EMI Test Report

Tested in accordance with
Federal Communications Commission (FCC)
Personal Communications Services
CFR 47 Parts 2, 22, and 24
&
Industry Canada (IC) RSS- GEN, 132 and 133

A division of Research In Motion Limited

REPORT NO: RTS-1689-1007-54

PRODUCT MODEL NO:	RCM72UW
TYPE NAME:	BlackBerry® smartphone
FCC ID:	L6ARCM70UW
IC:	2503A–RCM70UW
EMISSION DESIGNATOR (GSM):	243KG7W
EMISSION DESIGNATOR (EDGE):	242KGXW
EMISSION DESIGNATOR (WCDMA):	4M19F9W

DATE: August 25, 2010

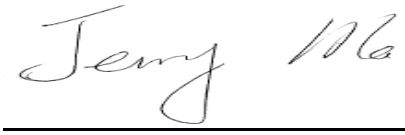
Statement of Performance:

The BlackBerry® smartphone, model RCM72UW, part number CER-33222-001 Rev 1 and accessories performs within the requirements of the test standards when configured and operated per RIM's instructions.

Declaration:

We hereby certify that:
The test data reported herein is an accurate record of the performance of the sample(s) tested. The test results are valid for the tested unit (s) only. The test equipment used was suitable for the tests performed and within manufacturer's published specifications and operating parameters. The test methods were consistent with the methods described in the relevant standards.

Documented by:



Quan (Jerry) Ma
Regulatory Compliance Associate
Date: September 22, 2010

Reviewed by:

Heng Lin
Regulatory Compliance Specialist
Date: September 23, 2010

Reviewed and Approved by:

Masud S. Attayi, P.Eng.
Manager, Regulatory Compliance
Date: September 23, 2010

Table of Contents

A) Scope

This report details the results of compliance tests which were performed in accordance to the requirements of:

- FCC CFR 47 Part 2, October 2009
- FCC CFR 47 Part 22, Subpart H, Cellular Radiotelephone Services, October 2009
- FCC CFR 47 Part 24 Subpart E, Broadband PCS, October 2009
- Industry Canada, RSS-132 Issue 2, September 2005, Cellular Telephones Employing New Technologies Operating in the Bands 824-849 MHz and 869-894 MHz.
- Industry Canada, RSS-133 Issue 5, February 2009, 2 GHz Personal Communications Services.
- Industry Canada, RSS-GEN Issue 2, June 02007, General Requirements and Information for the Certification of Radiocommunication Equipment

B) Associated Documents

1) RTS-1689-0909-19
2) RTS-1689-0909-27
3) 9700 – 9780 Differences

C) Product Identification

Manufactured by Research In Motion Limited whose headquarters is located at:

295 Phillip Street
Waterloo, Ontario
Canada, N2L 3W8
Phone: 519 888 7465
Fax: 519 888 6906

The equipment under test (EUT) was tested at the following locations:

RIM Testing Services EMI test facilities

305 Phillip Street	440 Phillip Street
Waterloo, Ontario	Waterloo, Ontario,
Canada, N2L 3W8	Canada , N2L 5R9
Phone: 519 888 7465	Phone: 519 888 7465
Fax: 519 888 6906	Fax: 519 888 6906

The testing was performed from June 11 to July 07 and September 22, 2010.

The sample EUT included:

SAMPLE	MODEL	CER NUMBER	PIN	Software
1	RCM72UW	CER-33222-001 Rev. 1	226DCEFE	V6.0.0.68 (Platform 6.5.0.14) Bundle 142
2	RCM72UW	CER-33221-001 Rev. 1	226DCF62	V6.0.0.68 (Platform 6.5.0.6) Bundle 142
3	RCM72UW	CER-33221-001 Rev. 1	226DCF5F	V6.0.0.68 (Platform 6.5.0.6) Bundle 142

UMTS RF Conducted testing was performed on sample 1.
Radiated Emissions testing was performed on samples 2, and 3.
GSM 850/UMTS ERP and EIRP testing was performed on sample 2.
GSM 1900 EIRP testing was performed on sample 3.

Only the characteristics that may have been affected by the changes from model RCM71UW to model RCM72UW were retested. For more information, see 9700 – 9780 Differences.

D) Support Equipment Used for the Testing of the EUT

No support equipment required; for list of equipment refer to section G, Compliance Test Equipment Used.

E) Test Voltage

The ac input voltage was 120 volts, 60 Hz where applicable. This configuration was per RIM's specifications.

F) Summary of Results

SPECIFICATION		TEST TYPE	RESULT	TEST DATA APPENDIX
FCC CFR 47	IC			
Part 2.1051 Part 22.917 Part 22.901	RSS-GEN, 4.9	GSM 850 Conducted Spurious Emissions	See Test Report RTS-1689-0907-19	-
Part 2.1051 Part 24.238(a)	RSS-GEN, 4.9	GSM PCS Conducted Spurious Emissions	See Test Report RTS-1689-0907-19	-
Part 2.202 Part 22.917	RSS-GEN, 4.6	GSM 850 Occupied Bandwidth and Channel Mask	See Test Report RTS-1689-0907-19	-
Part 2.202 Part 24.238	RSS-GEN, 4.6	GSM PCS Occupied Bandwidth and Channel Mask	See Test Report RTS-1689-0907-19	-
Part 2.1046(a)	RSS-133, 6.4 RSS-132, 4.4	GSM Conducted RF Output Power	See Test Report RTS-1689-0907-19	-
Part 2.1055(a)(d) Part 22.917	RSS-132, 4.3	GSM 850 Frequency Stability vs. Temperature and Voltage	See Test Report RTS-1689-0909-27	-
Part 2.1055(a)(d) Part 24.235	RSS-132, 4.3	GSM PCS Frequency Stability vs. Temperature and Voltage	See Test Report RTS-1689-0909-27	-
Part 22, Subpart H, Part 24, Subpart E	RSS-GEN, 4.9	GSM ERP, EIRP	Pass	2A
Part 22, Subpart H Part 24, Subpart E	RSS-GEN, 4.9	GSM Radiated Spurious/Harmonic Emissions	Pass	2A
Part 2.1051 Part 22.917 Part 22.901	RSS-GEN, 4.9	WCDMA UMTS850 Conducted Spurious Emissions	Pass	1
Part 2.1051 Part 24.238(a)	RSS-GEN, 4.9	WCDMA UMTS1900 Conducted Spurious Emissions	Pass	1
Part 2.202 Part 22.917	RSS-GEN, 4.6	WCDMA UMTS850 Occupied Bandwidth	See Test Report RTS-1689-0909-27	-
Part 2.202 Part 22.917	RSS-GEN, 4.6	WCDMA UMTS850 Channel Mask	Pass	1
Part 2.202 Part 24.238	RSS-GEN, 4.6	WCDMA UMTS1900 Occupied Bandwidth	See Test Report RTS-1689-0909-27	-
Part 2.202 Part 24.238	RSS-GEN, 4.6	WCDMA UMTS1900 Channel Mask	Pass	1

