\_E\_Field\_CDMA1900\_Spk center\_low\_chan

**DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 1900; Frequency: 1851.25 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: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**E Scan - ER probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid:

dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 49.5 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(11x11x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 25.3 V/m; Power Drift = -0.033 dB

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(101x101x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 48.7 V/m

Probe Modulation Factor = 0.980

Reference Value = 25.3 V/m; Power Drift = -0.033 dB

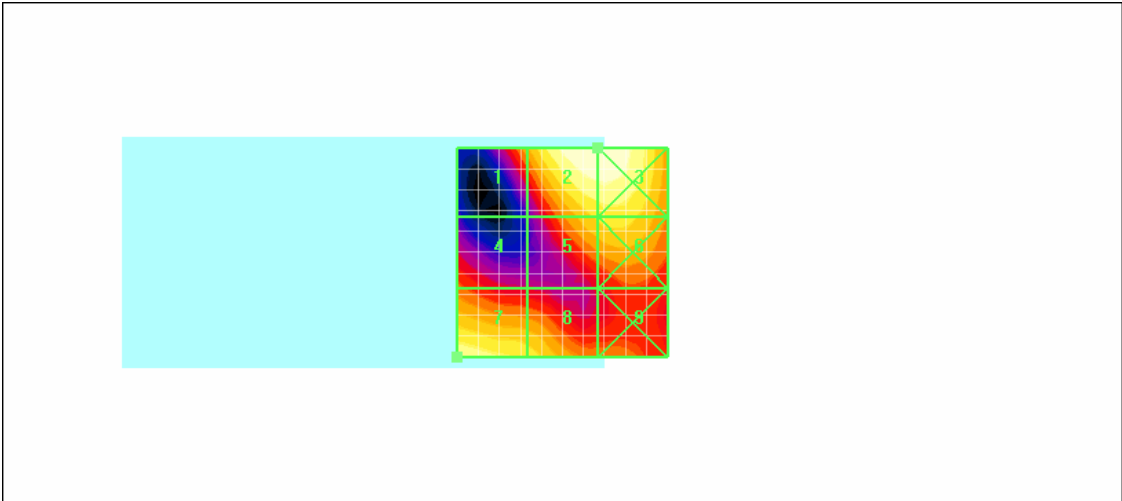
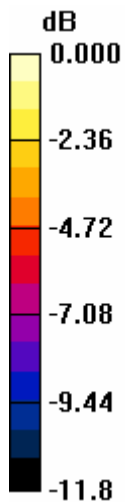
**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
33.5	48.7	48.7
Grid	Grid	Grid

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Grid	Grid	Grid
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0 dB = 48.7V/m

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Date/Time: 19/07/2006 8:43:58 AM

Test Laboratory: RTS

HAC\_E\_Field\_CDMA1900\_Spk center\_mid\_chan

**DUT: BlackBerry Wireless Handheld; Type: Sample ; 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: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**E Scan - ER probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid:

dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 49.6 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(11x11x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 24.8 V/m; Power Drift = -0.070 dB

Maximum value of Total (measured) = 49.4 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(101x101x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 48.5 V/m

Probe Modulation Factor = 0.980

Reference Value = 24.8 V/m; Power Drift = -0.070 dB

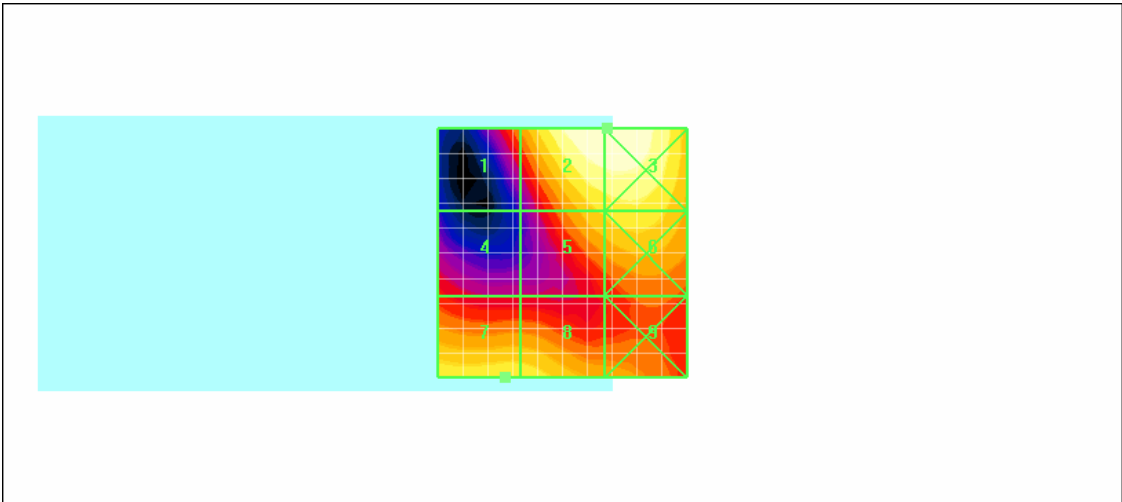
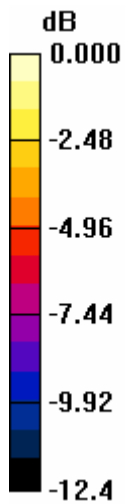
**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
<b>30.9</b>	<b>48.5</b>	<b>48.5</b>
Grid	Grid	Grid
<b>25.7</b>	<b>37.2</b>	<b>38.8</b>
Grid	Grid	Grid

