

RTS RIM Testing Services	Document Annexes to Hearing Aid Compatibility RF Emissions Test Report for BlackBerry Wireless Handheld Model RBH42GW / RBH44GW		Page 1(96)
Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW

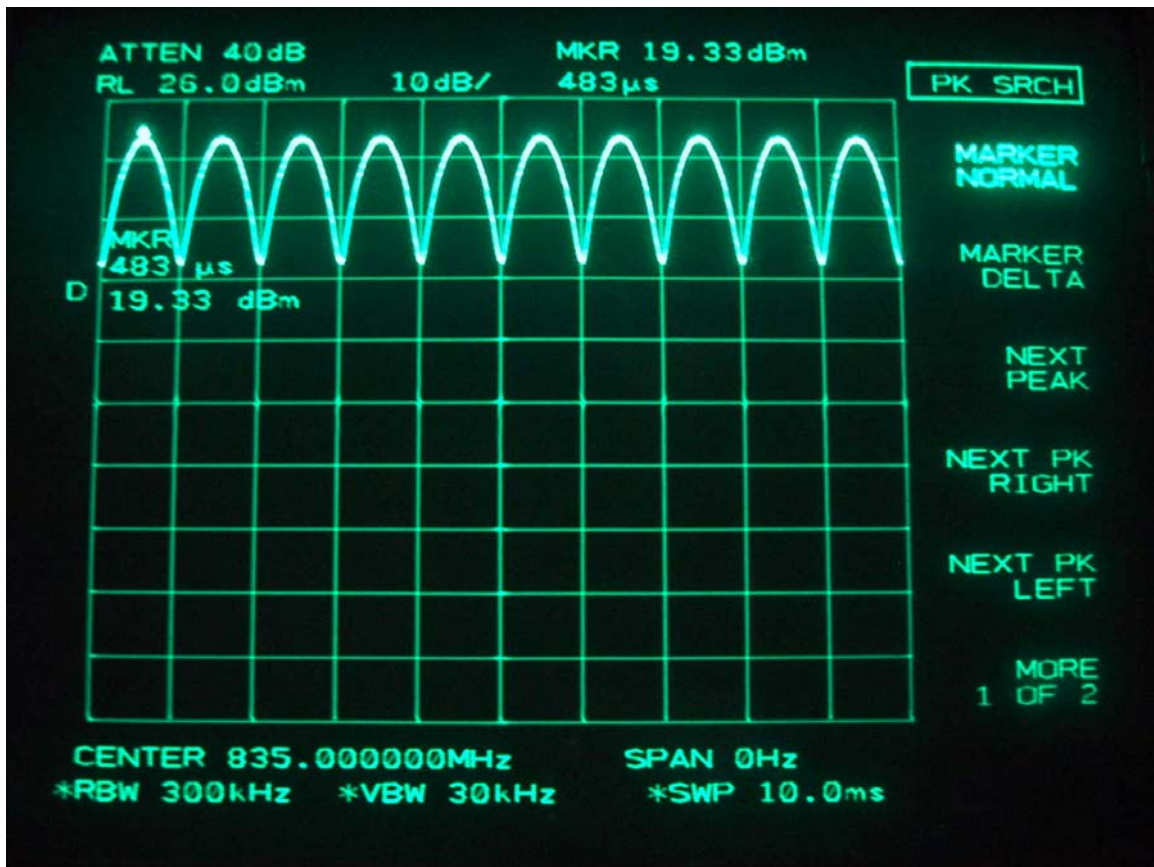
Annex A: Measurement data and plots

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



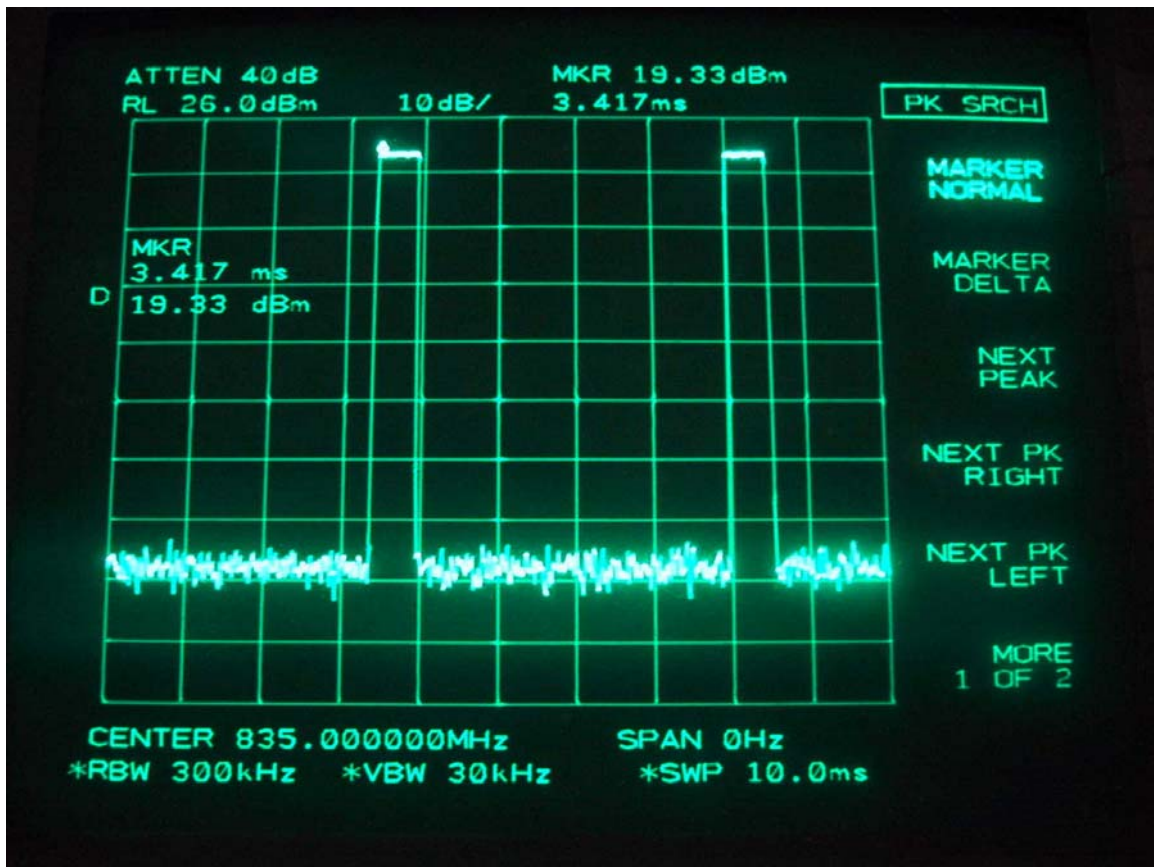
0 Hz Span CW Plot (835MHz)

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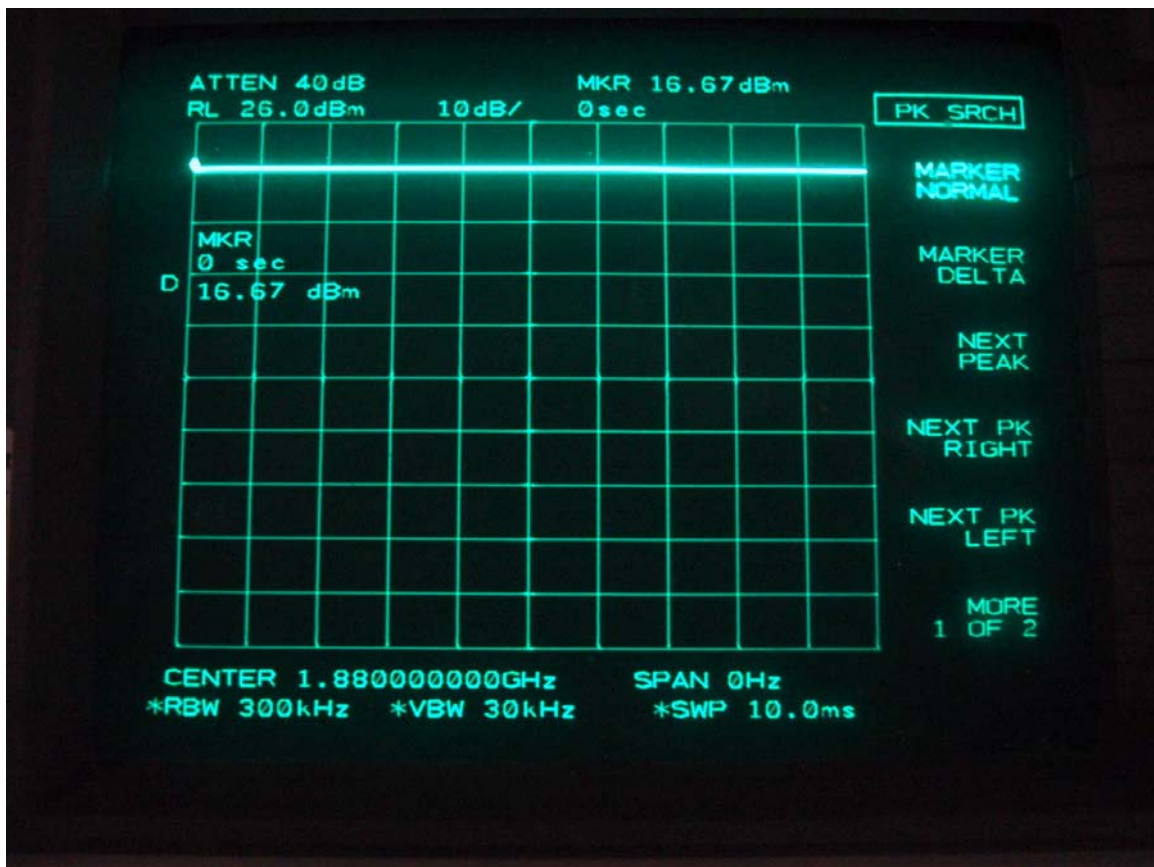
0 Hz Span 80% AM Plot (835MHz)

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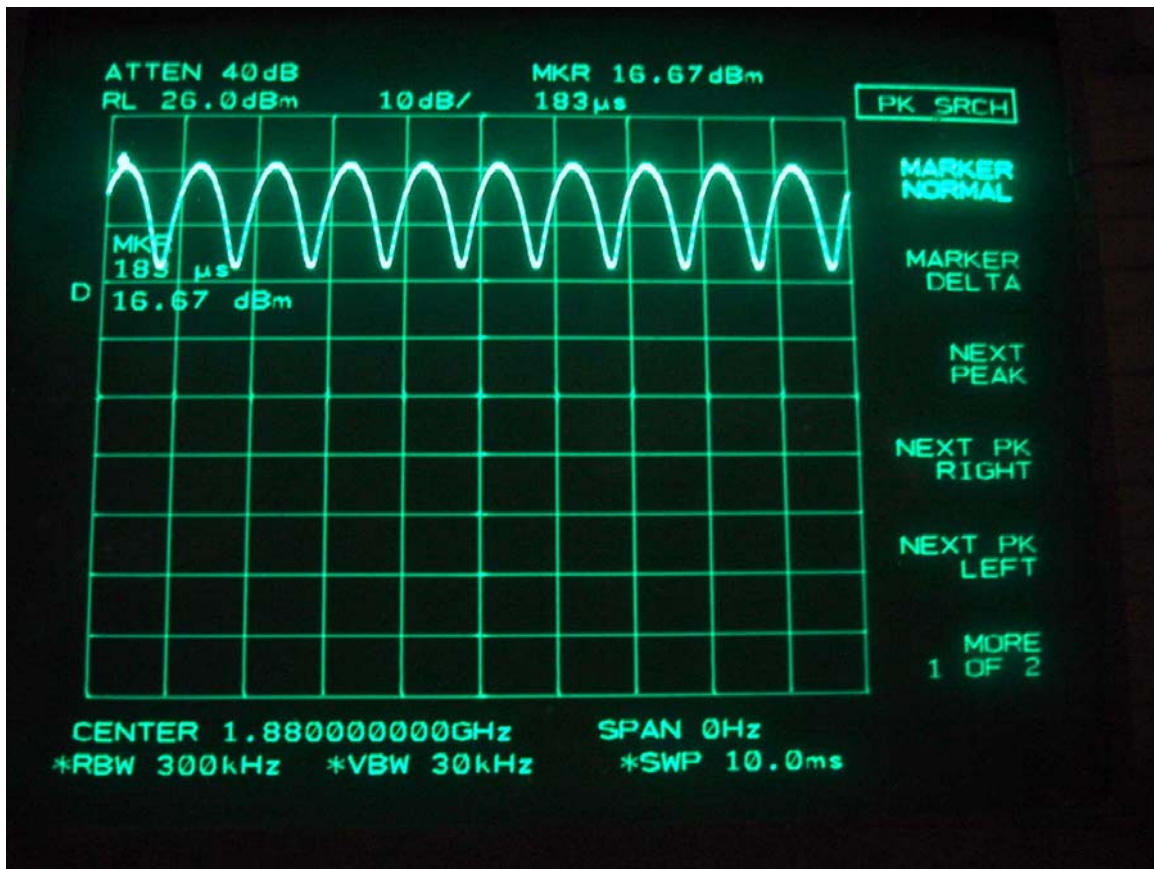
0 Hz Span GSM (835MHz)

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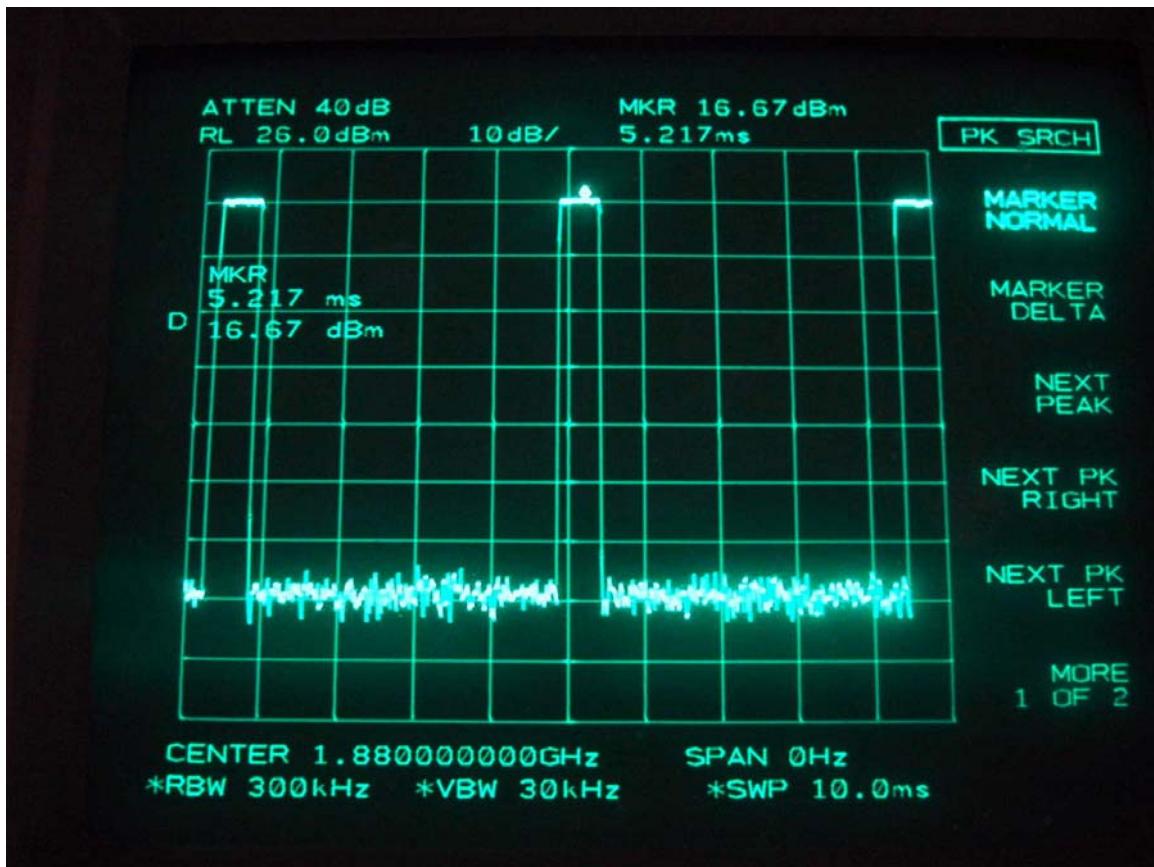
0 Hz Span CW Plot (1880MHz)

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0 Hz Span 80% AM Plot (1880MHz)

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0 Hz Span GSM (1880MHz)

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A.2 Dipole validation and probe modulation factor plots

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Date/Time: 27/06/2006 8:04:36 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/m³

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

(5x35x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 54.1 V/m; Power Drift = 0.117 dB

Maximum value of Total (measured) = 164.4 V/m

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

(41x341x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 167.2 V/m

Probe Modulation Factor = 1.00

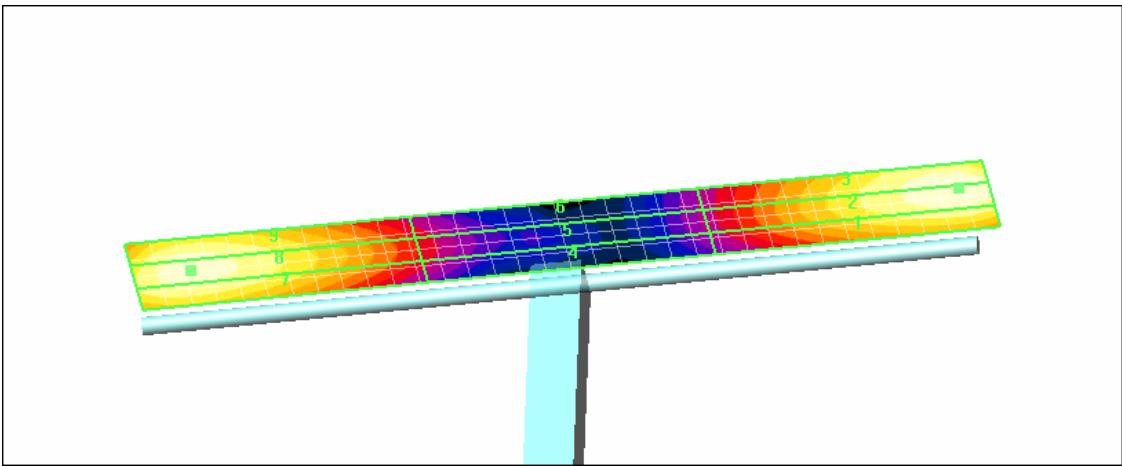
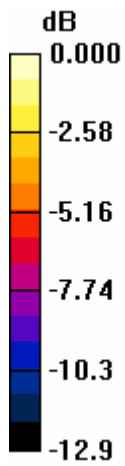
Reference Value = 54.1 V/m; Power Drift = 0.117 dB

