

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-2605-1105-02B

PRODUCT MODEL NO:	RDH71CW, RDQ71UW
TYPE NAME:	BlackBerry® smartphone
FCC ID:	L6ARDH70CW, L6ARDQ70UW
IC:	2503A-RDH70CW, 2503A-RDQ70UW
EMISSION DESIGNATOR (GSM):	248KGXW
EMISSION DESIGNATOR (EDGE):	248KG7W
EMISSION DESIGNATOR (WCDMA):	4M18F9W

DATE: 20 May 2011

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Statement of Performance:

The BlackBerry® smartphone, model RDH71CW, part number CER-30956-001 Rev 3 and accessories performs within the requirements of the test standards when configured and operated per RIM's instructions.

The BlackBerry® smartphone, model RDQ71UW, part number CER-39232-001 Rev. 1, and its accessories perform within the requirements of the test standards when configured and operated under RIM's operation 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.

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A) Scope

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

- FCC CFR 47 Part 2, Oct, 2010
- FCC CFR 47 Part 22, Subpart H, Cellular Radiotelephone Services, Oct., 2010
- FCC CFR 47 Part 24 Subpart E, Broadband PCS, Oct., 2010
- FCC CFR 47 Part 27, Subpart C, Technical Standards, Oct, 2010
- 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 3, December 2010, General Requirements and Information for the Certification of Radiocommunication Equipment
- Industry Canada, RSS-139 Issue 2, February 2009, Advanced Wireless Services Equipment Operating in the Bands 1710-1755 MHz and 2110-2155 MHz.

B) Associated Documents

1. RDH71CW_HW_Declaration_CER-30956-001-Rev 2.doc
2. RDH71CW_HW_Declaration_CER-30956-001-Rev 3.doc
3. MultiSourceDeclaration_ RDH71CW _b421.doc
4. MultiSourceDeclaration_ RDH71CW _b984.doc
5. SimilarityDeclaration_RDH71CW_RDQ71UW

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

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

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The testing was performed from January 17 to Feb 10, April 12 and 18, 2011

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The sample EUT included:

Sample	Model	CER NUMBER	PIN	Software Information
1	RDH71CW	CER-30956-001 Rev 1	329CDE2A	v6.1.0.16 Bundle 157
2	RDH71CW	CER-30956-001 Rev 1	329F4819	v6.1.0.16 Bundle 157
3	RDH71CW	CER-30956-001 Rev 1	329CDE71	v6.1.0.16 Bundle 157
4	RDH71CW	CER-30956-001 Rev 2	32DF5ED6	v6.1.0.66 Bundle 421
5	RDH71CW	CER-30956-001 Rev 3	27490C92	V7.0.0.144 Bundle 984
6	RDQ71UW	CER-39232-001 Rev 1	26FF04A0	v6.1.0.16 Bundle 157
7	RDQ71UW	CER-39232-001 Rev 1	26FF048A	v6.1.0.16 Bundle 157
8	RDQ71UW	CER-39232-001 Rev 1	26FF0453	v6.1.0.16 Bundle 157
9	RDQ71UW	CER-39232-001 Rev 1	26FF049B	v6.1.0.16 Bundle 421

RF Conducted Emissions testing was performed on sample 1, 2, 6 and 7.
RF Radiated Emissions testing was performed on samples 3, 4, 5, 8 and 9.


Only the characteristics that have been affected by the changes from Model RDH71CW Rev 1 to RDH71CW Rev 3 were retested. For more information see documents:
R008_RDH71CW_HW_Declaration_CER-30956-001-Rev 2.doc and
R008_RDH71CW_HW_Declaration_CER-30956-001-Rev 3.doc

Only the characteristics that have been affected by the changes from Model RDH71CW to RDQ71UW were retested. For more information see document:
SimilarityDeclaration_RDH71CW_RDQ71UW

To view the differences between Bundle 157 to 984, see documents:
MultiSourceDeclaration_RDH71CW_b421.doc and
MultiSourceDeclaration_RDH71CW_b984.doc


D) Support Equipment Used for the Testing of the EUT

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

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E) Test Voltage

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

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Test Results Chart

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	Pass	1A
Part 2.1051 Part 24.238(a)	RSS-GEN, 4.9	PCS 1900 Conducted Spurious Emissions	Pass	1A
Part 2.202 Part 22.917	RSS-GEN, 4.6	GSM 850 Occupied Bandwidth and Channel Mask	Pass	1A
Part 2.202 Part 24.238	RSS-GEN, 4.6	PCS 1900 Occupied Bandwidth and Channel Mask	Pass	1A
Part 2.1046(a)	RSS-133, 6.4 RSS-132, 4.4	GSM Conducted RF Output Power	Pass	2A
Part 2.1055(a)(d) Part 22.917	RSS-132, 4.3	GSM 850 Frequency Stability vs. Temperature and Voltage	Pass	3A
Part 2.1055(a)(d) Part 24.235	RSS-132, 4.3	PCS 1900 Frequency Stability vs. Temperature and Voltage	Pass	3A
Part 22, Subpart H, Part 24, Subpart E	RSS-GEN, 4.9	GSM ERP, EIRP	Pass	4A
Part 22, Subpart H Part 24, Subpart E	RSS-GEN, 4.9	GSM Radiated Spurious/Harmonic Emissions	Pass	4A
Part 2.1051 Part 22.917 Part 22.901(d)	RSS-GEN, 4.9	CDMA Cell Conducted Spurious Emissions	Pass	1B
Part 2.1051 Part 24.238(a)	RSS-GEN, 4.9	CDMA PCS Conducted Spurious Emissions	Pass	1B
Part 2.202 Part 22.917	RSS-GEN, 4.6	CDMA Cell Occupied Bandwidth and Channel Mask	Pass	1B
Part 2.202 Part 24.238	RSS-GEN, 4.6	CDMA PCS Occupied Bandwidth and Channel Mask	Pass	1B
Part 2.1046(a)	RSS-133, 6.4 RSS-132, 4.4	CDMA Conducted RF Output Power	Pass	2B
Part 2.1055(a)(d) Part 22.917	RSS-132, 4.3	CDMA Cell Frequency Stability vs. Temperature and Voltage	Pass	3B

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Test Results Chart cont'd

Part 2.1055(a)(d) Part 24.235	RSS-GEN, 4.7	CDMA PCS Frequency Stability vs. Temperature and Voltage	Pass	3B
Part 22, Subpart H	RSS-GEN, 4.9	CDMA Cell Radiated Spurious/Harmonic Emissions, ERP	Pass	4B
Part 24, Subpart E	RSS-GEN, 4.9	CDMA PCS Radiated Spurious/Harmonic Emissions, EIRP	Pass	4B
Part 27.53	RSS-139, 6.5	WCDMA UMTS Band 4 Conducted Spurious Emissions	Pass	1C
Part 2.202 Part 27.53	RSS-GEN, 2.3	WCDMA UMTS Band 4 Occupied Bandwidth and Channel Mask	Pass	1C
Part 2.1046(a)	RSS-139, 6.4	WCDMA UMTS Band 4 Conducted RF Output Power	Pass	2C
Part 2.1055(a)(d) Part 27.54	RSS-139, 6.3	WCDMA UMTS Band 4 Frequency Stability vs. Temperature and Voltage	Pass	3C
Part 27.53	RSS-139, 6.5	WCDMA UMTS Band 4 Radiated Spurious/Harmonic Emissions	Pass	4C
Part 27.50	RSS-139, 6.4	WCDMA UMTS Band 4 EIRP	Pass	4C

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F) Summary of Results

1) Conducted Emission Measurements

The following test configurations were measured for model RDH71CW:

a) The BlackBerry® smartphone met the requirements of the Tx Conducted Spurious Emissions requirements in the GSM850 as per 47 CFR 2.1051, 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 10 GHz.

See APPENDIX 1A for test data.

The BlackBerry® smartphone met the requirements of the Tx Conducted Spurious Emissions requirements in the PCS1900 as per 47 CFR 2.1051, CFR 24.238(a) and RSS-GEN, 4.9. The EUT was on the low, middle and high channels. The frequency range investigated was from 10 MHz to 20 GHz.

See APPENDIX 1A for test data

b) The BlackBerry® smartphone met the requirements of the Occupied Bandwidth and channel mask requirements in the GSM850 as per 47 CFR 2.202, CFR 22.917 and RSS-GEN, 4.6. The EUT was measured in GSM and EDGE mode on the low, middle and high channels. The worst case occupied bandwidth was 248.3 kHz on low channel in GSM mode, and 248.3 kHz on high channel in EDGE mode.

See APPENDIX 1A for test data.


The BlackBerry® smartphone met the requirements of the Occupied Bandwidth and channel mask requirements in the PCS1900 as per 47 CFR 2.202, CFR 24.238 and RSS-GEN, 4.6. The EUT was measured in GSM and EDGE mode on the low, middle and high channels. The worst case occupied bandwidth was 243.3 kHz on middle channel in GSM, and 245 kHz on low and high channel in EDGE mode.

See APPENDIX 1A for test data.

c) The BlackBerry® smartphone met the requirements of the Tx Conducted RF output Power requirements in the GSM850 as per 47 CFR 2.1046, and RSS-GEN, 4.4. The EUT was measured on the low, middle and high channels. The frequency range investigated was from 10 MHz to 10 GHz.

See APPENDIX 2A for test data.

The BlackBerry® smartphone met the requirements of the Tx Conducted RF output Power requirements in the PCS1900 as per 47 CFR 2.1046, and RSS-GEN, 6.4. The EUT was on the low, middle and high channels. The frequency range investigated was from 10 MHz to 20 GHz.

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See APPENDIX 2A for test data

d) The BlackBerry® smartphone met the requirements of the Frequency Stability requirements in the GSM850 as per 47 CFR 2.1055, CFR 22.917 and RSS-GEN, 4.3. The EUT was measured in GSM850 mode on the low, middle and high channels.

See APPENDIX 3A for test data.

The BlackBerry® smartphone met the requirements of the Frequency Stability requirements in the PCS1900 as per 47 CFR 2.1055, CFR 24.235 and RSS-GEN, 4.7. The EUT was measured in PCS1900 mode on the low, middle and high channels.

See APPENDIX 3A for test data.

e) The EUT met the requirements of the Conducted Spurious Emissions in the CDMA Cellular band as per 47 CFR 22.917, CFR 22.901(d) and RSS-132. The EUT was measured in Loopback and 1xEVDO mode on the low, middle and high channels. The frequency range investigated was from 10 MHz to 10 GHz.

See APPENDIX 1B for the test data.

The BlackBerry® smartphone met the requirements of the Conducted Spurious Emissions in the CDMA PCS band as per 47 CFR 2.1057, CFR 24.238 and RSS-133. The EUT was measured in Loopback and 1xEVDO mode on the low, middle and high channels. The frequency range investigated was from 10 MHz to 20 GHz. See APPENDIX 1B for the test data.

f) The BlackBerry® smartphone met the requirements of the Occupied Bandwidth in the CDMA Cellular band as per 47 CFR 2.202, CFR 22.917 and RSS-132. The EUT was measured in Loopback and 1xEVDO mode on the low, middle and high channels. The worst case occupied bandwidth was 1.273 MHz on all three channels.


See APPENDIX 1B for the test data.

The BlackBerry® smartphone met the requirements of the Occupied Bandwidth and channel mask in the CDMA PCS band as per 47 CFR 2.202, CFR 24.238 and RSS-133. The EUT was measured in Loopback and 1xEVDO mode on the low, middle and high channels. The worst case occupied bandwidth was 1.280 MHz on the low channel and mid channels.

See APPENDIX 1B for the test data.

g) The BlackBerry® smartphone met the requirements of the Conducted RF Output Power for both the CDMA Cellular and PCS bands. The EUT was measured in Loopback and 1xEVDO mode on the low, middle and high channels.

See APPENDIX 2B for test data.

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h) The BlackBerry® smartphone met the requirements of the Frequency Stability vs. Temperature and Voltage for CDMA Cellular band as per 22.917 and RSS-132. The EUT was measured in Cellular mode on the low, middle and high channels. See APPENDIX 3B for test data.

The BlackBerry® smartphone met the requirements of the Frequency Stability vs. Temperature and Voltage requirements for the PCS band as per 24.235 and RSS-133. The EUT was measured in CDMA PCS mode on the low, middle and high channels. See APPENDIX 3B for test data.


The following test configurations were measured for model RDQ71UW:

i) The BlackBerry® smartphone met the requirements of the Conducted Spurious Emissions in the UMTS band 4 as per 47 CFR 27.53 and RSS-139, 6.5. The EUT was measured on the low, middle and high channels. The frequency range investigated was from 10 MHz to 20 GHz. See APPENDIX 1C for the test data.

j) The BlackBerry® smartphone met the requirements of the Occupied Bandwidth in the UMTS band 4 as per 47 CFR 2.202, CFR 27.53 and RSS-139, 2.3. The low, middle and high channels were measured. The worst case occupied bandwidth was 4.158 MHz on high channel in Loopback and 4.175 MHz on high channel in HSUPA mode. See APPENDIX 1C for the test data.

k) The BlackBerry® smartphone met the requirements of the Conducted RF Output Power for the UMTS band 4 as per 47 CFR 2.1046(a), RSS-139, 6.4 and RSS-132, 4.4. The low, middle and high channels were measured. See APPENDIX 2C for test data.

l) The BlackBerry® smartphone met the requirements of the Frequency Stability vs. Temperature and Voltage for UMTS band 4 as per 47 CFR 2.1055(a)(d), CFR 27.54 and RSS-139, 6.3. The maximum frequency error measured was less than 0.1 ppm. The temperature range was from -30°C to +60°C in 10° temperature steps. The BlackBerry® smartphone was measured on low, middle and high channels at each temperature step. The BlackBerry® smartphone was measured at low (3.6 volts), nominal (3.7 volts) and high (4.2 volts) dc input voltage at each temperature step and channel at maximum output power. See APPENDIX 3C for test data.

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2) Radiated Emission Measurements

The radiated spurious emissions/harmonics and ERP/EIRP were measured for GSM 850, PCS 1900, CDMA Cellular and CDMA PCS. 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 Semi-anechoic Chamber ((SAC) with floor absorber) above 1 GHz. The SAC's FCC registration number is **778487** and the Industry Canada (IC) file number is **2503B-1**. The SAC with floor absorber'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 following test configurations were measured for model RDH71CW:

The highest ERP in the 850 band call mode measured was 32.16 dBm (1.64 W) at 836.60 MHz (channel 190).

The highest ERP in the 850 band EDGE mode measured was 28.41dBm (0.69 W) at 836.60 MHz (channel 190).

The highest EIRP in the PCS band call mode measured was 32.29 dBm (1.69 W) at 1880.0 MHz (channel 661).

The highest EIRP in the PCS band EDGE mode measured was 30.2 dBm (1.05 W) at 1880.0 MHz (channel 661).

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The highest ERP measured in the CDMA Cellular band, Loopback Service mode, was 25.86 dBm (0.39 W) at 836.52 MHz (channel 384).

The highest ERP measured in the CDMA Cellular band, 1xEVDO mode, was 27.24 dBm (0.53 W) at 836.52 MHz (channel 384).

The highest EIRP measured in the CDMA PCS band, Loopback Service mode, was 27.91 dBm (0.62 W) at 1908.75 MHz (channel 1175).

The highest EIRP measured in the CDMA PCS band, 1xEVDO mode, was 29.73 dBm (0.94 W) at 1851.25 MHz (channel 25)

The radiated spurious emission and carrier harmonics were measured up to the 10th harmonic for low, middle, and high channels in the GSM850 and PCS 1900 bands. Each band was measured in GSM and EDGE mode, with both the horizontal and vertical polarizations.

The worst margins in the 850 band for GSM and EDGE modes harmonic emissions were 18.3 dB below the limit at 1673.372 MHz.

The margins in the PCS band for GSM and EDGE modes harmonic emissions were 16.2 dB below the limit at 5639.664 MHz.

The radiated carrier harmonics were measured up to the 10th harmonic for low, middle and high channels in the CDMA Cellular and PCS. Each band was measured in Call, and EVDO modes, with both the horizontal and vertical polarizations.


The margins in the CDMA Cellular Call and EVDO for harmonic emissions were greater than 25 dB below the accepted limits for all test frequencies.

The margins in the CDMA PCS Call and EVDO for harmonic emissions were greater than 25 dB below the accepted limits for all test frequencies.

The following test configurations were measured for model RDQ71UW:

The highest ERP in the UMTS band 4, Call Service mode was 27.55 dBm (0.57 W) at 1752.6 MHz (channel 1513).

The highest ERP in the UMTS band 4, HSUPA mode was 28.23 dBm (0.67 W) at 1752.6 MHz (channel 1513).

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The radiated carrier harmonics were measured up to the 10th harmonic for low, middle and high channels in the UMTS band 4 and was measured in Call, and HSUPA modes. Both the horizontal and vertical polarizations were measured.

The margins in the UMTS band 5 for harmonic emissions were greater than 25 dB below the accepted limits for all test frequencies.

b) Co-Location Measurements

The following test configurations were measured for model RDH71CW:

The radiated emissions were measured up to 18 GHz for middle channels for simultaneous transmission in the following test configuration combinations:

CDMA CELL/Bluetooth/802.11n, CDMA PCS/Bluetooth/802.11n,

GSM 850/Bluetooth/802.11b and PCS 1900/Bluetooth/802.11g.

Both the horizontal and vertical polarizations were measured. The emissions due to different simultaneous transmission did not increase the amplitude of any emissions nor did it produce any new inter-modulation products as a result of mixing


Sample Calculation:

Corrected Signal level (CSL) is calculated as follows:

CSL (dBm) = Measured Level (dBμV) – Antenna Gain (dBi) + Free Space loss (dB) – 107(dB) + Cable Loss (dB) - Preamp (dB) + Filter Loss (dB) -2.15(dB)


To view the test data see APPENDIX 4A, 4B and 4C.

Measurement Uncertainty ±4.6 dB

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H) Compliance Test Equipment Used


<u>UNIT</u>	<u>MANUFACTURER</u>	<u>MODEL</u>	<u>SERIAL NUMBER</u>	<u>CAL DUE DATE</u> (YY MM DD)	<u>USE</u>
Preamplifier	Sonoma	310N/11909A	185831	11-11-24	Radiated Emissions
Preamplifier system	TDK RF Solutions	PA-02	080010	11-11-24	Radiated Emissions
Preamplifier	Rohde & Schwarz	TS-ANA4-SP	001	11-12-01	Radiated Emissions
Preamplifier	Rohde & Schwarz	TS-ANA-SP	001	11-12-01	Radiated Emissions
Hybrid Log Antenna	EMC Automation	HLP-3003C	017401	12-01-04	Radiated Emissions
Horn Antenna	EMC Automation	HRN-0118	030101	12-07-20	Radiated Emissions
Horn Antenna	EMC Automation	HRN-0118	030201	12-09-22	Radiated Emissions
Horn Antenna	Emco	3117	47563	11-07-15	Radiated Emissions
Horn Antenna	CMT	LHA 0180	R52734-001	12-01-21	Radiated Emissions
Dipole Antenna	Schwarzbeck	UHAP	973	12-02-21	Radiated Emissions
Dipole Antenna	Schwarzbeck	UHAP	974	13-02-21	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	837493/073	11-10-01	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	112394	11-10-01	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	102204	11-11-30	RF Conducted Emissions
EMI Receiver	Rohde & Schwarz	ESIB-40	100255	11-11-28	Radiated Emissions
EMI Receiver	Rohde & Schwarz	ESU-40	100162	11-11-30	Radiated Emissions
Spectrum Analyzer	HP	8563E	3745A08112	11-09-30	RF Conducted Emissions
DC Power Supply	HP	6632B	US37472178	11-11-19	RF Conducted Emissions
Environment Monitor	Omega	iTHX-SD	0380561	11-10-13	Radiated Emissions

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Compliance Test Equipment Used cont'd

<u>UNIT</u>	<u>MANUFACTURER</u>	<u>MODEL</u>	<u>SERIAL NUMBER</u>	<u>CAL DUE DATE</u> (YY MM DD)	<u>USE</u>
Environment Monitor	Omega	iTHX-SD	0340060	11-10-13	RF Conducted Emissions
Environment Monitor	Omega	iTHX-SD	0380567	11-10-13	Radiated Emissions
Signal Generator	Agilent	E8257D	MY45140527	11-11-05	Radiated Emissions
Signal Generator	Agilent	83630B	3844A00927	12-10-28	Radiated Emissions

APPENDIX 1A – GSM CONDUCTED RF EMISSIONS TEST DATA/PLOTS

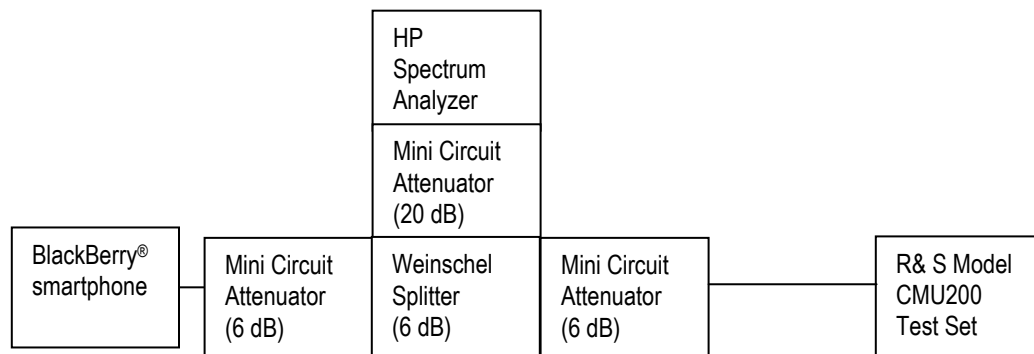
	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Conducted RF Emission Test Data

The following test configurations were measured for model RDH71CW:

This appendix contains measurement data pertaining to conducted spurious emissions, –26 dBc bandwidth, 99% power bandwidth and the channel mask on BlackBerry® smartphone.

Test Setup Diagram




Date of Test: Jan 26, 2011

The environmental test conditions were:

Temperature: 24.0 °C
Relative Humidity: 32.5 %

The following measurements were performed by Maurice Battler.

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Conducted RF Emission Test Data cont'd

The conducted spurious emissions – As per 47 CFR 2.1051, CFR 24.238(a), RSS-GEN, 4.9, CFR 22 Subpart H and RSS-132 were measured from 10 MHz to 20 GHz. The EUT emissions were in the noise floor.

See figures 1-1a to 1-12a for the plots of the conducted spurious emissions.

–26 dBc Bandwidth and Occupied Bandwidth (99%)

For each carrier frequency of low, middle and high, the modulation spectrum was measured by both methods of 99% power bandwidth and –26 dBc bandwidth.

The resolution bandwidth required for out-of-band emissions in the 1 MHz bands immediately outside and adjacent to the frequency block, was determined to be at least 1% of the emission bandwidth.

The worst case –26dBc bandwidth for the GSM850 band was measured to be 275 kHz, and for the PCS1900 band was measured to be 260 kHz as shown below. This results in a 3.0 kHz resolution bandwidth.

On any frequency outside the frequency block and outside the adjacent 1 MHz bands, a resolution bandwidth of at least 1 MHz was applied.

Test Data for 850 band and 1900 band selected Frequencies in GSM mode.

850 band Frequency (MHz)	-26dBc Bandwidth (kHz)	99% Occupied Bandwidth (kHz)
824.2	270	248.3
837.6	267	243.3
848.8	275	245.0


1900 band Frequency (MHz)	-26dBc Bandwidth (kHz)	99% Occupied Bandwidth (kHz)
1850.2	258	241.7
1880.0	260	243.3
1909.8	258	240.0

Measurement Plots for 850 and 1900 in GSM mode

Refer to the following measurement plots for more detail.

See Figures 1-13a to 1-24a for the plots of 26dBc/99% Occupied Bandwidth.

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

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Conducted RF Emission Test Data cont'd

Date of Test: Jan 28, 2011

Test Data for 850 and 1900 bands selected Frequencies in EDGE mode.

850 band Frequency (MHz)	99% Occupied Bandwidth (kHz)
824.2	245.0
837.6	243.3
848.8	248.3

1900 band Frequency (MHz)	99% Occupied Bandwidth (kHz)
1850.2	245.0
1880.0	243.3
1909.8	245.0

Measurement Plots for 850 and 1900 bands in EDGE mode

Refer to the following measurement plots for more detail.

See Figures 1-1a to 1-12a for the plots of the conducted spurious emissions.

See Figures 1-13a to 1-24a for the plots of 26dBc/99% Occupied Bandwidth.


See Figures 1-25a to 1-28a for the plots of the Channel mask.

See Figures 1-29a to 1-34a for the plots of the 99% Occupied Bandwidth EDGE results.

See Figures 1-35a to 1-38a for the plots of channel mask EDGE results.