Summary of Results cont'd

SPECIFICATION		TEST TYPE	RESULT	TEST DATA APPENDIX
FCC CFR 47	IC			
Part 2.1046(a)	RSS-133, 6.4 RSS-132, 4.4	WCDMA Conducted RF Output Power	See Test Report RTS-1689-0907-19	-
Part 2.1055(a)(d) Part 22.917	RSS-132, 4.3	WCDMA UMTS850 Frequency Stability vs. Temperature and Voltage	See Test Report RTS-1689-0907-19	-
Part 2.1055(a)(d) Part 24.235	RSS-GEN, 4.7	WCDMA UMTS1900 Frequency Stability vs. Temperature and Voltage	See Test Report RTS-1689-0907-19	-
Part 22, Subpart H	RSS-GEN, 4.9	WCDMA UMTS850 Radiated Spurious/Harmonic Emissions, ERP	Pass	2B
Part 24, Subpart E	RSS-GEN, 4.9	WCDMA UMTS1900 Radiated Spurious/Harmonic Emissions, EIRP	Pass	2B

1) Conducted Emission Measurements

a) The BlackBerry® smartphone met the requirements of the Conducted Spurious Emissions in the UMTS850 band as per 47 CFR 2.1057, CFR 22.917, CFR 22.901(d), and RSS-GEN, 4.9. The EUT was measured on the low, middle and high channels. The frequency range investigated was from 10 MHz to 20 GHz.
See APPENDIX 1 for the test data.

The BlackBerry® smartphone met the requirements of the Conducted Spurious Emissions in the UMTS1900 band as per 47 CFR 2.1057, CFR 24.238, and RSS-GEN, 4.9. The EUT was measured on the low, middle and high channels. The frequency range investigated was from 10 MHz to 20 GHz.
See APPENDIX 1 for the test data.

b) The BlackBerry® smartphone met the requirements of the channel mask in the UMTS850 band as per 47 CFR 2.202, CFR 22.917 and RSS-GEN, 4.6. The low, and high channels were measured.
See APPENDIX 1 for the test data.

The BlackBerry® smartphone met the requirements of the channel mask in the UMTS1900 band as per 47 CFR 2.202, CFR 24.238 and RSS-GEN, 4.6. The low, and high channels were measured.
See APPENDIX 1 for the test data.

2) Radiated Spurious/Harmonic Emission and ERP/EIRP Measurements

The radiated spurious emissions/harmonics and ERP/EIRP were measured for GSM 850, 1900, UMTS band II and UMTS band V. The results are within the limits. The BlackBerry® smartphone was placed on a nonconductive styrofoam table, 100 cm high that was positioned on a remotely controlled turntable. The test distance used between the BlackBerry® smartphone and the receiving antenna was three metres. Then the emissions were maximized by elevating the antenna in the range of 1 to 4 metres. The turntable was rotated to determine the azimuth of the peak emissions. Both the horizontal and vertical polarizations of the emissions were measured. The maximum emissions level was recorded. The BlackBerry® smartphone was then substituted with an antenna placed in the same location as the BlackBerry® smartphone. A Dipole antenna was used for the ERP measurements and a Horn antenna was used for EIRP measurements. The substitution antenna was connected into a signal generator that was set to the test frequency.
The emissions were maximized by elevating the antenna in the range of 1 to 4 metres. The signal generator output was then adjusted to match the BlackBerry® smartphone output reading. The signal generator output was recorded. Both the horizontal and vertical polarizations of the emissions were measured.

The following measurements were done in a semi-anechoic chamber (SAC) below 1 GHz and a fully-anechoic room (FAR) above 1 GHz. The SAC's FCC registration number is **778487** and the Industry Canada (IC) file number is **2503B-1**. The FAR's FCC registration number is **959115** and the IC file number is **2503C-1**. The BlackBerry® smartphone was measured on the low, middle and high channels.

The ERP in the GSM 850 band, GSM mode was measured on BlackBerry® smartphone. The highest ERP measured was 29.60 dBm (0.91 W) at 848.80 MHz (channel 251).

The ERP in the GSM 850 band, EDGE mode was measured on BlackBerry® smartphone. The highest ERP measured was 27.11 dBm (0.51 W) at 837.60 MHz (channel 195).

The EIRP in the GSM 1900 band, GSM mode was measured on BlackBerry® smartphone. The highest ERP measured was 29.84 dBm (0.96 W) at 1909.80 MHz (channel 810).

The EIRP in the GSM 1900 band, EDGE mode was measured on BlackBerry® smartphone. The highest ERP measured was 27.79 dBm (0.60 W) at 1850.20 MHz (channel 512).

The EIRP in the UMTS band II, Call mode was measured on BlackBerry® smartphone. The highest ERP measured was 26.96 dBm (0.50 W) at 1907.60 MHz (channel 9538).

The ERP in the UMTS band V, Call mode was measured on BlackBerry® smartphone. The highest ERP measured was 23.08 dBm (0.20 W) at 836.40 MHz (channel 4182).

The radiated spurious emission and carrier harmonics were measured up to the 10th harmonic for middle channel in the GSM850 band and for low channel in the PCS1900 bands. Each band was measured in GSM mode. Both the horizontal and vertical polarizations were measured.

The worst case emission level in the 850 band for GSM mode harmonic emissions was -34.42 dBm or test margin of 21.42 dB below the limit at 1673.269 MHz.

The worst case emission level in the PCS band for GSM mode harmonic emissions was -35.40 dBm or test margin of 22.40 dB below the limit at 3700.609 MHz.

The radiated spurious emission and carrier harmonics were measured up to the 10th harmonic for middle channel in the UMTS band II and band V. Both the horizontal and vertical polarizations were measured.

The test margin in the UMTS band II and band V harmonic emissions were greater than 25 dB below the accepted limits for all tested frequencies.

