

Annex A: Measurement data and plots

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



0 Hz Span CW Plot (835MHz)

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Daoud Attayi	Mar. 08-10, 2010 RTS-2337-1003-22 L6ARCY70U			W
Duodu Allayi	Mai. 00-10, 2010	R15-2557-1005-22	Loncerve	



0 Hz Span 80% AM Plot (835MHz)



0 Hz Span GSM (835MHz)

Testing	Annex A to Hearing	I Aid Compatibility RF Emis	ssions Test
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Daoud Attavi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70IIW
	1 1 2:28 ai NIF NI NIF NIF NIF NIF NIF NIF	NoW 10 NH2 Herker 1 (1) 3 + UN 20 HH2 51,22 • SHT 2.5 m 1	B PERK
BROWN BORNT STRF Appre-11 StrF HUNY			

0 Hz Span CW Plot (835MHz)

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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W



0 Hz Span 80% AM Plot (835MHz)

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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	J W	
	Mar. 08-10, 2010	K18-2357-1003-22		VV	



0 Hz Span WCDMA (835MHz)

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Daoud Attayi	Mar. 08-10, 2010 RTS-2337-1003-22 L6ARCY70U			W



0 Hz Span CW Plot (1880MHz)



0 Hz Span 80% AM Plot (1880MHz)



0 Hz Span GSM (1880MHz)

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Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Mar. 08-10, 2010	W		



0 Hz Span CW Plot (1880MHz)



0 Hz Span 80% AM Plot (1880MHz)



0 Hz Span WCDMA (1880MHz)

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Daoud Attayi	Mar. 08-10, 2010	Mar. 08-10, 2010 RTS-2337-1003-22 L6ARCY70U			

A.2 Dipole validation and probe modulation factor plots

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Author Data Daoud Attayi	Dates of Test Mar. 08-10, 2010	W

Date/Time: 3/10/2010 9:55:04 AM

File Name: HAC_E_Dipole_835MHz.da4

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: 1/8/2010
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn473; Calibrated: 1/4/2010
- 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 = 107.1 V/m; Power Drift = -0.012 dB

Maximum value of Total (measured) = 167.7 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 = 168.3 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 107.1 V/m; Power Drift = -0.012 dB

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

Grid 1	Grid 2	Grid 3
159.1 M4	165.6 M4	163.3 M4
Grid 4	Grid 5	Grid 6
88.2 M4	89.9 M4	87.1 M4
Grid 7	Grid 8	Grid 9
159.8 M4	168.3 M4	165.7 M4



 $0 \ dB = 168.3 V/m$

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Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Mar. 08-10, 2010 RTS-2337-1003-22 L6ARCY70U			W

Date/Time: 3/10/2010 9:55:04 AM

File Name: HAC_E_Dipole_835MHz_CW_GSM_mod.da4

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 107.1 V/m; Power Drift = -0.012 dB

Maximum value of Total (measured) = 167.7 V/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 168.3 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 107.1 V/m; Power Drift = -0.012 dB

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

Grid 1	Grid 2	Grid 3
159.1 M4	165.6 M4	163.3 M4
Grid 4	Grid 5	Grid 6
88.2 M4	89.9 M4	87.1 M4
Grid 7	Grid 8	Grid 9
159.8 M4	168.3 M4	165.7 M4



 $0 \ dB = 168.3 V/m$

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Author Data	Dates of Test	Report No	FCC ID		
Daoud Attayı	Mar. 08-10, 2010	Mar. 08-10, 2010 RTS-2337-1003-22 L6ARCY70U			

Date/Time: 3/10/2010 10:14:07 AM

File Name: HAC_E_Dipole_835MHz_AM80%_GSM_mod.da4

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 66.9 V/m; Power Drift = 0.009 dB

Maximum value of Total (measured) = 103.4 V/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 103.9 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 66.9 V/m; Power Drift = 0.009 dB

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

Grid 1	Grid 2	Grid 3
98.5 M4	101.9 M4	100.5 M4
Grid 4	Grid 5	Grid 6
55.5 M4	56.6 M4	54.9 M4
Grid 7	Grid 8	Grid 9
98.9 M4	103.9 M4	102.8 M4



 $0 \ dB = 103.9 V/m$

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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 10:40:51 AM

File Name: HAC_E_Dipole_835MHz_GSM_mod.da4

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

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.108 dB

Maximum value of Total (measured) = 59.0 V/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 59.2 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 = 0.108 dB

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

Grid 1 Grid 2 Grid 3 56.7 M4 59.2 M4 58.6 M4 Grid 4 Grid 5 Grid 6 30.8 M4 31.5 M4 30.6 M4 Grid 7 Grid 8 Grid 9 53.6 M4 57.0 M4 56.3 M4



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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 10:20:43 AM

File Name: HAC_E_Dipole_835MHz_CW_WCDMA_mod.da4

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 39.3 V/m; Power Drift = -0.082 dB

Maximum value of Total (measured) = 60.7 V/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 60.9 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 39.3 V/m; Power Drift = -0.082 dB

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

Grid 1	Grid 2	Grid 3
57.8 M4	60.2 M4	59.5 M4
Grid 4	Grid 5	Grid 6
32.0 M4	32.8 M4	31.8 M4
Grid 7	Grid 8	Grid 9
58.0 M4	60.9 M4	60.1 M4



 $0 \ dB = 60.9 \ V/m$

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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 10:31:17 AM

File Name: HAC_E_Dipole_835MHz_AM80%_WCDMA.da4

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 25.2 V/m; Power Drift = -0.266 dB

Maximum value of Total (measured) = 38.8 V/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 38.9 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 25.2 V/m; Power Drift = -0.266 dB

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

Grid 1 Grid 2 Grid 3 36.9 M4 38.3 M4 37.9 M4 Grid 4 Grid 5 Grid 6 20.6 M4 21.0 M4 20.5 M4 Grid 7 Grid 8 Grid 9 37.0 M4 38.9 M4 38.4 M4