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

Peak E-field in V/m

Grid	Grid	Grid
151.9	167.2	166.7
Grid	Grid	Grid
80.7	84.3	82.9
Grid	Grid	Grid

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0 dB = 167.2V/m

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Date/Time: 27/06/2006 8:12:02 AM

Test Laboratory: RTS

HAC_E_Dipole_835 MHz_CW_19_33dBm_PMF

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/m³

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

(5x35x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 49.2 V/m; Power Drift = 0.070 dB

Maximum value of Total (measured) = 149.6 V/m

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

(41x341x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 152.1 V/m

Probe Modulation Factor = 1.00

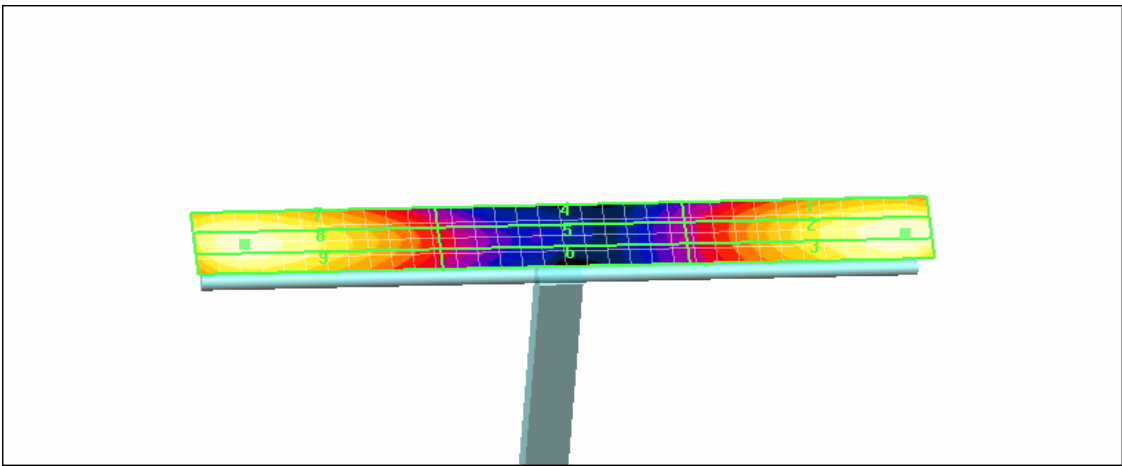
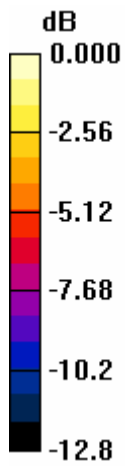
Reference Value = 49.2 V/m; Power Drift = 0.070 dB

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

Peak E-field in V/m

Grid	Grid	Grid
138.2	152.1	151.5
Grid	Grid	Grid
73.4	76.8	75.3
Grid	Grid	Grid

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0 dB = 152.1V/m

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Date/Time: 27/06/2006 8:18:27 AM

Test Laboratory: RTS

HAC_E_Dipole_835 MHz_80%AM_19_33dBm_PMF

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/m³

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

(5x35x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 31.1 V/m; Power Drift = -0.046 dB

Maximum value of Total (measured) = 92.6 V/m

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

(41x341x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 93.8 V/m

Probe Modulation Factor = 1.00

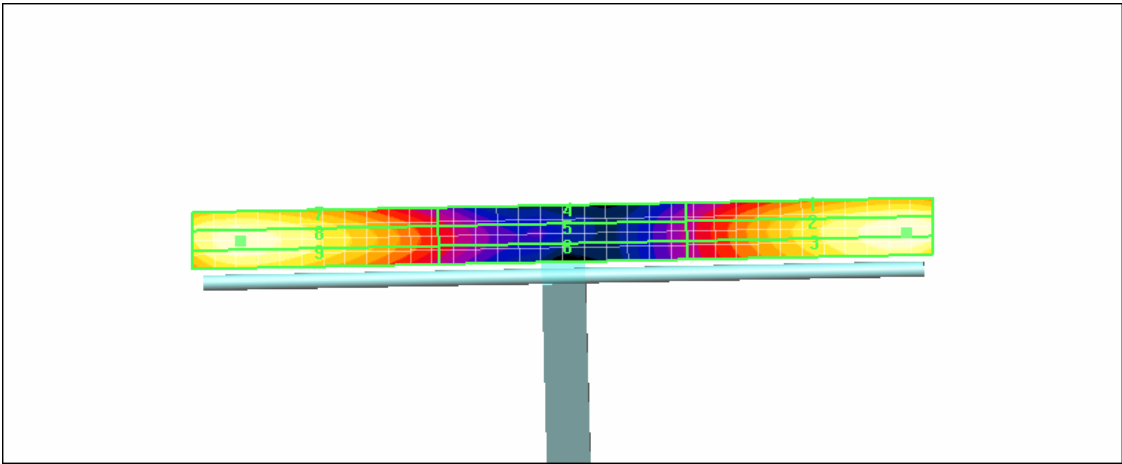
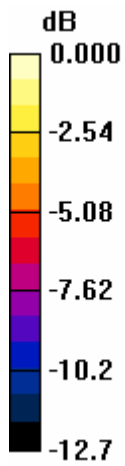
Reference Value = 31.1 V/m; Power Drift = -0.046 dB

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

Peak E-field in V/m

Grid	Grid	Grid
86.2	93.8	93.4
Grid	Grid	Grid
46.0	47.9	47.2
Grid	Grid	Grid

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0 dB = 93.8V/m

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Date/Time: 27/06/2006 8:31:39 AM

Test Laboratory: RTS

HAC_E_Dipole_835 MHz__GSM_19_33dBm_PMF

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

Communication System: GSM 850; Frequency: 835 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Phantom section: H Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 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

(5x35x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Reference Value = 18.5 V/m; Power Drift = -0.038 dB

Maximum value of Total (measured) = 51.7 V/m

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

(41x341x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 52.5 V/m

Probe Modulation Factor = 1.00

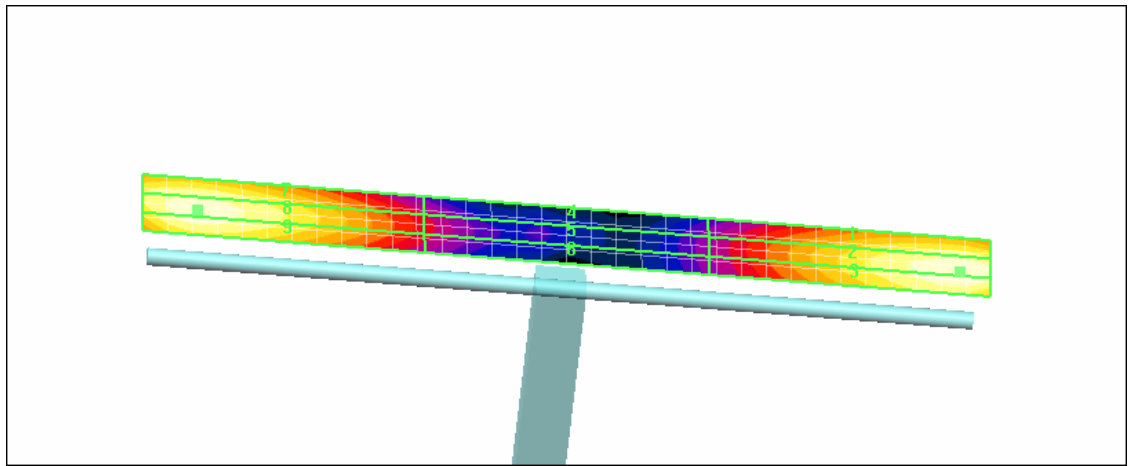
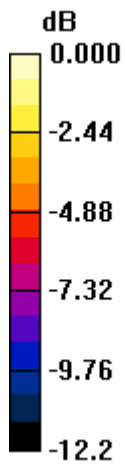
Reference Value = 18.5 V/m; Power Drift = -0.038 dB

Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak E-field in V/m

Grid	Grid	Grid
47.3	52.5	52.2
Grid	Grid	Grid
25.1	26.4	26.1
Grid	Grid	Grid

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0 dB = 52.5V/m

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Date/Time: 27/06/2006 9:28:59 AM

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/m³

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 = 0.473 A/m; Power Drift = 0.029 dB

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

Probe Modulation Factor = 1.00

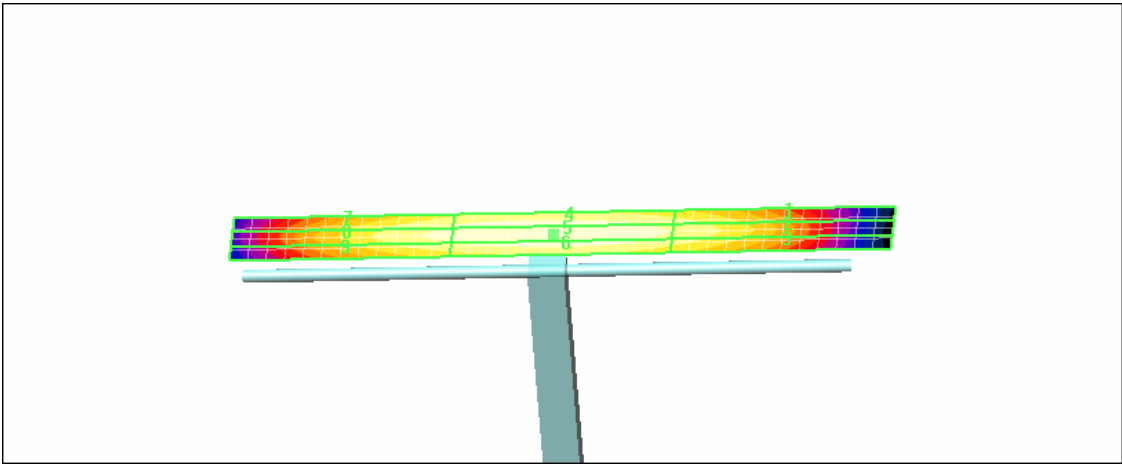
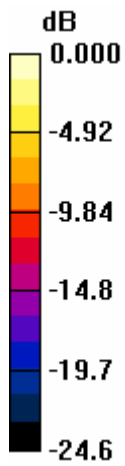
Reference Value = 0.473 A/m; Power Drift = 0.029 dB

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

Peak H-field in A/m

Grid	Grid	Grid
0.375	0.400	0.378
Grid	Grid	Grid
0.458	0.485	0.453
Grid	Grid	Grid

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0 dB = 0.485A/m

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Date/Time: 27/06/2006 9:00:18 AM

Test Laboratory: RTS

HAC_H_Dipole_835 MHz_CW_19_33dBm

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

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

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

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 = 0.435 A/m; Power Drift = 0.124 dB

Maximum value of Total (measured) = 0.377 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 = 0.377 A/m

Probe Modulation Factor = 1.00

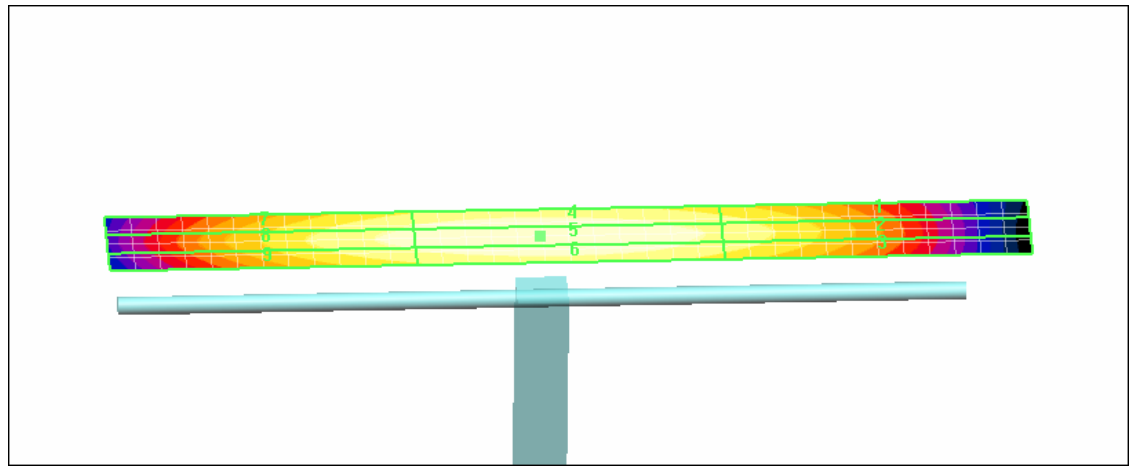
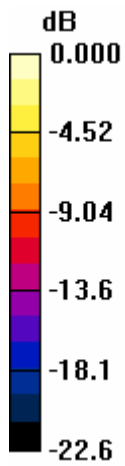
Reference Value = 0.435 A/m; Power Drift = 0.124 dB

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

Peak H-field in A/m

Grid	Grid	Grid
0.292	0.306	0.298
Grid	Grid	Grid
0.357	0.377	0.362
Grid	Grid	Grid

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0 dB = 0.377A/m

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Date/Time: 27/06/2006 9:07:47 AM

Test Laboratory: RTS

HAC_H_Dipole_835 MHz_80%AM_19_33dBm

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

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

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

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 = 0.270 A/m; Power Drift = 0.057 dB

Maximum value of Total (measured) = 0.236 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 = 0.236 A/m

Probe Modulation Factor = 1.00

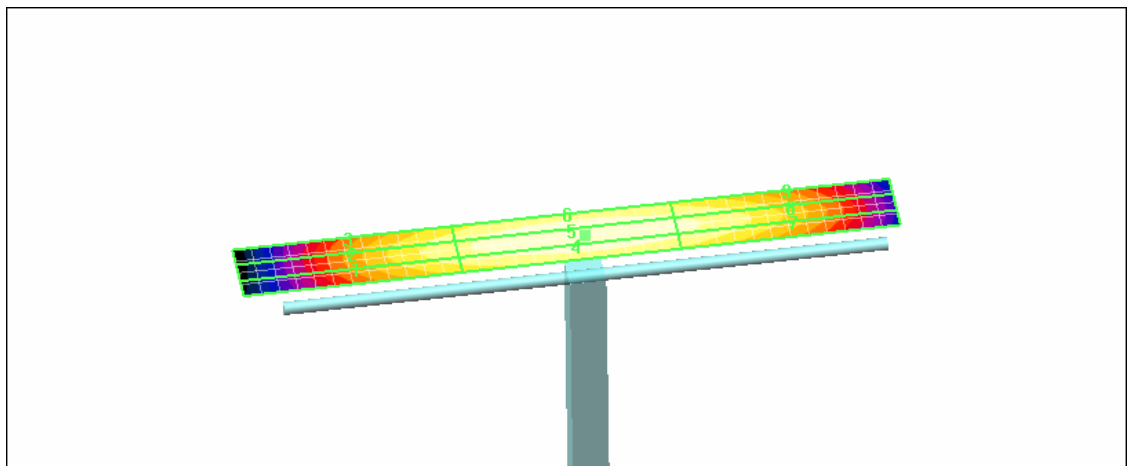
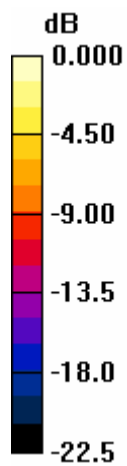
Reference Value = 0.270 A/m; Power Drift = 0.057 dB

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

Peak H-field in A/m

Grid	Grid	Grid
0.183	0.191	0.185
Grid	Grid	Grid
0.224	0.236	0.224
Grid	Grid	Grid

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0 dB = 0.236A/m

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Date/Time: 27/06/2006 8:48:36 AM

Test Laboratory: RTS

HAC_H_Dipole_835 MHz_GSM_19_33dBm

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

Communication System: GSM 850; Frequency: 835 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

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 = 0.157 A/m; Power Drift = 0.199 dB

Maximum value of Total (measured) = 0.137 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 = 0.137 A/m

Probe Modulation Factor = 1.00

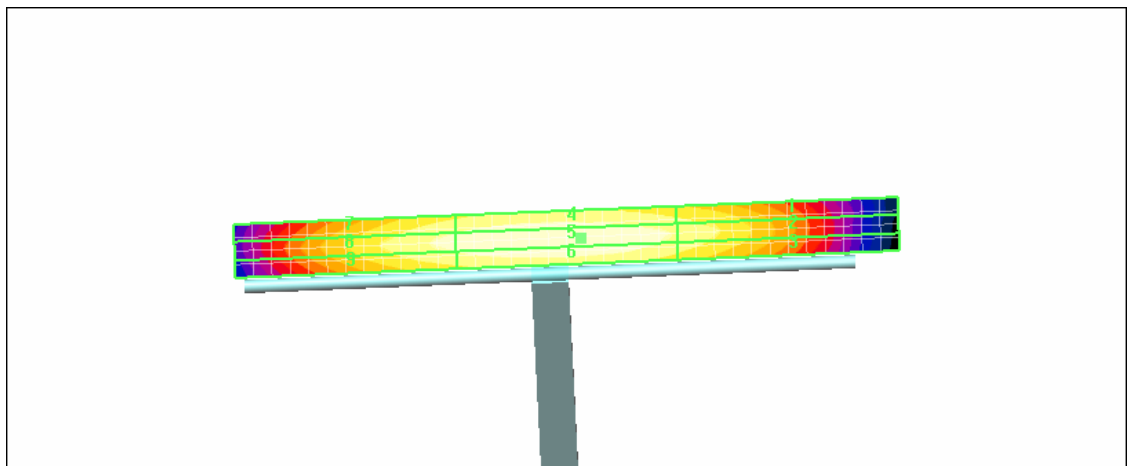
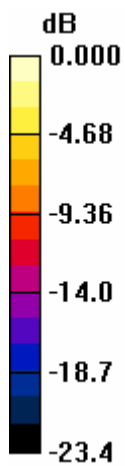
Reference Value = 0.157 A/m; Power Drift = 0.199 dB

Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Peak H-field in A/m

Grid	Grid	Grid
0.103	0.112	0.108
Grid	Grid	Grid
0.125	0.137	0.131
Grid	Grid	Grid

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0 dB = 0.137A/m

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Date/Time: 26/06/2006 1:38:01 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/m³

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 = 68.1 V/m; Power Drift = 0.008 dB

Maximum value of Total (measured) = 120.6 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 = 81.2 V/m

