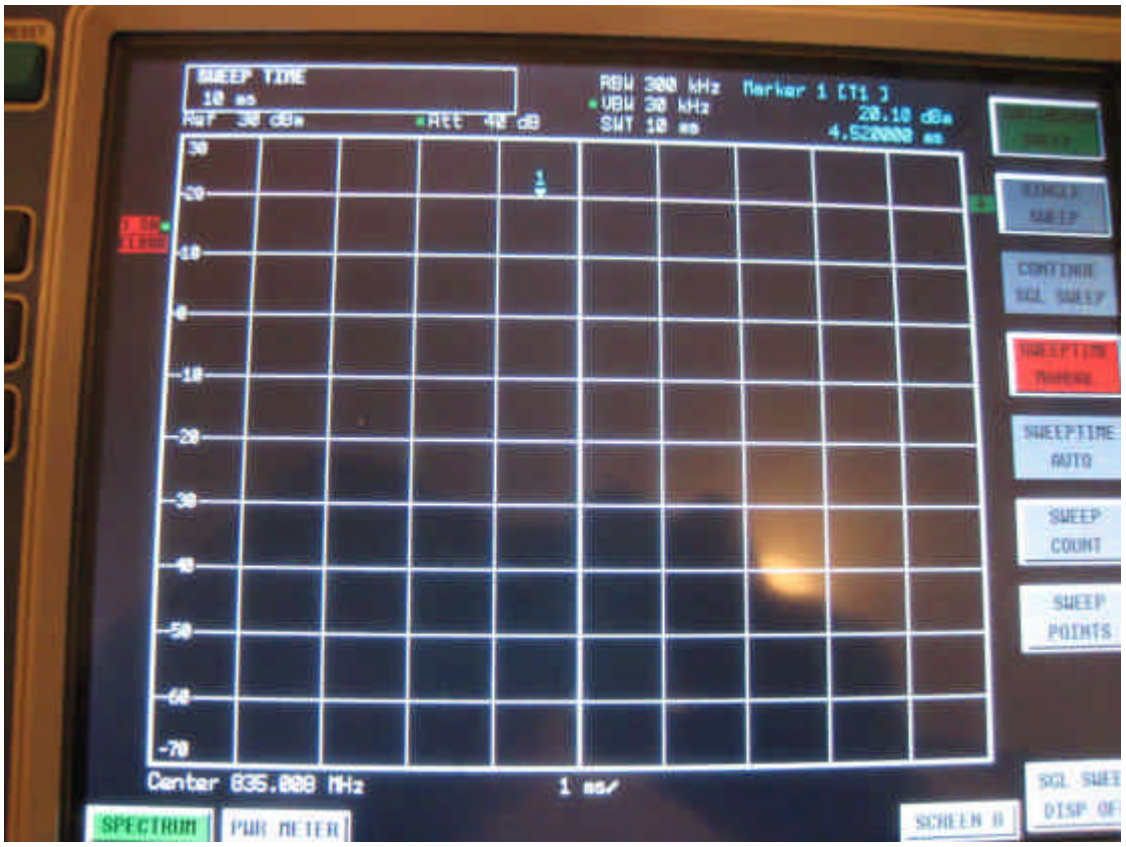
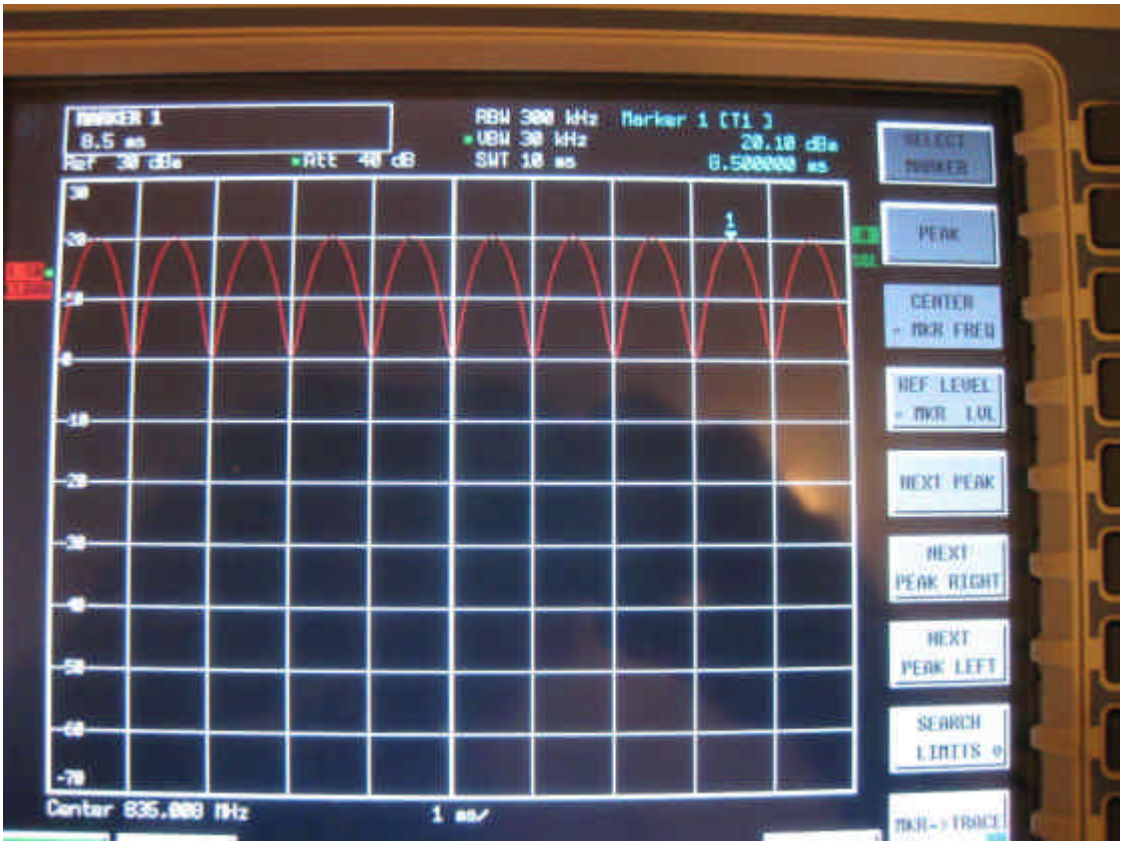
Annex A: Measurement data and plots

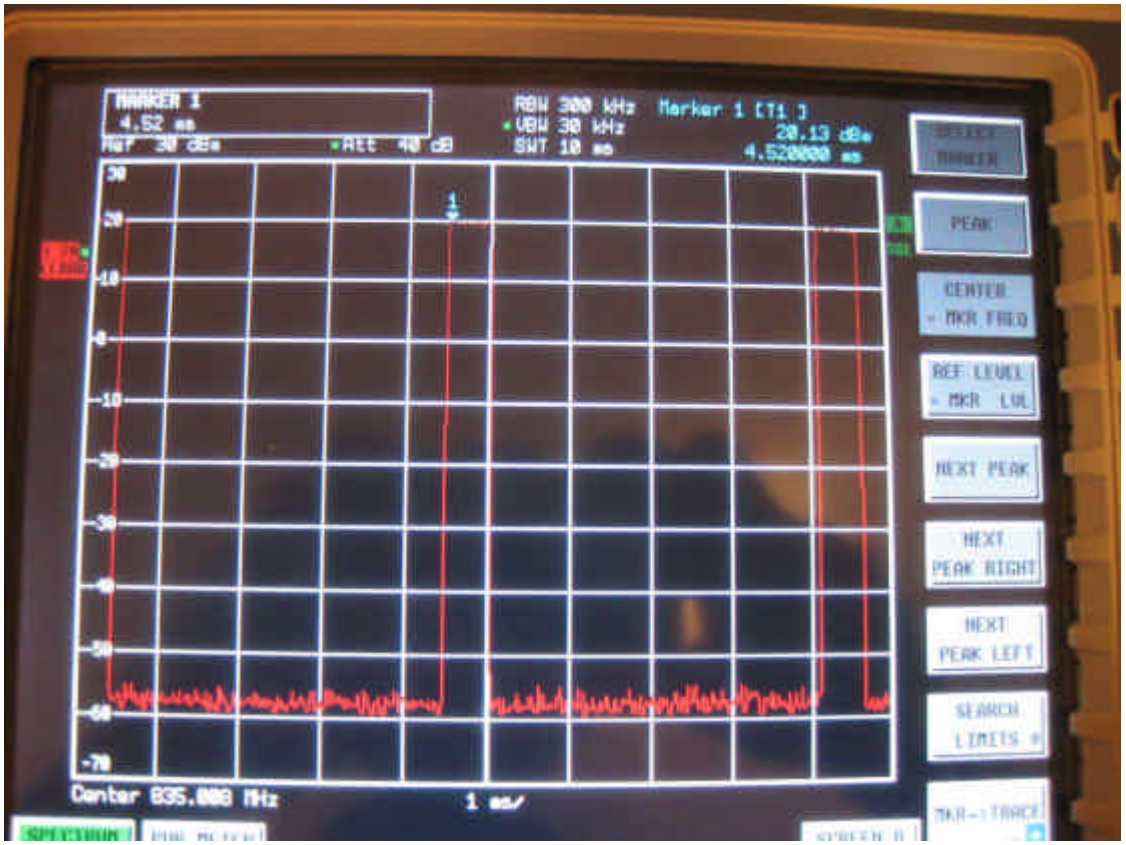
A.1 Spectrum analyser plots: CW, 80%AM and GSM signals



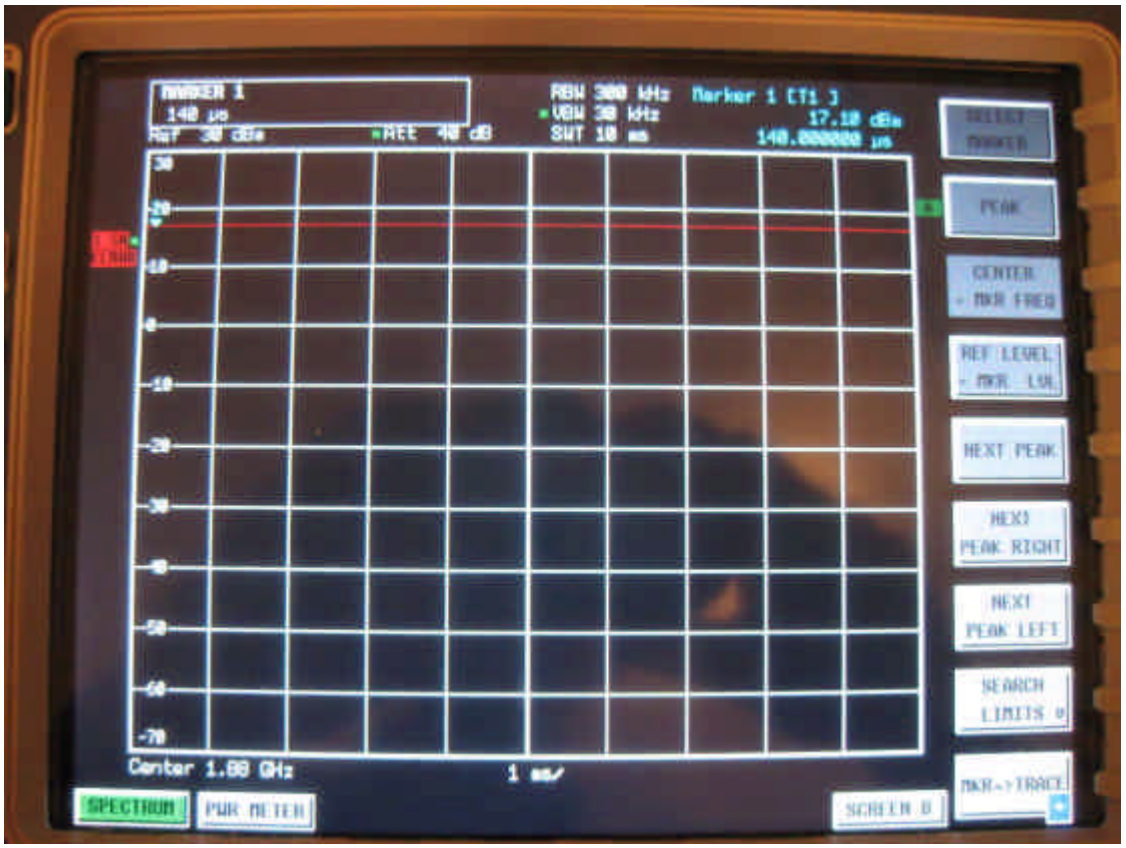
0 Hz Span CW Plot (835MHz)



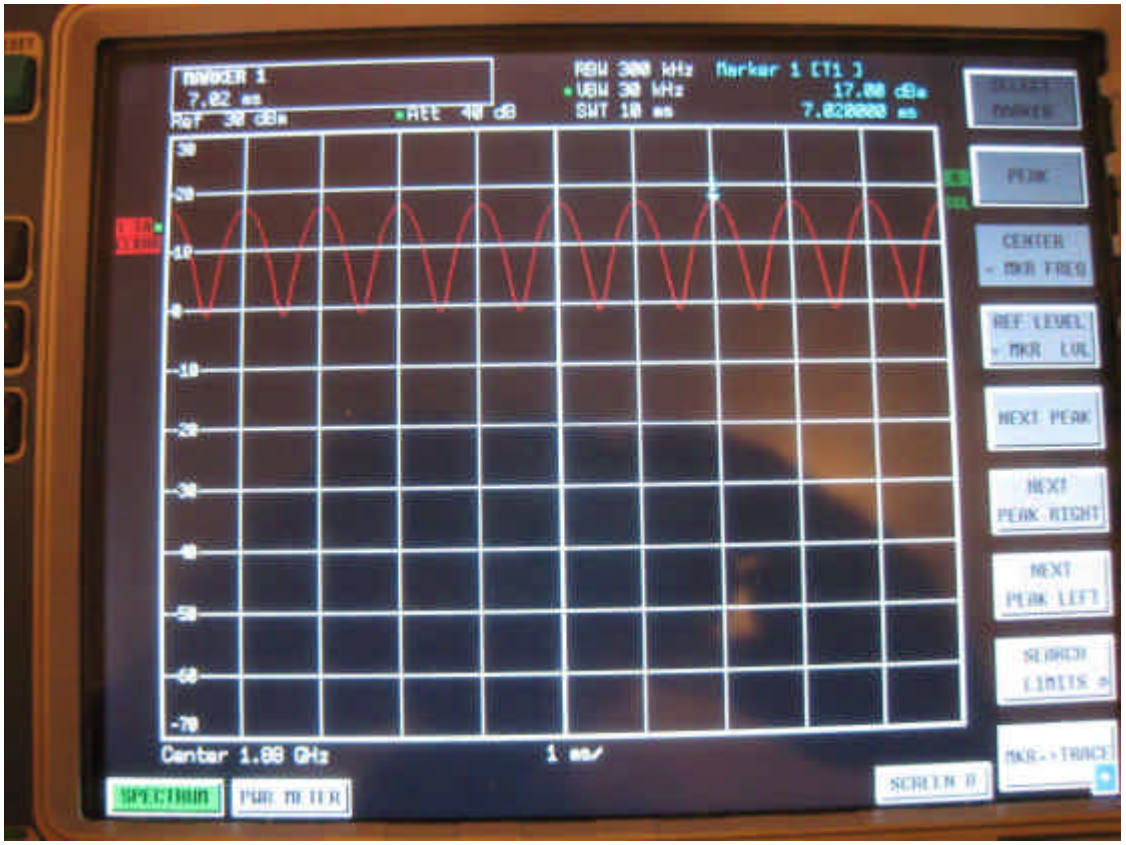
0 Hz Span 80% AM Plot (835MHz)



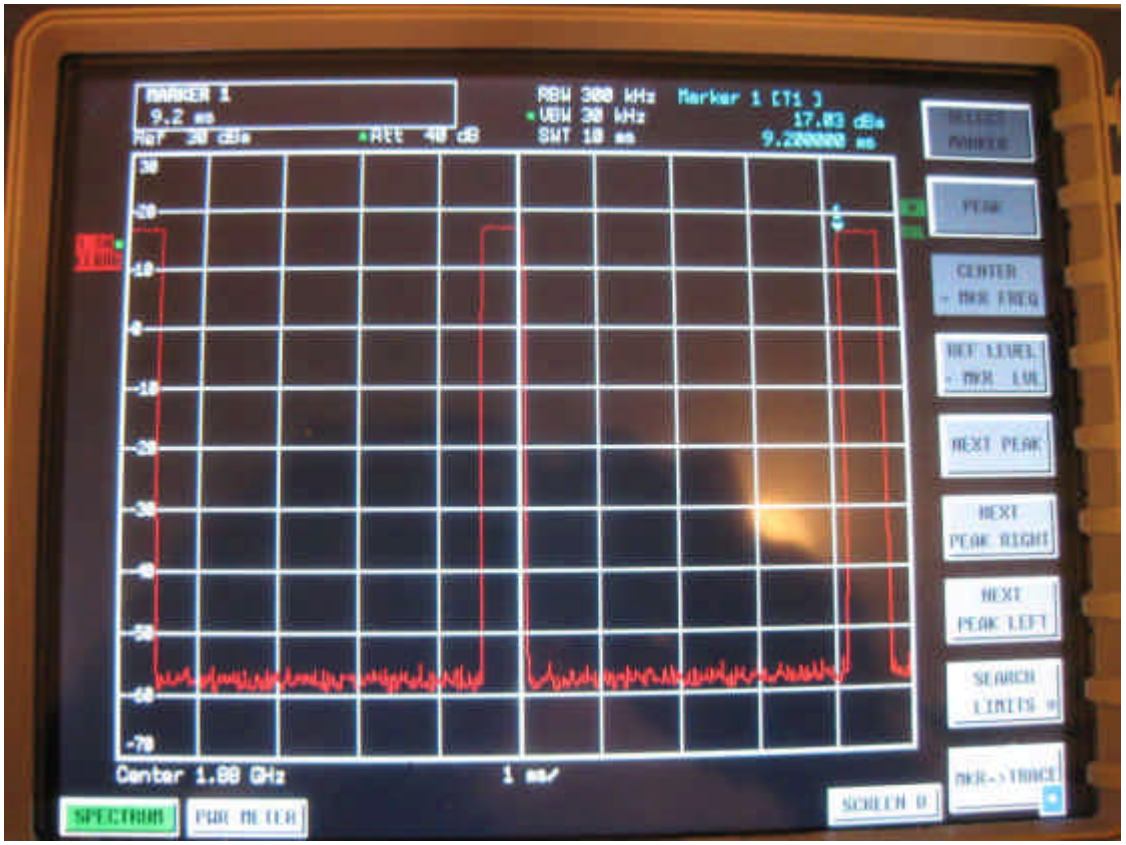
0 Hz Span GSM (835MHz)



0 Hz Span CW Plot (1880MHz)



0 Hz Span 80% AM Plot (1880MHz)



0 Hz Span GSM (1880MHz)

A.2 Dipole validation and probe modulation factor plots

Date/Time: 29/07/2008 4:14:47 PM

Test Laboratory: RTS

File Name: HAC_E_Dipole_CW835_20.00dBm.da4

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

Program Name: HAC RF E Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 21/01/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (5x37x1):

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

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 113.5 V/m; Power Drift = 0.019 dB

Maximum value of Total (measured) = 155.3 V/m

E Scan - measurement distance from the probe sensor center to

CD835 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 155.5 V/m

Probe Modulation Factor = 1.00

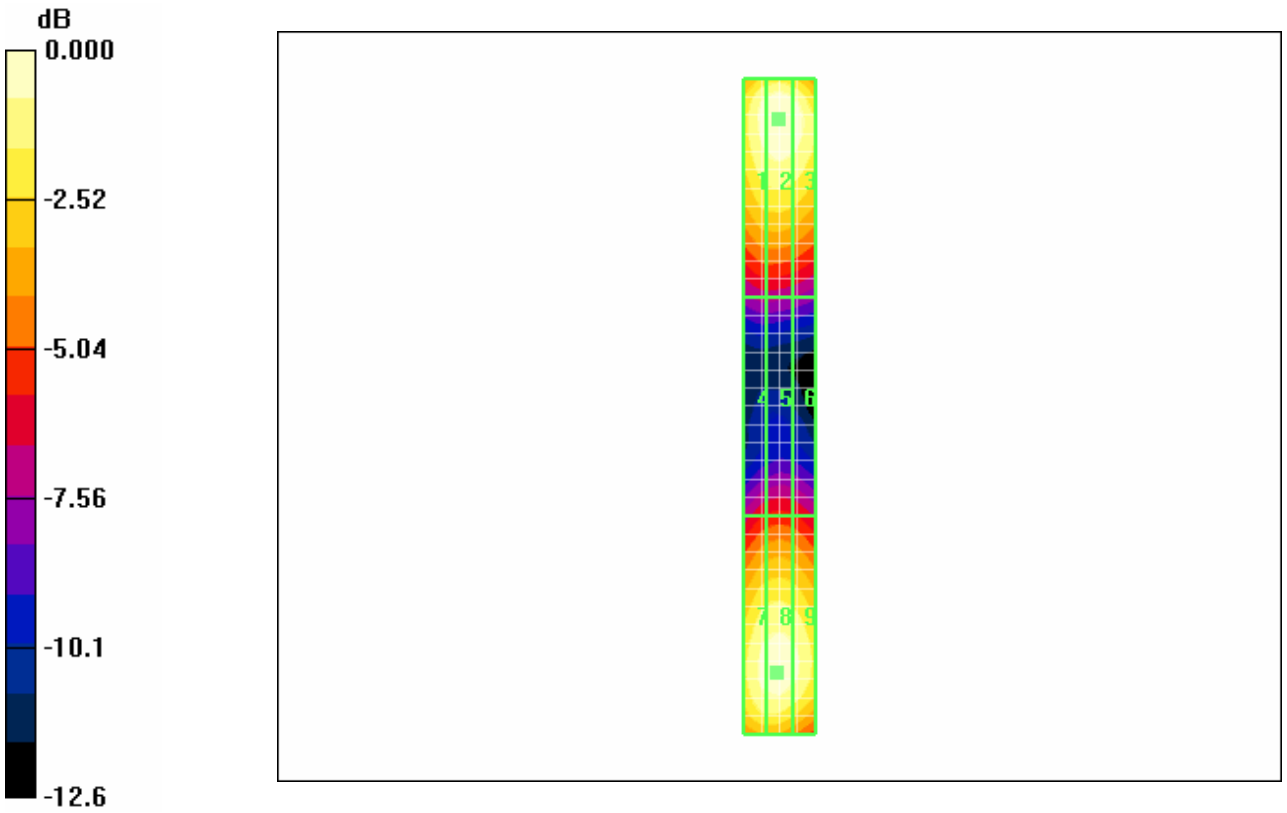
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 113.5 V/m; Power Drift = 0.019 dB

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

Peak E-field in V/m

Grid 1 **150.7** **M4**	Grid 2 **155.5** **M4**	Grid 3 **152.1** **M4**
Grid 4 **80.7** **M4**	Grid 5 **82.6** **M4**	Grid 6 **81.1** **M4**
Grid 7 **148.0** **M4**	Grid 8 **149.9** **M4**	Grid 9 **146.2** **M4**