Sample Calculation:

Field Strength (dBµV/M) is calculated as follows:
FS = Measured Level (dBµV) + A.F. (dB/m) + Cable Loss (dB) - Preamp (dB) + Filter Loss (dB)

To view the test data see APPENDIX 1.

Measurement Uncertainty ±4.6 dB

G) Compliance Test Equipment Used

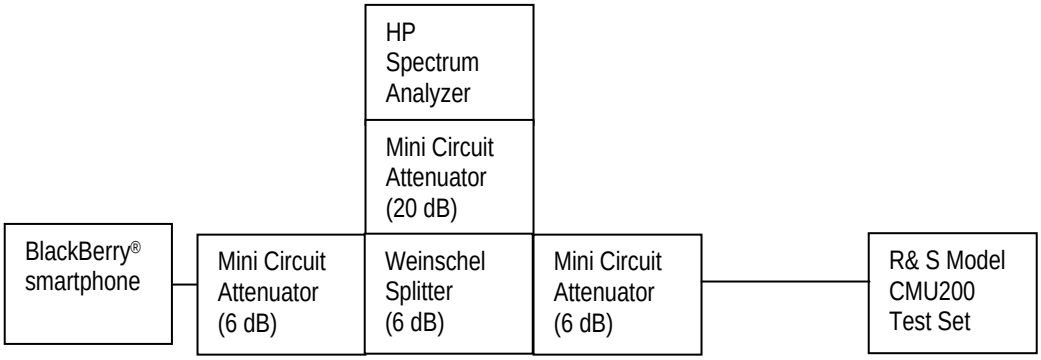
UNIT	MANUFACTURER	MODEL	SERIAL NUMBER	CAL DUE DATE (YY MM DD)	USE
Preamplifier	Sonoma	310N/11909A	185831	10-11-14	Radiated Emissions
Preamplifier system	TDK RF Solutions	PA-02	080010	10-11-06	Radiated Emissions
Preamplifier	Rohde & Schwarz	TS-ANA4-SP	001	11-02-17	Radiated Emissions
Preamplifier	Rohde & Schwarz	TS-ANA-SP	001	11-02-19	Radiated Emissions
Hybrid Log Antenna	EMC Automation	HLP-3003C	017301	11-02-02	Radiated Emissions
Hybrid Log Antenna	EMC Automation	HLP-3003C	017401	10-09-26	Radiated Emissions
Horn Antenna	EMC Automation	HRN-0118	030101	12-07-20	Radiated Emissions
Horn Antenna	EMC Automation	HRN-0118	030201	11-03-12	Radiated Emissions
Horn Antenna	Emco	3117	47563	11-07-15	Radiated Emissions
Horn Antenna	CMT	LHA 0180	R52734-001	12-01-21	Radiated Emissions
Preamplifier	TDK RF Solutions	18-26	030002	10-11-06	Radiated Emissions
Dipole Antenna	Schwarzbeck	UHAP	1018	11-03-12	Radiated Emissions
Dipole Antenna	Schwarzbeck	UHAP	974	10-10-16	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	837493/073	10-11-30	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	112394	10-11-30	Radiated Emissions
EMI Receiver	Rohde & Schwarz	ESIB-40	100255	10-11-30	Radiated Emissions
EMI Receiver	Rohde & Schwarz	ESU-40	100162	10-11-29	Radiated Emissions
Environment Monitor	Control Company	1870	230355190	11-01-08	Radiated Emissions
Environment Monitor	Control Company	1870	80117164	11-01-08	Radiated Emissions
Signal Generator	Agilent	E8257D	MY45140527	11-11-05	Radiated Emissions
Signal Generator	Agilent	83630B	3844A00927	10-10-31	Radiated Emissions

APPENDIX 1 – WCDMA CONDUCTED RF EMISSIONS TEST DATA/PLOTS

WCDMA Conducted RF Emission Test Data

This appendix contains measurement data pertaining to conducted spurious emissions, 99% power bandwidth and the channel mask.

Test Setup Diagram



Date of Test: June 23, 2010

The environmental test conditions were:	Temperature:	23 ºC
	Pressure:	1013 mb
	Relative Humidity:	32 %

The following measurements were performed by Maurice Battler.

The conducted spurious emissions – As per 47 CFR 2.1051, CFR 24.238(a), CFR 4.202, CFR 22 Subpart H, RSS – 132 and RSS - 133 were measured from 10 MHz to 20 GHz. The EUT emissions were in the noise floor.
See figures 1-1 to 1-12 for the plots of the conducted spurious emissions.

Measurement Plots for band 2 and band 5 in UMTS mode
Refer to the following measurement plots for more detail.
See Figures 1-13 to 1-16 for plots of the channel mask results.

The RF power output was at maximum for all the recorded measurements shown below.

