Testing Services™	Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RCM71UW			Page 1 (191)
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Daoud Attayi	July 03-Aug 11, 2009 RTS-1689-0908-37 L6ARCM70			JW

Annex A: Measurement data and plots

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



0 Hz Span CW Plot (835MHz)





0 Hz Span 80% AM Plot (835MHz)





0 Hz Span GSM (835MHz)

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Daoud Attayi	July 03-Aug 11, 2009	RTS-1689-0908-37	L6ARCM70U	W



0 Hz Span CW Plot (1880MHz)





0 Hz Span 80% AM Plot (1880MHz)

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Daoud Attayi	July 03-Aug 11, 2009	RTS-1689-0908-37	L6ARCM70U	JW
	· · · ·	•		



0 Hz Span GSM (1880MHz)





0 Hz Span CW Plot (835MHz)



0 Hz Span 80% AM Plot (835MHz)

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0 Hz Span WCDMA (835MHz)

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Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	July 03-Aug 11, 2009	RTS-1689-0908-37	L6ARCM70U	W



0 Hz Span CW Plot (1880MHz)



0 Hz Span 80% AM Plot (1880MHz)



0 Hz Span WCDMA (1880MHz)

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A.2 Dipole validation and probe modulation factor plots

Date/Time: 11/08/2009 9:12:23 AM

Test Laboratory: RTS

File Name: <u>HAC_E_Dipole_CW835_20.00dBm.da4</u>

DUT: HAC-Dipole 835 MHz; Type: D835V3;

Program Name: HAC RF E Dipole

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: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 102.2 V/m; Power Drift = 0.093 dB Maximum value of Total (measured) = 160.7 V/m



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

Maximum value of peak Total field = 162.8 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 102.2 V/m; Power Drift = 0.093 dB

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

Grid 1	Grid 2	Grid 3
147.2 M4	158.1 M4	158.0 M4
Grid 4	Grid 5	Grid 6
83.4 M4	85.2 M4	83.5 M4
Grid 7	Grid 8	Grid 9
162.6 M4	162.8 M4	142.8 M4

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Daoud Attayi	July 03-Aug 11, 2009	RTS-1689-0908-37	L6ARCM70U	JW







Date/Time: 03/07/2009 10:28:16 AM

Test Laboratory: RTS

File Name: <u>HAC_E_Dipole_835MHz_CW.da4</u>

DUT: HAC-Dipole 835 MHz; Type: D835V3;

Program Name: HAC RF E Dipole

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: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 104.4 V/m; Power Drift = 0.112 dB Maximum value of Total (measured) = 163.1 V/m



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

Maximum value of peak Total field = 164.3 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 104.4 V/m; Power Drift = 0.112 dB

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

Grid 1	Grid 2	Grid 3
154.1 M4	162.8 M4	161.9 M4
Grid 4	Grid 5	Grid 6
85.4 M4	87.1 M4	84.8 M4
Grid 7	Grid 8	Grid 9
161.9 M4	164.3 M4	152.0 M4

Testing Services™	Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RCM71UW			Page 19 (191)
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 $0 \ dB = 164.3 V/m$

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Date/Time: 06/07/2009 2:40:33 PM

Test Laboratory: RTS

File Name: <u>HAC_E_Dipole_835MHz_CW_GSM_mod.da4</u>

DUT: HAC-Dipole 835 MHz; Type: D835V3;

Program Name: HAC RF E Dipole

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: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 103.1 V/m; Power Drift = 0.054 dB Maximum value of Total (measured) = 161.1 V/m



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

Maximum value of peak Total field = 161.5 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 103.1 V/m; Power Drift = 0.054 dB

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

Grid 1	Grid 2	Grid 3
149.5 M4	155.9 M4	154.5 M4
Grid 4	Grid 5	Grid 6
84.1 M4	85.4 M4	82.2 M4
Grid 7	Grid 8	Grid 9
158.0 M4	161.5 M4	153.8 M4





Date/Time: 06/07/2009 2:48:36 PM

Test Laboratory: RTS

File Name: <u>HAC_E_Dipole_835MHz_AM80%.da4</u>

DUT: HAC-Dipole 835 MHz; Type: D835V3;

Program Name: HAC RF E Dipole

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

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 65.7 V/m; Power Drift = 0.070 dB Maximum value of Total (measured) = 102.1 V/m



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

Maximum value of peak Total field = 102.3 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 65.7 V/m; Power Drift = 0.070 dB

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

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
93.9 M4	97.9 M4	97.5 M4
Grid 4	Grid 5	Grid 6
53.7 M4	54.3 M4	52.5 M4
Grid 7	Grid 8	Grid 9
99.9 M4	102.3 M4	98.2 M4

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Date/Time: 06/07/2009 1:52:10 PM

Test Laboratory: RTS

File Name: <u>HAC_E_Dipole_835MHz_GSM_mod.da4</u>

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 36.4 V/m; Power Drift = -0.142 dB Maximum value of Total (measured) = 55.9 V/m



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

Maximum value of peak Total field = 56.2 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 36.4 V/m; Power Drift = -0.142 dB

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

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
52.4 M4	55.2 M4	54.8 M4
Grid 4	Grid 5	Grid 6
29.2 M4	29.7 M4	28.7 M4
Grid 7	Grid 8	Grid 9
55.0 M4	56.2 M4	52.8 M4

Cursor:

Total = 56.2 V/m E Category: M4 Location: 1, 79.5, 4.7 mm





Date/Time: 21/08/2009 10:06:33 AM

Test Laboratory: RTS

File Name: <u>HAC_E_Dipole_835MHz_CW_WCDMA_mod.da4</u>

DUT: HAC-Dipole 835 MHz; Type: D835V3;

Program Name: HAC RF E Dipole

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: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 34.6 V/m; Power Drift = 0.012 dB Maximum value of Total (measured) = 53.7 V/m



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

Maximum value of peak Total field = 54.2 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 34.6 V/m; Power Drift = 0.012 dB

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

Grid 1	Grid 2	Grid 3
48.6 M4	51.3 M4	51.1 M4
Grid 4	Grid 5	Grid 6
27.1 M4	27.5 M4	26.6 M4
Grid 7	Grid 8	Grid 9
53.4 M4	54.2 M4	49.7 M4





Date/Time: 21/08/2009 10:16:03 AM

Test Laboratory: RTS

File Name: <u>HAC_E_Dipole_835MHz_AM80%_WCDMA.da4</u>

DUT: HAC-Dipole 835 MHz; Type: D835V3;