 $0 \, dB = 38.9 \, V/m$

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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 10:59:37 AM

File Name: HAC_E_Dipole_835MHz_WCDMA_mod.da4

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 38.9 V/m; Power Drift = -0.020 dB

Maximum value of Total (measured) = 62.4 V/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 62.6 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 38.9 V/m; Power Drift = -0.020 dB

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

Grid 1 Grid 2 Grid 3 60.1 M4 62.6 M4 61.7 M4 Grid 4 Grid 5 Grid 6 32.2 M4 32.9 M4 32.0 M4 Grid 7 Grid 8 Grid 9 59.7 M4 57.8 M4 60.6 M4





Date/Time: 3/10/2010 11:31:43 AM

File Name: HAC_E_Dipole_1880MHz.da4

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 143.3 V/m; Power Drift = 0.033 dB

Maximum value of Total (measured) = 128.8 V/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 129.1 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 143.3 V/m; Power Drift = 0.033 dB

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

Grid 1	Grid 2	Grid 3
124.6 M2	129.1 M2	127.5 M2
Grid 4	Grid 5	Grid 6
88.2 M3	90.9 M3	88.0 M3
Grid 7	Grid 8	Grid 9
119.3 M2	128.7 M2	128.1 M2


 $0 \ dB = 129.1 \ V/m$

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Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 11:44:25 AM

File Name: HAC_E_Dipole_1880MHz_CW_GSM_mod.da4

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 108.7 V/m; Power Drift = 0.023 dB Maximum value of Total (measured) = 97.3 V/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 97.5 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 108.7 V/m; Power Drift = 0.023 dB

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

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
93.8 M3	97.5 M3	96.1 M3
Grid 4	Grid 5	Grid 6
66.5 M3	68.5 M3	66.5 M3
Grid 7	Grid 8	Grid 9
90.9 M3	97.5 M3	96.9 M3



 $0 \; dB = 97.5 V/m$

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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 11:50:57 AM

File Name: <u>HAC_E_Dipole_1880MHz_AM80%_GSM.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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 68.6 V/m; Power Drift = -0.011 dB Maximum value of Total (measured) = 61.2 V/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 61.9 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 68.6 V/m; Power Drift = -0.011 dB

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

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
59.4 M4	61.3 M4	60.9 M4
Grid 4	Grid 5	Grid 6
42.2 M4	43.5 M4	42.3 M4
Grid 7	Grid 8	Grid 9
57.2 M4	61.9 M4	61.6 M4



 $0 \, dB = 61.9 \, V/m$

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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 11:22:34 AM

File Name: HAC_E_Dipole_1880MHz_GSM_mod.da4

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, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Phantom section: RF Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 17.9 V/m; Power Drift = 0.124 dB Maximum value of Total (measured) = 35.9 V/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 36.7 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 17.9 V/m; Power Drift = 0.124 dB

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

Grid 7

33.6 M4

 Grid 1
 Grid 2
 Grid 3

 34.6 M4
 36.0 M4
 35.6 M4

 Grid 4
 Grid 5
 Grid 6

 23.9 M4
 24.9 M4
 24.1 M4

Grid 8

36.7 M4

Grid 9

36.4 M4

Peak E-field in V/m



 $0 \, dB = 36.7 \, V/m$

Testing Services™	Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RCY71UW		Page 47 (206)	
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 12:15:19 PM

File Name: HAC_E_Dipole_1880MHz_CW_WCDMA_mod.da4

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 47.6 V/m; Power Drift = 0.002 dB Maximum value of Total (measured) = 42.3 V/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 42.6 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 47.6 V/m; Power Drift = 0.002 dB

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

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
40.9 M4	42.4 M4	42.0 M4
Grid 4	Grid 5	Grid 6
29.1 M4	30.0 M4	29.1 M4
Grid 7	Grid 8	Grid 9
39.4 M4	42.6 M4	42.4 M4



 $0 \, dB = 42.6 V/m$

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Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 12:08:52 PM

File Name: HAC_E_Dipole_1880MHz_AM80%_WCDMA.da4

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 30.4 V/m; Power Drift = 0.009 dB Maximum value of Total (measured) = 27.1 V/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 27.4 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 30.4 V/m; Power Drift = 0.009 dB

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

Grid 1	Grid 2	Grid 3
26.2 M4	27.2 M4	26.9 M4
Grid 4	Grid 5	Grid 6
18.6 M4	19.2 M4	18.7 M4
Grid 7	Grid 8	Grid 9
25.3 M4	27.4 M4	27.2 M4

Peak E-field in V/m



 $0 \ dB = 27.4 V/m$

Testing Services™	Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RCY71UW			Page 53 (206)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 11:16:10 AM

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 23.2 V/m; Power Drift = -0.014 dB Maximum value of Total (measured) = 46.1 V/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 46.7 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 23.2 V/m; Power Drift = -0.014 dB

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

Grid 1	Grid 2	Grid 3
44.3 M4	46.2 M4	45.7 M4
Grid 4	Grid 5	Grid 6
30.6 M4	31.7 M4	30.7 M4
Grid 7	Grid 8	Grid 9
43.4 M4	46.7 M4	46.4 M4

Peak E-field in V/m



 $0 \, dB = 46.7 \, V/m$



Date/Time: 3/10/2010 2:28:11 PM

File Name: HAC_H_Dipole_835MHz.da4

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.510 A/m; Power Drift = 0.063 dB

Maximum value of Total (measured) = 0.482 A/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 0.483 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.510 A/m; Power Drift = 0.063 dB

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

Grid 1	Grid 2	Grid 3
0.441 M4	0.473 M4	0.460 M4
Grid 4	Grid 5	Grid 6
0.454 M4	0.483 M4	0.467 M4
Grid 7	Grid 8	Grid 9
0.452 M4	0.479 M4	0.463 M4

Peak H-field in A/m



 $0 \ dB = 0.483 \text{A/m}$

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Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 2:28:11 PM

File Name: HAC_H_Dipole_835MHz_CW_GSM_mod.da4

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.510 A/m; Power Drift = 0.063 dB

