

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 1 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Annex A: Measurement data and plots

A.1 MIF validation plots

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 2 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Date/Time: 12:00:00 AM

Test Laboratory: BlackBerry RTS

MIF_measurements_08_31_15

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 111340110

Communication System: UID 0, CW; Frequency: 835 MHz

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

Phantom section: TCoil Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ; Calibrated: 1/19/2015
- Sensor-Surface: 0mm (Fix Surface), z = 2.5
- Electronics: DAE4 Sn881; Calibrated: 1/13/2015
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/MIF Measurements/MIF_AM80%_1KHz_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-1.29 dB		0.00 dB	
PMF	3.80 dB	1.549	0.00 dB	
Detector Level	4.32 dBm		0.00 dB	
RFAIP	3.03 dBm		0.00 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_AM10%_1KHz_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
----------	-------------	----------	-------------	--------

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 3 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

MIF	-9.26 dB		0.00 dB	
PMF	0.78 dB	1.094	0.00 dB	
Detector Level	4.24 dBm		0.00 dB	
RFAIP	-5.02 dBm		0.00 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_AM1%_1KHz_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-19.22 dB		0.01 dB	
PMF	0.09 dB	1.010	0.00 dB	
Detector Level	4.21 dBm		0.00 dB	
RFAIP	-15.01 dBm		0.01 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements/MIF_GSM_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	3.44 dB		0.00 dB	
PMF	9.19 dB	2.881	0.01 dB	
Detector Level	-2.52 dBm		0.00 dB	
RFAIP	0.94 dBm		0.01 dB	(MIF+CF+Detector Level)

Configuration/MIF

Measurements/MIF_WCDMA_Voice_AMR12_2kps_Mute_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-25.78 dB		0.08 dB	MIF Low
PMF	0.06 dB	1.007	0.00 dB	
Detector Level	-1.56 dBm		0.00 dB	
RFAIP	-27.34 dBm		0.08 dB	(MIF+CF+Detector Level)

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 4 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Date/Time: 12:00:00 AM

Test Laboratory: BlackBerry RTS

MIF_WiFi_measurements_08_31_15

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 111340110

Communication System: UID 0, 802.11 b (2450) (0); Frequency: 2437 MHz

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

Phantom section: TCoil Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ; Calibrated: 1/19/2015
- Sensor-Surface: 0mm (Fix Surface), z = 2.5
- Electronics: DAE4 Sn881; Calibrated: 1/13/2015
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/MIF Measurements

WiFi_VoIP/MIF_AM80%_1KHz_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-1.30 dB		0.00 dB	
PMF	3.81 dB	1.550	0.00 dB	
Detector Level	8.07 dBm		0.00 dB	
RFAIP	6.78 dBm		0.00 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements

WiFi_VoIP/MIF_AM10%_1KHz_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
----------	-------------	----------	-------------	--------

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 5 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

MIF	-9.30 dB		0.00 dB
PMF	0.77 dB	1.093	0.00 dB
Detector Level	8.09 dBm		0.00 dB
RFAIP	-1.20 dBm		0.01 dB (MIF+CF+Detector Level)

Configuration/MIF Measurements

WiFi_VoIP/MIF_AM1%_1KHz_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-19.26 dB		0.01 dB	
PMF	0.09 dB	1.010	0.00 dB	
Detector Level	8.06 dBm		0.00 dB	
RFAIP	-11.20 dBm		0.01 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11b_Rate_1Mbps

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-13.06 dB		0.09 dB	
PMF	0.44 dB	1.052	0.04 dB	
Detector Level	5.11 dBm		0.02 dB	
RFAIP	-7.95 dBm		0.11 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11b_Rate_2Mbps

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-12.28 dB		0.08 dB	
PMF	0.48 dB	1.056	0.03 dB	
Detector Level	5.22 dBm		0.01 dB	
RFAIP	-7.06 dBm		0.09 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11b_Rate_5.5Mbps

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 6 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-9.76 dB		0.06 dB	
PMF	0.67 dB	1.080	0.05 dB	
Detector Level	5.41 dBm		0.01 dB	
RFAIP	-4.35 dBm		0.07 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11b_Rate_11Mbps

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-8.99 dB		0.11 dB	
PMF	0.80 dB	1.096	0.04 dB	
Detector Level	5.31 dBm		0.01 dB	
RFAIP	-3.68 dBm		0.12 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11g_Rate_6Mbps

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.07 dB		0.04 dB	
PMF	0.89 dB	1.108	0.01 dB	
Detector Level	5.83 dBm		0.01 dB	
RFAIP	-4.24 dBm		0.05 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11g_Rate_9Mbps

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-9.40 dB		0.08 dB	
PMF	1.05 dB	1.129	0.01 dB	
Detector Level	5.70 dBm		0.01 dB	
RFAIP	-3.70 dBm		0.09 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11g_Rate_18Mbps

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 7 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-8.13 dB		0.14 dB	
PMF	1.08 dB	1.132	0.03 dB	
Detector Level	5.52 dBm		0.00 dB	
RFAIP	-2.61 dBm		0.14 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11g_Rate_54Mbps

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-8.62 dB		0.13 dB	
PMF	1.91 dB	1.246	0.05 dB	
Detector Level	2.40 dBm		0.01 dB	
RFAIP	-6.23 dBm		0.14 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11n_Rate_6.5Mbps

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.94 dB		0.06 dB	
PMF	0.95 dB	1.116	0.02 dB	
Detector Level	4.13 dBm		0.01 dB	
RFAIP	-6.81 dBm		0.06 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11n_Rate_39Mbps

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-7.94 dB		0.14 dB	
PMF	1.32 dB	1.164	0.01 dB	
Detector Level	2.02 dBm		0.01 dB	
RFAIP	-5.93 dBm		0.15 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11n_Rate_65Mbps

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 8 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-7.91 dB		0.13 dB	
PMF	1.63 dB	1.206	0.01 dB	
Detector Level	0.90 dBm		0.01 dB	
RFAIP	-7.01 dBm		0.14 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11a_Rate_6Mbps

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.19 dB		0.09 dB	
PMF	0.95 dB	1.116	0.05 dB	
Detector Level	2.92 dBm		0.10 dB	
RFAIP	-7.27 dBm		0.19 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11a_Rate_24Mbps

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-7.98 dB		0.15 dB	
PMF	1.47 dB	1.184	0.02 dB	
Detector Level	1.95 dBm		0.01 dB	
RFAIP	-6.03 dBm		0.16 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11a_Rate_54Mbps

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-8.92 dB		0.11 dB	
PMF	1.77 dB	1.227	0.02 dB	
Detector Level	-0.05 dBm		0.01 dB	
RFAIP	-8.97 dBm		0.12 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11n_Rate_6.5Mbps 2

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 9 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-11.07 dB		0.03 dB	
PMF	1.04 dB	1.128	0.02 dB	
Detector Level	3.06 dBm		0.01 dB	
RFAIP	-8.01 dBm		0.04 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11n_Rate_39Mbps 2

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-8.14 dB		0.14 dB	
PMF	1.43 dB	1.179	0.04 dB	
Detector Level	1.61 dBm		0.01 dB	
RFAIP	-6.53 dBm		0.14 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11n_Rate_65Mbps 2

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-8.11 dB		0.14 dB	
PMF	1.67 dB	1.212	0.01 dB	
Detector Level	-0.79 dBm		0.01 dB	
RFAIP	-8.89 dBm		0.15 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11ac_Rate_6Mbps

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.21 dB		0.05 dB	
PMF	0.83 dB	1.101	0.00 dB	
Detector Level	-0.89 dBm		0.02 dB	
RFAIP	-11.10 dBm		0.07 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11ac_Rate_9Mbps

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 10 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-9.59 dB		0.07 dB	
PMF	0.94 dB	1.114	0.01 dB	
Detector Level	-1.09 dBm		0.01 dB	
RFAIP	-10.68 dBm		0.08 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11ac_Rate_18Mbps

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-8.23 dB		0.16 dB	
PMF	0.99 dB	1.121	0.08 dB	
Detector Level	-1.26 dBm		0.00 dB	
RFAIP	-9.50 dBm		0.17 dB	(MIF+CF+Detector Level)

Configuration/MIF Measurements WiFi_VoIP/MIF_802.11ac_Rate_54Mbps

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-8.80 dB		0.16 dB	
PMF	1.94 dB	1.250	0.02 dB	
Detector Level	-2.07 dBm		0.01 dB	
RFAIP	-10.87 dBm		0.17 dB	(MIF+CF+Detector Level)

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 11 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Date/Time: 12:00:00 AM

Test Laboratory: BlackBerry RTS

MIF_VoLTE_measurements_09_23_15

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 1161340110

Communication System: UID 0, LTE 4 (0); Frequency: 1732.5 MHz

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

Phantom section: TCoil Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ; Calibrated: 1/19/2015
- Sensor-Surface: 0mm (Fix Surface), z = 2.5
- Electronics: DAE4 Sn881; Calibrated: 1/13/2015
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Measurements/MIF_VoLTE_20MHz_BW_QPSK_RB1_Offset0_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-14.84 dB		0.13 dB	
PMF	1.46 dB	1.183	0.17 dB	
Detector Level	8.98 dBm		0.04 dB	
RFAIP	-5.86 dBm		0.17 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_20MHz_BW_QPSK_RB1_Offset50_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-14.74 dB		0.15 dB	

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 12 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

PMF	1.50 dB	1.188	0.18 dB	
Detector Level	8.70 dBm		0.05 dB	
RFAIP	-6.04 dBm		0.20 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_20MHz_BW_QPSK_RB1_Offset99_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-14.68 dB		0.26 dB	
PMF	1.48 dB	1.186	0.21 dB	
Detector Level	8.60 dBm		0.06 dB	
RFAIP	-6.07 dBm		0.33 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_20MHz_BW_QPSK_RB50_Offset0_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-21.24 dB		0.01 dB	
PMF	0.17 dB	1.020	0.00 dB	
Detector Level	8.01 dBm		0.00 dB	
RFAIP	-13.23 dBm		0.02 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_20MHz_BW_QPSK_RB50_Offset50_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-21.23 dB		0.02 dB	
PMF	0.17 dB	1.020	0.00 dB	
Detector Level	8.17 dBm		0.00 dB	
RFAIP	-13.06 dBm		0.03 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_20MHz_BW_QPSK_RB100_Offset0_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-21.88 dB		0.02 dB	

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 13 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