0 dB = 155.5V/m

Date/Time: 26/09/2008 3:00:16 PM

Test Laboratory: RTS

File Name: HAC_E_Dipole_CW835_09_26_08.da4

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

Program Name: HAC RF E Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 07/03/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (5x37x1):

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

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 111.5 V/m; Power Drift = -0.138 dB

Maximum value of Total (measured) = 148.9 V/m

E Scan - measurement distance from the probe sensor center to

CD835 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 149.5 V/m

Probe Modulation Factor = 1.00

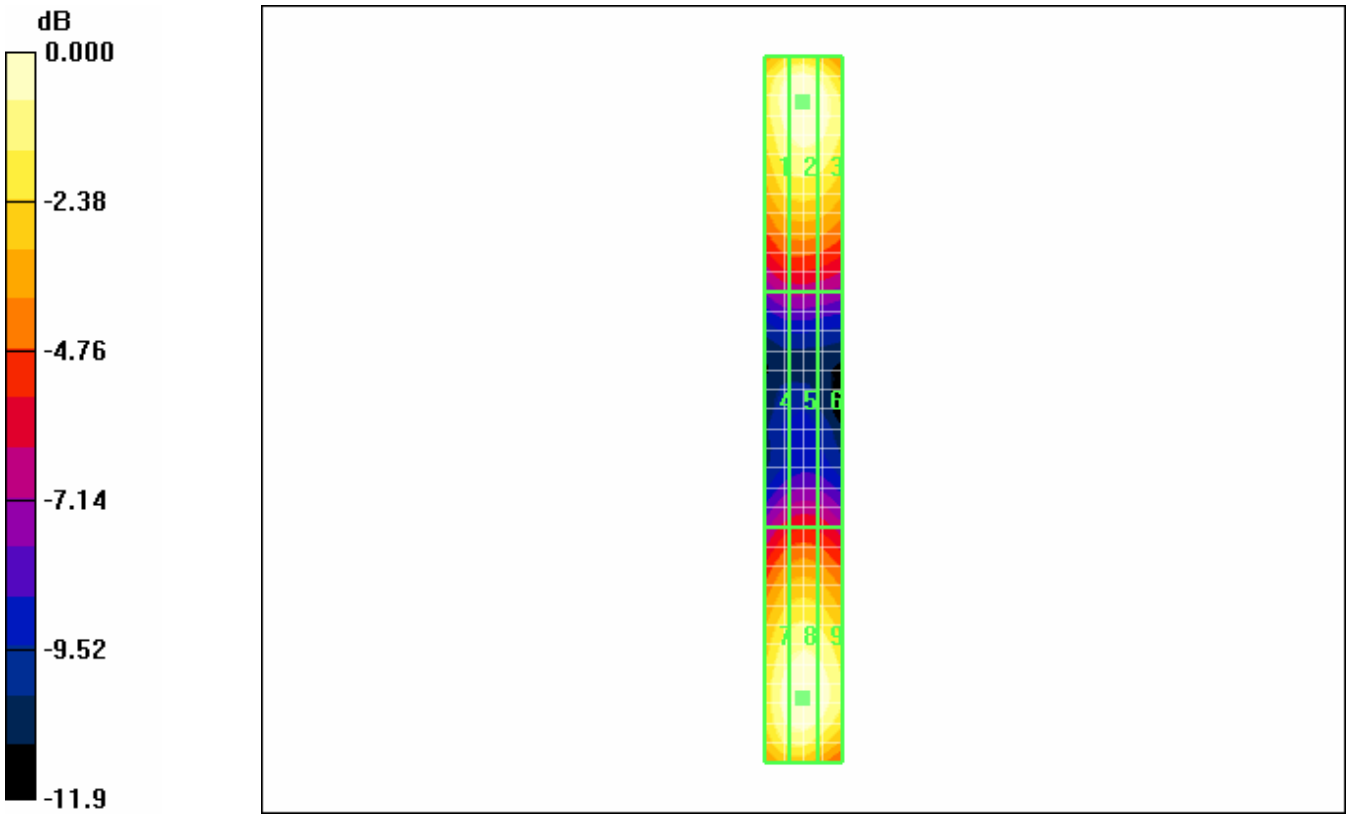
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 111.5 V/m; Power Drift = -0.138 dB

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

Peak E-field in V/m

Grid 1 **146.0** **M4**	Grid 2 **149.5** **M4**	Grid 3 **146.7** **M4**
Grid 4 **77.3** **M4**	Grid 5 **79.2** **M4**	Grid 6 **77.5** **M4**
Grid 7 **144.6** **M4**	Grid 8 **148.2** **M4**	Grid 9 **145.0** **M4**



0 dB = 149.5V/m

Date/Time: 26/09/2008 2:26:11 PM

Test Laboratory: RTS

File Name: HAC_E_Dipole_CW835_PMF_GSM.da4

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

Program Name: HAC RF E Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 07/03/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (5x37x1):

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

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 115.1 V/m; Power Drift = -0.023 dB

Maximum value of Total (measured) = 157.1 V/m

E Scan - measurement distance from the probe sensor center to

CD835 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 157.7 V/m

Probe Modulation Factor = 1.00

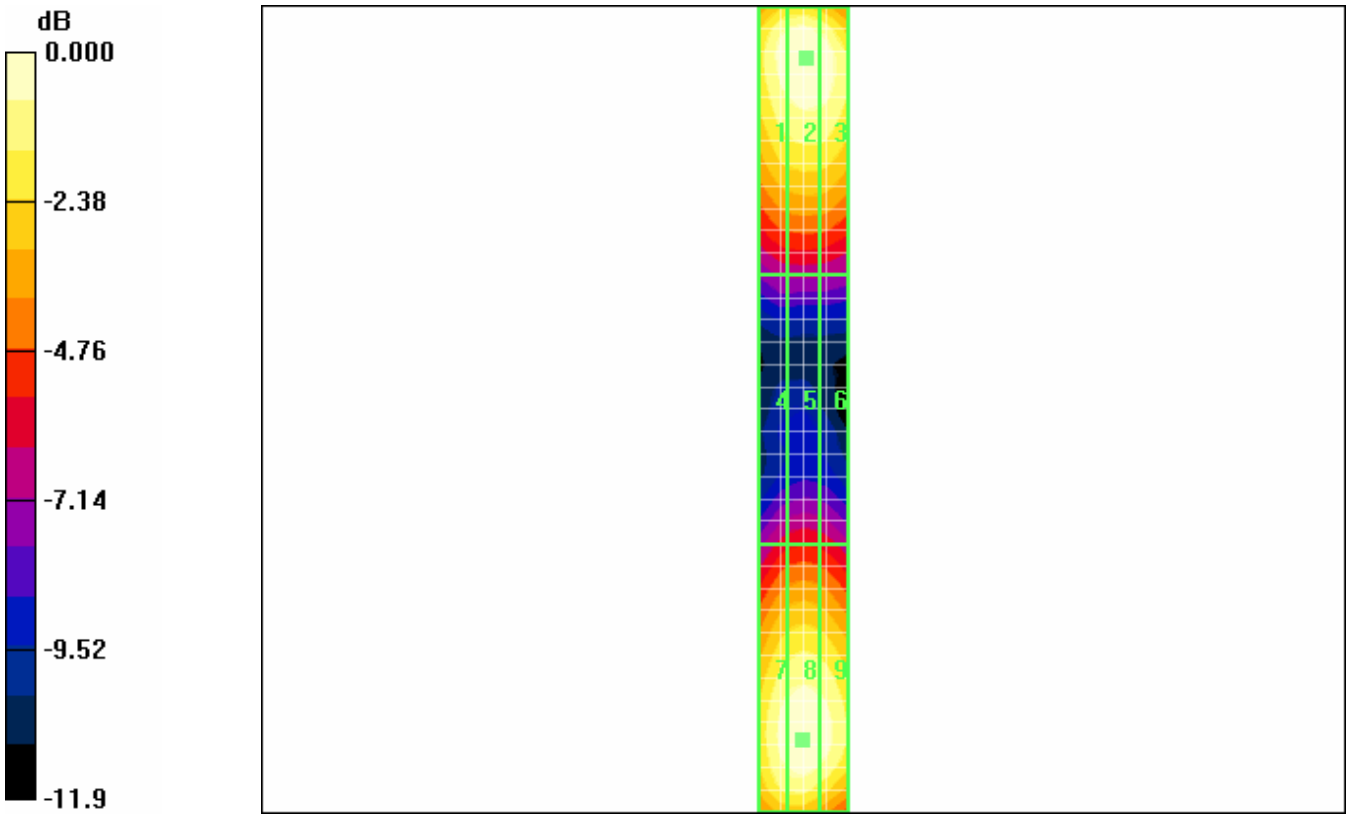
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 115.1 V/m; Power Drift = -0.023 dB

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

Peak E-field in V/m

Grid 1 **154.0** **M4**	Grid 2 **157.7** **M4**	Grid 3 **155.7** **M4**
Grid 4 **81.4** **M4**	Grid 5 **83.3** **M4**	Grid 6 **81.8** **M4**
Grid 7 **152.3** **M4**	Grid 8 **156.3** **M4**	Grid 9 **152.8** **M4**



0 dB = 157.7V/m

Date/Time: 26/09/2008 2:34:29 PM

Test Laboratory: RTS

File Name: HAC_E_Dipole_AM835_PMF_GSM.da4

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

Program Name: HAC RF E Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 07/03/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (5x37x1):

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

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 71.6 V/m; Power Drift = 0.109 dB

Maximum value of Total (measured) = 98.3 V/m

E Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 98.6 V/m

Probe Modulation Factor = 1.00

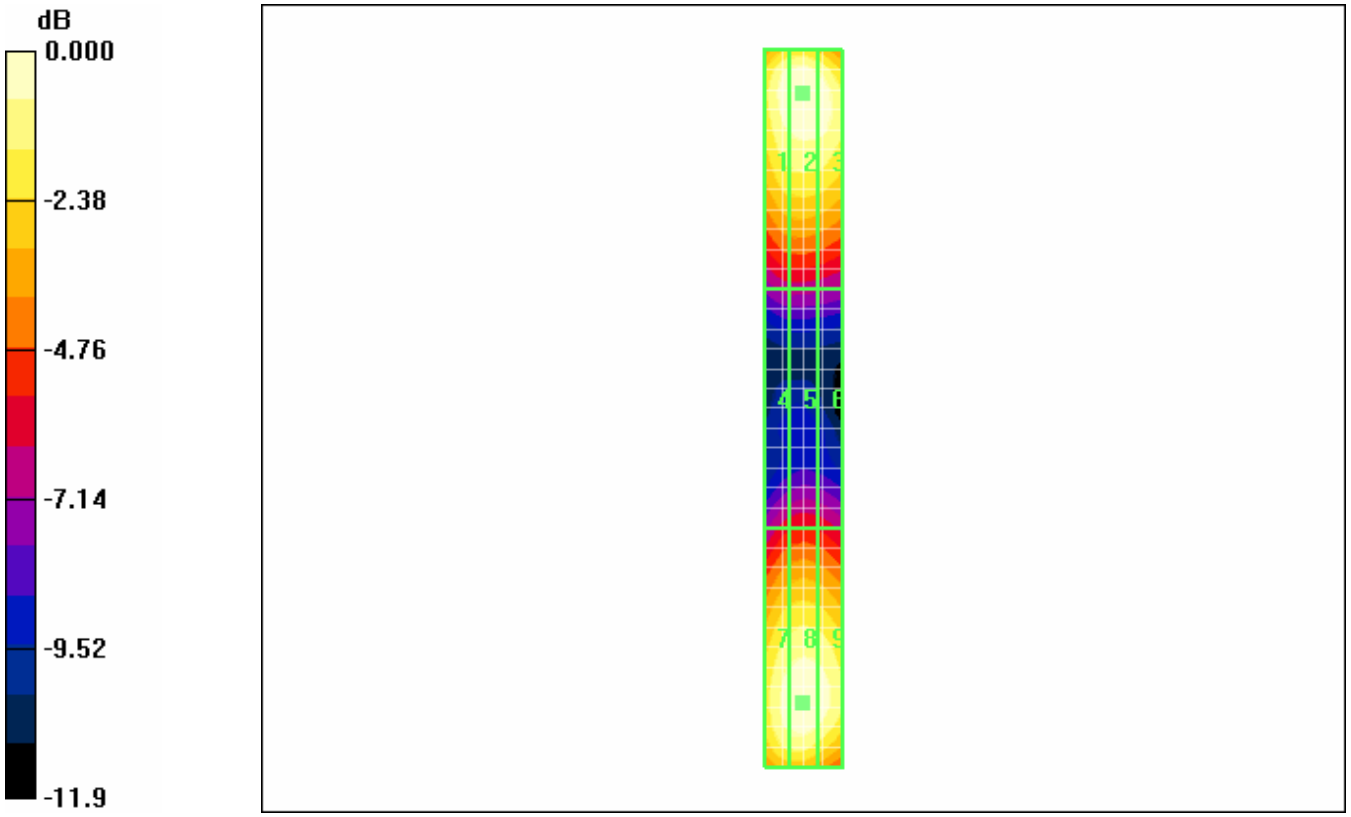
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 71.6 V/m; Power Drift = 0.109 dB

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

Peak E-field in V/m

Grid 1 **97.3** **M4**	Grid 2 **98.6** **M4**	Grid 3 **97.1** **M4**
Grid 4 **51.5** **M4**	Grid 5 **52.6** **M4**	Grid 6 **51.6** **M4**
Grid 7 **94.9** **M4**	Grid 8 **97.1** **M4**	Grid 9 **95.2** **M4**



0 dB = 98.6V/m

Date/Time: 27/09/2008 7:54:48 AM

Test Laboratory: RTS

File Name: HAC_E_Dipole_GSM835.da4

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

Program Name: HAC RF E Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 07/03/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (5x37x1):

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

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 35.3 V/m; Power Drift = 0.054 dB

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

E Scan - measurement distance from the probe sensor center to

CD835 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 53.6 V/m

Probe Modulation Factor = 1.00

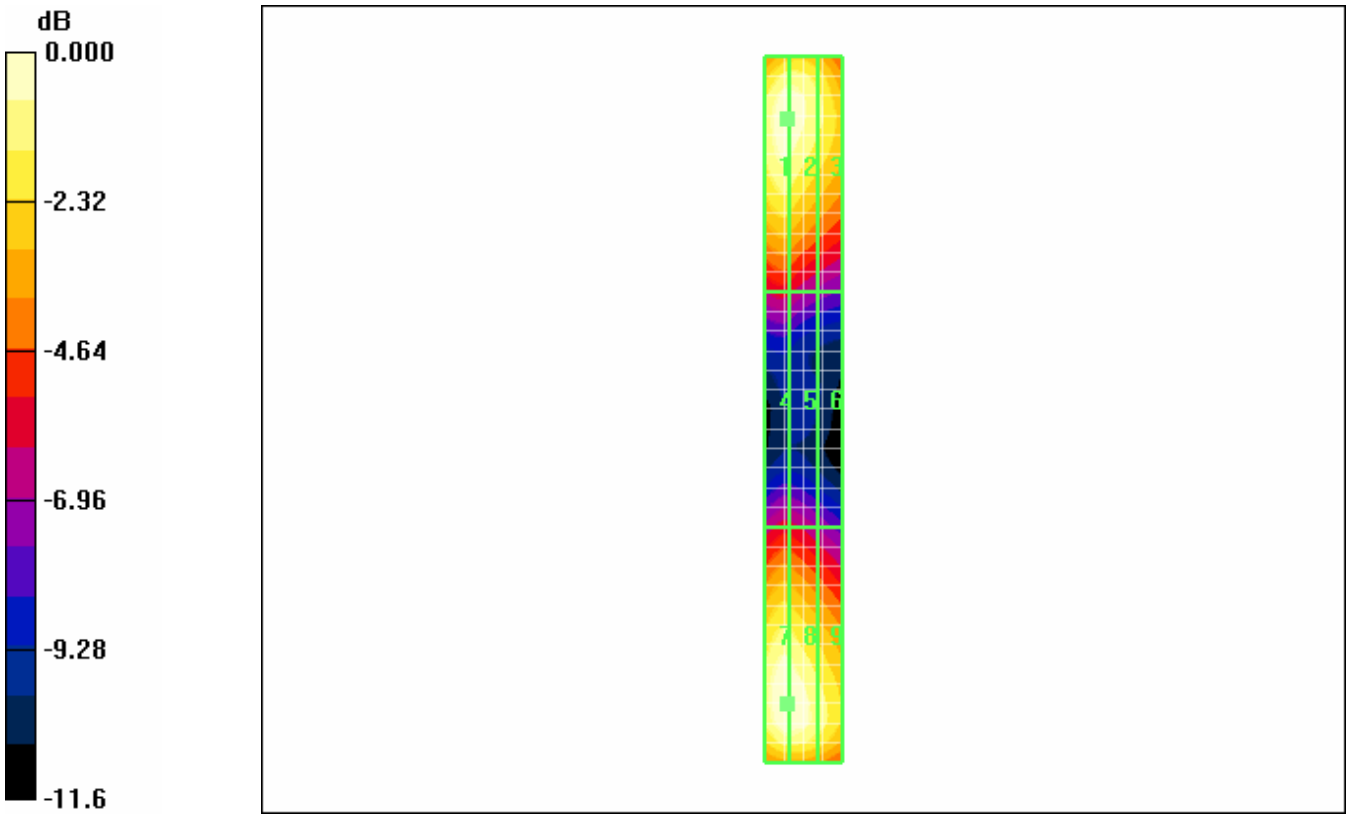
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 35.3 V/m; Power Drift = 0.054 dB

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

Peak E-field in V/m

Grid 1 **52.3** **M4**	Grid 2 **52.2** **M4**	Grid 3 **46.7** **M4**
Grid 4 **27.8** **M4**	Grid 5 **27.7** **M4**	Grid 6 **24.1** **M4**
Grid 7 **53.6** **M4**	Grid 8 **53.4** **M4**	Grid 9 **47.8** **M4**



0 dB = 53.6V/m

Date/Time: 29/07/2008 3:59:04 PM

Test Laboratory: RTS

File Name: HAC_E_Dipole_CW1880_20.00dBm.da4

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

Program Name: HAC RF E Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 21/01/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (5x19x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 116.8 V/m; Power Drift = -0.007 dB

Maximum value of Total (measured) = 123.4 V/m

E Scan - measurement distance from the probe sensor center to

CD1880 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 124.9 V/m

Probe Modulation Factor = 1.00

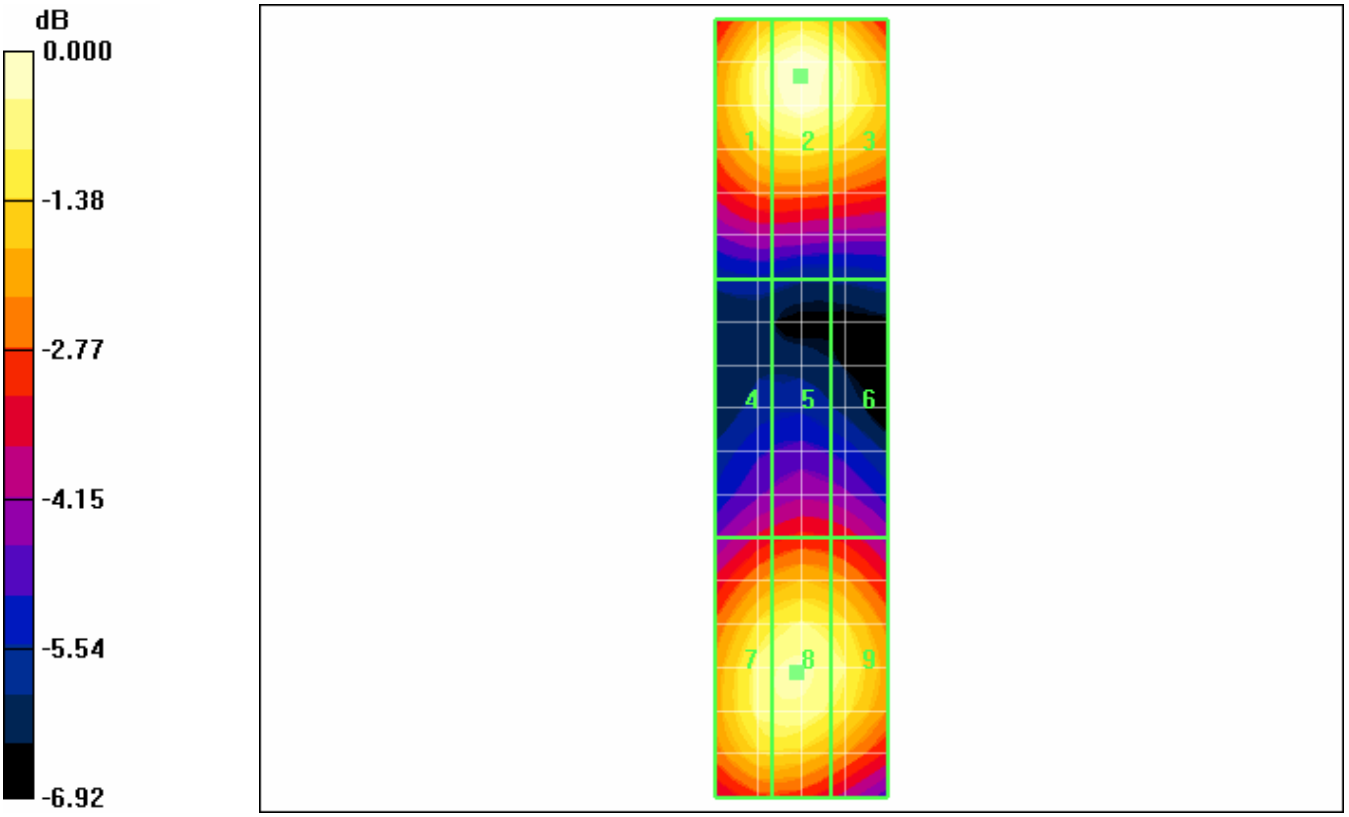
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 116.8 V/m; Power Drift = -0.007 dB

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

Peak E-field in V/m

Grid 1 **120.7** **M2**	Grid 2 **124.9** **M2**	Grid 3 **121.0** **M2**
Grid 4 **85.1** **M3**	Grid 5 **88.0** **M3**	Grid 6 **86.6** **M3**
Grid 7 **118.1** **M2**	Grid 8 **119.6** **M2**	Grid 9 **115.8** **M2**



0 dB = 124.9V/m

Date/Time: 26/09/2008 12:51:51 PM

Test Laboratory: RTS

File Name: HAC_E_Dipole_CW1880_20.00dBm_26_09_08.da4

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

Program Name: HAC RF E Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 07/03/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (5x19x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 123.4 V/m; Power Drift = 0.006 dB

