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Annex A: Measurement data and plots

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

Please refere to Annex A.1 of the report number RTS-1689-0908-36 for the plots

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A.2 Dipole validation and probe modulation factor plots

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Date/Time: 6/30/2010 10:20:21 AM

Test Laboratory: RIM Testing Services

HAC_E_Dipole_835MHz_20dBm

DUT: HAC-Dipole 835 MHz; Type: D835V3

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 = 109.7 V/m; Power Drift = -0.032 dB Maximum value of Total (measured) = 170.9 V/m

E Scan - measurement distance from the probe sensor center to

CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x361x1):

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



Maximum value of peak Total field = 171.7 V/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

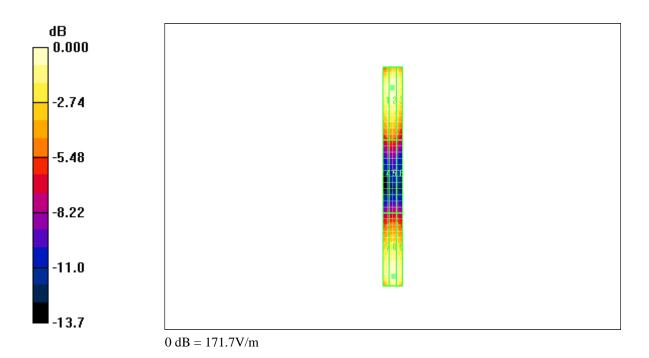
Reference Value = 109.7 V/m; Power Drift = -0.032 dB

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

Grid 1 Grid 2 Grid 3 167.8 M4 171.7 M4 164.8 M4 Grid 4 Grid 5 Grid 6 90.9 M4 91.4 M4 87.0 M4 Grid 7 Grid 8 Grid 9 164.1 M4 171.1 M4 168.0 M4

Peak E-field in V/m

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Date/Time: 6/30/2010 9:21:21 AM

Test Laboratory: RIM Testing Services

HAC_E_Dipole_1880MHz_20dBm

DUT: HAC Dipole 1880 MHz; Type: CD1880V3

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

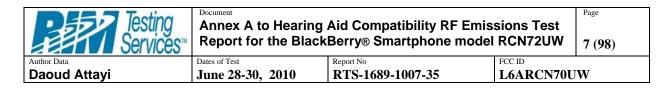
CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (5x19x1):

Measurement grid: dx=5mm, dy=5mm Probe Modulation Factor = 1.00 Device Reference Point: 0.000, 0.000, -6.30 mm Reference Value = 150.7 V/m; Power Drift = 0.035 dB Maximum value of Total (measured) = 130.5 V/m

E Scan - measurement distance from the probe sensor center to

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

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



Maximum value of peak Total field = 132.8 V/m

Probe Modulation Factor = 1.00

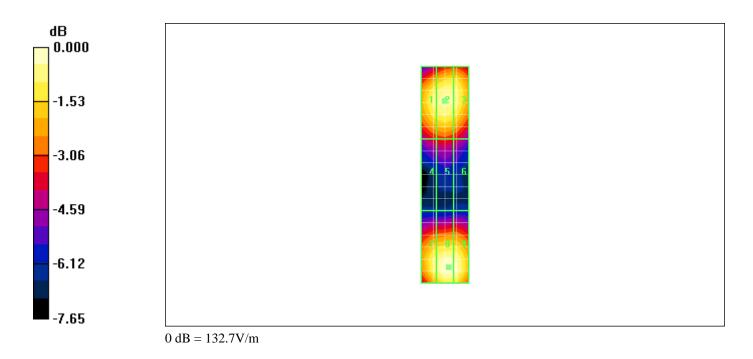
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 150.7 V/m; Power Drift = 0.035 dB

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

Peak E-field in V	V/m	
Grid 1	Grid 2	Grid 3
123.9 M2	127.1 M2	125.3 M2
Grid 4	Grid 5	Grid 6
89.4 M3	91.3 M3	88.4 M3
Grid 7	Grid 8	Grid 9
125.5 M2	132.8 M2	131.7 M2

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Date/Time: 6/30/2010 10:34:30 AM

Test Laboratory: RIM Testing Services

HAC_H_Dipole_835MHz_20dBm

DUT: HAC-Dipole 835 MHz; Type: D835V3

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 SN6168; ; Calibrated: 3/12/2010
- 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

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 = 0.526 A/m; Power Drift = -0.030 dB Maximum value of Total (measured) = 0.490 A/m

H Scan - measurement distance from the probe sensor center to

CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x121x1):

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



Maximum value of peak Total field = 0.491 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

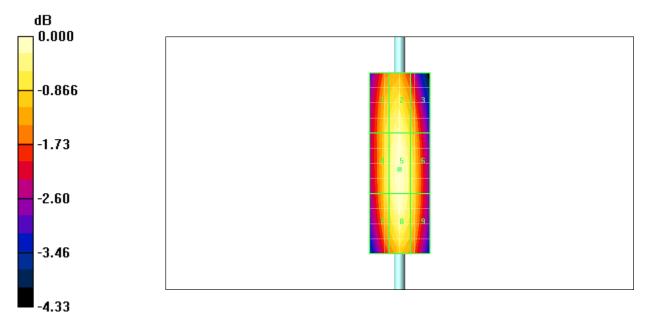
Reference Value = 0.526 A/m; Power Drift = -0.030 dB

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

Peak H-field in A	A/m	
Grid 1	Grid 2	Grid 3
0.464 M4	0.479 M4	0.452 M4
Grid 4	Grid 5	Grid 6
0.469 M4	0.491 M4	0.466 M4
Grid 7	Grid 8	Grid 9
	cina c	
0.466 M4	0.489 M4	0.465 M4

Peak H-field in A/m

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 $0 \ dB = 0.491 \mbox{A/m}$

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Date/Time: 6/30/2010 8:51:06 AM

Test Laboratory: RIM Testing Services

HAC_H_Dipole_1880MHz_20dBm

DUT: HAC Dipole 1880 MHz; Type: CD1880V3

Communication System: CW; Frequency: 1880 MHz;Duty Cycle: 1:1 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 SN6168; ; Calibrated: 3/12/2010
- 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 = 0.499 A/m; Power Drift = -0.048 dB Maximum value of Total (measured) = 0.467 A/m

H Scan - measurement distance from the probe sensor center to

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

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



Maximum value of peak Total field = 0.467 A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, -6.30 mm

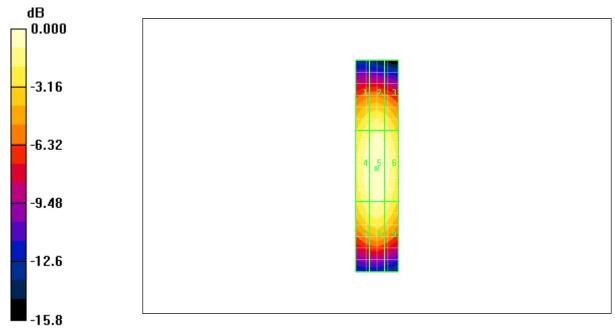
Reference Value = 0.499 A/m; Power Drift = -0.048 dB