PMF	0.15 dB	1.018	0.00 dB	
Detector Level	8.13 dBm		0.00 dB	
RFAIP	-13.75 dBm		0.02 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_20MHz_BW_16QAM_RB1_Offset0_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.42 dB		0.23 dB	
PMF	2.45 dB	1.326	0.13 dB	
Detector Level	8.00 dBm		0.04 dB	
RFAIP	-2.41 dBm		0.28 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_20MHz_BW_16QAM_RB1_Offset50_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.41 dB		0.17 dB	
PMF	2.46 dB	1.328	0.10 dB	
Detector Level	7.89 dBm		0.01 dB	
RFAIP	-2.53 dBm		0.18 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_20MHz_BW_16QAM_RB1_Offset99_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.32 dB		0.44 dB	
PMF	2.51 dB	1.335	0.12 dB	
Detector Level	7.91 dBm		0.03 dB	
RFAIP	-2.41 dBm		0.47 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_20MHz_BW_16QAM_RB24_Offset0_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 14 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-16.54 dB		0.08 dB	
PMF	0.53 dB	1.063	0.03 dB	
Detector Level	6.78 dBm		0.01 dB	
RFAIP	-9.76 dBm		0.09 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_20MHz_BW_16QAM_RB24_Offset76_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-16.38 dB		0.09 dB	
PMF	0.57 dB	1.068	0.02 dB	
Detector Level	6.98 dBm		0.00 dB	
RFAIP	-9.39 dBm		0.09 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_20MHz_BW_16QAM_RB100_Offset0_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-17.69 dB		0.06 dB	
PMF	0.34 dB	1.040	0.01 dB	
Detector Level	6.95 dBm		0.02 dB	
RFAIP	-10.74 dBm		0.07 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_15MHz_BW_16QAM_RB1_Offset74_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.07 dB		0.02 dB	
PMF	2.27 dB	1.299	0.29 dB	
Detector Level	7.97 dBm		0.04 dB	
RFAIP	-2.10 dBm		0.07 dB	(MIF+CF+Detector Level)

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 15 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Measurements/MIF_VoLTE_10MHz_BW_16QAM_RB1_Offset49_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.10 dB		0.06 dB	
PMF	2.32 dB	1.307	0.11 dB	
Detector Level	8.32 dBm		0.03 dB	
RFAIP	-1.78 dBm		0.10 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_5MHz_BW_16QAM_RB1_Offset24_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.74 dB		0.40 dB	
PMF	2.57 dB	1.345	0.25 dB	
Detector Level	7.99 dBm		0.04 dB	
RFAIP	-2.75 dBm		0.44 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_3MHz_BW_16QAM_RB1_Offset14_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.22 dB		0.09 dB	
PMF	2.15 dB	1.281	0.19 dB	
Detector Level	7.92 dBm		0.03 dB	
RFAIP	-2.30 dBm		0.13 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_1.4MHz_BW_16QAM_RB1_Offset5_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-14.89 dB		0.23 dB	
PMF	1.34 dB	1.167	0.16 dB	
Detector Level	8.68 dBm		0.05 dB	

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 16 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

RFAIP -6.21 dBm 0.28 dB (MIF+CF+Detector Level)

Measurements/MIF_VoLTE_Narrow_Band_Codec_4.75kbits_15MHz_BW_16QAM_RB1_Offset74_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.06 dB		0.03 dB	
PMF	2.28 dB	1.301	0.11 dB	
Detector Level	7.99 dBm		0.02 dB	
RFAIP	-2.07 dBm		0.06 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_Narrow_Band_Codec_7.4kbits_15MHz_BW_16QAM_RB1_Offset74_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.06 dB		0.07 dB	
PMF	2.31 dB	1.305	0.14 dB	
Detector Level	7.90 dBm		0.03 dB	
RFAIP	-2.16 dBm		0.10 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_Narrow_Band_Codec_12.2kbits_15MHz_BW_16QAM_RB1_Offset74_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.09 dB		0.06 dB	
PMF	2.35 dB	1.310	0.09 dB	
Detector Level	7.91 dBm		0.03 dB	
RFAIP	-2.17 dBm		0.09 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_Wide_Band_Codec_6.6kbits_15MHz_BW_16QAM_RB1_Offset74_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 17 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.07 dB		0.04 dB	
PMF	2.30 dB	1.303	0.09 dB	
Detector Level	7.92 dBm		0.06 dB	
RFAIP	-2.15 dBm		0.10 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_Wide_Band_Codec_15.85kbits_15MHz_BW_16QAM_RB1_Offset74_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.04 dB		0.06 dB	
PMF	2.34 dB	1.310	0.19 dB	
Detector Level	7.82 dBm		0.04 dB	
RFAIP	-2.22 dBm		0.10 dB	(MIF+CF+Detector Level)

Measurements/MIF_VoLTE_Wide_Band_Codec_23.85kbits_15MHz_BW_16QAM_RB1_Offset74_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-10.05 dB		0.10 dB	
PMF	2.34 dB	1.309	0.22 dB	
Detector Level	7.82 dBm		0.05 dB	
RFAIP	-2.24 dBm		0.15 dB	(MIF+CF+Detector Level)

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 18 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Date/Time: 12:00:00 AM

Test Laboratory: BlackBerry RTS

MIF_VoLTE_TDD_measurements_09_23_15

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 1161344168

Communication System: UID 0, LTE 41 (63.3 % DF) (0), Communication System: UID 0, LTE 41 (11.67% DF) (0); Frequency: 2593 MHz, Frequency: 2506 MHz

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

Phantom section: TCoil Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ; Calibrated: 1/19/2015
- Sensor-Surface: 0mm (Fix Surface), z = 2.5
- Electronics: DAE4 Sn881; Calibrated: 1/13/2015
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/MIF_VoLTE_TDD_QPSK_16QAM_20-15 MHz-BW-Measurements_DF 63.3

%/MIF_VoLTE_20MHz_BW_QPSK_RB1_Offset0_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.39 dB		0.09 dB	
PMF	3.48 dB	1.493	0.26 dB	
Detector Level	5.91 dBm		0.06 dB	
RFAIP	2.52 dBm		0.15 dB	(MIF+CF+Detector Level)

Configuration/MIF_VoLTE_TDD_QPSK_16QAM_20-15 MHz-BW-Measurements_DF 63.3

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 19 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

%/MIF_VoLTE_20MHz_BW_QPSK_RB1_Offset50_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.31 dB		0.06 dB	
PMF	3.59 dB	1.512	0.24 dB	
Detector Level	6.05 dBm		0.09 dB	
RFAIP	2.74 dBm		0.15 dB	(MIF+CF+Detector Level)

Configuration/MIF_VoLTE_TDD_QPSK_16QAM_20-15 MHz-BW-Measurements_DF 63.3

%/MIF_VoLTE_20MHz_BW_QPSK_RB1_Offset99_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.35 dB		0.16 dB	
PMF	3.51 dB	1.499	0.29 dB	
Detector Level	5.77 dBm		0.38 dB	
RFAIP	2.42 dBm		0.53 dB	(MIF+CF+Detector Level)

Configuration/MIF_VoLTE_TDD_QPSK_16QAM_20-15 MHz-BW-Measurements_DF 63.3

%/MIF_VoLTE_20MHz_BW_QPSK_RB50_Offset0_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.37 dB		0.08 dB	
PMF	2.63 dB	1.354	0.13 dB	
Detector Level	5.09 dBm		0.06 dB	
RFAIP	1.72 dBm		0.14 dB	(MIF+CF+Detector Level)

Configuration/MIF_VoLTE_TDD_QPSK_16QAM_20-15 MHz-BW-Measurements_DF 63.3

%/MIF_VoLTE_20MHz_BW_QPSK_RB50_Offset50_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 20 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.18 dB		0.20 dB	
PMF	2.92 dB	1.399	0.25 dB	
Detector Level	5.20 dBm		0.09 dB	
RFAIP	2.02 dBm		0.29 dB	(MIF+CF+Detector Level)

**Configuration/MIF_ VoLTE_TDD_ QPSK_16QAM_20-15 MHz-BW-
Measurements_DF 63.3**

%/MIF_VoLTE_20MHz_BW_QPSK_RB100_Offset0_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.31 dB		0.15 dB	
PMF	2.71 dB	1.366	0.22 dB	
Detector Level	5.10 dBm		0.09 dB	
RFAIP	1.79 dBm		0.24 dB	(MIF+CF+Detector Level)

**Configuration/MIF_ VoLTE_TDD_ QPSK_16QAM_20-15 MHz-BW-
Measurements_DF 63.3**

%/MIF_VoLTE_20MHz_BW_16QAM_RB1_Offset0_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.20 dB		0.09 dB	
PMF	4.69 dB	1.715	0.27 dB	
Detector Level	5.26 dBm		0.08 dB	
RFAIP	2.06 dBm		0.16 dB	(MIF+CF+Detector Level)

**Configuration/MIF_ VoLTE_TDD_ QPSK_16QAM_20-15 MHz-BW-
Measurements_DF 63.3**

%/MIF_VoLTE_20MHz_BW_16QAM_RB1_Offset50_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.14 dB		0.06 dB	

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 21 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

PMF	4.73 dB	1.723	0.24 dB	
Detector Level	5.51 dBm		0.06 dB	
RFAIP	2.36 dBm		0.13 dB	(MIF+CF+Detector Level)

**Configuration/MIF_VoLTE_TDD_QPSK_16QAM_20-15 MHz-BW-
Measurements_DF 63.3**

%/MIF_VoLTE_20MHz_BW_16QAM_RB1_Offset99_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.19 dB		0.03 dB	
PMF	4.70 dB	1.718	0.22 dB	
Detector Level	5.29 dBm		0.05 dB	
RFAIP	2.11 dBm		0.08 dB	(MIF+CF+Detector Level)

**Configuration/MIF_VoLTE_TDD_QPSK_16QAM_20-15 MHz-BW-
Measurements_DF 63.3**

%/MIF_VoLTE_20MHz_BW_16QAM_RB50_Offset0_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.41 dB		0.08 dB	
PMF	2.69 dB	1.363	0.08 dB	
Detector Level	3.90 dBm		0.09 dB	
RFAIP	0.50 dBm		0.17 dB	(MIF+CF+Detector Level)

**Configuration/MIF_VoLTE_TDD_QPSK_16QAM_20-15 MHz-BW-
Measurements_DF 63.3**

%/MIF_VoLTE_20MHz_BW_16QAM_RB50_Offset50_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.40 dB		0.12 dB	
PMF	2.70 dB	1.365	0.12 dB	
Detector Level	3.61 dBm		0.09 dB	
RFAIP	0.21 dBm		0.21 dB	(MIF+CF+Detector Level)