WCDMA Conducted RF Emission Test Data cont'd

Figure 1-1: UMTS band 5, Spurious Conducted Emissions, Low channel

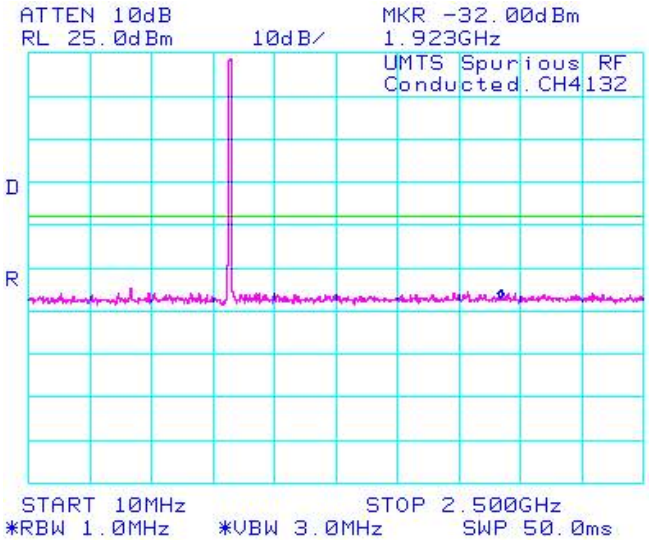


Figure 1-2: UMTS band 5, Spurious Conducted Emissions, Low channel

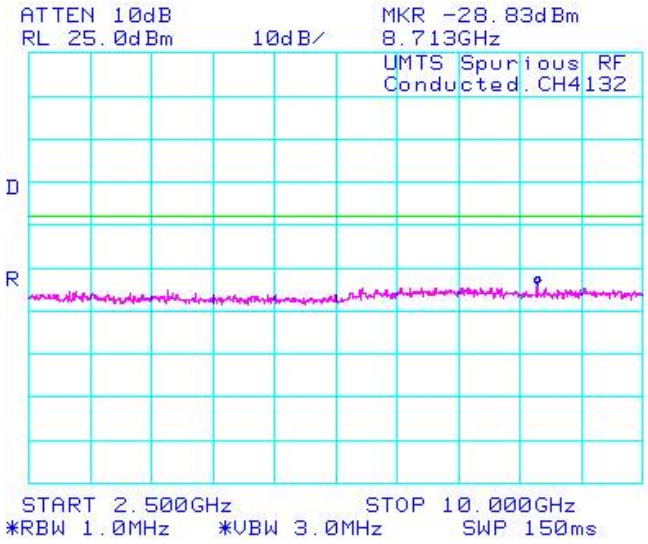


Figure 1-3: UMTS band 5, Spurious Conducted Emissions, Middle Channel

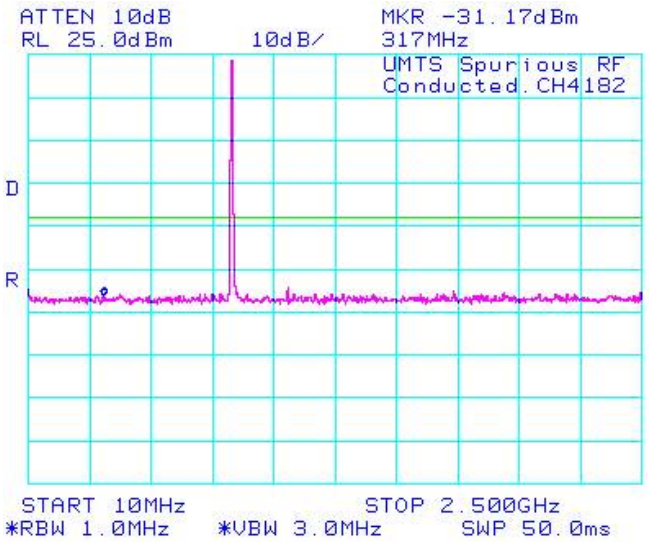
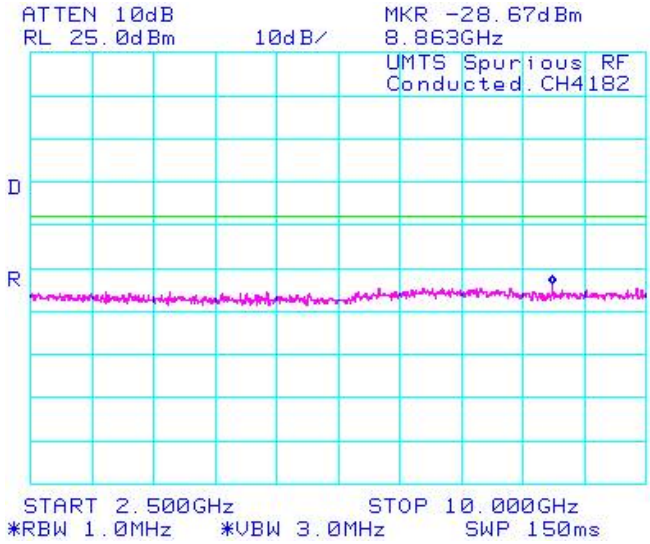