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

Grid 1	Grid 2	Grid 3
0.396 M2	0.413 M2	0.394 M2
Grid 4	Grid 5	Grid 6
0.447 M2	0.467 M2	0.442 M2
Grid 7	Grid 8	Grid 9
0.411 M2	0.431 M2	0.405 M2

Peak H-field in A/m





 $0 \; dB = 0.467 A/m$

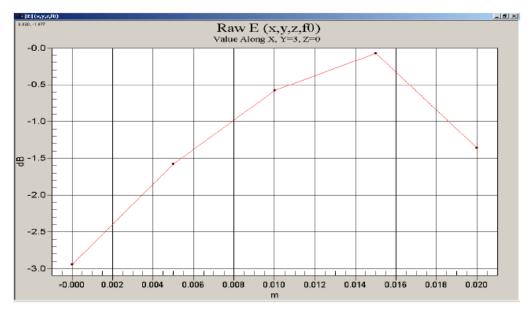
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Please refere to Annex A.2 of the report number RTS-1689-0908-36 for the probe modulation factor plots

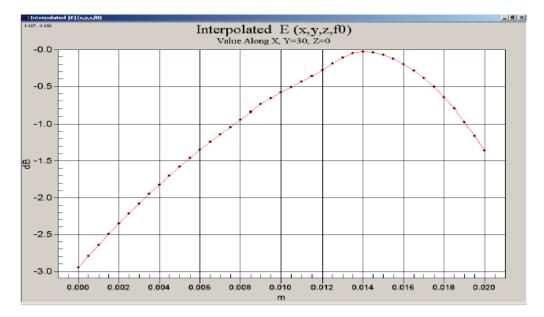
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Justification of Step Size and Interpolation

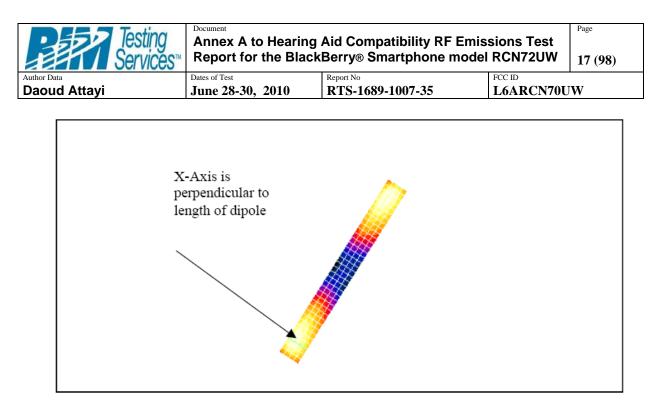
This section demonstrates that a 5mm step size with interpolation provides sufficient resolution for RF emissions measurements. The DASY 4 uses interpolation algorithms to derive 9 interpolated points between every measured point.



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



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



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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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/	E in V/m (Time averaged) E in V/m (Slot averaged)						
Grid 1	Grid 2	Grid 3		Grid 1	Grid 2	Grid 3	
123.2	138.1	138.4		123.2	138.1	138.4	
Grid 4	Grid 5	Grid 6		Grid 4	Grid 5	Grid 6	
80.9	92.3	92.2		80.9	92.3	92.2	
	Grid 8			Grid 7			
119.8	131.0	130.7		119.8	131.0	130.7	

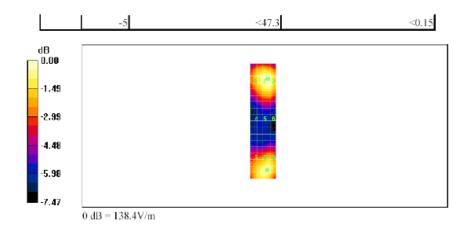
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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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)

Е	E in V/m (Time averaged) E in V/m (Slot averaged)							
G	rid 1	Grid 2	Grid 3		Grid 1	Grid 2	Grid 3	
12	23.1	138.6	138.6		123.1	138.6	138.6	
G	rid 4	Grid 5	Grid 6		Grid 4	Grid 5	Grid 6	
8	1.4	92.1	91.6		81.4	92.1	91.6	
		Grid 8			Grid 7			
12	21.3	131.2	131.0		121.3	131.2	131.0	

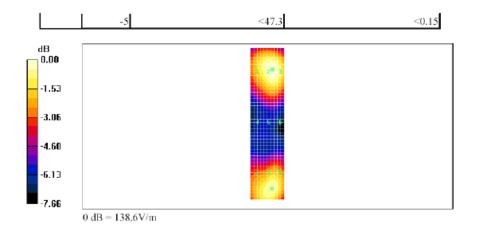
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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Lab: RIM Testing Services (RTS)

HAC_H_Dipole_CW 1880_5 mm step_07_14_05

DUT: HAC Dipole 1880 MHz; Type: CD1880V3

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_c = 1$; $\rho = 1$ 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/	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			
0.389	0.406	0.389		0.389	0.406	0.389	
Grid 7				Grid 7			
0.363	0.378	0.363		0.363	0.378	0.363	

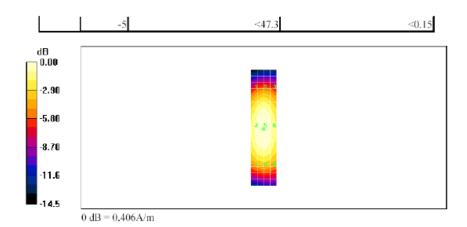
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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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

 0.347
 0.361
 0.348

 Grid 4
 Grid 5
 Grid 6

 0.394
 0.406
 0.391

 Grid 7
 Grid 8
 Grid 9

 Grid 7
 Grid 8
 Grid 9

 Grid 7
 0.380
 0.365

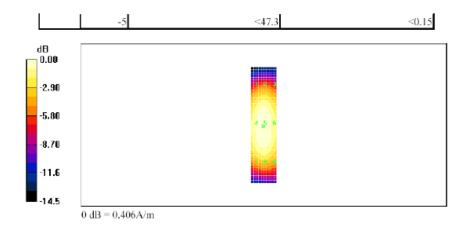
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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

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

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A.3 RF emission field plots

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Daoud Attayi	June 28-30, 2010	RTS-1689-1007-35	L6ARCN70U	W

Date/Time: 6/30/2010 2:17:43 PM

Test Laboratory: RIM Testing Services

HAC_E_GSM_850_low_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

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

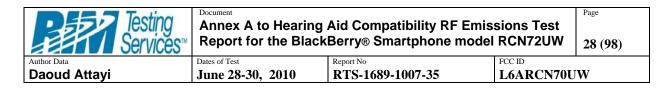
Device/Hearing Aid Compatibility Test (11x11x1): Measurement grid:

dx=5mm, dy=5mm Probe Modulation Factor = 1.00 Device Reference Point: 0.000, 0.000, -6.30 mm Reference Value = 89.0 V/m; Power Drift = 0.097 dB Maximum value of Total (measured) = 69.6 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 = 199.2 V/m