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39.5	39.1	32.1
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0 dB = 48.5V/m



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Date/Time: 19/07/2006 8:52:51 AM

Test Laboratory: RTS

HAC\_E\_Field\_CDMA1900\_Spk center\_high\_chan

**DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 1900; Frequency: 1908.5 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: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**E Scan - ER probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid:

dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 38.0 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(11x11x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 21.6 V/m; Power Drift = -0.127 dB

Maximum value of Total (measured) = 37.9 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(101x101x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 37.1 V/m

Probe Modulation Factor = 0.980

Reference Value = 21.6 V/m; Power Drift = -0.127 dB

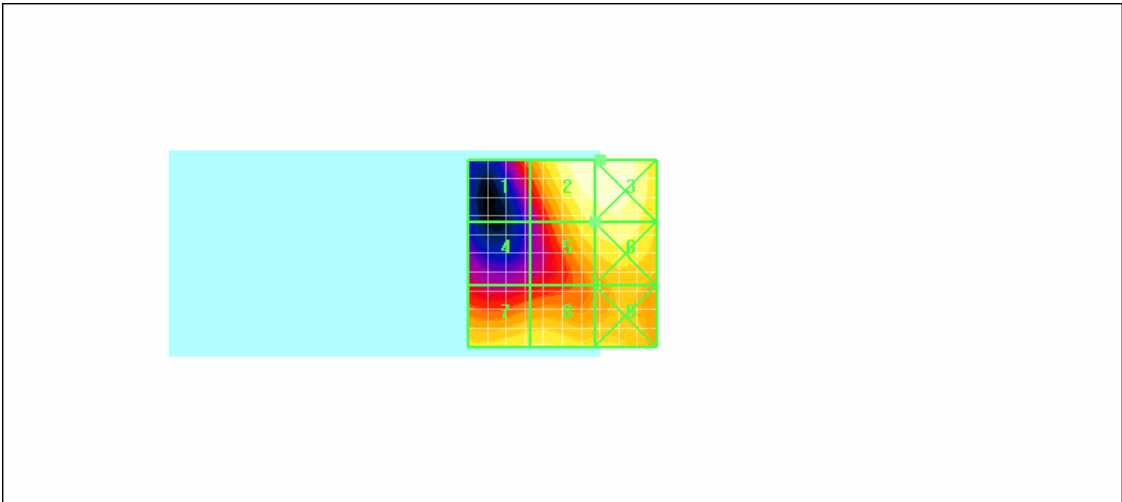
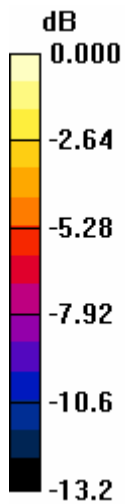
**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
<b>22.9</b>	<b>37.1</b>	<b>37.2</b>
Grid	Grid	Grid
<b>17.3</b>	<b>31.1</b>	<b>32.6</b>
Grid	Grid	Grid

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30.9	30.9	28.2
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0 dB = 37.2V/m

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Date/Time: 19/07/2006 9:06:01 AM

Test Laboratory: RTS

HAC\_E\_Field\_CDMA1900\_T\_coil center\_low\_chan

**DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 1900; Frequency: 1851.25 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: 27/04/2006
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**E Scan - ER probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid:

dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 47.5 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(11x11x1):** Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 23.8 V/m; Power Drift = -0.089 dB