Figure 1-4: UMTS band 5, Spurious Conducted Emissions, Middle Channel



WCDMA Conducted RF Emission Test Data cont'd

Figure 1-5: UMTS band 5, Spurious Conducted Emissions, High Channel

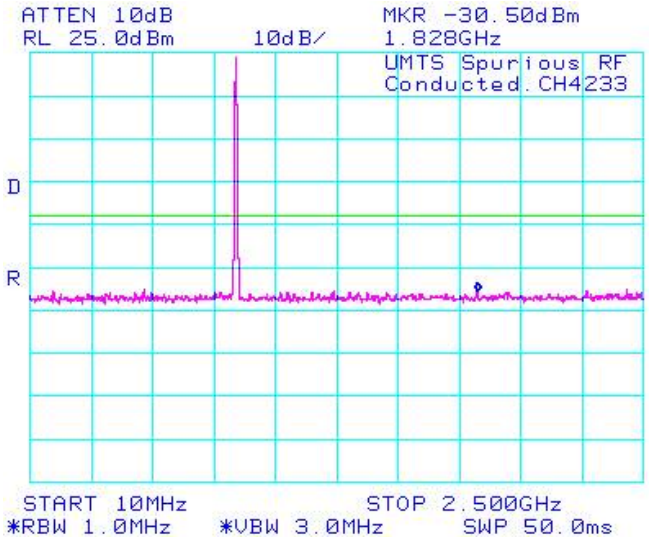


Figure 1-6: UMTS band 5, Spurious Conducted Emissions, High Channel

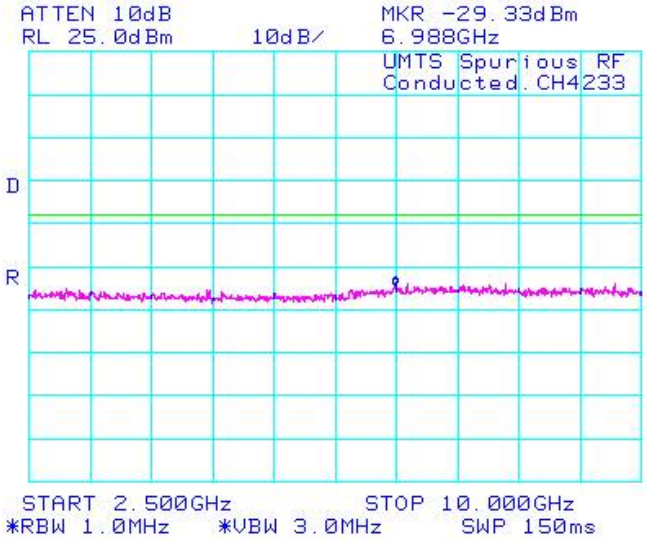


Figure 1-7: UMTS band 2, Spurious Conducted Emissions, Low channel

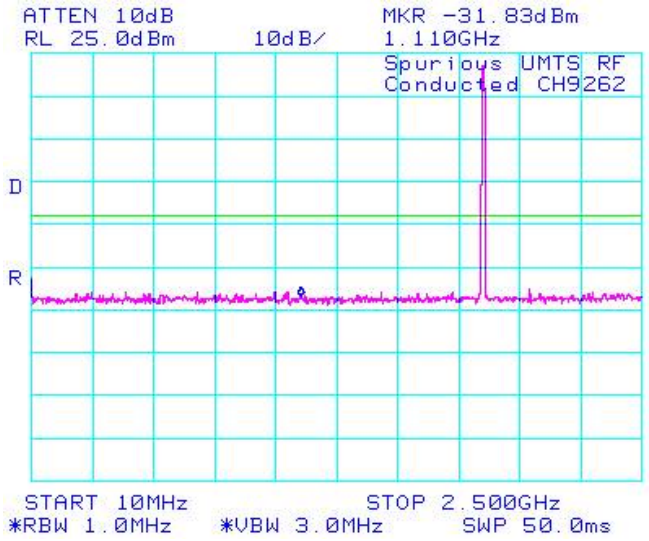
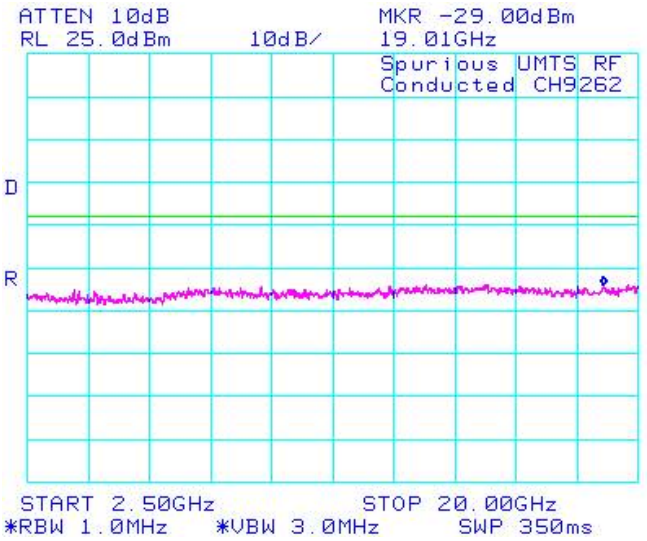


Figure 1-8: UMTS band 2, Spurious Conducted Emissions, Low channel



WCDMA Conducted RF Emission Test Data cont'd

Figure 1-9: UMTS band 2, Spurious Conducted Emissions, Middle channel

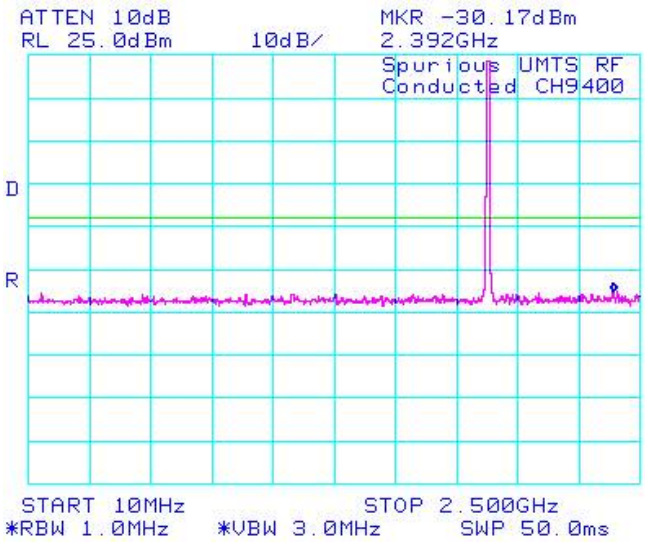


Figure 1-10: UMTS band 2, Spurious Conducted Emissions, Middle channel

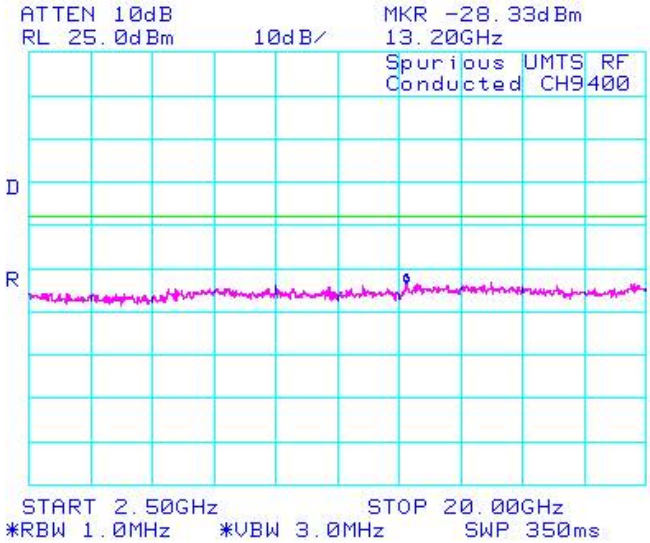


Figure 1-11: UMTS band 2, Spurious Conducted Emissions, High channel

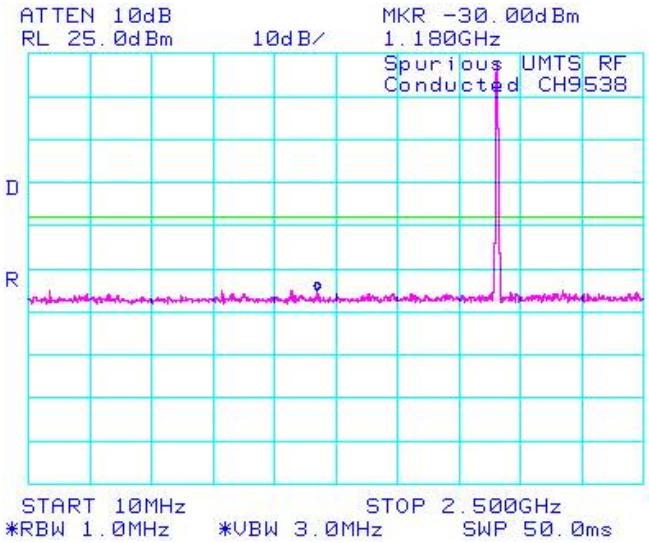
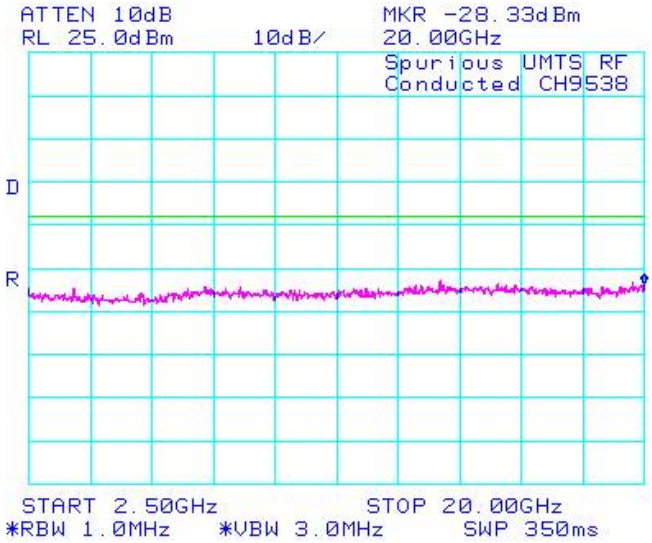