Probe Modulation Factor = 1.00

Reference Value = 68.1 V/m; Power Drift = 0.008 dB

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

Peak E-field in V/m

Grid	Grid	Grid
118.5	122.9	119.1
Grid	Grid	Grid
77.4	81.2	80.7
Grid	Grid	Grid

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Cursor:

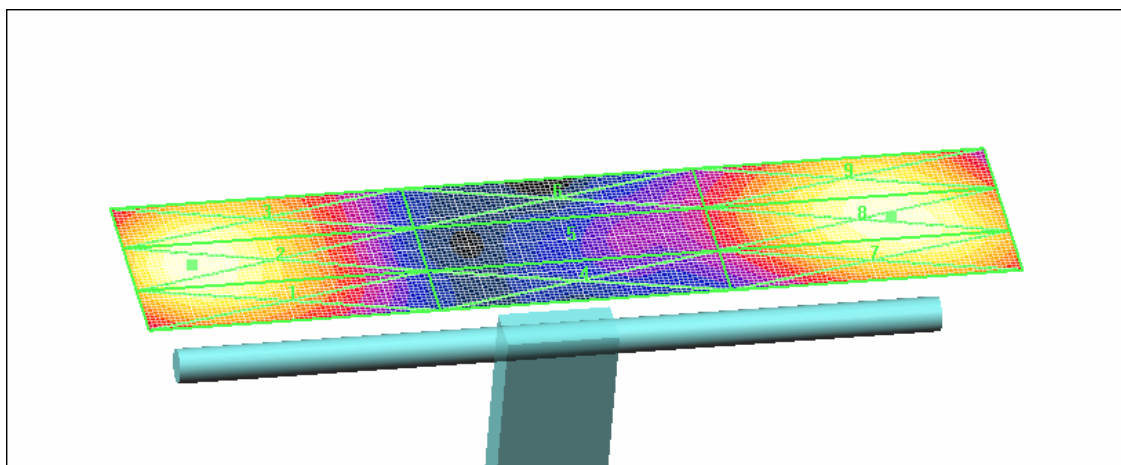
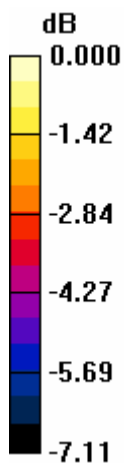
Total = 41.7929 dB V/m
E Category: M2
Location: 0, -38.5, 364.3 mm

E Scan - ER probe tip 10mm above CD1880 Dipole/Hearing Aid
Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm
Probe Modulation Factor = 1.00
Reference Value = 68.1 V/m; Power Drift = 0.008 dB
Maximum value of Total (interpolated) = 122.9 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 = 122.9 V/m
Probe Modulation Factor = 1.00
Reference Value = 68.1 V/m; Power Drift = 0.008 dB
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak E-field in V/m

Grid	Grid	Grid
118.5	122.9	119.1
Grid	Grid	Grid
77.4	81.2	80.7
Grid	Grid	Grid



0 dB = 122.9V/m

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Test Laboratory: RTS

HAC_E_Dipole_1880 MHz_CW_16_67dBm_PMF

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/m³

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 = 45.1 V/m; Power Drift = -0.066 dB

Maximum value of Total (measured) = 81.3 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 = 82.8 V/m

Probe Modulation Factor = 1.00

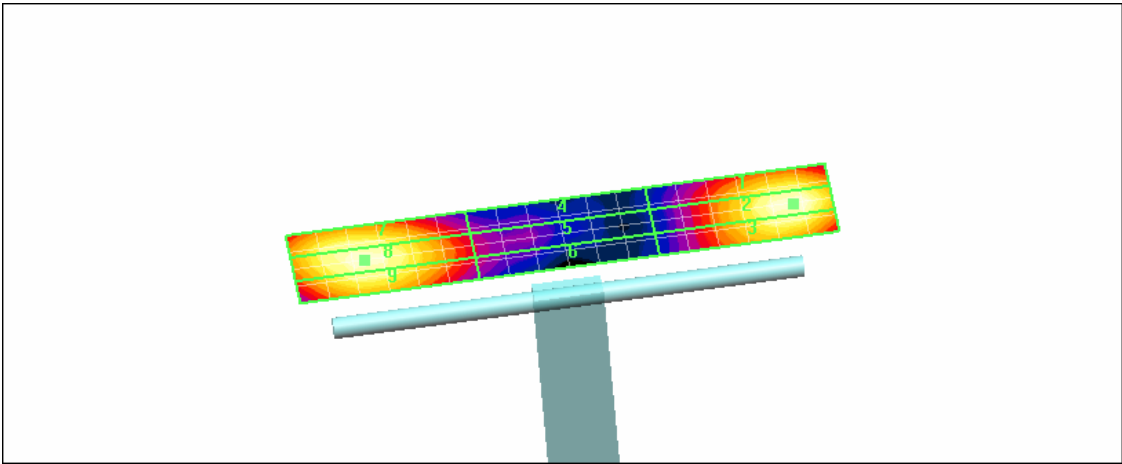
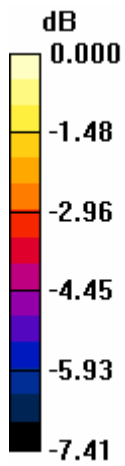
Reference Value = 45.1 V/m; Power Drift = -0.066 dB

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

Peak E-field in V/m

Grid	Grid	Grid
78.2	82.8	80.0
Grid	Grid	Grid
51.4	53.7	53.0
Grid	Grid	Grid

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0 dB = 82.8V/m

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Date/Time: 26/06/2006 2:53:54 PM

Test Laboratory: RTS

HAC_E_Dipole_1880 MHz_80%AM_16_7dBm_PMF

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/m³

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 = 29.7 V/m; Power Drift = -0.059 dB

Maximum value of Total (measured) = 53.4 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 = 54.3 V/m

Probe Modulation Factor = 1.00

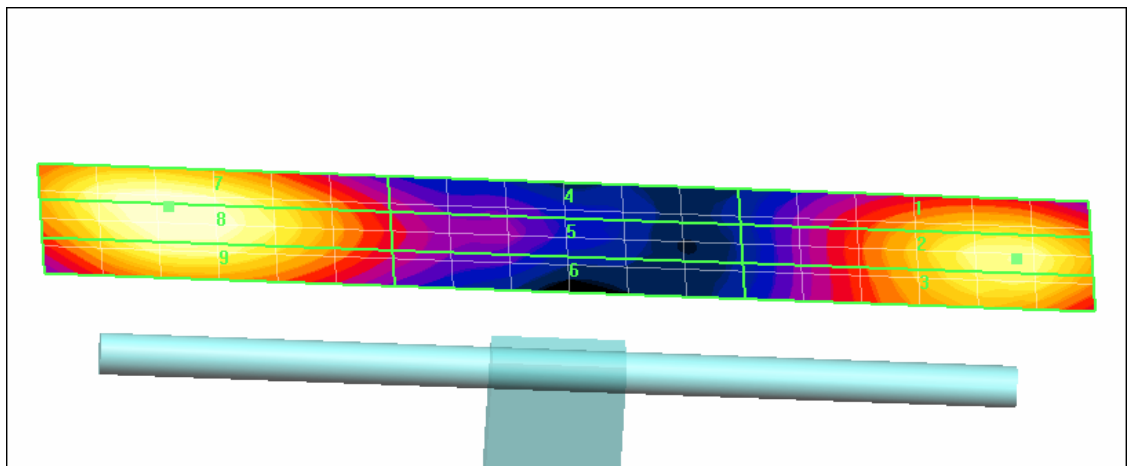
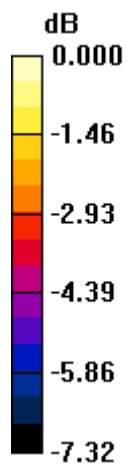
Reference Value = 29.7 V/m; Power Drift = -0.059 dB

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

Peak E-field in V/m

Grid	Grid	Grid
47.8	51.4	50.4
Grid	Grid	Grid
34.9	36.0	35.1
Grid	Grid	Grid

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0 dB = 54.3V/m

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Date/Time: 26/06/2006 3:38:14 PM

Test Laboratory: RTS

HAC_E_Dipole_GSM 1880_16_67dBm_PMF

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

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Phantom section: H Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 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 = 15.6 V/m; Power Drift = 0.046 dB

Maximum value of Total (measured) = 28.3 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 = 28.8 V/m

Probe Modulation Factor = 1.00

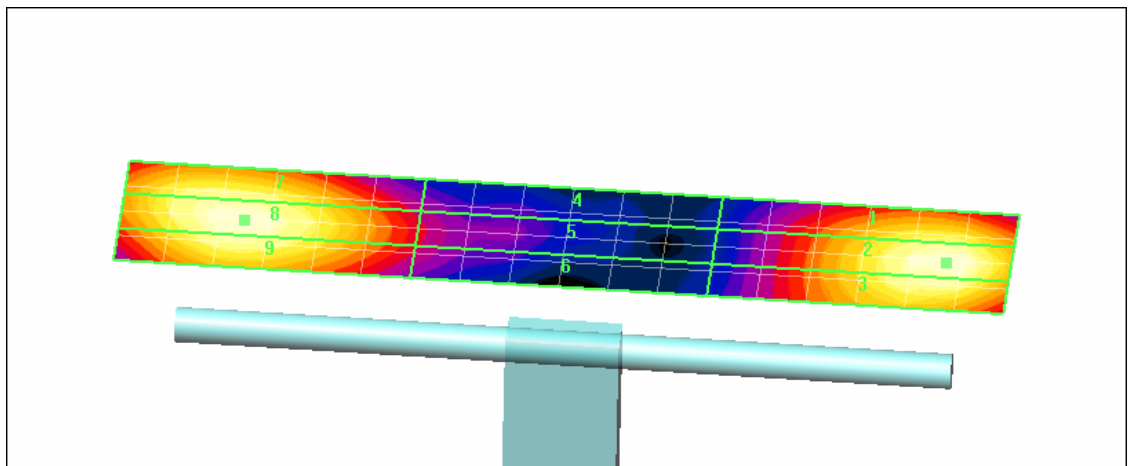
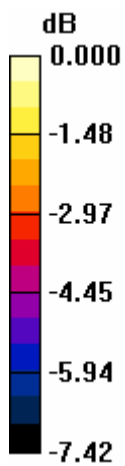
Reference Value = 15.6 V/m; Power Drift = 0.046 dB

Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Peak E-field in V/m

Grid	Grid	Grid
26.9	28.8	28.1
Grid	Grid	Grid
17.8	18.8	18.6
Grid	Grid	Grid

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0 dB = 28.8V/m

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Date/Time: 26/06/2006 4:20:41 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/m³

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 = 0.457 A/m; Power Drift = -0.112 dB

Maximum value of Total (measured) = 0.470 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 = 0.470 A/m

Probe Modulation Factor = 1.00

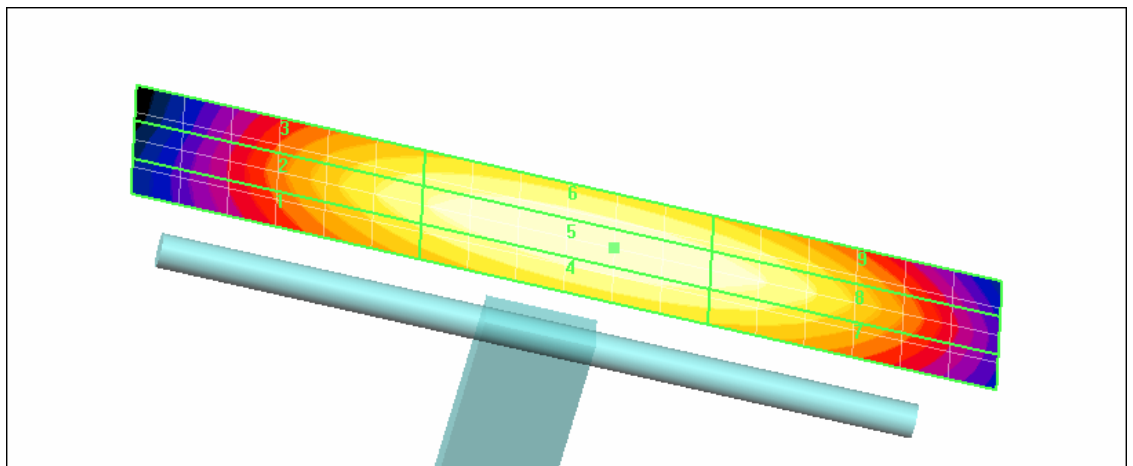
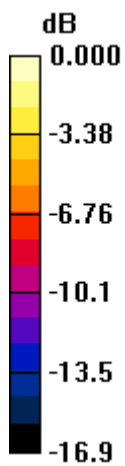
Reference Value = 0.457 A/m; Power Drift = -0.112 dB

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

Peak H-field in A/m

Grid	Grid	Grid
0.376	0.409	0.392
Grid	Grid	Grid
0.436	0.470	0.442
Grid	Grid	Grid

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0 dB = 0.470A/m

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Test Laboratory: RTS

HAC_H_Dipole_1880 MHz_CW_16_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/m³

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 = 0.292 A/m; Power Drift = -0.024 dB

Maximum value of Total (measured) = 0.254 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 = 0.255 A/m

Probe Modulation Factor = 1.00

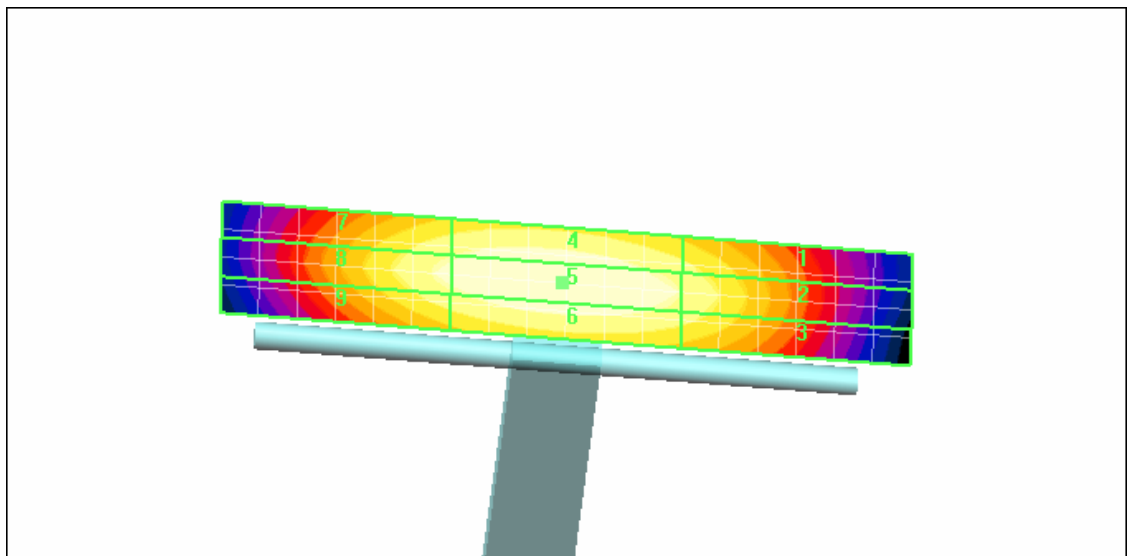
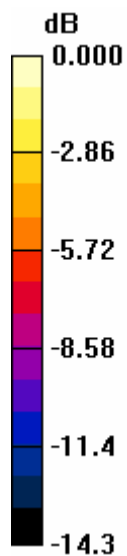
Reference Value = 0.292 A/m; Power Drift = -0.024 dB

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

Peak H-field in A/m

Grid	Grid	Grid
0.217	0.228	0.219
Grid	Grid	Grid
0.244	0.255	0.242
Grid	Grid	Grid

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0 dB = 0.255A/m

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Test Laboratory: RTS

HAC_H_Dipole_1880 MHz_80%AM_16_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/m³

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 = 0.185 A/m; Power Drift = 0.048 dB

Maximum value of Total (measured) = 0.163 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 = 0.163 A/m

Probe Modulation Factor = 1.00

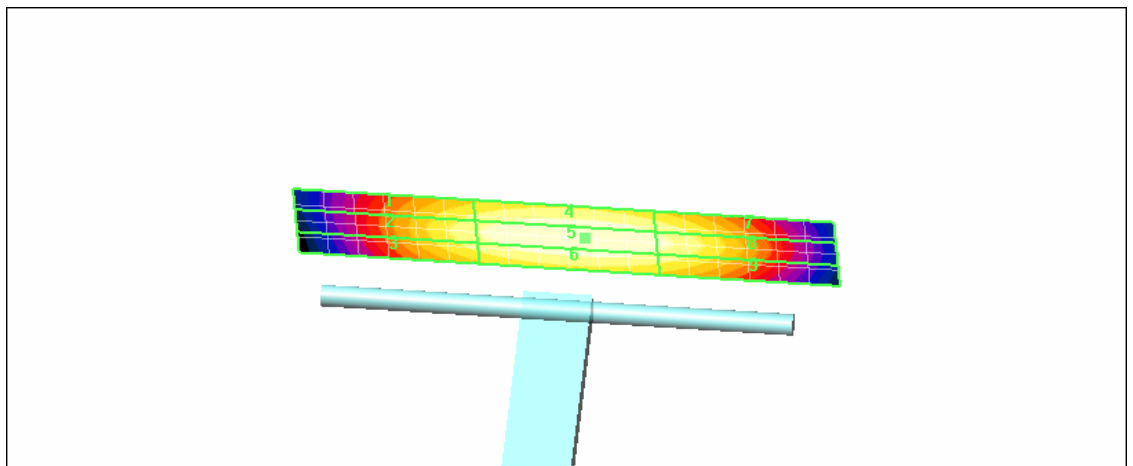
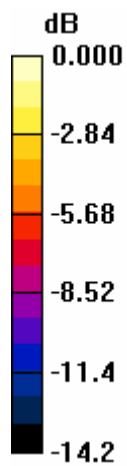
Reference Value = 0.185 A/m; Power Drift = 0.048 dB

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

Peak H-field in A/m

Grid	Grid	Grid
0.138	0.145	0.141
Grid	Grid	Grid
0.157	0.163	0.155
Grid	Grid	Grid

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0 dB = 0.163A/m

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Date/Time: 26/06/2006 3:50:18 PM

Test Laboratory: RTS

HAC_H_Dipole_1880 MHz_GSM_16_67dBm

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

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

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 = 0.110 A/m; Power Drift = -0.062 dB

Maximum value of Total (measured) = 0.095 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 = 0.095 A/m