Maximum value of Total (measured) = 47.3 V/m

**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid Compatibility Test**

**(101x101x1):** Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 41.9 V/m

Probe Modulation Factor = 1.00

Reference Value = 23.8 V/m; Power Drift = -0.089 dB

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

Peak E-field in V/m

Grid	Grid	Grid
42.5	47.3	43.5
Grid	Grid	Grid
27.0	36.8	36.2
Grid	Grid	Grid

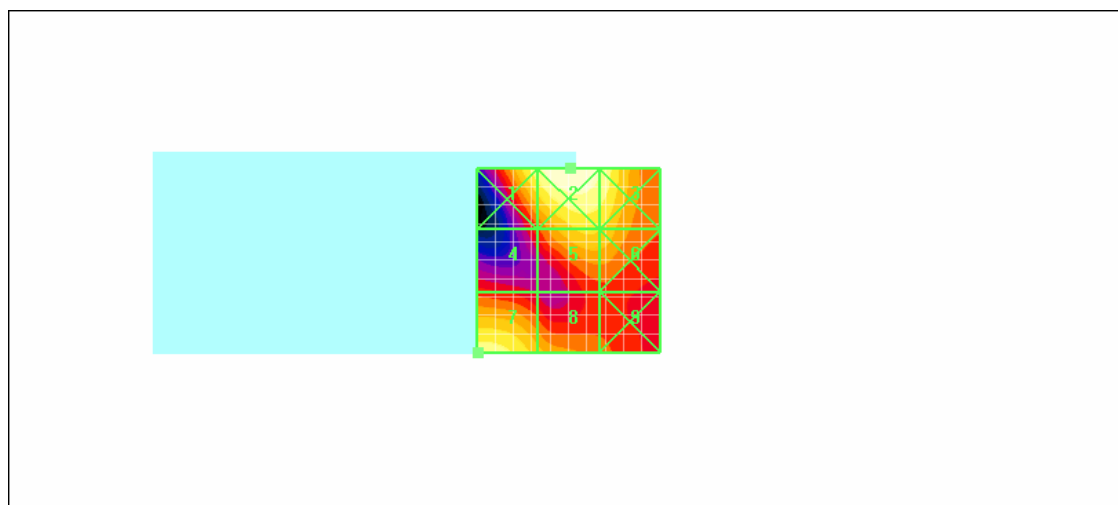
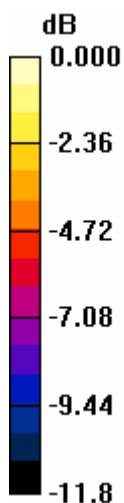
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41.9	34.6	28.7
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**E Scan - ER probe tip 10mm above Device Reference/Hearing Aid  
Compatibility Test (101x101x1):** Measurement grid: dx=5mm, dy=5mm  
Maximum value of peak Total field = 46.3 V/m  
Probe Modulation Factor = 0.980  
Reference Value = 23.8 V/m; Power Drift = -0.089 dB  
**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak E-field in V/m

Grid	Grid	Grid
<b>41.7</b>	<b>46.3</b>	<b>42.6</b>
Grid	Grid	Grid
<b>26.5</b>	<b>36.1</b>	<b>35.5</b>
Grid	Grid	Grid



0 dB = 47.3V/m

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Date/Time: 31/07/2006 11:25:49 AM

Test Laboratory: RTS

HAC\_H\_Field\_CDMA1900\_Spk center\_low\_chan

**DUT: BlackBerry Wireless Handheld Model; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 1900; Frequency: 1851.25 MHz; Duty Cycle: 1:1

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: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**H Scan - H3DV6 probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm  
Maximum value of Total (measured) = 0.134 A/m

**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (11x11x1):** Measurement grid: dx=5mm, dy=5mm  
Probe Modulation Factor = 1.00  
Reference Value = 0.123 A/m; Power Drift = -0.008 dB  
Maximum value of Total (measured) = 0.136 A/m