Probe Modulation Factor = 2.87

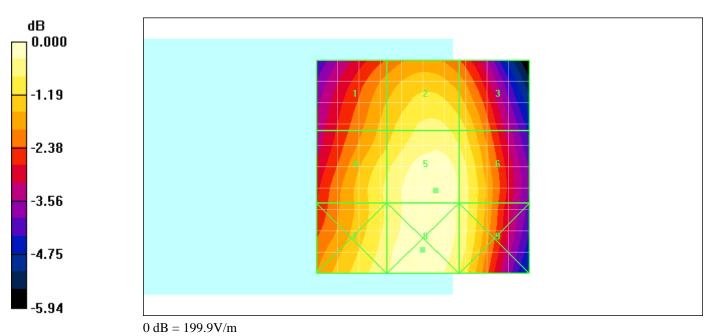
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 89.0 V/m; Power Drift = 0.097 dB

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

Peak E-field in	Peak E-field in V/m					
Grid 1	Grid 2	Grid 3				
171.4 M3	185.7 M3	178.7 M3				
Grid 4	Grid 5	Grid 6				
184.4 M3	199.2 M3	190.0 M3				
Grid 7	Grid 8	Grid 9				
190.1 M3	199.9 M3	189.6 M3				





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Date/Time: 6/30/2010 2:24:41 PM

Test Laboratory: RIM Testing Services

HAC_E_GSM_850_mid_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

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 = 95.6 V/m; Power Drift = -0.023 dB Maximum value of Total (measured) = 74.5 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 = 211.8 V/m

Probe Modulation Factor = 2.87

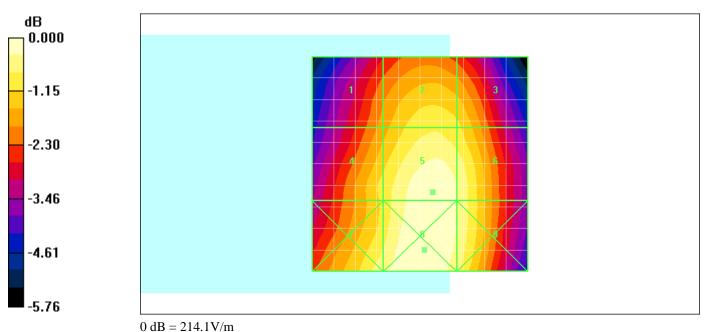
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 95.6 V/m; Power Drift = -0.023 dB

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

Peak E-field in V	/m	
Grid 1	Grid 2	Grid 3
176.1 M3	195.0 M3	190.1 M3
Grid 4	Grid 5	Grid 6
191.4 M3	211.8 M3	204.8 M3
Grid 7	Grid 8	Grid 9
203.1 M3	214.1 M3	204.5 M3





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Date/Time: 6/30/2010 2:29:36 PM

Test Laboratory: RIM Testing Services

HAC_E_GSM_850_high_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

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 = 96.2 V/m; Power Drift = -0.043 dB Maximum value of Total (measured) = 74.5 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 = 214.4 V/m

Probe Modulation Factor = 2.87

Device Reference Point: 0.000, 0.000, -6.30 mm

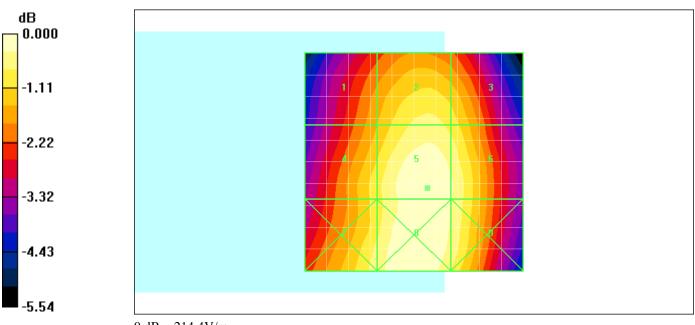
Reference Value = 96.2 V/m; Power Drift = -0.043 dB

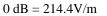
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Grid 1	Grid 2	Grid 3
180.8 M3	200.4 M3	194.0 M3
Grid 4	Grid 5	Grid 6
194.2 M3	214.4 M3	206.9 M3
Grid 7	Grid 8	Grid 9
201.4 M3	214.1 M3	206.1 M3

Peak E-field in V/m







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Test Laboratory: RIM Testing Services

HAC_E_GSM_850_high_chan_Telecoil

DUT: BlackBerry Smartphone; Type: SAMPLE

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 = 95.5 V/m; Power Drift = 0.008 dB Maximum value of Total (measured) = 73.7 V/m

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

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

dx=5mm, dy=5mm



Maximum value of peak Total field = 211.6 V/m

Probe Modulation Factor = 2.87

Device Reference Point: 0.000, 0.000, -6.30 mm

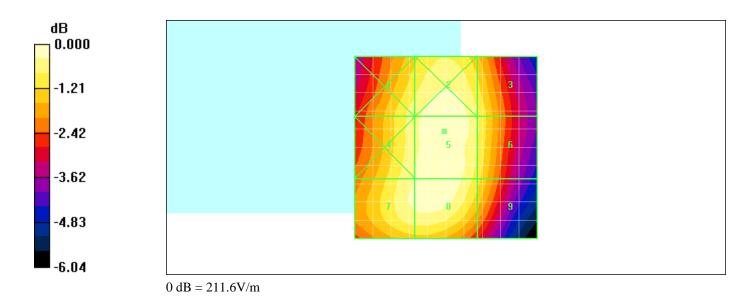
Reference Value = 95.5 V/m; Power Drift = 0.008 dB

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

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
198.8 M3	211.1 M3	194.2 M3
Grid 4	Grid 5	Grid 6
203.5 M3	211.6 M3	194.6 M3
Grid 7	Grid 8	Grid 9
205.0 M3	210.8 M3	188.3 M3

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Date/Time: 6/30/2010 2:43:12 PM

Test Laboratory: RIM Testing Services

HAC_E_GSM_1900_low_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

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 = 13.4 V/m; Power Drift = 0.116 dB Maximum value of Total (measured) = 28.8 V/m

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

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



Maximum value of peak Total field = 55.7 V/m

Probe Modulation Factor = 2.79

Device Reference Point: 0.000, 0.000, -6.30 mm

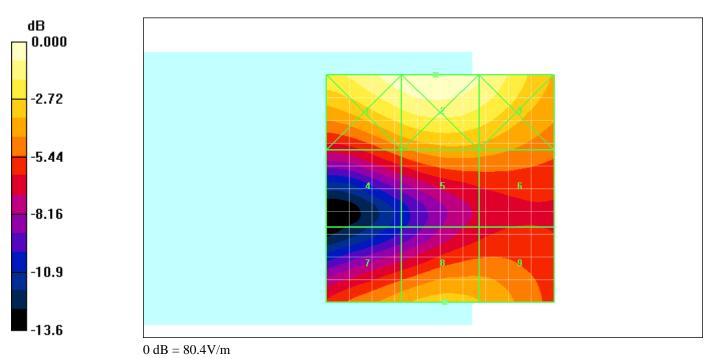
Reference Value = 13.4 V/m; Power Drift = 0.116 dB

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

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
77.6 M3	80.4 M3	73.9 M3
Grid 4	Grid 5	Grid 6
46.4 M4	51.5 M3	50.5 M3
Grid 7	Grid 8	Grid 9
51.7 M3	55.7 M3	53.5 M3