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 22 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Configuration/MIF_ VoLTE_TDD_ QPSK_16QAM_20-15 MHz-BW- Measurements_DF 63.3

%/MIF_VoLTE_20MHz_BW_16QAM_RB100_Offset0_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.40 dB		0.13 dB	
PMF	2.71 dB	1.366	0.13 dB	
Detector Level	4.13 dBm		0.17 dB	
RFAIP	0.72 dBm		0.30 dB	(MIF+CF+Detector Level)

Configuration/MIF_ VoLTE_TDD_ QPSK_16QAM_20-15 MHz-BW- Measurements_DF 63.3

%/MIF_VoLTE_15MHz_BW_16QAM_RB1_Offset38_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.14 dB		0.10 dB	
PMF	4.75 dB	1.727	0.24 dB	
Detector Level	5.44 dBm		0.12 dB	
RFAIP	2.30 dBm		0.21 dB	(MIF+CF+Detector Level)

Configuration/MIF_ VoLTE_TDD_ QPSK_16QAM_20-15 MHz-BW- Measurements_DF 63.3

%/MIF_VoLTE_10MHz_BW_16QAM_RB1_Offset25_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.15 dB		0.13 dB	
PMF	4.73 dB	1.724	0.27 dB	
Detector Level	5.48 dBm		0.14 dB	
RFAIP	2.33 dBm		0.27 dB	(MIF+CF+Detector Level)

Configuration/MIF_ VoLTE_TDD_ QPSK_16QAM_20-15 MHz-BW- Measurements_DF 63.3

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 23 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

%/MIF_VoLTE_5MHz_BW_16QAM_RB1_Offset13_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.15 dB		0.12 dB	
PMF	4.69 dB	1.716	0.20 dB	
Detector Level	5.49 dBm		0.12 dB	
RFAIP	2.34 dBm		0.25 dB	(MIF+CF+Detector Level)

Configuration/MIF_VoLTE_TDD_QPSK_16QAM_20-15 MHz-BW-Measurements_DF 63.3

%/MIF_VoLTE_Narrow_Band_Codec_4.75kbits_20MHz_BW_16QAM_RB1_Offset50_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.16 dB		0.09 dB	
PMF	4.71 dB	1.721	0.22 dB	
Detector Level	5.47 dBm		0.05 dB	
RFAIP	2.31 dBm		0.13 dB	(MIF+CF+Detector Level)

Configuration/MIF_VoLTE_TDD_QPSK_16QAM_20-15 MHz-BW-Measurements_DF 63.3

%/MIF_VoLTE_Narrow_Band_Codec_7.4kbits_20MHz_BW_16QAM_RB1_Offset50_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.16 dB		0.06 dB	
PMF	4.68 dB	1.714	0.29 dB	
Detector Level	5.48 dBm		0.05 dB	
RFAIP	2.32 dBm		0.11 dB	(MIF+CF+Detector Level)

Configuration/MIF_VoLTE_TDD_QPSK_16QAM_20-15 MHz-BW-Measurements_DF 63.3

%/MIF_VoLTE_Narrow_Band_Codec_12.2kbits_20MHz_BW_16QAM_RB1_Offset50_Measurement

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)		Page 24 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW	

ffset50_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.15 dB		0.06 dB	
PMF	4.68 dB	1.713	0.20 dB	
Detector Level	5.12 dBm		0.10 dB	
RFAIP	1.97 dBm		0.16 dB	(MIF+CF+Detector Level)

Configuration/MIF_VoLTE_TDD_QPSK_16QAM_20-15 MHz-BW-Measurements_DF 63.3

%/MIF_VoLTE_Wide_Band_Codec_6.6kbits_20MHz_BW_16QAM_RB1_Offset50_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.16 dB		0.10 dB	
PMF	4.70 dB	1.719	0.21 dB	
Detector Level	5.00 dBm		0.11 dB	
RFAIP	1.84 dBm		0.21 dB	(MIF+CF+Detector Level)

Configuration/MIF_VoLTE_TDD_QPSK_16QAM_20-15 MHz-BW-Measurements_DF 63.3

%/MIF_VoLTE_Wide_Band_Codec_15.85kbits_20MHz_BW_16QAM_RB1_Offset50_Measurement

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.16 dB		0.07 dB	
PMF	4.69 dB	1.716	0.26 dB	
Detector Level	5.03 dBm		0.12 dB	
RFAIP	1.88 dBm		0.19 dB	(MIF+CF+Detector Level)

Configuration/MIF_VoLTE_TDD_QPSK_16QAM_20-15 MHz-BW-Measurements_DF 63.3

%/MIF_VoLTE_Wide_Band_Codec_23.85kbits_20MHz_BW_16QAM_RB1_Offset50_Measurement

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 25 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

set50_Measurement

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.15 dB		0.17 dB	
PMF	4.70 dB	1.718	0.26 dB	
Detector Level	5.01 dBm		0.16 dB	
RFAIP	1.86 dBm		0.33 dB	(MIF+CF+Detector Level)

Configuration/MIF_ VoLTE_TDD_ QPSK_16QAM_20 MHz-BW- Measurements_various duty cycle

%/MIF_VoLTE_20MHz_BW_16QAM_RB1_Offset50_Measurement_UL_DL
config 0_ No of S 2_No of U 6_DF 63.33 %

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-3.16 dB		0.15 dB	
PMF	4.68 dB	1.714	0.25 dB	
Detector Level	5.50 dBm		0.06 dB	
RFAIP	2.34 dBm		0.21 dB	(MIF+CF+Detector Level)

Configuration/MIF_ VoLTE_TDD_ QPSK_16QAM_20 MHz-BW- Measurements_various duty cycle

%/MIF_VoLTE_20MHz_BW_16QAM_RB1_Offset50_Measurement_UL_DL
config 1_ No of S 2_No of U 4_DF 43.33 %

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-1.53 dB		0.11 dB	
PMF	6.28 dB	2.060	0.20 dB	
Detector Level	3.70 dBm		0.11 dB	
RFAIP	2.17 dBm		0.22 dB	(MIF+CF+Detector Level)

Configuration/MIF_ VoLTE_TDD_ QPSK_16QAM_20 MHz-BW- Measurements_various duty cycle

%/MIF_VoLTE_20MHz_BW_16QAM_RB1_Offset50_Measurement_UL_DL

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 26 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

config 2_ No of S 2_No of U 2_DF 23.33 %

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	1.44 dB		0.08 dB	
PMF	9.25 dB	2.900	0.39 dB	
Detector Level	0.49 dBm		0.05 dB	
RFAIP	1.93 dBm		0.13 dB	(MIF+CF+Detector Level)

Configuration/MIF_ VoLTE_TDD_ QPSK_16QAM_20 MHz-BW- Measurements_various duty cycle

%/MIF_VoLTE_20MHz_BW_16QAM_RB1_Offset50_Measurement_UL_DL

config 3_ No of S 1_No of U 3_DF 31.67 %

Calibration Factors: 1.096, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-1.59 dB		0.03 dB	
PMF	6.89 dB	2.211	0.15 dB	
Detector Level	2.60 dBm		0.01 dB	
RFAIP	1.01 dBm		0.04 dB	(MIF+CF+Detector Level)

Configuration/MIF_ VoLTE_TDD_ QPSK_16QAM_20 MHz-BW- Measurements_various duty cycle

%/MIF_VoLTE_20MHz_BW_16QAM_RB1_Offset50_Measurement_UL_DL

config 4_ No of S 1_No of U 2_DF 21.67 %

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	0.55 dB		0.11 dB	
PMF	8.43 dB	2.640	0.30 dB	
Detector Level	0.63 dBm		0.08 dB	
RFAIP	1.18 dBm		0.19 dB	(MIF+CF+Detector Level)

Configuration/MIF_ VoLTE_TDD_ QPSK_16QAM_20 MHz-BW- Measurements_various duty cycle

%/MIF_VoLTE_20MHz_BW_16QAM_RB1_Offset50_Measurement_UL_DL

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 27 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

config 5_ No of S 1_No of U 1_DF 11.67 %

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	3.63 dB		0.02 dB	
PMF	11.27 dB	3.659	0.09 dB	
Detector Level	-2.21 dBm		0.02 dB	
RFAIP	1.42 dBm		0.04 dB	(MIF+CF+Detector Level)

Configuration/MIF_ VoLTE_TDD_ QPSK_16QAM_20 MHz-BW- Measurements_various duty cycle

%/MIF_VoLTE_20MHz_BW_16QAM_RB1_Offset50_Measurement_UL_DL

config 6_ No of S 2_No of U 5_DF 53.33 %

Calibration Factors: 1.095, 1.095; MIF Scale: 0.00 dB; Coupling Factor (CF): 0.00 dB

Quantity	Value [log]	[linear]	Fluctuation	Remark
MIF	-2.54 dB		0.15 dB	
PMF	5.16 dB	1.812	0.22 dB	
Detector Level	4.06 dBm		0.04 dB	
RFAIP	1.52 dBm		0.19 dB	(MIF+CF+Detector Level)

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)		Page 28 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW	

A.2 Dipole validation

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 29 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Date/Time: 8/31/2015 9:22:38 AM

Test Laboratory: BlackBerry RTS

HAC RF_E-Field_validation_08_31_15

DUT: HAC-Dipole 835 MHz; Type: CD835V3; Serial: 1011

Communication System: UID 0, CW For MIF; Frequency: 835 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/19/2015;
- Sensor-Surface: (Fix Surface), $z = 9.7$
- Electronics: DAE4 Sn881; Calibrated: 1/13/2015
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

CD835 Dipole E-Field measurement (E-field scan for ANSI C63.19-2011 compliance)/E Scan - measurement distance from the probe sensor center to CD835 = 15mm/Hearing Aid Compatibility Test at 15mm distance (41x361x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 102.2 V/m; Power Drift = 0.04 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 108.4 V/m

Near-field category: M4 (AWF 0 dB)

PMF scaled E-field

Grid 1 M4 91.88 V/m	Grid 2 M4 97.19 V/m	Grid 3 M4 97.22 V/m
Grid 4 M4 57.74 V/m	Grid 5 M4 59.11 V/m	Grid 6 M4 58.88 V/m

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 30 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Grid 7 M4 103.4 V/m	Grid 8 M4 108.4 V/m	Grid 9 M4 108.1 V/m
--------------------------------------	--------------------------------------	--------------------------------------

Cursor:

Total = 108.4 V/m

E Category: M4

Location: -2.5, 78, 9.7 mm

Date/Time: 8/31/2015 9:35:14 AM

Test Laboratory: BlackBerry RTS

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1008

Communication System: UID 0, CW For MIF; Frequency: 1880 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/19/2015;
- Sensor-Surface: (Fix Surface), z = 9.7
- Electronics: DAE4 Sn881; Calibrated: 1/13/2015
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

CD1880 Dipole E-Field measurement (E-field scan for ANSI C63.19-2011 compliance)/E Scan - measurement distance from the probe sensor center to CD1880 = 15mm/Hearing Aid Compatibility Test at 15mm distance (41x181x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 141.3 V/m; Power Drift = -0.04 dB

PMR not calibrated. PMF = 1.000 is applied.