See Figures 1-39a to 1-50a for the plots of the conducted spurious emissions EDGE results

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

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Conducted RF Emission Test Data cont'd

Figure 1-1a: GSM850 band, Spurious Conducted Emissions, Low channel

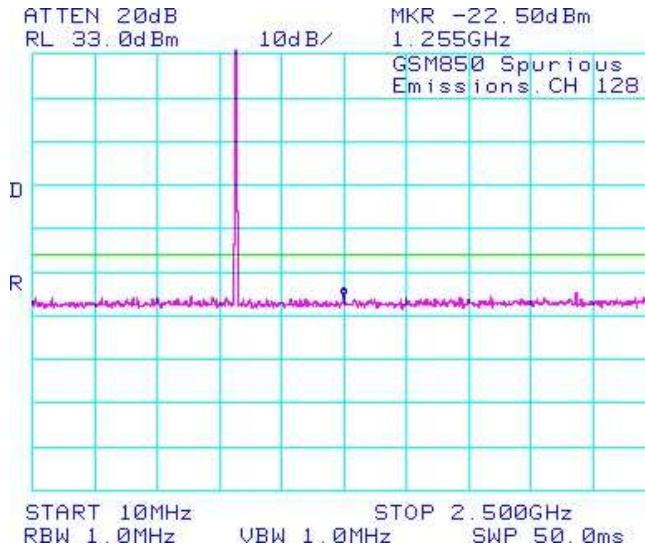


Figure 1-2a: GSM850 band, Spurious Conducted Emissions, Low channel

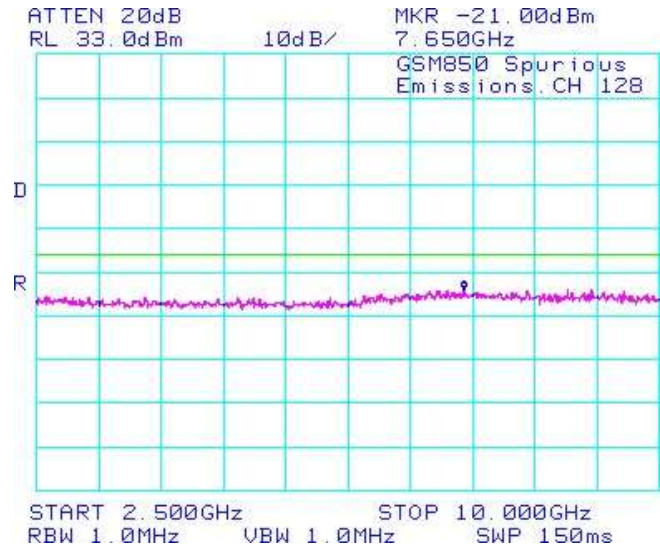


Figure 1-3a: GSM850 band, Spurious Conducted Emissions, Middle Channel

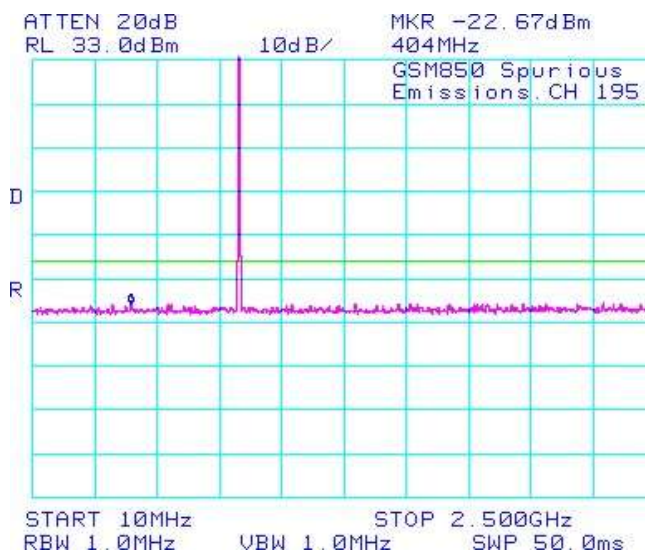
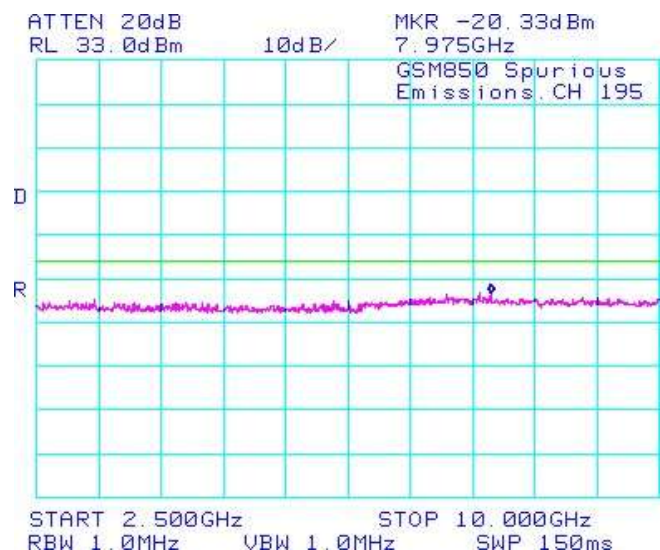



Figure 1-4a: GSM850 band, Spurious Conducted Emissions, Middle Channel



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Conducted RF Emission Test Data cont'd

Figure 1-5a: GSM850 band, Spurious Conducted Emissions, High Channel

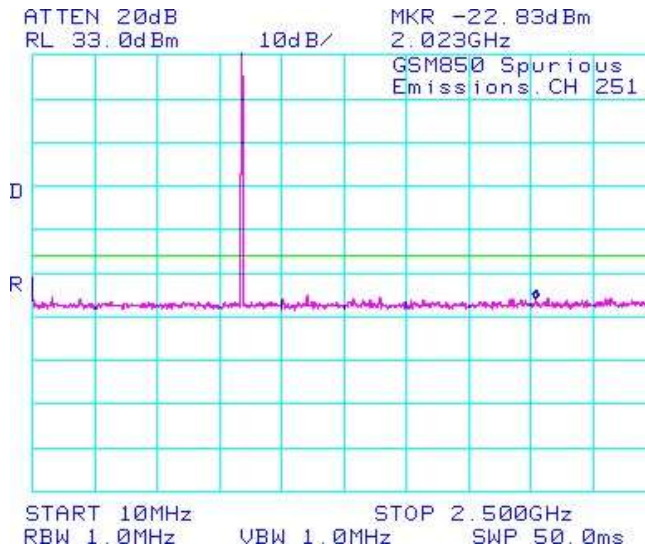


Figure 1-6a: GSM850 band, Spurious Conducted Emissions, High Channel

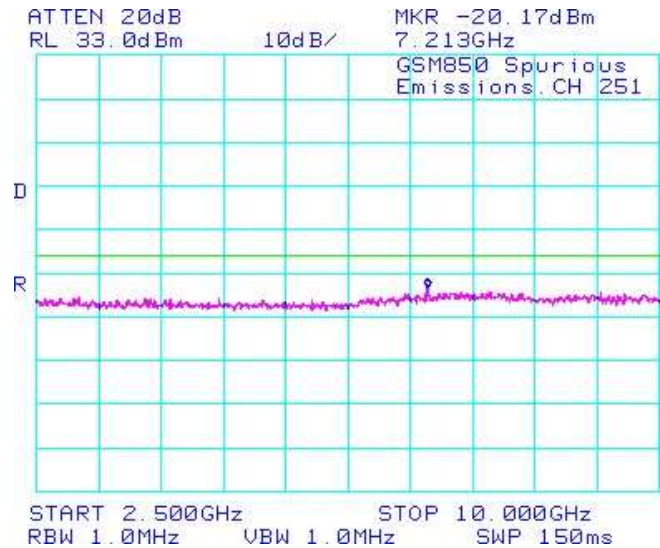


Figure 1-7a: PCS1900 band, Spurious Conducted Emissions, Low Channel

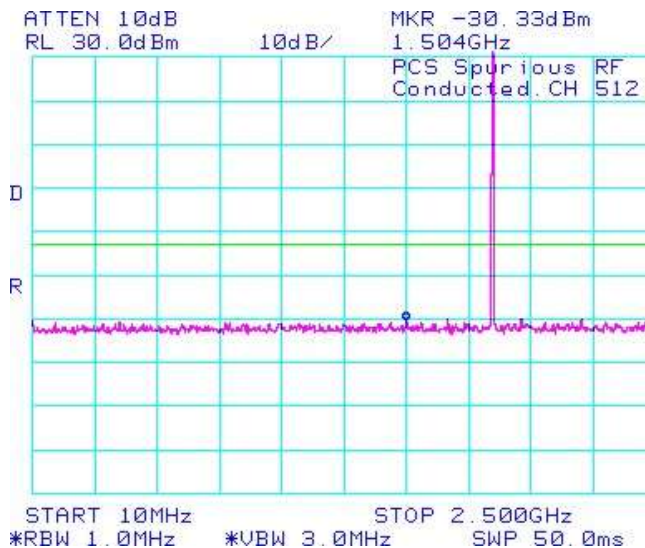
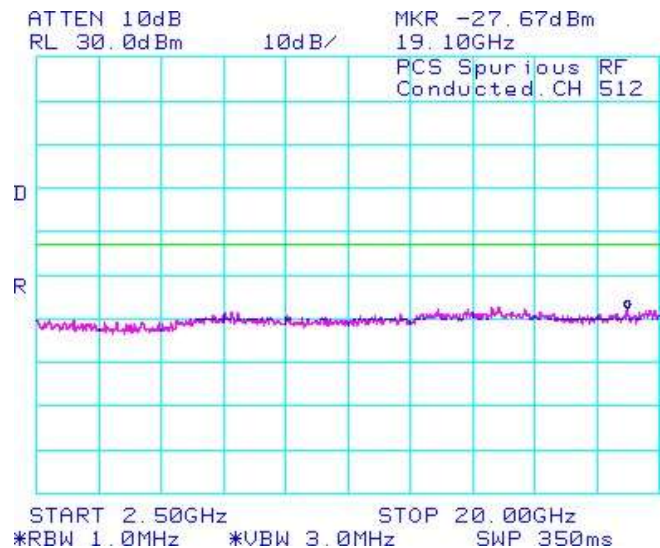



Figure 1-8a: PCS1900 band, Spurious Conducted Emissions, Low Channel



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Conducted RF Emission Test Data cont'd

Figure 1-9a: PCS1900 band, Spurious Conducted Emissions, Middle Channel

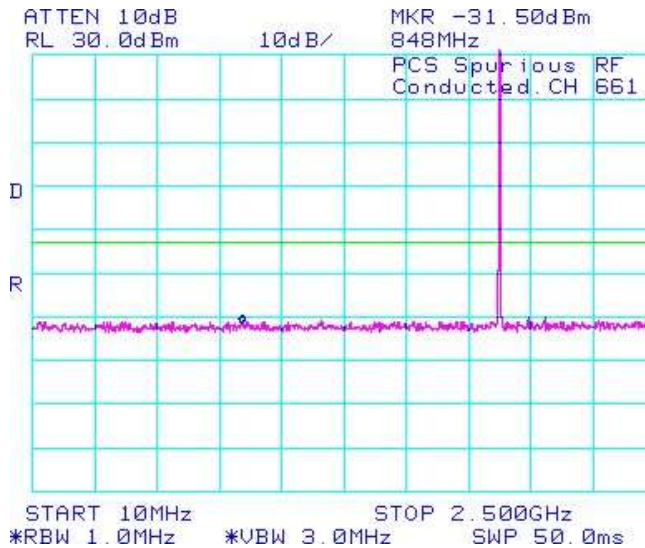


Figure 1-10a: PCS1900 band, Spurious Conducted Emissions, Middle Channel

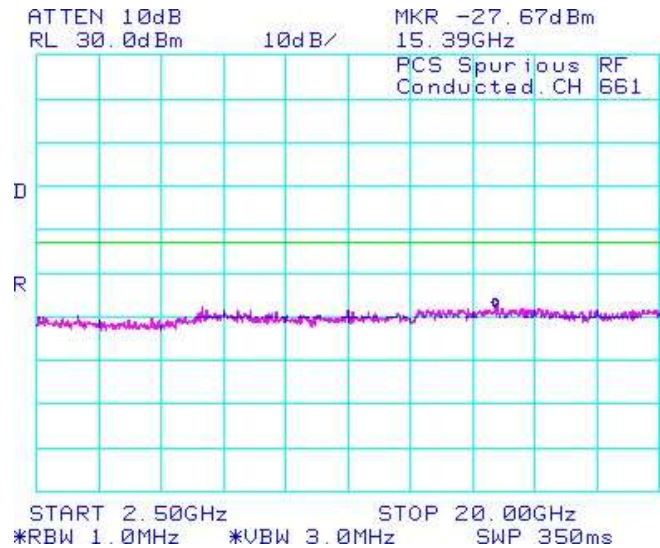


Figure 1-11a: PCS1900 band, Spurious Conducted Emissions, High Channel

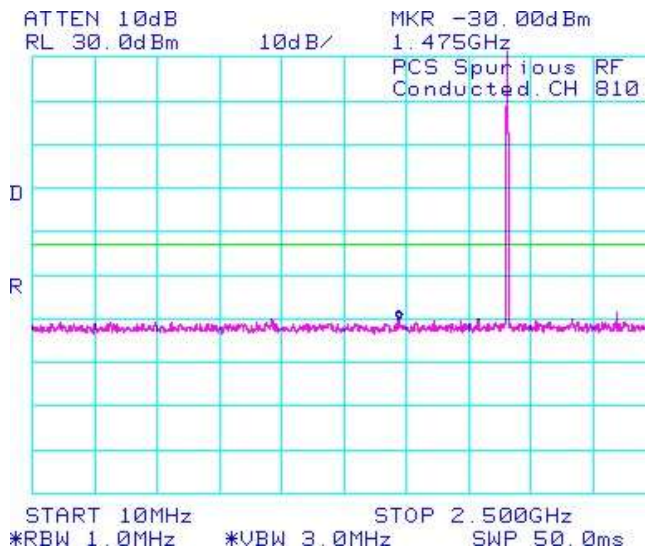
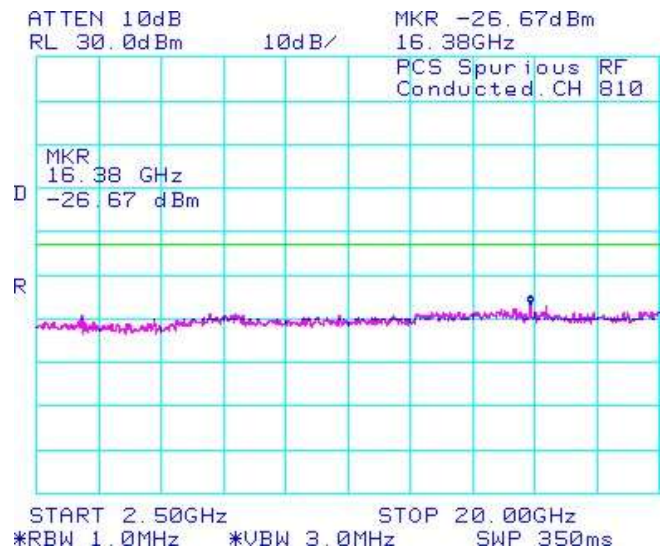



Figure 1-12a: PCS1900 band, Spurious Conducted Emissions, High Channel



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Conducted RF Emission Test Data cont'd

Figure 1-13a: -26dBc bandwidth, GSM850 band Low Channel in GSM mode

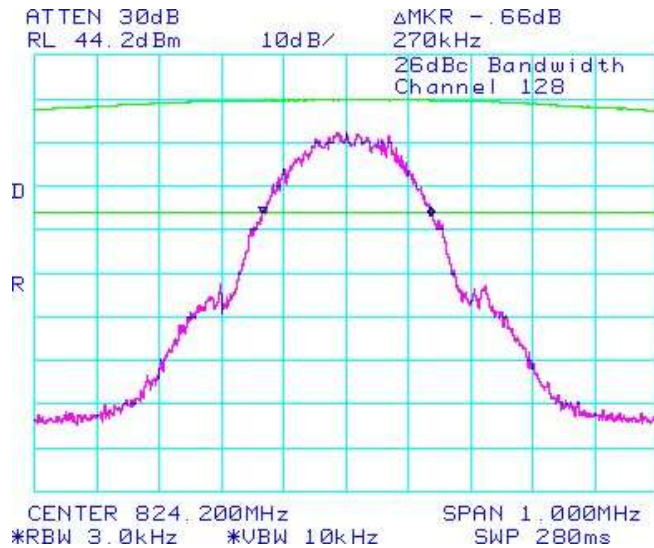


Figure 1-14a: Occupied Bandwidth, GSM850 band Low Channel in GSM mode

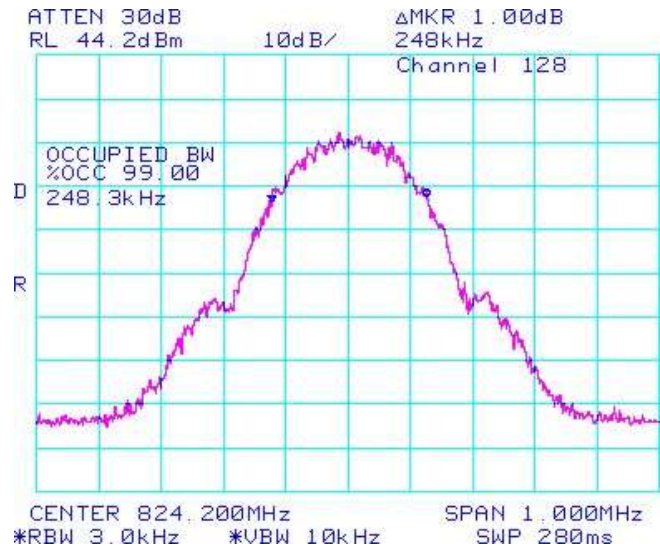


Figure 1-15a: -26dBc bandwidth, GSM850 band Middle Channel in GSM mode

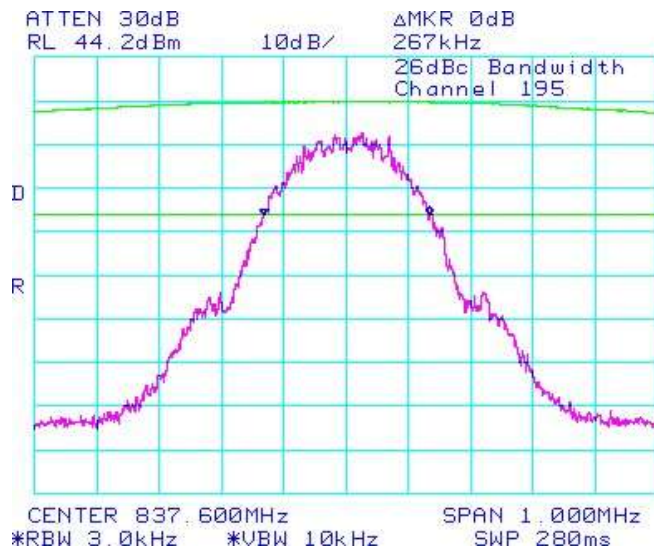
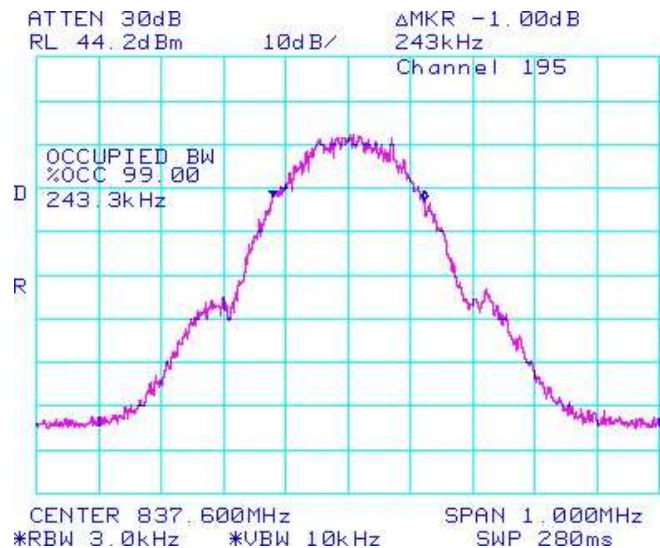



Figure 1-16a: Occupied Bandwidth, GSM850 band Middle Channel in GSM mode



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Conducted RF Emission Test Data cont'd

Figure 1-17a: -26dBc bandwidth, GSM850 band High Channel in GSM mode

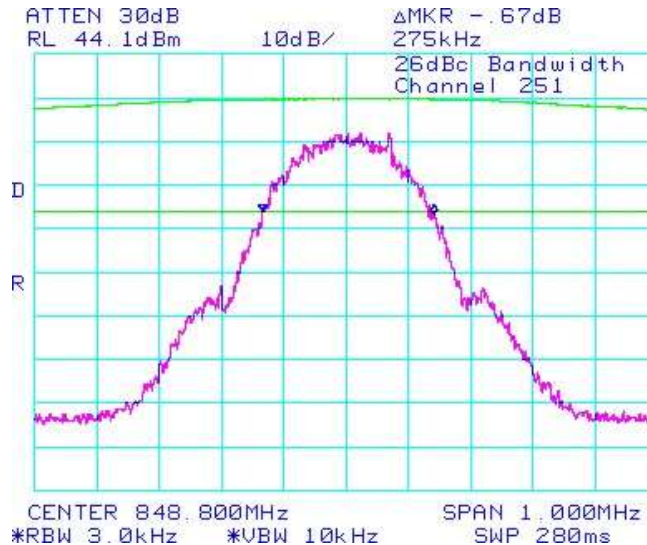


Figure 1-18a: Occupied Bandwidth, GSM850 band High Channel in GSM mode

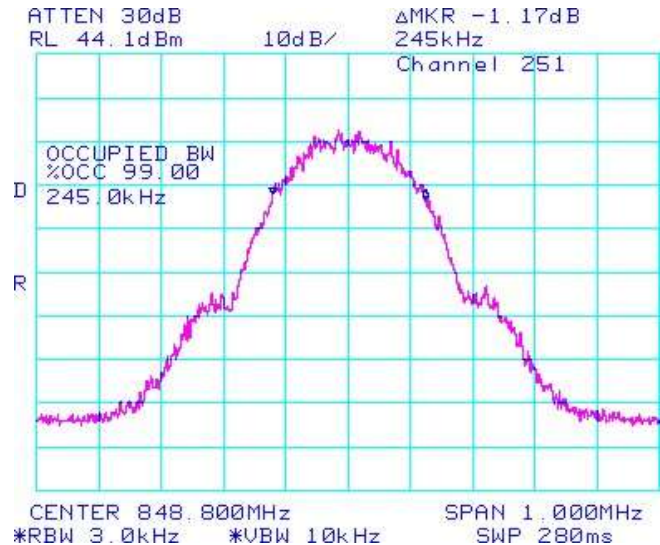
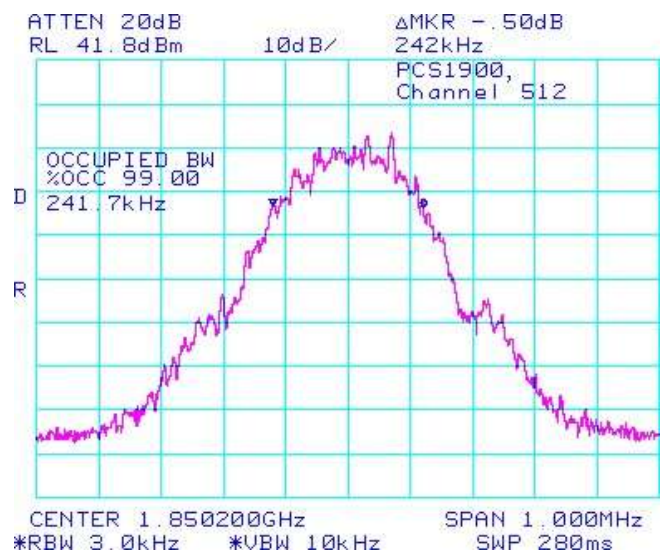



Figure 1-19a: -26dBc bandwidth, PCS1900 Low Channel in GSM mode



Figure 1-20a: Occupied Bandwidth, PCS1900 Low Channel in GSM mode



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Conducted RF Emission Test Data cont'd

Figure 1-21a: -26dBc bandwidth, PCS1900 Middle Channel in GSM mode

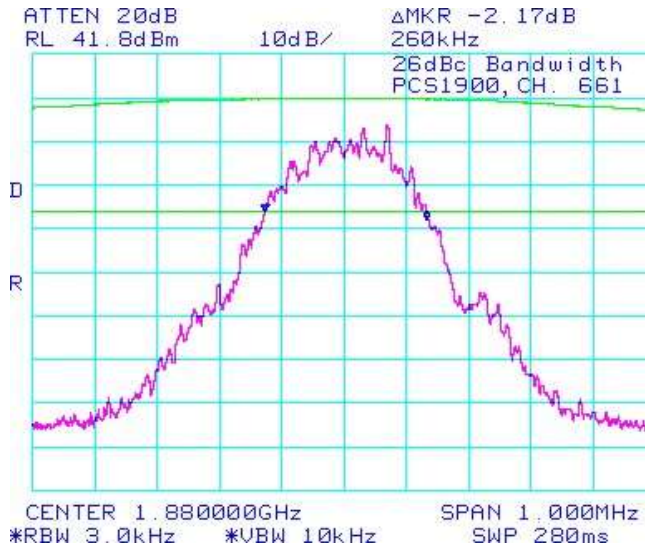


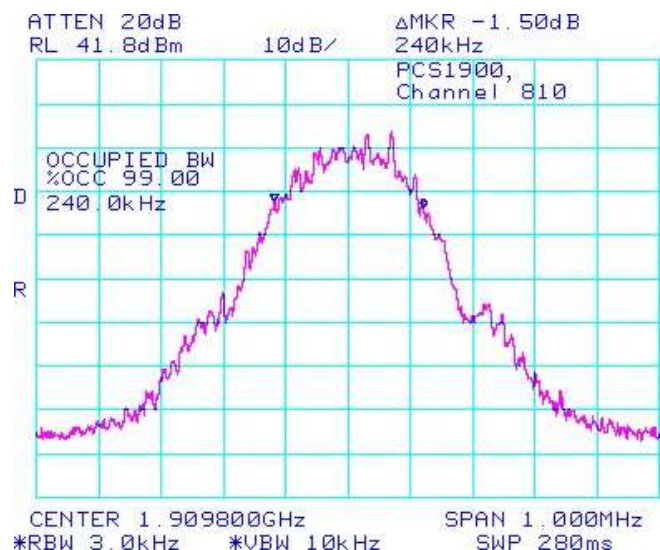
Figure 1-22a: Occupied Bandwidth, PCS1900 Middle Channel in GSM mode