Figure 1-12: UMTS band 2, Spurious Conducted Emissions, High channel



WCDMA Conducted RF Emission Test Data cont'd

Figure 1-13: UMTS band 5, Low Channel Mask

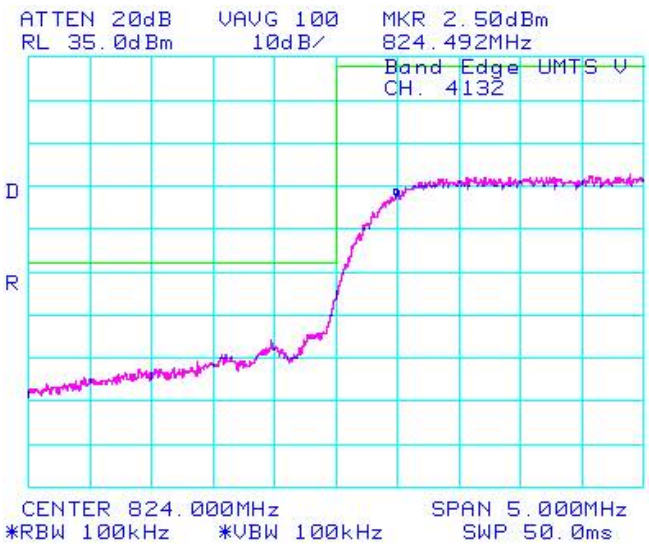


Figure 1-14: UMTS band 5, High Channel Mask

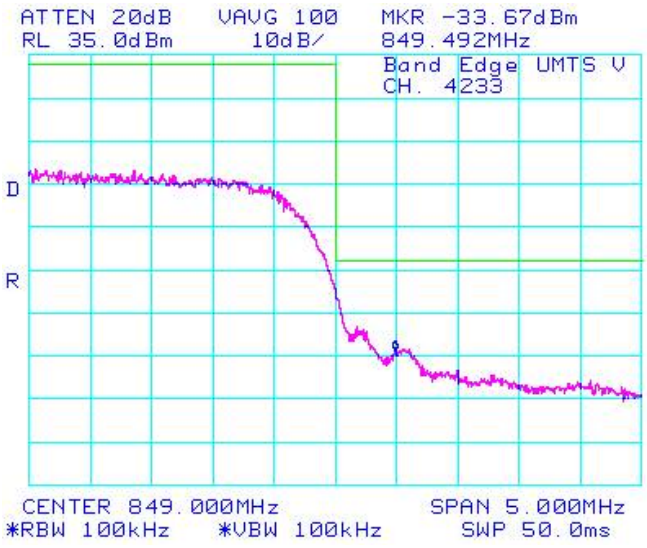


Figure 1-15: - UMTS band 2, Low Channel Mask

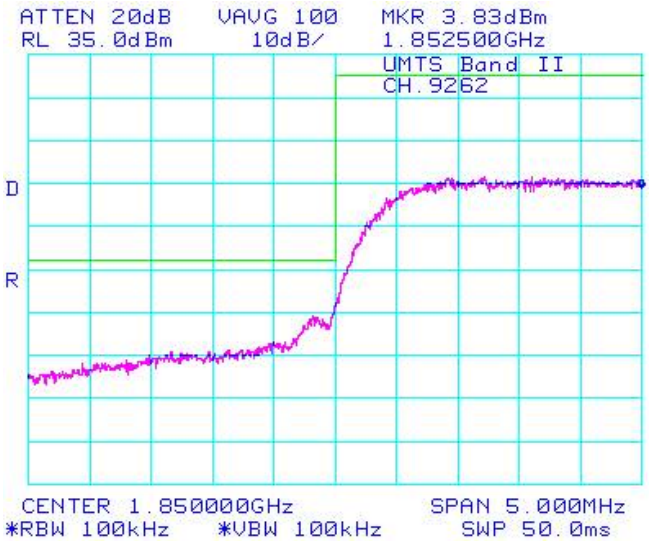
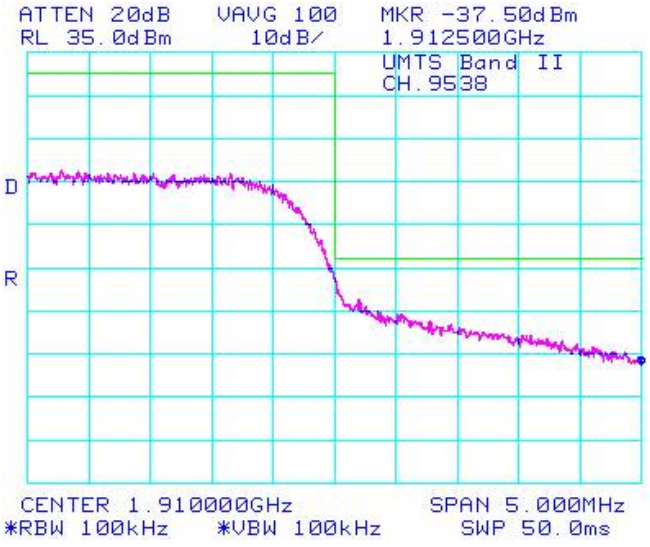


Figure 1-16: UMTS band 2, High Channel Mask



APPENDIX 2A – GSM RADIATED EMISSIONS TEST DATA

Radiated Power Test Results

Date of test: September 22, 2010

The measurements were performed by Kevin Rose.