Maximum value of Total (measured) = 123.6 V/m

E Scan - measurement distance from the probe sensor center to

CD1880 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 125.9 V/m

Probe Modulation Factor = 1.00

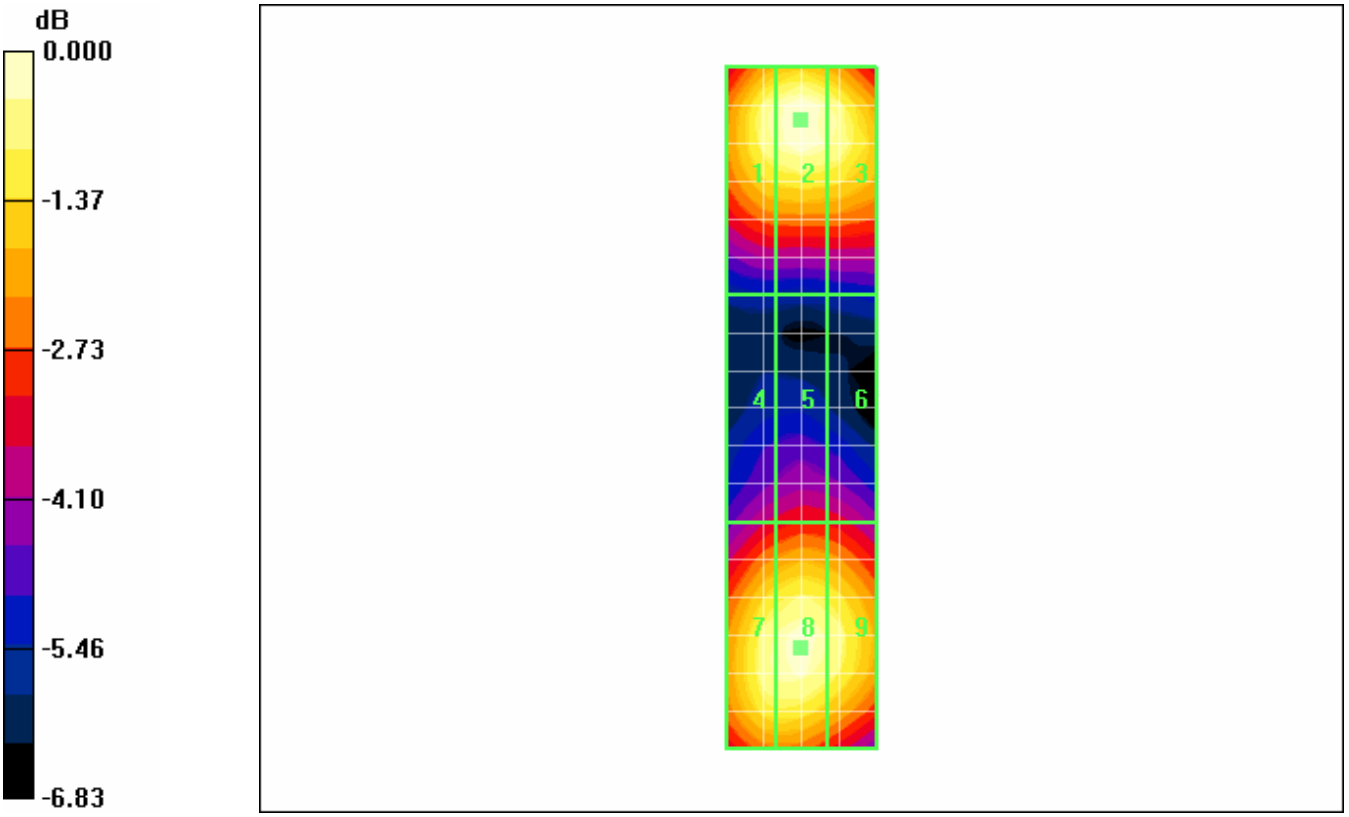
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 123.4 V/m; Power Drift = 0.006 dB

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

Peak E-field in V/m

Grid 1 **122.2** **M2**	Grid 2 **125.9** **M2**	Grid 3 **122.0** **M2**
Grid 4 **84.7** **M3**	Grid 5 **88.0** **M3**	Grid 6 **86.7** **M3**
Grid 7 **120.5** **M2**	Grid 8 **122.4** **M2**	Grid 9 **119.0** **M2**



0 dB = 125.9V/m

Date/Time: 27/09/2008 8:32:36 AM

Test Laboratory: RTS

File Name: HAC_E_Dipole_CW1880_PMF.da4

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

Program Name: HAC RF E Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 07/03/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (5x19x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 85.6 V/m; Power Drift = -0.006 dB

Maximum value of Total (measured) = 84.2 V/m

E Scan - measurement distance from the probe sensor center to

CD1880 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 85.8 V/m

Probe Modulation Factor = 1.00

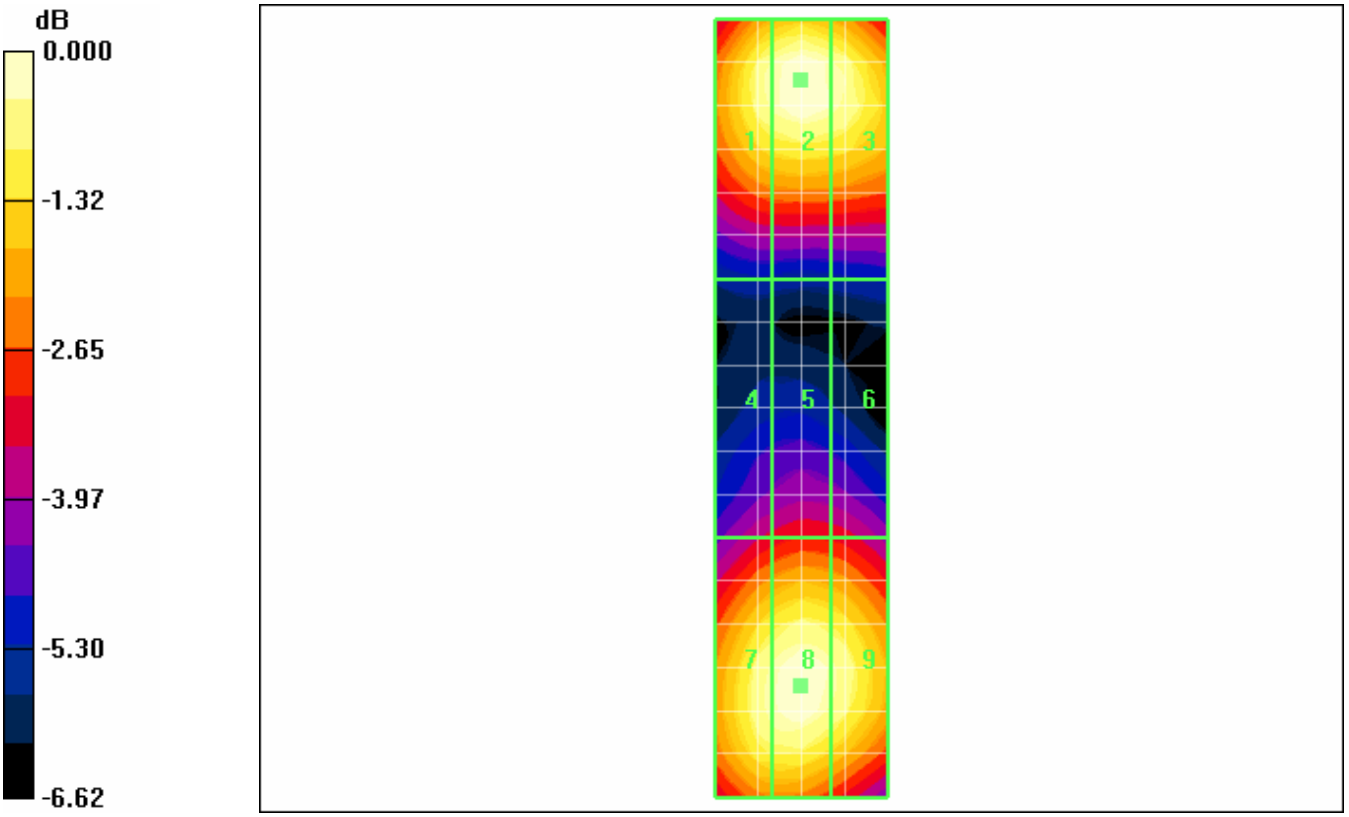
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 85.6 V/m; Power Drift = -0.006 dB

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

Peak E-field in V/m

Grid 1 **83.2** **M3**	Grid 2 **85.8** **M3**	Grid 3 **83.8** **M3**
Grid 4 **58.6** **M4**	Grid 5 **60.7** **M4**	Grid 6 **60.0** **M4**
Grid 7 **82.8** **M3**	Grid 8 **84.5** **M3**	Grid 9 **82.3** **M3**



0 dB = 85.8V/m

Date/Time: 26/09/2008 1:12:00 PM

Test Laboratory: RTS

File Name: HAC_E_Dipole_AM_1880_PMF_GSM.da4

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

Program Name: HAC RF E Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 07/03/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (5x19x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 56.2 V/m; Power Drift = 0.021 dB

Maximum value of Total (measured) = 56.5 V/m

E Scan - measurement distance from the probe sensor center to

CD1880 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 57.5 V/m

Probe Modulation Factor = 1.00

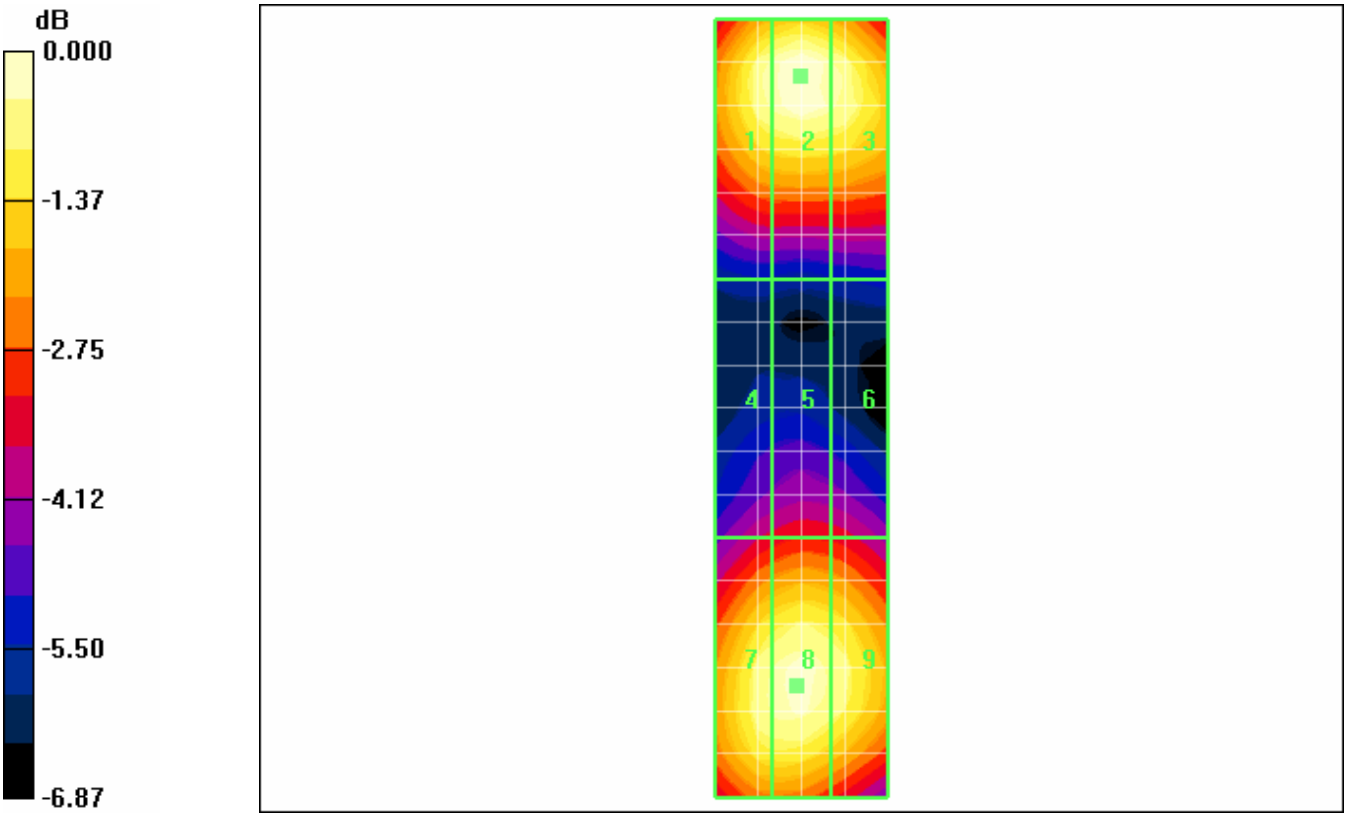
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 56.2 V/m; Power Drift = 0.021 dB

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

Peak E-field in V/m

Grid 1 **55.9** **M4**	Grid 2 **57.5** **M4**	Grid 3 **55.8** **M4**
Grid 4 **38.8** **M4**	Grid 5 **40.2** **M4**	Grid 6 **39.6** **M4**
Grid 7 **54.9** **M4**	Grid 8 **55.8** **M4**	Grid 9 **54.2** **M4**



0 dB = 57.5V/m

Date/Time: 27/09/2008 8:16:05 AM

Test Laboratory: RTS

File Name: HAC_E_Dipole_GSM1880.da4

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

Program Name: HAC RF E Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2285; ConvF(1, 1, 1); Calibrated: 07/03/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (5x19x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 29.2 V/m; Power Drift = -0.047 dB

Maximum value of Total (measured) = 28.9 V/m

E Scan - measurement distance from the probe sensor center to

CD1880 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 29.5 V/m

Probe Modulation Factor = 1.00

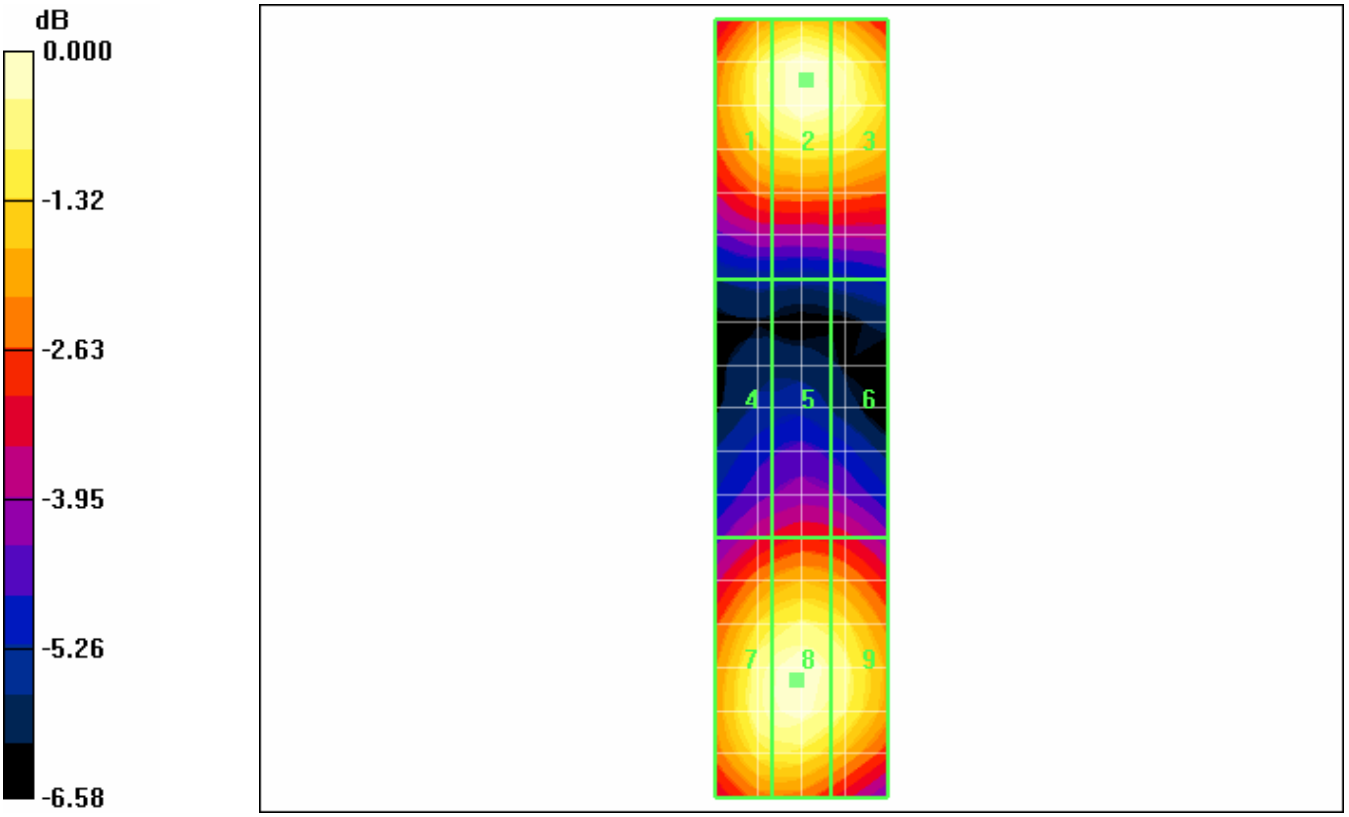
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 29.2 V/m; Power Drift = -0.047 dB

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

Peak E-field in V/m

Grid 1 **28.3** **M4**	Grid 2 **29.5** **M4**	Grid 3 **28.9** **M4**
Grid 4 **20.1** **M4**	Grid 5 **20.9** **M4**	Grid 6 **20.6** **M4**
Grid 7 **28.6** **M4**	Grid 8 **29.0** **M4**	Grid 9 **28.0** **M4**



0 dB = 29.5V/m

Date/Time: 29/07/2008 4:27:42 PM

Test Laboratory: RTS

File Name: HAC_H_Dipole_CW835_20.00dBm.da4

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

Program Name: HAC RF H3DV6 Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (5x37x1):

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

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.460 A/m; Power Drift = 0.001 dB

Maximum value of Total (measured) = 0.437 A/m

H Scan - measurement distance from the probe sensor center to

CD835 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 0.438 A/m

Probe Modulation Factor = 1.00

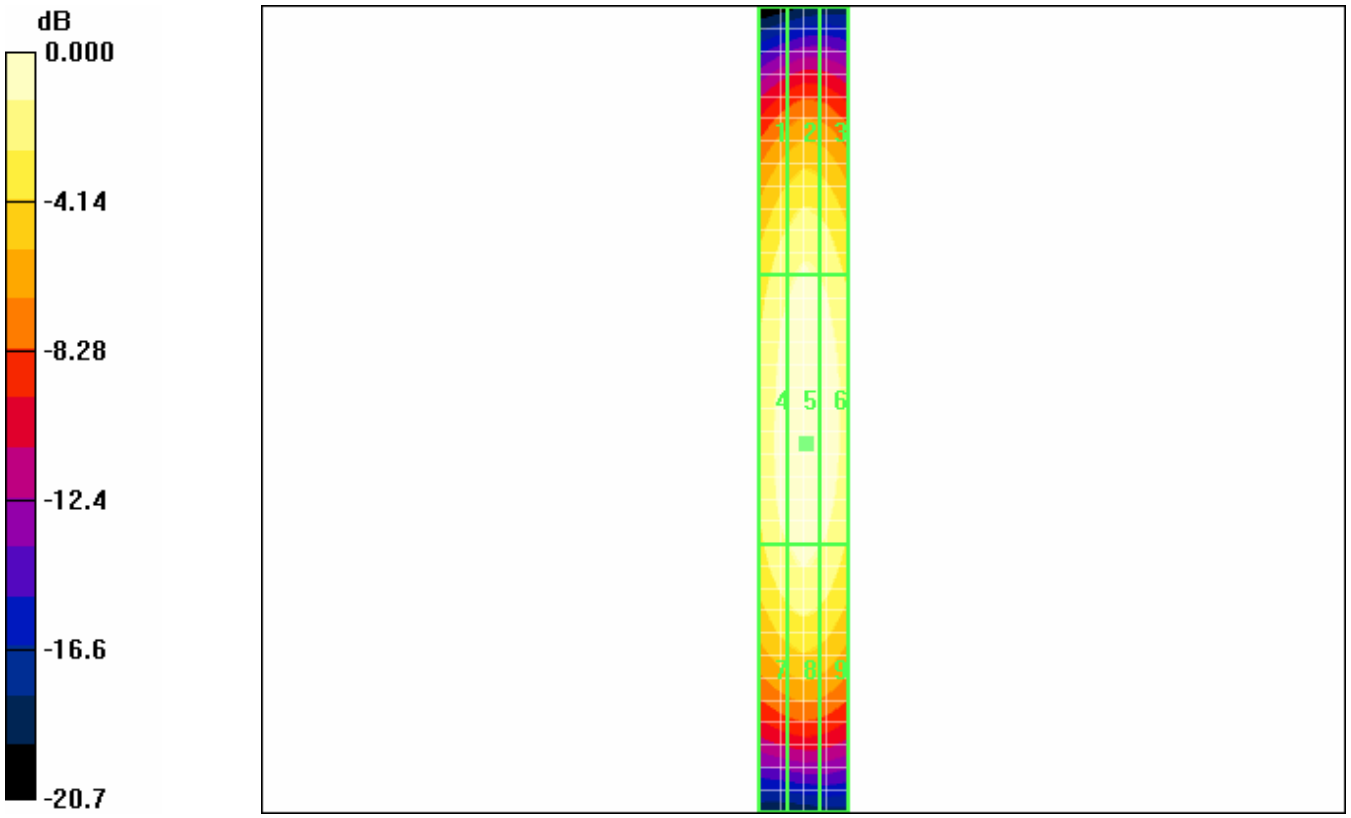
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.460 A/m; Power Drift = 0.001 dB

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

Peak H-field in A/m

Grid 1 **0.362** **M4**	Grid 2 **0.384** **M4**	Grid 3 **0.374** **M4**
Grid 4 **0.411** **M4**	Grid 5 **0.438** **M4**	Grid 6 **0.426** **M4**
Grid 7 **0.377** **M4**	Grid 8 **0.395** **M4**	Grid 9 **0.381** **M4**



0 dB = 0.438A/m

Date/Time: 26/09/2008 4:28:20 PM

Test Laboratory: RTS

File Name: HAC_H_Dipole_CW835_20dBm_09_26_08.da4

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

Program Name: HAC RF H3DV6 Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (5x37x1):

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

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.446 A/m; Power Drift = 0.070 dB