Program Name: HAC RF E Dipole

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

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 21.7 V/m; Power Drift = -0.014 dB Maximum value of Total (measured) = 33.4 V/m



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

Maximum value of peak Total field = 33.8 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 21.7 V/m; Power Drift = -0.014 dB

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

Grid 1	Grid 2	Grid 3
30.4 M4	32.1 M4	31.9 M4
Grid 4	Grid 5	Grid 6
17 1 MA	17 A MA	16 8 M4
1/.1 1/14	1/.4 1/14	10.0 114
Grid 7	Grid 8	Grid 9

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Daoud Attayi	July 03-Aug 11, 2009	RTS-1689-0908-37	L6ARCM70U	JW



0 dB = 33.8 V/m

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Date/Time: 21/08/2009 9:55:47 AM

Test Laboratory: RTS

File Name: <u>HAC_E_Dipole_835MHz_WCDMA_mod.da4</u>

DUT: HAC-Dipole 835 MHz; Type: D835V3;

Program Name: HAC RF E Dipole

Communication System: WCDMA FDD V; Frequency: 836.4 MHz;Duty Cycle:

1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 36.8 V/m; Power Drift = -0.062 dB Maximum value of Total (measured) = 56.4 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 = 57.3 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 36.8 V/m; Power Drift = -0.062 dB

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

Grid 1	Grid 2	Grid 3
51.8 M4	55.0 M4	54.8 M4
Grid 4	Grid 5	Grid 6
29.0 M4	29.6 M4	28.8 M4
Grid 7	Grid 8	Grid 9
56.9 M4	57.3 M4	51.8 M4




Date/Time: 11/08/2009 9:21:32 AM

Test Laboratory: RTS

File Name: <u>HAC_E_Dipole_CW1880_20.00dBm.da4</u>

DUT: HAC Dipole 1880 MHz; Type: CD1880V3;

Program Name: HAC RF E Dipole

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: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 149.6 V/m; Power Drift = -0.059 dB Maximum value of Total (measured) = 127.9 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 = 129.5 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 149.6 V/m; Power Drift = -0.059 dB

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

Grid 1	Grid 2	Grid 3
121.5 M2	126.5 M2	125.1 M2
Grid 4	Grid 5	Grid 6
85.1 M3	88.0 M3	84.9 M3
Grid 7	Grid 8	Grid 9
125.0 M2	129.5 M2	123.9 M2







Date/Time: 03/07/2009 11:15:10 AM

Test Laboratory: RTS

File Name: <u>HAC_E_Dipole_1880MHz_CW.da4</u>

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Program Name: HAC RF E Dipole

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: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 143.7 V/m; Power Drift = 0.004 dB Maximum value of Total (measured) = 126.1 V/m

E Scan - measurement distance from the probe sensor center to



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

Maximum value of peak Total field = 128.4 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 143.7 V/m; Power Drift = 0.004 dB

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

Grid 1	Grid 2	Grid 3
122.6 M2	126.3 M2	124.1 M2
Grid 4	Grid 5	Grid 6
86.4 M3	88.5 M3	85.4 M3
Grid 7	Grid 8	Grid 9
121.8 M2	128.4 M2	126.4 M2







Date/Time: 06/07/2009 1:23:02 PM

Test Laboratory: RTS

File Name: <u>HAC_E_Dipole_1880MHz_CW_GSM_mod.da4</u>

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Program Name: HAC RF E Dipole

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: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 111.8 V/m; Power Drift = -0.011 dB Maximum value of Total (measured) = 98.3 V/m

E Scan - measurement distance from the probe sensor center to



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

Maximum value of peak Total field = 100.0 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 111.8 V/m; Power Drift = -0.011 dB

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

Peak E-field in V/mGrid 1Grid 2Grid 391.9 M397.3 M397.1 M3Grid 4Grid 5Grid 665.6 M367.8 M366.5 M3

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Date/Time: 06/07/2009 1:28:37 PM

Test Laboratory: RTS

File Name: <u>HAC_E_Dipole_1880MHz_AM80%.da4</u>

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Program Name: HAC RF E Dipole

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

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 70.9 V/m; Power Drift = 0.028 dB Maximum value of Total (measured) = 62.5 V/m

E Scan - measurement distance from the probe sensor center to



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

Maximum value of peak Total field = 63.6 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 70.9 V/m; Power Drift = 0.028 dB

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

 Grid 1
 Grid 2
 Grid 3

 58.3 M4
 61.8 M4
 61.7 M4

 Grid 4
 Grid 5
 Grid 6

 41.8 M4
 43.2 M4
 42.5 M4







Date/Time: 06/07/2009 1:07:30 PM

Test Laboratory: RTS

File Name: <u>HAC_H_Dipole_1880MHz_GSM_mod.da4</u>

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 18.2 V/m; Power Drift = -0.071 dB Maximum value of Total (measured) = 35.3 V/m

H Scan - measurement distance from the probe sensor center to



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

Maximum value of peak Total field = 35.9 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 18.2 V/m; Power Drift = -0.071 dB

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

Grid 1	Grid 2	Grid 3
32.3 M4	34.2 M4	34.1 M4
Grid 4	Grid 5	Grid 6
22.6 M4	23.5 M4	22.9 M4
Grid 7	Grid 8	Grid 9
34.7 M4	35.9 M4	34.3 M4

Peak E-field in V/m

Cursor:

Total = 35.9 V/m E Category: M4 Location: 0, 38, 4.2 mm

Testing Services™	Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RCM71UW			Page 52 (191)
Author Data	Dates of Test Report No FCC ID			
Daoud Attayi	July 03-Aug 11, 2009	RTS-1689-0908-37	L6ARCM70U	JW



Date/Time: 21/08/2009 9:39:51 AM

Test Laboratory: RTS

File Name: <u>HAC_E_Dipole_1880MHz_CW_WCDMA_mod.da4</u>

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Program Name: HAC RF E Dipole

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: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 44.0 V/m; Power Drift = 0.000 dB Maximum value of Total (measured) = 38.5 V/m

E Scan - measurement distance from the probe sensor center to



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

Maximum value of peak Total field = 39.8 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 44.0 V/m; Power Drift = 0.000 dB

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

Grid 1	Grid 2	Grid 3
37.0 M4	37.2 M4	35.2 M4
Grid 4	Grid 5	Grid 6
26.4 M4	26.5 M4	24.9 M4
26.4 M4 Grid 7	26.5 M4 Grid 8	24.9 M4 Grid 9