Probe Modulation Factor = 1.00

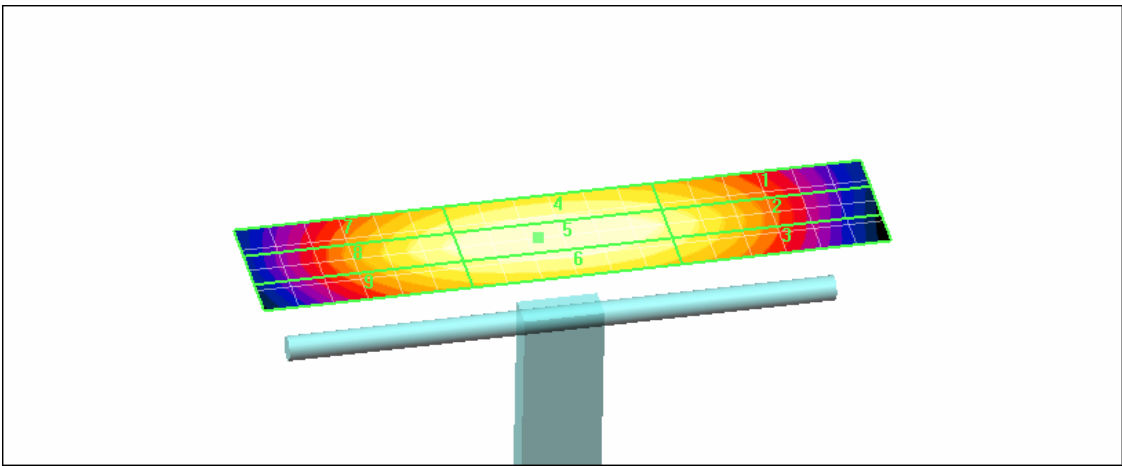
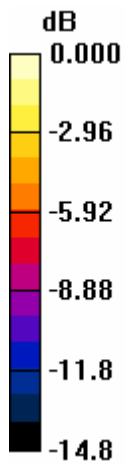
Reference Value = 0.110 A/m; Power Drift = -0.062 dB

Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Peak H-field in A/m

Grid	Grid	Grid
0.079	0.084	0.080
Grid	Grid	Grid
0.090	0.095	0.090
Grid	Grid	Grid

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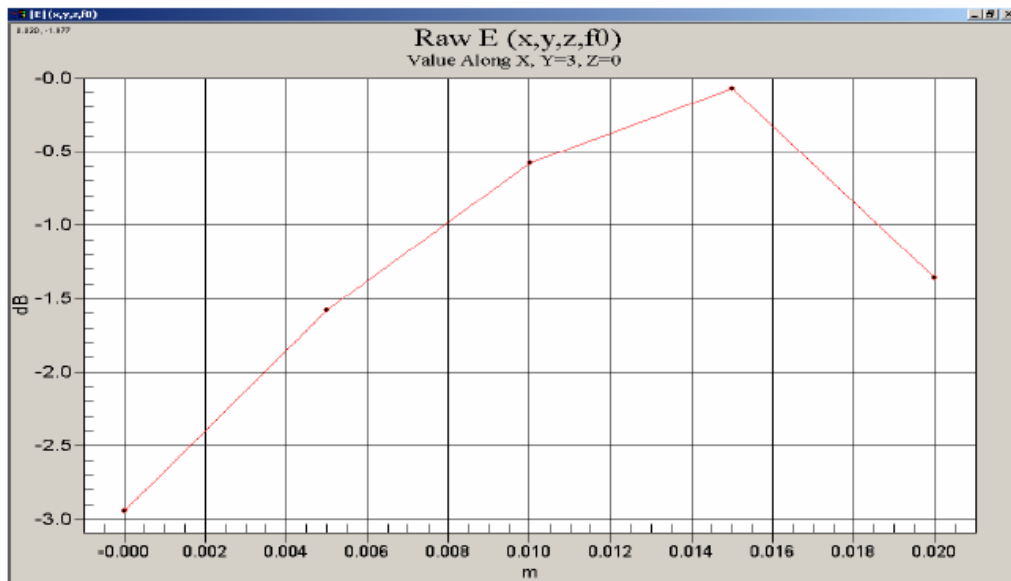


0 dB = 0.095A/m

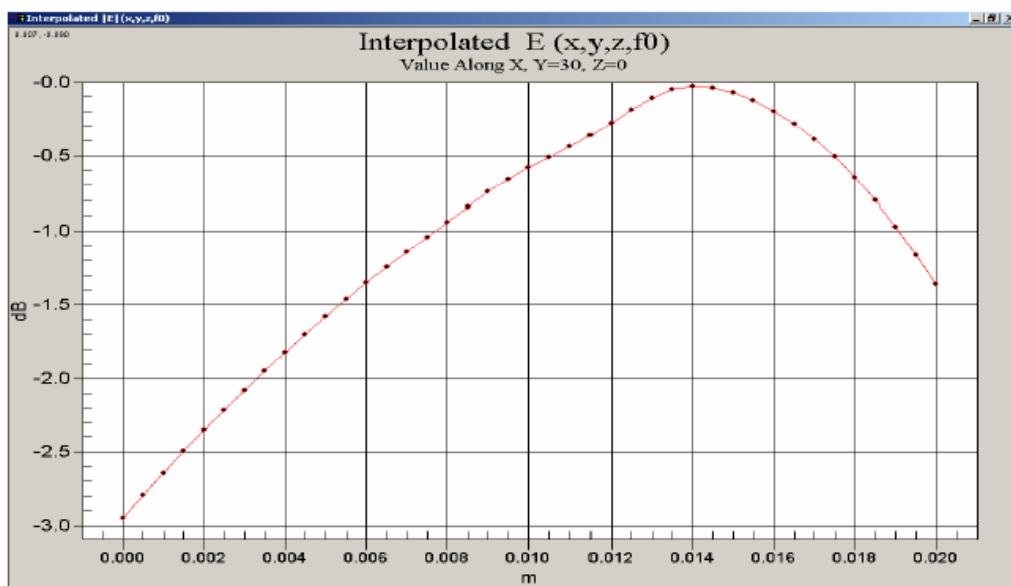
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Justification of Step Size and Interpolation

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.

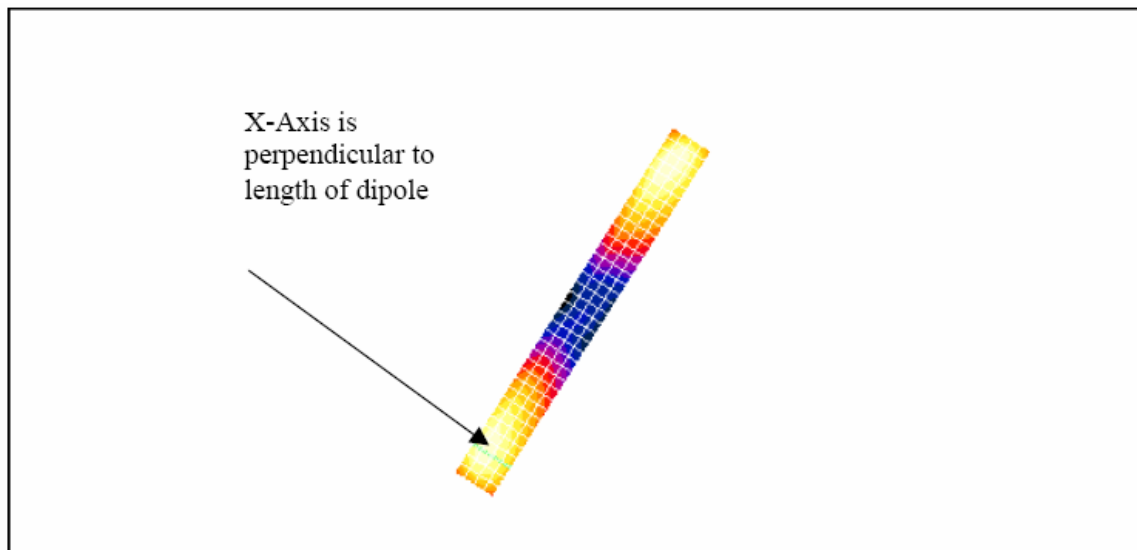


The figure above shows the raw measured field strength perpendicular to the length of the validation dipole. The TCB guidance slides require the 3dB width to be much larger than the step size. The width between -3dB points is > 21mm, at least 4 times the step size.



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

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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/m³

Phantom section: H Device Section

DASY4 Configuration:

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

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

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

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

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

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

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

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

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

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

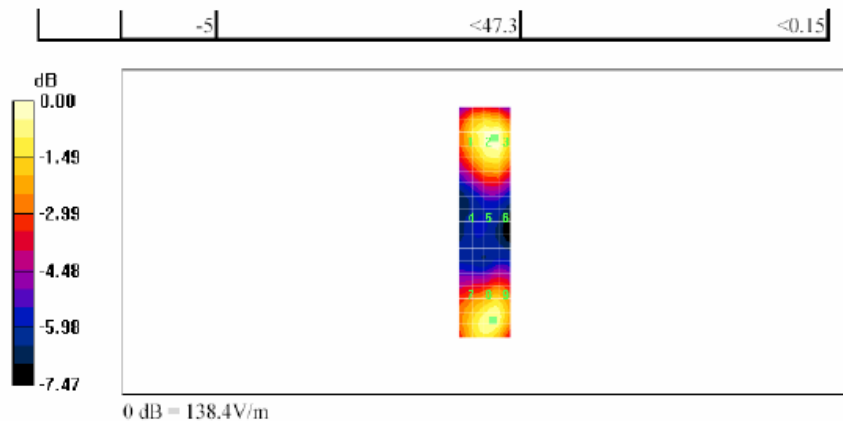
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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

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

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

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Lab: RIM Testing Services (RTS)

Dipole Validation 1880 MHz_2mm step_E-Field 07_14_05

DUT: HAC Dipole 1880 MHz; Type: CD1880V3

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

Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Phantom section: H Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 10/12/2004

- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)

- Electronics: DAE3 Sn472; Calibrated: 03/01/2005

- Phantom: HAC Test Arch; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

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

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

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

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

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

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

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

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

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

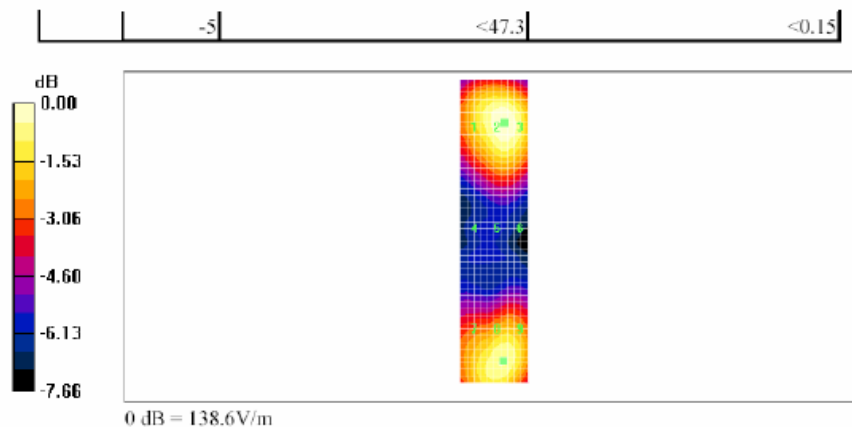
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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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/m³

Phantom section: H Dipole Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 10/12/2004
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 03/01/2005
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

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

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

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

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

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

Maximum value of Total field (slot averaged) = 0.406 A/m

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

H in A/m (Time averaged) H in A/m (Slot averaged)

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

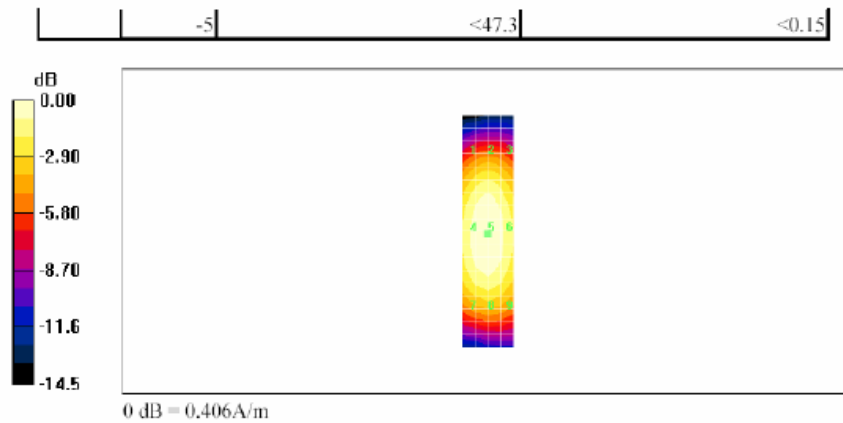
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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

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

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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/m³

Phantom section: H Dipole Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 10/12/2004
- Sensor-Surface: 0mm (Fix Surface) Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 03/01/2005
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

H Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (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
0.347	0.361	0.348	0.347	0.361	0.348
Grid 4	Grid 5	Grid 6	Grid 4	Grid 5	Grid 6
0.394	0.406	0.391	0.394	0.406	0.391
Grid 7	Grid 8	Grid 9	Grid 7	Grid 8	Grid 9
0.367	0.380	0.365	0.367	0.380	0.365

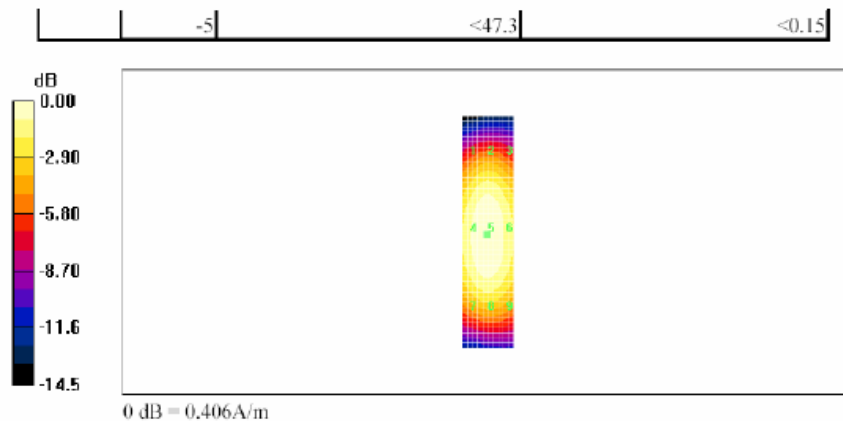
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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A.3 RF emission field plots

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

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Date/Time: 28/06/2006 12:04:54 PM

Test Laboratory: RTS

HAC_E_RBH42GW_GSM850_Spk center_low_chan

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

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

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) = 78.1 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 = 77.9 V/m; Power Drift = -0.131 dB

Maximum value of Total (measured) = 78.6 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 = 227.6 V/m