Maximum value of Total (measured) = 0.425 A/m

H Scan - measurement distance from the probe sensor center to

CD835 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 0.427 A/m

Probe Modulation Factor = 1.00

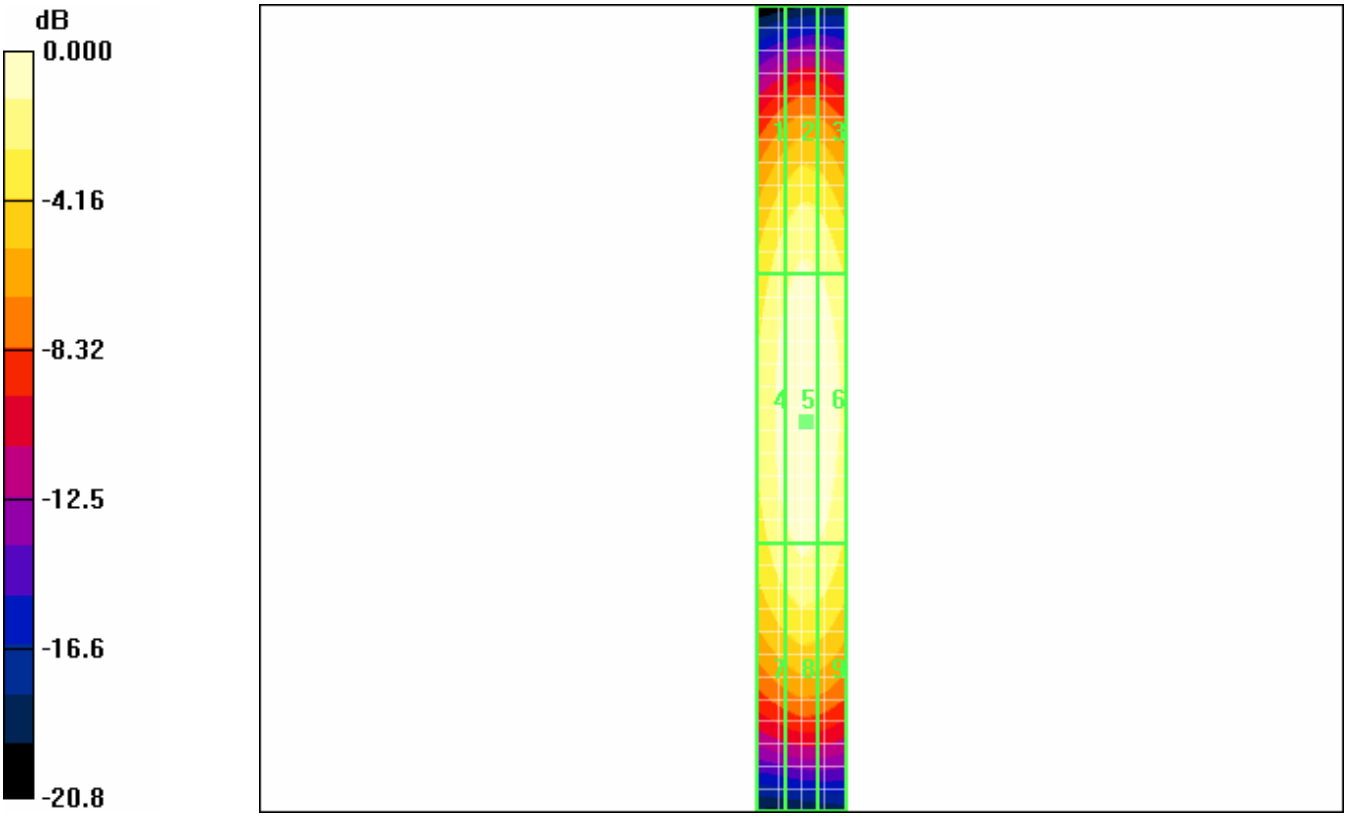
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.446 A/m; Power Drift = 0.070 dB

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

Peak H-field in A/m

Grid 1 **0.351** **M4**	Grid 2 **0.376** **M4**	Grid 3 **0.369** **M4**
Grid 4 **0.393** **M4**	Grid 5 **0.427** **M4**	Grid 6 **0.418** **M4**
Grid 7 **0.351** **M4**	Grid 8 **0.377** **M4**	Grid 9 **0.367** **M4**



0 dB = 0.427A/m

Date/Time: 26/09/2008 3:58:11 PM

Test Laboratory: RTS

File Name: HAC_H_Dipole_CW835_PMF_GSM.da4

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

Program Name: HAC RF H3DV6 Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (5x37x1):

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

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.472 A/m; Power Drift = 0.082 dB

Maximum value of Total (measured) = 0.445 A/m

H Scan - measurement distance from the probe sensor center to

CD835 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 0.447 A/m

Probe Modulation Factor = 1.00

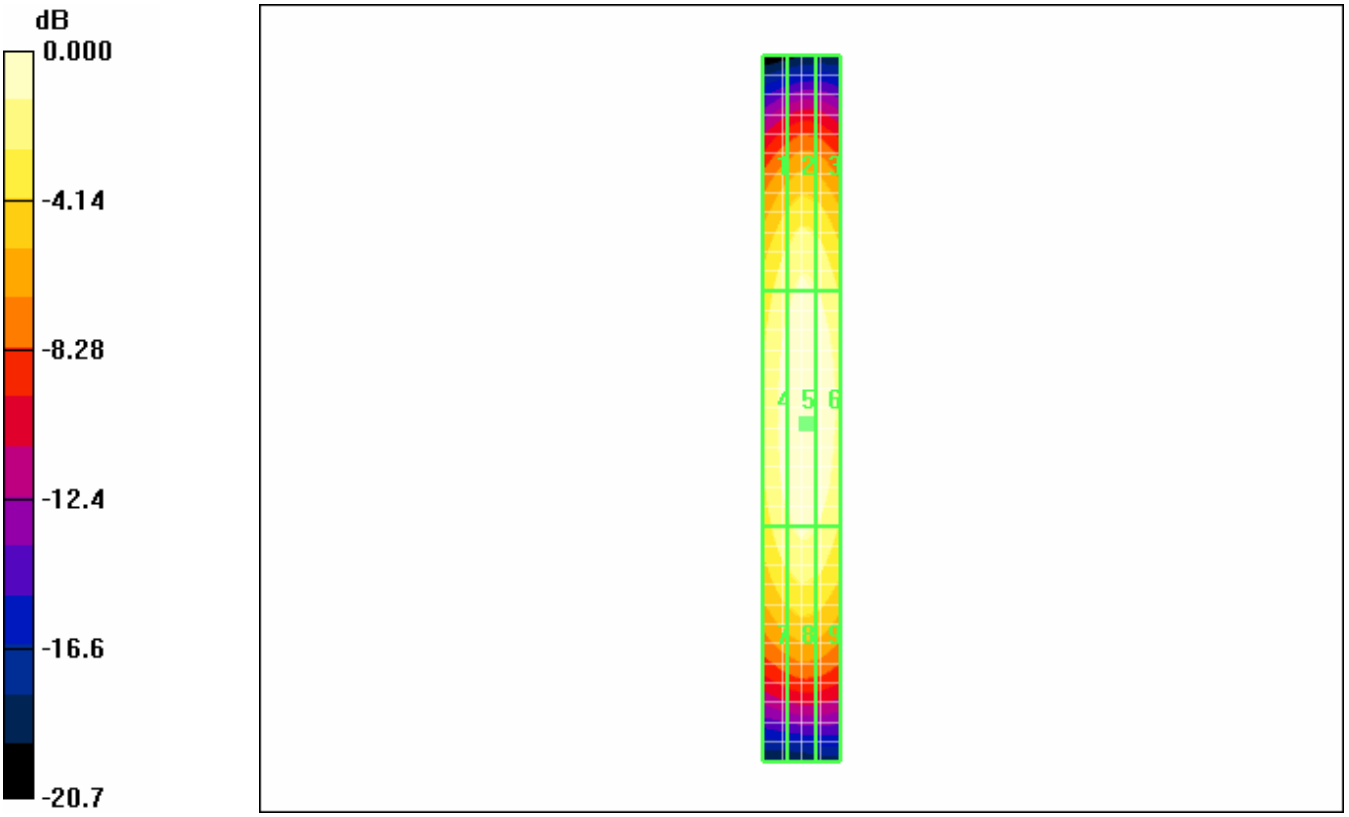
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.472 A/m; Power Drift = 0.082 dB

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

Peak H-field in A/m

Grid 1 **0.370** **M4**	Grid 2 **0.396** **M4**	Grid 3 **0.386** **M4**
Grid 4 **0.413** **M4**	Grid 5 **0.447** **M4**	Grid 6 **0.438** **M4**
Grid 7 **0.373** **M4**	Grid 8 **0.395** **M4**	Grid 9 **0.384** **M4**



0 dB = 0.447A/m

Date/Time: 26/09/2008 4:06:30 PM

Test Laboratory: RTS

File Name: HAC_H_Dipole_AM835_PMF_GSM.da4

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

Program Name: HAC RF H3DV6 Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (5x37x1):

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

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.299 A/m; Power Drift = -0.023 dB

Maximum value of Total (measured) = 0.282 A/m

H Scan - measurement distance from the probe sensor center to

CD835 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 0.283 A/m

Probe Modulation Factor = 1.00

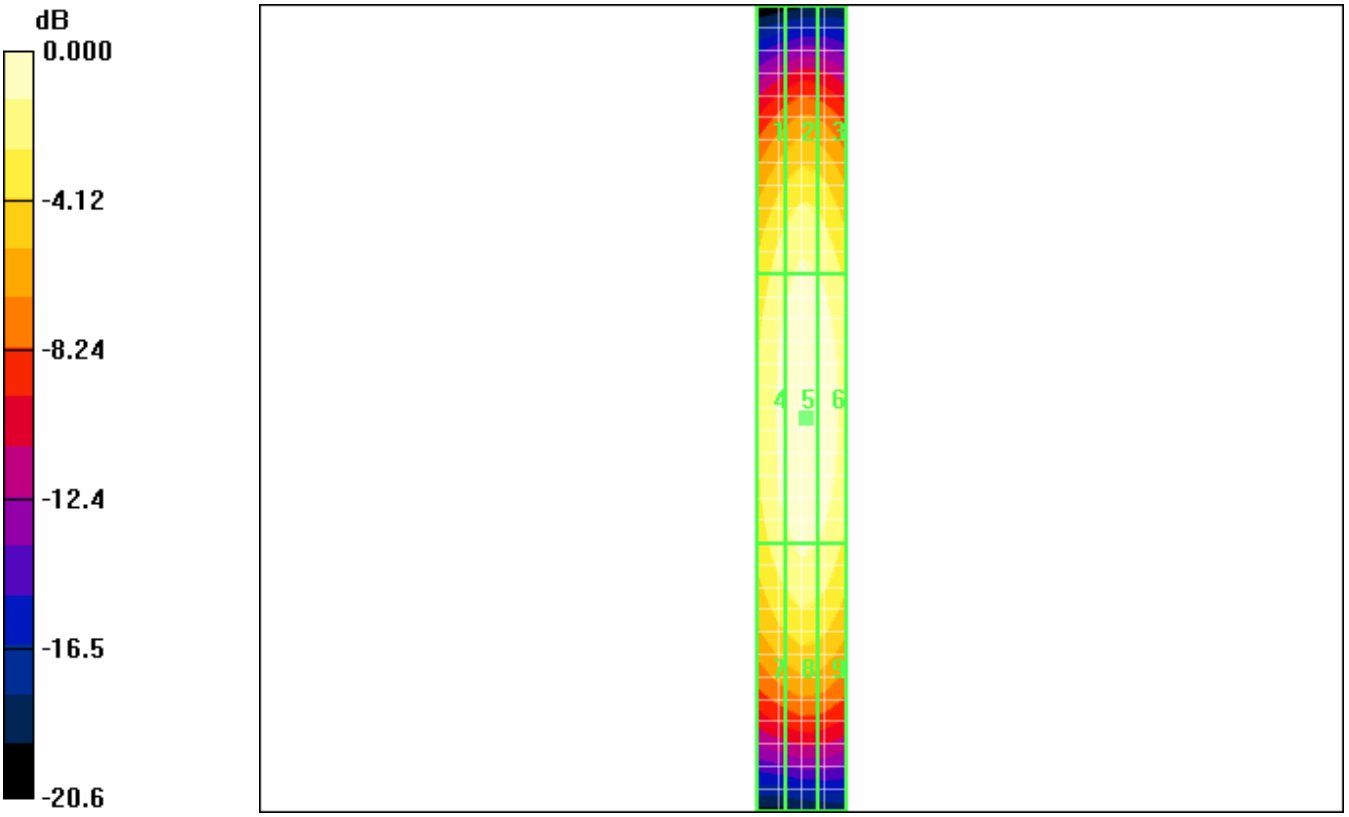
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.299 A/m; Power Drift = -0.023 dB

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

Peak H-field in A/m

Grid 1 **0.232** **M4**	Grid 2 **0.249** **M4**	Grid 3 **0.243** **M4**
Grid 4 **0.259** **M4**	Grid 5 **0.283** **M4**	Grid 6 **0.277** **M4**
Grid 7 **0.234** **M4**	Grid 8 **0.250** **M4**	Grid 9 **0.242** **M4**



0 dB = 0.283A/m

Date/Time: 27/09/2008 7:31:31 AM

Test Laboratory: RTS

File Name: HAC_H_Dipole_GSM835.da4

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

Program Name: HAC RF H3DV6 Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (5x37x1):

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

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.171 A/m; Power Drift = 0.107 dB

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

H Scan - measurement distance from the probe sensor center to

CD835 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 0.164 A/m

Probe Modulation Factor = 1.00

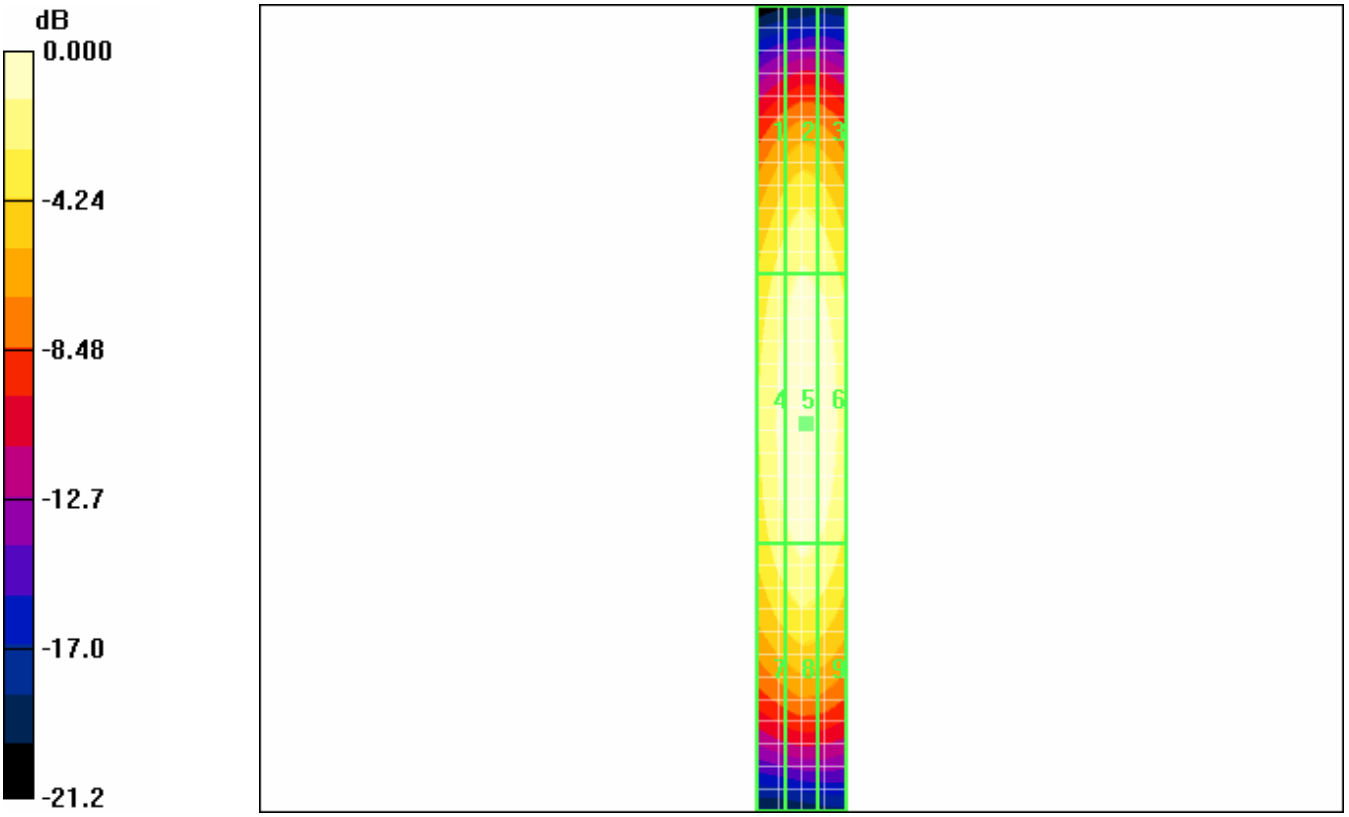
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.171 A/m; Power Drift = 0.107 dB

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

Peak H-field in A/m

Grid 1 **0.132** **M4**	Grid 2 **0.142** **M4**	Grid 3 **0.138** **M4**
Grid 4 **0.150** **M4**	Grid 5 **0.164** **M4**	Grid 6 **0.160** **M4**
Grid 7 **0.135** **M4**	Grid 8 **0.145** **M4**	Grid 9 **0.140** **M4**



0 dB = 0.164A/m

Date/Time: 29/07/2008 4:35:58 PM

Test Laboratory: RTS

File Name: HAC_H_Dipole_CW1880_20.00dBm.da4

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

Program Name: HAC RF H3DV6 Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (5x19x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.467 A/m; Power Drift = 0.014 dB

Maximum value of Total (measured) = 0.444 A/m

H Scan - measurement distance from the probe sensor center to

CD1880 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 0.445 A/m

Probe Modulation Factor = 1.00

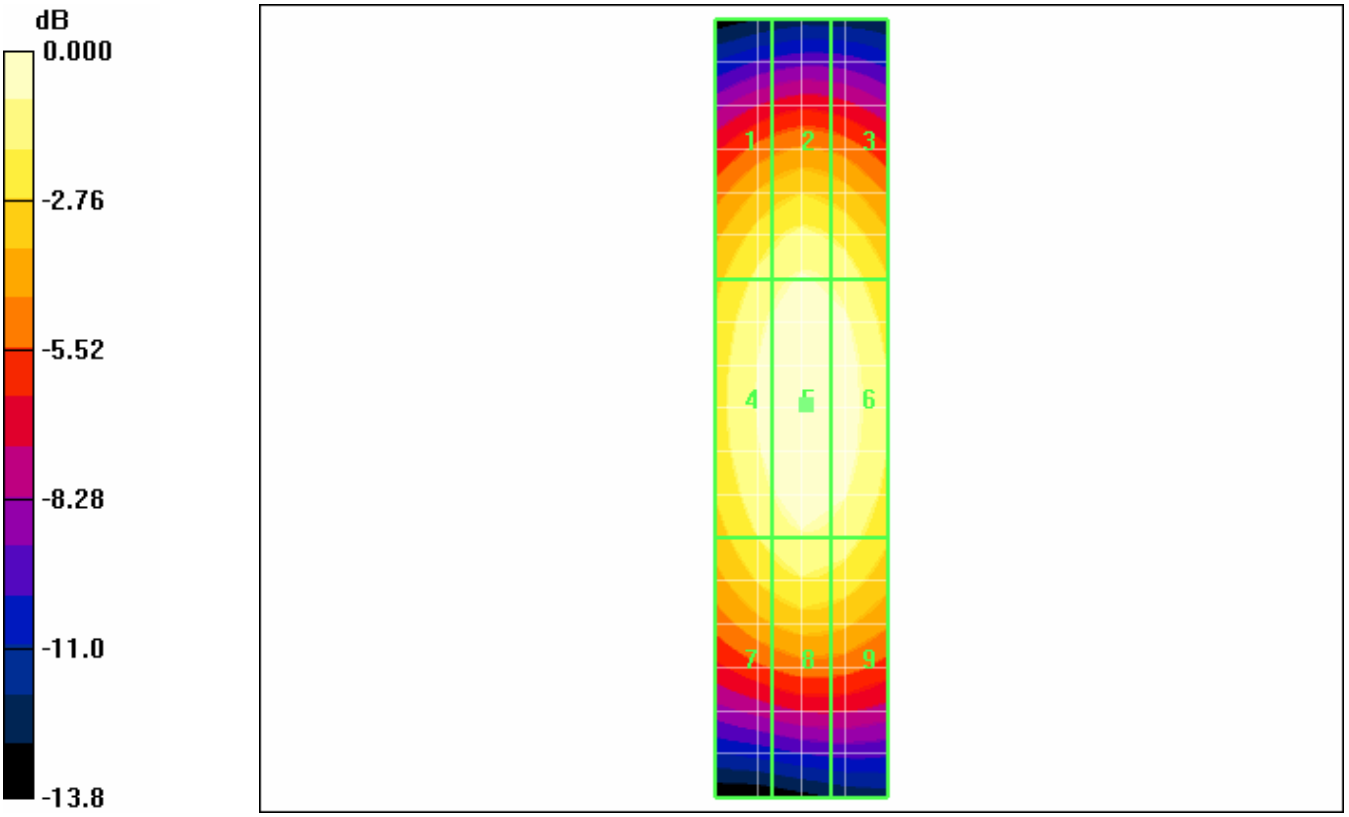
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.467 A/m; Power Drift = 0.014 dB

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

Peak H-field in A/m

Grid 1 **0.385 M2**	Grid 2 **0.407 M2**	Grid 3 **0.396 M2**
Grid 4 **0.419 M2**	Grid 5 **0.445 M2**	Grid 6 **0.434 M2**
Grid 7 **0.374 M2**	Grid 8 **0.396 M2**	Grid 9 **0.387 M2**



0 dB = 0.445A/m

Date/Time: 26/09/2008 5:27:46 PM

Test Laboratory: RTS

File Name: HAC_H_Dipole_CW1880_20dBm_09_26_08.da4

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

Program Name: HAC RF H3DV6 Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (5x19x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.463 A/m; Power Drift = 0.004 dB