Figure 1-23a: -26dBc bandwidth, PCS1900 High Channel in GSM mode



Figure 1-24a: Occupied Bandwidth, PCS1900 High Channel in GSM mode



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Conducted RF Emission Test Data cont'd

Figure 1-25a: GSM850 band, Low Channel Mask in GSM mode

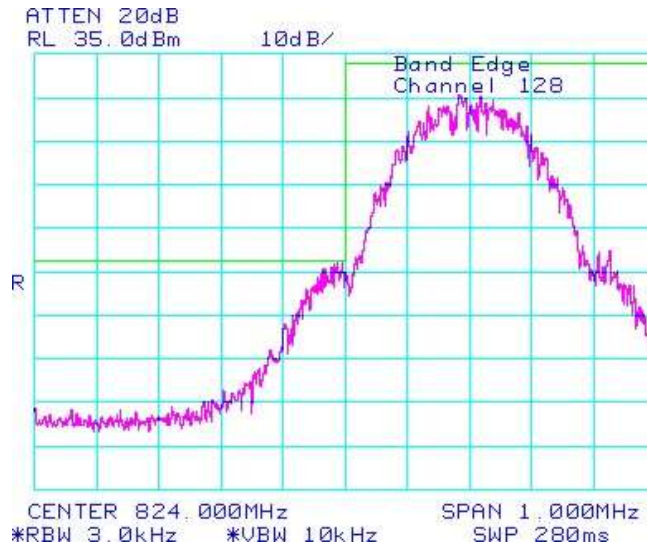


Figure 1-26a: GSM850 band High Channel Mask in GSM mode

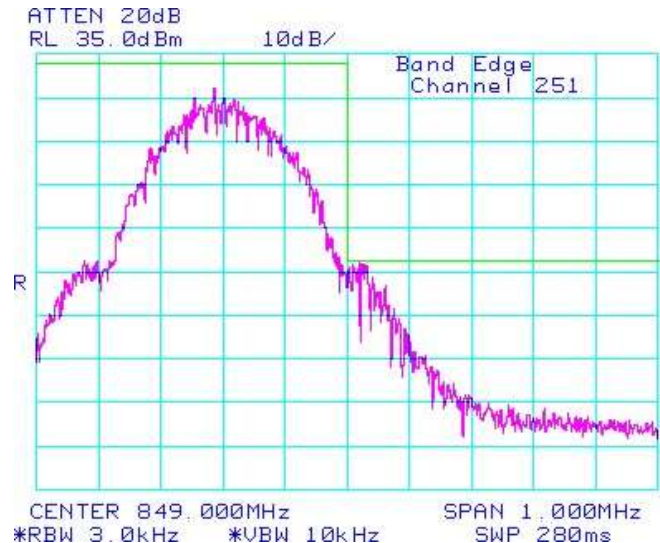


Figure 1-27a: PCS1900, Low Channel Mask in GSM mode

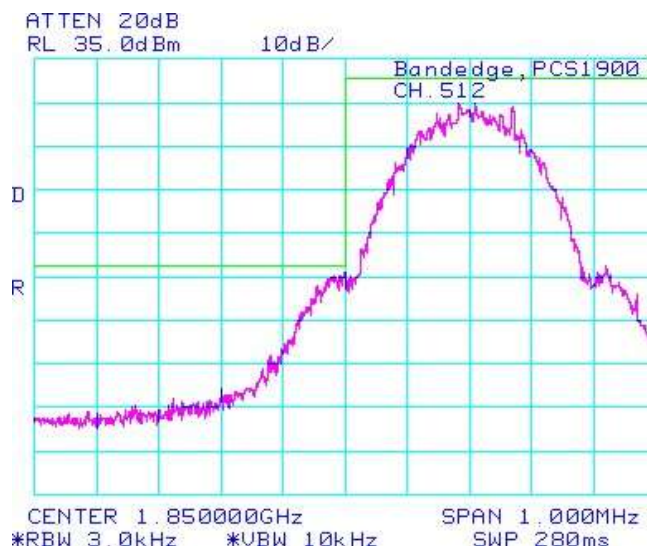
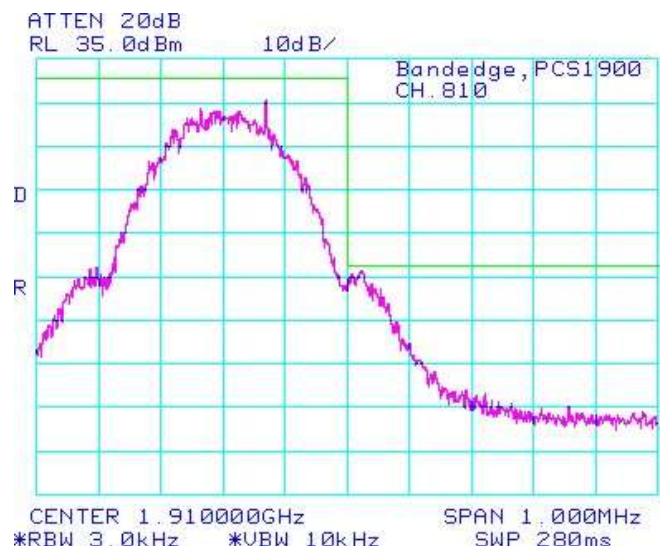



Figure 1-28a: PCS1900, High Channel Mask in GSM mode



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Conducted RF Emission Test Data cont'd

Figure 1-29a: Occupied Bandwidth, GSM850 Band, Low Channel in EDGE mode

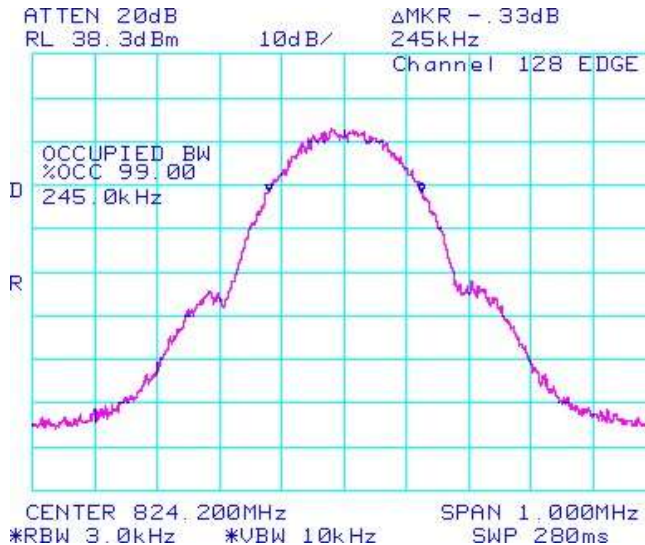


Figure 1-30a: Occupied Bandwidth, GSM850 Band, Middle Channel in EDGE mode

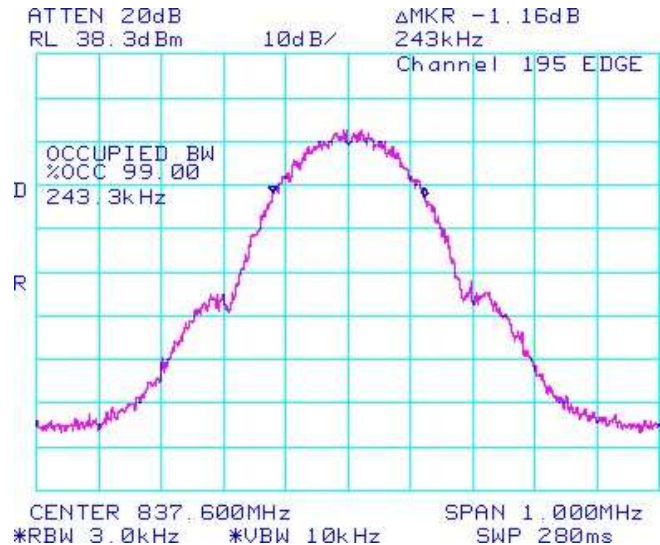


Figure 1-31a: Occupied Bandwidth, GSM850 band, High Channel in EDGE mode

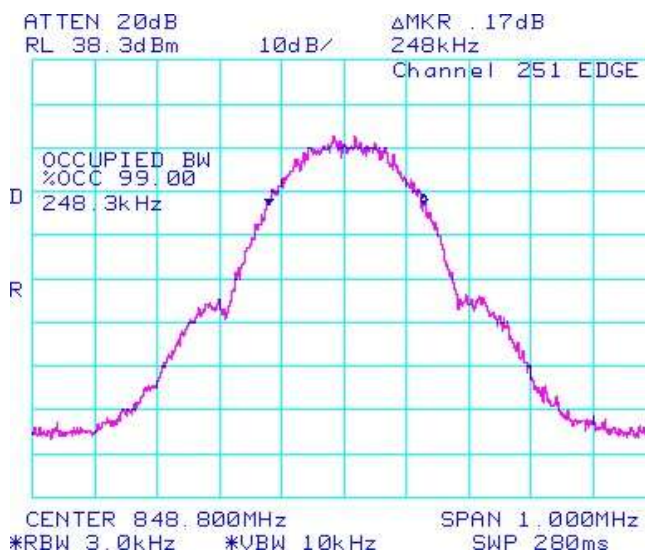
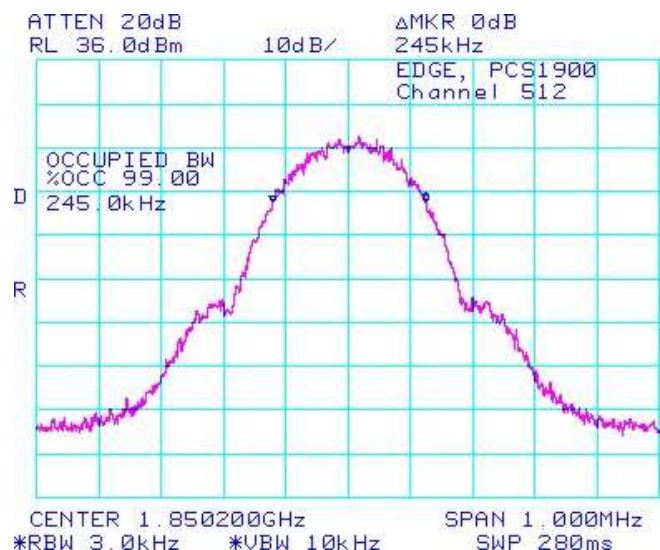



Figure 1-32a: Occupied Bandwidth, PCS1900 Band, Low Channel in EDGE mode



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Conducted RF Emission Test Data cont'd

Figure 1-33a: Occupied Bandwidth, PCS1900 Band, Middle Channel in EDGE mode

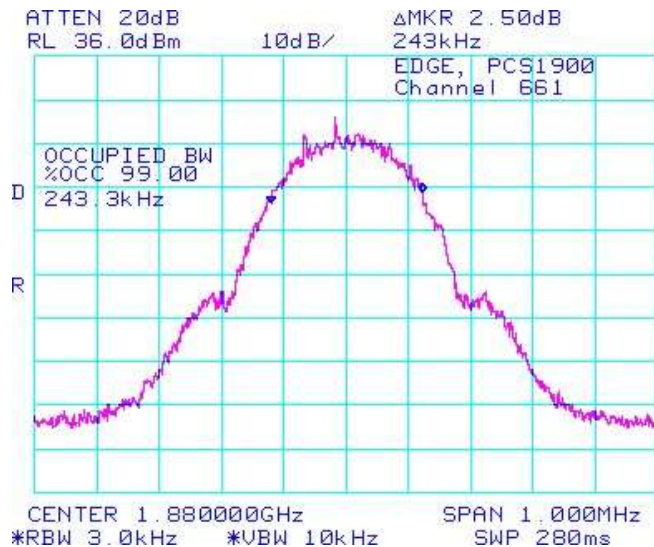


Figure 1-34a: Occupied Bandwidth, PCS1900 Band, High Channel in EDGE mode

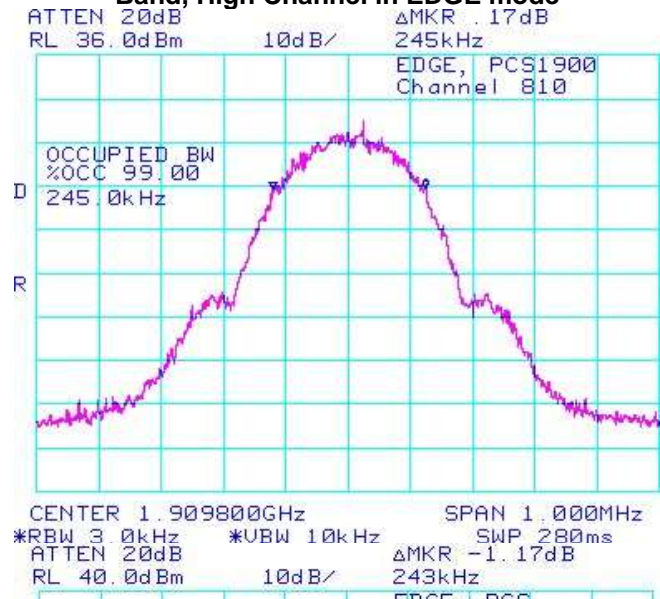


Figure 1-35a: GSM850 Band, Low Channel Mask in EDGE mode

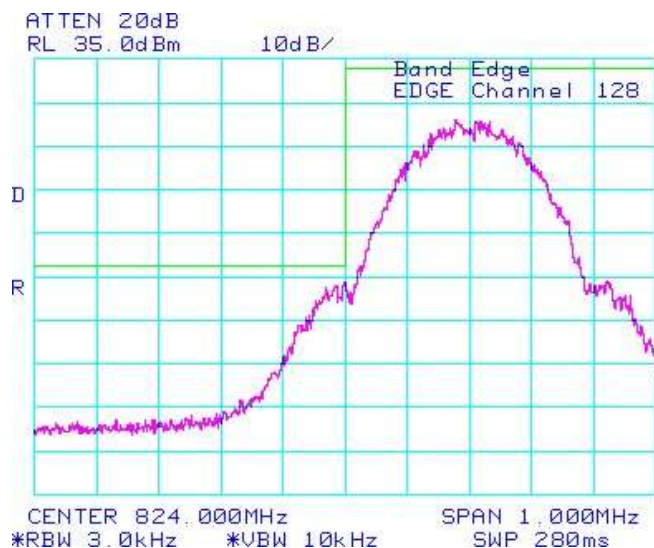
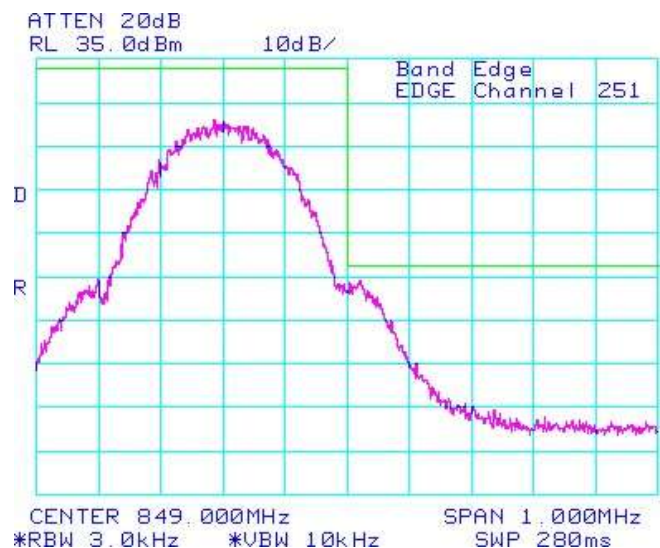



Figure 1-36a: GSM850 Band, High Channel Mask in EDGE mode



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Conducted RF Emission Test Data cont'd

Figure 1-37a: PCS1900 Band, Low Channel Mask in EDGE mode

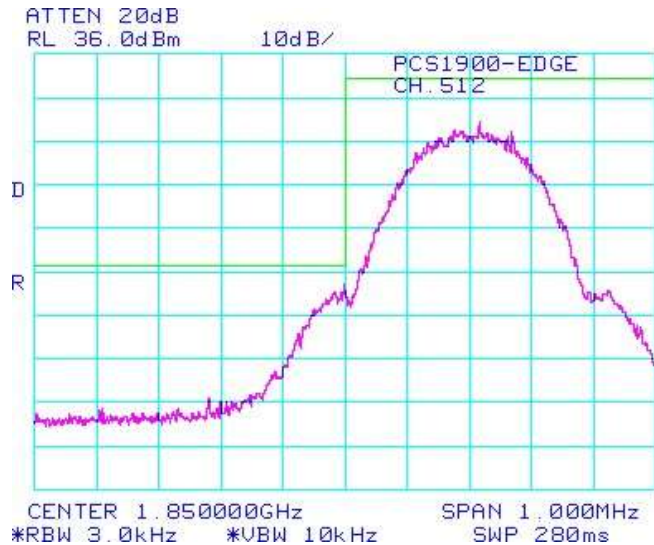
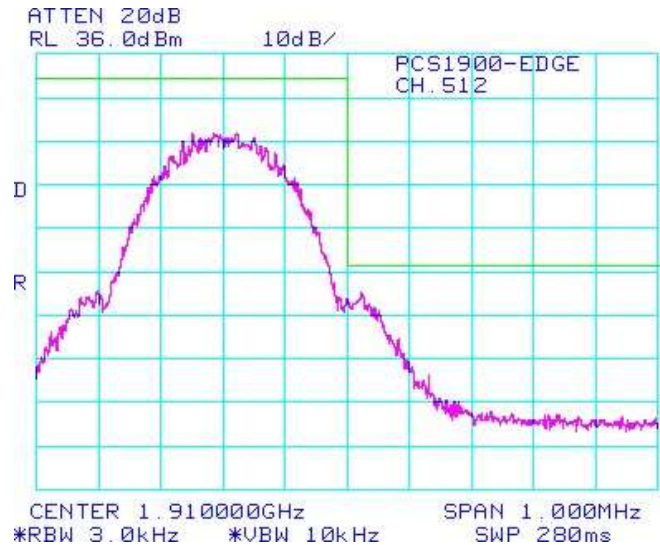



Figure 1-38a: PCS1900 Band, High Channel Mask in EDGE mode



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Conducted RF Emission Test Data cont'd

Figure 1-39a: GSM850 band, Spurious Conducted Emissions, Low channel in Edge Mode

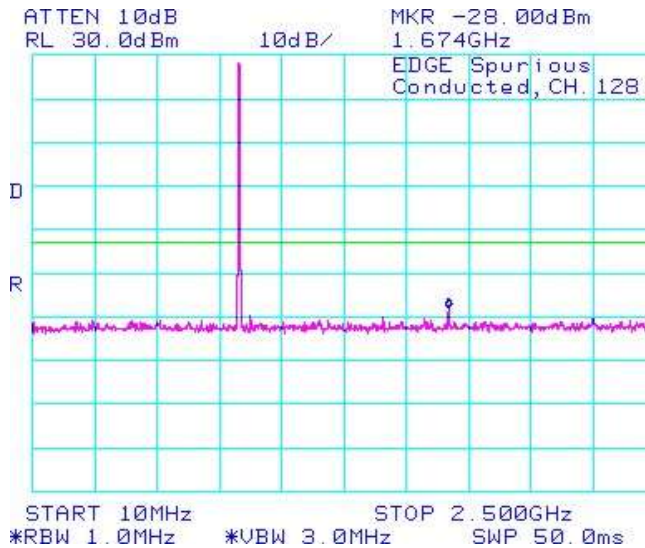


Figure 1-40a: GSM850 band, Spurious Conducted Emissions, Low channel in Edge Mode

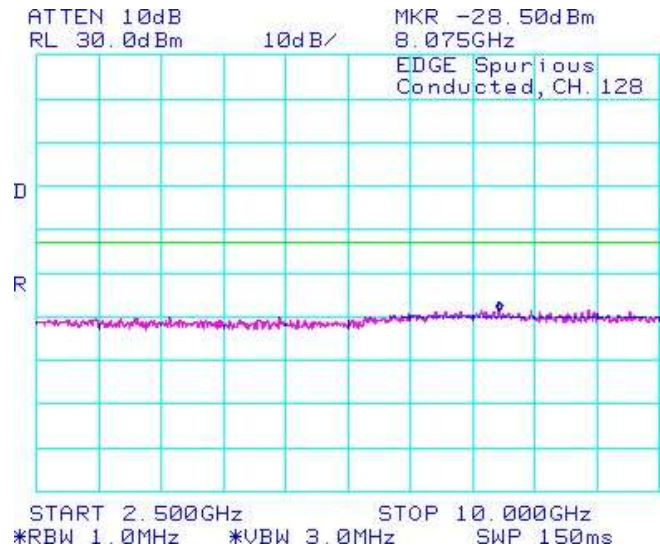


Figure 1-41a: GSM850 band, Spurious Conducted Emissions, Middle channel in Edge Mode

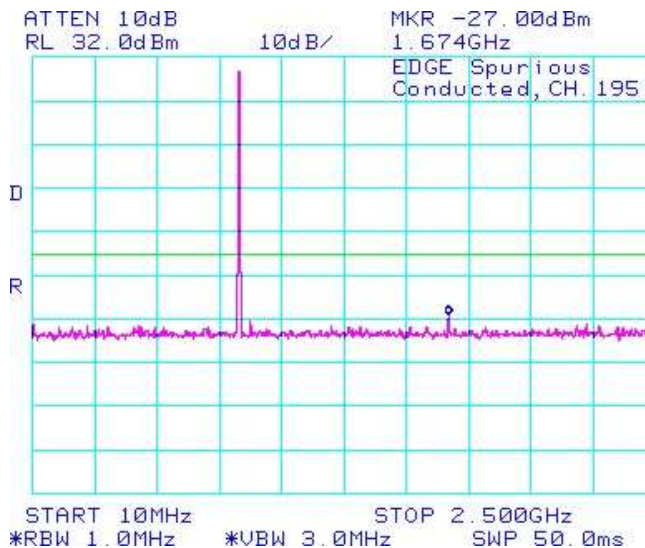
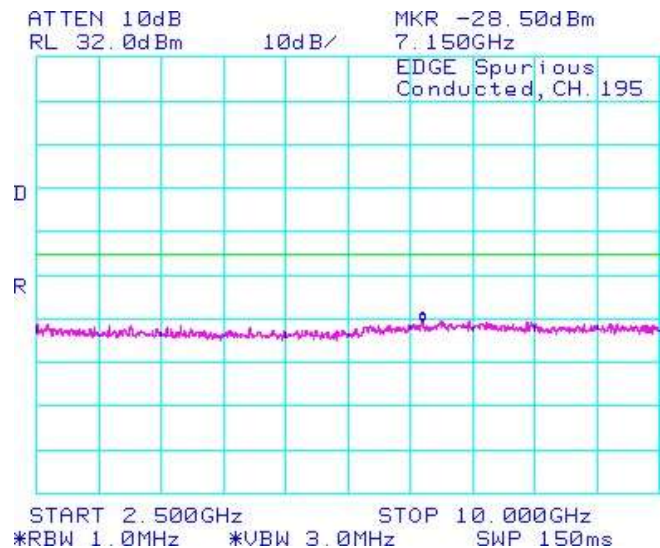



Figure 1-42a: GSM850 band, Spurious Conducted Emissions, Middle channel in Edge Mode



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Conducted RF Emission Test Data cont'd

Figure 1-43a: GSM850 band, Spurious Conducted Emissions, High channel in Edge Mode

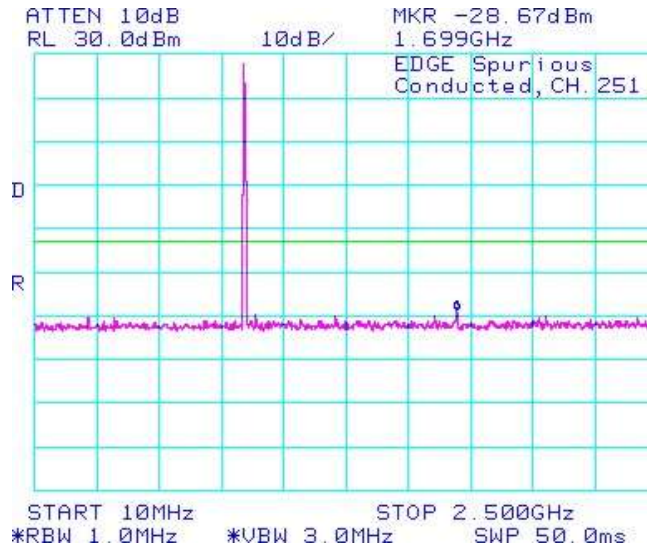


Figure 1-44a: GSM850 band, Spurious Conducted Emissions, High channel in Edge Mode