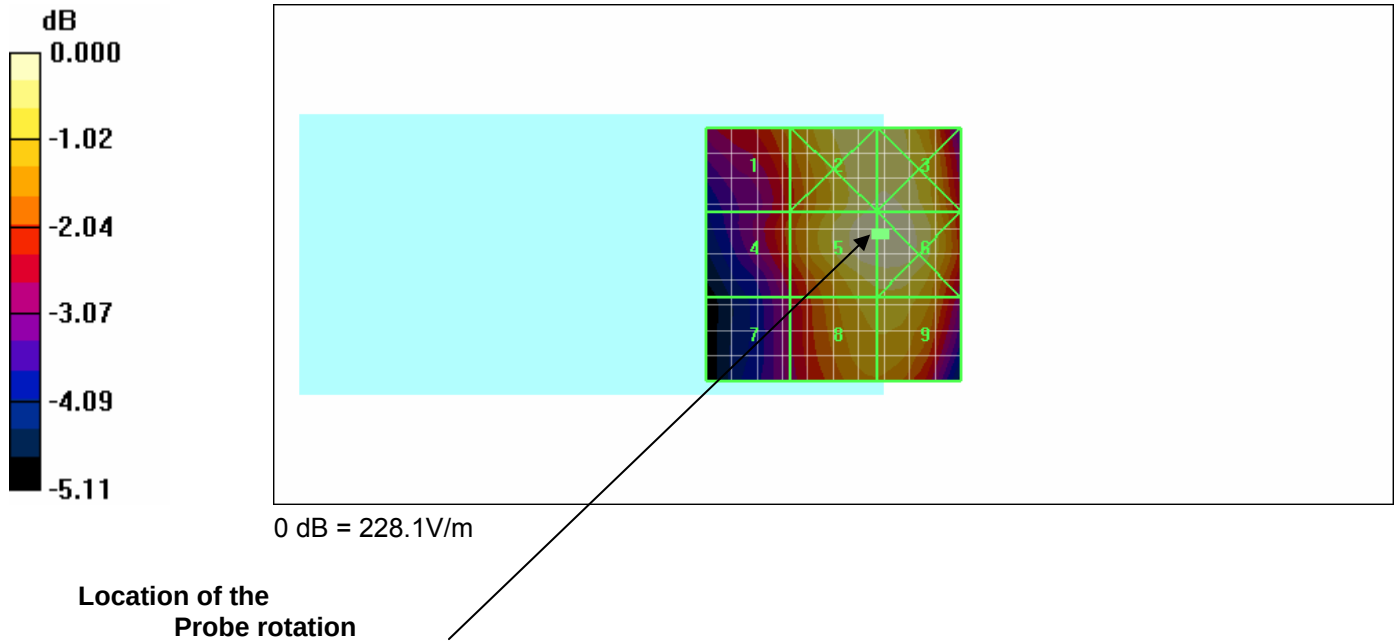
Probe Modulation Factor = 2.90

Reference Value = 77.9 V/m; Power Drift = -0.131 dB

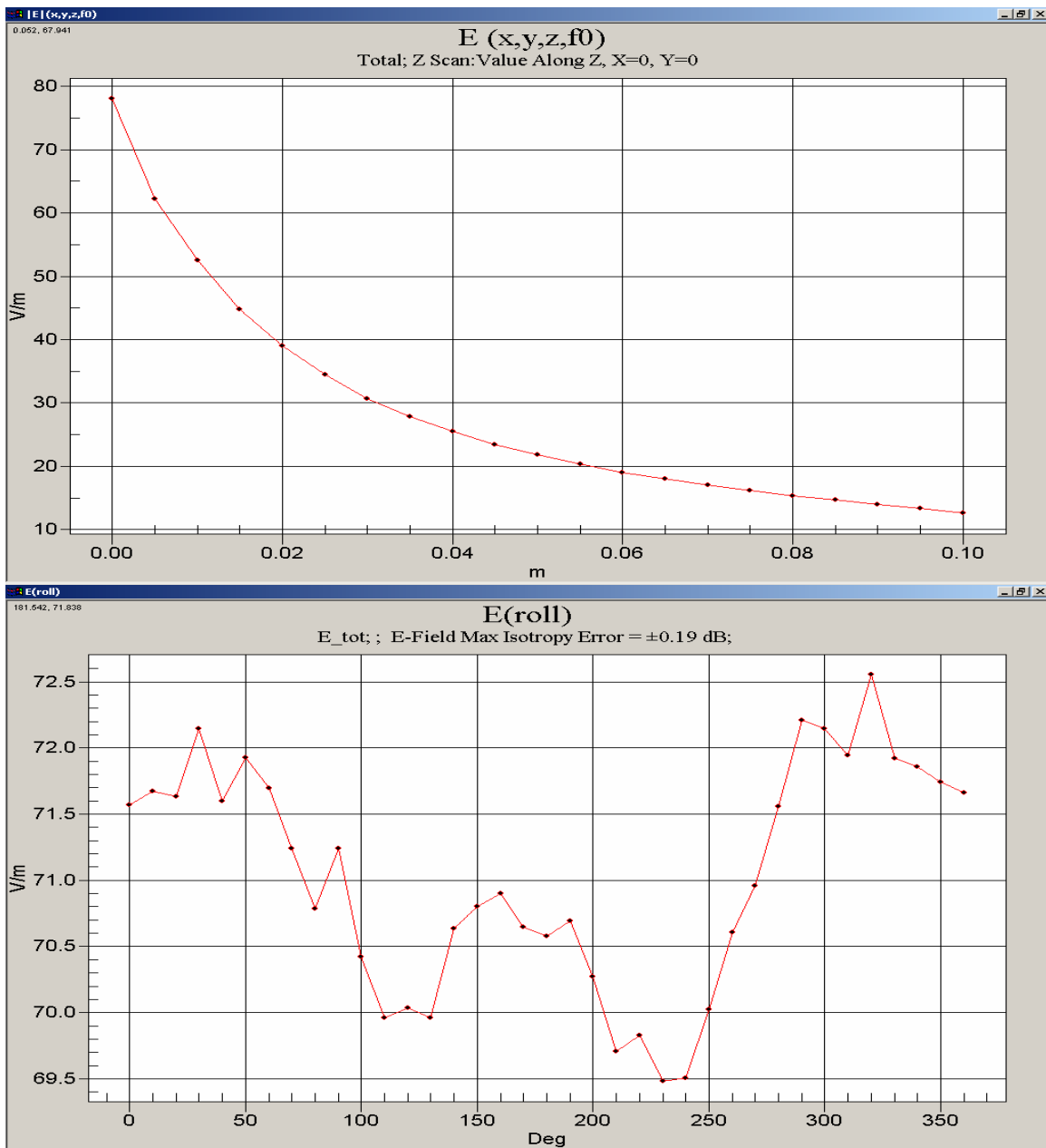
Peak E-field in V/m

Grid	Grid	Grid
191.9	222.1	222.6
Grid	Grid	Grid
184.0	227.6	228.1
Grid	Grid	Grid

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Probe rotation at max location after exclusion block

$$\begin{aligned}
 E(\delta) &= (E_{\text{max}} - E_{\text{at zero degree}}) * \text{PMF} \\
 &= (72.6 - 71.6) * 2.90 \\
 &= 1 * 2.90 \\
 &= 2.89 \text{ V/m}
 \end{aligned}$$

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Date/Time: 28/06/2006 12:14:44 PM

Test Laboratory: RTS

HAC_E_RBH42GW_GSM850_Spk center_mid_chan

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

Communication System: GSM 850; Frequency: 836.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

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) = 65.3 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 = 64.7 V/m; Power Drift = 0.056 dB

Maximum value of Total (measured) = 65.0 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 = 188.1 V/m

Probe Modulation Factor = 2.90

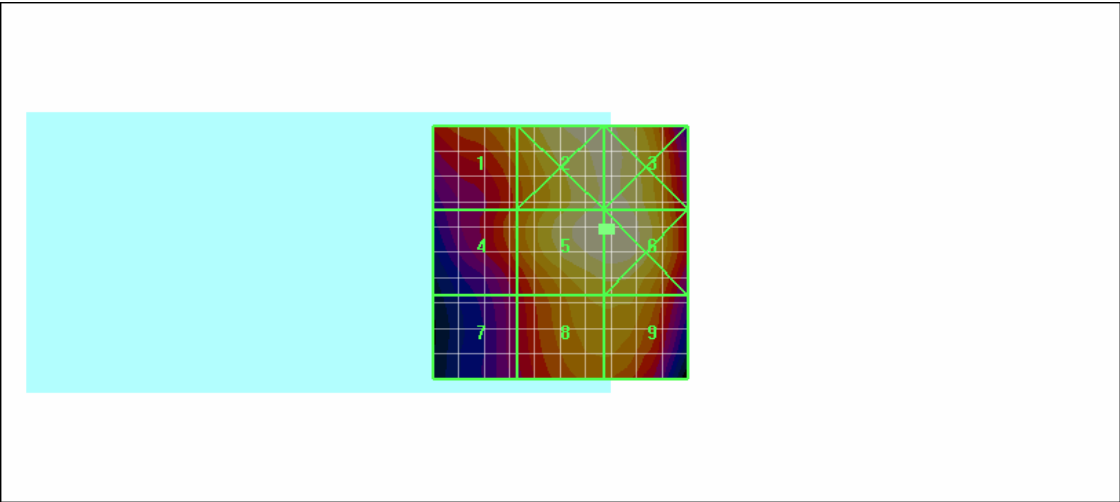
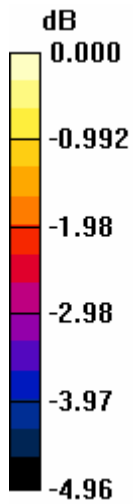
Reference Value = 64.7 V/m; Power Drift = 0.056 dB

Hearing Aid Near-Field Category: M1 (AWF -5 dB)

Peak E-field in V/m

Grid	Grid	Grid
167.1	184.0	184.2
Grid	Grid	Grid
157.8	188.1	188.5
Grid	Grid	Grid

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0 dB = 188.5V/m

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Date/Time: 28/06/2006 12:23:15 PM

Test Laboratory: RTS

HAC_E_RBH42GW_GSM850_Spk center_high_chan

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

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

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) = 70.5 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 = 68.1 V/m; Power Drift = -0.026 dB

Maximum value of Total (measured) = 70.7 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 = 204.1 V/m

Probe Modulation Factor = 2.90

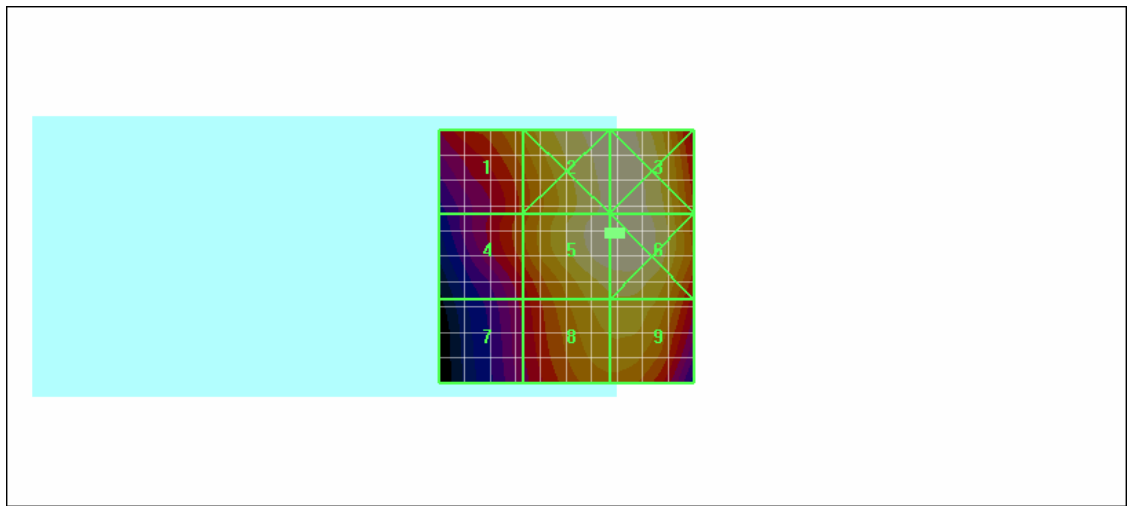
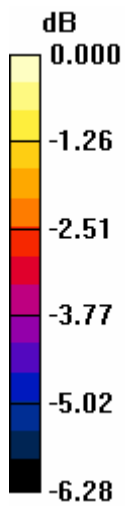
Reference Value = 68.1 V/m; Power Drift = -0.026 dB

Hearing Aid Near-Field Category: M1 (AWF -5 dB)

Peak E-field in V/m

Grid	Grid	Grid
172.3	200.7	201.2
Grid	Grid	Grid
160.7	204.1	205.2
Grid	Grid	Grid

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0 dB = 205.2V/m

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Date/Time: 28/06/2006 11:30:52 AM

Test Laboratory: RTS

HAC_E_RBH42GW_GSM850_T_Coil_center_low_chan

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

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

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) = 79.3 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 = 77.6 V/m; Power Drift = -0.055 dB

Maximum value of Total (measured) = 78.0 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 = 227.0 V/m

Probe Modulation Factor = 2.90

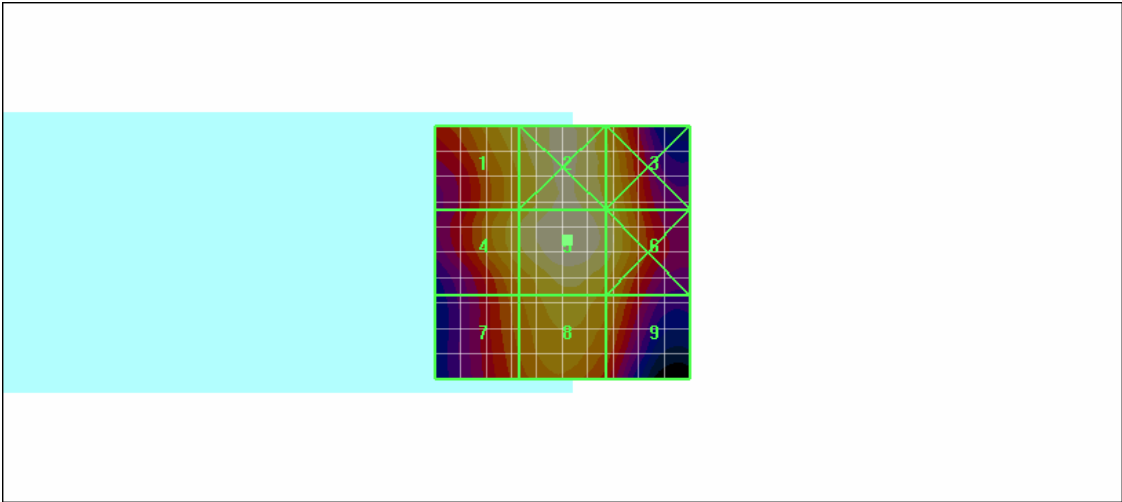
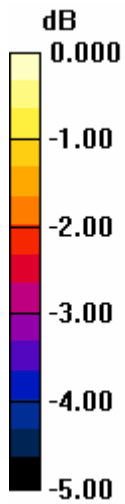
Reference Value = 77.6 V/m; Power Drift = -0.055 dB

Hearing Aid Near-Field Category: M1 (AWF -5 dB)

Peak E-field in V/m

Grid	Grid	Grid
210.8	221.4	211.0
Grid	Grid	Grid
210.5	227.0	215.8
Grid	Grid	Grid

RTS RIM Testing Services	Document Annexes to Hearing Aid Compatibility RF Emissions Test Report for BlackBerry Wireless Handheld Model RBH42GW / RBH44GW			Page 59(96)
Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW	



0 dB = 227.0V/m

RTS RIM Testing Services	Document Annexes to Hearing Aid Compatibility RF Emissions Test Report for BlackBerry Wireless Handheld Model RBH42GW / RBH44GW		Page 60(96)
Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW

Date/Time: 28/06/2006 11:49:46 AM

Test Laboratory: RTS

HAC_E_RBH42GW_GSM850_T_coil center_mid_chan

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

Communication System: GSM 850; Frequency: 836.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

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) = 65.6 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 = 65.3 V/m; Power Drift = 0.022 dB

Maximum value of Total (measured) = 65.4 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 = 190.4 V/m

Probe Modulation Factor = 2.90

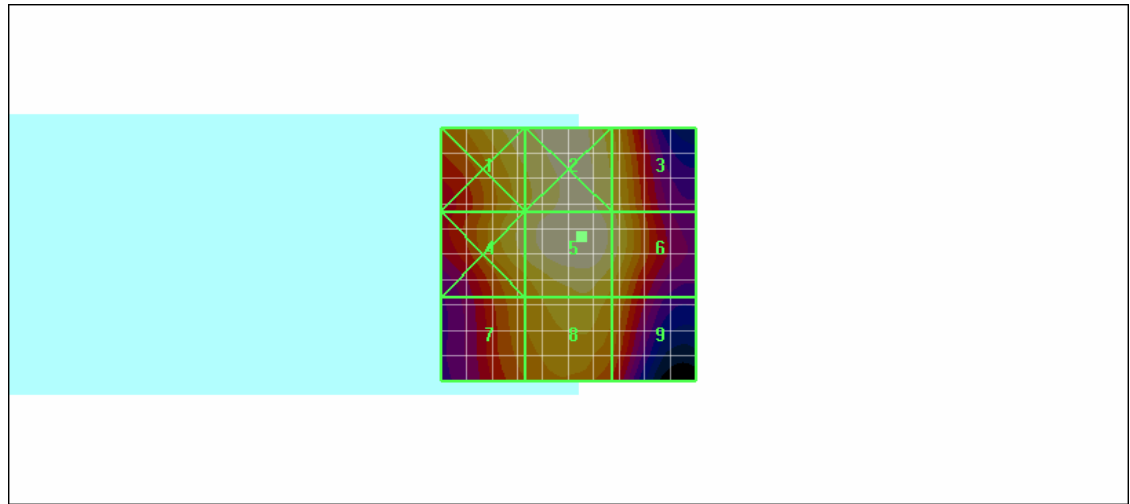
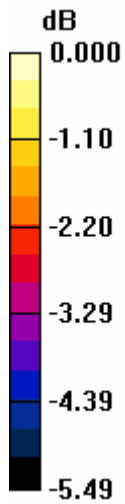
Reference Value = 65.3 V/m; Power Drift = 0.022 dB

Hearing Aid Near-Field Category: M1 (AWF -5 dB)

Peak E-field in V/m

Grid	Grid	Grid
181.4	186.4	176.8
Grid	Grid	Grid
179.0	190.4	180.2
Grid	Grid	Grid

RTS RIM Testing Services	Document Annexes to Hearing Aid Compatibility RF Emissions Test Report for BlackBerry Wireless Handheld Model RBH42GW / RBH44GW			Page 61(96)
Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW	



0 dB = 190.4V/m

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Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW	

Date/Time: 28/06/2006 11:56:46 AM

Test Laboratory: RTS

HAC_E_RBH42GW_GSM850_T_coil center_high_chan

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

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

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) = 72.5 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 = 68.7 V/m; Power Drift = 0.027 dB

Maximum value of Total (measured) = 70.9 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 = 206.8 V/m

Probe Modulation Factor = 2.90

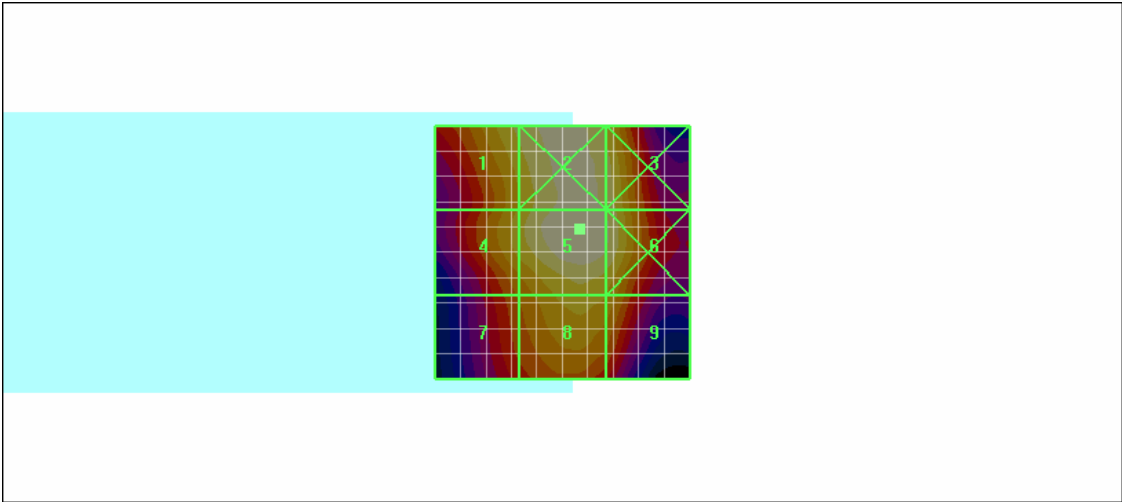
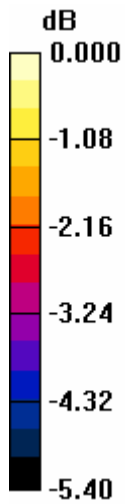
Reference Value = 68.7 V/m; Power Drift = 0.027 dB

Hearing Aid Near-Field Category: M1 (AWF -5 dB)

Peak E-field in V/m

Grid	Grid	Grid
193.1	203.0	197.4
Grid	Grid	Grid
187.5	206.8	200.3
Grid	Grid	Grid

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Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW	



0 dB = 206.8V/m

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Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW	

Date/Time: 28/06/2006 12:36:01 PM

Test Laboratory: RTS

HAC_E_RBH42GW_GSM850_Spk center_low_chan_battery 2

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

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

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) = 79.1 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 = 76.4 V/m; Power Drift = 0.030 dB

Maximum value of Total (measured) = 78.2 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 = 226.9 V/m