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Test Laboratory: RIM Testing Services

HAC_E_GSM_1900_mid_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

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 = 12.8 V/m; Power Drift = -0.061 dB Maximum value of Total (measured) = 24.6 V/m

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

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



Maximum value of peak Total field = 47.2 V/m

Probe Modulation Factor = 2.79

Device Reference Point: 0.000, 0.000, -6.30 mm

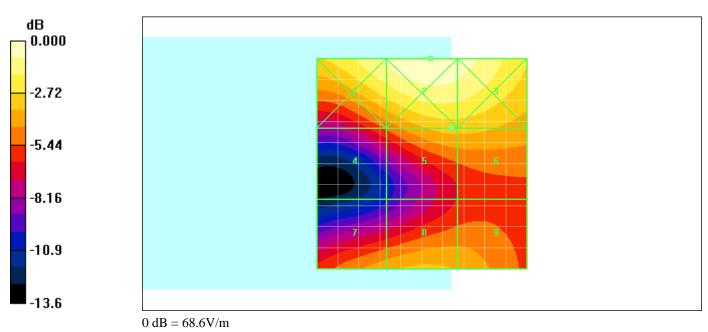
Reference Value = 12.8 V/m; Power Drift = -0.061 dB

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

Peak E-field i	n V/m	
Grid 1	Grid 2	Grid 3
63.6 M3	68.6 M3	66.1 M3
Grid 4	Grid 5	Grid 6
37.6 M4	47.2 M4	47.2 M4
Grid 7	Grid 8	Grid 9
43.9 M4	46.4 M4	44.9 M4

Deals E field in W/m





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Date/Time: 6/30/2010 2:57:37 PM

Test Laboratory: RIM Testing Services

HAC_E_GSM_1900_high_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

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

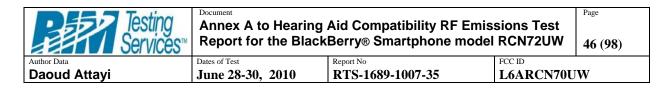
E Scan - ER3D - 2007: 15 mm from Probe Center to the

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 = 14.2 V/m; Power Drift = 0.121 dB Maximum value of Total (measured) = 23.8 V/m

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

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



Maximum value of peak Total field = 49.3 V/m

Probe Modulation Factor = 2.79

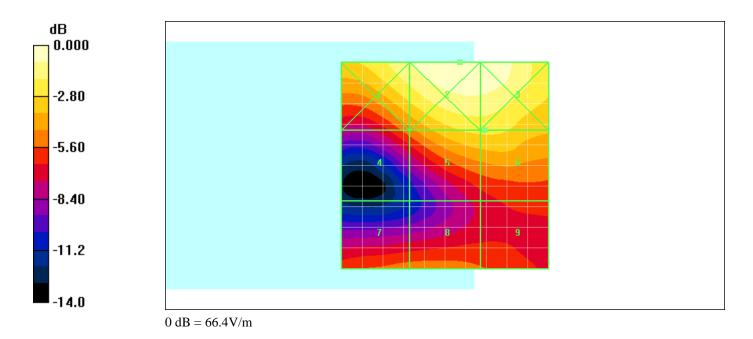
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 14.2 V/m; Power Drift = 0.121 dB

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

Peak E-field in V	V/m	
Grid 1	Grid 2	Grid 3
59.7 M3	66.4 M3	65.7 M3
Grid 4	Grid 5	Grid 6
37.3 M4	49.3 M3	49.3 M3
Grid 7	Grid 8	Grid 9
37.1 M4	37.6 M4	35.4 M4

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Date/Time: 6/30/2010 3:42:45 PM

Test Laboratory: RIM Testing Services

HAC_E_GSM_1900_low_chan_Telecoil

DUT: BlackBerry Smartphone; Type: SAMPLE

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

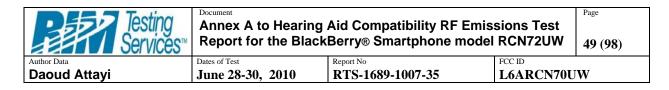
E Scan - ER3D - 2007: 15 mm from Probe Center to the

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 = 12.6 V/m; Power Drift = 0.222 dB Maximum value of Total (measured) = 22.1 V/m

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

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



Maximum value of peak Total field = 62.0 V/m

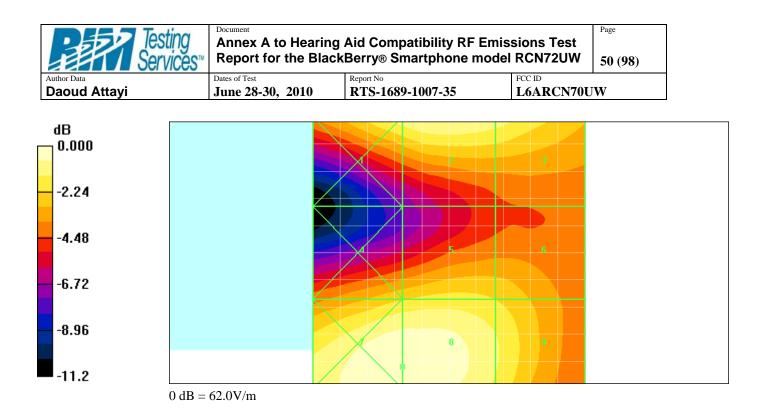
Probe Modulation Factor = 2.79

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 12.6 V/m; Power Drift = 0.222 dB

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

Peak E-field in V/m					
Grid 1	Grid 2	Grid 3			
55.8 M3	58.6 M3	55.5 M3			
Grid 4	Grid 5	Grid 6			
47.6 M3	49.6 M3	47.9 M3			
Grid 7	Grid 8	Grid 9			
62.0 M3	62.0 M3	53.0 M3			



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Date/Time: 6/30/2010 3:16:22 PM

Test Laboratory: RIM Testing Services

HAC_E_UMTS_band_IV_low_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

Communication System: WCDMA FDD IV; Frequency: 1712.4 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 = 20.4 V/m; Power Drift = 0.000 dB Maximum value of Total (measured) = 38.6 V/m

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

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

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dx=5mm, dy=5mm

Maximum value of peak Total field = 28.4 V/m

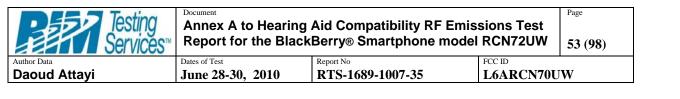
Probe Modulation Factor = 0.950

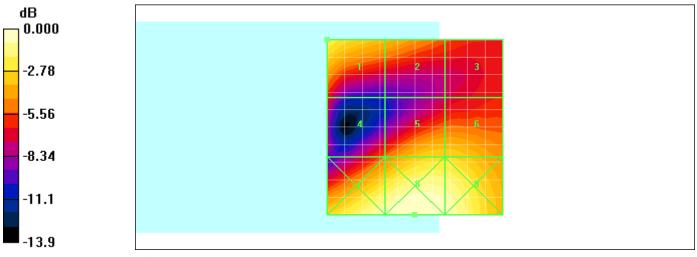
- Device Reference Point: 0.000, 0.000, -6.30 mm
- Reference Value = 20.4 V/m; Power Drift = 0.000 dB