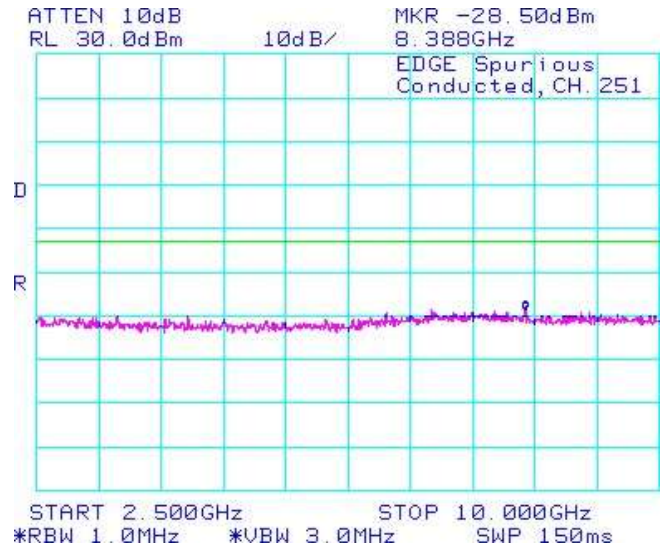


Figure 1-45a: PCS1900 band, Spurious Conducted Emissions, Low channel in Edge Mode

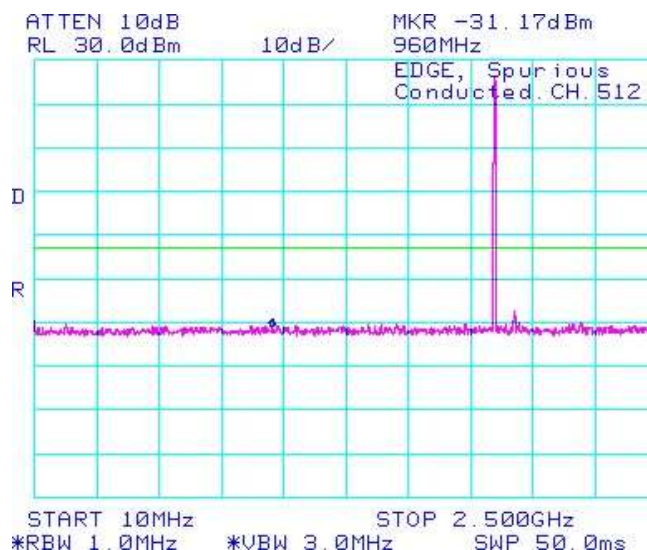
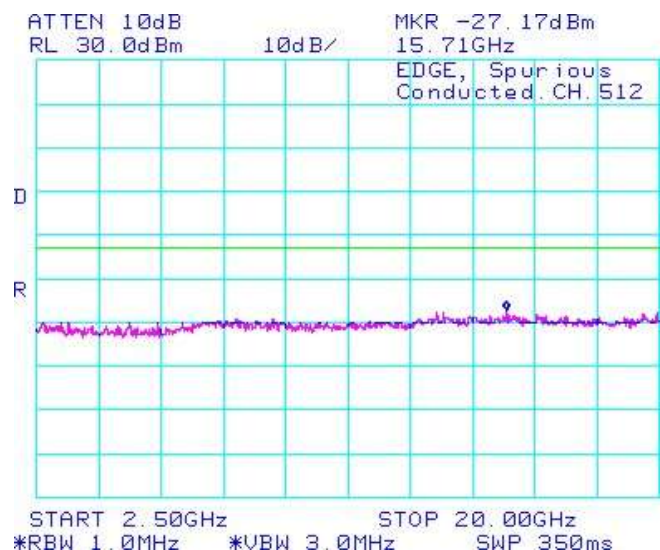



Figure 1-46a: PCS1900 band, Spurious Conducted Emissions, Low channel in Edge Mode



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Conducted RF Emission Test Data cont'd

Figure 1-47a: PCS1900 band, Spurious Conducted Emissions, Low channel in Edge Mode

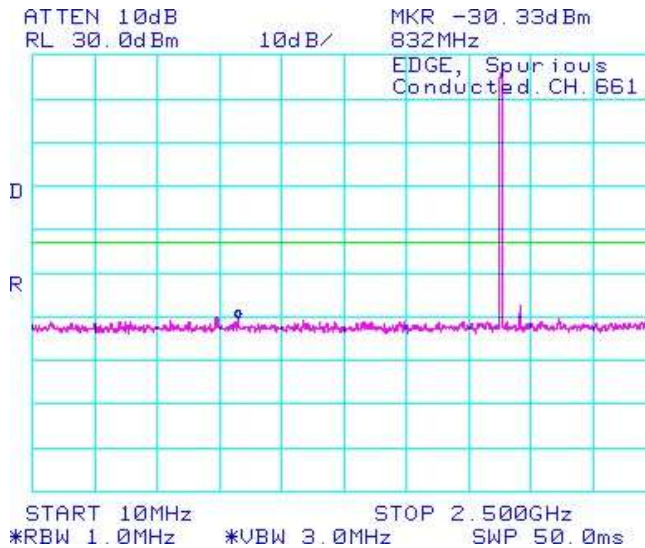


Figure 1-48a: PCS1900 band, Spurious Conducted Emissions, Low channel in Edge Mode

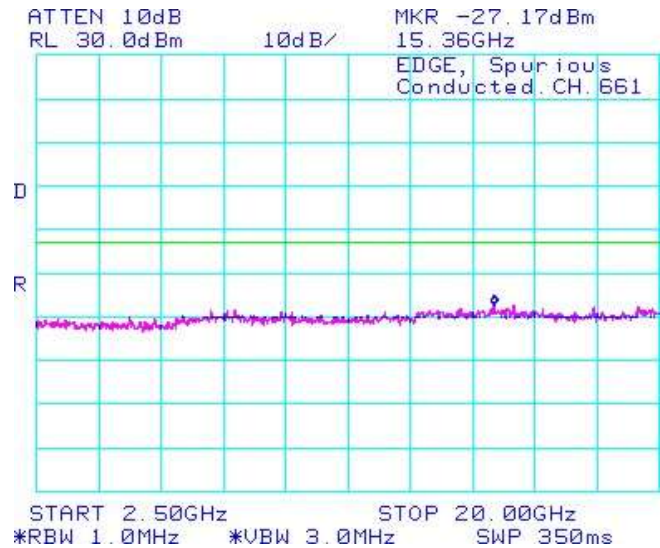


Figure 1-49a: PCS1900 band, Spurious Conducted Emissions, High channel in Edge Mode

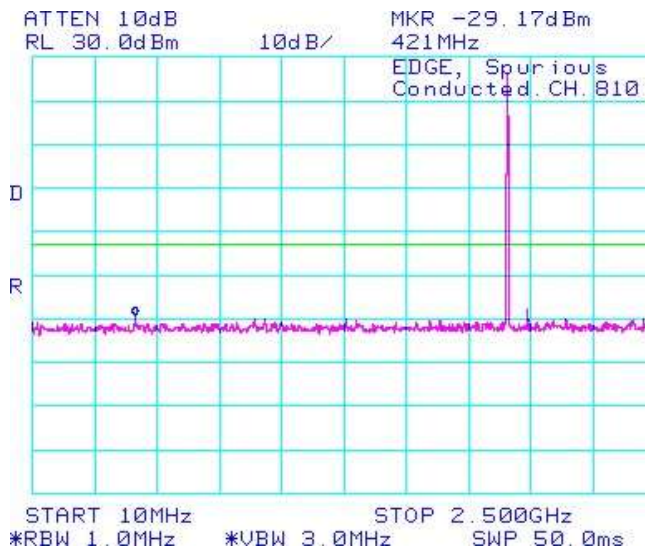
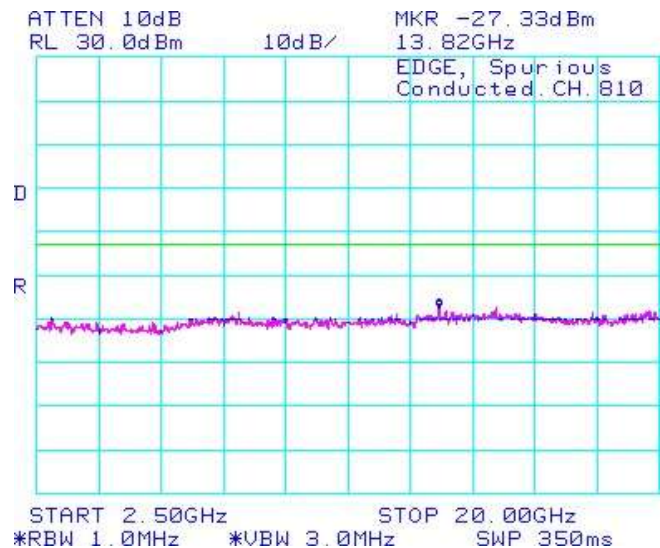



Figure 1-50a: PCS1900 band, Spurious Conducted Emissions, High channel in Edge Mode



APPENDIX 1B – CDMA CONDUCTED RF EMISSIONS TEST DATA/PLOTS

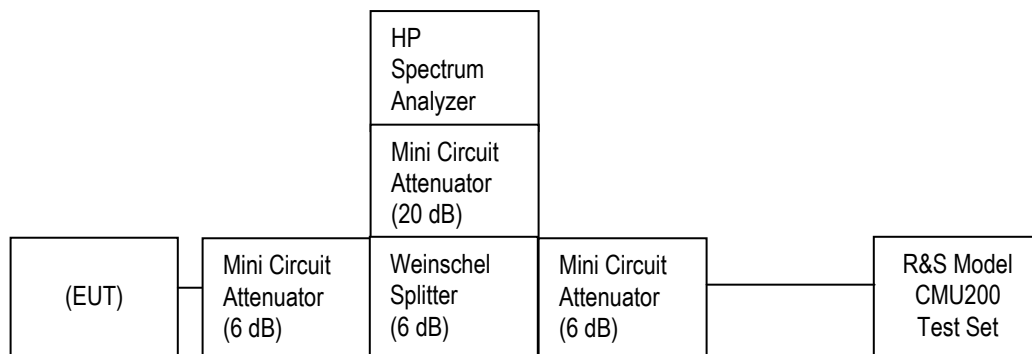
	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

CDMA Conducted RF Emission Test Data


The following test configurations were measured for model RDH71CW:

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

Test Setup Diagram



The environmental test conditions were: Temperature: 22.8 °C
Relative Humidity: 34 %

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

CDMA Conducted RF Emission Test Data cont'd

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.

See figures 1-1b to 1-12b for the plots of the conducted spurious emissions.

Date of Test: Jan 28, 2011

Test Data for Cellular and PCS selected Frequencies in Loopback mode

Cellular Frequency (MHz)	99% Occupied Bandwidth (MHz)
824.700	1.273
836.520	1.273
848.310	1.273

PCS Frequency (MHz)	99% Occupied Bandwidth (MHz)
1851.200	1.280
1880.000	1.267
1908.750	1.280

Test Data for Cellular and PCS selected Frequencies in Loopback mode


Refer to the following measurement plots for more detail.

See Figures 1-1b to 1-12b for the plots of the conducted spurious emissions.

See Figures 1-13b to 1-18b for the plots of 99% Occupied Bandwidth.

See Figures 1-19b to 1-22b for the plots of the Channel mask.

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

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

CDMA Conducted RF Emission Test Data cont'd

Figure 1-1b: Cellular, Spurious Conducted Emissions, Low channel

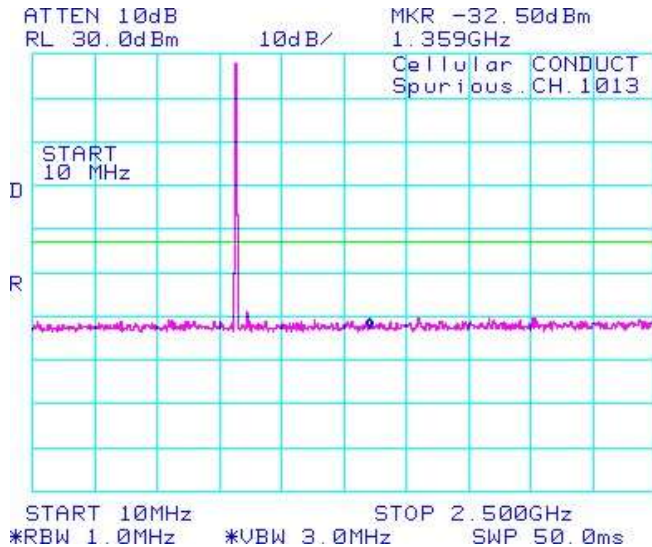


Figure 1-2b: Cellular, Spurious Conducted Emissions, Low channel

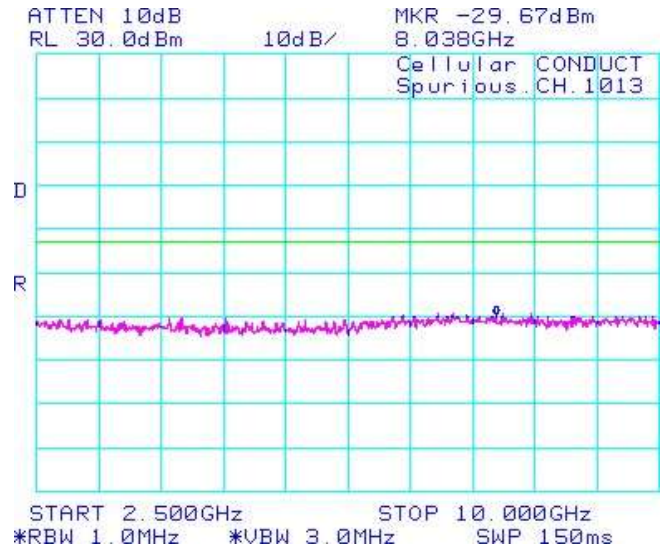


Figure 1-3b: Cellular, Spurious Conducted Emissions, Middle channel

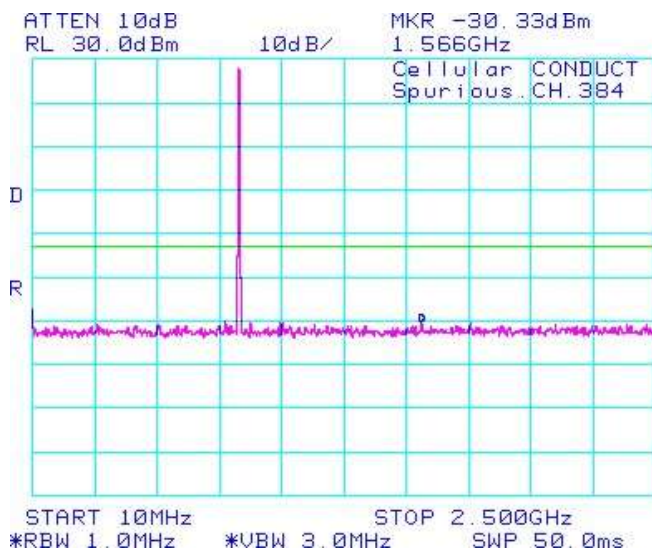
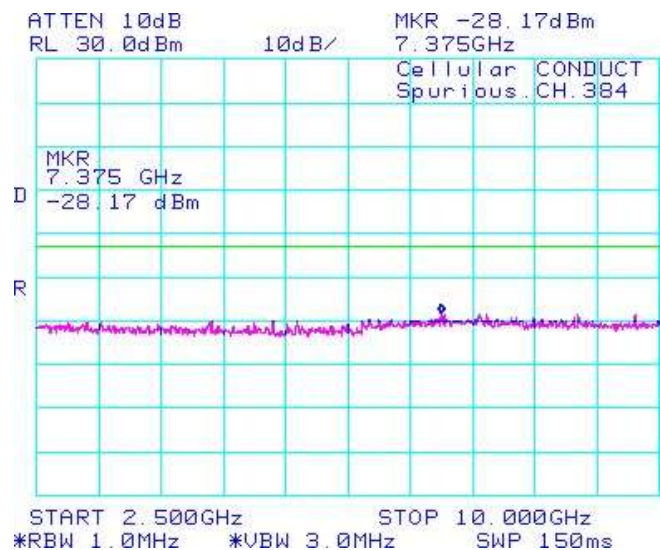



Figure 1-4b: Cellular, Spurious Conducted Emissions, Middle channel



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

UMTS Conducted RF Emission Test Data cont'd

Figure 7-5b: Cellular, Spurious Conducted Emissions, High Channel

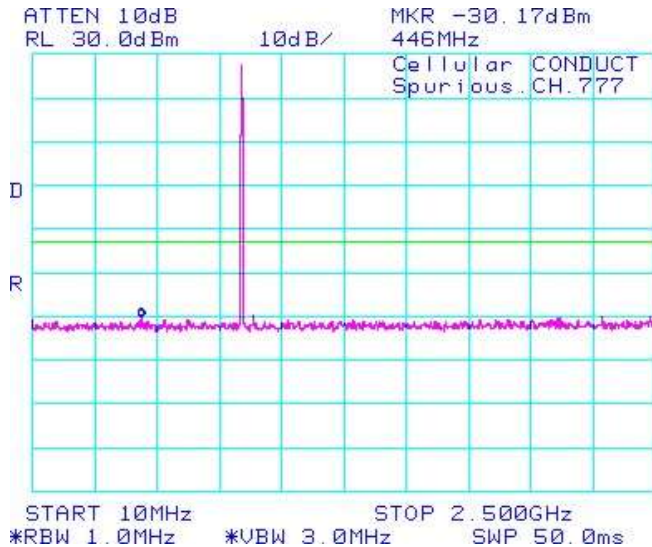


Figure 1-6b: Cellular, Spurious Conducted Emissions, High Channel

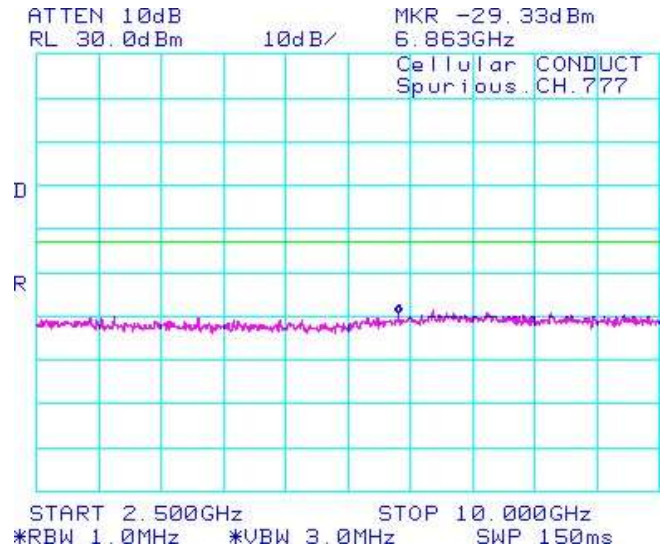


Figure 1-7b: PCS, Spurious Conducted Emissions, Low Channel

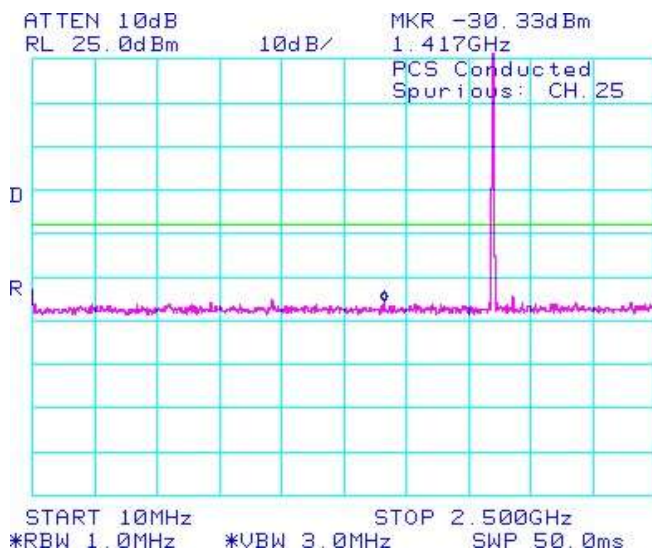
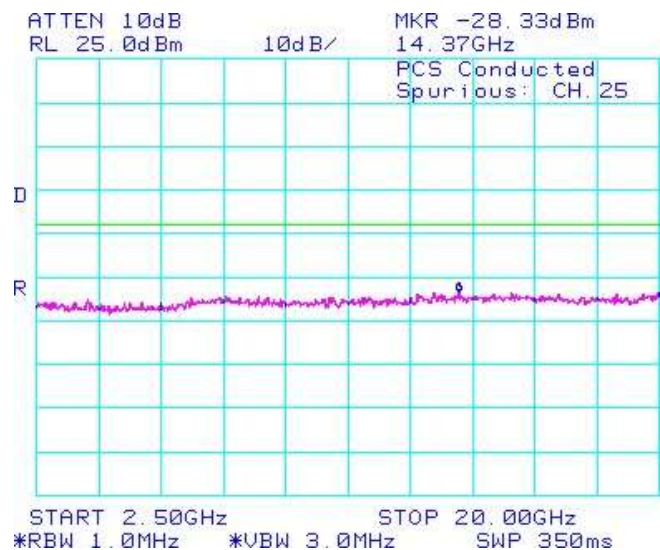



Figure 1-8b: PCS, Spurious Conducted Emissions, Low Channel



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

CDMA Conducted RF Emission Test Data cont'd

Figure 1-9b: PCS, Spurious Conducted Emissions, Middle Channel

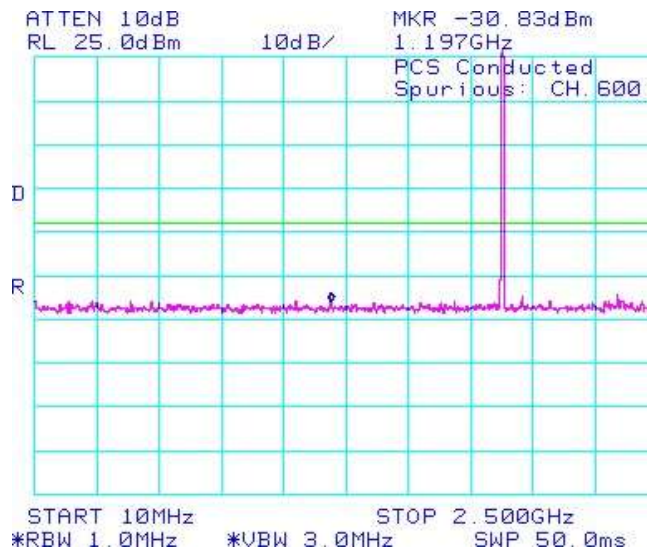


Figure 1-10b: PCS, Spurious Conducted Emissions, Middle Channel

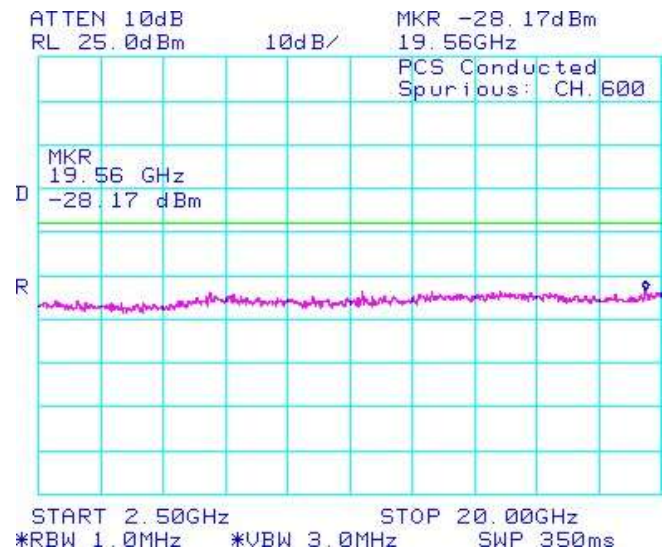


Figure 1-11b: PCS, Spurious Conducted Emissions, High Channel

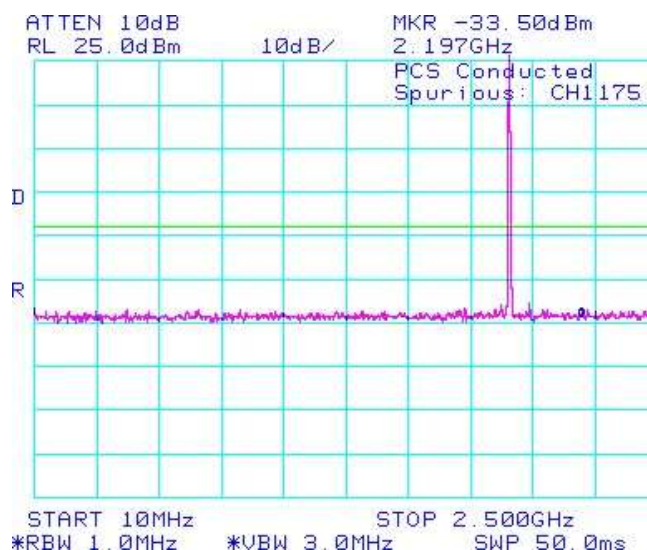
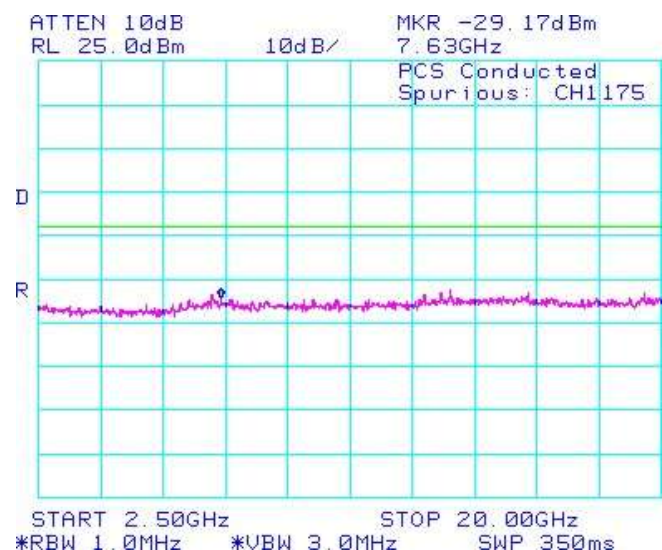