Probe Modulation Factor = 2.90

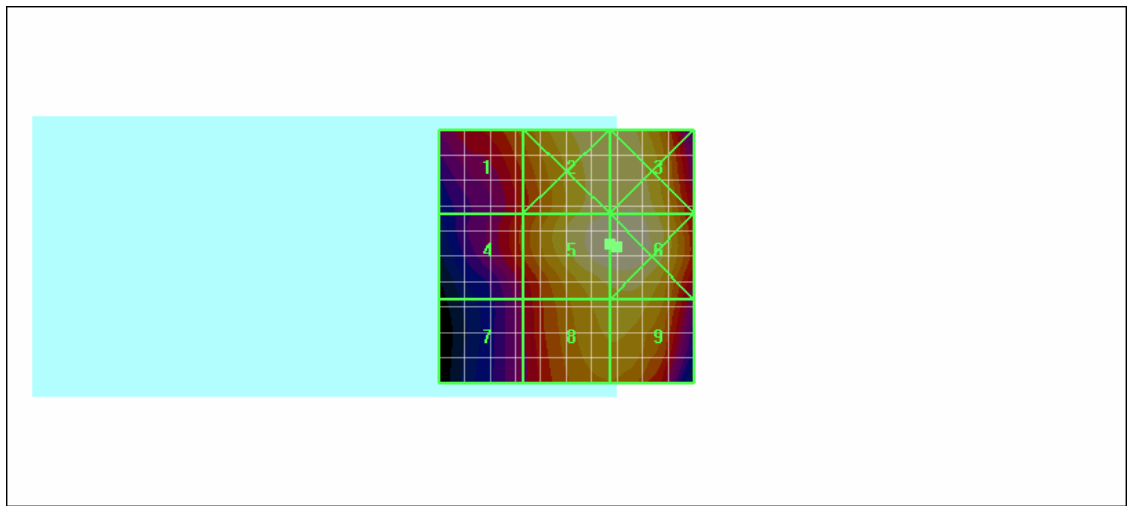
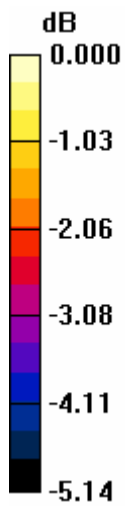
Reference Value = 76.4 V/m; Power Drift = 0.030 dB

Hearing Aid Near-Field Category: M1 (AWF -5 dB)

Peak E-field in V/m

Grid	Grid	Grid
190.3	219.3	220.2
Grid	Grid	Grid
182.5	226.9	227.7
Grid	Grid	Grid

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Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW	



0 dB = 227.7V/m

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Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW

Date/Time: 29/06/2006 8:24:15 AM

Test Laboratory: RTS

HAC_H_RBH42GW_GSM850_Spk center_low_chan

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

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: E 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 Device Reference/Z Scan (1x1x21): Measurement

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

Maximum value of Total (measured) = 0.158 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 = 0.085 A/m; Power Drift = -0.036 dB

Maximum value of Total (measured) = 0.160 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 = 0.441 A/m

Probe Modulation Factor = 2.75

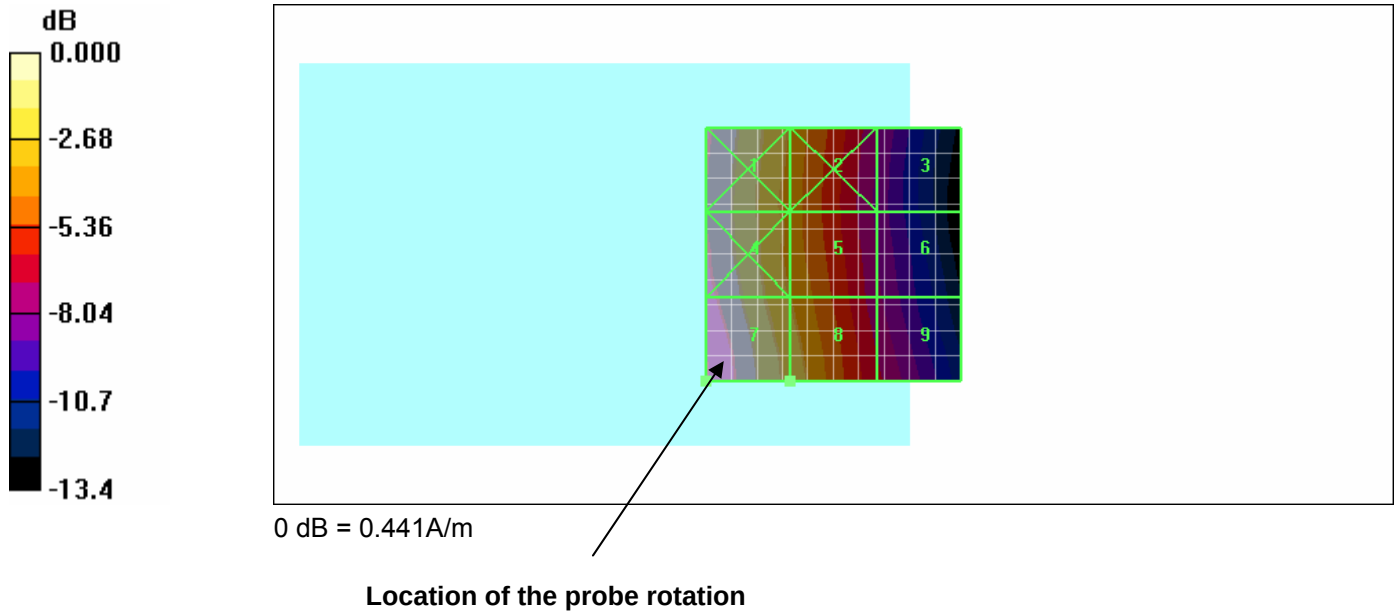
Reference Value = 0.085 A/m; Power Drift = -0.036 dB

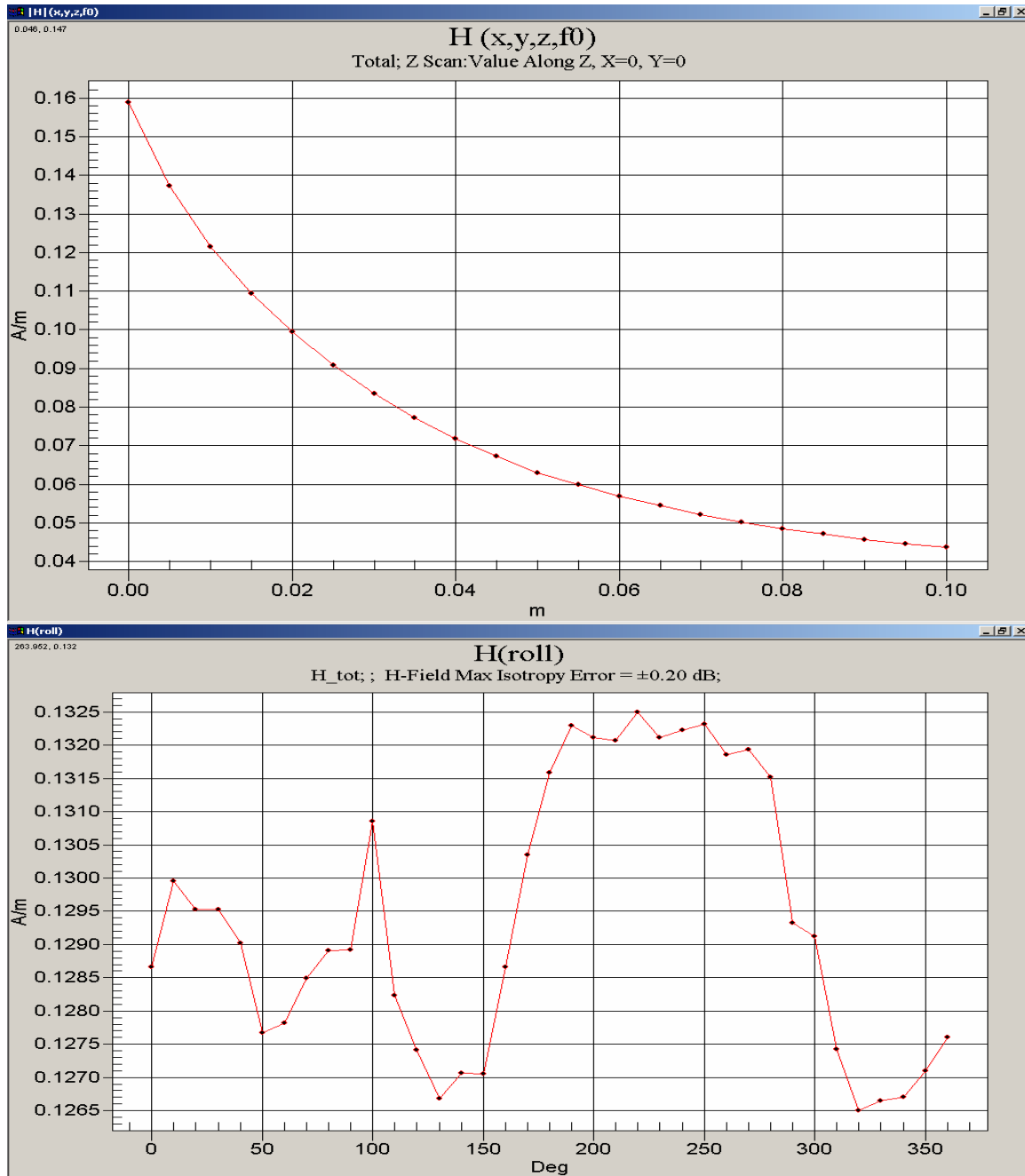
Hearing Aid Near-Field Category: M2 (AWF -5 dB)

Peak H-field in A/m

Grid	Grid	Grid
0.403	0.288	0.179
Grid	Grid	Grid
0.413	0.291	0.181
Grid	Grid	Grid

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$$\begin{aligned}
 H(\delta) &= (H_{\text{max}} - H_{\text{at zero degrees}}) * \text{PMF} \\
 &= (0.1325 - 0.1285) * 2.75 \\
 &= 0.004 * 2.75 \\
 &= 0.01 \text{ A/m}
 \end{aligned}$$

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Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW

Date/Time: 29/06/2006 8:34:31 AM

Test Laboratory: RTS

HAC_H_RBH42GW_GSM850_Spk center_mid_chan

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

Communication System: GSM 850; Frequency: 836.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: E 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 Device Reference/Z Scan (1x1x21): Measurement

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

Maximum value of Total (measured) = 0.140 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 = 0.075 A/m; Power Drift = -0.040 dB

Maximum value of Total (measured) = 0.142 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 = 0.392 A/m

Probe Modulation Factor = 2.75

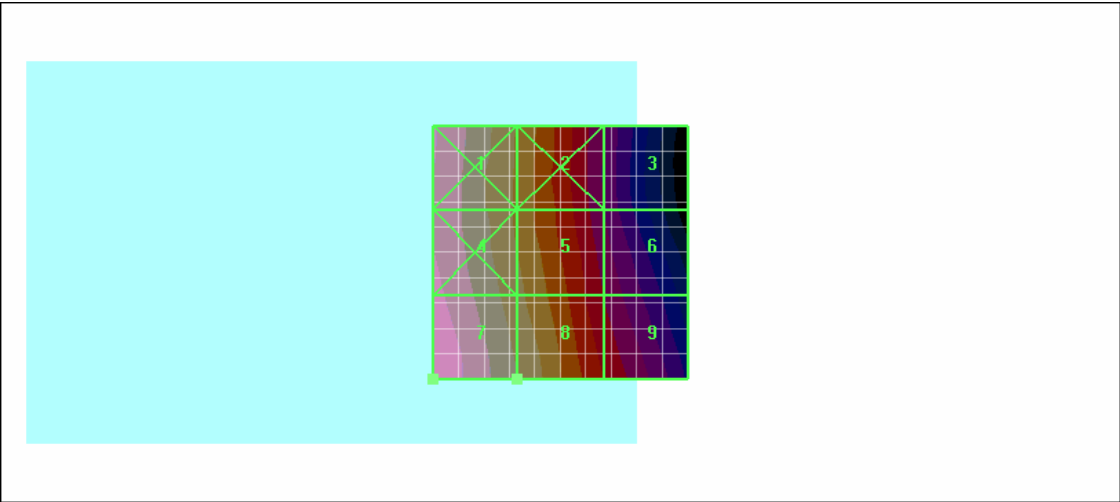
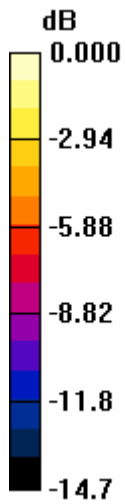
Reference Value = 0.075 A/m; Power Drift = -0.040 dB

Hearing Aid Near-Field Category: M2 (AWF -5 dB)

Peak H-field in A/m

Grid	Grid	Grid
0.355	0.248	0.143
Grid	Grid	Grid
0.365	0.260	0.159
Grid	Grid	Grid

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0 dB = 0.392A/m

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Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW	

Date/Time: 29/06/2006 8:46:35 AM

Test Laboratory: RTS

HAC_H_RBH42GW_GSM850_Spk center_high_chan

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

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: E 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 Device Reference/Z Scan (1x1x21): Measurement

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

Maximum value of Total (measured) = 0.154 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 = 0.083 A/m; Power Drift = -0.015 dB

Maximum value of Total (measured) = 0.153 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 = 0.420 A/m

Probe Modulation Factor = 2.75

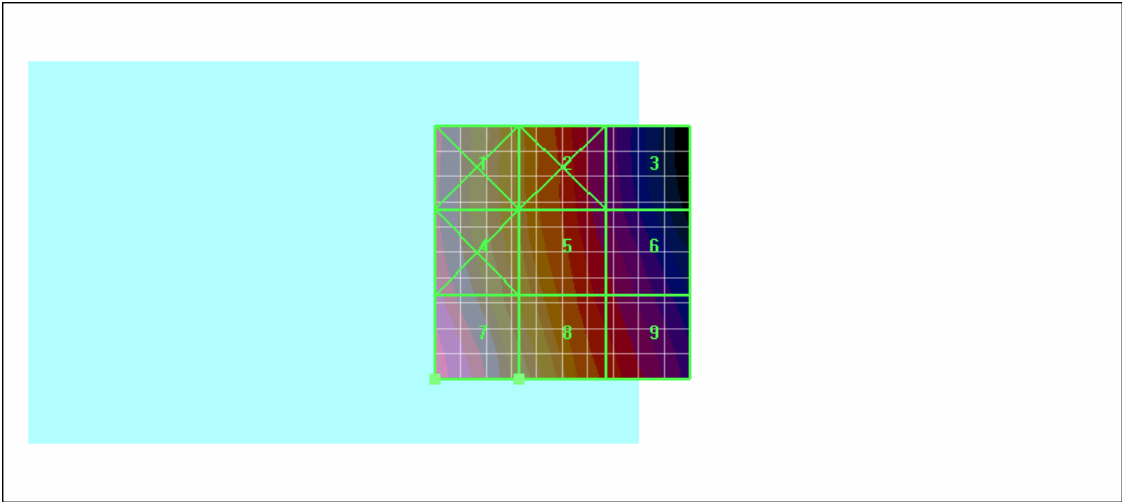
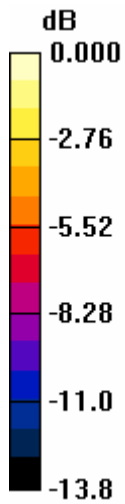
Reference Value = 0.083 A/m; Power Drift = -0.015 dB

Hearing Aid Near-Field Category: M2 (AWF -5 dB)

Peak H-field in A/m

Grid	Grid	Grid
0.371	0.273	0.165
Grid	Grid	Grid
0.386	0.289	0.190
Grid	Grid	Grid

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0 dB = 0.420A/m

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Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW

Date/Time: 29/06/2006 9:35:31 AM

Test Laboratory: RTS

HAC_H_RBH42GW_GSM850_Spk center_low_chan_batt2

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

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: E 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 Device Reference/Z Scan (1x1x21): Measurement

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

Maximum value of Total (measured) = 0.160 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 = 0.084 A/m; Power Drift = 0.060 dB

Maximum value of Total (measured) = 0.158 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 = 0.435 A/m

Probe Modulation Factor = 2.75

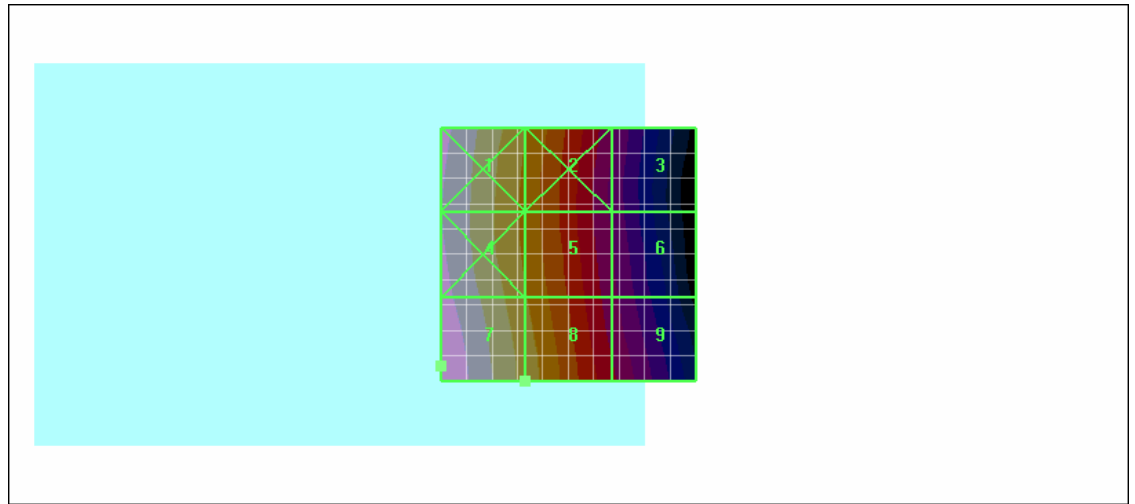
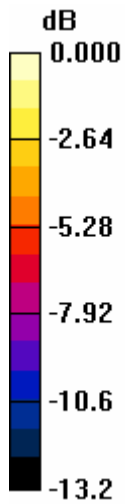
Reference Value = 0.084 A/m; Power Drift = 0.060 dB

Hearing Aid Near-Field Category: M2 (AWF -5 dB)

Peak H-field in A/m

Grid	Grid	Grid
0.408	0.294	0.178
Grid	Grid	Grid
0.413	0.294	0.182
Grid	Grid	Grid

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0 dB = 0.435A/m

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Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW

Date/Time: 29/06/2006 8:55:50 AM

Test Laboratory: RTS

HAC_H_RBH42GW_GSM850_T_coil center_low_chan

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

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: E 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 Device Reference/Z Scan (1x1x21): Measurement

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

Maximum value of Total (measured) = 0.135 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 = 0.083 A/m; Power Drift = 0.007 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 = 0.371 A/m