Date/Time: 21/08/2009 9:45:40 AM

Test Laboratory: RTS

File Name: <u>HAC_E_Dipole_1880MHz_AM80%_WCDMA.da4</u>

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Program Name: HAC RF E Dipole

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

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 28.1 V/m; Power Drift = 0.083 dB Maximum value of Total (measured) = 24.7 V/m

E Scan - measurement distance from the probe sensor center to



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

Maximum value of peak Total field = 25.5 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 28.1 V/m; Power Drift = 0.083 dB

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

Grid 1	Grid 2	Grid 3
23.8 M4	23.9 M4	22.7 M4
Grid 4	Grid 5	Grid 6
16.9 M4	17.0 M4	16.0 M4
Grid 7	Grid 8	Grid 9
23.4 M4	25.5 M4	25.4 M4





Date/Time: 21/08/2009 9:12:23 AM

Test Laboratory: RTS

File Name: <u>HAC_E_Dipole_1880MHz_WCDMA_mod.da4</u>

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Program Name: HAC RF H3DV6 Dipole

Communication System: WCDMA FDD II; Frequency: 1880 MHz; Duty Cycle: 1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 22.0 V/m; Power Drift = -0.011 dB Maximum value of Total (measured) = 43.1 V/m

H Scan - measurement distance from the probe sensor center to



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

Maximum value of peak Total field = 43.6 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 22.0 V/m; Power Drift = -0.011 dB

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

Grid 1	Grid 2	Grid 3
39.5 M4	41.0 M4	40.6 M4
Grid 4	Grid 5	Grid 6
27.7 M4	28.4 M4	27.4 M4
Grid 7	Grid 8	Grid 9
42.2 M4	43.6 M4	41.7 M4







Date/Time: 11/08/2009 10:02:03 AM

Test Laboratory: RTS

File Name: <u>HAC_H_Dipole_CW835_20.00dBm.da4</u>

DUT: HAC-Dipole 835 MHz; Type: D835V3; Program Name: HAC RF H3DV6 Dipole

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: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (5x13x1): Measurement grid: dx=5mm, dy=5mm Probe Modulation Factor = 1.00 Device Reference Point: 0.000, 0.000, -6.30 mm Reference Value = 0.475 A/m; Power Drift = 0.081 dB Maximum value of Total (measured) = 0.455 A/m

H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x121x1):



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

Maximum value of peak Total field = 0.455 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.475 A/m; Power Drift = 0.081 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.416 M4	0.435 M4	0.423 M4
Grid 4	Grid 5	Grid 6
0.433 M4	0.455 M4	0.432 M4
Grid 7	Grid 8	Grid 9
0.433 M4	0.454 M4	0.428 M4



-4.02

 $0 \ dB = 0.455 A/m$

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Date/Time: 03/07/2009 11:53:55 AM

Test Laboratory: RTS

File Name: <u>HAC_H_Dipole_835MHz_CW.da4</u>

DUT: HAC-Dipole 835 MHz; Type: D835V3; Program Name: HAC RF H3DV6 Dipole

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: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 0.490 A/m; Power Drift = 0.066 dB Maximum value of Total (measured) = 0.463 A/m

H Scan - measurement distance from the probe sensor center to



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

Maximum value of peak Total field = 0.463 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.490 A/m; Power Drift = 0.066 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.381 M4	0.400 M4	0.384 M4
Grid 4	Grid 5	Grid 6
0.444 M4	0.463 M4	0.438 M4
Grid 7	Grid 8	Grid 9
0.403 M4	0.410 M4	0.377 M4

Testing Services ^{**}	Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RCM71UW			Page 67 (191)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	July 03-Aug 11, 2009	RTS-1689-0908-37	L6ARCM70U	JW



 $0 \ dB = 0.463 \text{A/m}$

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Date/Time: 20/08/2009 12:30:34 PM

Test Laboratory: RTS

File Name: <u>HAC_H_Dipole_835MHz_CW_GSM_mod.da4</u>

DUT: HAC-Dipole 835 MHz; Type: D835V3;

Program Name: HAC RF H3DV6 Dipole

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: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - measurement distance from the probe sensor center to CD835 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, -6.30 mm Reference Value = 0.463 A/m; Power Drift = -0.039 dB Maximum value of Total (measured) = 0.434 A/m

H Scan - measurement distance from the probe sensor center to



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

Maximum value of peak Total field = 0.435 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.463 A/m; Power Drift = -0.039 dB

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

Grid 1	Grid 2	Grid 3
0.397 M4	0.414 M4	0.395 M4
Grid 4	Grid 5	Grid 6
0.423 M4	0.435 M4	0.405 M4
Grid 7	Grid 8	Grid 9
0.419 M4	0.428 M4	0.391 M4

Peak H-field in A/m







Date/Time: 20/08/2009 12:35:15 PM

Test Laboratory: RTS

File Name: <u>HAC_H_Dipole_835MHz_AM80%_mod.da4</u>

DUT: HAC-Dipole 835 MHz; Type: D835V3;

Program Name: HAC RF H3DV6 Dipole

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

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - measurement distance from the probe sensor center to CD835 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, -6.30 mm Reference Value = 0.300 A/m; Power Drift = 0.005 dB Maximum value of Total (measured) = 0.283 A/m

H Scan - measurement distance from the probe sensor center to



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

Maximum value of peak Total field = 0.284 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.300 A/m; Power Drift = 0.005 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.260 M4	0.270 M4	0.256 M4
Grid 4	Grid 5	Grid 6
0.276 M4	0.284 M4	0.263 M4
Grid 7	Grid 8	Grid 9
0.274 M4	0.279 M4	0.254 M4






Date/Time: 20/08/2009 11:45:42 AM

Test Laboratory: RTS

File Name: <u>HAC_H_Dipole_835MHz_GSM_mod.da4</u>

DUT: HAC-Dipole 835 MHz; Type: D835V3;

Program Name: HAC RF H3DV6 Dipole

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: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - measurement distance from the probe sensor center to CD835 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, -6.30 mm Reference Value = 0.168 A/m; Power Drift = 0.139 dB Maximum value of Total (measured) = 0.156 A/m



CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1):

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

Maximum value of peak Total field = 0.157 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.168 A/m; Power Drift = 0.139 dB

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

Grid 1	Grid 2	Grid 3
0.142 M4	0.149 M4	0.142 M4
Grid 4	Grid 5	Grid 6
0.152 M4	0.157 M4	0.145 M4