Maximum value of Total (measured) = 0.482 A/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 0.483 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.510 A/m; Power Drift = 0.063 dB

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

Grid 1 Grid 2 Grid 3 0.441 M4 0.473 M4 0.460 M4 Grid 4 Grid 5 Grid 6 0.454 M4 0.483 M4 0.467 M4 Grid 7 Grid 8 Grid 9 0.479 M4 0.452 M4 0.463 M4

Peak H-field in A/m



 $0 \, dB = 0.483 \, A/m$

Testing Services™	Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RCY71UW			Page 62 (206)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 2:45:40 PM

File Name: HAC_H_Dipole_835MHz_AM80%_mod.da4

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.328 A/m; Power Drift = 0.048 dB

Maximum value of Total (measured) = 0.308 A/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 0.309 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.328 A/m; Power Drift = 0.048 dB

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

Grid 1	Grid 2	Grid 3
0.283 M4	0.303 M4	0.295 M4
Grid 4	Grid 5	Grid 6
0.290 M4	0.309 M4	0.299 M4
Grid 7	Grid 8	Grid 9
0.289 M4	0.304 M4	0.295 M4

Peak H-field in A/m



 $0 \ dB = 0.309 \ A/m$

Testing Services™	Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RCY71UW			Page 65 (206)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 3:12:33 PM

File Name: HAC_H_Dipole_835MHz_GSM_mod.da4

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 (5x11x1): Measurement grid:

dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.185 A/m; Power Drift = -0.105 dB

Maximum value of Total (measured) = 0.173 A/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 0.173 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.185 A/m; Power Drift = -0.105 dB

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

Grid 1	Grid 2	Grid 3
0.155 M4	0.169 M4	0.163 M4
Grid 4	Grid 5	Grid 6
0.160 M4	0.173 M4	0.166 M4
Grid 7	Grid 8	Grid 9
0.161 M4	0.172 M4	0.166 M4

Peak H-field in A/m



 $0 \ dB = 0.173 \text{A/m}$

Testing Services™	Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RCY71UW			Page 68 (206)
Author Data	Dates of Test	Report No	FCC ID	XX 7
Daoud Attayi	Mar. 08-10, 2010	R15-2537-1005-22	LOAKCY/UU	vv

Date/Time: 3/10/2010 2:36:33 PM

File Name: HAC_H_Dipole_835MHz_CW_WCDMA_mod.da4

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.188 A/m; Power Drift = -0.109 dB

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



dx=5mm, dy=5mm

Maximum value of peak Total field = 0.174 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.188 A/m; Power Drift = -0.109 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.160 M4	0.171 M4	0.167 M4
Grid 4	Grid 5	Grid 6
0.165 M4	0.174 M4	0.170 M4
Grid 7	Grid 8	Grid 9
0.165 M4	0.173 M4	0.168 M4



 $0 \ dB = 0.174 \text{A/m}$

Testing Services™	Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RCY71UW			Page 71 (206)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 2:51:38 PM

File Name: HAC_H_Dipole_835MHz_AM80%_WCDMA_mod.da4

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.038 dB

Maximum value of Total (measured) = 0.112 A/m



dx=5mm, dy=5mm

Maximum value of peak Total field = 0.112 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 = 0.038 dB

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

Grid 1	Grid 2	Grid 3
0.100 M4	0.108 M4	0.105 M4
Grid 4	Grid 5	Grid 6
0.105 M4	0.112 M4	0.108 M4
Grid 7	Grid 8	Grid 9
0.103 M4	0.109 M4	0.106 M4

Peak H-field in A/m


0 dB = 0.112 A/m

Testing Services™	Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RCY71UW			Page 74 (206)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 2:59:14 PM

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: WCDMA FDD V; 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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 (5x11x1): Measurement grid:

dx=5mm, dy=5mm

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.185 A/m; Power Drift = 0.001 dB

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



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

dx=5mm, dy=5mm

Maximum value of peak Total field = 0.174 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.185 A/m; Power Drift = 0.001 dB

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

Grid 1	Grid 2	Grid 3
0.160 M4	0.172 M4	0.168 M4
Grid 4	Grid 5	Grid 6
0.164 M4	0.174 M4	0.169 M4
Grid 7	Grid 8	Grid 9
0.164 M4	0.173 M4	0.168 M4



 $0 \ dB = 0.174 \text{A/m}$



Date/Time: 3/10/2010 1:38:50 PM

File Name: HAC_H_Dipole_1880MHz.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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.486 A/m; Power Drift = 0.008 dB

Maximum value of Total (measured) = 0.459 A/m



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

dx=5mm, dy=5mm

Maximum value of peak Total field = 0.460 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.486 A/m; Power Drift = 0.008 dB

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

Grid 2	Grid 3
0.448 M2	0.436 M2
Grid 5	Grid 6
0.460 M2	0.447 M2
Grid 8	Grid 9
0.443 M2	0.432 M2
	Grid 2 0.448 M2 Grid 5 0.460 M2 Grid 8 0.443 M2



 $0 \ dB = 0.460 \text{A/m}$

Testing Services™	Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RCY71UW			Page 80 (206)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 1:48:16 PM

File Name: HAC_H_Dipole_1880MHz_CW_GSM_mod.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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 (5x10x1): Measurement grid: dx=5mm, dy=5mm Probe Modulation Factor = 1.00 Device Reference Point: 0.000, 0.000, -6.30 mm Reference Value = 0.369 A/m; Power Drift = -0.015 dB Maximum value of Total (measured) = 0.347 A/m



Dipole = 10mm/Hearing Aid Compatibility Test (41x91x1): Measurement grid:

dx=5mm, dy=5mm

Maximum value of peak Total field = 0.348 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.369 A/m; Power Drift = -0.015 dB

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

Grid 1	Grid 2	Grid 3
0.316 M3	0.341 M2	0.332 M3
Grid 4	Grid 5	Grid 6
0.324 M3	0.348 M2	0.338 M3
Grid 7	Grid 8	Grid 9
0.316 M3	0.339 M3	0.329 M3