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

Grid 2 Grid 3 Grid 1 28.4 M4 23.5 M4 19.0 M4 Grid 4 Grid 5 Grid 6 19.7 M4 25.8 M4 25.7 M4 Grid 8 Grid 9 Grid 7 36.7 M4 34.1 M4 34.0 M4

Peak E-field in V/m





 $0 \ dB = 36.7 \ V/m$

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Date/Time: 6/30/2010 3:22:02 PM

Test Laboratory: RIM Testing Services

HAC_E_UMTS_band_IV_mid_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

Communication System: WCDMA FDD IV; Frequency: 1732.6 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 = 18.4 V/m; Power Drift = -0.318 dB Maximum value of Total (measured) = 42.3 V/m

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

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

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dx=5mm, dy=5mm

Maximum value of peak Total field = 29.5 V/m

Probe Modulation Factor = 0.950

Device Reference Point: 0.000, 0.000, -6.30 mm

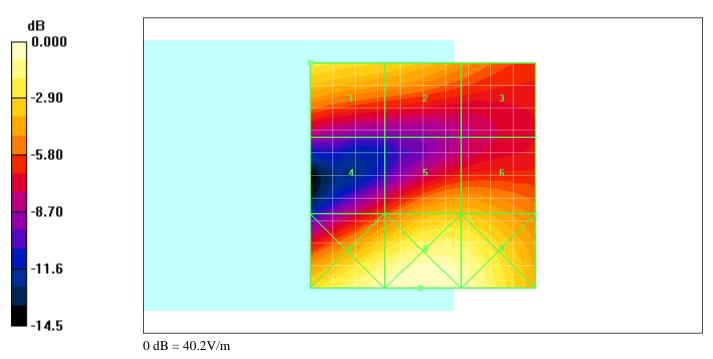
Reference Value = 18.4 V/m; Power Drift = -0.318 dB

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

Grid 1 Grid 2 Grid 3 29.5 M4 27.4 M4 22.8 M4 Grid 4 Grid 5 Grid 6 20.0 M4 26.0 M4 26.0 M4 Grid 7 Grid 8 Grid 9 37.5 M4 40.2 M4 37.0 M4

Peak E-field in V/m





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Test Laboratory: RIM Testing Services

HAC_E_UMTS_band_IV_high_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

Communication System: WCDMA FDD IV; Frequency: 1752.5 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 = 14.7 V/m; Power Drift = -0.076 dB Maximum value of Total (measured) = 38.8 V/m

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

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

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dx=5mm, dy=5mm

Maximum value of peak Total field = 36.8 V/m

Probe Modulation Factor = 0.950

Device Reference Point: 0.000, 0.000, -6.30 mm

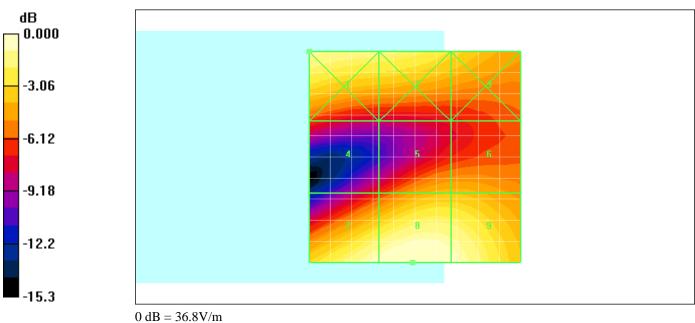
Reference Value = 14.7 V/m; Power Drift = -0.076 dB

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

Grid 1	Grid 2	Grid 3
32.0 M4	29.9 M4	25.7 M4
Grid 4	Grid 5	Grid 6
17.1 M4	22.8 M4	22.8 M4
Grid 7	Grid 8	Grid 9
34.4 M4	36.8 M4	34.2 M4

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







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Date/Time: 6/30/2010 3:33:08 PM

Test Laboratory: RIM Testing Services

HAC_E_UMTS_band_IV_high_chan_Telecoil

DUT: BlackBerry Smartphone; Type: SAMPLE

Communication System: WCDMA FDD IV; Frequency: 1752.5 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 = 14.3 V/m; Power Drift = 0.340 dB Maximum value of Total (measured) = 40.3 V/m

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

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

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dx=5mm, dy=5mm

Maximum value of peak Total field = 38.3 V/m

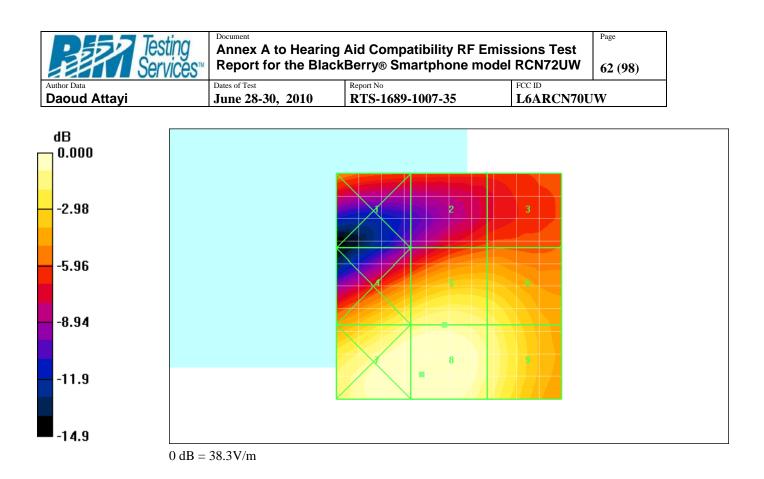
Probe Modulation Factor = 0.950

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 14.3 V/m; Power Drift = 0.340 dB

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

Peak E-field in	n V/m	
Grid 1	Grid 2	Grid 3
20.7 M4	19.0 M4	19.5 M4
Grid 4	Grid 5	Grid 6
31.1 M4	33.1 M4	30.7 M4
Grid 7	Grid 8	Grid 9
38.1 M4	38.3 M4	32.8 M4



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Test Laboratory: RIM Testing Services

HAC_H_GSM850_low_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 SN6168; ; Calibrated: 3/12/2010
- 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 - 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 = 0.075 A/m; Power Drift = 0.115 dB Maximum value of Total (measured) = 0.156 A/m

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

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



Maximum value of peak Total field = 0.295 A/m

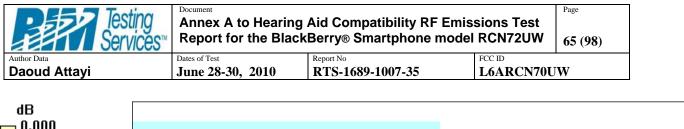
Probe Modulation Factor = 2.77

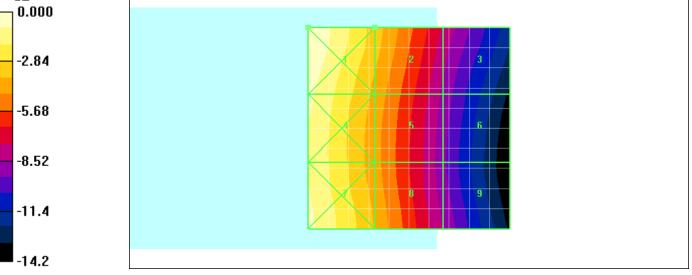
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.075 A/m; Power Drift = 0.115 dB