The environmental tests conditions were: Temperature: 24 °C
Pressure: 1004 mb
Relative Humidity: 31 %

The BlackBerry® smartphone was in standalone, USB up position.
Test distance is 3.0 metres

GSM 850 Band

GSM Mode

EUT				Rx Antenna		Spectrum Analyzer		Substitution Method Tracking Generator					
Type	Ch	Frequency (MHz)	Band	Type	Pol.	Reading (dBuV)	Max (V,H) dBuV	Pol. Tx-Rx	Reading (dBm)	Corrected Reading (relative to Isotropic Radiator) (dBm)	(W)	Limit (dBm)	Diff to Limit (dB)
F0	128	824.20	850	Dipole	V	76.25	87.15	V-V	14.07	29.11	0.81	38.50	-9.39
F0	128	824.20	850	Dipole	H	87.15		H-H	12.31				
F0	195	837.60	850	Dipole	V	74.66	86.4	V-V	12.92	28.60	0.72	38.50	-9.90
F0	195	837.60	850	Dipole	H	86.4		H-H	11.87				
F0	251	848.80	850	Dipole	V	72.37	87.25	V-V	14.11	**29.60**	0.91	38.50	-8.90
F0	251	848.80	850	Dipole	H	87.25		H-H	12.43				

EDGE Mode

EUT				Rx Antenna		Spectrum Analyzer		Substitution Method Tracking Generator					
Type	Ch	Frequency (MHz)	Band	Type	Pol.	Reading (dBuV)	Max (V,H) dBuV	Pol. Tx-Rx	Reading (dBm)	Corrected Reading (relative to Isotropic Radiator) (dBm)	(W)	Limit (dBm)	Diff to Limit (dB)
F0	128	824.20	850	Dipole	V	74.38	85.07	V-V	11.52	26.56	0.45	38.50	-11.94
F0	128	824.20	850	Dipole	H	85.07		H-H	9.45				
F0	195	837.60	850	Dipole	V	72.76	84.85	V-V	11.43	**27.11**	0.51	38.50	-11.39
F0	195	837.60	850	Dipole	H	84.85		H-H	9.13				
F0	251	848.80	850	Dipole	V	74.35	85.03	V-V	11.49	26.98	0.50	38.50	-11.52
F0	251	848.80	850	Dipole	H	85.03		H-H	9.21				

Radiated Power Test Results con'd

Date of test: September 22, 2010

The measurements were performed by Kevin Rose.

The environmental tests conditions were: Temperature: 24 °C
Pressure: 1004 mb
Relative Humidity: 31 %

The BlackBerry® smartphone was in standalone, Horizontal down position.
Test distance is 3.0 metres

PCS 1900 Band

GSM Mode

EUT				Rx Antenna		Spectrum Analyzer		Substitution Method Tracking Generator					
Type	Ch	Frequency (MHz)	Band	Type	Pol.	Reading (dBuV)	Max (V,H) dBuV	Pol. Tx-Rx	Reading (dBm)	Corrected Reading (relative to Isotropic Radiator) (dBm)	(W)	Limit (dBm)	Diff to Limit (dB)
F0	512	1850.20	1900	Horn	V	91.26	91.26	V-V	-6.45	29.41	0.87	33.00	-3.59
F0	512	1850.20	1900	Horn	H	82.01		H-H	-5.72				
F0	661	1880.00	1900	Horn	V	91.23	91.23	V-V	-6.12	29.58	0.91	33.00	-3.42
F0	661	1880.00	1900	Horn	H	81.34		H-H	-5.3				
F0	810	1909.80	1900	Horn	V	91.33	91.33	V-V	-6.98	**29.84**	0.96	33.00	-3.16
F0	810	1909.80	1900	Horn	H	80.94		H-H	-4.98				

EDGE Mode

EUT				Rx Antenna		Spectrum Analyzer		Substitution Method Tracking Generator					
Type	Ch	Frequency (MHz)	Band	Type	Pol.	Reading (dBuV)	Max (V,H) dBuV	Pol. Tx-Rx	Reading (dBm)	Corrected Reading (relative to Isotropic Radiator) (dBm)	(W)	Limit (dBm)	Diff to Limit (dB)
F0	512	1850.20	1900	Horn	V	89.64	89.64	V-V	-8.07	**27.79**	0.60	33.00	-5.21
F0	512	1850.20	1900	Horn	H	78.36		H-H	-7.34				
F0	661	1880.00	1900	Horn	V	88.93	88.93	V-V	-8.42	27.28	0.53	33.00	-5.72
F0	661	1880.00	1900	Horn	H	79.01		H-H	-7.6				
F0	810	1909.80	1900	Horn	V	88.47	88.47	V-V	-9.84	25.95	0.39	33.00	-7.05
F0	810	1909.80	1900	Horn	H	78.94		H-H	-8.87				

Radiated Emissions Test Results

GSM850

GSM Mode

Date of Test: June 11, 2010
The measurements were performed by Fahd Faisal.

The environmental test conditions were: Temperature: 23 ºC
Pressure: 1012 mb
Relative Humidity: 32 %

Test Distance was 3.0 metres with a height of 1.0 metre, 30 MHz to 1000 MHz.
The BlackBerry® smartphone was in standalone, USB down position.

The measurements were performed in GSM850 Tx mode on channel 190.

All emissions had a test margin greater than 25.0 dB.

Date of Test: June 14, 2010
The measurements were performed by Steven Wang.

The environmental test conditions were: Temperature: 24 ºC
Pressure: 1023 mb
Relative Humidity: 25 %

Test Distance was 3.0 metres with a height of 1.0 metre, 1 GHz to 9 GHz.
The BlackBerry® smartphone was in standalone, USB down position.

The measurements were performed in GSM850 Tx mode on channel 190.

BlackBerry® smartphone PIN 226DCF5F										
Frequency (MHz)	Channel Of Occurrence	Antenna Pol. (V/H)	Antenna Height (metres)	Test Angle (Deg.)	Detector (PK or QP)	Measured Level (dBµV)	Correction Factor for preamp/antenna/ cables/ filter (dB)	Field Strength Level (reading+corr) (dBm)	Limit @ 3.0 m (dBm)	Test Margin (dB)
1673.269	190	V	1.00	97.00	PK	57.03	-91.44	-34.42	-13.00	**-21.42**

All other emissions had a test margin greater than 25.0 dB.