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 31 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

E-field emissions = 85.24 V/m

Near-field category: M3 (AWF 0 dB)

PMF scaled E-field

Grid 1 M3 81.03 V/m	Grid 2 M3 85.24 V/m	Grid 3 M3 85.24 V/m
Grid 4 M3 66.62 V/m	Grid 5 M3 68.42 V/m	Grid 6 M3 68.32 V/m
Grid 7 M3 78.93 V/m	Grid 8 M3 83.76 V/m	Grid 9 M3 83.76 V/m

Cursor:

Total = 85.24 V/m

E Category: M3

Location: -3.5, -31, 9.7 mm

		Document		Page
		Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)		32 (68)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	August 31- Sep. 23, 2015	RTS-6066-1509-21	L6ARHL210LW	

Test Laboratory: BlackBerry RTS

HAC RF_E-Field_validation_08_31_15_2300-2600

Date/Time: 8/31/2015 10:47:02 AM

Test Laboratory: BlackBerry RTS

DUT: HAC Dipole 2450 MHz; Type: CD2450V3;

Communication System: UID 0, CW (0); Frequency: 2300 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/19/2015;
- Sensor-Surface: (Fix Surface), $z = 9.7$
- Electronics: DAE4 Sn881; Calibrated: 1/13/2015
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

2300 MHz Dipole E-Field measurement (E-field scan for ANSI C63.19-2011 compliance) 2/E Scan - measurement distance from the probe sensor center to CD2450 = 15mm/Hearing Aid Compatibility Test at 15mm distance (41x181x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 90.25 V/m; Power Drift = -0.00 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 91.28 V/m

Near-field category: M3 (AWF 0 dB)

PMF scaled E-field

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 33 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Grid 1 M3 86.12 V/m	Grid 2 M3 90.18 V/m	Grid 3 M3 90.13 V/m
Grid 4 M3 82.52 V/m	Grid 5 M3 85.15 V/m	Grid 6 M3 84.87 V/m
Grid 7 M3 85.62 V/m	Grid 8 M3 91.28 V/m	Grid 9 M3 91.27 V/m

Cursor:

Total = 91.28 V/m

E Category: M3

Location: -3, 27.5, 9.7 mm

Date/Time: 8/31/2015 9:50:09 AM

DUT: HAC Dipole 2450 MHz; Type: CD2450V3

Communication System: UID 0, CW; Frequency: 2450 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/19/2015;
- Sensor-Surface: (Fix Surface), z = 9.7
- Electronics: DAE4 Sn881; Calibrated: 1/13/2015
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

CD2450 Dipole E-Field measurement (E-field scan for ANSI C63.19-2011 compliance)/E Scan - measurement distance from the probe sensor center to CD2450 = 15mm/Hearing Aid Compatibility Test at 15mm distance (41x181x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 34 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Reference Value = 90.18 V/m; Power Drift = 0.03 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 88.96 V/m

Near-field category: M3 (AWF 0 dB)

PMF scaled E-field

Grid 1 M3 85.44 V/m	Grid 2 M3 88.92 V/m	Grid 3 M3 88.80 V/m
Grid 4 M3 81.31 V/m	Grid 5 M3 83.63 V/m	Grid 6 M3 83.16 V/m
Grid 7 M3 83.07 V/m	Grid 8 M3 88.96 V/m	Grid 9 M3 88.96 V/m

Cursor:

Total = 88.96 V/m

E Category: M3

Location: -3.5, 28, 9.7 mm

Date/Time: 8/31/2015 10:51:04 AM

Test Laboratory: BlackBerry RTS

DUT: HAC Dipole 2450 MHz; Type: CD2450V3

Communication System: UID 0, CW (0); Frequency: 2600 MHz

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

Phantom section: RF Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/19/2015;
- Sensor-Surface: (Fix Surface), z = 9.7
- Electronics: DAE4 Sn881; Calibrated: 1/13/2015
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA;

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 35 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

2600 MHz Dipole E-Field measurement (E-field scan for ANSI C63.19-2011 compliance) 2 2/E Scan - measurement distance from the probe sensor center to CD2450 = 15mm/Hearing Aid Compatibility Test at 15mm distance (41x181x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 79.05 V/m; Power Drift = -0.03 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 84.83 V/m

Near-field category: M3 (AWF 0 dB)

PMF scaled E-field

Grid 1 M3 82.39 V/m	Grid 2 M3 84.83 V/m	Grid 3 M3 84.55 V/m
Grid 4 M3 79.04 V/m	Grid 5 M3 80.48 V/m	Grid 6 M3 79.82 V/m
Grid 7 M3 76.16 V/m	Grid 8 M3 81.51 V/m	Grid 9 M3 81.51 V/m

Cursor:

Total = 84.83 V/m

E Category: M3

Location: -1.5, -22, 9.7 mm



Document

**Annex A to Hearing Aid Compatibility RF Emissions Test Report
for the BlackBerry® Smartphone RHL211LW (STV100-3)**

Page

36 (68)

Author Data

Daoud Attayi

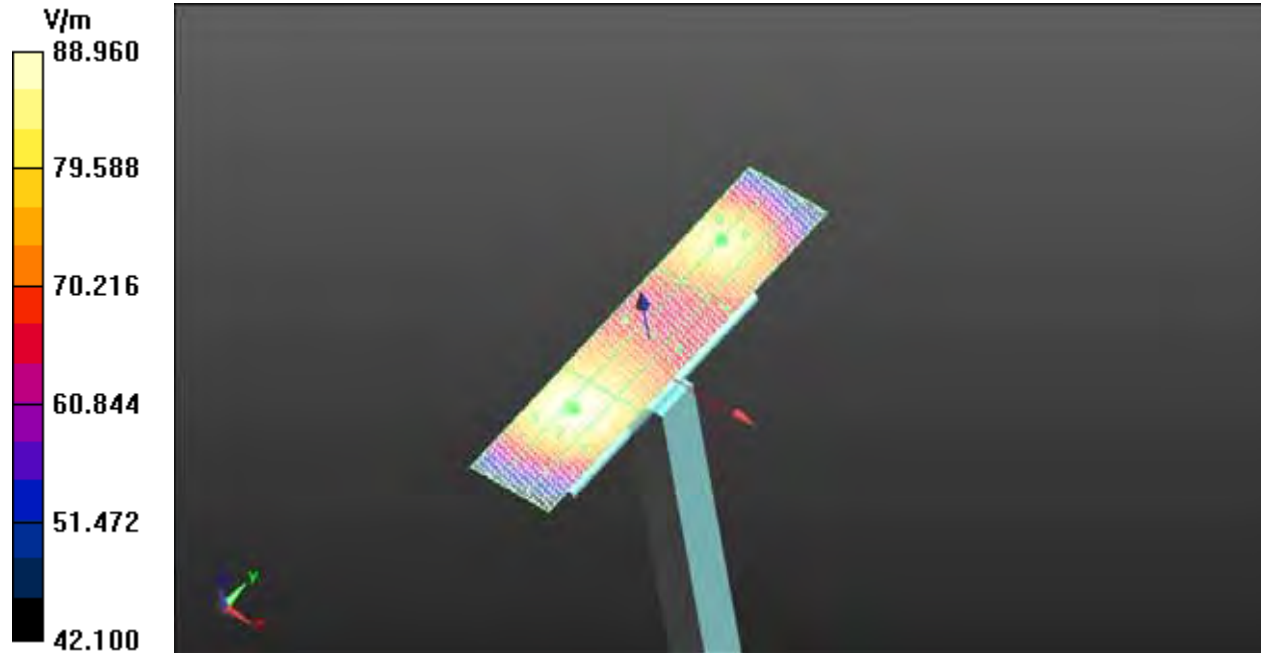
Dates of Test

August 31- Sep. 23, 2015

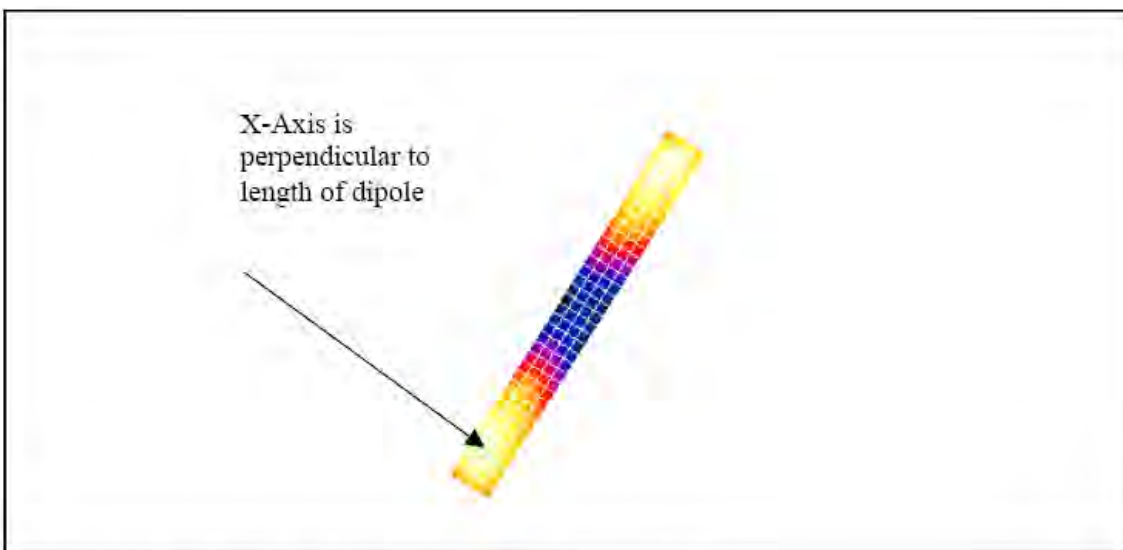
Report No

RTS-6066-1509-21

FCC ID

L6ARHL210LW

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)		Page 37 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW	



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.