 $0 \ dB = 0.348 A/m$

Testing Services™	Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RCY71UW			Page 83 (206)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 1:55:22 PM

File Name: HAC_H_Dipole_1880MHz_AM80%_GSM_mod.da4

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.240 A/m; Power Drift = -0.040 dB

Maximum value of Total (measured) = 0.227 A/m



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

dx=5mm, dy=5mm

Maximum value of peak Total field = 0.227 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.240 A/m; Power Drift = -0.040 dB

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

Grid 1	Grid 2	Grid 3
0.203 M3	0.221 M3	0.214 M3
Grid 4	Grid 5	Grid 6
0.210 M3	0.227 M3	0.219 M3
Grid 7	Grid 8	Grid 9
0.203 M3	0.219 M3	0.212 M3



 $0 \ dB = 0.227 \text{A/m}$

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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 2:03:45 PM

File Name: HAC_H_Dipole_1880MHz_GSM_mod.da4

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.155 A/m; Power Drift = -0.086 dB

Maximum value of Total (measured) = 0.144 A/m



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 = 0.155 A/m; Power Drift = -0.086 dB

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

Grid 1	Grid 2	Grid 3
0.127 M4	0.140 M3	0.133 M4
Grid 4	Grid 5	Grid 6
0.131 M4	0.144 M3	0.137 M4
Grid 7	Grid 8	Grid 9
0.126 M4	0.139 M4	0.132 M4
		1



 $0 \ dB = 0.144 \text{A/m}$

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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 1:51:41 PM

File Name: HAC_H_Dipole_1880MHz_CW_WCDMA_mod.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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.160 A/m; Power Drift = 0.011 dB

Maximum value of Total (measured) = 0.152 A/m



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

dx=5mm, dy=5mm

Maximum value of peak Total field = 0.152 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.160 A/m; Power Drift = 0.011 dB

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

Grid 1	Grid 2	Grid 3
0.137 M4	0.148 M4	0.143 M4
Grid 4	Grid 5	Grid 6
0.142 M4	0.152 M4	0.147 M4
Grid 7	Grid 8	Grid 9
0.137 M4	0.147 M4	0.143 M4



 $0 \ dB = 0.152 \text{A/m}$

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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Date/Time: 3/10/2010 1:58:58 PM

File Name: HAC_H_Dipole_1880MHz_AM80%_WCDMA_mod.da4

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.103 A/m; Power Drift = 0.066 dB

Maximum value of Total (measured) = 0.098 A/m



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

dx=5mm, dy=5mm

Maximum value of peak Total field = 0.098 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.103 A/m; Power Drift = 0.066 dB

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

Grid 1	Grid 2	Grid 3
0.088 M4	0.096 M4	0.093 M4
Grid 4	Grid 5	Grid 6
0.091 M4	0.098 M4	0.095 M4
Grid 7	Grid 8	Grid 9
0.089 M4	0.095 M4	0.092 M4



 $0 \ dB = 0.098 A/m$

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Daoud Attayi	Mar. 08-10, 2010	Mar. 08-10, 2010 RTS-2337-1003-22 L6ARCY70U		

Date/Time: 3/10/2010 2:19:32 PM

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.166 A/m; Power Drift = 0.009 dB

Maximum value of Total (measured) = 0.157 A/m



Dipole = 10mm/Hearing Aid Compatibility Test (41x101x1): 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 = 0.166 A/m; Power Drift = 0.009 dB

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

Grid 1	Grid 2	Grid 3
0.142 M4	0.154 M4	0.149 M4
Grid 4	Grid 5	Grid 6
0.146 M4	0.157 M4	0.152 M4
Grid 7	Grid 8	Grid 9
0.142 M4	0.152 M4	0.147 M4



 $0 \ dB = 0.157 \ A/m$

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Justification of Step Size and Interpolation

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



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



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

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

Comparison of 5mm and 2mm step sizes

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



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

Lab: RIM Testing Services (RTS)

Dipole Validation 1880 MHz_E-Field 07_14_05

DUT: HAC Dipole 1880 MHz; Type: CD1880V3

Communication System: CW; Frequency: 1880 MHz;Duty Cycle: 1:1 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ 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
Grid 4	Grid 5	Grid 6	Grid 4	Grid 5	Grid 6
80.9	92.3	92.2	80.9	92.3	92.2
Grid 7	Grid 8	Grid 9	Grid 7	Grid 8	Grid 9
119.8	131.0	130.7	119.8	131.0	130.7

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

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			D 0 00	



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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	02.1	01 6	01.4	02.1	01 6
01.4	92.1	91.0	01.4	92.1	91.0
Grid 7	Grid 8	91.6 Grid 9	Grid 7	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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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 6
0.389	0.406	0.389	0.389	0.406	0.389
Grid 7	Grid 8	Grid 9	Grid 7	Grid 8	Grid 9
0.363	0.378	0.363	0.363	0.378	0.363

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

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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

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Date/Time: 3/10/2010 5:00:00 PM

Test Laboratory: RIM TESTING SERVICES

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

DUT: BlackBerry Smartphone;

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 69.2 V/m; Power Drift = 0.084 dB

Maximum value of Total (measured) = 57.0 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 = 161.8 V/m
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Probe Modulation Factor = 2.84

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 69.2 V/m; Power Drift = 0.084 dB

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

Grid 1	Grid 2	Grid 3
138.9 M4	156.2 M3	154.7 M3
Grid 4	Grid 5	Grid 6
143.3 M4	161.8 M3	160.0 M3
Grid 7	Grid 8	Grid 9
141.5 M4	160.3 M3	158.4 M3



 $0 \, dB = 161.8 V/m$



Date/Time: 3/10/2010 5:10:47 PM

Test Laboratory: RIM TESTING SERVICES

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

DUT: BlackBerry Smartphone;

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 73.5 V/m; Power Drift = 0.041 dB

Maximum value of Total (measured) = 61.4 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 = 174.4 V/m