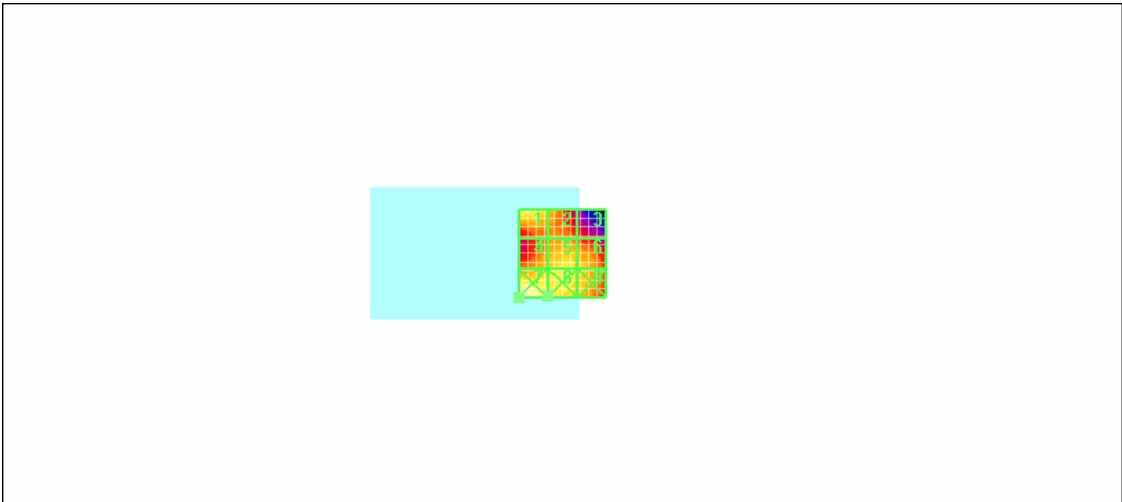
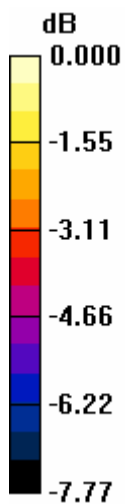
**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (101x101x1):** Measurement grid: dx=5mm, dy=5mm  
Maximum value of peak Total field = 0.122 A/m  
Probe Modulation Factor = 0.980  
Reference Value = 0.123 A/m; Power Drift = -0.008 dB  
**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak H-field in A/m

Grid	Grid	Grid
<b>0.122</b>	<b>0.109</b>	<b>0.093</b>
Grid	Grid	Grid
<b>0.108</b>	<b>0.114</b>	<b>0.110</b>
Grid	Grid	Grid

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0.133	0.117	0.110



0 dB = 0.133A/m

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Date/Time: 19/07/2006 3:32:58 PM

Test Laboratory: RTS

HAC\_H\_Field\_CDMA1900\_Spk center\_low\_chan\_1\_8th\_RC1\_SO2

**DUT: BlackBerry Wireless Handheld Model; Type: Sample ; Serial: Not Specified**

Communication System: CDMA 1900; Frequency: 1851.25 MHz; Duty Cycle: 1:8

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: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**H Scan - H3DV6 probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm  
Maximum value of Total (measured) = 0.049 A/m

**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (11x11x1):** Measurement grid: dx=5mm, dy=5mm  
Probe Modulation Factor = 1.00  
Reference Value = 0.046 A/m; Power Drift = -0.029 dB  
Maximum value of Total (measured) = 0.055 A/m

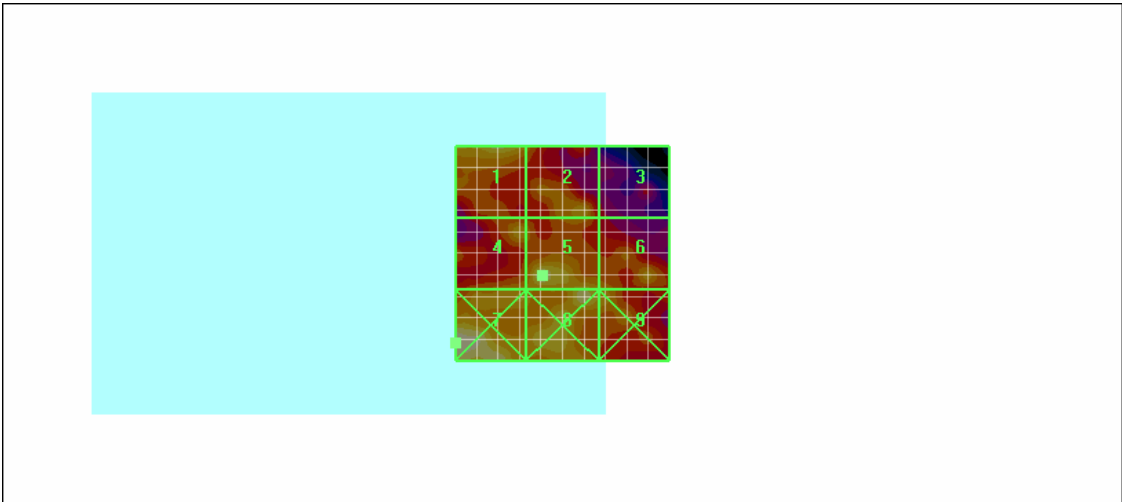
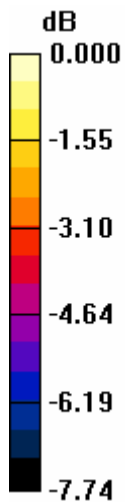
**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (101x101x1):** Measurement grid: dx=5mm, dy=5mm  
Maximum value of peak Total field = 0.117 A/m  
Probe Modulation Factor = 2.26  
Reference Value = 0.046 A/m; Power Drift = -0.029 dB  
**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak H-field in A/m