Probe Modulation Factor = 2.75

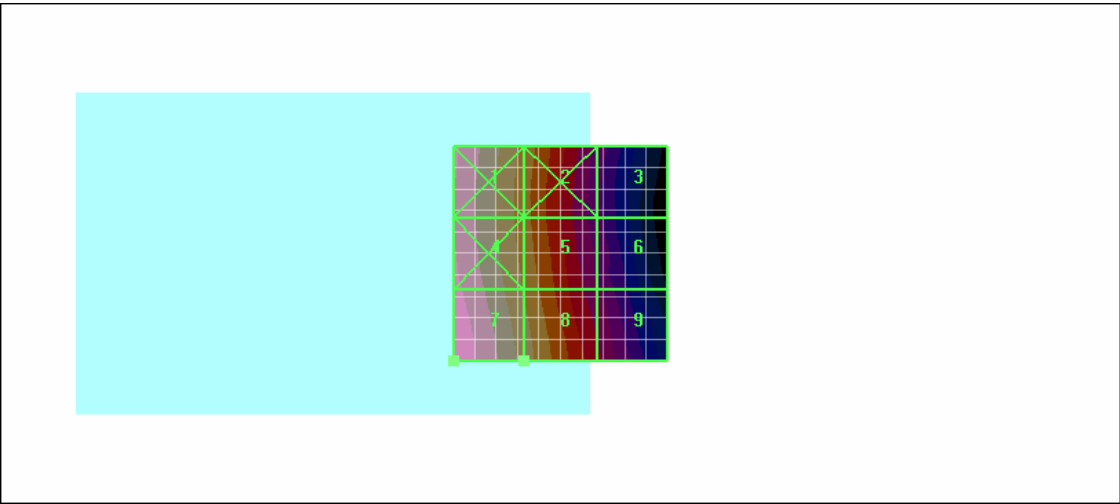
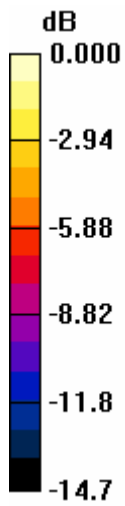
Reference Value = 0.083 A/m; Power Drift = 0.007 dB

Hearing Aid Near-Field Category: M2 (AWF -5 dB)

Peak H-field in A/m

Grid	Grid	Grid
0.342	0.228	0.131
Grid	Grid	Grid
0.346	0.235	0.138
Grid	Grid	Grid

RTS RIM Testing Services	Document Annexes to Hearing Aid Compatibility RF Emissions Test Report for BlackBerry Wireless Handheld Model RBH42GW / RBH44GW			Page 76(96)
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0 dB = 0.371A/m

RTS RIM Testing Services	Document Annexes to Hearing Aid Compatibility RF Emissions Test Report for BlackBerry Wireless Handheld Model RBH42GW / RBH44GW		Page 77(96)
Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW

Date/Time: 29/06/2006 9:03:11 AM

Test Laboratory: RTS

HAC_H_RBH42GW_GSM850_T_coil center_mid_chan

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

Communication System: GSM 850; Frequency: 836.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: E 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 Device Reference/Z Scan (1x1x21): Measurement

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

Maximum value of Total (measured) = 0.121 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 = 0.074 A/m; Power Drift = -0.053 dB

Maximum value of Total (measured) = 0.123 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 = 0.339 A/m

Probe Modulation Factor = 2.75

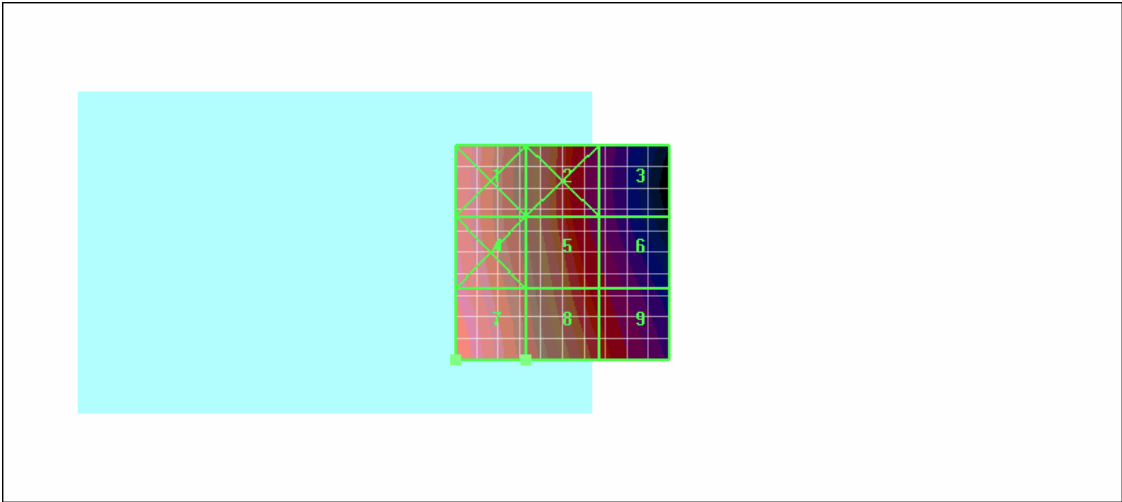
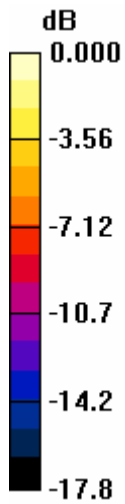
Reference Value = 0.074 A/m; Power Drift = -0.053 dB

Hearing Aid Near-Field Category: M2 (AWF -5 dB)

Peak H-field in A/m

Grid	Grid	Grid
0.301	0.194	0.103
Grid	Grid	Grid
0.314	0.211	0.122
Grid	Grid	Grid

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0 dB = 0.339A/m

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Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW

Date/Time: 29/06/2006 9:10:48 AM

Test Laboratory: RTS

HAC_H_RBH42GW_GSM850_T_coil center_high_chan

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

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: E 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 Device Reference/Z Scan (1x1x21): Measurement

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

Maximum value of Total (measured) = 0.135 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 = 0.083 A/m; Power Drift = 0.122 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 = 0.371 A/m

Probe Modulation Factor = 2.75

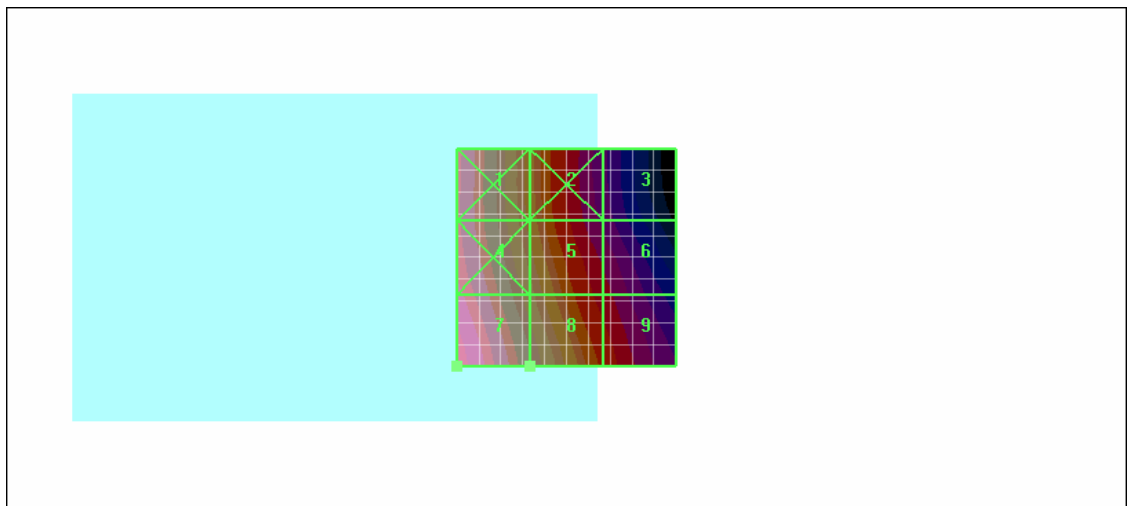
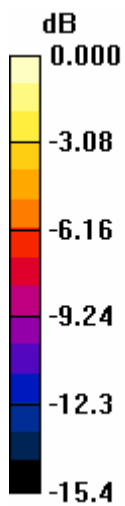
Reference Value = 0.083 A/m; Power Drift = 0.122 dB

Hearing Aid Near-Field Category: M2 (AWF -5 dB)

Peak H-field in A/m

Grid	Grid	Grid
0.322	0.217	0.124
Grid	Grid	Grid
0.339	0.238	0.153
Grid	Grid	Grid

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0 dB = 0.371A/m

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Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW	

Date/Time: 27/06/2006 3:24:58 PM

Test Laboratory: RTS

HAC_E_RBH42GW_GSM1900_Spk center_low_chan

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

Communication System: GSM 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

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) = 27.5 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 = 12.1 V/m; Power Drift = 0.185 dB

Maximum value of Total (measured) = 27.6 V/m

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

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

Probe Modulation Factor = 2.88

Reference Value = 12.1 V/m; Power Drift = 0.185 dB

Maximum value of Total (interpolated) = 79.7 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 = 52.1 V/m

Probe Modulation Factor = 2.88

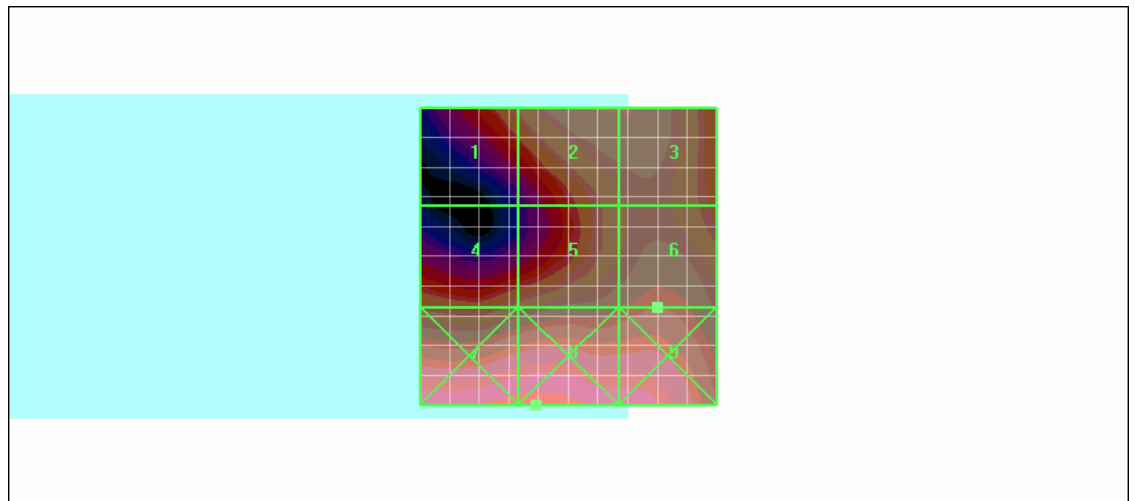
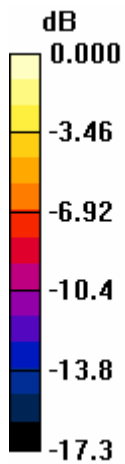
Reference Value = 12.1 V/m; Power Drift = 0.185 dB

Hearing Aid Near-Field Category: M3 (AWF -5 dB)

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Peak E-field in V/m

Grid	Grid	Grid
39.3	51.1	51.1
Grid	Grid	Grid
42.6	49.2	52.1
Grid	Grid	Grid



0 dB = 79.7V/m

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Date/Time: 28/06/2006 8:23:27 AM

Test Laboratory: RTS

HAC_E_RBH42GW_GSM1900_T_coil_center_high_chan

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

Communication System: GSM 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

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) = 22.5 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 = 13.0 V/m; Power Drift = 0.142 dB

Maximum value of Total (measured) = 22.4 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 = 63.9 V/m

Probe Modulation Factor = 2.88

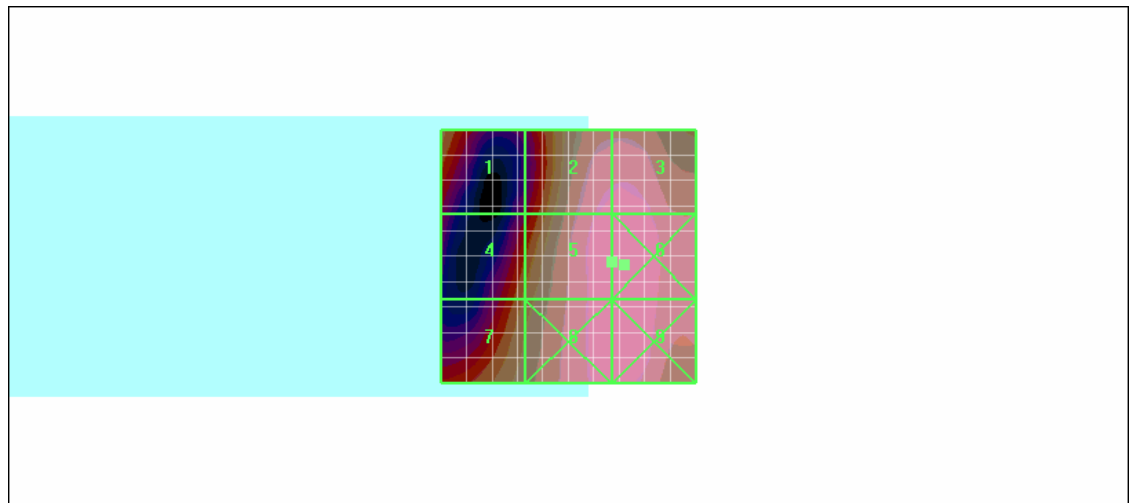
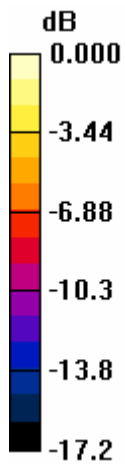
Reference Value = 13.0 V/m; Power Drift = 0.142 dB

Hearing Aid Near-Field Category: M3 (AWF -5 dB)

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Peak E-field in V/m

Grid	Grid	Grid
36.6	60.3	61.1
Grid	Grid	Grid
35.4	63.9	64.9
Grid	Grid	Grid



0 dB = 64.9V/m

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Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW

Date/Time: 28/06/2006 9:30:58 AM

Test Laboratory: RTS

HAC_E_RBH42GW_GSM1900_T_coil_center_high_chan_batt2

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

Communication System: GSM 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

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) = 23.8 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 = 14.2 V/m; Power Drift = 0.079 dB

Maximum value of Total (measured) = 23.7 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 = 67.6 V/m

Probe Modulation Factor = 2.88

Reference Value = 14.2 V/m; Power Drift = 0.079 dB

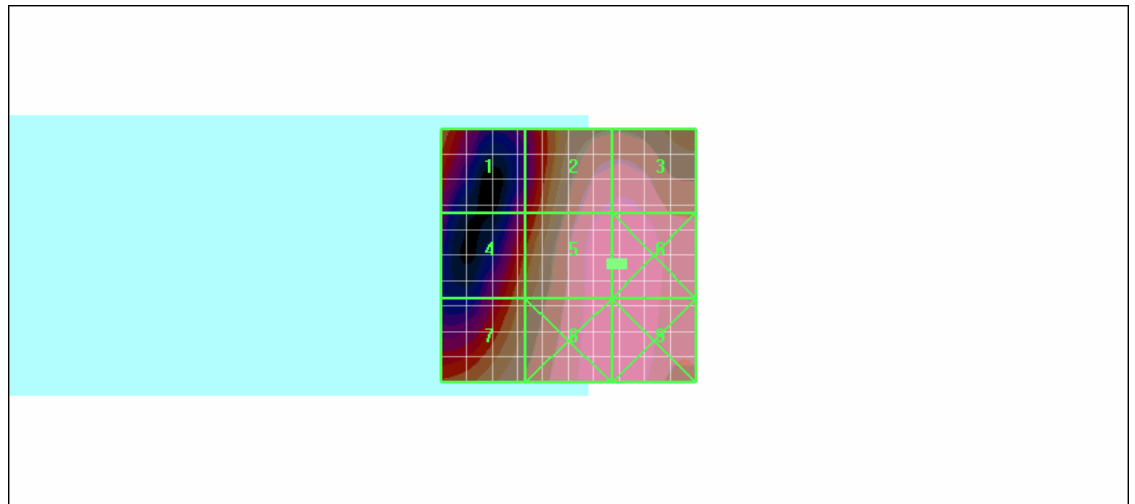
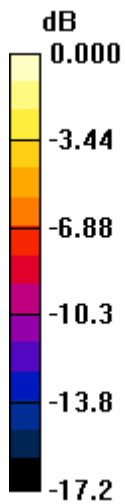
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak E-field in V/m

Grid	Grid	Grid
36.5	62.1	62.7
Grid	Grid	Grid
37.7	67.6	68.4
Grid	Grid	Grid

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47.1	67.8	68.4
------	------	------



0 dB = 68.4V/m

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Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW

Date/Time: 28/06/2006 2:19:44 PM

Test Laboratory: RTS

HAC_H_RBH42GW_GSM1900_Spk center_low_chan

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

Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: H Dipole Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 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) = 0.095 A/m

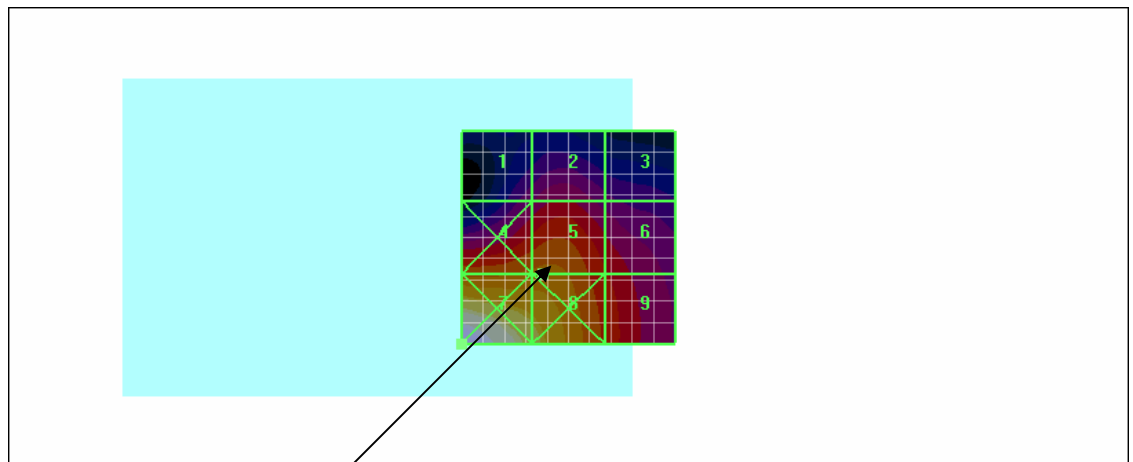
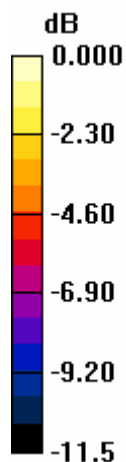
H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (11x11x1): Measurement grid: dx=5mm, dy=5mm
Probe Modulation Factor = 1.00
Reference Value = 0.062 A/m; Power Drift = 0.070 dB