Maximum value of Total (measured) = 0.439 A/m

H Scan - measurement distance from the probe sensor center to

CD1880 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 0.442 A/m

Probe Modulation Factor = 1.00

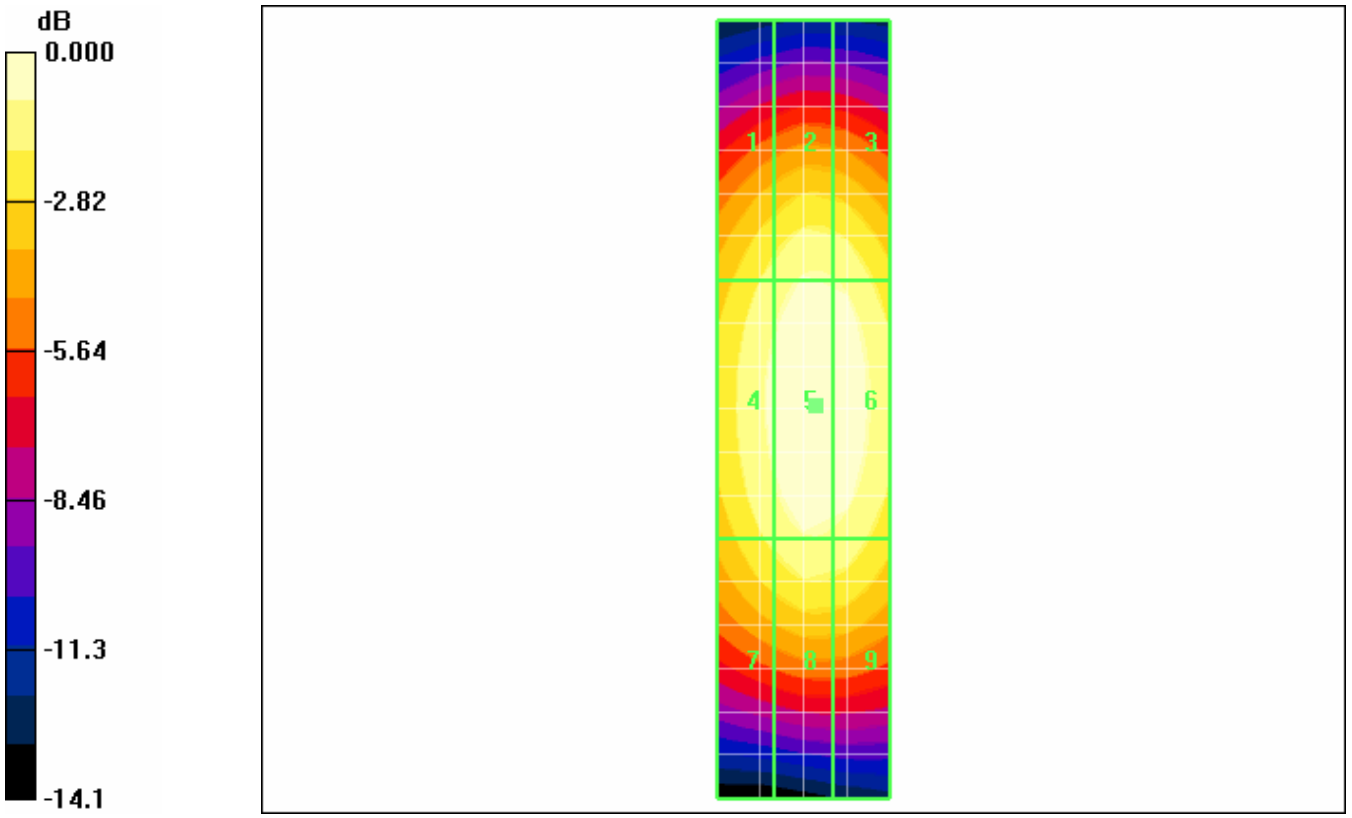
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.463 A/m; Power Drift = 0.004 dB

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

Peak H-field in A/m

Grid 1 **0.373 M2**	Grid 2 **0.404 M2**	Grid 3 **0.399 M2**
Grid 4 **0.408 M2**	Grid 5 **0.442 M2**	Grid 6 **0.436 M2**
Grid 7 **0.367 M2**	Grid 8 **0.394 M2**	Grid 9 **0.388 M2**



0 dB = 0.442A/m

Date/Time: 26/09/2008 5:05:10 PM

Test Laboratory: RTS

File Name: HAC_H_Dipole_CW1880_PMF_GSM.da4

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

Program Name: HAC RF H3DV6 Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (5x19x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.336 A/m; Power Drift = -0.004 dB

Maximum value of Total (measured) = 0.319 A/m

H Scan - measurement distance from the probe sensor center to

CD1880 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 0.321 A/m

Probe Modulation Factor = 1.00

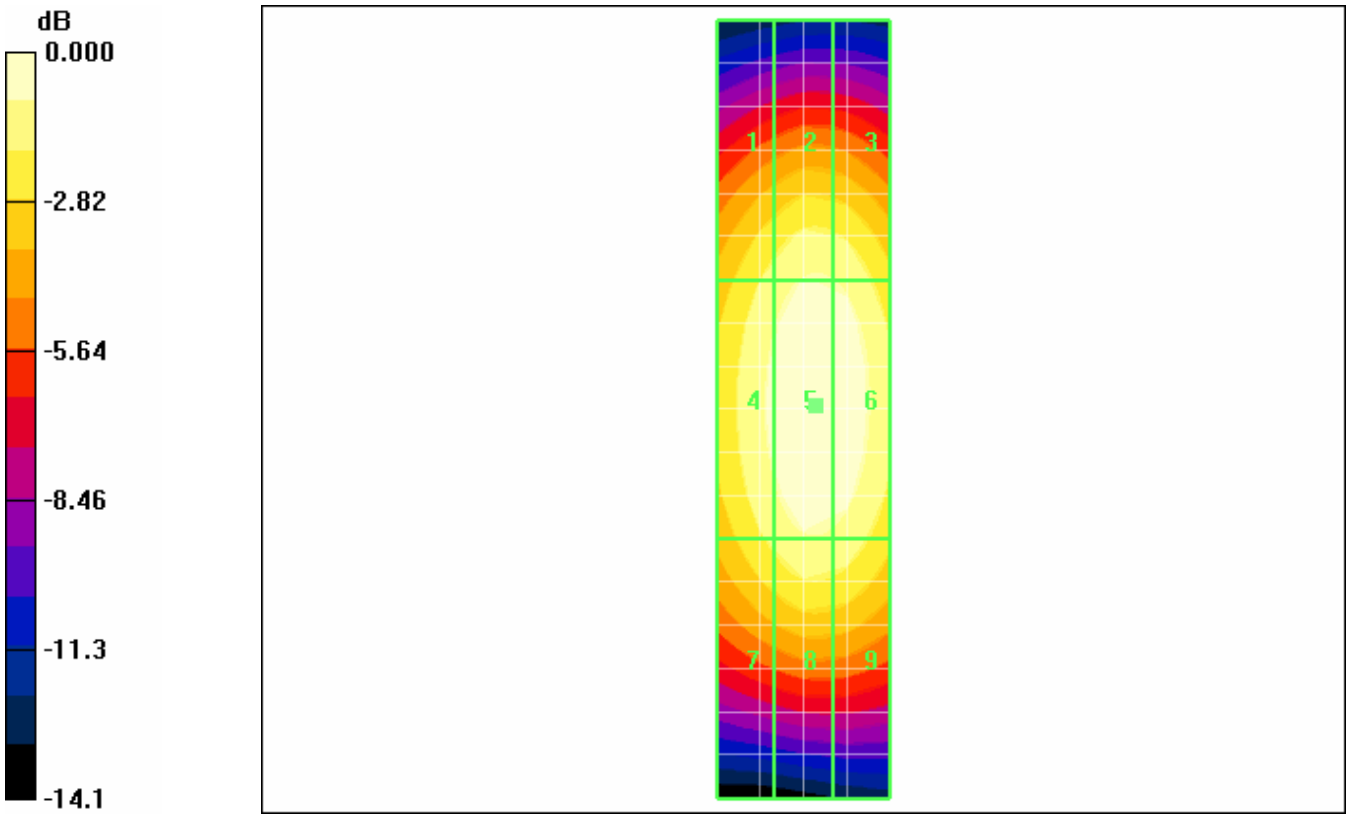
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.336 A/m; Power Drift = -0.004 dB

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

Peak H-field in A/m

Grid 1 **0.270** **M3**	Grid 2 **0.292** **M3**	Grid 3 **0.289** **M3**
Grid 4 **0.296** **M3**	Grid 5 **0.321** **M3**	Grid 6 **0.316** **M3**
Grid 7 **0.266** **M3**	Grid 8 **0.286** **M3**	Grid 9 **0.282** **M3**



0 dB = 0.321A/m

Date/Time: 26/09/2008 5:09:43 PM

Test Laboratory: RTS

File Name: HAC_H_Dipole_AM1880_PMF_GSM.da4

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

Program Name: HAC RF H3DV6 Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (5x19x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.216 A/m; Power Drift = 0.018 dB

Maximum value of Total (measured) = 0.204 A/m

H Scan - measurement distance from the probe sensor center to

CD1880 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 0.205 A/m

Probe Modulation Factor = 1.00

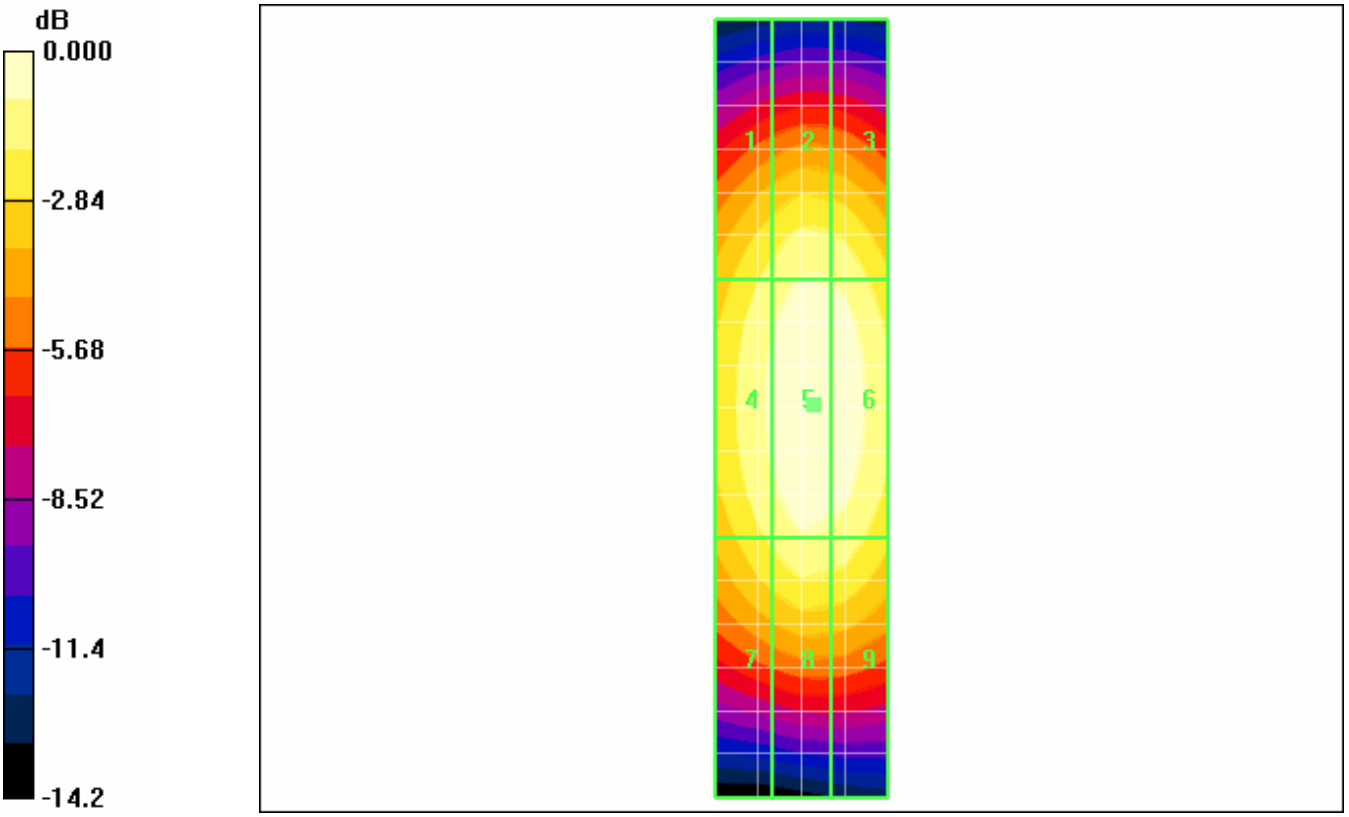
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.216 A/m; Power Drift = 0.018 dB

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

Peak H-field in A/m

Grid 1 **0.172** **M4**	Grid 2 **0.186** **M4**	Grid 3 **0.184** **M4**
Grid 4 **0.188** **M4**	Grid 5 **0.205** **M3**	Grid 6 **0.202** **M3**
Grid 7 **0.169** **M4**	Grid 8 **0.183** **M4**	Grid 9 **0.180** **M4**



0 dB = 0.205A/m

Date/Time: 27/09/2008 7:22:26 AM

Test Laboratory: RTS

File Name: HAC_H_Dipole_GSM1880.da4

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

Program Name: HAC RF H3DV6 Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (5x19x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.125 A/m; Power Drift = -0.027 dB

Maximum value of Total (measured) = 0.117 A/m

H Scan - measurement distance from the probe sensor center to

CD1880 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 0.117 A/m

Probe Modulation Factor = 1.00

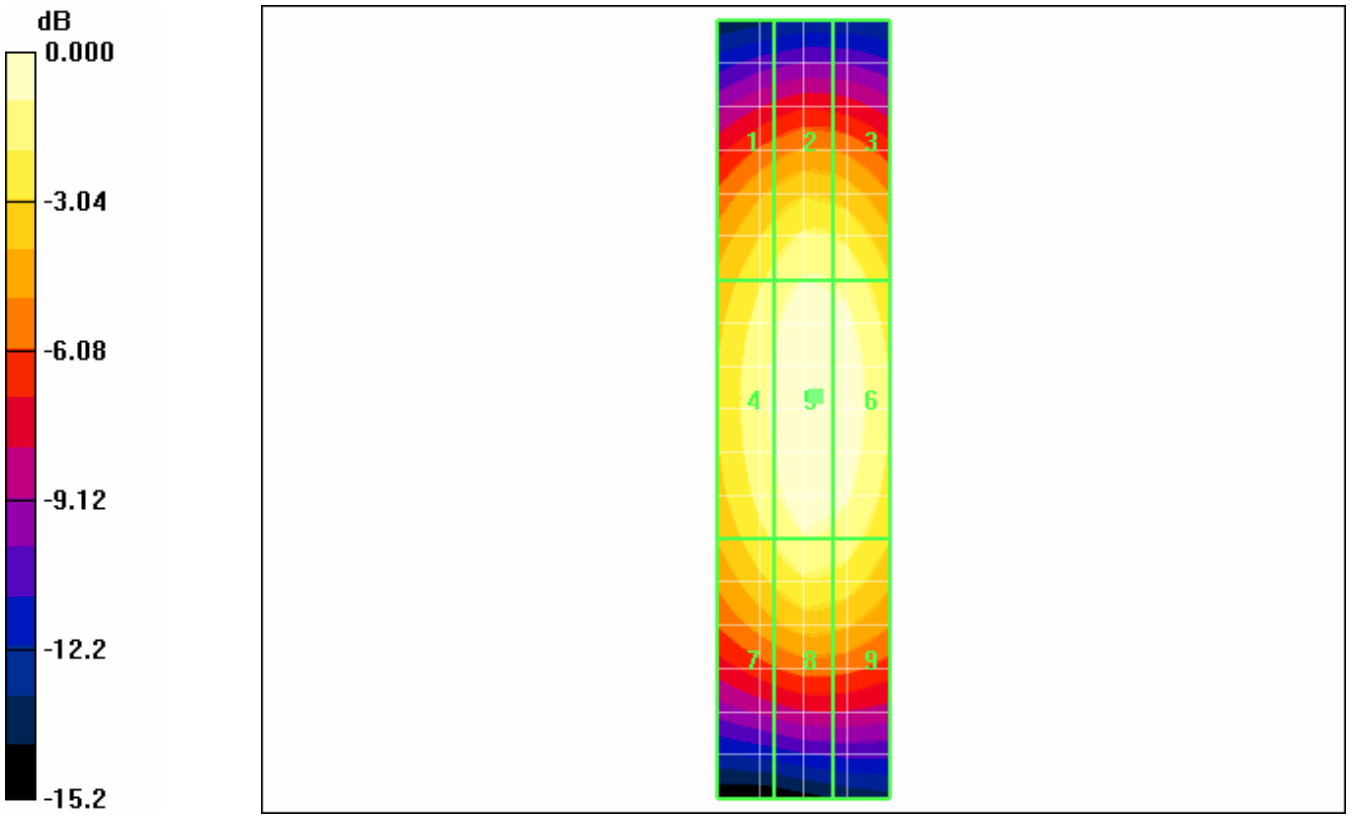
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.125 A/m; Power Drift = -0.027 dB

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

Peak H-field in A/m

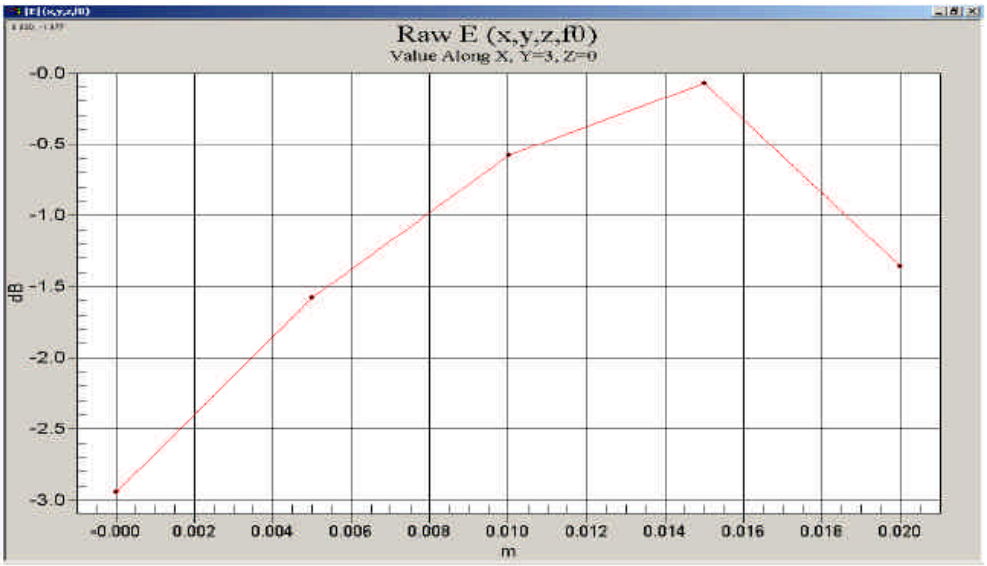
Grid 1 **0.096** **M4**	Grid 2 **0.106** **M4**	Grid 3 **0.104** **M4**
Grid 4 **0.107** **M4**	Grid 5 **0.117** **M4**	Grid 6 **0.115** **M4**
Grid 7 **0.094** **M4**	Grid 8 **0.104** **M4**	Grid 9 **0.101** **M4**



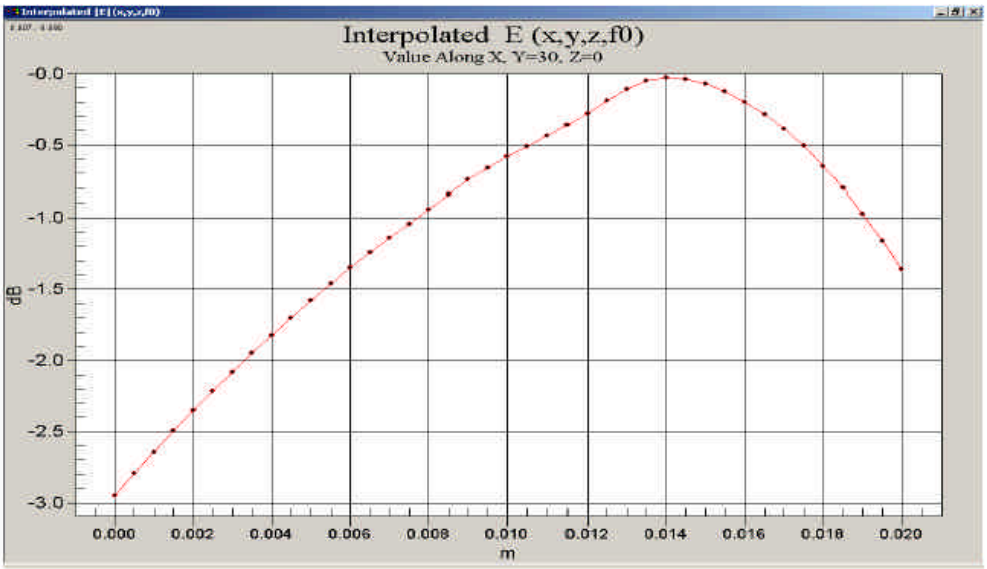
0 dB = 0.117A/m

Justification of Step Size and Interpolation

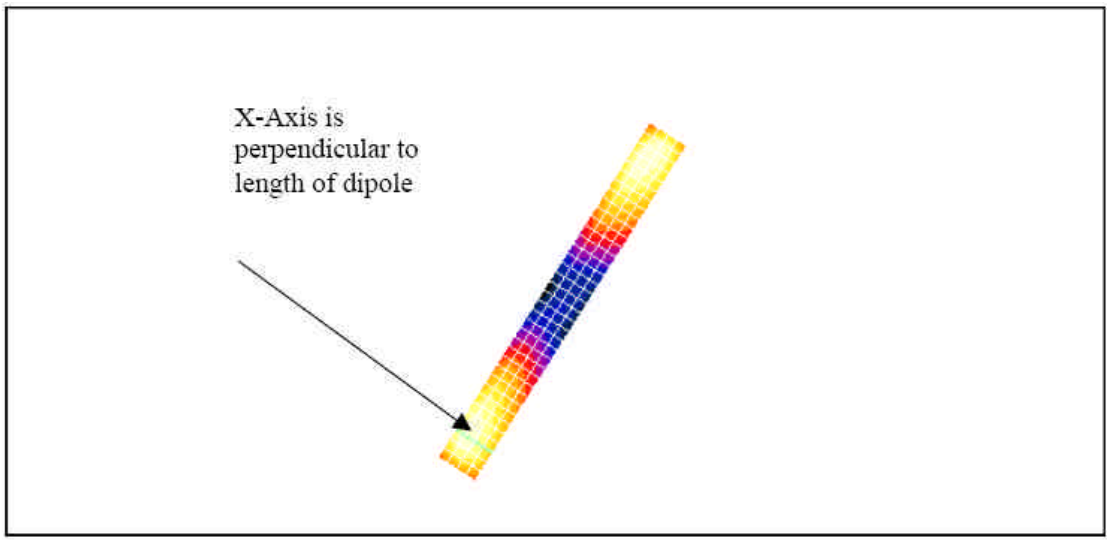
This section demonstrates that a 5mm step size with interpolation provides sufficient resolution for RF emissions measurements. The DASY 4 uses interpolation algorithms to derive 9 interpolated points between every measured point.



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.