Figure 1-12b: PCS, Spurious Conducted Emissions, High Channel



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

CDMA Conducted RF Emission Test Data cont'd

Figure 1-13b: Occupied Bandwidth, Cellular Low Channel

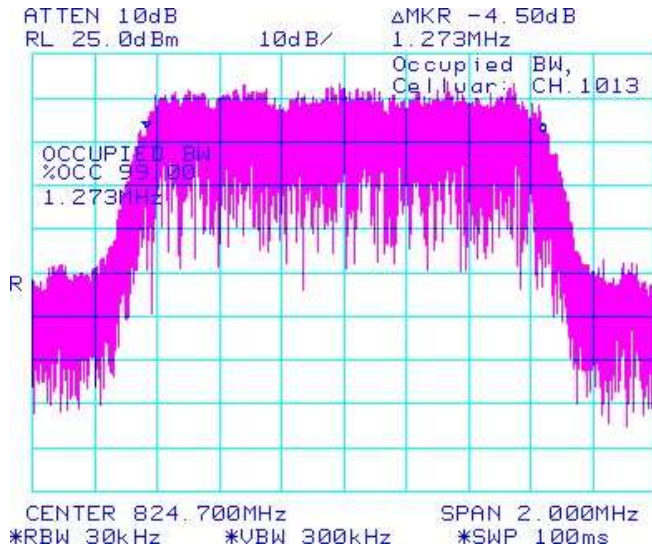


Figure 1-14b: Occupied Bandwidth, Cellular Middle Channel

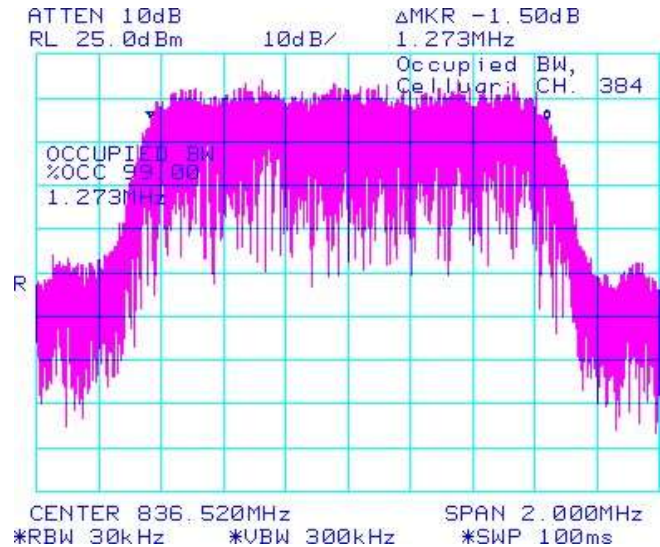


Figure 1-15b: Occupied Bandwidth, Cellular High Channel

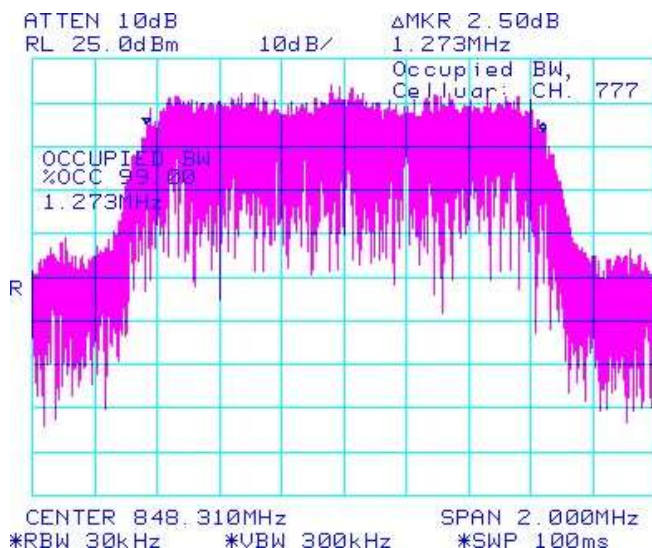
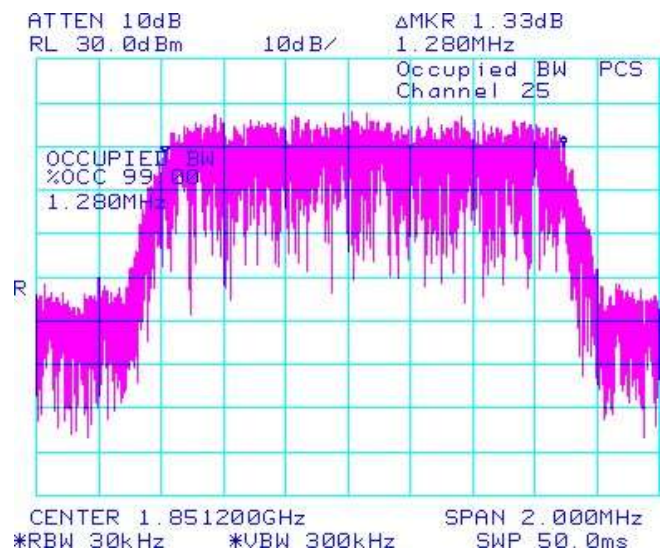



Figure 1-16b: Occupied Bandwidth, PCS Low Channel



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

CDMA Conducted RF Emission Test Data cont'd

Figure 1-17b: Occupied Bandwidth, PCS Middle Channel

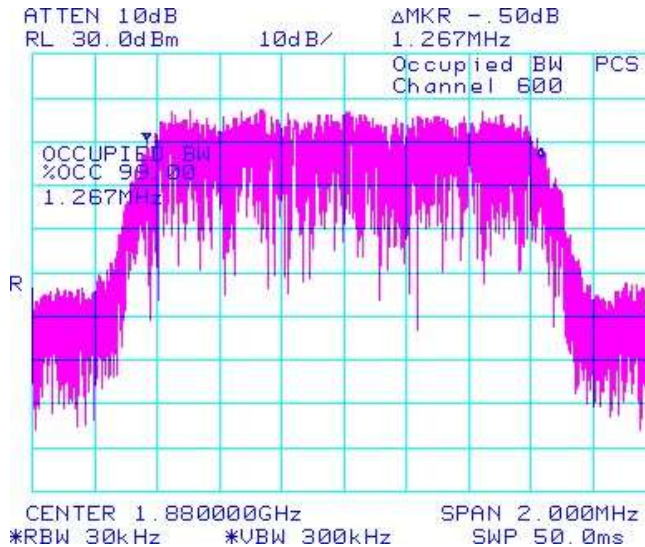


Figure 1-18b: Occupied Bandwidth, PCS High Channel

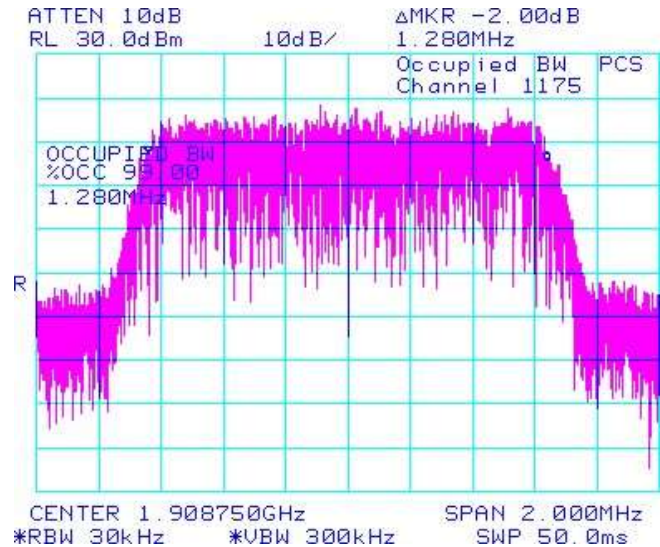


Figure 1-19b: Cellular Low Channel Mask

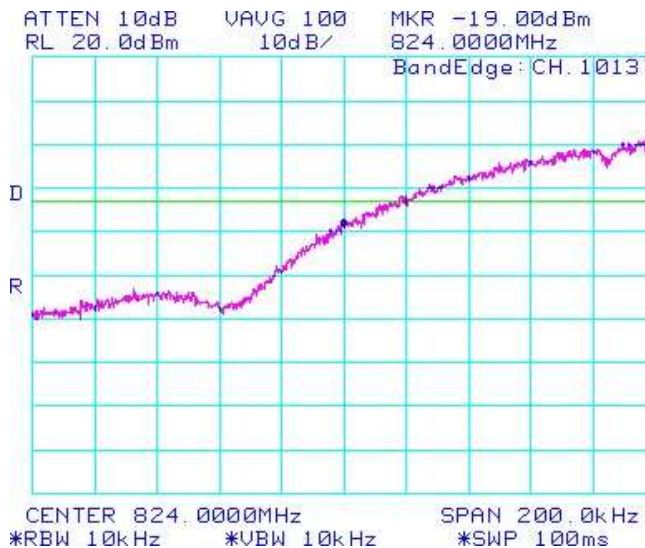
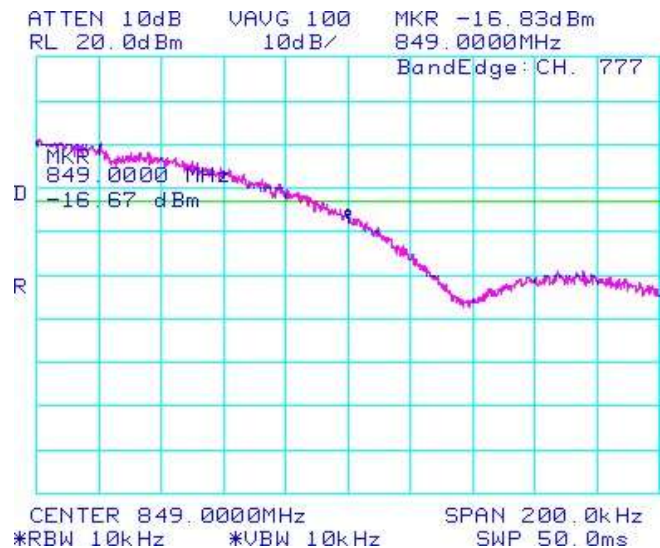



Figure 1-20b: Cellular High Channel Mask



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

CDMA Conducted RF Emission Test Data cont'd

Figure 1-21b: PCS Low Channel Mask

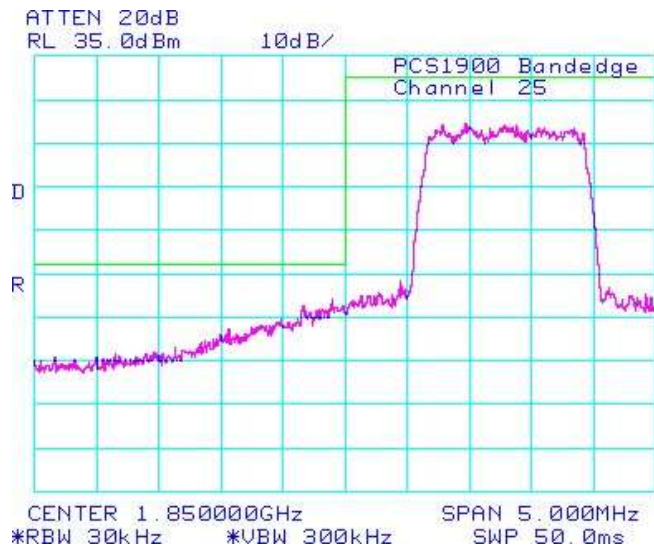
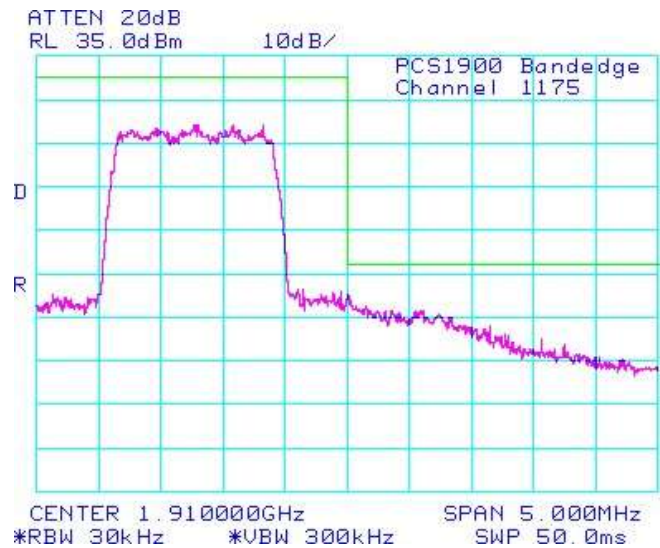



Figure 1-22b: PCS High Channel Mask



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

CDMA Conducted RF Emission Test Data cont'd

The conducted spurious emissions – As per 47 CFR 2.1051, CFR 24.238(a), CFR 22 Subpart H, RSS-132 and RSS - 133 were measured from 10 MHz to 20 GHz. See figures 1-29b to 1-40b for the plots of the conducted spurious emissions.
Date of Test: Jan 31, 2011

The environmental test conditions were: Temperature: 23.8 °C
Relative Humidity: 33.1 %

Test Data for Cellular and PCS selected Frequencies in 1xEVDO mode

Cellular Frequency (MHz)	99% Occupied Bandwidth (MHz)
824.700	1.273
836.520	1.273
848.310	1.273


PCS Frequency (MHz)	99% Occupied Bandwidth (MHz)
1851.200	1.280
1880.000	1.273
1908.750	1.273

Measurement Plots for Cellular and PCS in 1xEVDO mode

Refer to the following measurement plots for more detail.

See Figures 1-23b to 1-34b for the plots of the conducted spurious emissions.
See Figures 1-35b to 1-39b for the plots of 99% Occupied Bandwidth.
See Figures 1-40b to 1-43b for the plots of the Channel mask.

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

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

CDMA EVDO Conducted RF Emission Test Data cont'd

Figure 1-23b: Cellular , Spurious Conducted Emissions, Low channel

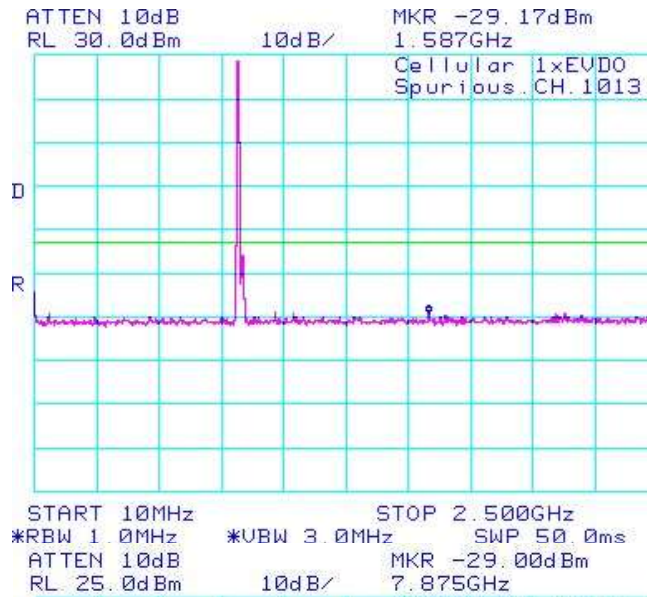


Figure 1-24b: Cellular , Spurious Conducted Emissions, Low channel

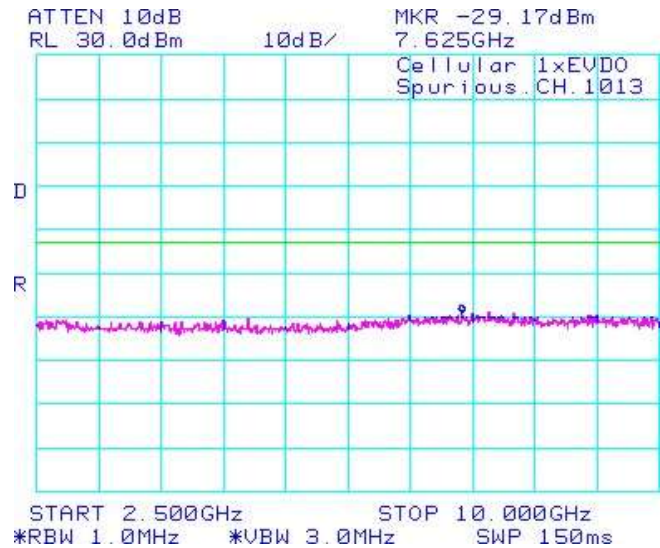


Figure 1-25b: Cellular , Spurious Conducted Emissions, Middle channel

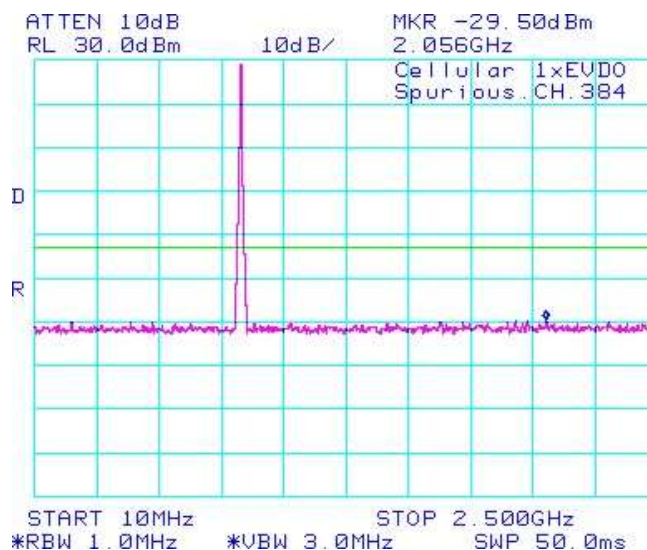
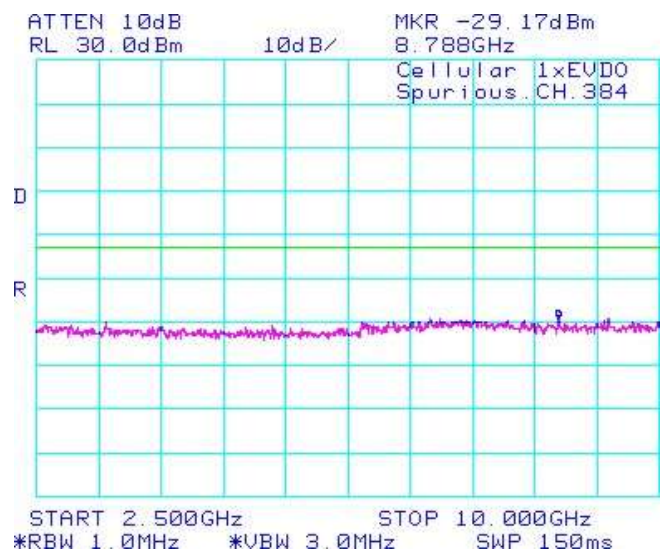



Figure 1-26b: Cellular , Spurious Conducted Emissions, Middle channel



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

CDMA Conducted RF Emission Test Data cont'd

Figure 8-27b: Cellular , Spurious Conducted Emissions, High Channel

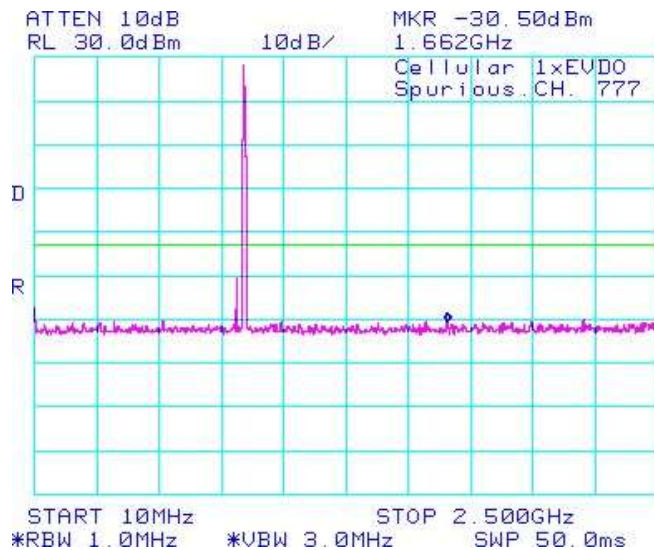


Figure 1-28b: Cellular , Spurious Conducted Emissions, High Channel

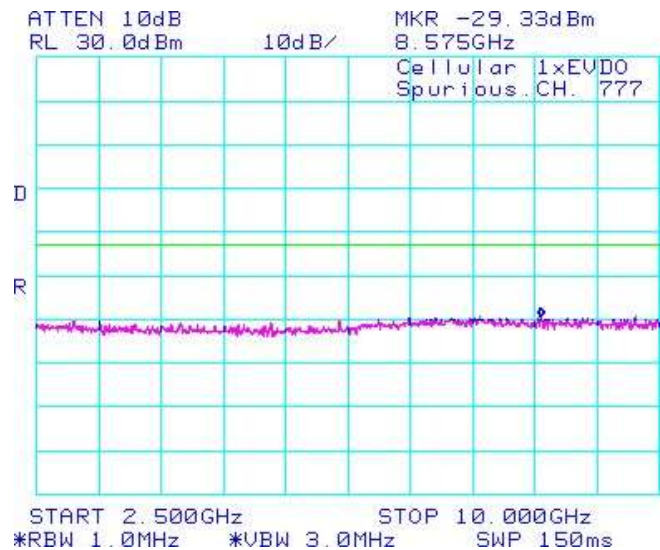


Figure 1-29b: CDMA PCS, Spurious Conducted Emissions, Low Channel

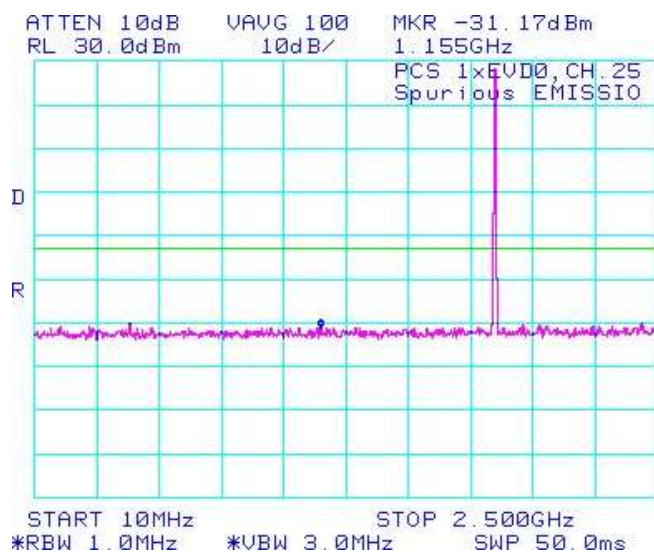
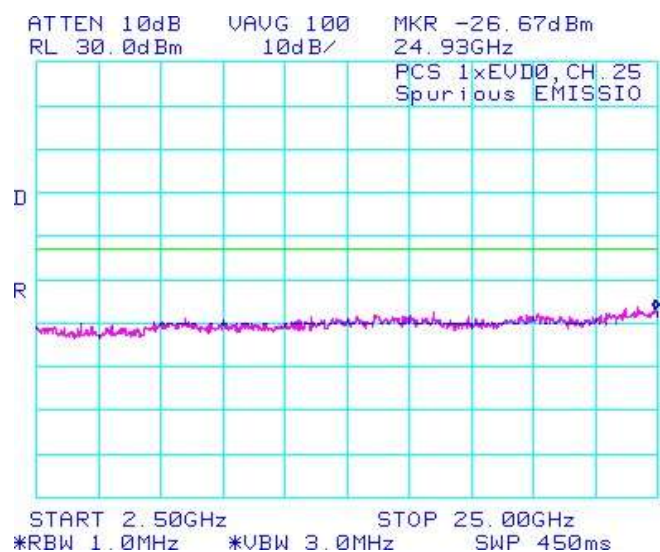