Date/Time: 20/08/2009 12:41:18 PM

Test Laboratory: RTS

File Name: <u>HAC_H_Dipole_835MHz_CW_WCDMA_mod.da4</u>

DUT: HAC-Dipole 835 MHz; Type: D835V3;

Program Name: HAC RF H3DV6 Dipole

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: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - measurement distance from the probe sensor center to CD835 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, -6.30 mm Reference Value = 0.187 A/m; Power Drift = -0.006 dB Maximum value of Total (measured) = 0.176 A/m



CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1):

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

Maximum value of peak Total field = 0.177 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.187 A/m; Power Drift = -0.006 dB

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

Grid 1	Grid 2	Grid 3
0.162 M4	0.169 M4	0.160 M4
Grid 4	Grid 5	Grid 6
0.172 M4	0.177 M4	0.164 M4
Grid 7	Grid 8	Grid 9
0.171 M4	0.174 M4	0.159 M4





0 dB = 0.177 A/m

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Date/Time: 20/08/2009 12:50:59 PM

Test Laboratory: RTS

File Name: <u>HAC_H_Dipole_835MHz_AM80%_WCDMA_mod.da4</u>

DUT: HAC-Dipole 835 MHz; Type: D835V3;

Program Name: HAC RF H3DV6 Dipole

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

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - measurement distance from the probe sensor center to CD835 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, -6.30 mm Reference Value = 0.119 A/m; Power Drift = 0.084 dB Maximum value of Total (measured) = 0.113 A/m



CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1):

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

Maximum value of peak Total field = 0.113 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.119 A/m; Power Drift = 0.084 dB

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

Grid 1	Grid 2	Grid 3
0.105 M4	0.108 M4	0.103 M4
Grid 4	Grid 5	Grid 6
0.111 M4	0.113 M4	0.105 M4
Grid 7	Grid 8	Grid 9
0.110 M4	0.112 M4	0.102 M4







Date/Time: 20/08/2009 12:05:17 PM

Test Laboratory: RTS

File Name: <u>HAC_H_Dipole_835MHz_WCDMA_mod.da4</u>

DUT: HAC-Dipole 835 MHz; Type: D835V3;

Program Name: HAC RF H3DV6 Dipole

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: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - measurement distance from the probe sensor center to CD835 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, -6.30 mm Reference Value = 0.169 A/m; Power Drift = 0.013 dB Maximum value of Total (measured) = 0.159 A/m



CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1):

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

Maximum value of peak Total field = 0.160 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.169 A/m; Power Drift = 0.013 dB

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

Grid 1	Grid 2	Grid 3
0.146 M4	0.152 M4	0.145 M4
Grid 4	Grid 5	Grid 6
0.156 M4	0.160 M4	0.148 M4
Grid 7	Grid 8	Grid 9
0.154 M4	0.157 M4	0.143 M4







Date/Time: 11/08/2009 11:47:11 AM

Test Laboratory: RTS

File Name: HAC_H_Dipole_CW1880_20.00dBm.da4

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Program Name: HAC RF H3DV6 Dipole

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: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (5x13x1): Measurement grid: dx=5mm, dy=5mm Probe Modulation Factor = 1.00 Device Reference Point: 0.000, 0.000, -6.30 mm Reference Value = 0.493 A/m; Power Drift = -0.077 dB Maximum value of Total (measured) = 0.451 A/m

H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x121x1):



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

Maximum value of peak Total field = 0.451 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.493 A/m; Power Drift = -0.077 dB

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

Grid 1	Grid 2	Grid 3
0.415 M2	0.433 M2	0.418 M2
Grid 4	Grid 5	Grid 6
0.433 M2	0.451 M2	0.435 M2
Grid 7	Grid 8	Grid 9
0.422 M2	0.436 M2	0.415 M2







Date/Time: 03/07/2009 11:34:22 AM

Test Laboratory: RTS

File Name: <u>HAC_H_Dipole_1880MHz_CW.da4</u>

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Program Name: HAC RF H3DV6 Dipole

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: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 0.474 A/m; Power Drift = -0.032 dB Maximum value of Total (measured) = 0.444 A/m



CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1):

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

Maximum value of peak Total field = 0.444 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.474 A/m; Power Drift = -0.032 dB

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

Grid 1	Grid 2	Grid 3
0.389 M2	0.403 M2	0.386 M2
Grid 4	Grid 5	Grid 6
0.427 M2	0.444 M2	0.424 M2
Grid 7	Grid 8	Grid 9
0.393 M2	0.406 M2	0.382 M2







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Date/Time: 20/08/2009 2:28:28 PM

Test Laboratory: RTS

File Name: <u>HAC_H_Dipole_1880MHz_CW_GSM_mod.da4</u>

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Program Name: HAC RF H3DV6 Dipole

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: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm Reference Value = 0.376 A/m; Power Drift = 0.000 dB Maximum value of Total (measured) = 0.355 A/m



CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1):

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

Maximum value of peak Total field = 0.355 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.376 A/m; Power Drift = 0.000 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.308 M3	0.322 M3	0.306 M3
Grid 4	Grid 5	Grid 6
0.344 M2	0.355 M2	0.334 M3
Grid 7	Grid 8	Grid 9
0.317 M3	0.325 M3	0.300 M3

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Date/Time: 20/08/2009 2:36:17 PM

Test Laboratory: RTS

File Name: <u>HAC_H_Dipole_1880MHz_AM80%_GSM_mod.da4</u>

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Program Name: HAC RF H3DV6 Dipole

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

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (5x11x1): Measurement grid: dx=5mm, dy=5mm Probe Modulation Factor = 1.00 Device Reference Point: 0.000, 0.000, -6.30 mm Reference Value = 0.251 A/m; Power Drift = 0.011 dB Maximum value of Total (measured) = 0.237 A/m



CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x101x1):

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

Maximum value of peak Total field = 0.237 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.251 A/m; Power Drift = 0.011 dB

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

Grid 3 Grid 1 Grid 2 0.219 M3 0.230 M3 0.216 M3 Grid 4 Grid 5 Grid 6 0.229 M3 0.237 M3 0.221 M3 Grid 7 Grid 8 Grid 9 0.224 M3 0.231 M3 0.212 M3







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Date/Time: 20/08/2009 1:33:06 PM

Test Laboratory: RTS

File Name: <u>HAC_H_Dipole_1880MHz_GSM_mod.da4</u>

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Program Name: HAC RF H3DV6 Dipole