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

Peak H-field in A	A/m	
Grid 1	Grid 2	Grid 3
0.431 M4	0.295 M4	0.177 M4
Grid 4	Grid 5	Grid 6
0.398 M4	0.271 M4	0.158 M4
Grid 7	Grid 8	Grid 9
0.401 M4	0.277 M4	0.162 M4





 $0 \, dB = 0.431 \, A/m$

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Test Laboratory: RIM Testing Services

HAC_H_GSM850_mid_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

Communication System: GSM 850; Frequency: 836.8 MHz;Duty Cycle: 1:8.3 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 SN6168; ; Calibrated: 3/12/2010
- 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 - H3DV6 - 2007: 15 mm from Probe Center to the

Device/Hearing Aid Compatibility Test (11x11x1): Measurement grid:

dx=5mm, dy=5mm Probe Modulation Factor = 1.00 Device Reference Point: 0.000, 0.000, -6.30 mm Reference Value = 0.089 A/m; Power Drift = -0.065 dB Maximum value of Total (measured) = 0.171 A/m

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

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



Maximum value of peak Total field = 0.333 A/m

Probe Modulation Factor = 2.77

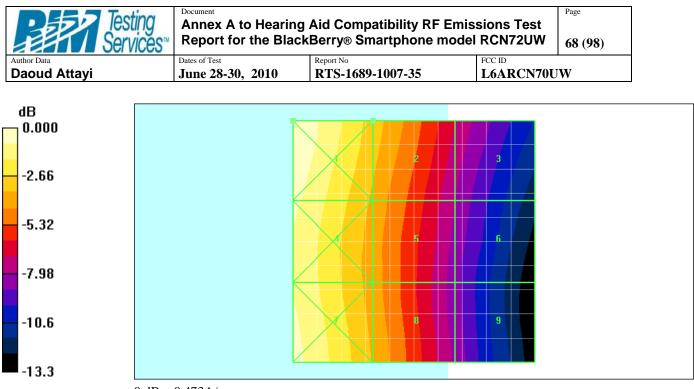
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.089 A/m; Power Drift = -0.065 dB

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

Peak H-field in A/m				
Grid 1	Grid 2	Grid 3		
0.473 M3	0.333 M4	0.209 M4		
Grid 4	Grid 5	Grid 6		
0.441 M4	0.309 M4	0.189 M4		
Grid 7	Grid 8	Grid 9		
0.444 M4	0.312 M4	0.185 M4		

Peak H-field in A/m



 $0 \, dB = 0.473 \text{A/m}$

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Test Laboratory: RIM Testing Services

HAC_H_GSM850_high_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 SN6168; ; Calibrated: 3/12/2010
- 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 - 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 = 0.097 A/m; Power Drift = -0.146 dB Maximum value of Total (measured) = 0.177 A/m

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

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



Maximum value of peak Total field = 0.356 A/m

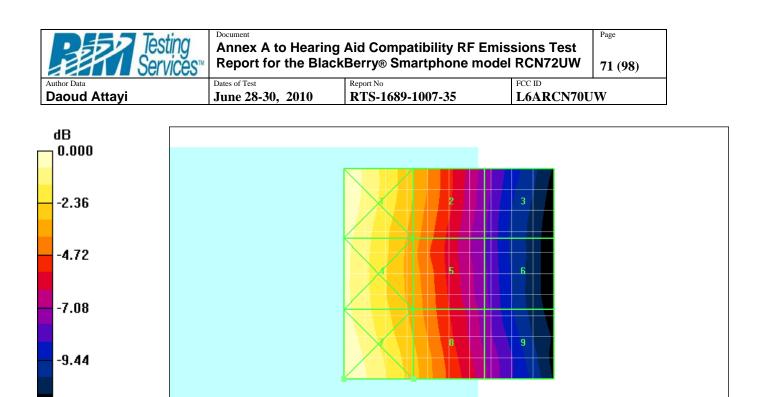
Probe Modulation Factor = 2.77

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.097 A/m; Power Drift = -0.146 dB

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

Peak H-field in A/m				
Grid 1	Grid 2	Grid 3		
0.487 M3	0.344 M4	0.209 M4		
Grid 4	Grid 5	Grid 6		
0.468 M3	0.331 M4	0.207 M4		
Grid 7	Grid 8	Grid 9		
0.491 M3	0.356 M4	0.222 M4		



 $0 \, dB = 0.491 \, A/m$

-11.8

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Test Laboratory: RIM Testing Services

HAC_H_GSM850_high_chan_Telecoil

DUT: BlackBerry Smartphone; Type: SAMPLE

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 SN6168; ; Calibrated: 3/12/2010
- 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 - 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 = 0.096 A/m; Power Drift = 0.113 dB Maximum value of Total (measured) = 0.168 A/m

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

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



Maximum value of peak Total field = 0.333 A/m

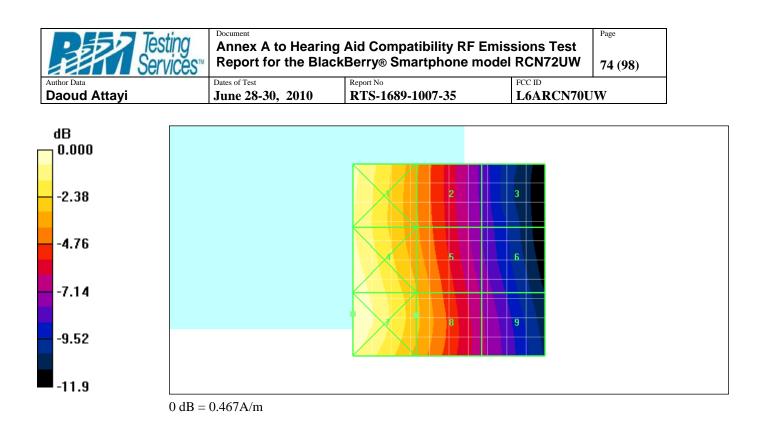
Probe Modulation Factor = 2.77

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.096 A/m; Power Drift = 0.113 dB

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

Peak H-field in A/m				
Grid 1	Grid 2	Grid 3		
0.441 M4	0.302 M4	0.188 M4		
Grid 4	Grid 5	Grid 6		
0.459 M3	0.327 M4	0.203 M4		
Grid 7	Grid 8	Grid 9		
0.467 M3	0.333 M4	0.212 M4		



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Test Laboratory: RIM Testing Services

HAC_H_GSM1900_low_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 SN6168; ; Calibrated: 3/12/2010
- 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

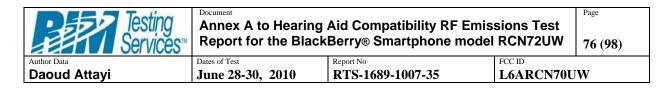
H Scan - H3DV6 - 2007: 15 mm from Probe Center to the

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 = 0.079 A/m; Power Drift = 0.035 dB Maximum value of Total (measured) = 0.096 A/m