Figure 1-30b: CDMA PCS, Spurious Conducted Emissions, Low Channel



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

CDMA Conducted RF Emission Test Data cont'd

Figure 1-31b: CDMA PCS, Spurious Conducted Emissions, Middle Channel



Figure 1-32b: CDMA PCS, Spurious Conducted Emissions, Middle Channel

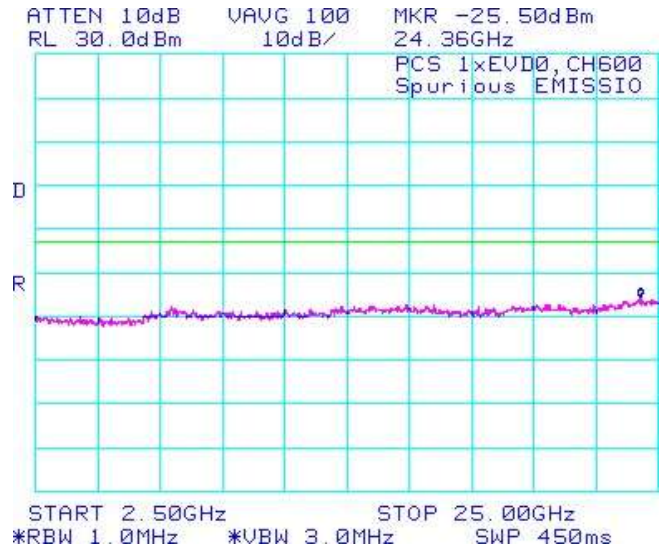


Figure 1-33b: CDMA PCS, Spurious Conducted Emissions, High Channel

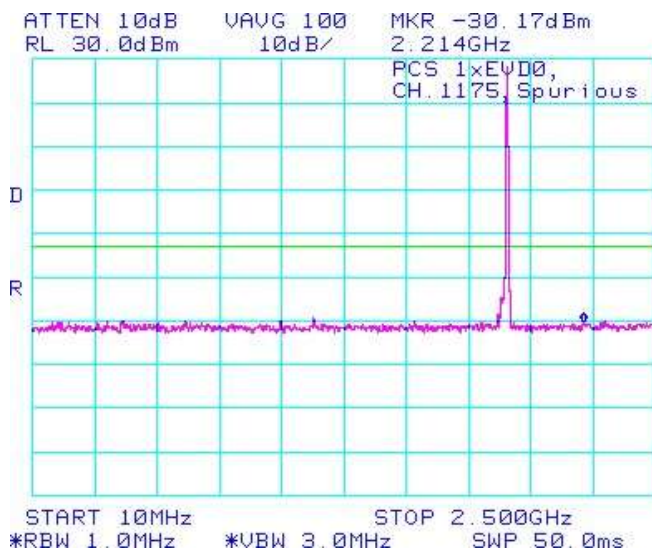
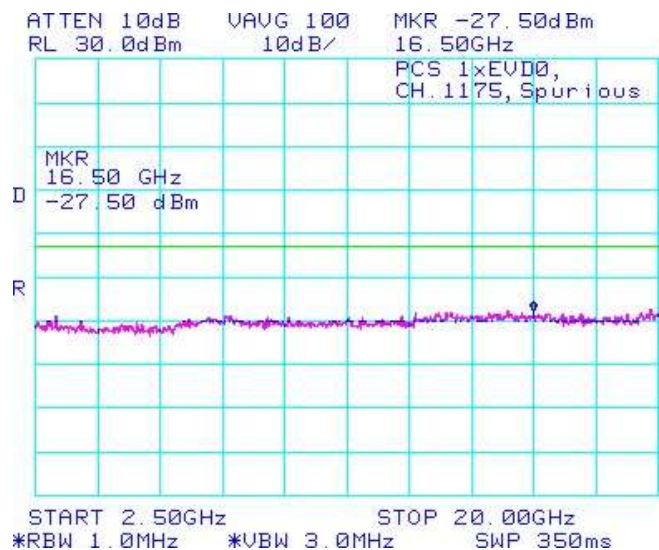



Figure 1-34b: CDMA PCS, Spurious Conducted Emissions, High Channel



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

CDMA Conducted RF Emission Test Data cont'd

Figure 1-35b: Occupied Bandwidth, Cellular Low Channel

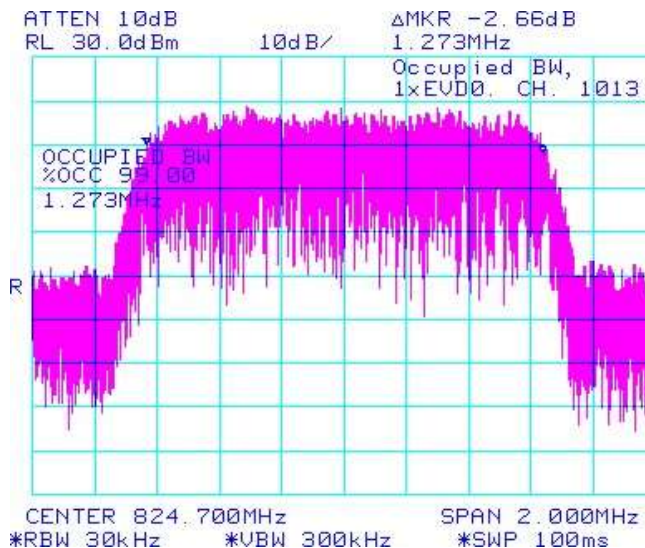


Figure 1-36b: Occupied Bandwidth, Cellular Middle Channel

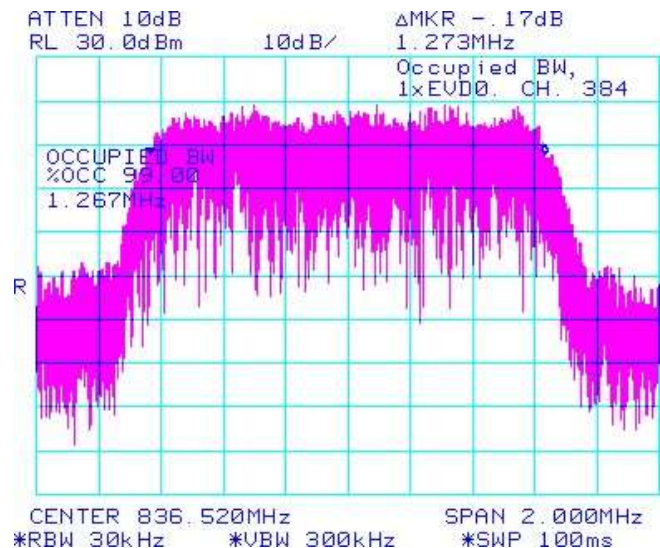


Figure 1-37b: Occupied Bandwidth, Cellular High Channel

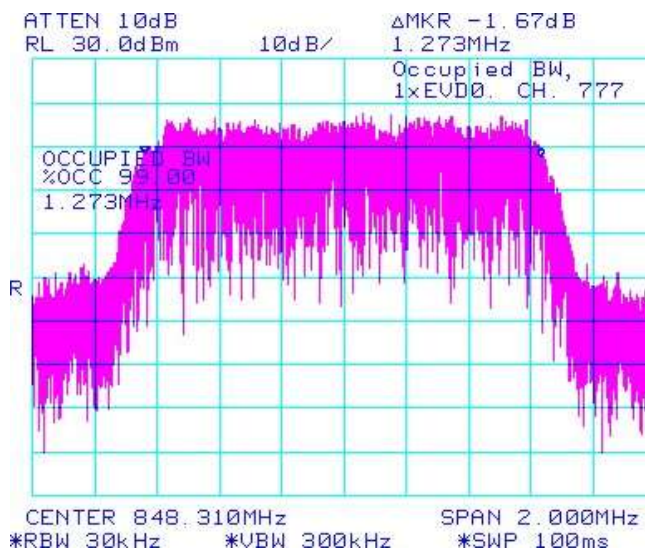
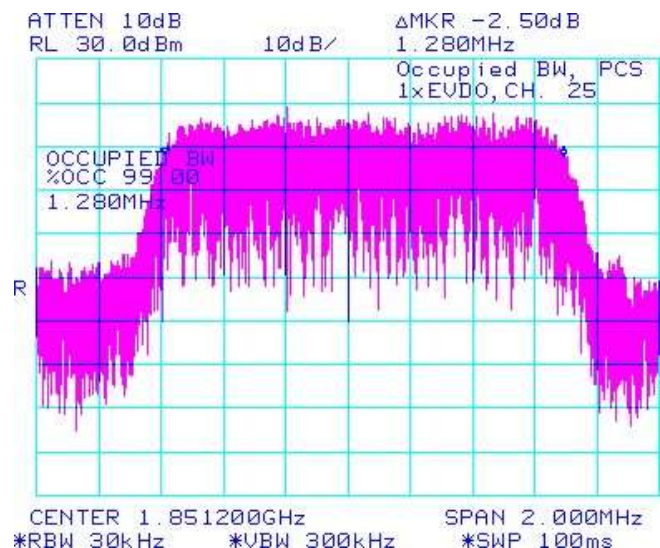



Figure 1-38b: Occupied Bandwidth, PCS Low Channel



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

CDMA Conducted RF Emission Test Data cont'd

Figure 1-38b: Occupied Bandwidth, PCS Middle Channel

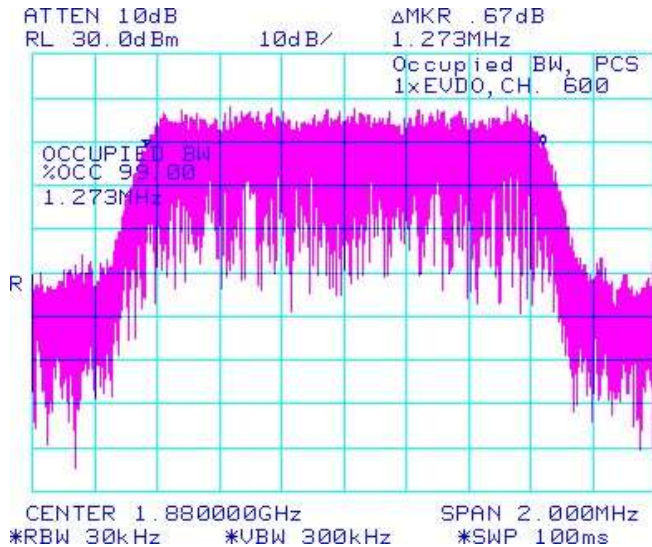


Figure 1-39b: Occupied Bandwidth, PCS High Channel

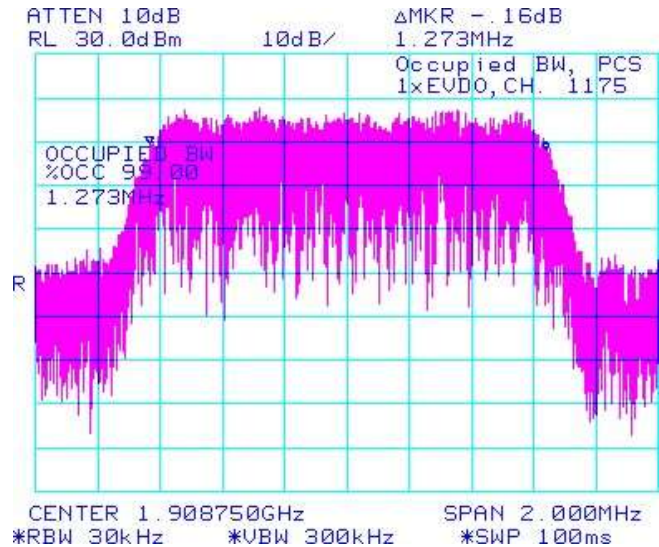


Figure 1-40b: Cellular , Low Channel Mask

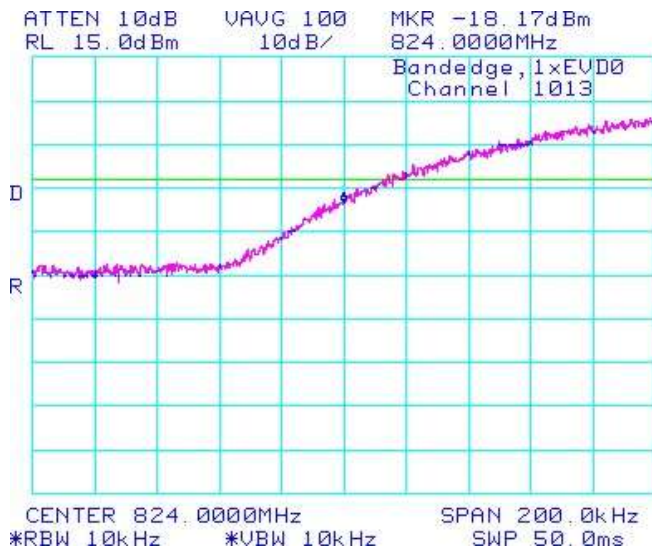
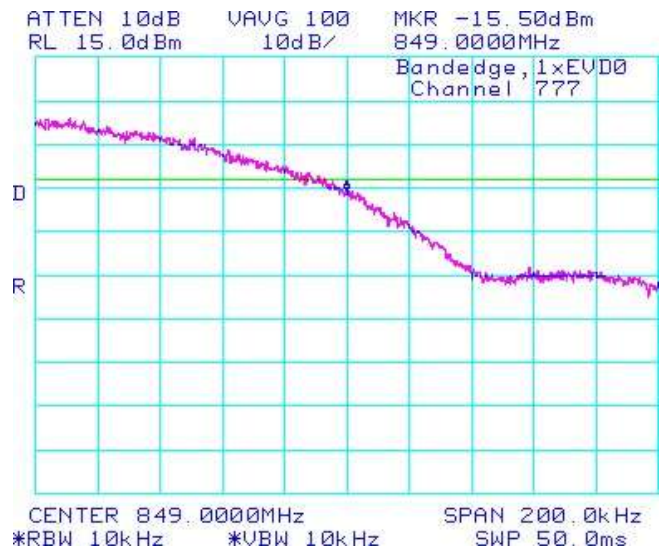



Figure 1-41b: Cellular , High Channel Mask



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

CDMA Conducted RF Emission Test Data cont'd

Figure 1-42b: CDMA PCS, Low Channel Mask

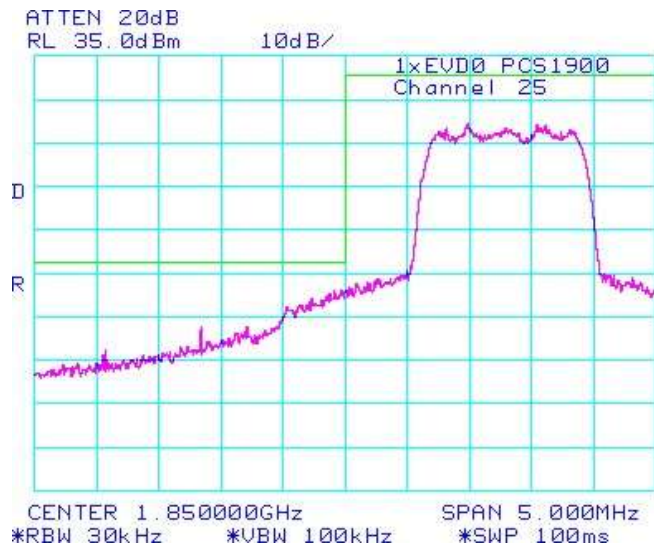
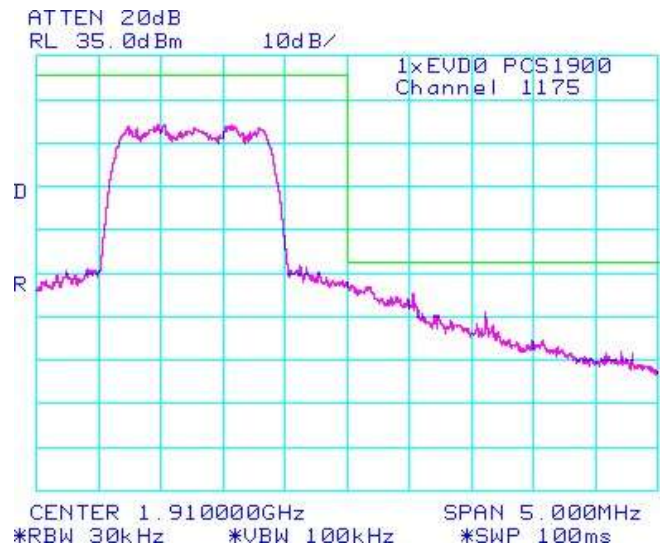



Figure 1-43b: CDMA PCS, High Channel Mask



APPENDIX 1C– UMTS CONDUCTED RF EMISSIONS TEST DATA/PLOTS

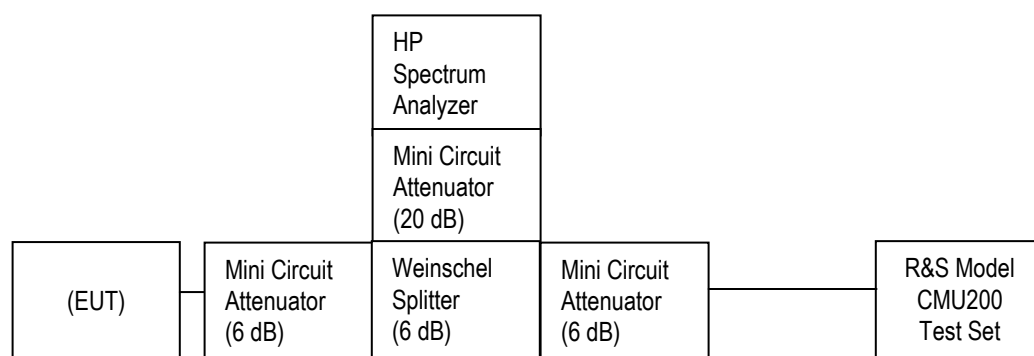
	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

UMTS Conducted RF Emission Test Data


The following test configurations were measured for model RDQ71UW:

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

Test Setup Diagram



The environmental test conditions were: Temperature: 22.7 °C
Relative Humidity: 42.9 %

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

UMTS Conducted RF Emission Test Data cont'd

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.

See figures 1-1c to 1-11c for the plots of the conducted spurious emissions.

Date of Test: May 12, 2011

Test Data UMTS Band 4 selected Frequencies in Call mode

UMTS band 4 Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
1712.400	4.617	4.150
1732.600	4.583	4.150
1752.600	4.583	4.158

Test Data for UMTS band 4 selected Frequencies in Call mode


Refer to the following measurement plots for more detail.

See Figures 1-1c to 1-6c for the plots of the conducted spurious emissions.

See Figures 1-7c to 1-9c for the plots of 99% Occupied Bandwidth.

See Figures 1-10c to 1-11c for the plots of the Channel mask.

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

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

UMTS Conducted RF Emission Test Data cont'd

Figure 1-1c: Band 4, Spurious Conducted Emissions, Low channel

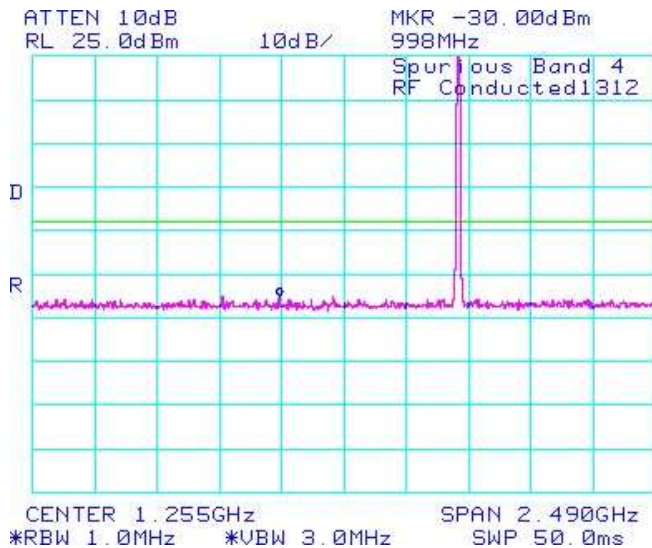


Figure 1-2c: Band 4, Spurious Conducted Emissions, Low channel

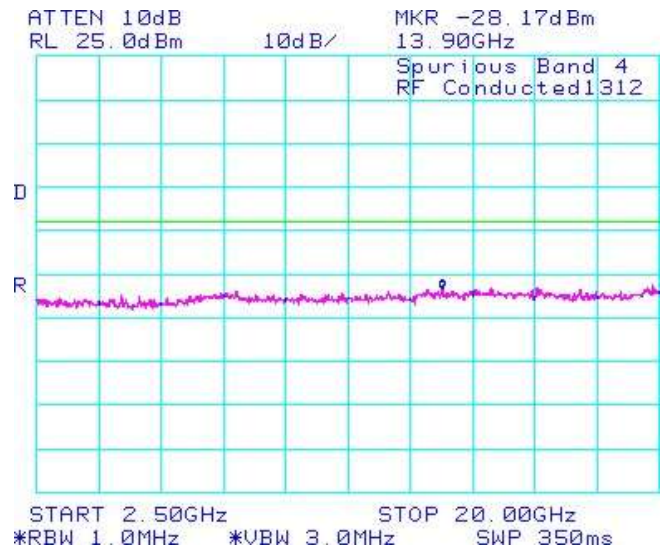
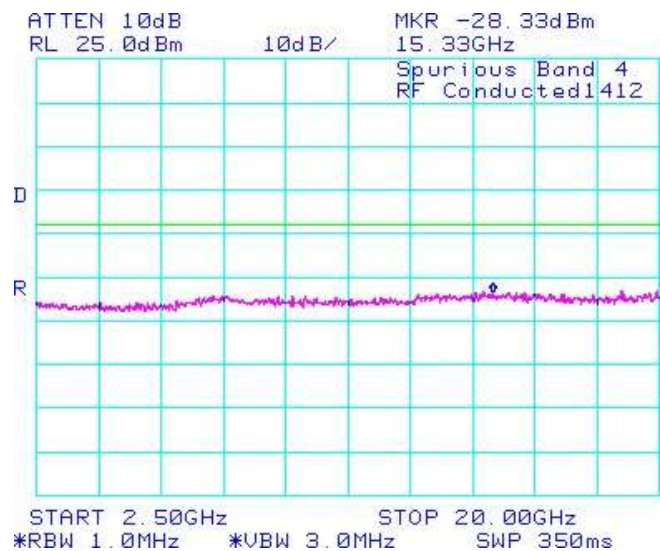



Figure 1-3c: Band 4, Spurious Conducted Emissions, Middle channel



Figure 1-4c: Band 4, Spurious Conducted Emissions, Middle channel



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

UMTS Conducted RF Emission Test Data cont'd

Figure 1-5c: Band 4, Spurious Conducted Emissions, High channel

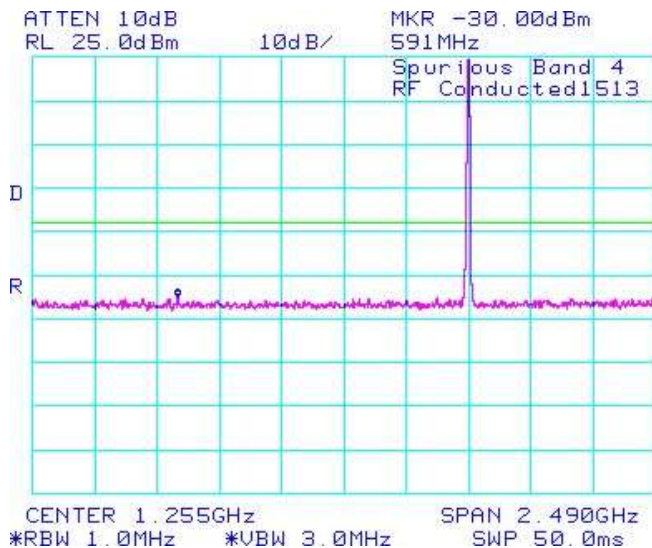


Figure 1-6c: Band 4, Spurious Conducted Emissions, High channel

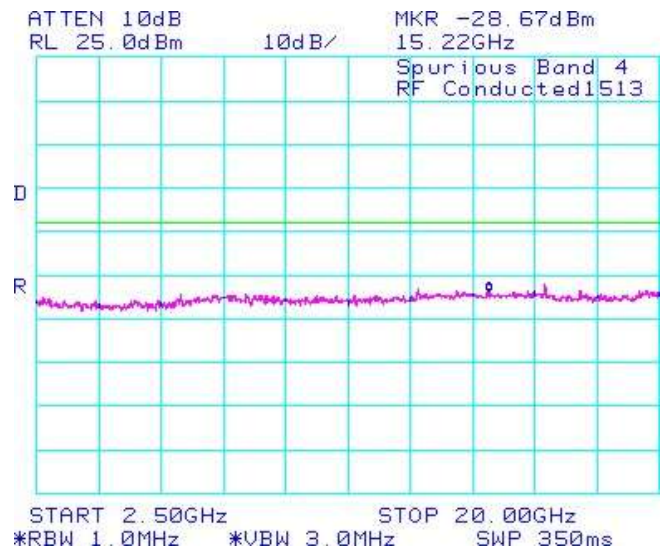


Figure 1-7c: Occupied Bandwidth, Band 4 Low Channel

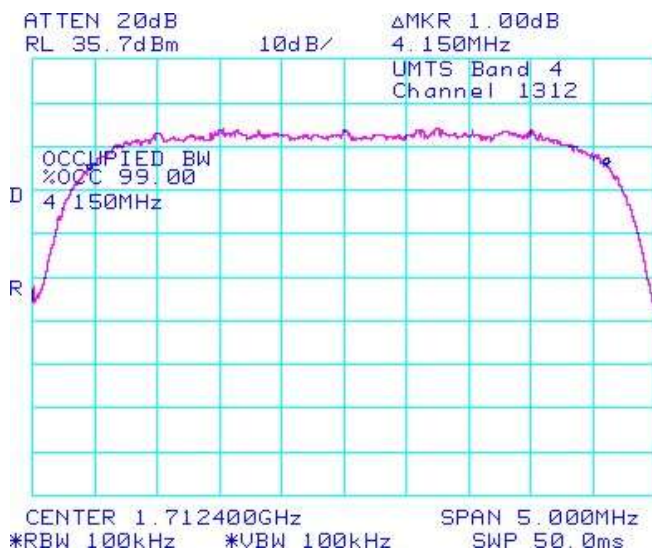
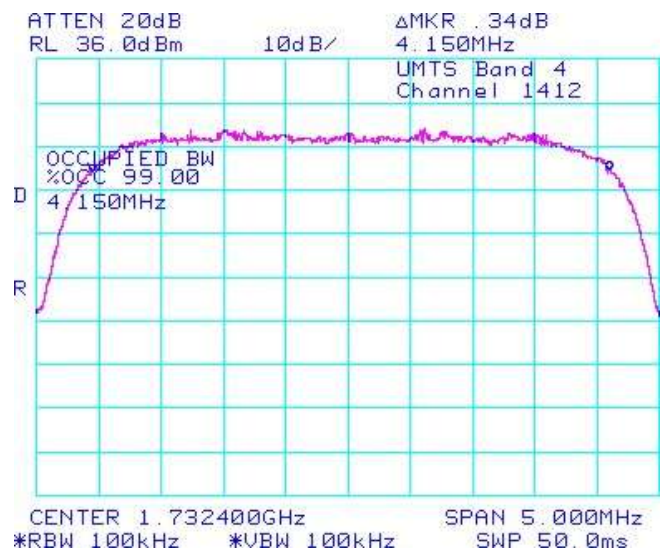