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 38 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

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

Page 1 of 2

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

Lab: RIM Testing Services (RTS)

Dipole Validation 1880 MHz_E-Field 07_14_05

DUT: HAC Dipole 1880 MHz; Type: CD1880V3

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
Phantom section: H Device Section

DASY4 Configuration:

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

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of Total (measured) = 134.8 V/m

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of Total field (slot averaged) = 131.0 V/m

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

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

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

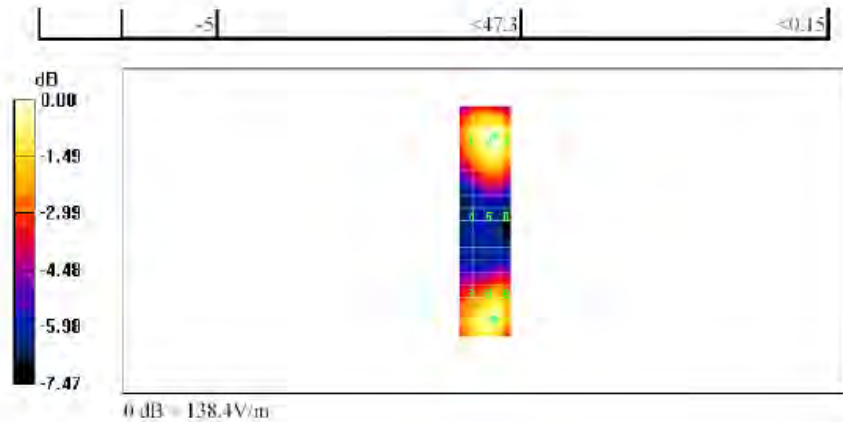
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 39 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

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

Page 2 of 2



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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 40 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

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

Page 1 of 2

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, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
Phantom section: H Device Section

DASY4 Configuration:

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

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

Measurement grid: dx=2mm, dy=2mm
Maximum value of Total (measured) = 138.0 V/m

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

Measurement grid: dx=2mm, dy=2mm
Maximum value of Total field (slot averaged) = 131.2 V/m

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

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

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

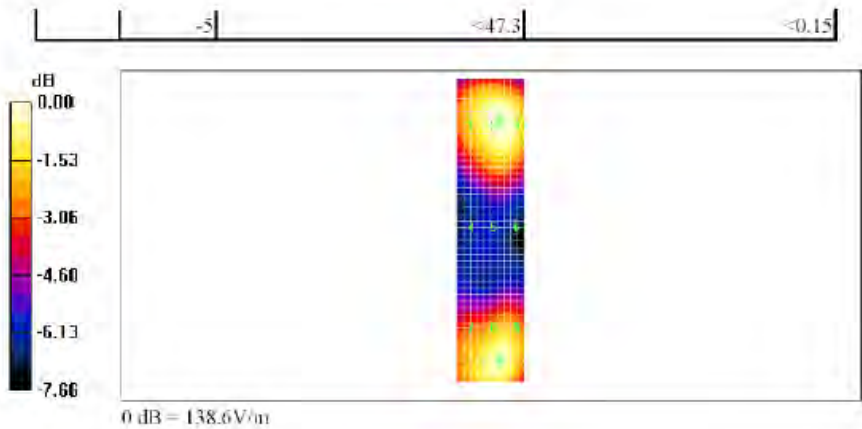
Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 41 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

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

Page 2 of 2



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

		Document		Page
		Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)		42 (68)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	August 31- Sep. 23, 2015	RTS-6066-1509-21	L6ARHL210LW	

A.3 RF emission field plots

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 43 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Date/Time: 9/1/2015 9:39:24 AM

Test Laboratory: BlackBerry RTS

HAC RF_E-Field_GSM 850_slider closed

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 1161507290

Communication System: UID 0, GSM 850; Frequency: 824.2 MHz, Frequency: 836.8 MHz,
Frequency: 848.8 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/19/2015;
- Sensor-Surface: (Fix Surface), $z = 8.7$
- Electronics: DAE4 Sn881; Calibrated: 1/13/2015
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Device E-Field GSM850 measurement with ER probe_slider closed/E Scan -
ER3D - 2011: 15 mm from Probe Center to the Device_Low_Chan/Hearing Aid
Compatibility Test (101x101x1):** Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 31.11 V/m; Power Drift = 0.12 dB

Applied MIF = 3.44 dB

RF audio interference level = 37.68 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 35.94 dBV/m	Grid 2 M4 36.97 dBV/m	Grid 3 M4 37.24 dBV/m
Grid 4 M4	Grid 5 M4	Grid 6 M4

	Document		Page
	Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)		44 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

36 dBV/m	37.36 dBV/m	37.68 dBV/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
36.62 dBV/m	37.1 dBV/m	36.43 dBV/m

Category	Limits for E-Field Emissions < 960MHz	Limits for E-Field Emissions > 960MHz
M1	50 dBV/m - 55 dB V/m	40 dBV/m - 45 dB V/m
M2	45 dBV/m - 50 dB V/m	35 dBV/m - 40 dB V/m
M3	40 dBV/m - 45 dB V/m	30 dBV/m - 35 dB V/m
M4	<40 dBV/m	<30 dBV/m

Cursor:

Total = 37.68 dBV/m

E Category: M4

Location: -12.5, -2, 8.7 mm

Device E-Field GSM850 measurement with ER probe_slider closed/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Mid_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 62.23 V/m; Power Drift = 0.15 dB

Applied MIF = 3.44 dB

RF audio interference level = 38.29 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
36.09 dBV/m	37.79 dBV/m	37.61 dBV/m
Grid 4 M4	Grid 5 M4	Grid 6 M4
35.42 dBV/m	37.68 dBV/m	37.68 dBV/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
36.8 dBV/m	38.29 dBV/m	38 dBV/m

Category	Limits for E-Field Emissions < 960MHz	Limits for E-Field Emissions > 960MHz
M1	50 dBV/m - 55 dB V/m	40 dBV/m - 45 dB V/m

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)		Page 45 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW	

M2	45 dBV/m - 50 dB V/m	35 dBV/m - 40 dB V/m
M3	40 dBV/m - 45 dB V/m	30 dBV/m - 35 dB V/m
M4	<40 dBV/m	<30 dBV/m

Cursor:

Total = 38.29 dBV/m

E Category: M4

Location: -7.5, 13.5, 8.7 mm

Device E-Field GSM850 measurement with ER probe_slider closed/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_High_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 41.12 V/m; Power Drift = -0.12 dB

Applied MIF = 3.44 dB

RF audio interference level = 38.36 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 35.92 dBV/m	Grid 2 M4 37.61 dBV/m	Grid 3 M4 37.86 dBV/m
Grid 4 M4 35.91 dBV/m	Grid 5 M4 38.36 dBV/m	Grid 6 M4 37.02 dBV/m
Grid 7 M4 35.37 dBV/m	Grid 8 M4 38.18 dBV/m	Grid 9 M4 37.86 dBV/m

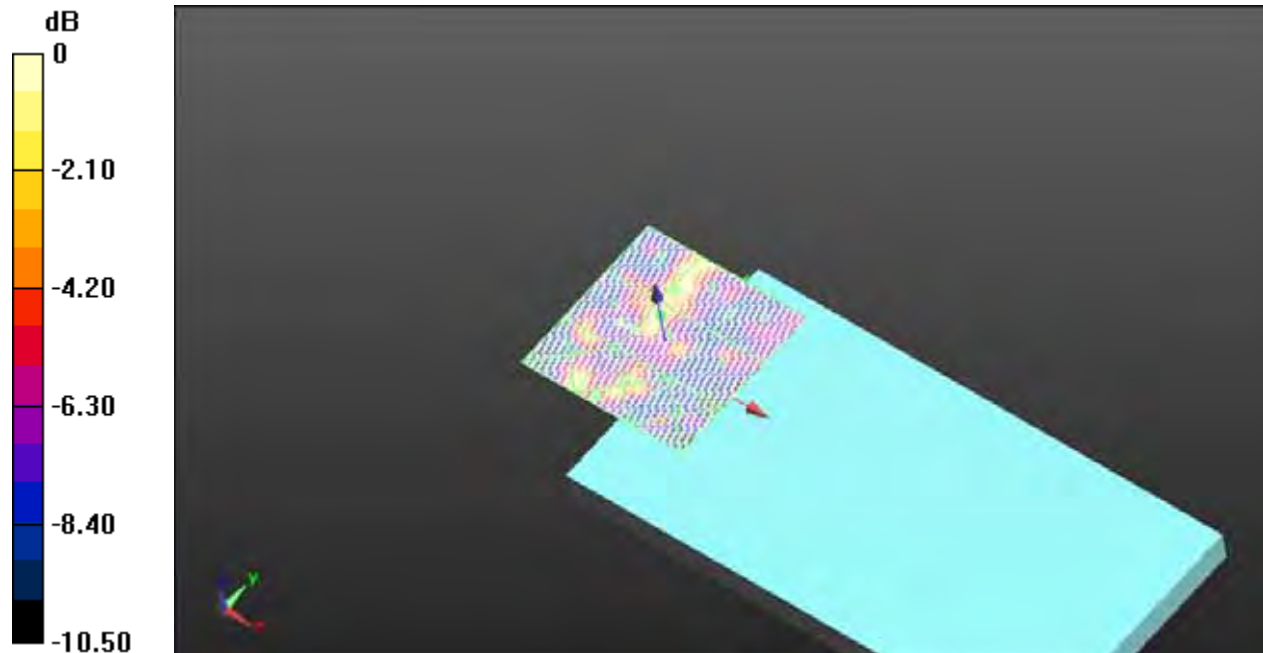
Cursor:

Total = 38.36 dBV/m

E Category: M4

Location: -5.5, 5.5, 8.7 mm

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)		Page 46 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW	



0 dB = 76.60 V/m = 37.68 dBV/m

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 47 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Date/Time: 9/1/2015 10:56:35 AM

Test Laboratory: BlackBerry RTS

HAC RF_E-Field_GSM 1900_slider closed

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 1161507290

Communication System: UID 0, GSM 1900; Frequency: 1850.2 MHz, Frequency: 1880 MHz,
Frequency: 1909.8 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/19/2015;
- Sensor-Surface: (Fix Surface), $z = 8.7$
- Electronics: DAE4 Sn881; Calibrated: 1/13/2015
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Device E-Field GSM 1900 measurement with ER probe_slider closed/E Scan -
ER3D - 2011: 15 mm from Probe Center to the Device_Low_Chan/Hearing Aid
Compatibility Test (101x101x1):** Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 20.00 V/m; Power Drift = -0.07 dB