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

Comparison of 5mm and 2mm step sizes

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

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

Lab: RIM Testing Services (RTS)

Dipole Validation 1880 MHz_E-Field 07_14_05

DUT: HAC Dipole 1880 MHz; Type: CD1880V3

Communication System: CW; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: H Device Section

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

E Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (5x19x1):
Measurement grid: dx=5mm, dy=5mm
Maximum value of Total (measured) = 134.8 V/m

E Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (41x181x1):
Measurement grid: dx=5mm, dy=5mm
Maximum value of Total field (slot averaged) = 131.0 V/m
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

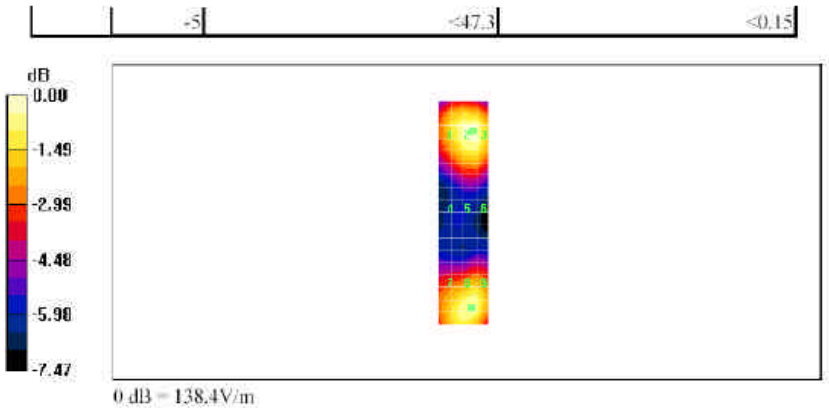
E in V/m (Time averaged)

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

E in V/m (Slot averaged)

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

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



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

Lab: RIM Testing Services (RTS)

Dipole Validation 1880 MHz_2mm step_E-Field 07_14_05

DUT: HAC Dipole 1880 MHz; Type: CD1880V3

Communication System: CW; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: H Device Section

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

E Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (11x46x1):
Measurement grid: dx=2mm, dy=2mm
Maximum value of Total (measured) = 138.0 V/m

E Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (101x451x1):
Measurement grid: dx=2mm, dy=2mm
Maximum value of Total field (slot averaged) = 131.2 V/m
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

E in V/m (Time averaged)

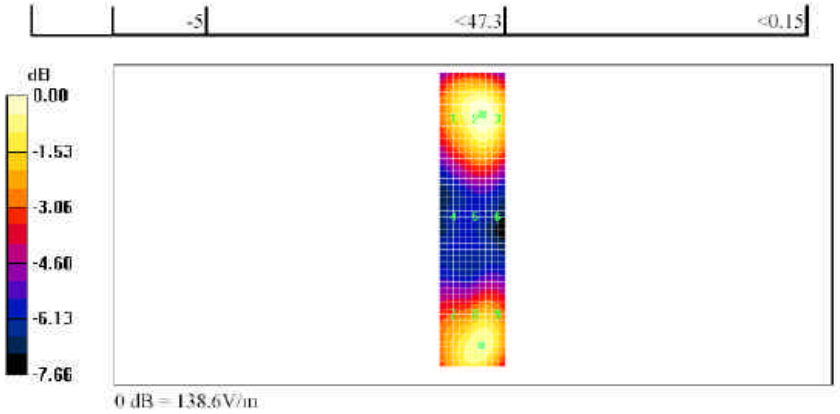
Grid 1 **123.1**	Grid 2 **138.6**	Grid 3 **138.6**
Grid 4 **81.4**	Grid 5 **92.1**	Grid 6 **91.6**
Grid 7 **121.3**	Grid 8 **131.2**	Grid 9 **131.0**

E in V/m (Slot averaged)

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

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

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



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

Date/Time: 14/07/2005 12:43:02 PM

Lab: RIM Testing Services (RTS)

HAC_H_Dipole_CW 1880_5 mm step_07_14_05

DUT: HAC Dipole 1880 MHz; Type: CD1880V3

Communication System: CW; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Dipole Section

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

H Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (5x19x1):
Measurement grid: dx=5mm, dy=5mm
Maximum value of Total (measured) = 0.406 A/m

H Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (41x181x1):
Measurement grid: dx=5mm, dy=5mm
Maximum value of Total field (slot averaged) = 0.406 A/m
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

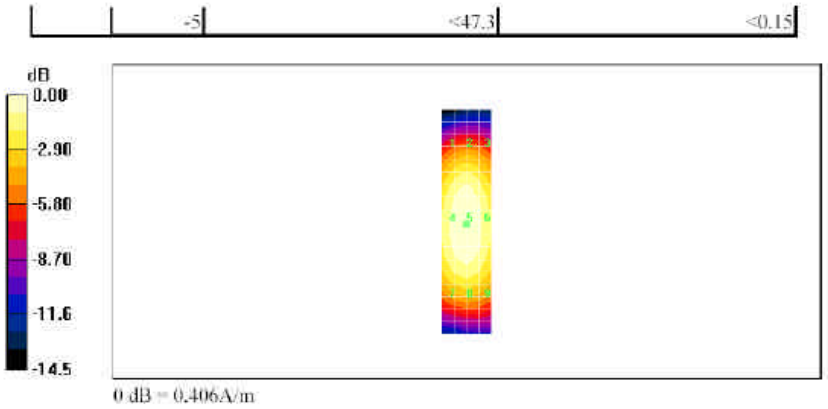
H in A/m (Time averaged)

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

H in A/m (Slot averaged)

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



Date/Time: 14/07/2005 12:53:40 PM

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, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Dipole Section

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

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

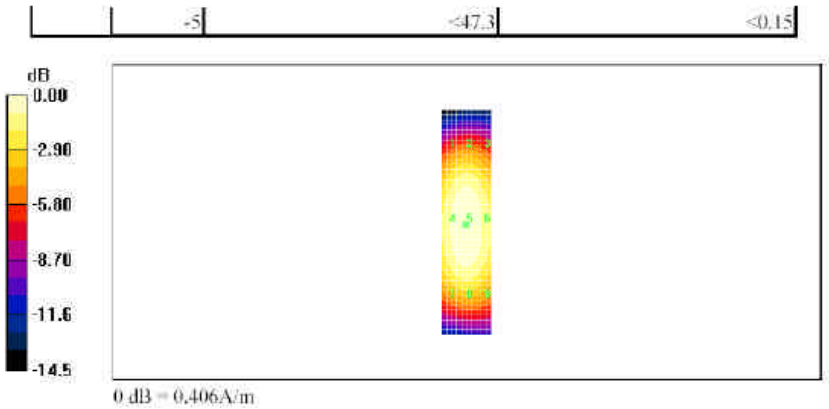
H in A/m (Time averaged)

Grid 1	Grid 2	Grid 3
0.347	**0.361**	**0.348**
Grid 4	Grid 5	Grid 6
0.394	**0.406**	**0.391**
Grid 7	Grid 8	Grid 9
0.367	**0.380**	**0.365**

H in A/m (Slot averaged)

Grid 1	Grid 2	Grid 3
0.347	**0.361**	**0.348**
Grid 4	Grid 5	Grid 6
0.394	**0.406**	**0.391**
Grid 7	Grid 8	Grid 9
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



A.3 RF emissions and ambient noise plots

Date/Time: 29/07/2008 6:59:23 PM

Test Laboratory: RTS

File Name: HAC_E_GSM850_Low_Chan.da4

DUT: BlackBerry Smartphone; Type: Sample ; Serial: Not Specified

Program Name: HAC RF ER3D Device

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 21/01/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (11x11x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 75.9 V/m; Power Drift = -0.082 dB

Maximum value of Total (measured) = 61.3 V/m

E Scan - ER3D - 2007: 15 mm from Probe Center to the

Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 181.1 V/m

Probe Modulation Factor = 2.94

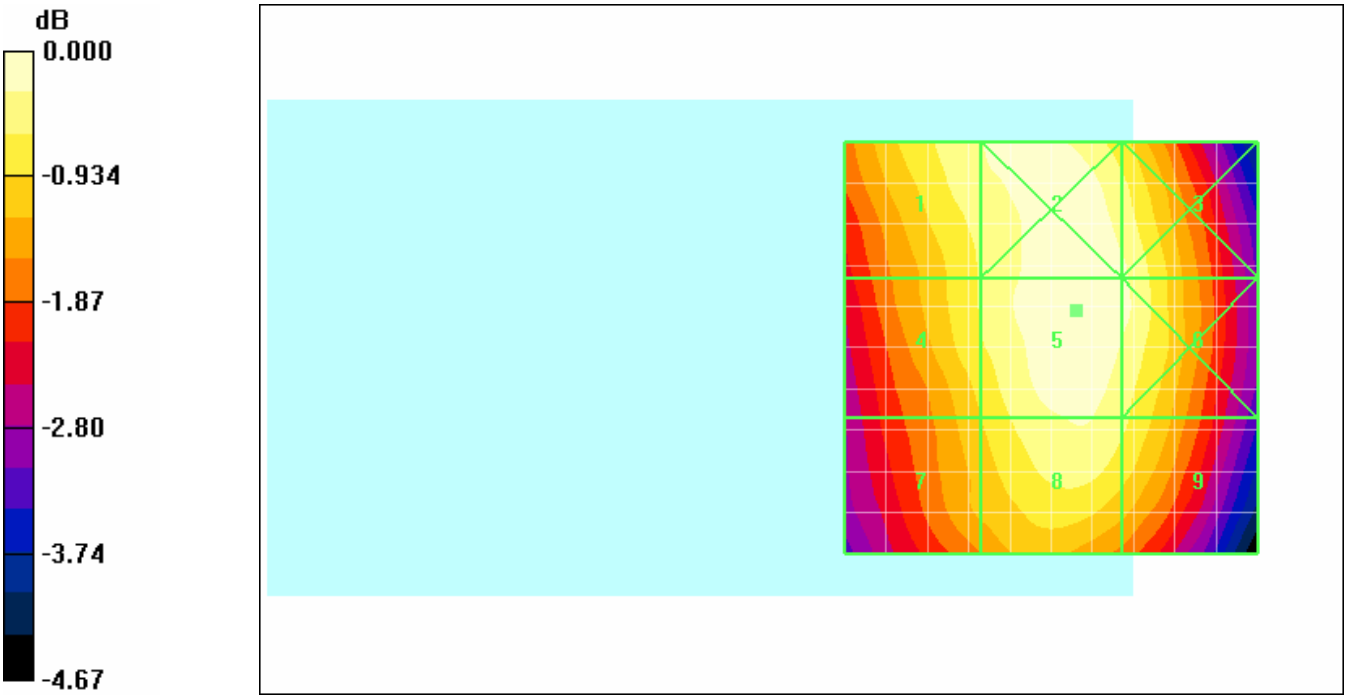
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 75.9 V/m; Power Drift = -0.082 dB

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

Peak E-field in V/m

Grid 1 **174.3** **M3**	Grid 2 **180.0** **M3**	Grid 3 **176.1** **M3**
Grid 4 **169.3** **M3**	Grid 5 **181.1** **M3**	Grid 6 **176.8** **M3**
Grid 7 **162.7** **M3**	Grid 8 **175.3** **M3**	Grid 9 **170.3** **M3**



0 dB = 181.1V/m

Date/Time: 29/07/2008 7:05:11 PM

Test Laboratory: RTS

File Name: HAC_E_GSM850_Mid_Chan.da4

DUT: BlackBerry Smartphone; Type: Sample ; Serial: Not Specified

Program Name: HAC RF ER3D Device

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 21/01/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (11x11x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 83.3 V/m; Power Drift = 0.121 dB

Maximum value of Total (measured) = 69.7 V/m

E Scan - ER3D - 2007: 15 mm from Probe Center to the

Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 205.0 V/m

Probe Modulation Factor = 2.94

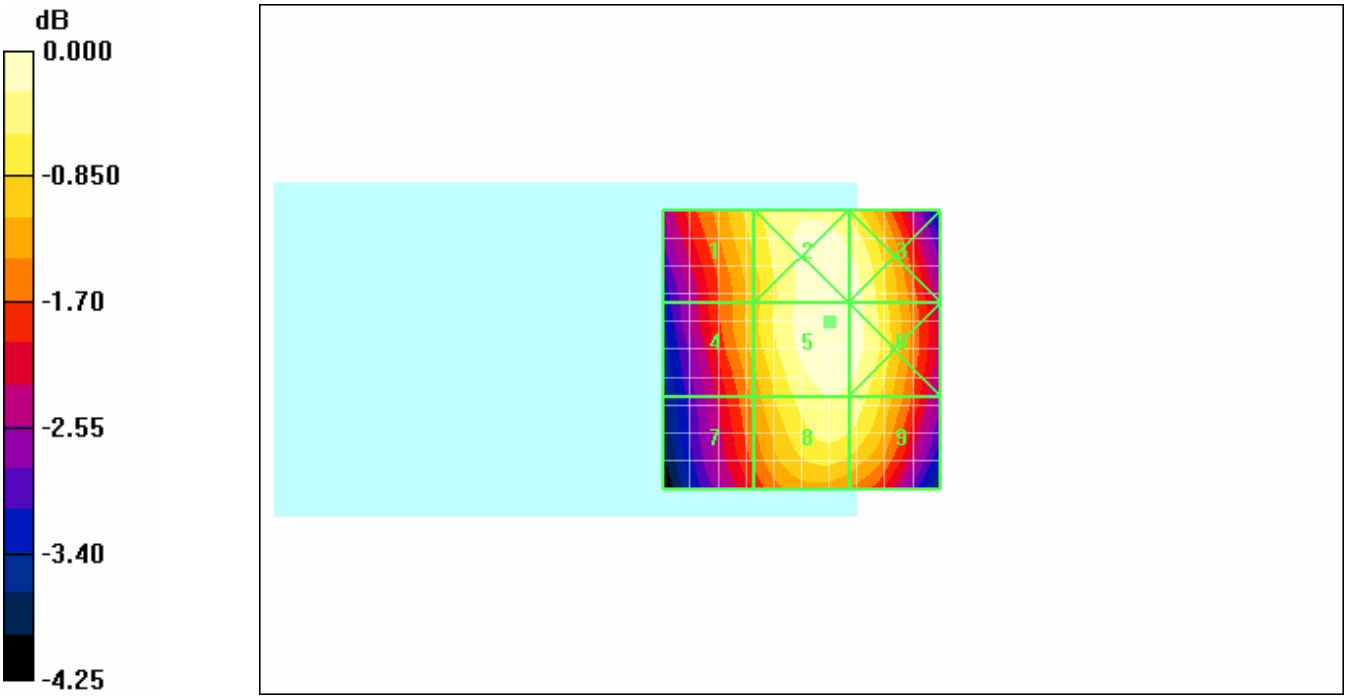
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 83.3 V/m; Power Drift = 0.121 dB

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

Peak E-field in V/m

Grid 1 **189.7** **M3**	Grid 2 **204.4** **M3**	Grid 3 **202.8** **M3**
Grid 4 **184.3** **M3**	Grid 5 **205.0** **M3**	Grid 6 **203.4** **M3**
Grid 7 **176.7** **M3**	Grid 8 **198.6** **M3**	Grid 9 **197.2** **M3**



0 dB = 205.0V/m

Date/Time: 29/07/2008 7:18:12 PM

Test Laboratory: RTS

File Name: HAC_E_GSM850_High_Chan.da4

DUT: BlackBerry Smartphone; Type: Sample ; Serial: Not Specified

Program Name: HAC RF ER3D Device

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 21/01/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (11x11x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 85.0 V/m; Power Drift = 0.034 dB

Maximum value of Total (measured) = 71.3 V/m

E Scan - ER3D - 2007: 15 mm from Probe Center to the

Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 209.8 V/m

Probe Modulation Factor = 2.94

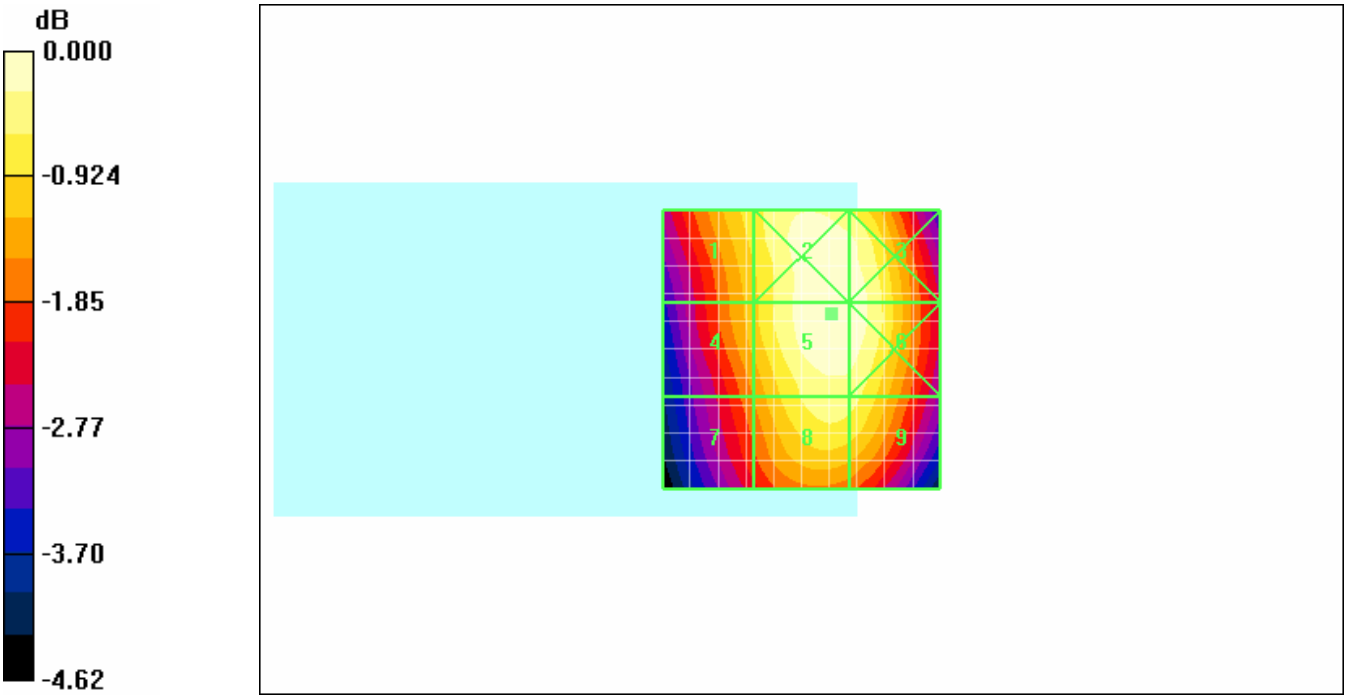
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 85.0 V/m; Power Drift = 0.034 dB

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

Peak E-field in V/m

Grid 1 **193.1 M3**	Grid 2 **209.4 M3**	Grid 3 **208.3 M3**
Grid 4 **187.0 M3**	Grid 5 **209.8 M3**	Grid 6 **208.4 M3**
Grid 7 **176.6 M3**	Grid 8 **200.0 M3**	Grid 9 **198.7 M3**



0 dB = 209.8V/m

Date/Time: 29/07/2008 7:29:27 PM

Test Laboratory: RTS

File Name: HAC_E_GSM1900_Low_Chan.da4

DUT: BlackBerry Smartphone; Type: Sample ; Serial: Not Specified

Program Name: HAC RF ER3D Device

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 21/01/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (11x11x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 13.9 V/m; Power Drift = -0.096 dB

Maximum value of Total (measured) = 24.6 V/m

E Scan - ER3D - 2007: 15 mm from Probe Center to the

Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 66.1 V/m

Probe Modulation Factor = 2.91

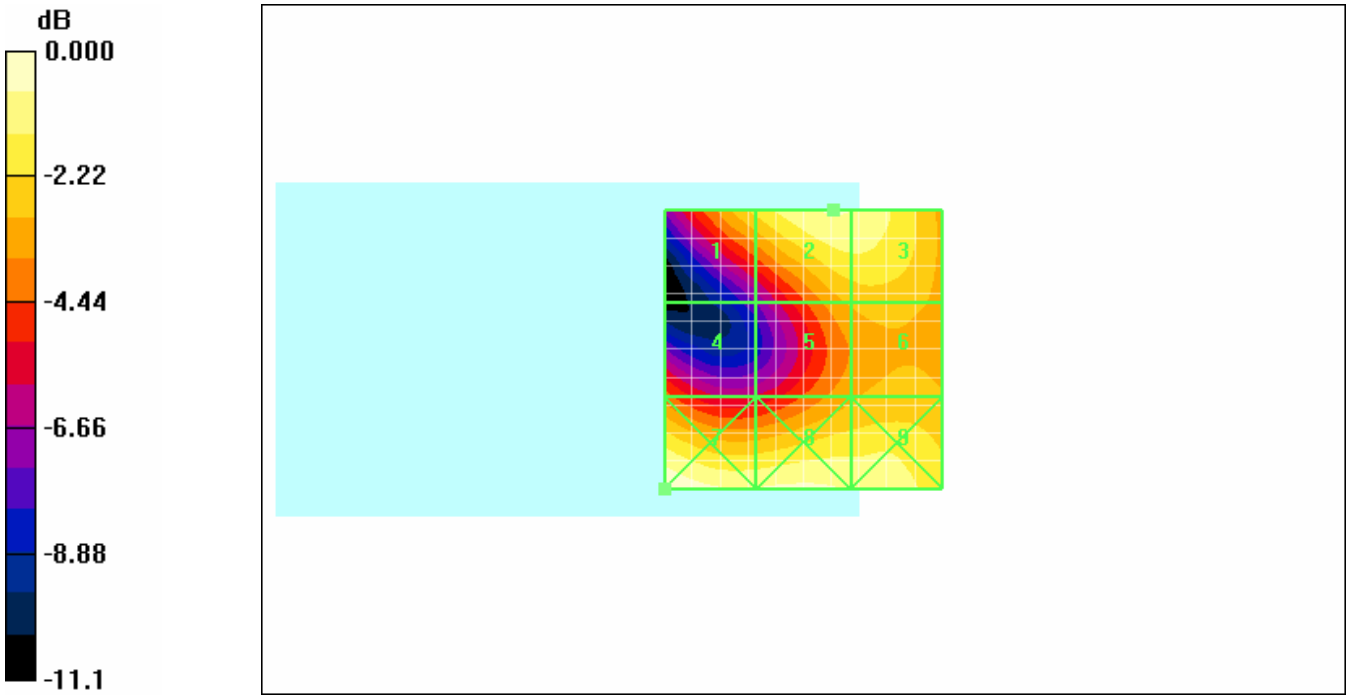
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 13.9 V/m; Power Drift = -0.096 dB

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

Peak E-field in V/m

Grid 1 **57.0** **M3**	Grid 2 **66.1** **M3**	Grid 3 **65.6** **M3**
Grid 4 **45.0** **M4**	Grid 5 **51.7** **M3**	Grid 6 **53.2** **M3**
Grid 7 **71.4** **M3**	Grid 8 **66.8** **M3**	Grid 9 **65.1** **M3**



0 dB = 71.4V/m

Date/Time: 29/07/2008 7:35:13 PM

Test Laboratory: RTS

File Name: HAC_E_GSM1900_Mid_Chan.da4

DUT: BlackBerry Smartphone; Type: Sample ; Serial: Not Specified

Program Name: HAC RF ER3D Device

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 21/01/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (11x11x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 15.4 V/m; Power Drift = 0.020 dB