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

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



Maximum value of peak Total field = 0.177 A/m

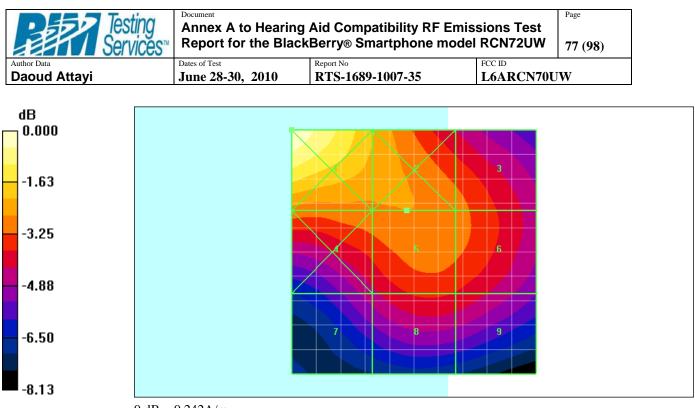
Probe Modulation Factor = 2.52

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.079 A/m; Power Drift = 0.035 dB

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

Grid 1	Grid 2	Grid 3
0.242 M3	0.189 M3	0.171 M3
Grid 4	Grid 5	Grid 6
0.175 M3	0.177 M3	0.171 M3
Grid 7	Grid 8	Grid 9
0.144 M3	0.159 M3	0.156 M3



0 dB = 0.242 A/m

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Test Laboratory: RIM Testing Services

HAC_H_GSM1900_mid_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 SN6168; ; Calibrated: 3/12/2010
- 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

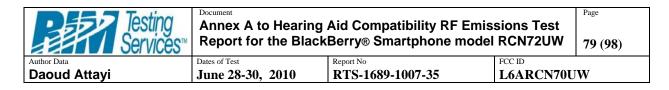
H Scan - H3DV6 - 2007: 15 mm from Probe Center to the

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 = 0.068 A/m; Power Drift = 0.068 dB Maximum value of Total (measured) = 0.087 A/m

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

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



Maximum value of peak Total field = 0.158 A/m

Probe Modulation Factor = 2.52

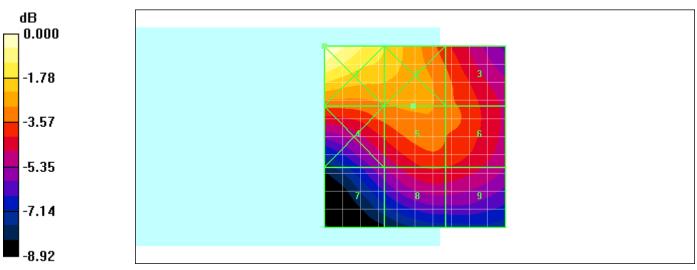
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.068 A/m; Power Drift = 0.068 dB

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

Grid 1	Grid 2	Grid 3
0.219 M3	0.180 M3	0.150 M3
Grid 4	Grid 5	Grid 6
0.154 M3	0.158 M3	0.152 M3
Grid 7	Grid 8	Grid 9
0.119 M4	0.137 M4	0.136 M4





 $0 \, dB = 0.219 \, A/m$

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Test Laboratory: RIM Testing Services

HAC_H_GSM1900_high_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

Communication System: GSM 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 SN6168; ; Calibrated: 3/12/2010
- 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

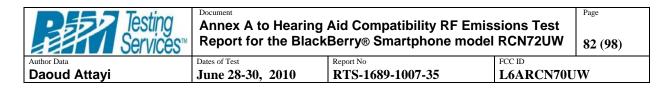
H Scan - H3DV6 - 2007: 15 mm from Probe Center to the

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 = 0.062 A/m; Power Drift = -0.093 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:



Maximum value of peak Total field = 0.149 A/m

Probe Modulation Factor = 2.52

Device Reference Point: 0.000, 0.000, -6.30 mm

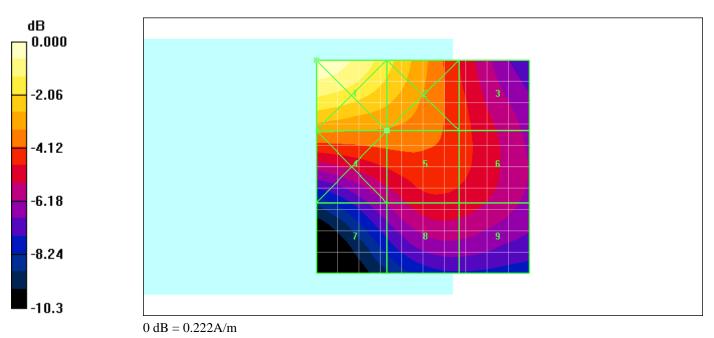
Reference Value = 0.062 A/m; Power Drift = -0.093 dB

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

Peak H-field in A	A/m	
Grid 1	Grid 2	Grid 3
0.222 M3	0.181 M3	0.133 M4
Grid 4	Grid 5	Grid 6
0.153 M3	0.149 M3	0.133 M4
Grid 7	Grid 8	Grid 9
0.110 M4	0.125 M4	0.124 M4

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Test Laboratory: RIM Testing Services

HAC_H_GSM1900_low_chan_Telecoil

DUT: BlackBerry Smartphone; Type: SAMPLE

Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 SN6168; ; Calibrated: 3/12/2010
- 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 - 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 = 0.079 A/m; Power Drift = 0.304 dB Maximum value of Total (measured) = 0.076 A/m

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

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



Maximum value of peak Total field = 0.173 A/m

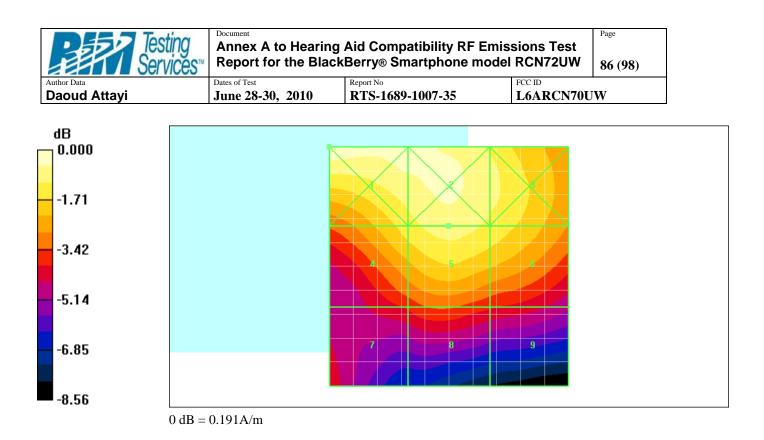
Probe Modulation Factor = 2.52

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.079 A/m; Power Drift = 0.304 dB

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

	A/m	
Grid 1	Grid 2	Grid 3
0.191 M3	0.184 M3	0.171 M3
Grid 4	Grid 5	Grid 6
0.162 M3	0.173 M3	0.165 M3
Grid 7	Grid 8	Grid 9



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Date/Time: 6/30/2010 1:46:20 PM

Test Laboratory: RIM Testing Services

HAC_H_UMTS_band_IV_low_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

Communication System: WCDMA FDD IV; Frequency: 1712.4 MHz; Duty Cycle:

1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 SN6168; ; Calibrated: 3/12/2010
- 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 - 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 = 0.100 A/m; Power Drift = 0.010 dB Maximum value of Total (measured) = 0.106 A/m

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

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Maximum value of peak Total field = 0.086 A/m

Probe Modulation Factor = 0.970

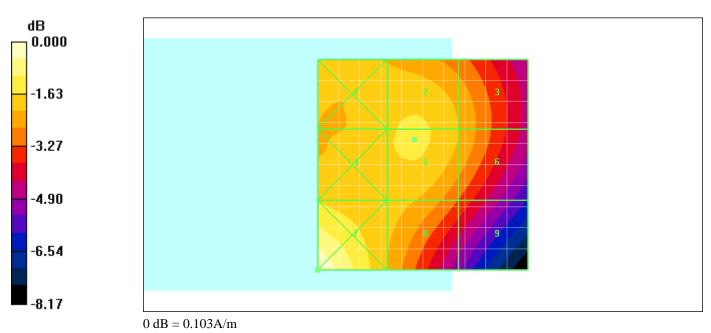
Device Reference Point: 0.000, 0.000, -6.30 mm

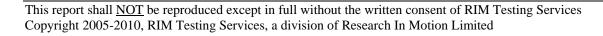
Reference Value = 0.100 A/m; Power Drift = 0.010 dB

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

Peak H-field in	Peak H-field in A/m				
Grid 1	Grid 2	Grid 3			
0.086 M4	0.086 M4	0.080 M4			
Grid 4	Grid 5	Grid 6			
0.085 M4	0.086 M4	0.080 M4			
Grid 7	Grid 8	Grid 9			
0.103 M4	0.082 M4	0.071 M4			







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Daoud Attayi	June 28-30, 2010	RTS-1689-1007-35	L6ARCN70U	W

Date/Time: 6/30/2010 1:51:51 PM

Test Laboratory: RIM Testing Services

HAC_H_UMTS_band_IV_mid_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

Communication System: WCDMA FDD IV; Frequency: 1732.6 MHz;Duty Cycle:

1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 SN6168; ; Calibrated: 3/12/2010
- 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 - H3DV6 - 2007: 15 mm from Probe Center to the

Device/Hearing Aid Compatibility Test (11x11x1): Measurement grid:

dx=5mm, dy=5mm Probe Modulation Factor = 1.00 Device Reference Point: 0.000, 0.000, -6.30 mm Reference Value = 0.114 A/m; Power Drift = 0.033 dB Maximum value of Total (measured) = 0.109 A/m

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

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Maximum value of peak Total field = 0.097 A/m

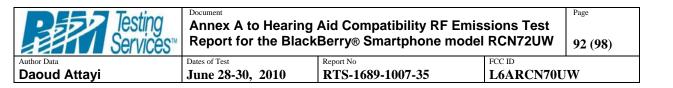
Probe Modulation Factor = 0.970

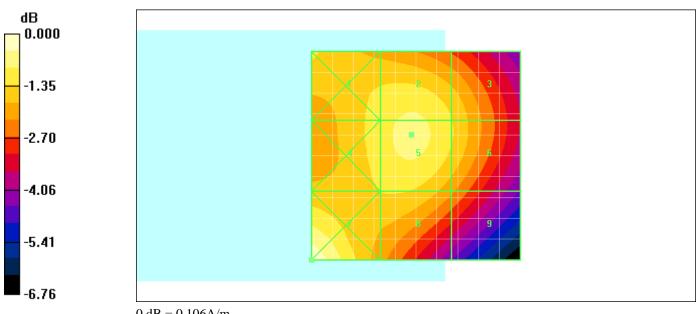
Device Reference Point: 0.000, 0.000, -6.30 mm

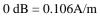
Reference Value = 0.114 A/m; Power Drift = 0.033 dB

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

Grid 1	Grid 2	Grid 3
0.094 M4	0.096 M4	0.091 M4
Grid 4	Grid 5	Grid 6
0.094 M4	0.097 M4	0.091 M4
Grid 7	Grid 8	Grid 9
0.106 M4	0.091 M4	0.083 M4







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Test Laboratory: RIM Testing Services

HAC_H_UMTS_band_IV_high_chan

DUT: BlackBerry Smartphone; Type: SAMPLE

Communication System: WCDMA FDD IV; Frequency: 1752.6 MHz;Duty Cycle:

1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 SN6168; ; Calibrated: 3/12/2010
- 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 - 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 = 0.118 A/m; Power Drift = -0.025 dB Maximum value of Total (measured) = 0.104 A/m

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

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Maximum value of peak Total field = 0.100 A/m

Probe Modulation Factor = 0.970

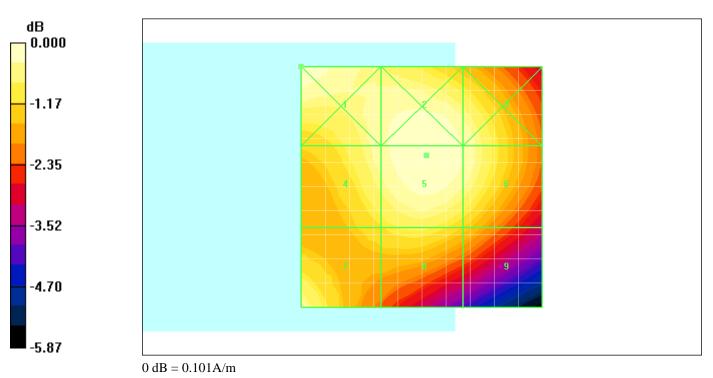
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.118 A/m; Power Drift = -0.025 dB

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

Peak H-field in A/m Grid 2 Grid 1 Grid 3 0.096 M4 **0.101 M4** 0.100 M4 Grid 4 Grid 5 Grid 6 0.095 M4 0.100 M4 0.097 M4 Grid 7 Grid 8 Grid 9 0.095 M4 0.090 M4 0.086 M4





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Daoud Attayi	June 28-30, 2010	RTS-1689-1007-35	L6ARCN70U	W

Date/Time: 6/30/2010 2:04:36 PM

Test Laboratory: RIM Testing Services

HAC_H_UMTS_band_IV_high_chan_Telecoil

DUT: BlackBerry Smartphone; Type: SAMPLE

Communication System: WCDMA FDD IV; Frequency: 1752.6 MHz;Duty Cycle:

1:1

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

Phantom section: RF Section

DASY4 Configuration:

- Probe: H3DV6 SN6168; ; Calibrated: 3/12/2010
- 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 - 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 = 0.117 A/m; Power Drift = 0.034 dB Maximum value of Total (measured) = 0.103 A/m

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

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Maximum value of peak Total field = 0.095 A/m

Probe Modulation Factor = 0.970

Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.117 A/m; Power Drift = 0.034 dB

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

Peak H-field in A/m Grid 1 Grid 2 Grid 3 0.097 M4 0.100 M4 0.094 M4 Grid 4 Grid 5 Grid 6 0.092 M4 0.095 M4 0.088 M4 Grid 7 Grid 8 Grid 9 0.093 M4 0.078 M4 0.066 M4