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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Probe Modulation Factor = 2.84

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 73.5 V/m; Power Drift = 0.041 dB

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

Grid 1	Grid 2	Grid 3
140.8 M4	165.8 M3	165.2 M3
Grid 4	Grid 5	Grid 6
148.6 M4	174.4 M3	172.4 M3
Grid 7	Grid 8	Grid 9
151.9 M3	172.9 M3	171.9 M3







Date/Time: 3/10/2010 5:18:45 PM

Test Laboratory: RIM TESTING SERVICES

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

DUT: BlackBerry Smartphone;

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 70.0 V/m; Power Drift = -0.004 dB

Maximum value of Total (measured) = 57.8 V/m



Maximum value of peak Total field = 164.2 V/m

Probe Modulation Factor = 2.84

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 70.0 V/m; Power Drift = -0.004 dB

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

Grid 1	Grid 2	Grid 3
136.3 M4	158.6 M3	158.0 M3
Grid 4	Grid 5	Grid 6
140.2 M4	164.2 M3	163.3 M3
Grid 7	Grid 8	Grid 9
138.4 M4	162.5 M3	160.9 M3





Date/Time: 3/10/2010 5:42:59 PM

Test Laboratory: RIM TESTING SERVICES

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

DUT: BlackBerry Smartphone;

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 74.1 V/m; Power Drift = -0.192 dB

Maximum value of Total (measured) = 60.8 V/m



Maximum value of peak Total field = 171.5 V/m

Probe Modulation Factor = 2.84

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 74.1 V/m; Power Drift = -0.192 dB

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

Grid 1	Grid 2	Grid 3
135.5 M4	158.6 M3	158.6 M3
Grid 4	Grid 5	Grid 6
143.5 M4	171.5 M3	171.8 M3
Grid 7	Grid 8	Grid 9
144.4 M4	172.9 M3	173.1 M3





Date/Time: 3/10/2010 8:11:32 PM

Test Laboratory: RIM TESTING SERVICES

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

DUT: BlackBerry Smartphone;

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 65.0 V/m; Power Drift = 0.002 dB

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



Maximum value of peak Total field = 51.8 V/m

Probe Modulation Factor = 0.970

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 65.0 V/m; Power Drift = 0.002 dB

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

Grid 1	Grid 2	Grid 3
43.3 M4	49.5 M4	49.2 M4
Grid 4	Grid 5	Grid 6
45.3 M4	51.8 M4	51.3 M4
Grid 7	Grid 8	Grid 9
45.8 M4	51.5 M4	51.0 M4





Date/Time: 3/10/2010 8:46:16 PM

Test Laboratory: RIM TESTING SERVICES

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

DUT: BlackBerry Smartphone;

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 67.9 V/m; Power Drift = 0.018 dB

Maximum value of Total (measured) = 55.9 V/m



Maximum value of peak Total field = 54.3 V/m

Probe Modulation Factor = 0.970

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 67.9 V/m; Power Drift = 0.018 dB

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

Grid 1	Grid 2	Grid 3
44.3 M4	51.5 M4	51.4 M4
Grid 4	Grid 5	Grid 6
46.6 M4	54.3 M4	53.8 M4
Grid 7	Grid 8	Grid 9
47.4 M4	54.1 M4	53.5 M4





Date/Time: 3/10/2010 8:56:22 PM

Test Laboratory: RIM TESTING SERVICES

File Name: HAC_E_UMTS_band_V_high chan.da4

DUT: BlackBerry Smartphone;

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 73.3 V/m; Power Drift = 0.016 dB

Maximum value of Total (measured) = 59.8 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 = 58.1 V/m

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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Probe Modulation Factor = 0.970

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 73.3 V/m; Power Drift = 0.016 dB

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

Grid 1	Grid 2	Grid 3
48.7 M4	56.1 M4	55.7 M4
Grid 4	Grid 5	Grid 6
50.3 M4	58.1 M4	57.5 M4
Grid 7	Grid 8	Grid 9
50.3 M4	57.6 M4	56.9 M4



-3.90

-4.87

 $0 \ dB = 58.1 \ V/m$



Date/Time: 3/10/2010 9:08:10 PM

Test Laboratory: RIM TESTING SERVICES

File Name: <u>HAC_E_UMTS_band_V_high chan_Telecoil.da4</u>

DUT: BlackBerry Smartphone;

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 73.7 V/m; Power Drift = -0.007 dB

Maximum value of Total (measured) = 60.0 V/m



Maximum value of peak Total field = 58.3 V/m

Probe Modulation Factor = 0.970

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 73.7 V/m; Power Drift = -0.007 dB

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

Grid 1	Grid 2	Grid 3
46.1 M4	54.5 M4	54.5 M4
Grid 4	Grid 5	Grid 6
47.9 M4	58.3 M4	58.3 M4
Grid 7	Grid 8	Grid 9
48.2 M4	58.5 M4	58.5 M4





Date/Time: 3/10/2010 9:08:10 PM

Test Laboratory: RIM TESTING SERVICES

File Name: <u>HAC_E_UMTS_band_V_high chan_Telecoil.da4</u>

DUT: BlackBerry Smartphone;

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 73.7 V/m; Power Drift = -0.007 dB

Maximum value of Total (measured) = 60.0 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 = 58.3 V/m

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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Probe Modulation Factor = 0.970

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 73.7 V/m; Power Drift = -0.007 dB

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

Grid 1	Grid 2	Grid 3
46.1 M4	54.5 M4	54.5 M4
Grid 4	Grid 5	Grid 6
47.9 M4	58.3 M4	58.3 M4
Grid 7	Grid 8	Grid 9
48.2 M4	58.5 M4	58.5 M4





Date/Time: 3/10/2010 6:01:42 PM

Test Laboratory: RIM TESTING SERVICES

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

DUT: BlackBerry Smartphone

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 17.1 V/m; Power Drift = 0.036 dB