Radiated Emissions Test Results cont'd

PCS1900

GSM Mode

Date of Test: June 11, 2010

The environmental test conditions were: Temperature: 24 ºC
Pressure: 1002 mb
Relative Humidity: 30 %

Test Distance was 3.0 metres with a height of 1.0 metre, 30 MHz to 1000 MHz.
The BlackBerry® smartphone was in standalone, horizontal face down position.

The measurements were performed in PCS1900 Tx mode on channel 512.

All emissions had a test margin greater than 25.0 dB.

Date of Test: June 14-23, 2010

The environmental test conditions were: Temperature: 24 ºC
Pressure: 1023 mb
Relative Humidity: 25 %

Test Distance was 3.0 metres with a height of 1.0 metre, 1 GHz to 20 GHz.
The BlackBerry® smartphone was in standalone, Horizontal face down position.

The measurements were performed in PCS1900 Tx mode on channel 512.

BlackBerry® smartphone PIN 226DCF5F										
Frequency (MHz)	Channel Of Occurrence	Antenna Pol. (V/H)	Antenna Height (metres)	Test Angle (Deg.)	Detector (PK or QP)	Measured Level (dBµV)	Correction Factor for preamp/antenna/ cables/ filter (dB)	Field Strength Level (reading+corr) (dBm)	Limit @ 3.0 m (dBm)	Test Margin (dB)
2026.330	512	H	1.00	191.00	PK	52.31	-89.53	-37.22	-13.00	-24.22
3700.609	512	H	1.00	144.00	PK	45.61	-81.01	-35.40	-13.00	**-22.40**

All other emissions had a test margin greater than 25.0 dB.

APPENDIX 2B – UMTS RADIATED EMISSIONS TEST DATA

Radiated Power Test Results

Date of test: September 22, 2010

The measurements were performed by Kevin Rose.

The environmental tests conditions were: Temperature: 24 °C
Pressure: 1004 mb
Relative Humidity: 31 %

The BlackBerry® smartphone was in standalone, USB down position.
Test distance is 3.0 metres

UMTS Band II

Call Mode

EUT				Rx Antenna		Spectrum Analyzer		Substitution Method Tracking Generator					
Type	Ch	Frequency (MHz)	Band	Type	Pol.	Reading (dBuV)	Max (V,H) (dBuV)	Pol. Tx-Rx	Reading (dBm)	Corrected Reading (relative to Dipole) (dBm)	(W)	Limit (dBm)	Diff. To Limit (dB)
F0	9262	1852.40	UMTS 2	Horn	V	85.55	85.55	V-V	-12.86	26.02	0.39	33.00	-6.94
F0	9262	1852.40	UMTS 2	Horn	H	77.02		H-H	-11.82				
F0	9400	1880.00	UMTS 2	Horn	V	85.79	85.79	V-V	-11.25	26.75	0.47	33.00	-6.25
F0	9400	1880.00	UMTS 2	Horn	H	76.94		H-H	-10.75				
F0	9538	1907.60	UMTS 2	Horn	V	85.95	85.95	V-V	-10.85	**26.96**	0.50	33.00	-6.04
F0	9538	1907.60	UMTS 2	Horn	H	76.92		H-H	-10.25				

Radiated Power Test Results cont'd

Date of test: September 22, 2010

The environmental tests conditions were: Temperature: 24 °C
Pressure: 1004 mb
Relative Humidity: 31 %

The BlackBerry® smartphone was in standalone, USB down position.
Test distance is 3.0 metres

UMTS Band V

Call Mode

EUT				Rx Antenna		Spectrum Analyzer		Substitution Method Tracking Generator					
Type	Ch	Frequency (MHz)	Band	Type	Pol.	Reading (dBuV)	Max (V,H) (dBuV)	Pol. Tx-Rx	Reading (dBm)	Corrected Reading (relative to Dipole) (dBm)	(W)	Limit (dBm)	Diff. To Limit (dB)
F0	4132	826.40	UMTS 5	Dipole	V	69.74	78.39	V-V	7.46	22.51	0.18	33.00	-10.49
F0	4132	826.40	UMTS 5	Dipole	H	78.39		H-H	4.11				
F0	4182	836.40	UMTS 5	Dipole	V	70.25	80.11	V-V	8.13	**23.08**	0.20	33.00	-9.92
F0	4182	836.40	UMTS 5	Dipole	H	80.11		H-H	6.24				
F0	4233	846.60	UMTS 5	Dipole	V	70.37	78.89	V-V	7.89	22.73	0.19	33.00	-10.27
F0	4233	846.60	UMTS 5	Dipole	H	78.89		H-H	5.21				

Radiated Emissions Test Results cont'd

UMTS Band II

Date of Test: June 14, 2010

The measurements were performed by Kevin Rose

The environmental test conditions were: Temperature: 23 ºC
Pressure: 1009 mb
Relative Humidity: 32 %

Test Distance was 3.0 metres with a height of 1.0 metre, 30 MHz to 1000 MHz.
The BlackBerry® smartphone was in standalone, Horizontal face down position.

The measurements were performed in Call Tx mode, on channel 9400.

All emissions had a test margin greater than 25.0 dB.

Date of Test: June 14-23, 2010.
The measurements were performed by Steven Wang.

The environmental test conditions were: Temperature: 24 ºC
Pressure: 1022 – 1023 mb
Relative Humidity: 25 %

Test Distance was 3.0 metres with a height of 1.0 metre, 1 GHz to 20 GHz.
The BlackBerry® smartphone was in standalone, Horizontal face down position.

The measurements were performed in Call Tx mode, on channel 9400.

All other emissions had a test margin greater than 25.0 dB.

Radiated Emissions Test Results cont'd

UMTS Band V

Date of Test: June 14, 2010

The environmental test conditions were: Temperature: 23 ºC
Pressure: 1009 mb
Relative Humidity: 32 %

Test Distance was 3.0 metres with a height of 1.0 metre, 30 MHz to 1000 MHz.
The BlackBerry® smartphone was in standalone, Vertical position.

The measurements were performed in Call Tx mode, on channel 4182.

All emissions had a test margin greater than 25.0 dB.

Date of Test: June 14, 2010.

The environmental test conditions were: Temperature: 24 ºC
Pressure: 1022 – 1023 mb
Relative Humidity: 25 %

Test Distance was 3.0 metres with a height of 1.0 metre, 1 GHz to 9 GHz.
The BlackBerry® smartphone was in standalone, Vertical position.

The measurements were performed in Call Tx mode, on channel 4182.

All other emissions had a test margin greater than 25.0 dB.