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 = 0.169 A/m
Probe Modulation Factor = 2.68
Reference Value = 0.062 A/m; Power Drift = 0.070 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak H-field in A/m		
Grid	Grid	Grid
0.115	0.127	0.110
Grid	Grid	Grid
0.167	0.169	0.139
Grid	Grid	Grid

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0.254	0.206	0.148
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0 dB = 0.254A/m

Date/Time: 28/06/2006 3:01:12 PM

Test Laboratory: RTS

HAC_H_RBH42GW_GSM1900_T-Coil_center_low_chan

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

Communication System: GSM 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: H Dipole Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 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) = 0.088 A/m

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

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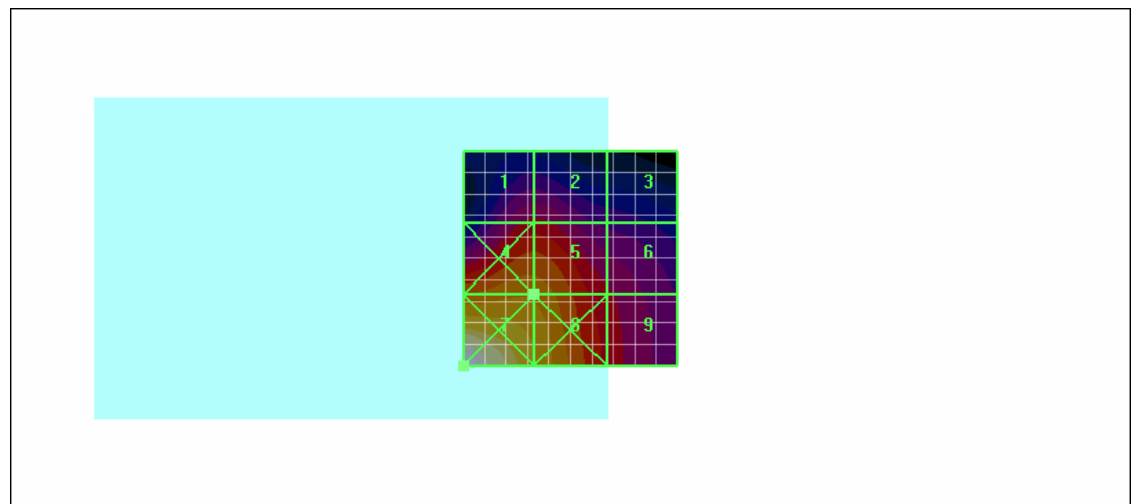
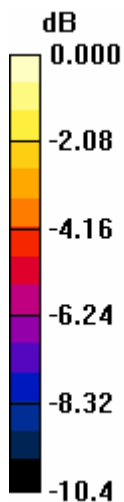
(11x11x1): Measurement grid: dx=5mm, dy=5mm
Probe Modulation Factor = 1.00
Reference Value = 0.061 A/m; Power Drift = 0.117 dB
Maximum value of Total (measured) = 0.087 A/m

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 = 0.166 A/m
Probe Modulation Factor = 2.68
Reference Value = 0.061 A/m; Power Drift = 0.117 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak H-field in A/m

Grid	Grid	Grid
0.126	0.126	0.103
Grid	Grid	Grid
0.169	0.166	0.126
Grid	Grid	Grid



0 dB = 0.233A/m

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Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW

Date/Time: 28/06/2006 3:30:48 PM

Test Laboratory: RTS

HAC_H_RBH42GW_GSM1900_Spk center_low_chan_battery 2

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

Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: H Dipole Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 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) = 0.098 A/m

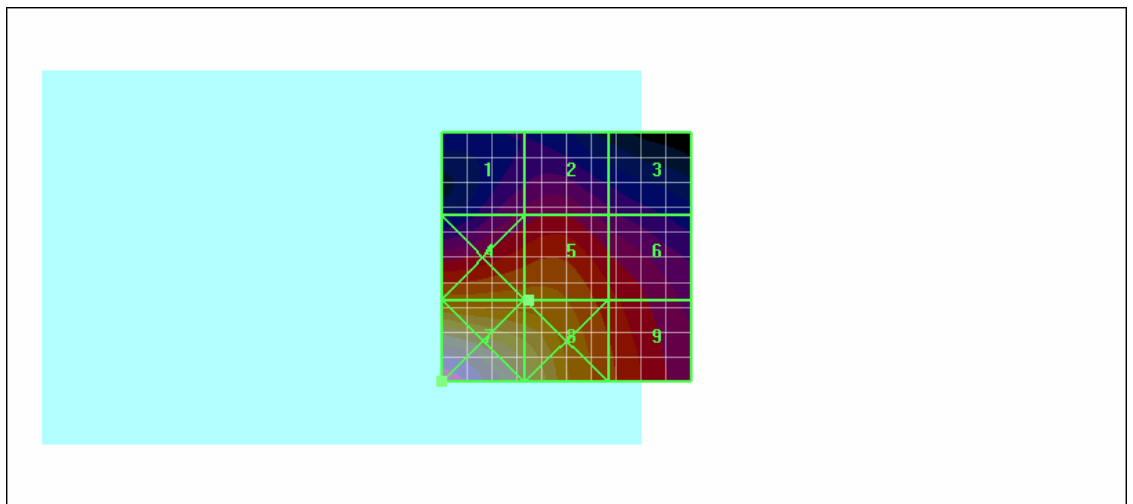
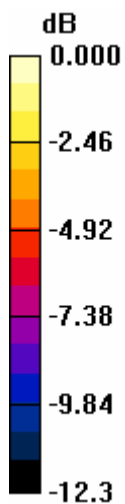
H Scan - H3DV6 probe tip 10mm above Device Reference/Hearing Aid Compatibility Test (11x11x1): Measurement grid: dx=5mm, dy=5mm
Probe Modulation Factor = 1.00
Reference Value = 0.062 A/m; Power Drift = 0.117 dB

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 = 0.172 A/m
Probe Modulation Factor = 2.68
Reference Value = 0.062 A/m; Power Drift = 0.117 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak H-field in A/m		
Grid	Grid	Grid
0.116	0.124	0.106
Grid	Grid	Grid

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Grid	Grid	Grid
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0 dB = 0.262A/m

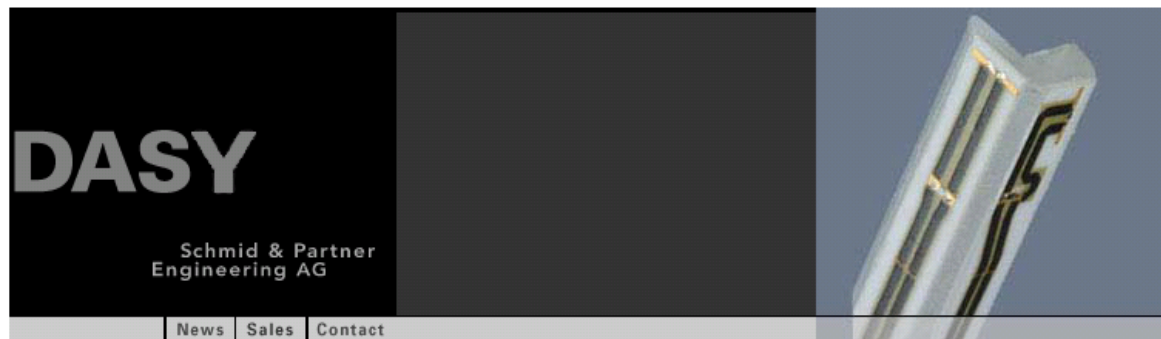
RTS RIM Testing Services	Document Annexes to Hearing Aid Compatibility RF Emissions Test Report for BlackBerry Wireless Handheld Model RBH42GW / RBH44GW		Page 92(96)
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Annex B: Probe and dipole descriptions and calibration certificates

B.1 Probe and measurement chain descriptions and specifications

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DASY Dosimetric Assessment System by Schmid & Partner Engineering AG

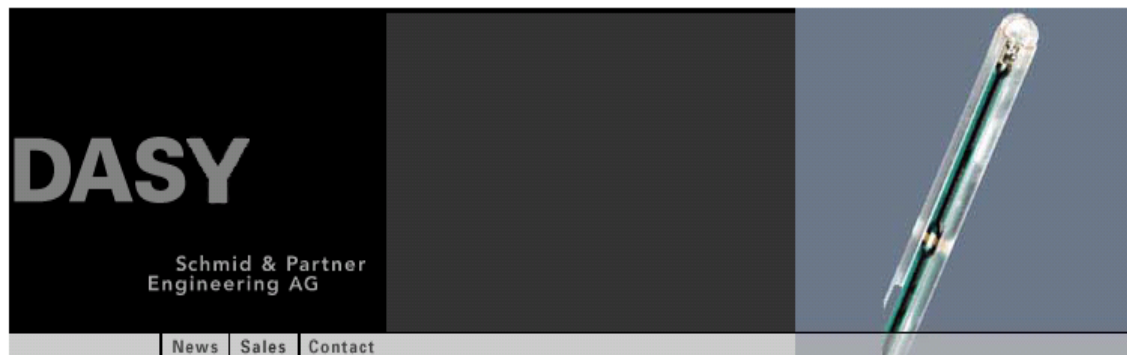


Applications	ER3DV6 ISOTROPIC E-FIELD PROBE FOR GENERAL NEAR-FIELD MEASUREMENTS	
Support & Downloads	 Download Product Flyer (PDF, 192kB)	
Products		
▪ DASY4 Packages		
▪ EASY4		
▪ Probes - ET3DV6 - Isotropic Dos-Probe - ES3DV3 - Isotropic Dos-Probe - EX3DV4 - Isotropic Dos-Probe - ET1DV3 - D-Probe	Construction One dipole parallel, two dipoles normal to probe axis Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., glycoether)	
ELUV3 - Universal Vector E-Probe	Calibration In air from 100 MHz to 3.0 GHz (absolute accuracy $\pm 6.0\%$, $k=2$)	
H3DV6 - Isotropic H-Probe	Frequency 100 MHz to > 6 GHz; Linearity: ± 0.2 dB (100 MHz to 3 GHz)	
HUV4 - Universal Vector H-Probe	Directivity ± 0.2 dB in air (rotation around probe axis) ± 0.4 dB in air (rotation normal to probe axis)	
T1V3 - Temp-Probe		
DP1 - Dummy-Probe		
▪ Data Acquisition System	Dynamic Range 2 V/m to > 1000 V/m; Linearity: ± 0.2 dB	
▪ Software		
▪ Phantoms	Dimensions Overall length: 330 mm (Tip: 16 mm) Tip diameter: 8 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.5 mm	
▪ Robots		
▪ Validation Kits & Calibration Dipoles		
▪ Hearing Aid Compatibility (HAC) Ext	Application General near-field measurements up to 6 GHz Field component measurements Fast automatic scanning in phantoms	
▪ Tissue Simulating Liquids		
SPEAG Home		

<http://www.dasy4.com/er3.htm>

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	Author Data Daoud Attayi	Dates June 26-29, 2005	Report No RTS-0447-0606-24	FCC ID L6ARBH40GW

DASY Dosimetric Assessment System by Schmid & Partner Engineering AG



Applications
Support & Downloads
Products
▪ DASY4 Packages
▪ EASY4
▪ Probes
ET3DV6 - Isotropic Dos-Probe
ES3DV3 - Isotropic Dos-Probe
EX3DV4 - Isotropic Dos-Probe
ET1DV3 - D-Probe
ER3DV6 - Isotropic E-Probe
EUV3 - Universal Vector E-Probe
HUV4 - Universal Vector H-Probe
T1V3 - Temp-Probe
DP1 - Dummy-Probe
▪ Data Acquisition System
▪ Software
▪ Phantoms
▪ Robots
▪ Validation Kits & Calibration Dipoles
▪ Hearing Aid Compatibility (HAC) Ext
▪ Tissue Simulating Liquids
SPEAG Home

H3DV6 3-DIMENSIONAL H-FIELD PROBE FOR SMALL BAND APPLICATIONS

 [Download Product Flyer](#) (PDF, 192kB)

Construction	Three concentric loop sensors with 3.8 mm loop diameters Resistively loaded detector diodes for linear response Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., glycoether)
Frequency	200 MHz to 3 GHz (absolute accuracy $\pm 6.0\%$, $k=2$); Output linearized
Directivity	± 0.25 dB (spherical isotropy error)
Dynamic Range	10 mA/m to 2 A/m at 1 GHz
E-Field Interference	< 10% at 3 GHz (for plane wave)
Dimensions	Overall length: 330 mm (Tip: 40 mm) Tip diameter: 6 mm (Body: 12 mm) Distance from probe tip to dipole centers: 3 mm
Application	General magnetic near-field measurements up to 3 GHz Field component measurements Surface current measurements Measurements in air or liquids Low interaction with the measured field

<http://www.dasy4.com/h3d.htm>

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All measurements were performed to the nearest element point as per the C63.19 standard. Offset distances were entered in the DASY4 software so that the measurement was to the nearest element.

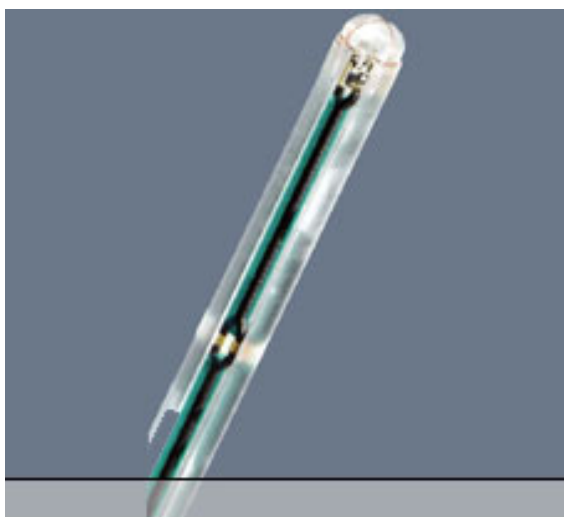
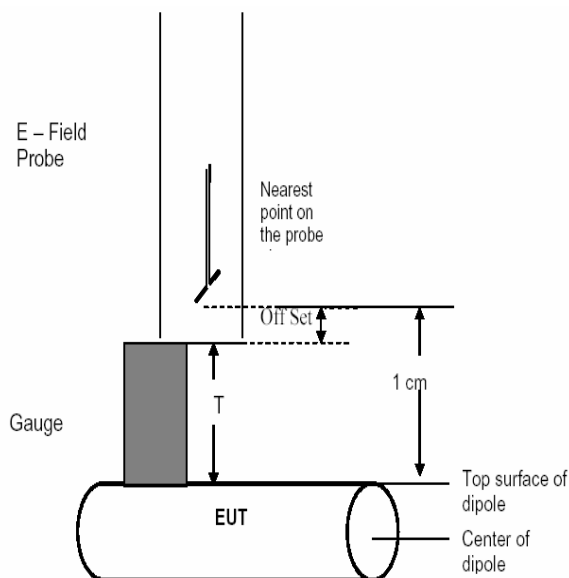
Figures 1 and 2, provided by the manufacturer, illustrate detail of the probe tip and its dimensions.

ER3DV6 E-Field probe: The distances from the probe tip to the closest points on the dipole sensors are 1.45mm for X and Y and 1.25mm for Z. From the probe tip to the center of the sensors is 2.5mm.

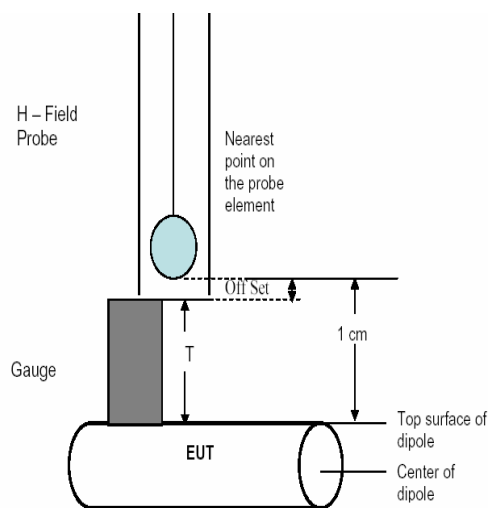
H3DV6 H-Field probe: The distance from the probe tip to the closest point of the X, Y and Z loop sensors is 1.1mm. From the probe tip to the center of the sensor is 3.00mm.



E-Field Probe (ER3DV6)



H-Field Probe (H3DV6)



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The following information is from the system manufacturer user manual describing the process chain:

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i} \quad (20.1)$$

with V_i = compensated signal of channel i (i = x, y, z)
 U_i = input signal of channel i (i = x, y, z)
 cf = crest factor of exciting field (DASY parameter)
 dcp_i = diode compression point (DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

$$\text{E - fieldprobes : } E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}$$

$$\text{H - fieldprobes : } H_i = \sqrt{V_i} \cdot \frac{a_{i0} + a_{i1}f + a_{i2}f^2}{f}$$

with V_i = compensated signal of channel i (i = x, y, z)
 $Norm_i$ = sensor sensitivity of channel i (i = x, y, z)
 $\mu V/(V/m)^2$ for E-field Probes
 $ConvF$ = sensitivity enhancement in solution
 a_{ij} = sensor sensitivity factors for H-field probes
 f = carrier frequency [GHz]
 E_i = electric field strength of channel i in V/m
 H_i = magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2} \quad (20.2)$$

The measurement / integration time per point is > 500 ms, as per the system manufacturer:

The time response of the field probes has been assessed by exposing the probe to a well-controlled field producing signals larger than HAC E- and H-fields of class M4. The signal response time is evaluated as the time required by the system to reach 90% of the expected final value after an on/off switch of the power source with an integration time of 500 ms and a probe response time of <5 ms. In the current implementation, DASY4 waits longer than 100 ms after having reached the grid point before starting a measurement, i.e., the response time uncertainty is negligible.

If the device under test does not emit a CW signal, the integration time applied to measure the electric field at a specific point may introduce additional uncertainties due to the discretization. The tolerances for the different systems had the worst-case of 2.6%.