Maximum value of Total (measured) = 36.3 V/m



Maximum value of peak Total field = 69.5 V/m

Probe Modulation Factor = 2.66

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 17.1 V/m; Power Drift = 0.036 dB

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

Grid 1	Grid 2	Grid 3
59.8 M3	56.9 M3	49.2 M3
Grid 4	Grid 5	Grid 6
46.7 M4	69.0 M3	69.5 M3
Grid 7	Grid 8	Grid 9





Date/Time: 3/10/2010 6:09:55 PM

Test Laboratory: RIM TESTING SERVICES

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

DUT: BlackBerry Smartphone;

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 16.6 V/m; Power Drift = 0.062 dB

Maximum value of Total (measured) = 30.1 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 = 60.7 V/m

Probe Modulation Factor = 2.66



Device Reference Point: 0.000, 0.000, -6.30 mm Reference Value = 16.6 V/m; Power Drift = 0.062 dB

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

Grid 1	Grid 2	Grid 3
60.5 M3	60.5 M3	55.9 M3
Grid 4	Grid 5	Grid 6
40.8 M4	59.2 M3	60.7 M3
Grid 7	Grid 8	Grid 9
62.0 M3	80.2 M3	79.8 M3







Date/Time: 3/10/2010 6:18:18 PM

Test Laboratory: RIM TESTING SERVICES

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

DUT: BlackBerry Smartphone

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = -0.070 dB

Maximum value of Total (measured) = 27.3 V/m



Maximum value of peak Total field = 56.2 V/m

Probe Modulation Factor = 2.66

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 14.3 V/m; Power Drift = -0.070 dB

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

Grid 1	Grid 2	Grid 3
54.0 M3	56.2 M3	55.7 M3
Grid 4	Grid 5	Grid 6
39.5 M4	52.2 M3	53.6 M3
Grid 7	Grid 8	Grid 9
54.4 M3	73.1 M3	72.8 M3





Date/Time: 3/10/2010 6:28:07 PM

Test Laboratory: RIM TESTING SERVICES

File Name: HAC_E_GSM_1900_low chan_Telecoil.da4

DUT: BlackBerry Smartphone;

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 17.2 V/m; Power Drift = -0.057 dB

Maximum value of Total (measured) = 31.6 V/m

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid

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

Maximum value of peak Total field = 70.5 V/m
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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Probe Modulation Factor = 2.66

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 17.2 V/m; Power Drift = -0.057 dB

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

Grid 1	Grid 2	Grid 3
70.5 M3	70.0 M3	64.1 M3
Grid 4	Grid 5	Grid 6
50.0 M3	47.8 M3	52.2 M3
Grid 7	Grid 8	Grid 9
55.9 M3	83.3 M3	84.3 M2



0 dB = 84.3 V/m



Date/Time: 3/10/2010 7:15:48 PM

Test Laboratory: RIM TESTING SERVICES

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

DUT: BlackBerry Smartphone;

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 21.5 V/m; Power Drift = -0.062 dB

Maximum value of Total (measured) = 46.9 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 = 30.5 V/m

Probe Modulation Factor = 0.910

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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Device Reference Point: 0.000, 0.000, -6.30 mm Reference Value = 21.5 V/m; Power Drift = -0.062 dB

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

Grid 1	Grid 2	Grid 3
27.8 M4	27.1 M4	24.5 M4
Grid 4	Grid 5	Grid 6
19.7 M4	30.2 M4	30.5 M4
Grid 7	Grid 8	Grid 9
33.5 M4	42.7 M4	42.3 M4







Date/Time: 3/10/2010 7:23:13 PM

Test Laboratory: RIM TESTING SERVICES

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

DUT: BlackBerry Smartphone;

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 21.6 V/m; Power Drift = -0.029 dB

Maximum value of Total (measured) = 41.1 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 = 28.0 V/m

Probe Modulation Factor = 0.910

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Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 21.6 V/m; Power Drift = -0.029 dB

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

Grid 1	Grid 2	Grid 3
26.3 M4	26.4 M4	25.2 M4
Grid 4	Grid 5	Grid 6
18.0 M4	27.6 M4	28.0 M4
Grid 7	Grid 8	Grid 9
29.0 M4	37.5 M4	37.2 M4





Date/Time: 3/10/2010 7:32:09 PM

Test Laboratory: RIM TESTING SERVICES

File Name: HAC_E_UMTS_band_II_high chan.da4

DUT: BlackBerry Smartphone;

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 19.2 V/m; Power Drift = 0.001 dB

Maximum value of Total (measured) = 38.3 V/m

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid

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

Maximum value of peak Total field = 26.2 V/m

Probe Modulation Factor = 0.910



Device Reference Point: 0.000, 0.000, -6.30 mm Reference Value = 19.2 V/m; Power Drift = 0.001 dB

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

Grid 1	Grid 2	Grid 3
24.6 M4	26.2 M4	26.1 M4
Grid 4	Grid 5	Grid 6
16.6 M4	25.3 M4	25.8 M4
Grid 7	Grid 8	Grid 9
27.0 M4	35.0 M4	34.7 M4







Date/Time: 3/10/2010 7:41:32 PM

Test Laboratory: RIM TESTING SERVICES

File Name: HAC_E_UMTS_band_II_low chan_Telecoil.da4

DUT: BlackBerry Smartphone;

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: 1/8/2010

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 21.4 V/m; Power Drift = -0.045 dB

Maximum value of Total (measured) = 41.2 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 = 33.1 V/m

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Probe Modulation Factor = 0.910

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 21.4 V/m; Power Drift = -0.045 dB

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

Grid 1	Grid 2	Grid 3
33.1 M4	32.8 M4	29.9 M4
Grid 4	Grid 5	Grid 6
22.3 M4	21.8 M4	24.1 M4
Grid 7	Grid 8	Grid 9
24.2 M4	37.1 M4	37.6 M4





Date/Time: 3/10/2010 9:33:36 PM

Test Laboratory: RIM TESTING SERVICES

File Name: <u>HAC_H_GSM_850_low_chan.da4</u>

DUT: BlackBerry Smartphone;