Applied MIF = 3.44 dB

RF audio interference level = 30.88 dBV/m

Emission category: M3

MIF scaled E-field

Grid 1 M3 32.64 dBV/m	Grid 2 M3 33.45 dBV/m	Grid 3 M3 33.1 dBV/m
Grid 4 M4 28.54 dBV/m	Grid 5 M3 30.48 dBV/m	Grid 6 M3 30.51 dBV/m

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 48 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Grid 7 M4 26.17 dBV/m	Grid 8 M3 30.79 dBV/m	Grid 9 M3 30.88 dBV/m
--	--	--

Category	Limits for E-Field Emissions < 960MHz	Limits for E-Field Emissions > 960MHz
M1	50 dBV/m - 55 dB V/m	40 dBV/m - 45 dB V/m
M2	45 dBV/m - 50 dB V/m	35 dBV/m - 40 dB V/m
M3	40 dBV/m - 45 dB V/m	30 dBV/m - 35 dB V/m
M4	<40 dBV/m	<30 dBV/m

Cursor:

Total = 33.45 dBV/m

E Category: M3

Location: -0.5, -25, 8.7 mm

Device E-Field GSM 1900 measurement with ER probe_slider closed/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Mid_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 23.65 V/m; Power Drift = 0.05 dB

Applied MIF = 3.44 dB

RF audio interference level = 32.35 dBV/m

Emission category: M3

MIF scaled E-field

Grid 1 M3 32.65 dBV/m	Grid 2 M3 34.64 dBV/m	Grid 3 M3 34.51 dBV/m
Grid 4 M4 29.16 dBV/m	Grid 5 M3 32.34 dBV/m	Grid 6 M3 32.35 dBV/m
Grid 7 M4 26.74 dBV/m	Grid 8 M4 29.67 dBV/m	Grid 9 M3 30.08 dBV/m

Cursor:

Total = 34.64 dBV/m

E Category: M3

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 49 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Location: -5.5, -25, 8.7 mm

**Device E-Field GSM 1900 measurement with ER probe_slider closed/E Scan -
ER3D - 2011: 15 mm from Probe Center to the Device_High Chan/Hearing Aid
Compatibility Test (101x101x1):** Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 23.08 V/m; Power Drift = -0.09 dB

Applied MIF = 3.44 dB

RF audio interference level = 31.68 dBV/m

Emission category: M3

MIF scaled E-field

Grid 1 M3 31 dBV/m	Grid 2 M3 33.03 dBV/m	Grid 3 M3 32.97 dBV/m
Grid 4 M4 28.01 dBV/m	Grid 5 M3 31.55 dBV/m	Grid 6 M3 31.68 dBV/m
Grid 7 M4 28.15 dBV/m	Grid 8 M3 30.16 dBV/m	Grid 9 M3 30.74 dBV/m

Cursor:

Total = 33.03 dBV/m

E Category: M3

Location: -6, -25, 8.7 mm



Document

**Annex A to Hearing Aid Compatibility RF Emissions Test Report
for the BlackBerry® Smartphone RHL211LW (STV100-3)**

Page

50 (68)

Author Data

Daoud Attayi

Dates of Test

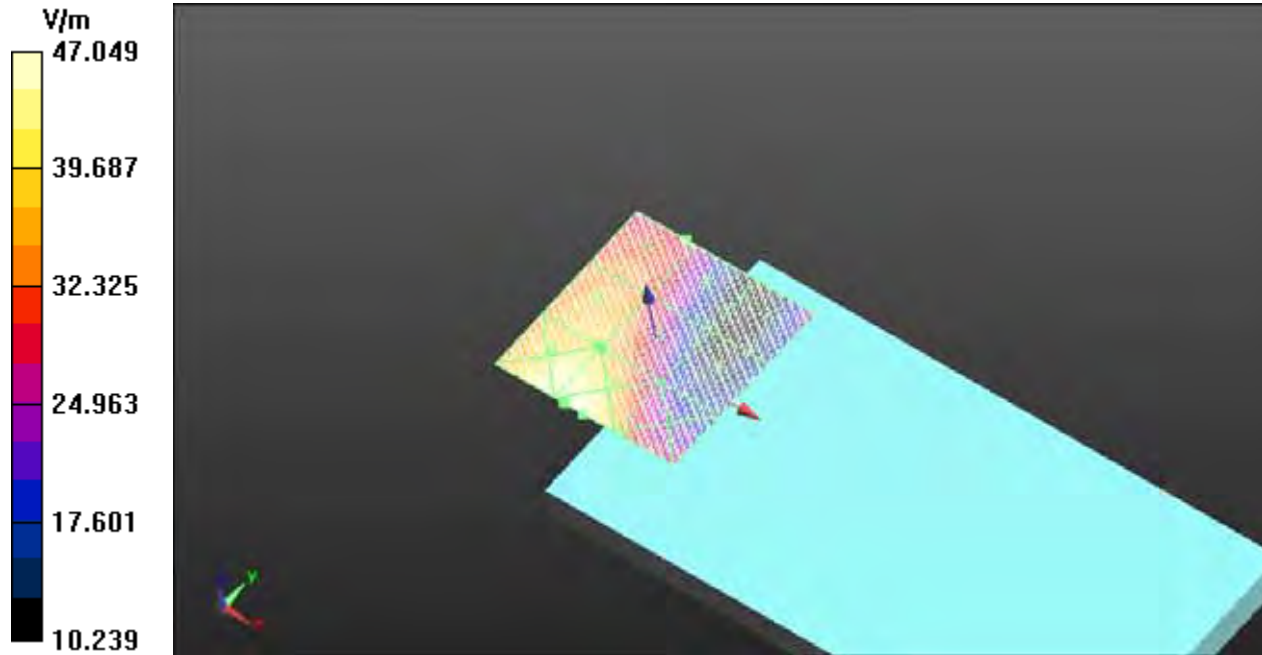
August 31- Sep. 23, 2015

Report No

RTS-6066-1509-21

FCC ID

L6ARHL210LW



		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)		Page 51 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW	

Date/Time: 9/1/2015 12:09:18 PM

Test Laboratory: BlackBerry RTS

HAC RF_E-Field_GSM 850_slider open

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 1161507290

Communication System: UID 0, GSM 850; Frequency: 824.2 MHz, Frequency: 836.8 MHz,
Frequency: 848.8 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/19/2015;
- Sensor-Surface: (Fix Surface), $z = 8.7$
- Electronics: DAE4 Sn881; Calibrated: 1/13/2015
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Device E-Field GSM850 measurement with ER probe_slider open/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Low_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 24.02 V/m; Power Drift = 0.02 dB

Applied MIF = 3.44 dB

RF audio interference level = 28.88 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 28.47 dBV/m	Grid 2 M4 28.86 dBV/m	Grid 3 M4 28.86 dBV/m
Grid 4 M4 28.58 dBV/m	Grid 5 M4 28.88 dBV/m	Grid 6 M4 28.81 dBV/m

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 52 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Grid 7 M4 28.31 dBV/m	Grid 8 M4 28.75 dBV/m	Grid 9 M4 28.61 dBV/m
--	--	--

Category	Limits for E-Field Emissions < 960MHz	Limits for E-Field Emissions > 960MHz
M1	50 dBV/m - 55 dB V/m	40 dBV/m - 45 dB V/m
M2	45 dBV/m - 50 dB V/m	35 dBV/m - 40 dB V/m
M3	40 dBV/m - 45 dB V/m	30 dBV/m - 35 dB V/m
M4	<40 dBV/m	<30 dBV/m

Cursor:

Total = 28.88 dBV/m

E Category: M4

Location: -0.5, 0, 8.7 mm

**Device E-Field GSM850 measurement with ER probe_slider open/E Scan -
ER3D - 2011: 15 mm from Probe Center to the Device_Mid_Chan/Hearing Aid
Compatibility Test (101x101x1):** Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 28.61 V/m; Power Drift = 4.64 dB

Applied MIF = 3.44 dB

RF audio interference level = 36.22 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 34.4 dBV/m	Grid 2 M4 36.06 dBV/m	Grid 3 M4 35.36 dBV/m
Grid 4 M4 34.73 dBV/m	Grid 5 M4 36.22 dBV/m	Grid 6 M4 35.48 dBV/m
Grid 7 M4 34.86 dBV/m	Grid 8 M4 37.02 dBV/m	Grid 9 M4 36.52 dBV/m

Cursor:

Total = 37.02 dBV/m

E Category: M4

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 53 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Location: -7.5, 25, 8.7 mm

**Device E-Field GSM850 measurement with ER probe_slider open/E Scan -
ER3D - 2011: 15 mm from Probe Center to the Device_High_Chan/Hearing Aid
Compatibility Test (101x101x1):** Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 31.12 V/m; Power Drift = 0.15 dB

Applied MIF = 3.44 dB

RF audio interference level = 31.56 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 30.58 dBV/m	Grid 2 M4 31.44 dBV/m	Grid 3 M4 31.35 dBV/m
Grid 4 M4 30.65 dBV/m	Grid 5 M4 31.56 dBV/m	Grid 6 M4 31.46 dBV/m
Grid 7 M4 30.4 dBV/m	Grid 8 M4 31.43 dBV/m	Grid 9 M4 31.28 dBV/m

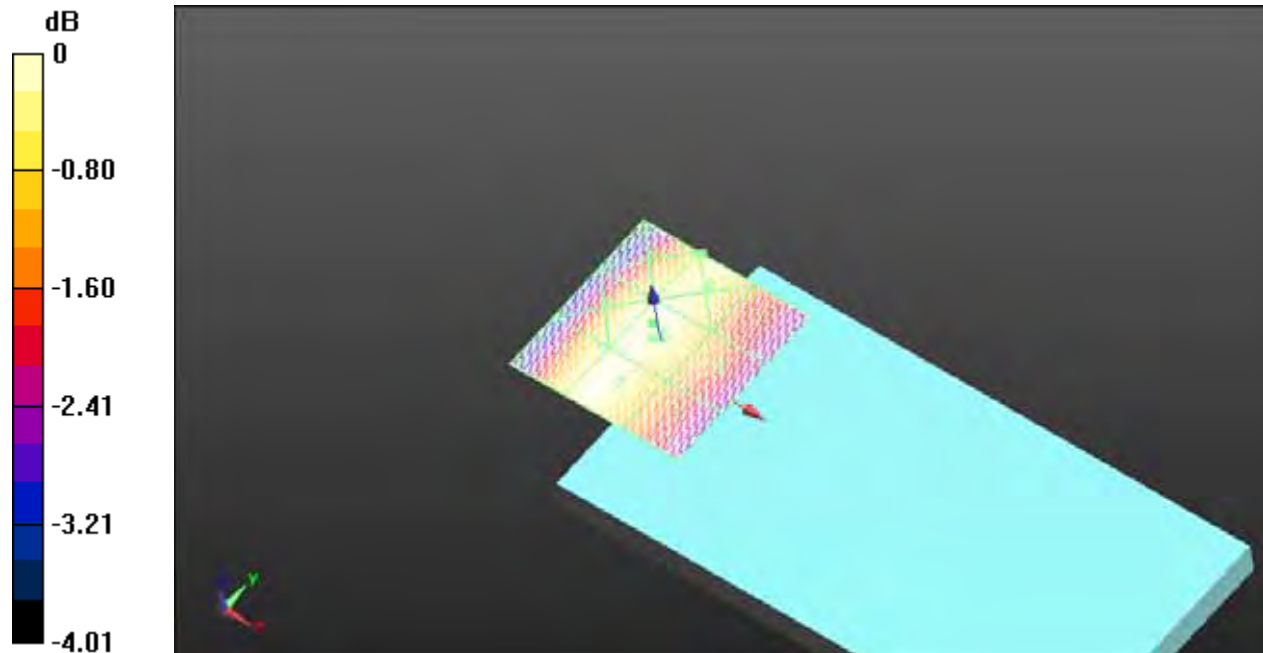
Cursor:

Total = 31.56 dBV/m

E Category: M4

Location: -4.5, 3, 8.7 mm

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)		Page 54 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW	



0 dB = 27.81 V/m = 28.88 dBV/m

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)		Page 55 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW	

Date/Time: 9/1/2015 11:53:58 AM

Test Laboratory: BlackBerry RTS

HAC RF_E-Field_GSM 1900_slider open

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 1161507290

Communication System: UID 0, GSM 1900; Frequency: 1850.2 MHz, Frequency: 1880 MHz,
Frequency: 1909.8 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/19/2015;
- Sensor-Surface: (Fix Surface), $z = 8.7$
- Electronics: DAE4 Sn881; Calibrated: 1/13/2015
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Device E-Field GSM 1900 measurement with ER probe_slider open/E Scan -
ER3D - 2011: 15 mm from Probe Center to the Device_Low_Chan 2/Hearing Aid
Compatibility Test (101x101x1):** Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 34.39 V/m; Power Drift = 0.14 dB

Applied MIF = 3.44 dB

RF audio interference level = 34.40 dBV/m

Emission category: M3

MIF scaled E-field

Grid 1 M3 32.53 dBV/m	Grid 2 M3 33.89 dBV/m	Grid 3 M3 33.87 dBV/m
Grid 4 M3 30.64 dBV/m	Grid 5 M3 34.4 dBV/m	Grid 6 M3 34.46 dBV/m

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 56 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Grid 7 M4 29.45 dBV/m	Grid 8 M3 34.62 dBV/m	Grid 9 M3 34.66 dBV/m
--	--	--

Category	Limits for E-Field Emissions < 960MHz	Limits for E-Field Emissions > 960MHz
M1	50 dBV/m - 55 dB V/m	40 dBV/m - 45 dB V/m
M2	45 dBV/m - 50 dB V/m	35 dBV/m - 40 dB V/m
M3	40 dBV/m - 45 dB V/m	30 dBV/m - 35 dB V/m
M4	<40 dBV/m	<30 dBV/m

Cursor:

Total = 34.66 dBV/m

E Category: M3

Location: -10, 20, 8.7 mm

Device E-Field GSM 1900 measurement with ER probe_slider open/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Mid_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 36.30 V/m; Power Drift = -0.02 dB

Applied MIF = 3.44 dB

RF audio interference level = 33.88 dBV/m

Emission category: M3

MIF scaled E-field

Grid 1 M3 32.37 dBV/m	Grid 2 M3 33.96 dBV/m	Grid 3 M3 33.71 dBV/m
Grid 4 M3 30.42 dBV/m	Grid 5 M3 33.86 dBV/m	Grid 6 M3 33.9 dBV/m
Grid 7 M4 29.35 dBV/m	Grid 8 M3 33.85 dBV/m	Grid 9 M3 33.88 dBV/m

Cursor:

Total = 33.96 dBV/m

E Category: M3

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 57 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Location: -4.5, -25, 8.7 mm

**Device E-Field GSM 1900 measurement with ER probe_slider open/E Scan -
ER3D - 2011: 15 mm from Probe Center to the Device_High_Chan/Hearing Aid
Compatibility Test (101x101x1):** Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 31.51 V/m; Power Drift = 0.00 dB

Applied MIF = 3.44 dB

RF audio interference level = 33.66 dBV/m

Emission category: M3

MIF scaled E-field

Grid 1 M3 30.54 dBV/m	Grid 2 M3 32.53 dBV/m	Grid 3 M3 32.66 dBV/m
Grid 4 M4 28.51 dBV/m	Grid 5 M3 33.66 dBV/m	Grid 6 M3 33.74 dBV/m
Grid 7 M4 28.64 dBV/m	Grid 8 M3 33.89 dBV/m	Grid 9 M3 33.92 dBV/m

Cursor:

Total = 33.92 dBV/m

E Category: M3

Location: -10, 18.5, 8.7 mm



Document

**Annex A to Hearing Aid Compatibility RF Emissions Test Report
for the BlackBerry® Smartphone RHL211LW (STV100-3)**

Page

58 (68)

Author Data

Daoud Attayi

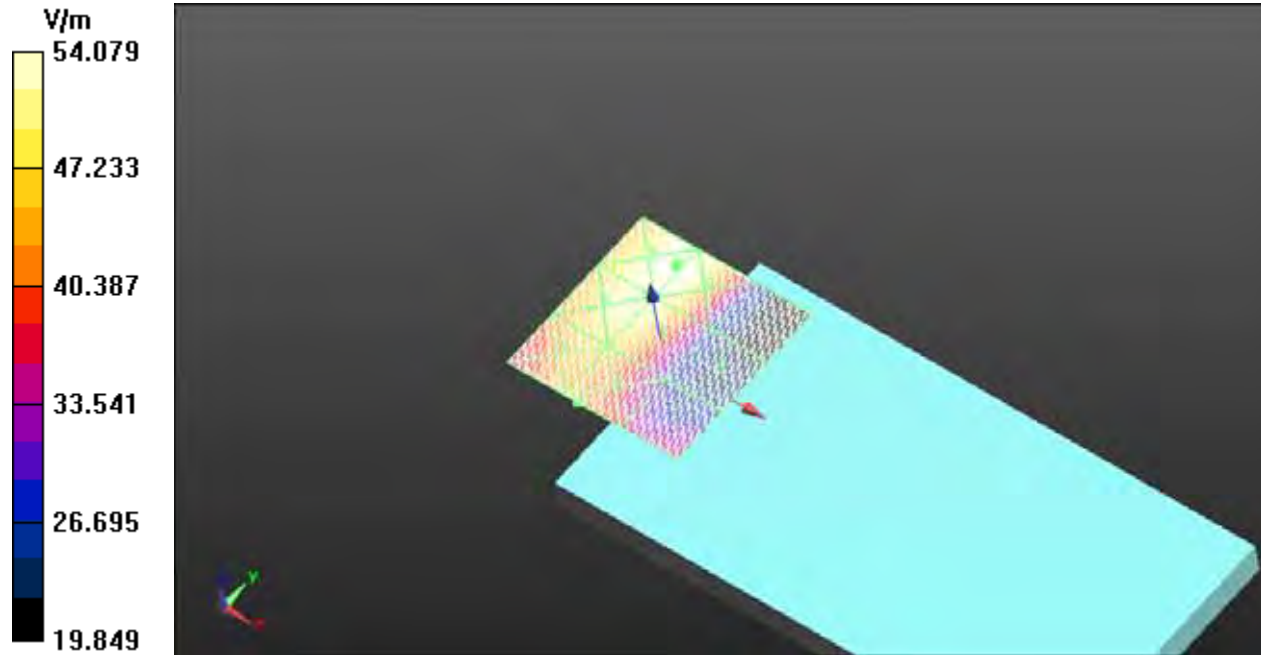
Dates of Test

August 31- Sep. 23, 2015

Report No

RTS-6066-1509-21

FCC ID

L6ARHL210LW

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 59 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Date/Time: 9/17/2015 2:28:38 PM

Test Laboratory: BlackBerry RTS

HAC RF_E-Field_VoLTE_TDD band 41_slider closed

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 1161507290

Communication System: UID 0, LTE 41 (11.67% DF) (0); Frequency: 2506 MHz, Frequency: 2549.5 MHz, Frequency: 2593 MHz, Frequency: 2636.5 MHz, Frequency: 2680 MHz

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

Phantom section: TCoil Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/19/2015;
- Sensor-Surface: (Fix Surface), $z = 8.7$
- Electronics: DAE4 Sn881; Calibrated: 1/13/2015
- Phantom: HAC T-Coil Test Arch with AMCC; Type: SD HAC P01 BA
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Device E-Field LTE TDD 41 measurement with ER probe_slider closed/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Low_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 2.390 V/m; Power Drift = 0.25 dB

Applied MIF = 3.63 dB

RF audio interference level = 18.11 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 15.27 dBV/m	Grid 2 M4 13.35 dBV/m	Grid 3 M4 10.27 dBV/m
Grid 4 M4 15.51 dBV/m	Grid 5 M4 12.82 dBV/m	Grid 6 M4 12.51 dBV/m

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 60 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Grid 7 M4 18.11 dBV/m	Grid 8 M4 15.87 dBV/m	Grid 9 M4 15.32 dBV/m
--	--	--

Category	Limits for E-Field Emissions < 960MHz	Limits for E-Field Emissions > 960MHz
M1	50 dBV/m - 55 dB V/m	40 dBV/m - 45 dB V/m
M2	45 dBV/m - 50 dB V/m	35 dBV/m - 40 dB V/m
M3	40 dBV/m - 45 dB V/m	30 dBV/m - 35 dB V/m
M4	<40 dBV/m	<30 dBV/m

Cursor:

Total = 18.11 dBV/m

E Category: M4

Location: 25, 25, 8.7 mm

Device E-Field LTE TDD 41 measurement with ER probe_slider closed/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Low_Mid_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 3.356 V/m; Power Drift = 0.36 dB

Applied MIF = 3.63 dB

RF audio interference level = 20.09 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 16.96 dBV/m	Grid 2 M4 13.9 dBV/m	Grid 3 M4 16.04 dBV/m
Grid 4 M4 16.95 dBV/m	Grid 5 M4 17.08 dBV/m	Grid 6 M4 17.59 dBV/m
Grid 7 M4 19.13 dBV/m	Grid 8 M4 20.09 dBV/m	Grid 9 M4 20.08 dBV/m