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: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (5x11x1): Measurement grid: dx=5mm, dy=5mm Probe Modulation Factor = 1.00 Device Reference Point: 0.000, 0.000, -6.30 mm Reference Value = 0.151 A/m; Power Drift = 0.064 dB Maximum value of Total (measured) = 0.141 A/m



CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x101x1):

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

Maximum value of peak Total field = 0.141 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.151 A/m; Power Drift = 0.064 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.126 M4	0.135 M4	0.125 M4
Grid 4	Grid 5	Grid 6
0.134 M4	0.141 M3	0.129 M4
Grid 7	Grid 8	Grid 9
0.132 M4	0.138 M4	0.124 M4

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Date/Time: 20/08/2009 2:46:37 PM

Test Laboratory: RTS

File Name: <u>HAC_H_Dipole_1880MHz_CW_WCDMA_mod.da4</u>

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Program Name: HAC RF H3DV6 Dipole

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: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (5x11x1): Measurement grid: dx=5mm, dy=5mm Probe Modulation Factor = 1.00 Device Reference Point: 0.000, 0.000, -6.30 mm Reference Value = 0.141 A/m; Power Drift = -0.048 dB Maximum value of Total (measured) = 0.132 A/m



CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x101x1):

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

Maximum value of peak Total field = 0.132 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.141 A/m; Power Drift = -0.048 dB

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

Grid 1	Grid 2	Grid 3
0.124 M4	0.129 M4	0.121 M4
Grid 4	Grid 5	Grid 6
0.129 M4	0.132 M4	0.123 M4
Grid 7	Grid 8	Grid 9
0.126 M4	0.129 M4	0.119 M4





Date/Time: 20/08/2009 2:57:22 PM

Test Laboratory: RTS

File Name: <u>HAC_H_Dipole_1880MHz_AM80%_WCDMA_mod.da4</u>

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Program Name: HAC RF H3DV6 Dipole

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

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (5x11x1): Measurement grid: dx=5mm, dy=5mm Probe Modulation Factor = 1.00 Device Reference Point: 0.000, 0.000, -6.30 mm Reference Value = 0.090 A/m; Power Drift = 0.014 dB Maximum value of Total (measured) = 0.085 A/m



CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x101x1):

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

Maximum value of peak Total field = 0.085 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.090 A/m; Power Drift = 0.014 dB

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

Grid 1	Grid 2	Grid 3
0.080 M4	0.083 M4	0.078 M4
Grid 4	Grid 5	Grid 6
0.083 M4	0.085 M4	0.080 M4
Grid 7	Grid 8	Grid 9
0.081 M4	0.083 M4	0.077 M4





Date/Time: 20/08/2009 1:55:29 PM

Test Laboratory: RTS

File Name: <u>HAC_H_Dipole_1880MHz_WCDMA_mod.da4</u>

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Program Name: HAC RF H3DV6 Dipole

Communication System: WCDMA FDD II; Frequency: 1880 MHz; Duty Cycle: 1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (5x11x1): Measurement grid: dx=5mm, dy=5mm Probe Modulation Factor = 1.00 Device Reference Point: 0.000, 0.000, -6.30 mm Reference Value = 0.153 A/m; Power Drift = -0.024 dB Maximum value of Total (measured) = 0.144 A/m



CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x101x1):

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

Maximum value of peak Total field = 0.144 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.153 A/m; Power Drift = -0.024 dB

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

Grid 1	Grid 2	Grid 3
0.133 M4	0.139 M4	0.131 M4
Grid 4	Grid 5	Grid 6
0.140 M4	0.144 M4	0.135 M4
Grid 7	Grid 8	Grid 9
0.138 M4	0.141 M4	0.131 M4






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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 > 21 mm, at least 4 times the step size.



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

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

Comparison of 5mm and 2mm step sizes

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



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

Lab: RIM Testing Services (RTS)

Dipole Validation 1880 MHz_E-Field 07_14_05

DUT: HAC Dipole 1880 MHz; Type: CD1880V3

Communication System: CW; Frequency: 1880 MHz;Duty Cycle: 1:1 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ 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
		1	

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-5.98

-7.47

0 dB = 138.4 V/m

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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/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
81.4 Grid 7	92.1 Grid 8	91.6 Grid 9	81.4 Grid 7	92.1 Grid 8	91.6 Grid 9

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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Daoud Attayi	July 03-Aug 11, 2009 RTS-1689-0908-37 L6ARCM70U			JW

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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/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
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

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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, $\varepsilon_r = 1$; $\rho = 1$ 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

file://C:\Program%20Files\DASY4\Print_Templates\HAC_H_Dipole_CW%201880_2%... 14/07/2005



-11.6

-14.5

0 dB = 0.406 A/m

 $file://C:\Program\%20Files\DASY4\Print_Templates\HAC_H_Dipole_CW\%201880_2\%...=14/07/2005$

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Date/Time: 21/08/2009 11:13:27 AM

Test Laboratory: RTS

File Name: <u>HAC_E_GSM_850_low chan.da4</u>

DUT: BlackBerry Smartphone; Type: Clamshell; Program Name: HAC RF ER3D Device

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: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 96.8 V/m; Power Drift = -0.177 dB

Maximum value of Total (measured) = 74.9 V/m



Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid:

dx=5mm, dy=5mm

Maximum value of peak Total field = 215.2 V/m

Probe Modulation Factor = 2.87

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 96.8 V/m; Power Drift = -0.177 dB

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

Grid 1	Grid 2	Grid 3
188.2 M3	201.0 M3	191.9 M3
Grid 4	Grid 5	Grid 6
201.6 M3	215.2 M3	203.3 M3
Grid 7	Grid 8	Grid 9
208.0 M3	214.2 M3	201.8 M3







Date/Time: 21/08/2009 11:20:27 AM

Test Laboratory: RTS

File Name: <u>HAC_E_GSM_850_mid chan.da4</u>

DUT: BlackBerry Smartphone; Type: Clamshell; Program Name: HAC RF ER3D Device

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: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 98.0 V/m; Power Drift = 0.103 dB

Maximum value of Total (measured) = 79.7 V/m



Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid:

dx=5mm, dy=5mm

Maximum value of peak Total field = 228.9 V/m

Probe Modulation Factor = 2.87

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 98.0 V/m; Power Drift = 0.103 dB

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

Peak E-field in V/m $% \left({{{\rm{P}}_{\rm{F}}} \right)$

Grid 1	Grid 2	Grid 3
186.3 M3	209.0 M3	205.8 M3
Grid 4	Grid 5	Grid 6
204.9 M3	227.1 M3	220.7 M3
Grid 7	Grid 8	Grid 9
215.9 M3	228.9 M3	220.8 M3