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.052 A/m; Power Drift = 0.041 dB

Maximum value of Total (measured) = 0.102 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 = 0.206 A/m

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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Probe Modulation Factor = 2.79

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.052 A/m; Power Drift = 0.041 dB

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

Grid 1	Grid 2	Grid 3
0.284 M4	0.206 M4	0.128 M4
Grid 4	Grid 5	Grid 6
0.254 M4	0.184 M4	0.113 M4
Grid 7	Grid 8	Grid 9
0.266 M4	0.189 M4	0.111 M4





Date/Time: 3/10/2010 9:45:06 PM

Test Laboratory: RIM TESTING SERVICES

File Name: <u>HAC_H_GSM_850_mid_chan.da4</u>

DUT: BlackBerry Smartphone;

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.052 A/m; Power Drift = -0.004 dB Maximum value of Total (measured) = 0.107 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 = 0.217 A/m

Probe Modulation Factor = 2.79

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.052 A/m; Power Drift = -0.004 dB

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

Grid 1	Grid 2	Grid 3
0.298 M4	0.217 M4	0.140 M4
Grid 4	Grid 5	Grid 6
0.262 M4	0.191 M4	0.118 M4
Grid 7	Grid 8	Grid 9
0.279 M4	0.195 M4	0.107 M4





Date/Time: 3/10/2010 9:57:08 PM

Test Laboratory: RIM TESTING SERVICES

File Name: <u>HAC_H_GSM_850_high_chan.da4</u>

DUT: BlackBerry Smartphone;

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.059 A/m; Power Drift = 0.153 dB

Maximum value of Total (measured) = 0.111 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

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Probe Modulation Factor = 2.79

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.059 A/m; Power Drift = 0.153 dB

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

Grid 1	Grid 2	Grid 3
0.296 M4	0.218 M4	0.138 M4
Grid 4	Grid 5	Grid 6
0.279 M4	0.208 M4	0.133 M4
Grid 7	Grid 8	Grid 9
0.310 M4	0.228 M4	0.144 M4





Date/Time: 3/10/2010 10:06:08 PM

Test Laboratory: RIM TESTING SERVICES

File Name: <u>HAC_H_GSM_850_high_chan_Telecoil.da4</u>

DUT: BlackBerry Smartphone;

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.061 A/m; Power Drift = 0.038 dB

Maximum value of Total (measured) = 0.111 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 = 0.235 A/m

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Probe Modulation Factor = 2.79

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.061 A/m; Power Drift = 0.038 dB

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

Grid 1	Grid 2	Grid 3
0.310 M4	0.235 M4	0.151 M4
Grid 4	Grid 5	Grid 6
0.297 M4	0.225 M4	0.145 M4
Grid 7	Grid 8	Grid 9
0.305 M4	0.233 M4	0.153 M4





Date/Time: 3/10/2010 10:58:19 PM

Test Laboratory: RIM TESTING SERVICES

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

DUT: BlackBerry Smartphone;

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.044 A/m; Power Drift = -0.023 dB

Maximum value of Total (measured) = 0.088 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 = 0.064 A/m

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Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.044 A/m; Power Drift = -0.023 dB

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

Grid 1	Grid 2	Grid 3
0.088 M4	0.064 M4	0.040 M4
Grid 4	Grid 5	Grid 6
0.078 M4	0.057 M4	0.034 M4
Grid 7	Grid 8	Grid 9
0.086 M4	0.061 M4	0.035 M4





Date/Time: 3/10/2010 11:05:05 PM

Test Laboratory: RIM TESTING SERVICES

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

DUT: BlackBerry Smartphone;

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.045 A/m; Power Drift = 0.165 dB

Maximum value of Total (measured) = 0.092 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 = 0.067 A/m

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Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.045 A/m; Power Drift = 0.165 dB

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

Grid 1	Grid 2	Grid 3
0.092 M4	0.067 M4	0.044 M4
Grid 4	Grid 5	Grid 6
0.080 M4	0.058 M4	0.037 M4
Grid 7	Grid 8	Grid 9
0.086 M4	0.061 M4	0.034 M4





Date/Time: 3/10/2010 11:12:08 PM

Test Laboratory: RIM TESTING SERVICES

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

DUT: BlackBerry Smartphone;

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.056 A/m; Power Drift = 0.062 dB

Maximum value of Total (measured) = 0.104 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 = 0.077 A/m

Probe Modulation Factor = 1.00



Device Reference Point: 0.000, 0.000, -6.30 mm Reference Value = 0.056 A/m; Power Drift = 0.062 dB

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

Grid 1	Grid 2	Grid 3
0.104 M4	0.077 M4	0.049 M4
Grid 4	Grid 5	Grid 6
0.094 M4	0.070 M4	0.044 M4
Grid 7	Grid 8	Grid 9
0.104 M4	0.077 M4	0.046 M4



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-7.68

-10.2

-12.8

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Date/Time: 3/10/2010 11:18:01 PM

Test Laboratory: RIM TESTING SERVICES

File Name: <u>HAC_H_UMTS_band_V_high chan_Telecoil.da4</u>

DUT: BlackBerry Smartphone;

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.056 A/m; Power Drift = -0.015 dB

Maximum value of Total (measured) = 0.108 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 = 0.083 A/m
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Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.056 A/m; Power Drift = -0.015 dB

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

Grid 1	Grid 2	Grid 3
0.108 M4	0.083 M4	0.054 M4
Grid 4	Grid 5	Grid 6
0.101 M4	0.077 M4	0.050 M4
Grid 7	Grid 8	Grid 9
0.103 M4	0.078 M4	0.049 M4





Date/Time: 3/10/2010 10:14:42 PM

Test Laboratory: RIM TESTING SERVICES

File Name: <u>HAC_H_GSM_1900_low_chan.da4</u>

DUT: BlackBerry Smartphone;

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.078 A/m; Power Drift = -0.151 dB

Maximum value of Total (measured) = 0.080 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 = 0.192 A/m



Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.078 A/m; Power Drift = -0.151 dB

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

Grid 1	Grid 2	Grid 3
0.142 M3	0.192 M3	0.194 M3
Grid 4	Grid 5	Grid 6
0.140 M4	0.192 M3	0.194 M3
Grid 7	Grid 8	Grid 9
0.191 M3	0.164 M3	0.166 M3







Date/Time: 3/10/2010 10:21:20 PM

Test Laboratory: RIM TESTING SERVICES

File Name: <u>HAC_H_GSM_1900_mid_chan.da4</u>

DUT: BlackBerry Smartphone;

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.074 A/m; Power Drift = -0.097 dB

Maximum value of Total (measured) = 0.074 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 = 0.180 A/m

Testing Services™	Annex A to Hearing Annex for the Black	Aid Compatibility RF Emis Berry® Smartphone model	sions Test RCY71UW	Page 187 (206)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.074 A/m; Power Drift = -0.097 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.160 M3	0.180 M3	0.180 M3
Grid 4	Grid 5	Grid 6
0.143 M3	0.179 M3	0.180 M3
Grid 7	Grid 8	Grid 9
0.157 M3	0.154 M3	0.154 M3

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Date/Time: 3/10/2010 10:28:06 PM

Test Laboratory: RIM TESTING SERVICES

File Name: <u>HAC_H_GSM_1900_high_chan.da4</u>

DUT: BlackBerry Smartphone;

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.069 A/m; Power Drift = -0.072 dB

Maximum value of Total (measured) = 0.069 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 = 0.165 A/m

Testing Services™	Annex A to Hearing Report for the Black	Aid Compatibility RF Emis Berry® Smartphone model	sions Test RCY71UW	Page 190 (206)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.069 A/m; Power Drift = -0.072 dB

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

Grid 1	Grid 2	Grid 3
0.156 M3	0.165 M3	0.167 M3
Grid 4	Grid 5	Grid 6
0.130 M4	0.165 M3	0.167 M3
Grid 7	Grid 8	Grid 9
0.155 M3	0.148 M3	0.149 M3





Date/Time: 3/10/2010 10:37:03 PM

Test Laboratory: RIM TESTING SERVICES

File Name: <u>HAC_H_GSM_1900_low_chan_Telecoil.da4</u>

DUT: BlackBerry Smartphone;

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.078 A/m; Power Drift = 0.062 dB

Maximum value of Total (measured) = 0.082 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 = 0.189 A/m

Testing Services™	Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RCY71UW		Page 193 (206)	
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.078 A/m; Power Drift = 0.062 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.147 M3	0.186 M3	0.194 M3
Grid 4	Grid 5	Grid 6
0.133 M4	0.189 M3	0.198 M3
Grid 7	Grid 8	Grid 9
0.156 M3	0.182 M3	0.188 M3

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Date/Time: 3/10/2010 11:24:29 PM

Test Laboratory: RIM TESTING SERVICES

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

DUT: BlackBerry Smartphone;

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.102 A/m; Power Drift = -0.084 dB

Maximum value of Total (measured) = 0.102 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 = 0.099 A/m

Testing Services™	Annex A to Hearing Report for the Black	Aid Compatibility RF Emis Berry® Smartphone model	sions Test RCY71UW	Page 196 (206)
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Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.102 A/m; Power Drift = -0.084 dB

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

Grid 1	Grid 2	Grid 3
0.081 M4	0.099 M4	0.099 M4
Grid 4	Grid 5	Grid 6
0.077 M4	0.099 M4	0.099 M4
Grid 7	Grid 8	Grid 9
0.092 M4	0.086 M4	0.086 M4





Date/Time: 3/10/2010 11:30:41 PM

Test Laboratory: RIM TESTING SERVICES

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

DUT: BlackBerry Smartphone;

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.094 A/m; Power Drift = 0.075 dB Maximum value of Total (measured) = 0.096 A/m

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H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm
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Maximum value of peak Total field = 0.093 A/m

Probe Modulation Factor = 0.970

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.094 A/m; Power Drift = 0.075 dB

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

Grid 1	Grid 2	Grid 3
0.082 M4	0.093 M4	0.093 M4
Grid 4	Grid 5	Grid 6
0.074 M4	0.093 M4	0.093 M4
Grid 7	Grid 8	Grid 9
0.083 M4	0.080 M4	0.080 M4





Date/Time: 3/10/2010 11:37:57 PM

Test Laboratory: RIM TESTING SERVICES

File Name: HAC_H_UMTS_band_II_high chan.da4

DUT: BlackBerry Smartphone;

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.091 A/m; Power Drift = -0.159 dB

Maximum value of Total (measured) = 0.091 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 = 0.088 A/m



Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.091 A/m; Power Drift = -0.159 dB

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

Grid 1	Grid 2	Grid 3
0.085 M4	0.088 M4	0.088 M4
Grid 4	Grid 5	Grid 6
0.071 M4	0.088 M4	0.088 M4
Grid 7	Grid 8	Grid 9
0.080 M4	0.075 M4	0.075 M4



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Date/Time: 3/10/2010 11:45:55 PM

Test Laboratory: RIM TESTING SERVICES

File Name: HAC_H_UMTS_band_II_low chan_Telecoil.da4

DUT: BlackBerry Smartphone;

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 - SN6105; ; Calibrated: 11/13/2009

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

- Electronics: DAE3 Sn473; Calibrated: 1/4/2010

- 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 = 0.102 A/m; Power Drift = -0.116 dB

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

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm Maximum value of peak Total field = 0.097 A/m

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Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Mar. 08-10, 2010	RTS-2337-1003-22	L6ARCY70U	W

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.102 A/m; Power Drift = -0.116 dB

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

Grid 1	Grid 2	Grid 3
0.088 M4	0.096 M4	0.099 M4
Grid 4		
	Grid 5	Grid 6
0.074 M4	0.097 M4	0.100 M4
Grid 7	Grid 8	Grid 9
0.077 M4	0.093 M4	0.095 M4