Figure 1-8c: Occupied Bandwidth, Band 4 Middle Channel



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

UMTS Conducted RF Emission Test Data cont'd

Figure 1-9c: Occupied Bandwidth, Band 4 High Channel

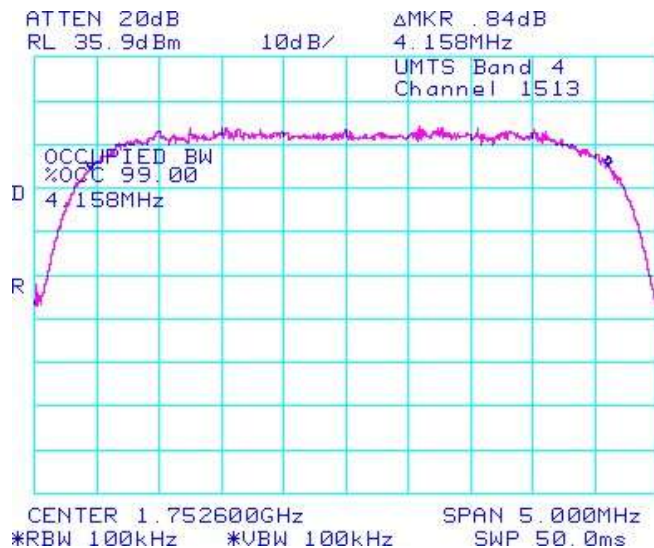


Figure 1-10c: Band 4 Low Channel Mask

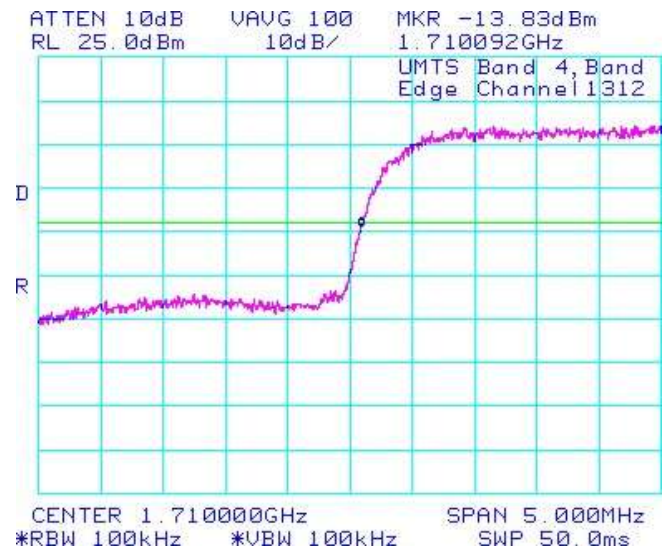
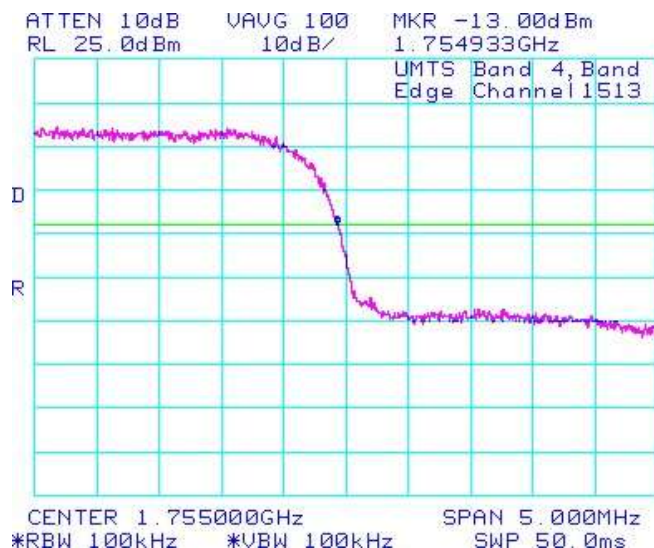



Figure 1-11c: Band 4 High Channel Mask



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

UMTS Conducted RF Emission Test Data cont'd

Figure 1-12c: Band 4 , Spurious Conducted Emissions, Low channel

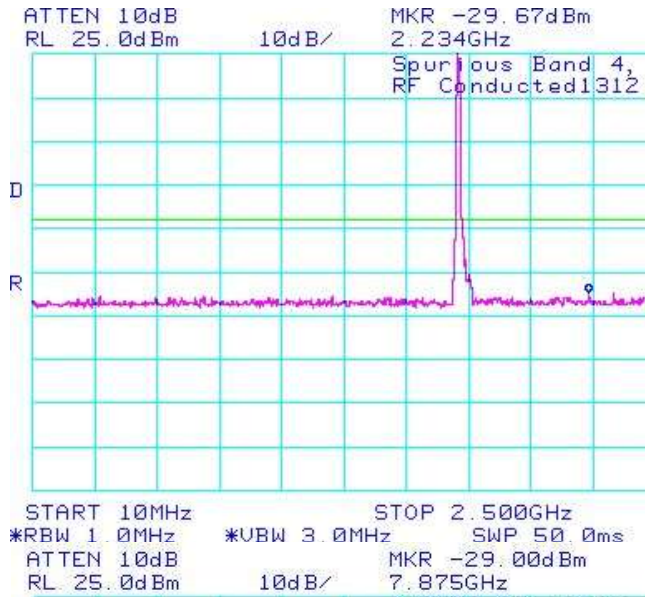


Figure 1-13c: Band 4 , Spurious Conducted Emissions, Low channel

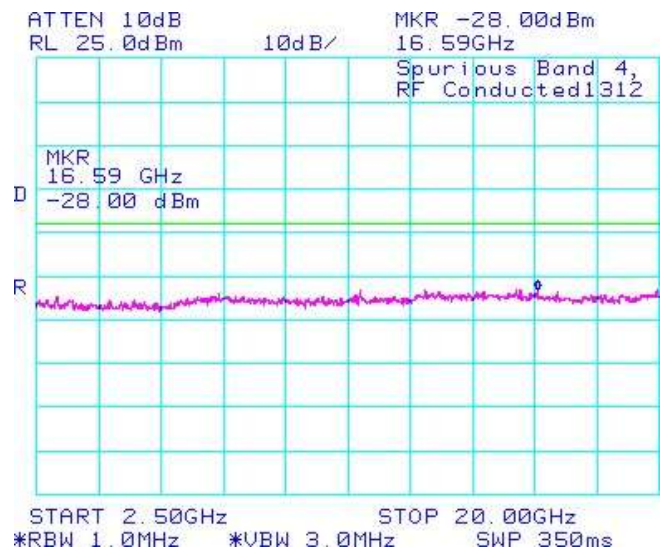


Figure 1-14c: Band 4 , Spurious Conducted Emissions, Middle channel

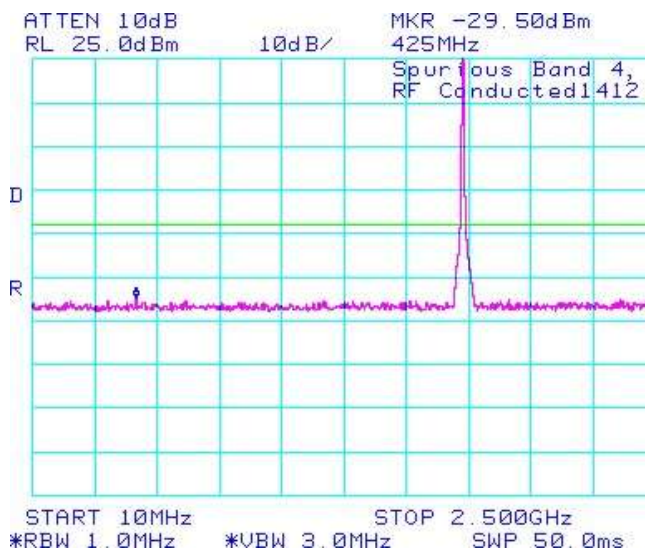
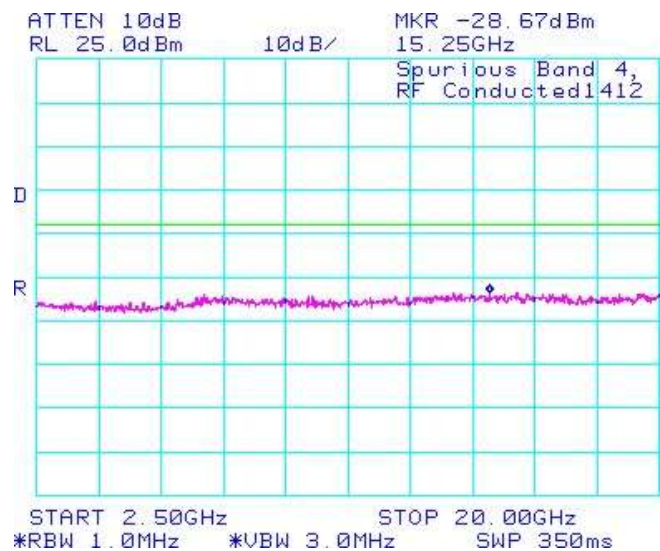



Figure 1-15c: Band 4 , Spurious Conducted Emissions, Middle channel



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

UMTS Conducted RF Emission Test Data cont'd

Figure 1-16c: Band 4 , Spurious Conducted Emissions, High Channel

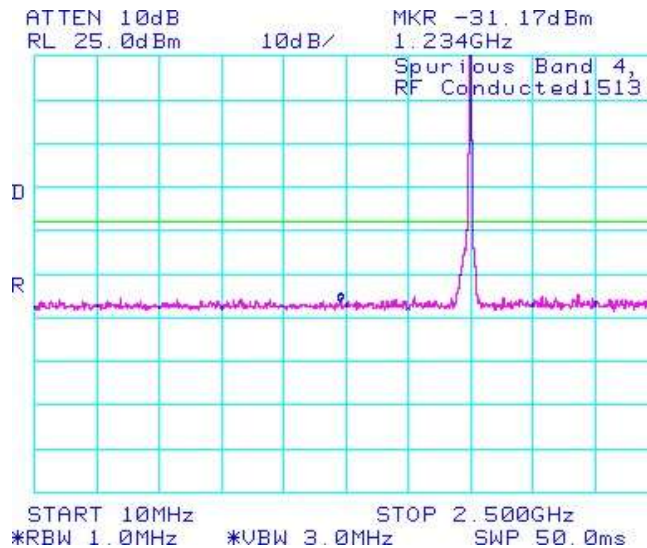


Figure 1-17c: Band 4 , Spurious Conducted Emissions, High Channel

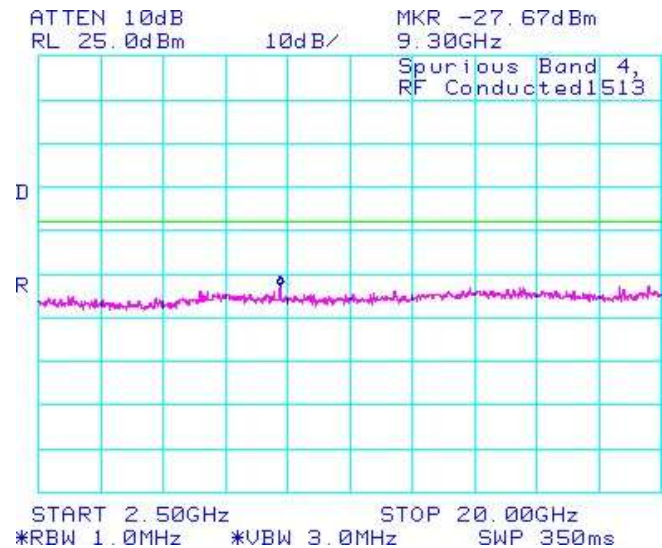


Figure 1-18c: Occupied Bandwidth, Band 4 Low Channel

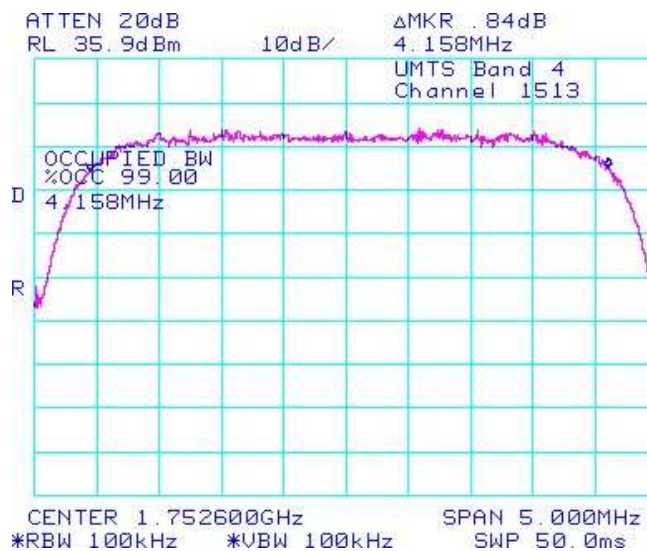
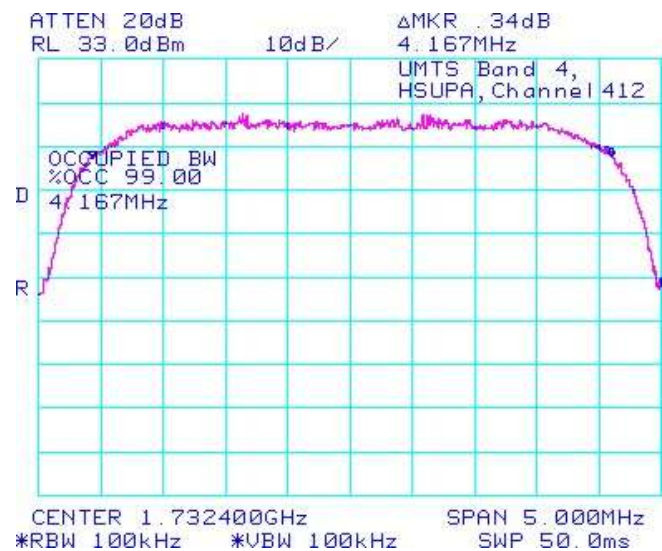



Figure 1-19c: Occupied Bandwidth, Band 4 Middle Channel



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

UMTS Conducted RF Emission Test Data cont'd

Figure 1-20c: Occupied Bandwidth, Band 4 High Channel

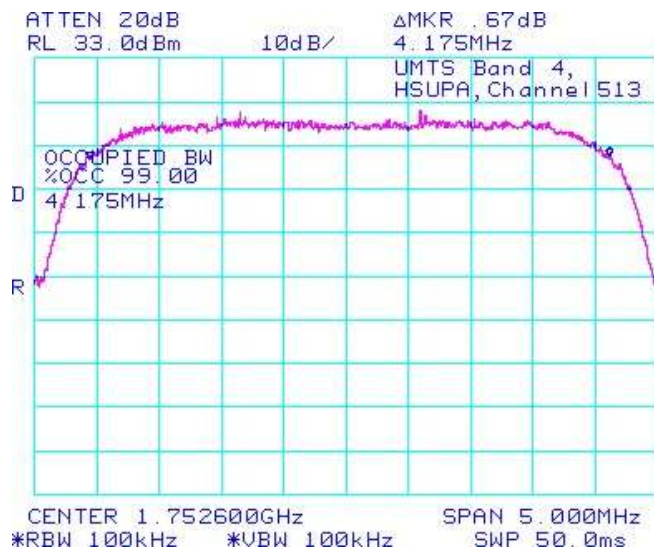


Figure 1-21c: Band 4, Low Channel Mask

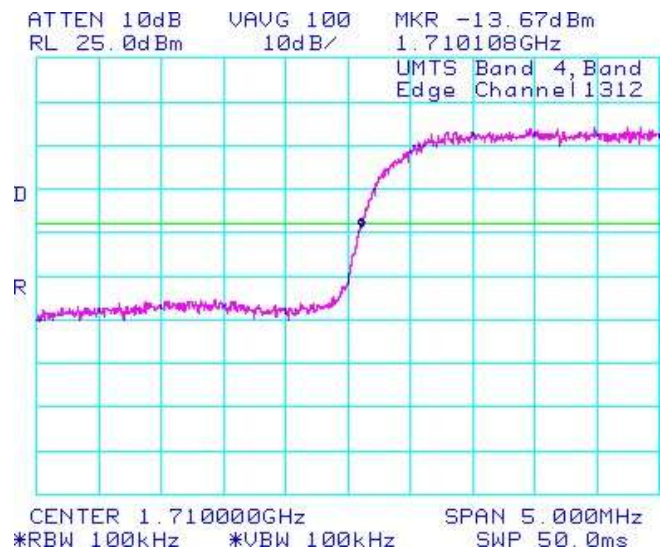
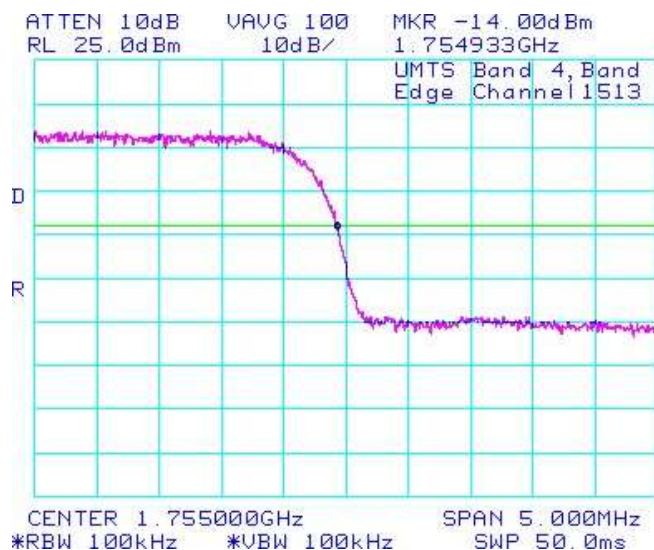




Figure 1-22c: Band 4, High Channel Mask



	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

APPENDIX 2A – GSM CONDUCTED RF OUTPUT POWER TEST DATA

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Conducted RF Output Power Test Data

The following test configurations were measured for model RDH71CW:

The conducted RF output power was measured on the BlackBerry® smartphone using the Communication Tester, Rohde & Schwarz, model CMU 200. The low, middle and high channels were measured at maximum output power. The insertion loss of the coaxial cable from the CMU 200 to the BlackBerry® smartphone was compensated for in the measurements.

Peak nominal output power is 32.5 dBm \pm 0.5 dB for GSM850 and 30.5 dBm \pm 0.5 dB for PCS.

Peak nominal output power is 29.5 dBm \pm 0.5 dB for GSM850 EDGE Mode (2-timeslot uplink) and 28.0 dBm \pm 0.5 dB for PCS EDGE Mode (2-timeslot uplink).


Date of Test: Jan 17, 2011

The environmental conditions were: Temperature: 23 °C
Humidity: 30 %

The measurements were performed by Daoud Attayi

Channel	Frequency (MHz)	Maximum Output Power (dBm)	Maximum Output Power (Watts)	Channel	Frequency (MHz)	Maximum Output Power (dBm)	Maximum Output Power (Watts)
<u>GSM850</u>				<u>GSM850 Edge</u>			
128	824.20	32.7	1.86	128	824.20	30.0	1.00
189	837.60	32.7	1.86	189	837.60	30.0	1.00
251	848.80	32.6	1.82	251	848.80	29.8	0.95
<u>PCS</u>				<u>PCS Edge</u>			
512	1850.2	30.7	1.17	512	1850.2	28.2	0.66
661	1880.0	30.6	1.15	661	1880.0	28.1	0.65
810	1909.8	30.6	1.15	810	1909.8	28.1	0.65

APPENDIX 2B – CDMA CONDUCTED RF OUTPUT POWER TEST DATA

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Conducted RF Output Power Test Data

The following test configurations were measured for model RDH71CW:

The measurements were performed by Daoud Attayi.

The conducted RF output power was measured using the CDMA base station simulator. Low, middle and high channels were measured at maximum radio output power at different service options and modes.

Peak nominal output power is 24.0 dBm \pm 0.5 dB for Cellular and 23.50 dBm \pm 0.5 dB for PCS.

Date of Test: Jan 17, 2011

The environmental test conditions were: Temperature 23 °C
 Relative Humidity 30 %

Test Results

Band	Channel	1x EvDO (153.6kbps)		CDMA2000 RC	SO2 Loopback		SO55 Loopback		TDSO SO32	
		(dBm)	(Watts)		(dBm)	(Watts)	(dBm)	(Watts)	(dBm)	(Watts)
CDMA 800	1013	24.2	0.26	RC1	24.3	0.27	24.4	0.28	-	-
				RC3	24.2	0.26	24.2	0.26	24.2	0.26
	384	24.1	0.26	RC1	24.2	0.26	24.3	0.27	-	-
				RC3	24.1	0.26	24.1	0.26	24.1	0.26
	777	23.5	0.22	RC1	24.2	0.26	24.1	0.26	-	-
				RC3	24.0	0.25	24.0	0.25	24.2	0.26
Band	Channel	1x EvDO (153.6kbps)		CDMA2000 RC	SO2 Loopback		SO55 Loopback		TDSO SO32	
		(dBm)	(Watts)		(dBm)	(Watts)	(dBm)	(Watts)	(dBm)	(Watts)
CDMA 1900	25	23.8	0.24	RC1	23.7	0.23	23.5	0.25	-	-
				RC3	23.6	0.23	23.6	0.25	23.5	0.22
	600	23.8	0.24	RC1	23.9	0.25	23.8	0.25	-	-
				RC3	23.7	0.23	23.7	0.23	23.7	0.23
	1175	23.8	0.24	RC1	23.7	0.23	23.6	0.23	-	-
				RC3	23.5	0.22	23.6	0.23	23.6	0.23


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APPENDIX 2C – UMTS CONDUCTED RF OUTPUT POWER TEST DATA

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Conducted RF Output Power Test Data

The following test configurations were measured for model RDQ71UW:

The measurements were performed by Daoud Attayi.

The conducted RF output power was measured using the CDMA base station simulator. Low, middle and high channels were measured at maximum radio output power at different service options and modes.

Peak nominal output power is 24.0 dBm \pm 0.5 dB for Band 4.


Date of Test: Feb 14, 2011

The environmental test conditions were: Temperature 23 °C
 Relative Humidity 30 %

Test Results

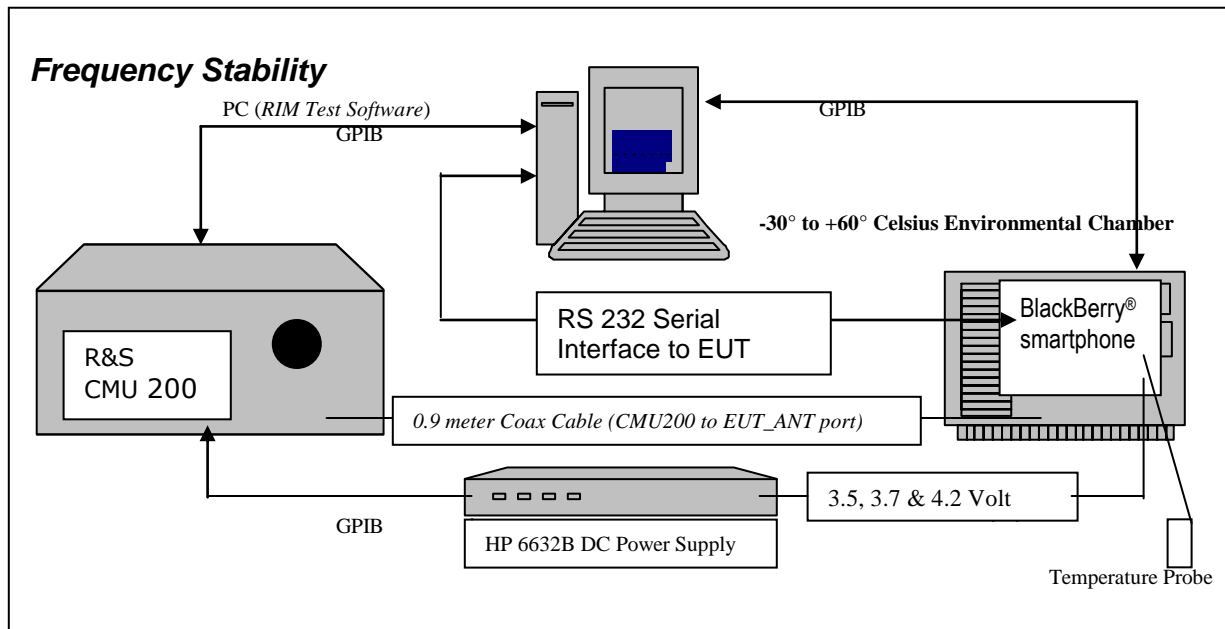
	Band	FDD IV (1700)		
		1312	1312	1312
		1712.4	1712.4	1712.4
Mode	Subtest	Max burst averaged conducted power (dBm)		
Rel99	12.2 kbps RMC	23.73	23.73	23.73
Rel99	12.2 kbps AMR, SRB 3.4 kbps	23.78	23.78	23.78
Rel5 HSDPA	1	23.78	23.78	23.78
Rel5 HSDPA	2	23.84	23.84	23.84
Rel5 HSDPA	3	23.83	23.83	23.83
Rel5 HSDPA	4	23.91	23.91	23.91
Rel6 HSUPA	1	23.84	23.84	23.84
Rel6 HSUPA	2	24.91	24.91	24.91
Rel6 HSUPA	3	24.03	24.03	24.03
Rel6 HSUPA	4	24.06	24.06	24.06
Rel6 HSUPA	5	24.04	24.04	24.04

APPENDIX 3A – GSM FREQUENCY STABILITY TEST DATA

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM Frequency Stability Test Data

The following test configurations were measured for model RDH71CW:



The measurements were performed by Maurice Battler.