Maximum value of Total (measured) = 28.6 V/m

E Scan - ER3D - 2007: 15 mm from Probe Center to the

Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 61.4 V/m

Probe Modulation Factor = 2.91

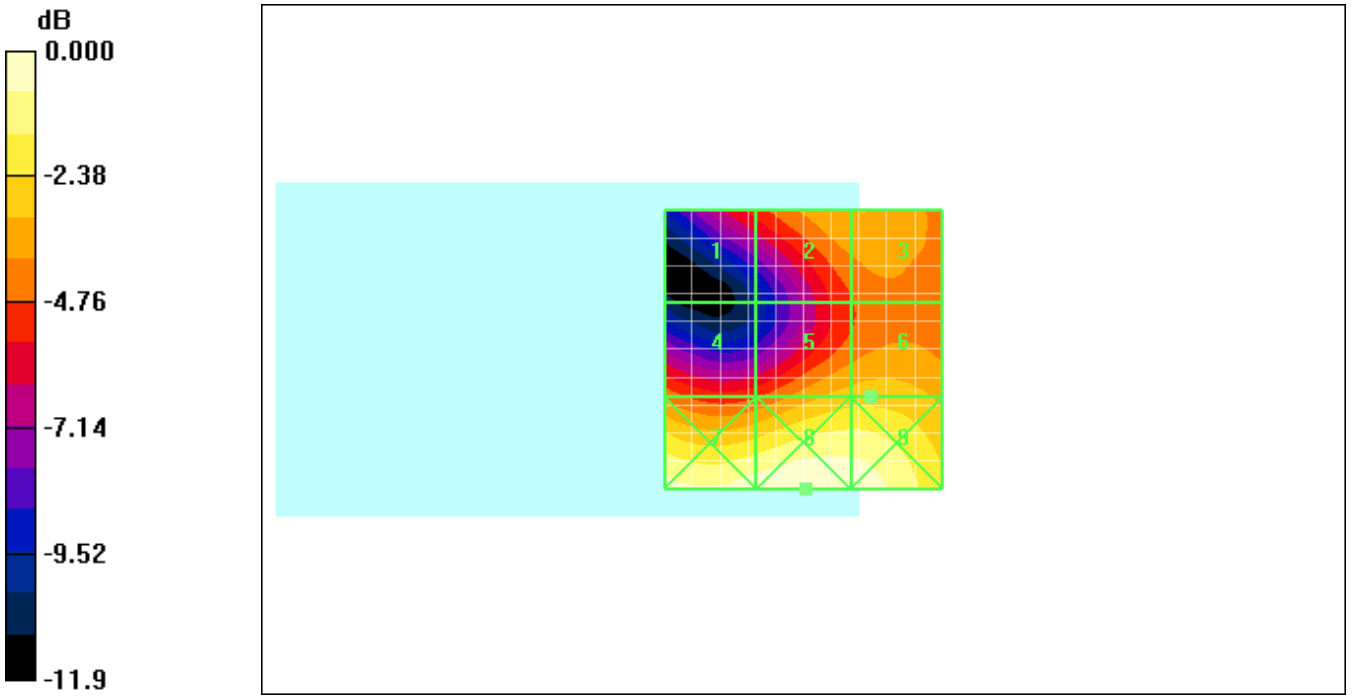
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 15.4 V/m; Power Drift = 0.020 dB

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

Peak E-field in V/m

Grid 1 **46.2** **M4**	Grid 2 **57.8** **M3**	Grid 3 **58.0** **M3**
Grid 4 **51.6** **M3**	Grid 5 **60.8** **M3**	Grid 6 **61.4** **M3**
Grid 7 **80.3** **M3**	Grid 8 **83.3** **M3**	Grid 9 **81.2** **M3**



0 dB = 83.3V/m

Date/Time: 29/07/2008 7:41:12 PM

Test Laboratory: RTS

File Name: HAC_E_GSM1900_High_Chan.da4

DUT: BlackBerry Smartphone; Type: Sample ; Serial: Not Specified

Program Name: HAC RF ER3D Device

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 21/01/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (11x11x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 16.7 V/m; Power Drift = -0.030 dB

Maximum value of Total (measured) = 29.3 V/m

E Scan - ER3D - 2007: 15 mm from Probe Center to the

Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 65.3 V/m

Probe Modulation Factor = 2.91

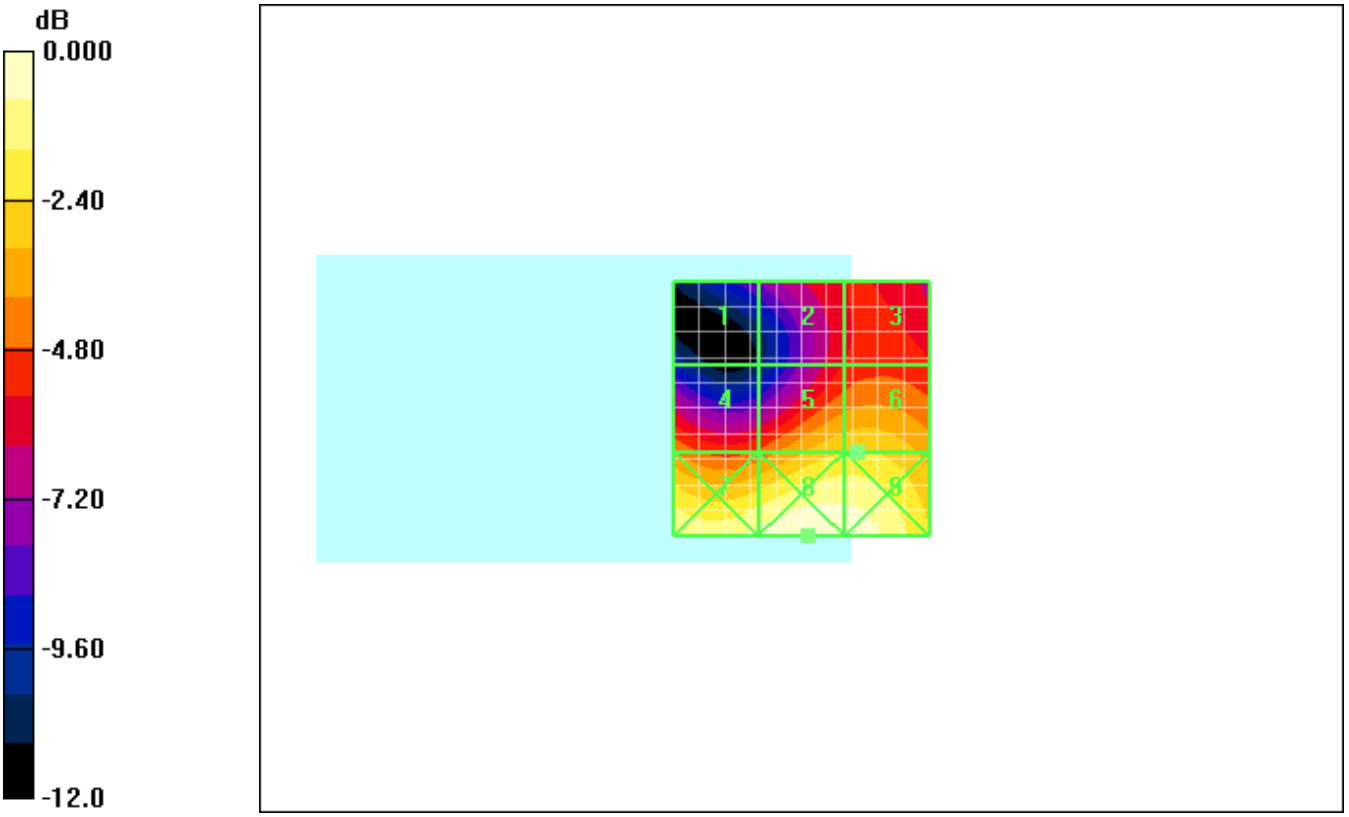
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 16.7 V/m; Power Drift = -0.030 dB

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

Peak E-field in V/m

Grid 1 **34.7** **M4**	Grid 2 **45.5** **M4**	Grid 3 **48.1** **M3**
Grid 4 **54.2** **M3**	Grid 5 **64.8** **M3**	Grid 6 **65.3** **M3**
Grid 7 **80.2** **M3**	Grid 8 **85.4** **M2**	Grid 9 **83.5** **M3**



0 dB = 85.4V/m

Date/Time: 29/07/2008 6:31:43 PM

Test Laboratory: RTS

File Name: HAC_H_GSM850_Low_Chan.da4

DUT: BlackBerry Smartphone; Type: Sample ; Serial: Not Specified

Program Name: HAC RF H3DV6 Device

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (11x11x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.072 A/m; Power Drift = 0.136 dB

Maximum value of Total (measured) = 0.140 A/m

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the

Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.365 A/m

Probe Modulation Factor = 2.73

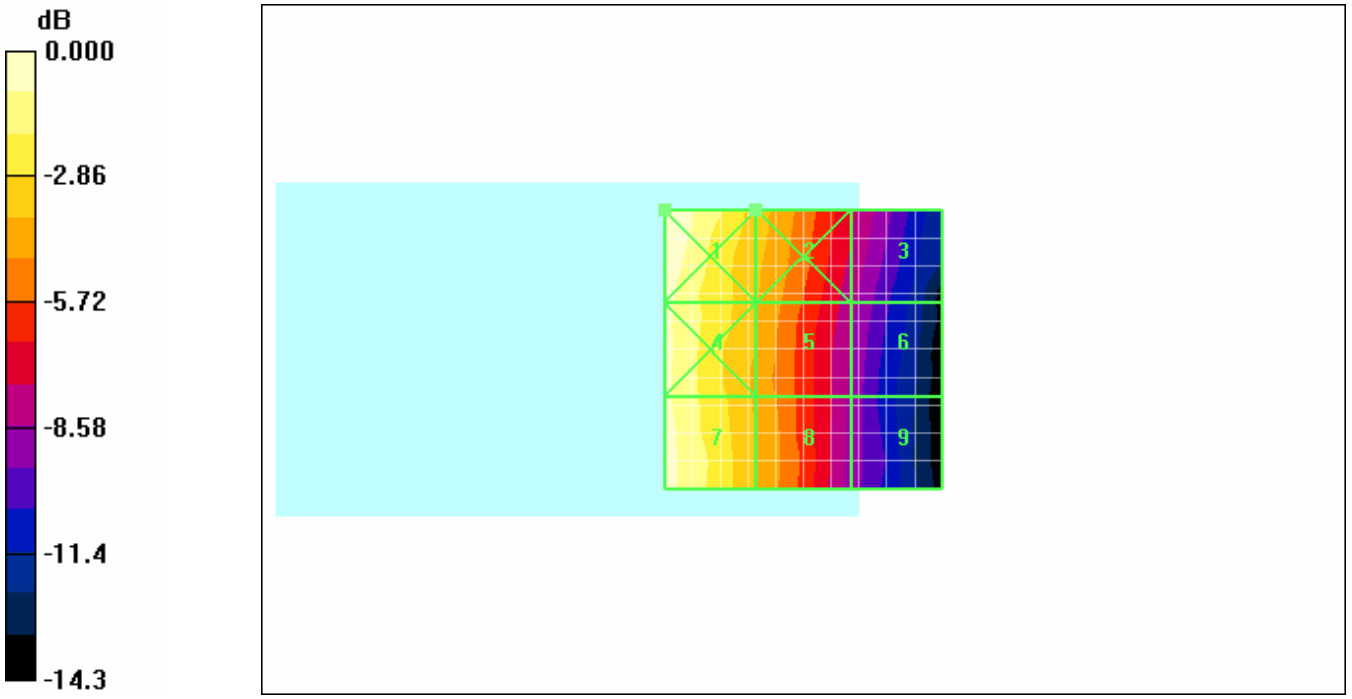
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.072 A/m; Power Drift = 0.136 dB

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

Peak H-field in A/m

Grid 1 **0.382** **M4**	Grid 2 **0.262** **M4**	Grid 3 **0.163** **M4**
Grid 4 **0.359** **M4**	Grid 5 **0.248** **M4**	Grid 6 **0.148** **M4**
Grid 7 **0.365** **M4**	Grid 8 **0.248** **M4**	Grid 9 **0.139** **M4**



0 dB = 0.382A/m

Date/Time: 29/07/2008 6:37:51 PM

Test Laboratory: RTS

File Name: HAC_H_GSM850_Mid_Chan.da4

DUT: BlackBerry Smartphone; Type: Sample ; Serial: Not Specified

Program Name: HAC RF H3DV6 Device

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (11x11x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.088 A/m; Power Drift = 0.325 dB

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

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the

Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.411 A/m

Probe Modulation Factor = 2.73

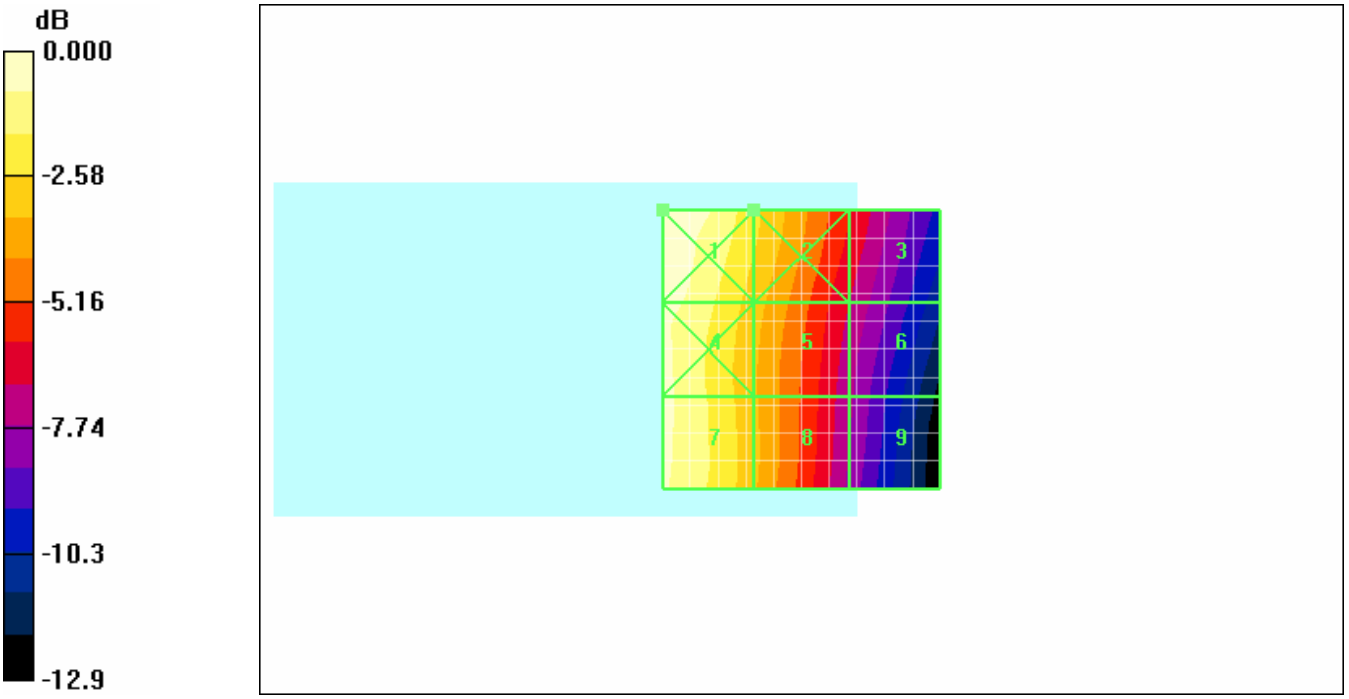
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.088 A/m; Power Drift = 0.325 dB

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

Peak H-field in A/m

Grid 1 **0.437** **M4**	Grid 2 **0.335** **M4**	Grid 3 **0.221** **M4**
Grid 4 **0.417** **M4**	Grid 5 **0.309** **M4**	Grid 6 **0.199** **M4**
Grid 7 **0.411** **M4**	Grid 8 **0.303** **M4**	Grid 9 **0.185** **M4**



0 dB = 0.437A/m

Date/Time: 29/07/2008 6:44:22 PM

Test Laboratory: RTS

File Name: HAC_H_GSM850_High_Chan.da4

DUT: BlackBerry Smartphone; Type: Sample ; Serial: Not Specified

Program Name: HAC RF H3DV6 Device

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (11x11x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.098 A/m; Power Drift = 0.105 dB

Maximum value of Total (measured) = 0.172 A/m

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the

Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.461 A/m

Probe Modulation Factor = 2.73

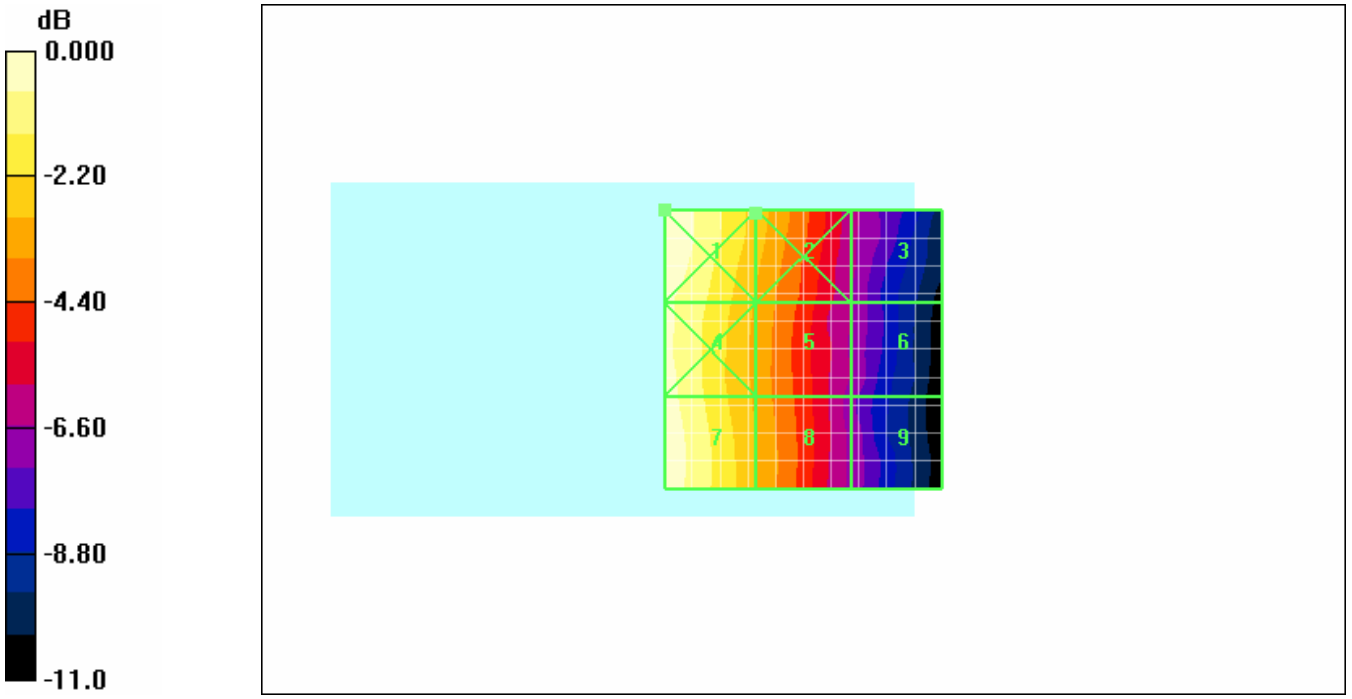
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.098 A/m; Power Drift = 0.105 dB

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

Peak H-field in A/m

Grid 1 **0.471** **M3**	Grid 2 **0.352** **M4**	Grid 3 **0.230** **M4**
Grid 4 **0.449** **M4**	Grid 5 **0.334** **M4**	Grid 6 **0.221** **M4**
Grid 7 **0.461** **M3**	Grid 8 **0.338** **M4**	Grid 9 **0.217** **M4**



0 dB = 0.471A/m

Date/Time: 29/07/2008 8:10:11 PM

Test Laboratory: RTS

File Name: HAC_H_GSM1900_Low_Chan.da4

DUT: BlackBerry Smartphone; Type: Sample ; Serial: Not Specified

Program Name: HAC RF H3DV6 Device

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (11x11x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.074 A/m; Power Drift = 0.004 dB

Maximum value of Total (measured) = 0.086 A/m

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the

Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.197 A/m

Probe Modulation Factor = 2.74

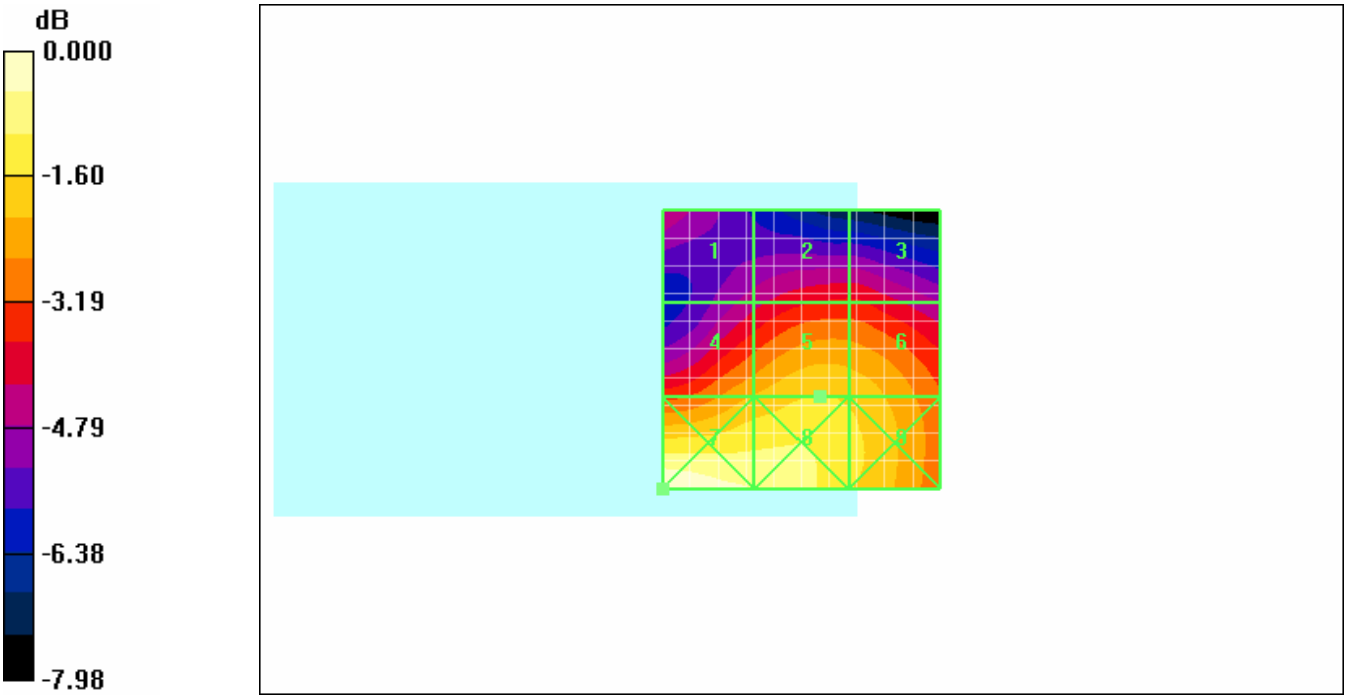
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.074 A/m; Power Drift = 0.004 dB

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

Peak H-field in A/m

Grid 1 **0.146** **M3**	Grid 2 **0.156** **M3**	Grid 3 **0.156** **M3**
Grid 4 **0.186** **M3**	Grid 5 **0.197** **M3**	Grid 6 **0.194** **M3**
Grid 7 **0.236** **M3**	Grid 8 **0.221** **M3**	Grid 9 **0.201** **M3**