Date/Time: 21/08/2009 11:25:39 AM

Test Laboratory: RTS

File Name: <u>HAC_E_GSM_850_high chan.da4</u>

DUT: BlackBerry Smartphone; Type: Clamshell; Program Name: HAC RF ER3D Device

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: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 104.6 V/m; Power Drift = -0.061 dB

Maximum value of Total (measured) = 82.6 V/m



Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid:

dx=5mm, dy=5mm

Maximum value of peak Total field = 238.2 V/m

Probe Modulation Factor = 2.87

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 104.6 V/m; Power Drift = -0.061 dB

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

Grid 1	Grid 2	Grid 3
202.6 M3	224.6 M3	219.8 M3
Grid 4	Grid 5	Grid 6
216.9 M3	238.2 M3	230.8 M3
Grid 7	Grid 8	Grid 9
222.6 M3	237.2 M3	229.8 M3





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Date/Time: 21/08/2009 2:32:26 PM

Test Laboratory: RTS

File Name: HAC_E_GSM_WCDMA_Band_V_low chan.da4

DUT: BlackBerry Smartphone; Type: Clamshell; Serial: Not Specified Program Name: HAC RF ER3D Device

Communication System: WCDMA FDD V; Frequency: 826.4 MHz;Duty Cycle:

1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 100.6 V/m; Power Drift = -0.022 dB

Maximum value of Total (measured) = 78.8 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 = 74.3 V/m

Probe Modulation Factor = 0.940

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 100.6 V/m; Power Drift = -0.022 dB

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

Grid 1	Grid 2	Grid 3
64.3 M4	69.9 M4	68.2 M4
Grid 4	Grid 5	Grid 6
69.0 M4	74.3 M4	71.8 M4
Grid 7	Grid 8	Grid 9
72.0 M4	74.2 M4	71.5 M4





Date/Time: 21/08/2009 2:39:15 PM

Test Laboratory: RTS

File Name: <u>HAC_E_GSM_WCDMA_Band_V_mid chan.da4</u>

DUT: BlackBerry Smartphone; Type: Clamshell; Program Name: HAC RF ER3D Device

Communication System: WCDMA FDD V; Frequency: 836.4 MHz;Duty Cycle:

1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 117.5 V/m; Power Drift = -0.091 dB

Maximum value of Total (measured) = 93.9 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 = 88.3 V/m

Probe Modulation Factor = 0.940

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 117.5 V/m; Power Drift = -0.091 dB

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

Grid 1	Grid 2	Grid 3
73.6 M4	80.8 M4	79.3 M4
Grid 4	Grid 5	Grid 6
80.1 M4	87.5 M4	85.1 M4
Grid 7	Grid 8	Grid 9
84.1 M4	88.3 M4	85.0 M4





Date/Time: 21/08/2009 2:47:18 PM

Test Laboratory: RTS

File Name: <u>HAC_E_GSM_WCDMA_Band_V_high chan.da4</u>

DUT: BlackBerry Smartphone; Type: Clamshell; Program Name: HAC RF ER3D Device

Communication System: WCDMA FDD V; Frequency: 846.6 MHz;Duty Cycle:

1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 115.0 V/m; Power Drift = -0.071 dB

Maximum value of Total (measured) = 89.7 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 = 84.7 V/m

Probe Modulation Factor = 0.940

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 115.0 V/m; Power Drift = -0.071 dB

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

Grid 1	Grid 2	Grid 3
71.9 M4	79.7 M4	77.8 M4
Grid 4	Grid 5	Grid 6
77.3 M4	84.7 M4	82.6 M4
Grid 7	Grid 8	Grid 9
70 5 M 4		







Date/Time: 21/08/2009 12:36:28 PM

Test Laboratory: RTS

File Name: <u>HAC_E_GSM_1900_low chan.da4</u>

DUT: BlackBerry Smartphone; Type: Clamshell; Program Name: HAC RF ER3D Device

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: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 14.1 V/m; Power Drift = -0.003 dB

Maximum value of Total (measured) = 30.7 V/m



Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid:

dx=5mm, dy=5mm

Maximum value of peak Total field = 69.9 V/m

Probe Modulation Factor = 2.79

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 14.1 V/m; Power Drift = -0.003 dB

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

Grid 1	Grid 2	Grid 3
83.1 M3	85.8 M2	80.0 M3
Grid 4	Grid 5	Grid 6
49.3 M3	55.1 M3	54.7 M3
Grid 7	Grid 8	Grid 9







Date/Time: 21/08/2009 12:42:52 PM

Test Laboratory: RTS

File Name: <u>HAC_E_GSM_1900_mid chan.da4</u>

DUT: BlackBerry Smartphone; Type: Clamshell; Program Name: HAC RF ER3D Device

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: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 15.5 V/m; Power Drift = -0.038 dB

Maximum value of Total (measured) = 31.2 V/m



Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid:

dx=5mm, dy=5mm

Maximum value of peak Total field = 61.1 V/m

Probe Modulation Factor = 2.79

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 15.5 V/m; Power Drift = -0.038 dB

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

Grid 1	Grid 2	Grid 3
80.0 M3	87.2 M2	82.9 M3
Grid 4	Grid 5	Grid 6
47.4 M3	59.7 M3	59.7 M3
Grid 7	Grid 8	Grid 9







Date/Time: 21/08/2009 12:51:12 PM

Test Laboratory: RTS

File Name: <u>HAC_E_GSM_1900_high chan.da4</u>

DUT: BlackBerry Smartphone; Type: Clamshell; Program Name: HAC RF ER3D Device

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: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 17.7 V/m; Power Drift = 0.039 dB

Maximum value of Total (measured) = 31.5 V/m


dx=5mm, dy=5mm

Maximum value of peak Total field = 64.9 V/m

Probe Modulation Factor = 2.79

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 17.7 V/m; Power Drift = 0.039 dB

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

 $Peak \ E\text{-field in } V\!/m$

Grid 1	Grid 2	Grid 3
80.4 M3	87.9 M2	86.4 M2
Grid 4	Grid 5	Grid 6
50.7 M3	64.9 M3	64.8 M3
50.7 M3 Grid 7	64.9 M3 Grid 8	64.8 M3 Grid 9





Date/Time: 21/08/2009 3:01:35 PM

Test Laboratory: RTS

File Name: HAC_E_WCDMA_Band_II_low chan.da4

DUT: BlackBerry Smartphone; Type: Clamshell; Program Name: HAC RF ER3D Device

Communication System: WCDMA FDD II; Frequency: 1852.4 MHz;Duty Cycle:

1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 15.7 V/m; Power Drift = 0.032 dB

Maximum value of Total (measured) = 36.1 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 = 30.4 V/m

Probe Modulation Factor = 0.910

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 15.7 V/m; Power Drift = 0.032 dB

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

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
31.5 M4	32.8 M4	31.3 M4
Grid 4	Grid 5	Grid 6
17.1 M4	20.3 M4	20.3 M4
Grid 7	Grid 8	Grid 9
28.4 M4	30.4 M4	28.7 M4





Date/Time: 21/08/2009 3:07:49 PM

Test Laboratory: RTS

File Name: <u>HAC_E_WCDMA_Band_II_mid chan.da4</u>

DUT: BlackBerry Smartphone; Type: Clamshell; Program Name: HAC RF ER3D Device

Communication System: WCDMA FDD II; Frequency: 1880 MHz; Duty Cycle: 1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 14.3 V/m; Power Drift = -0.077 dB

Maximum value of Total (measured) = 30.3 V/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 22.4 V/m

Probe Modulation Factor = 0.910

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 14.3 V/m; Power Drift = -0.077 dB

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

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
25.5 M4	27.6 M4	26.8 M4
Grid 4	Grid 5	Grid 6
14.8 M4	18 4 M4	18 8 M4
	10.4 1114	10.0 1014
Grid 7	Grid 8	Grid 9





Date/Time: 21/08/2009 3:14:11 PM

Test Laboratory: RTS

File Name: <u>HAC_E_WCDMA_Band_II_high chan.da4</u>

DUT: BlackBerry Smartphone; Type: Clamshell; Program Name: HAC RF ER3D Device

Communication System: WCDMA FDD II; Frequency: 1907.6 MHz;Duty Cycle:

1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 08/01/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 16.2 V/m; Power Drift = -0.012 dB

Maximum value of Total (measured) = 32.9 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 = 20.7 V/m

Probe Modulation Factor = 0.910

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 16.2 V/m; Power Drift = -0.012 dB

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

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
27.9 M4	30.0 M4	29.3 M4
Grid 4	Grid 5	Grid 6
16.7 M4	20.7 M4	20.7 M4
Grid 7	Grid 8	Grid 9
18.6 M4	20.6 M4	20.1 M4







Date/Time: 21/08/2009 3:47:52 PM

Test Laboratory: RTS

File Name: <u>HAC_H_GSM850_low_chan.da4</u>

DUT: BlackBerry Smartphone; Type: Sample; Program Name: HAC RF H3DV6 Device

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: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 0.081 A/m; Power Drift = -0.018 dB

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



dx=5mm, dy=5mm

Maximum value of peak Total field = 0.423 A/m

Probe Modulation Factor = 2.77

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.081 A/m; Power Drift = -0.018 dB

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

Grid 1	Grid 2	Grid 3
0.474 M3	0.327 M4	0.207 M4
Grid 4	Grid 5	Grid 6
0.421 M4	0.294 M4	0.179 M4
Grid 7	Grid 8	Grid 9
0.423 M4	0.282 M4	0.165 M4







Date/Time: 21/08/2009 3:53:58 PM

Test Laboratory: RTS

File Name: <u>HAC_H_GSM850_mid_chan.da4</u>

DUT: BlackBerry Smartphone; Type: Sample ; Program Name: HAC RF H3DV6 Device

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: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 0.092 A/m; Power Drift = -0.253 dB

Maximum value of Total (measured) = 0.176 A/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 0.454 A/m

Probe Modulation Factor = 2.77

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.092 A/m; Power Drift = -0.253 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.488 M3	0.350 M4	0.224 M4
Grid 4	Grid 5	Grid 6
0.453 M3	0.323 M4	0.196 M4
Grid 7	Grid 8	Grid 9
0.454 M3	0.318 M4	0.187 M4

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Date/Time: 21/08/2009 4:00:15 PM

Test Laboratory: RTS

File Name: <u>HAC_H_GSM850_high_chan.da4</u>

DUT: BlackBerry Smartphone; Type: Sample ; Program Name: HAC RF H3DV6 Device

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: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 0.107 A/m; Power Drift = -0.086 dB

Maximum value of Total (measured) = 0.196 A/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 0.521 A/m

Probe Modulation Factor = 2.77

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.107 A/m; Power Drift = -0.086 dB

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

Grid 1	Grid 2	Grid 3
0.542 M3	0.384 M4	0.243 M4
Grid 4	Grid 5	Grid 6
0.512 M3	0.363 M4	0.230 M4
Grid 7	Grid 8	Grid 9
0.521 M3	0.385 M4	0.246 M4





Testing Services™	Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RCM71UW			Page 165 (191)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	July 03-Aug 11, 2009	RTS-1689-0908-37	L6ARCM70U	JW

Date/Time: 21/08/2009 4:29:37 PM

Test Laboratory: RTS

File Name: <u>HAC_H_WCDMA_Band_V_low_chan.da4</u>

DUT: BlackBerry Smartphone; Type: Sample ; Serial: Not Specified Program Name: HAC RF H3DV6 Device

Communication System: WCDMA FDD V; Frequency: 826.4 MHz;Duty Cycle:

1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 0.087 A/m; Power Drift = 0.191 dB

Maximum value of Total (measured) = 0.176 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 = 0.183 A/m

Probe Modulation Factor = 1.11

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.087 A/m; Power Drift = 0.191 dB

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

Grid 1	Grid 2	Grid 3
0.195 M4	0.137 M4	0.086 M4
Grid 4	Grid 5	Grid 6
0.178 M4	0.124 M4	0.075 M4
Grid 7	Grid 8	Grid 9
0.183 M4	0.128 M4	0.075 M4



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Daoud Attayi	July 03-Aug 11, 2009	RTS-1689-0908-37	L6ARCM70U	JW

Date/Time: 21/08/2009 4:36:05 PM

Test Laboratory: RTS

File Name: <u>HAC_H_WCDMA_Band_V_mid_chan.da4</u>

DUT: BlackBerry Smartphone; Type: Sample ; Program Name: HAC RF H3DV6 Device

Communication System: WCDMA FDD V; Frequency: 836.4 MHz;Duty Cycle:

1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 0.106 A/m; Power Drift = -0.075 dB

Maximum value of Total (measured) = 0.209 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 = 0.210 A/m

Probe Modulation Factor = 1.10

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.106 A/m; Power Drift = -0.075 dB