Grid	Grid	Grid
<b>0.115</b>	<b>0.104</b>	<b>0.083</b>
Grid	Grid	Grid
<b>0.104</b>	<b>0.117</b>	<b>0.102</b>
Grid	Grid	Grid

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0.125	0.117	0.104
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0 dB = 0.125A/m



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Date/Time: 19/07/2006 1:38:06 PM

Test Laboratory: RTS

HAC\_H\_Field\_CDMA1900\_Spk center\_mid\_chan

**DUT: BlackBerry Wireless Handheld Model; Type: Sample ; 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: H Dipole Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 11/11/2005
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 25/04/2006
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**H Scan - H3DV6 probe tip 10mm above Device Reference/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm  
Maximum value of Total (measured) = 0.142 A/m

**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (11x11x1):** Measurement grid: dx=5mm, dy=5mm  
Probe Modulation Factor = 1.00  
Reference Value = 0.118 A/m; Power Drift = -0.006 dB  
Maximum value of Total (measured) = 0.143 A/m

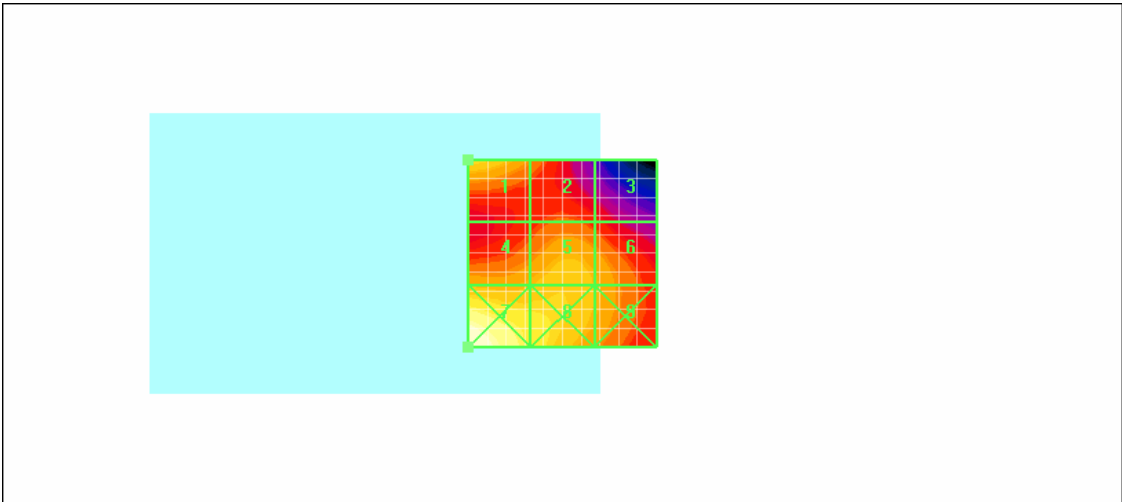
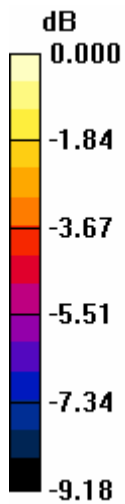
**H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (101x101x1):** Measurement grid: dx=5mm, dy=5mm  
Maximum value of peak Total field = 0.116 A/m  
Probe Modulation Factor = 0.980  
Reference Value = 0.118 A/m; Power Drift = -0.006 dB  
**Hearing Aid Near-Field Category: M4 (AWF 0 dB)**

Peak H-field in A/m

Grid	Grid	Grid
<b>0.116</b>	<b>0.098</b>	<b>0.088</b>
Grid	Grid	Grid
<b>0.106</b>	<b>0.111</b>	<b>0.105</b>
Grid	Grid	Grid

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0.140	0.118	0.106
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0 dB = 0.140A/m