0 dB = 0.236A/m

Date/Time: 29/07/2008 8:16:34 PM

Test Laboratory: RTS

File Name: HAC_H_GSM1900_Mid_Chan.da4

DUT: BlackBerry Smartphone; Type: Sample ; Serial: Not Specified

Program Name: HAC RF H3DV6 Device

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (11x11x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.079 A/m; Power Drift = 0.046 dB

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

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the

Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.215 A/m

Probe Modulation Factor = 2.74

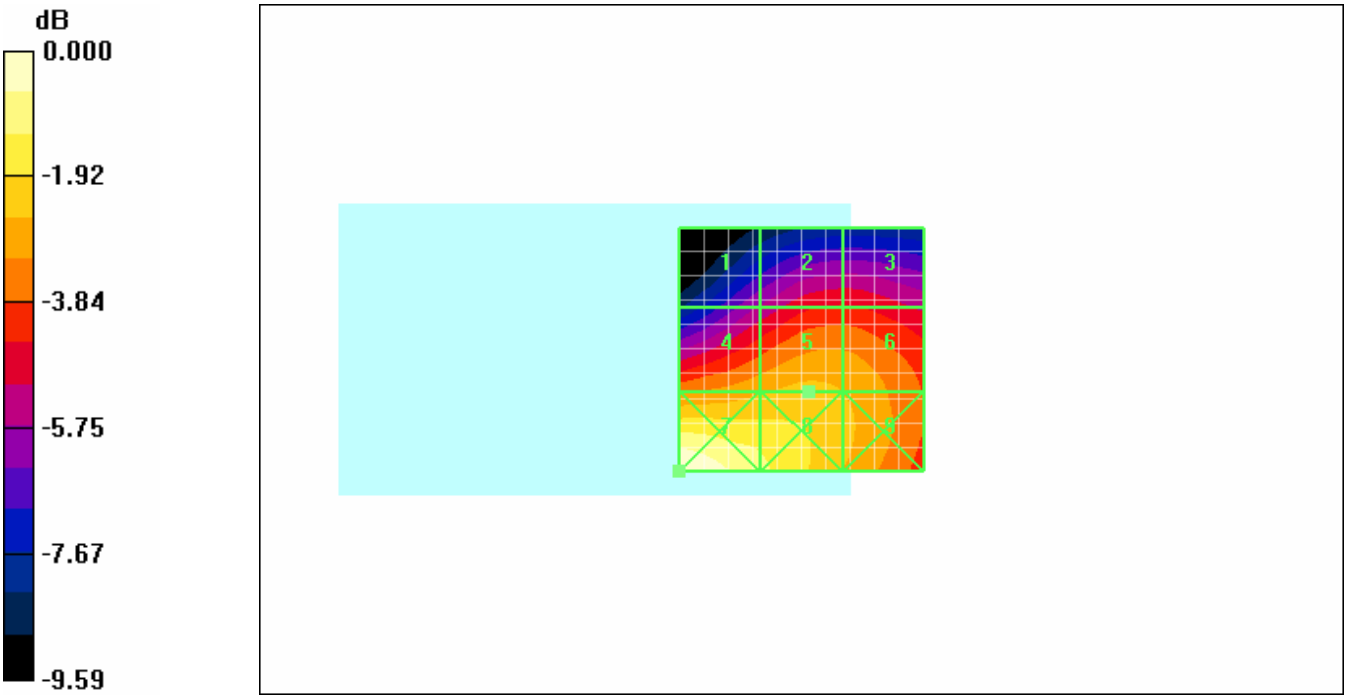
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.079 A/m; Power Drift = 0.046 dB

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

Peak H-field in A/m

Grid 1 **0.149** **M3**	Grid 2 **0.172** **M3**	Grid 3 **0.172** **M3**
Grid 4 **0.208** **M3**	Grid 5 **0.215** **M3**	Grid 6 **0.211** **M3**
Grid 7 **0.283** **M2**	Grid 8 **0.250** **M3**	Grid 9 **0.216** **M3**



0 dB = 0.283A/m

Date/Time: 29/07/2008 8:23:45 PM

Test Laboratory: RTS

File Name: HAC_H_GSM1900_High_Chan.da4

DUT: BlackBerry Smartphone; Type: Sample ; Serial: Not Specified

Program Name: HAC RF H3DV6 Device

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (11x11x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.077 A/m; Power Drift = -0.031 dB

Maximum value of Total (measured) = 0.113 A/m

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the

Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.219 A/m

Probe Modulation Factor = 2.74

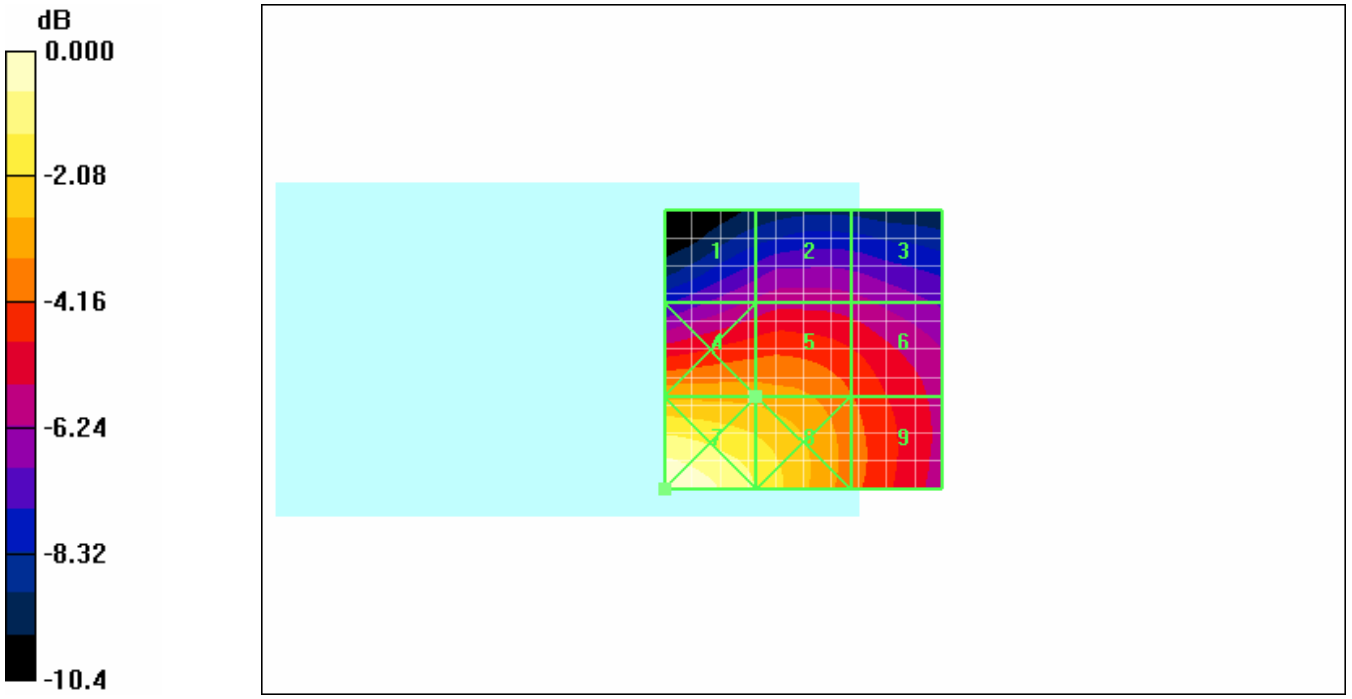
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.077 A/m; Power Drift = -0.031 dB

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

Peak H-field in A/m

Grid 1 **0.154** **M3**	Grid 2 **0.160** **M3**	Grid 3 **0.156** **M3**
Grid 4 **0.222** **M3**	Grid 5 **0.219** **M3**	Grid 6 **0.193** **M3**
Grid 7 **0.310** **M2**	Grid 8 **0.264** **M2**	Grid 9 **0.201** **M3**



0 dB = 0.310A/m

Date/Time: 25/06/2008 10:44:08 AM

Test Laboratory: RTS

File Name: HAC_E_Ambient Noise_835MHz.da4

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

Program Name: HAC RF E Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 21/01/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (5x37x1):

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

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.000 V/m; Power Drift = 999.0 dB

Maximum value of Total (measured) = 1.68 V/m

E Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 1.68 V/m

Probe Modulation Factor = 1.00

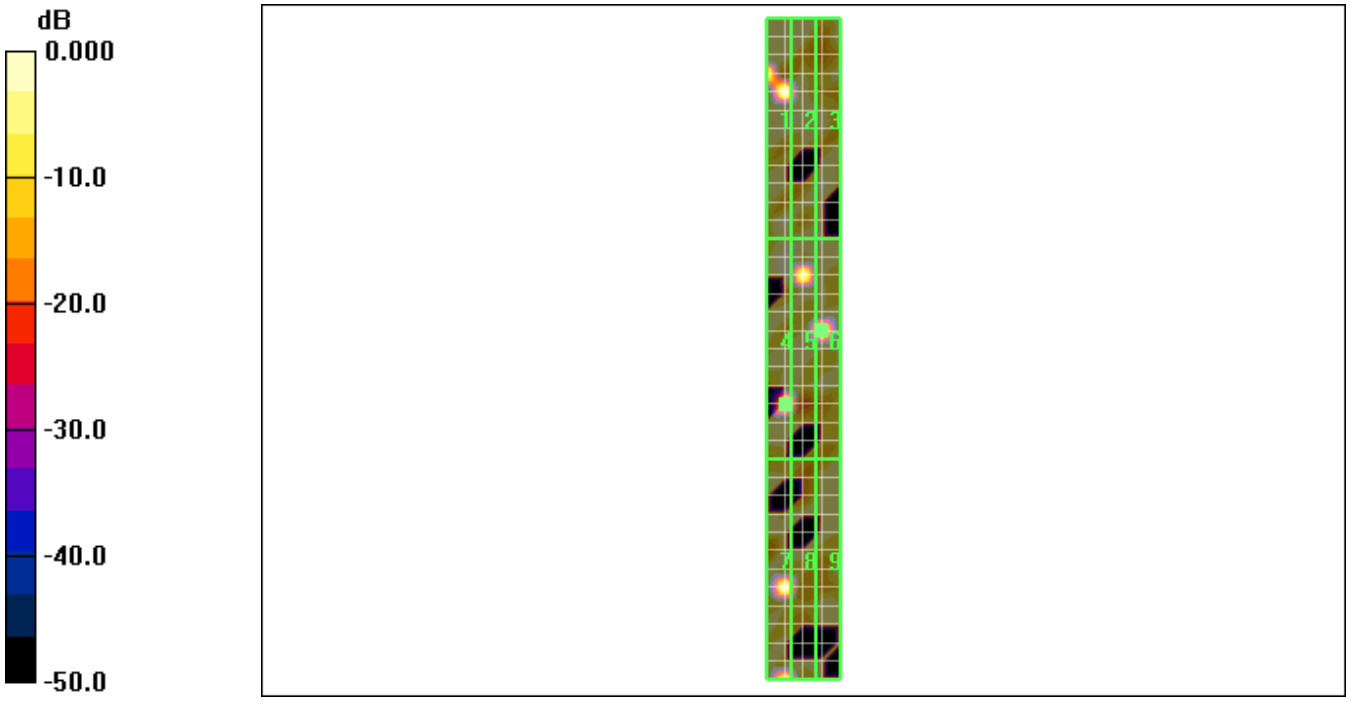
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.000 V/m; Power Drift = 999.0 dB

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

Peak E-field in V/m

Grid 1 **1.57** **M4**	Grid 2 **0.408** **M4**	Grid 3 **0.000** **M4**
Grid 4 **1.59** **M4**	Grid 5 **1.18** **M4**	Grid 6 **1.68** **M4**
Grid 7 **1.50** **M4**	Grid 8 **0.596** **M4**	Grid 9 **0.000** **M4**



0 dB = 1.68V/m

Date/Time: 25/06/2008 11:01:47 AM

Test Laboratory: RTS

File Name: HAC_E_Ambient Noise_1880MHz.da4

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

Program Name: HAC RF E Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1000 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 21/01/2008
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (5x37x1):

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

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.658 V/m; Power Drift = -0.581 dB

Maximum value of Total (measured) = 1.69 V/m

E Scan - measurement distance from the probe sensor center to

CD835 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 1.69 V/m

Probe Modulation Factor = 1.00

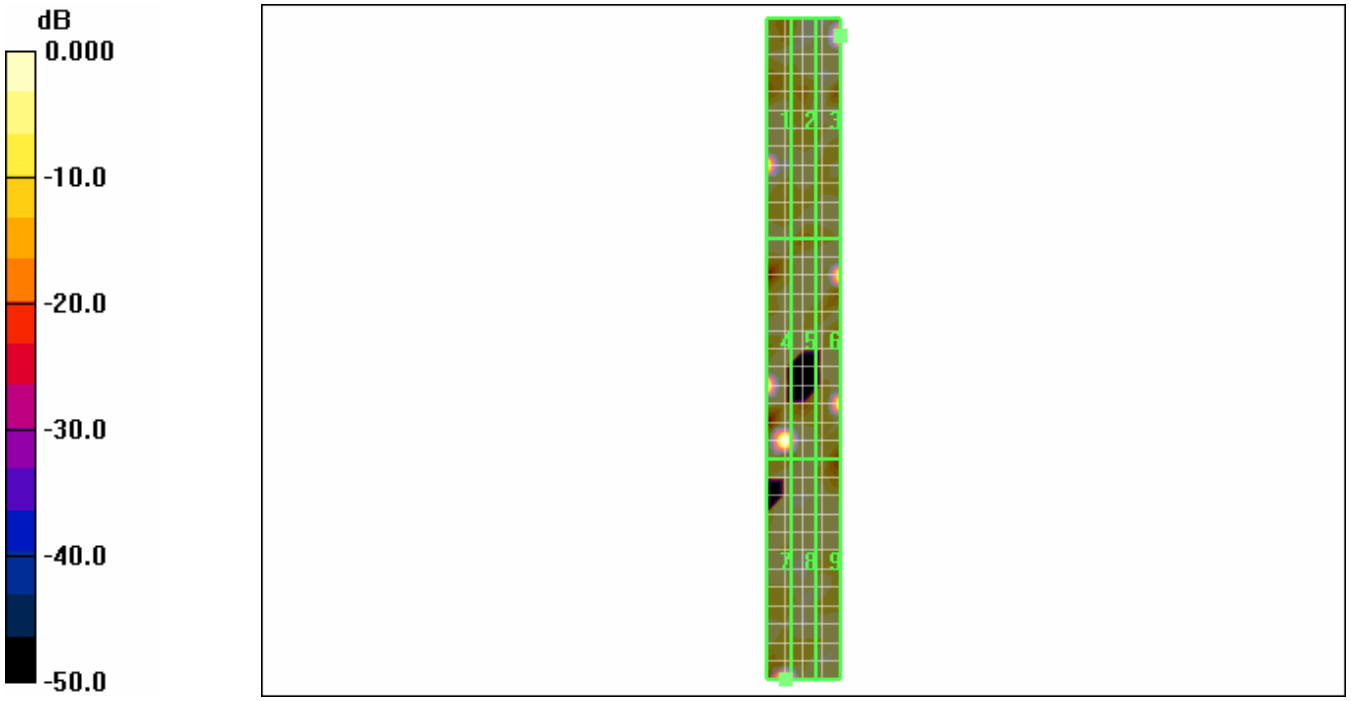
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.658 V/m; Power Drift = -0.581 dB

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

Peak E-field in V/m

Grid 1 **1.09** **M4**	Grid 2 **0.000** **M4**	Grid 3 **1.60** **M4**
Grid 4 **1.55** **M4**	Grid 5 **0.470** **M4**	Grid 6 **1.14** **M4**
Grid 7 **1.69** **M4**	Grid 8 **0.696** **M4**	Grid 9 **0.000** **M4**



0 dB = 1.69V/m

Date/Time: 25/06/2008 2:32:22 PM

Test Laboratory: RTS

File Name: HAC_H_Ambient Noise_835MHz.da4

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

Program Name: HAC RF H3DV6 Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (5x37x1):

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

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.003 A/m; Power Drift = 1.02 dB

Maximum value of Total (measured) = 0.007 A/m

H Scan - measurement distance from the probe sensor center to

CD835 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 0.007 A/m

Probe Modulation Factor = 1.00

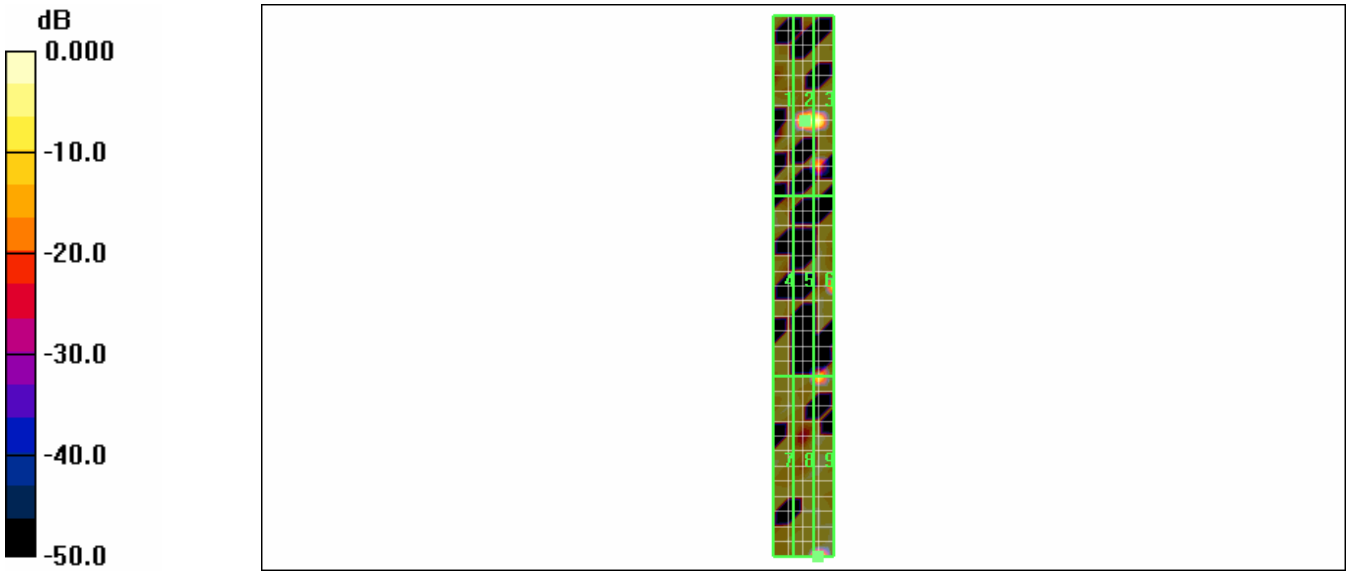
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.003 A/m; Power Drift = 1.02 dB

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

Peak H-field in A/m

Grid 1 **0.000** **M4**	Grid 2 **0.006** **M4**	Grid 3 **0.005** **M4**
Grid 4 **0.000** **M4**	Grid 5 **0.001** **M4**	Grid 6 **0.002** **M4**
Grid 7 **0.000** **M4**	Grid 8 **0.003** **M4**	Grid 9 **0.007** **M4**



0 dB = 0.007A/m

Date/Time: 25/06/2008 2:41:50 PM

Test Laboratory: RTS

File Name: HAC_H_Ambient Noise_1880MHz.da4

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

Program Name: HAC RF H3DV6 Dipole

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

Medium parameters used: s = 0 mho/m, e_r = 1; density = 1 kg/m^3

Phantom section: E Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6105; ; Calibrated: 09/11/2007
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 05/03/2008
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (5x37x1):

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

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.001 A/m; Power Drift = 2.15 dB

Maximum value of Total (measured) = 0.003 A/m

H Scan - measurement distance from the probe sensor center to

CD835 Dipole = 10mm/Hearing Aid Compatibility Test

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

Maximum value of peak Total field = 0.004 A/m

Probe Modulation Factor = 1.00

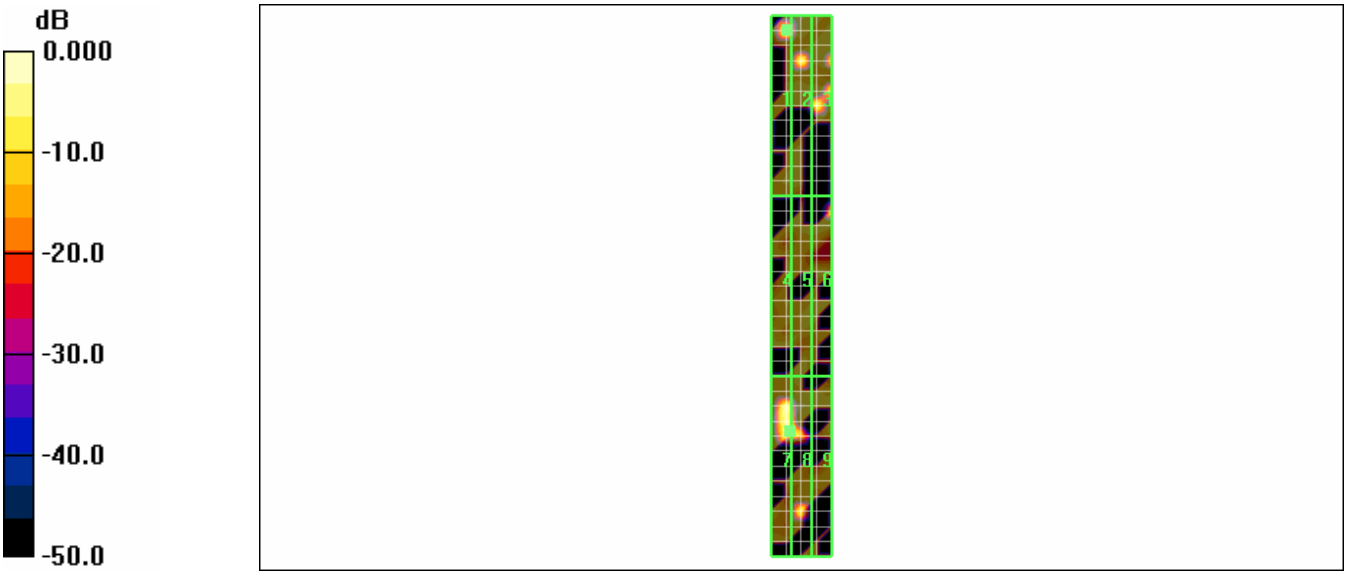
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.001 A/m; Power Drift = 2.15 dB

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

Peak H-field in A/m

Grid 1 **0.003** **M4**	Grid 2 **0.002** **M4**	Grid 3 **0.002** **M4**
Grid 4 **0.000** **M4**	Grid 5 **0.000** **M4**	Grid 6 **0.002** **M4**
Grid 7 **0.004** **M4**	Grid 8 **0.003** **M4**	Grid 9 **0.000** **M4**



0 dB = 0.004A/m