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

Grid 1	Grid 2	Grid 3
0.230 M4	0.165 M4	0.108 M4
Grid 4	Grid 5	Grid 6
0.208 M4	0.147 M4	0.093 M4
Grid 7	Grid 8	Grid 9
0.210 M4	0.146 M4	0.086 M4





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Daoud Attayi	July 03-Aug 11, 2009	RTS-1689-0908-37	L6ARCM70U	JW

Date/Time: 21/08/2009 4:43:32 PM

Test Laboratory: RTS

File Name: <u>HAC_H_WCDMA_Band_V_high_chan.da4</u>

DUT: BlackBerry Smartphone; Type: Sample ; Program Name: HAC RF H3DV6 Device

Communication System: WCDMA FDD V; Frequency: 846.6 MHz;Duty Cycle:

1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 0.113 A/m; Power Drift = 0.197 dB

Maximum value of Total (measured) = 0.209 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 = 0.228 A/m

Probe Modulation Factor = 1.10

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.113 A/m; Power Drift = 0.197 dB

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

Grid 1	Grid 2	Grid 3
0.230 M4	0.168 M4	0.107 M4
Grid 4	Grid 5	Grid 6
0.215 M4	0.157 M4	0.099 M4
Grid 7	Grid 8	Grid 9
0.228 M4	0.166 M4	0.103 M4







Date/Time: 21/08/2009 4:06:13 PM

Test Laboratory: RTS

File Name: <u>HAC_H_GSM1900_low_chan.da4</u>

DUT: BlackBerry Smartphone; Type: Sample ; Program Name: HAC RF H3DV6 Device

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: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 0.090 A/m; Power Drift = 0.106 dB

Maximum value of Total (measured) = 0.102 A/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 0.204 A/m

Probe Modulation Factor = 2.52

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.090 A/m; Power Drift = 0.106 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.257 M2	0.218 M3	0.200 M3
Grid 4	Grid 5	Grid 6
0.194 M3	0.204 M3	0.200 M3
Grid 7	Grid 8	Grid 9
0.162 M3	0.180 M3	0.178 M3

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Date/Time: 21/08/2009 4:13:44 PM

Test Laboratory: RTS

File Name: <u>HAC_H_GSM1900_mid_chan.da4</u>

DUT: BlackBerry Smartphone; Type: Sample ; Program Name: HAC RF H3DV6 Device

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: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 0.088 A/m; Power Drift = 0.224 dB

Maximum value of Total (measured) = 0.111 A/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 0.205 A/m

Probe Modulation Factor = 2.52

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.088 A/m; Power Drift = 0.224 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.279 M2	0.235 M3	0.203 M3
Grid 4	Grid 5	Grid 6
0.198 M3	0.205 M3	0.202 M3
Grid 7	Grid 8	Grid 9
0.152 M3	0.173 M3	0.171 M3

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Date/Time: 21/08/2009 4:19:40 PM

Test Laboratory: RTS

File Name: <u>HAC_H_GSM1900_high_chan.da4</u>

DUT: BlackBerry Smartphone; Type: Sample ; Program Name: HAC RF H3DV6 Device

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

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 0.085 A/m; Power Drift = 0.143 dB

Maximum value of Total (measured) = 0.116 A/m


Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid:

dx=5mm, dy=5mm

Maximum value of peak Total field = 0.207 A/m

Probe Modulation Factor = 2.52

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.085 A/m; Power Drift = 0.143 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.293 M2	0.246 M3	0.189 M3
Grid 4	Grid 5	Grid 6
0.207 M3	0.207 M3	0.189 M3
Grid 7	Grid 8	Grid 9
0.157 M3	0.173 M3	0.167 M3





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Daoud Attayi	July 03-Aug 11, 2009	RTS-1689-0908-37	L6ARCM70U	JW

Date/Time: 21/08/2009 4:52:10 PM

Test Laboratory: RTS

File Name: <u>HAC_H_WCDMA_Band_II_low_chan.da4</u>

DUT: BlackBerry Smartphone; Type: Sample ; Program Name: HAC RF H3DV6 Device

Communication System: WCDMA FDD II; Frequency: 1852.4 MHz;Duty Cycle:

1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 0.114 A/m; Power Drift = -0.038 dB

Maximum value of Total (measured) = 0.133 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 = 0.096 A/m

Probe Modulation Factor = 0.920

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.114 A/m; Power Drift = -0.038 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.122 M4	0.103 M4	0.092 M4
Grid 4	Grid 5	Grid 6
0.093 M4	0.096 M4	0.092 M4
Grid 7	Grid 8	Grid 9
0.076 M4	0.083 M4	0.082 M4





Date/Time: 21/08/2009 4:58:53 PM

Test Laboratory: RTS

File Name: <u>HAC_H_WCDMA_Band_II_mid_chan.da4</u>

DUT: BlackBerry Smartphone; Type: Sample ; Program Name: HAC RF H3DV6 Device

Communication System: WCDMA FDD II; Frequency: 1880 MHz; Duty Cycle: 1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 0.090 A/m; Power Drift = 0.020 dB

Maximum value of Total (measured) = 0.110 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 = 0.076 A/m

Probe Modulation Factor = 0.920

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.090 A/m; Power Drift = 0.020 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.101 M4	0.086 M4	0.075 M4
Grid 4	Grid 5	Grid 6
0.073 M4	0.076 M4	0.075 M4
0.073 M4 Grid 7	0.076 M4 Grid 8	0.075 M4 Grid 9

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Date/Time: 21/08/2009 5:08:12 PM

Test Laboratory: RTS

File Name: <u>HAC_H_WCDMA_Band_II_high_chan.da4</u>

DUT: BlackBerry Smartphone; Type: Sample ; Program Name: HAC RF H3DV6 Device

Communication System: WCDMA FDD II; Frequency: 1907.6 MHz;Duty Cycle:

1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 - SN6168; ; Calibrated: 03/03/2009

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

- Electronics: DAE3 Sn472; Calibrated: 03/03/2009

- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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, -6.30 mm

Reference Value = 0.089 A/m; Power Drift = -0.014 dB

Maximum value of Total (measured) = 0.116 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 = 0.075 A/m

Probe Modulation Factor = 0.920

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.089 A/m; Power Drift = -0.014 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.107 M4	0.089 M4	0.072 M4
Grid 4	Grid 5	Grid 6
0.075 M4	0.075 M4	0.072 M4
Grid 7	Grid 8	Grid 9
0.057 M4	0.065 M4	0.065 M4