Cursor:

Total = 20.09 dBV/m

E Category: M4

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 61 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Location: -7.5, 25, 8.7 mm

Device E-Field LTE TDD 41 measurement with ER probe_slider closed/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Mid_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 2.964 V/m; Power Drift = 0.48 dB

Applied MIF = 3.63 dB

RF audio interference level = 17.43 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 16.6 dBV/m	Grid 2 M4 14 dBV/m	Grid 3 M4 15.09 dBV/m
Grid 4 M4 15.69 dBV/m	Grid 5 M4 13.17 dBV/m	Grid 6 M4 15.64 dBV/m
Grid 7 M4 17.43 dBV/m	Grid 8 M4 17.18 dBV/m	Grid 9 M4 17.29 dBV/m

Cursor:

Total = 17.43 dBV/m

E Category: M4

Location: 25, 25, 8.7 mm

Device E-Field LTE TDD 41 measurement with ER probe_slider closed/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Mid_High_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 2.703 V/m; Power Drift = 0.47 dB

Applied MIF = 3.63 dB

RF audio interference level = 17.02 dBV/m

Emission category: M4

MIF scaled E-field

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 62 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Grid 1 M4 17.02 dBV/m	Grid 2 M4 13.45 dBV/m	Grid 3 M4 12.83 dBV/m
Grid 4 M4 16.7 dBV/m	Grid 5 M4 12.03 dBV/m	Grid 6 M4 13.28 dBV/m
Grid 7 M4 16.96 dBV/m	Grid 8 M4 15.72 dBV/m	Grid 9 M4 15.85 dBV/m

Cursor:

Total = 17.02 dBV/m

E Category: M4

Location: 25, -25, 8.7 mm

Device E-Field LTE TDD 41 measurement with ER probe_slider closed/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_High_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 3.682 V/m; Power Drift = 0.03 dB

Applied MIF = 3.63 dB

RF audio interference level = 19.72 dBV/m

Emission category: M4

MIF scaled E-field

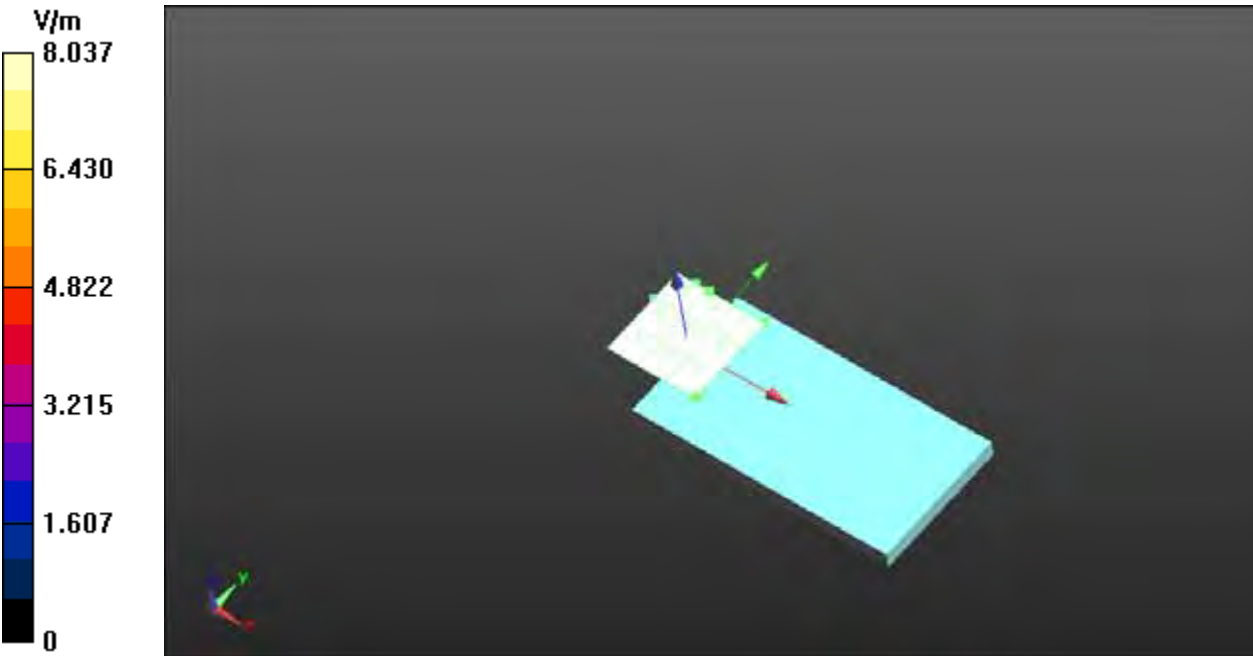
Grid 1 M4 19.72 dBV/m	Grid 2 M4 15.53 dBV/m	Grid 3 M4 14.98 dBV/m
Grid 4 M4 19.31 dBV/m	Grid 5 M4 16.94 dBV/m	Grid 6 M4 17.18 dBV/m
Grid 7 M4 18.87 dBV/m	Grid 8 M4 19.64 dBV/m	Grid 9 M4 19.58 dBV/m

Cursor:

Total = 19.72 dBV/m

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 63 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

E Category: M4
Location: 24.5, -25, 8.7 mm



		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 64 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Date/Time: 9/17/2015 3:42:42 PM

Test Laboratory: BlackBerry RTS

HAC RF_E-Field_VoLTE_TDD band 41_slider open

DUT: BlackBerry Smartphone; Type: Sample ; Serial: 1161507290

Communication System: UID 0, LTE 41 (11.67% DF) (0); Frequency: 2506 MHz, Frequency: 2549.5 MHz, Frequency: 2593 MHz, Frequency: 2636.5 MHz, Frequency: 2680 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY Configuration:

- Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/19/2015;
- Sensor-Surface: (Fix Surface), $z = 8.7$
- Electronics: DAE4 Sn881; Calibrated: 1/13/2015
- Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Device E-Field LTE TDD 41 measurement with ER probe_slider open/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Low_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 2.762 V/m; Power Drift = 0.24 dB

Applied MIF = 3.63 dB

RF audio interference level = 20.86 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 18.02 dBV/m	Grid 2 M4 16.67 dBV/m	Grid 3 M4 16.72 dBV/m
Grid 4 M4 17.05 dBV/m	Grid 5 M4 15.82 dBV/m	Grid 6 M4 16.1 dBV/m

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 65 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Grid 7 M4 19.16 dBV/m	Grid 8 M4 20.86 dBV/m	Grid 9 M4 20.86 dBV/m
--	--	--

Category	Limits for E-Field Emissions < 960MHz	Limits for E-Field Emissions > 960MHz
M1	50 dBV/m - 55 dB V/m	40 dBV/m - 45 dB V/m
M2	45 dBV/m - 50 dB V/m	35 dBV/m - 40 dB V/m
M3	40 dBV/m - 45 dB V/m	30 dBV/m - 35 dB V/m
M4	<40 dBV/m	<30 dBV/m

Cursor:

Total = 20.86 dBV/m

E Category: M4

Location: -8.5, 25, 8.7 mm

Device E-Field LTE TDD 41 measurement with ER probe_slider open/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Low_Mid_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 3.659 V/m; Power Drift = -0.19 dB

Applied MIF = 3.63 dB

RF audio interference level = 22.86 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 18.31 dBV/m	Grid 2 M4 17.46 dBV/m	Grid 3 M4 17.82 dBV/m
Grid 4 M4 19.1 dBV/m	Grid 5 M4 19.18 dBV/m	Grid 6 M4 19.55 dBV/m
Grid 7 M4 20.88 dBV/m	Grid 8 M4 22.84 dBV/m	Grid 9 M4 22.86 dBV/m

Cursor:

Total = 22.86 dBV/m

E Category: M4

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 66 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

Location: -10, 25, 8.7 mm

Device E-Field LTE TDD 41 measurement with ER probe_slider open/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Mid_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 3.620 V/m; Power Drift = -0.03 dB

Applied MIF = 3.63 dB

RF audio interference level = 19.28 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 16.07 dBV/m	Grid 2 M4 15.29 dBV/m	Grid 3 M4 16.44 dBV/m
Grid 4 M4 16.33 dBV/m	Grid 5 M4 16.31 dBV/m	Grid 6 M4 17.13 dBV/m
Grid 7 M4 19.14 dBV/m	Grid 8 M4 18.93 dBV/m	Grid 9 M4 19.28 dBV/m

Cursor:

Total = 19.28 dBV/m

E Category: M4

Location: -14.5, 25, 8.7 mm

Device E-Field LTE TDD 41 measurement with ER probe_slider open/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_Mid_High_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 3.186 V/m; Power Drift = -0.13 dB

Applied MIF = 3.63 dB

RF audio interference level = 18.56 dBV/m

Emission category: M4

MIF scaled E-field

	Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)		Page 67 (68)
	Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21
		FCC ID L6ARHL210LW	

Grid 1 M4 15.7 dBV/m	Grid 2 M4 13.52 dBV/m	Grid 3 M4 14.07 dBV/m
Grid 4 M4 15.84 dBV/m	Grid 5 M4 15.52 dBV/m	Grid 6 M4 15.79 dBV/m
Grid 7 M4 17.93 dBV/m	Grid 8 M4 18.56 dBV/m	Grid 9 M4 18.55 dBV/m

Cursor:

Total = 18.56 dBV/m

E Category: M4

Location: -7.5, 25, 8.7 mm

Device E-Field LTE TDD 41 measurement with ER probe_slider open/E Scan - ER3D - 2011: 15 mm from Probe Center to the Device_High_Chan/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 3.170 V/m; Power Drift = -0.06 dB

Applied MIF = 3.63 dB

RF audio interference level = 21.11 dBV/m

Emission category: M4

MIF scaled E-field

Grid 1 M4 17.4 dBV/m	Grid 2 M4 16.17 dBV/m	Grid 3 M4 16.74 dBV/m
Grid 4 M4 17.59 dBV/m	Grid 5 M4 16.85 dBV/m	Grid 6 M4 17.7 dBV/m
Grid 7 M4 20.6 dBV/m	Grid 8 M4 21.11 dBV/m	Grid 9 M4 21.11 dBV/m

Cursor:

Total = 21.11 dBV/m

		Document Annex A to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone RHL211LW (STV100-3)	Page 68 (68)
Author Data Daoud Attayi	Dates of Test August 31- Sep. 23, 2015	Report No RTS-6066-1509-21	FCC ID L6ARHL210LW

E Category: M4

Location: -8, 25, 8.7 mm