CFR 47 Chapter 1 - Federal Communications Commission Rules

Part 2 Required Measurements

2.995 Frequency Stability - Procedures

(a,b) Frequency Stability - Temperature Variation


(d) Frequency Stability - Voltage Variation

24.235/22.917 Frequency Stability.

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

The EUT meets the requirements as stated in CFR 47 chapter 1, Section 24.235, CFR 47 chapter 1, Section 22.917 RSS-132, 4.3 Frequency Stability, and RSS-133, 6.3 Frequency Stability.

Frequency Stability measurement devices were configured as presented in the block diagram recording frequency, power, data, temperatures, and stepped voltages controlled via a GPIB interface linked to the Environmental chamber, a DC power supply, and the Communications Test Set. A 0.9-metre coax cable was calibrated to characterize the insertion loss for the transmitted frequencies between the RF input/output of the CMU 200 and the EUT antenna port.

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Calibration for the Cable Loss was performed in the RF Laboratory using the Agilent power meter and Agilent Signal Generator.

Procedure:


The EUT was placed in the Temperature chamber and connected to CMU 200 outside as shown in the figure above. Dry air was pumped inside the temperature chamber to maintain a backpressure during the test. The EUT was kept in the off condition at all times except when the measurements were to be made.

The chamber was switched on and the temperature was set to -30°C. After the chamber stabilized at -30 °C there was a soak period of one hour to alleviate moisture in the chamber, the EUT voltage was enabled. The system software recorded the frequency, power, and associated measurements.

A Computer system controlled the automated software. This application was given the command of activating all machines intrinsic to the temperature and voltage tests controlling the CMU 200 via the GPIB Bus. The Environmental Chamber was instructed through an RS-232 serial line. The EUT dialogue was passed through a serial connection.

The EUT repetitively transmitted 100 bursts for each set of programmed parameters recording temperature, voltage settings, and systematically selected frequencies. The power supply was cycled from minimum voltage 3.6 volts, to 3.7 volts to 4.2 volts maximum voltage. The frequency error was measured at a maximum output power and recorded by the automated system test software.

The EUT output power and frequency was measured at 3.6 volts, 3.7 volts and 4.2 volts. The transmit frequency was varied in 3 steps consisting of 824.2, 836.4, and 848.8 MHz for the GSM850 band, 1850.2, 1880.0 and 1909.8 MHz for the PCS1900 band. This frequency was recorded in MHz and deviation from nominal, in Parts Per Million. After the initial one-hour soak at the beginning of the tests, a period of thirty minutes soak was initialized between each ascending temperature step, before proceeding to the next measurement test cycle.

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW


PROCEDURE:

The test system software for commencing the Frequency Stability Tests carried through the following cycle.

1. Switch on the HP 6632B power supply; CMU 200 Communications test Set, and Environmental Chamber.
2. Start test program
3. Set the Temperature to –30°C and maintain a period of one- hour soak time, with the EUT supply voltage disabled.
4. Set power supply voltage to 3.6 volts.
5. Set up CMU 200 Radio Communication Tester.
6. Command the CMU 200 to switch to the low channel.
7. Enable the voltage to the EUT, and connect a link to the CMU 200 test set.
8. EUT is commanded to Transmit 100 Bursts.
9. Software logs the following data from the CMU 200, power supply and temperature chamber: Traffic Channel Number, Traffic Channel Frequency, Power Level, Chamber Temperature, Supply Voltage, Power and Frequency Error.
10. The CMU 200 commands the EUT to change frequency to the middle channel and high channel and repeats steps 7 to 9.
11. Repeat steps 5 to 10 changing the supply voltage to 3.7 Volts
12. Increase temperature by 10°C and soak for 1/2 hour.
13. Repeat steps 4 - 12 for temperatures –30°C to 60°C.
14. Repeat steps 5 to 10 changing the supply voltage to 4.2 volts

Procedure 5 to 10 was repeated at room temperature (20°C) with the power supply voltage set to 3.6, 3.7 and 4.2 volts.

The maximum frequency error in the GSM850 band measured was **0.0367 PPM**.
The maximum frequency error in the PCS1900 band measured was **0.0548 PPM**.


	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM850 Channel results: channels 128, 189 and 251 @ 20°C maximum transmitted power

Traffic Channel Number	GSM850 Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
128	824.20	3.6	20	11.11	0.0135
189	836.40	3.6	20	11.49	0.0137
251	848.60	3.6	20	-4.71	-0.0055

Traffic Channel Number	GSM850 Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
128	824.20	3.7	20	4.26	0.0052
189	836.40	3.7	20	11.82	0.0141
251	848.60	3.7	20	9.04	0.0107

Traffic Channel Number	GSM850 Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
128	824.20	4.2	20	-5.36	-0.0065
189	836.40	4.2	20	-5.36	-0.0064
251	848.60	4.2	20	3.81	0.0045


	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM850 Results: channel 128 @ maximum transmitted power

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
128	824.20	3.6	-30	-12.91	-0.0157
128	824.20	3.6	-20	-7.62	-0.0092
128	824.20	3.6	-10	10.91	0.0132
128	824.20	3.6	0	28.35	0.0344
128	824.20	3.6	10	24.09	0.0292
128	824.20	3.6	20	11.11	0.0135
128	824.20	3.6	30	-15.30	-0.0186
128	824.20	3.6	40	5.42	0.0066
128	824.20	3.6	50	-4.78	-0.0058
128	824.20	3.6	60	-13.30	-0.0161

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
128	824.20	3.7	-30	-4.00	-0.0049
128	824.20	3.7	-20	-8.46	-0.0103
128	824.20	3.7	-10	10.27	0.0125
128	824.20	3.7	0	30.28	0.0367
128	824.20	3.7	10	25.57	0.0310
128	824.20	3.7	20	4.26	0.0052
128	824.20	3.7	30	-10.85	-0.0132
128	824.20	3.7	40	-8.20	-0.0099
128	824.20	3.7	50	-8.65	-0.0105
128	824.20	3.7	60	-10.65	-0.0129

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
128	824.20	4.2	-30	12.79	0.0155
128	824.20	4.2	-20	7.04	0.0085
128	824.20	4.2	-10	7.17	0.0087
128	824.20	4.2	0	26.60	0.0323
128	824.20	4.2	10	20.53	0.0249
128	824.20	4.2	20	-5.36	-0.0065
128	824.20	4.2	30	-12.46	-0.0151
128	824.20	4.2	40	-14.98	-0.0182
128	824.20	4.2	50	-12.07	-0.0146
128	824.20	4.2	60	-4.20	-0.0051


	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM850 Results: channel 189 @ maximum transmitted power

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
189	836.40	3.6	-30	-6.91	-0.0083
189	836.40	3.6	-20	-12.20	-0.0146
189	836.40	3.6	-10	8.98	0.0107
189	836.40	3.6	0	27.31	0.0327
189	836.40	3.6	10	26.35	0.0315
189	836.40	3.6	20	11.49	0.0137
189	836.40	3.6	30	-12.85	-0.0154
189	836.40	3.6	40	-13.17	-0.0157
189	836.40	3.6	50	-10.53	-0.0126
189	836.40	3.6	60	-15.24	-0.0182

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
189	836.40	3.7	-30	-10.01	-0.0120
189	836.40	3.7	-20	-8.27	-0.0099
189	836.40	3.7	-10	11.69	0.0140
189	836.40	3.7	0	27.57	0.0330
189	836.40	3.7	10	23.96	0.0286
189	836.40	3.7	20	11.82	0.0141
189	836.40	3.7	30	-4.20	-0.0050
189	836.40	3.7	40	-19.63	-0.0235
189	836.40	3.7	50	-13.30	-0.0159
189	836.40	3.7	60	-13.95	-0.0167

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
189	836.40	4.2	-30	-5.29	-0.0063
189	836.40	4.2	-20	10.59	0.0127
189	836.40	4.2	-10	8.98	0.0107
189	836.40	4.2	0	27.31	0.0327
189	836.40	4.2	10	23.83	0.0285
189	836.40	4.2	20	-5.36	-0.0064
189	836.40	4.2	30	-13.30	-0.0159
189	836.40	4.2	40	-14.27	-0.0171
189	836.40	4.2	50	-10.78	-0.0129
189	836.40	4.2	60	-12.33	-0.0147


	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

GSM850 Results: channel 251 @ maximum transmitted power

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
251	848.8	3.6	-30	-11.82	-0.0139
251	848.8	3.6	-20	-9.56	-0.0113
251	848.8	3.6	-10	6.46	0.0076
251	848.8	3.6	0	25.51	0.0301
251	848.8	3.6	10	27.31	0.0322
251	848.8	3.6	20	-4.71	-0.0055
251	848.8	3.6	30	-7.23	-0.0085
251	848.8	3.6	40	-9.10	-0.0107
251	848.8	3.6	50	-14.79	-0.0174
251	848.8	3.6	60	-15.88	-0.0187

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
251	848.8	3.7	-30	-8.85	-0.0104
251	848.8	3.7	-20	6.01	0.0071
251	848.8	3.7	-10	7.04	0.0083
251	848.8	3.7	0	28.86	0.0340
251	848.8	3.7	10	28.93	0.0341
251	848.8	3.7	20	9.04	0.0107
251	848.8	3.7	30	-11.88	-0.0140
251	848.8	3.7	40	-11.04	-0.0130
251	848.8	3.7	50	-6.20	-0.0073
251	848.8	3.7	60	-16.53	-0.0195

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
251	848.8	4.2	-30	5.68	0.0067
251	848.8	4.2	-20	6.01	0.0071
251	848.8	4.2	-10	9.56	0.0113
251	848.8	4.2	0	28.67	0.0338
251	848.8	4.2	10	22.79	0.0268
251	848.8	4.2	20	3.81	0.0045
251	848.8	4.2	30	-12.33	-0.0145
251	848.8	4.2	40	-7.17	-0.0084
251	848.8	4.2	50	-5.94	-0.0070
251	848.8	4.2	60	-9.36	-0.0110


	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

PCS Channel results: channels 512, 661, & 810 @ 20°C maximum transmitted power

Traffic Channel Number	PCS Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
512	1850.20	3.6	20	58.57	0.0317
661	1880.00	3.6	20	60.18	0.0320
810	1909.80	3.6	20	46.10	0.0241

Traffic Channel Number	PCS Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
512	1850.20	3.7	20	49.40	0.0267
661	1880.00	3.7	20	52.04	0.0277
810	1909.80	3.7	20	58.05	0.0304

Traffic Channel Number	PCS Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
512	1850.20	4.2	20	30.93	0.0167
661	1880.00	4.2	20	40.62	0.0216
810	1909.80	4.2	20	37.90	0.0198


	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

PCS1900 Results: channel 512 @ maximum transmitted power

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
512	1850.20	3.6	-30	12.46	0.0067
512	1850.20	3.6	-20	25.57	0.0138
512	1850.20	3.6	-10	50.75	0.0274
512	1850.20	3.6	0	101.44	0.0548
512	1850.20	3.6	10	100.86	0.0545
512	1850.20	3.6	20	58.57	0.0317
512	1850.20	3.6	30	46.69	0.0252
512	1850.20	3.6	40	40.81	0.0221
512	1850.20	3.6	50	28.15	0.0152
512	1850.20	3.6	60	24.47	0.0132

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
512	1850.20	3.7	-30	28.02	0.0151
512	1850.20	3.7	-20	32.80	0.0177
512	1850.20	3.7	-10	42.04	0.0227
512	1850.20	3.7	0	81.75	0.0442
512	1850.20	3.7	10	84.07	0.0454
512	1850.20	3.7	20	49.40	0.0267
512	1850.20	3.7	30	36.42	0.0197
512	1850.20	3.7	40	25.25	0.0136
512	1850.20	3.7	50	26.15	0.0141
512	1850.20	3.7	60	24.54	0.0133

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
512	1850.20	4.2	-30	43.13	0.0233
512	1850.20	4.2	-20	38.48	0.0208
512	1850.20	4.2	-10	39.07	0.0211
512	1850.20	4.2	0	74.97	0.0405
512	1850.20	4.2	10	67.99	0.0367
512	1850.20	4.2	20	30.93	0.0167
512	1850.20	4.2	30	20.79	0.0112
512	1850.20	4.2	40	15.95	0.0086
512	1850.20	4.2	50	21.89	0.0118
512	1850.20	4.2	60	27.44	0.0148


	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

PCS1900 Results: channel 661 @ maximum transmitted power

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
661	1880.00	3.6	-30	24.99	0.0133
661	1880.00	3.6	-20	37.45	0.0199
661	1880.00	3.6	-10	47.72	0.0254
661	1880.00	3.6	0	89.75	0.0477
661	1880.00	3.6	10	77.16	0.0410
661	1880.00	3.6	20	60.18	0.0320
661	1880.00	3.6	30	35.84	0.0191
661	1880.00	3.6	40	30.09	0.0160
661	1880.00	3.6	50	28.93	0.0154
661	1880.00	3.6	60	30.35	0.0161

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
661	1880.00	3.7	-30	32.87	0.0175
661	1880.00	3.7	-20	32.16	0.0171
661	1880.00	3.7	-10	46.23	0.0246
661	1880.00	3.7	0	86.91	0.0462
661	1880.00	3.7	10	84.33	0.0449
661	1880.00	3.7	20	52.04	0.0277
661	1880.00	3.7	30	27.06	0.0144
661	1880.00	3.7	40	32.03	0.0170
661	1880.00	3.7	50	28.22	0.0150
661	1880.00	3.7	60	26.99	0.0144

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
661	1880.00	4.2	-30	40.23	0.0214
661	1880.00	4.2	-20	40.87	0.0217
661	1880.00	4.2	-10	47.72	0.0254
661	1880.00	4.2	0	84.72	0.0451
661	1880.00	4.2	10	76.71	0.0408
661	1880.00	4.2	20	40.62	0.0216
661	1880.00	4.2	30	23.18	0.0123
661	1880.00	4.2	40	19.31	0.0103
661	1880.00	4.2	50	27.25	0.0145
661	1880.00	4.2	60	32.61	0.0173

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW


PCS1900 Results: channel 810 @ maximum transmitted power

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	20BPPM
810	1909.80	3.6	-30	24.99	0.0131
810	1909.80	3.6	-20	31.64	0.0166
810	1909.80	3.6	-10	45.46	0.0238
810	1909.80	3.6	0	89.30	0.0468
810	1909.80	3.6	10	85.23	0.0446
810	1909.80	3.6	20	46.10	0.0241
810	1909.80	3.6	30	36.48	0.0191
810	1909.80	3.6	40	33.38	0.0175
810	1909.80	3.6	50	28.15	0.0147
810	1909.80	3.6	60	24.73	0.0129

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
810	1909.80	3.7	-30	18.40	0.0096
810	1909.80	3.7	-20	31.12	0.0163
810	1909.80	3.7	-10	45.98	0.0241
810	1909.80	3.7	0	82.46	0.0432
810	1909.80	3.7	10	82.52	0.0432
810	1909.80	3.7	20	58.05	0.0304
810	1909.80	3.7	30	26.60	0.0139
810	1909.80	3.7	40	28.09	0.0147
810	1909.80	3.7	50	31.38	0.0164
810	1909.80	3.7	60	27.38	0.0143

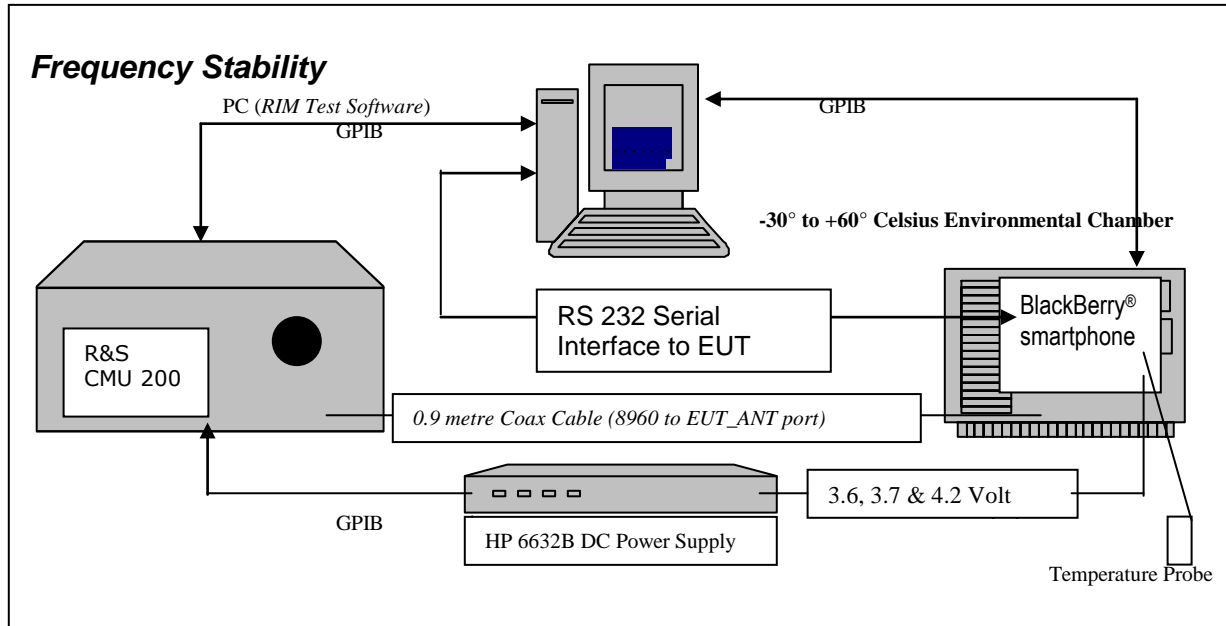
Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
810	1909.80	4.2	-30	31.25	0.0164
810	1909.80	4.2	-20	36.42	0.0191
810	1909.80	4.2	-10	43.07	0.0226
810	1909.80	4.2	0	74.39	0.0390
810	1909.80	4.2	10	74.84	0.0392
810	1909.80	4.2	20	37.90	0.0198
810	1909.80	4.2	30	22.34	0.0117
810	1909.80	4.2	40	24.02	0.0126
810	1909.80	4.2	50	26.86	0.0141
810	1909.80	4.2	60	32.67	0.0171

APPENDIX 3B – CDMA FREQUENCY STABILITY TEST DATA

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

CDMA Frequency Stability Test Data

The following test configurations were measured for model RDH71CW:



CFR 47 Chapter 1 - Federal Communications Commission Rules

Part 2 Required Measurements

2.1055 Frequency Stability - Procedures

- (a,b) Frequency Stability - Temperature Variation
- (d) Frequency Stability - Voltage Variation


22.917/24.235 Frequency Stability.

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

The RCU21CW BlackBerry® smartphone, (referred as EUT herein and after) transmitted frequencies are less than 0.1 ppm of the received frequency from the Agilent 8960 CDMA Base Station Simulator

The EUT meets the requirements as stated in CFR 47 chapter 1, Section 24.235, RSS-133, CFR 47 chapter 1, Section 22.917 and RSS-132 Frequency Stability.

Frequency Stability measurement devices were configured as presented in the block diagram recording frequency, power, data, temperatures, and stepped voltages controlled via a GPIB interface linked to the Environmental chamber, a DC power supply, and the Communications Test Set. A 0.9-metre coax cable was calibrated to characterize the insertion loss for the transmitted frequencies between the RF input/output of the base station simulator and the EUT antenna port; located inside the environmental chamber.

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Calibration for the Cable Loss was performed in the RF Laboratory using the Giga-tronics power metre and Agilent Signal Generator. The cable assembly from the RF input to the RF output was measured at the following Frequencies:

PCS Frequency (MHz)	Cable loss (dB)	Cellular Frequency (MHz)	Cable loss (dB)
1851.20	1.10	824.70	0.50
1880.00	1.10	836.52	0.50
1908.75	1.10	848.31	0.50

Procedure:


The EUT was placed in the Temperature chamber and connected to the Agilent 8960 outside as shown in the figure above. Dry air was pumped inside the temperature chamber to maintain a backpressure during the test. The EUT was kept in the off condition at all times except when the measurements were to be made.

The chamber was switched on and the temperature was set to -30°C. After the chamber stabilized at -30 °C there was a soak period of one hour to alleviate moisture in the chamber, the EUT voltage was enabled. The system software recorded the frequency, power, and associated measurements.

A Computer system controlled the automated software. This application was given the command of activating all machines intrinsic to the temperature and voltage tests controlling the base station simulator via the GPIB Bus. The Environmental Chamber was instructed through an RS-232 serial line. The EUT dialogue was passed through a serial connection.

The EUT repetitively transmitted 100 bursts for each set of programmed parameters recording temperature, voltage settings, and systematically selected frequencies. The power supply was cycled from minimum voltage 3.6 volts, to 3.7 volts nominal voltage to 4.2 volts maximum voltage. The frequency error was measured at a maximum output power and recorded by the automated system test software.

The EUT output power and frequency was measured at 3.6 volts, 3.7 volts and 4.2 volts. The transmit frequency was varied in 3 steps consisting of 824.70, 836.52, and 848.31 MHz for the cellular band and 1851.20, 1880.00 and 1908.75 MHz for the PCS band. This frequency was recorded in MHz and deviation from nominal, in Parts per Million. After the initial one-hour soak at the beginning of the tests, a period of thirty minutes soak was initialized between each ascending temperature step, before proceeding to the next measurement test cycle.

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW


PROCEDURE:

The test system software for commencing the Frequency Stability Tests carried through the following cycle.

1. Switch on the HP 6632B power supply; CMU 200 Communications test Set, and Environmental Chamber.
2. Start test program
3. Set the Temperature to –30°C and maintain a period of one- hour soak time, with the EUT supply voltage disabled.
4. Set power supply voltage to 3.6 volts.
5. Set up CMU 200 Radio Communication Tester.
6. Command the CMU 200 to switch to the low channel.
7. Enable the voltage to the EUT, and connect a link to the CMU 200 test set.
8. EUT is commanded to Transmit 100 Bursts.
9. Software logs the following data from the CMU 200, power supply and temperature chamber: Traffic Channel Number, Traffic Channel Frequency, Power Level, Chamber Temperature, Supply Voltage, Power and Frequency Error.
10. The CMU 200 commands the EUT to change frequency to the middle channel and high channel and repeats steps 7 to 9.
11. Repeat steps 5 to 10 changing the supply voltage to 3.7 Volts
12. Increase temperature by 10°C and soak for 1/2 hour.
13. Repeat steps 4 - 12 for temperatures –30°C to 60°C.
14. Repeat steps 5 to 10 changing the supply voltage to 4.2 volts

Procedure 5 to 10 was repeated at room temperature (20°C) with the power supply voltage set to 3.6, 3.7 and 4.2 volts

The maximum frequency error in the CDMA Cellular band measured was **-0.0546 PPM**.
The maximum frequency error in the CDMA PCS band measured was **-0.0320 PPM**.


	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Cellular Channel results: channels 1013, 384 and 777 @ 20°C maximum transmitted power

Traffic Channel Number	Cellular Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1013	824.700	3.6	20	35	0.0424
384	836.520	3.6	20	30	0.0359
777	848.310	3.6	20	11	0.0130

Traffic Channel Number	Cellular Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1013	824.700	3.7	20	30	0.0364
384	836.520	3.7	20	-29	-0.0347
777	848.310	3.7	20	-13	-0.0153

Traffic Channel Number	Cellular Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1013	824.700	4.2	20	35	0.0424
384	836.520	4.2	20	-33	-0.0394
777	848.310	4.2	20	16	0.0189


	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Cellular Results: channel 1013 @ maximum transmitted power

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1013	824.700	3.6	-30	19	0.0230
1013	824.700	3.6	-20	30	0.0364
1013	824.700	3.6	-10	31	0.0376
1013	824.700	3.6	0	-33	0.0121
1013	824.700	3.6	10	33	0.0400
1013	824.700	3.6	20	35	0.0424
1013	824.700	3.6	30	-32	-0.0388
1013	824.700	3.6	40	29	0.0352
1013	824.700	3.6	50	8	0.0097
1013	824.700	3.6	60	10	0.0121

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1013	824.700	3.7	-30	30	0.0364
1013	824.700	3.7	-20	19	0.0230
1013	824.700	3.7	-10	-26	-0.0315
1013	824.700	3.7	0	-42	-0.0509
1013	824.700	3.7	10	33	0.0400
1013	824.700	3.7	20	30	0.0364
1013	824.700	3.7	30	-33	-0.0400
1013	824.700	3.7	40	22	0.0267
1013	824.700	3.7	50	10	0.0121
1013	824.700	3.7	60	12	0.0146

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1013	824.700	4.2	-30	16	0.0194
1013	824.700	4.2	-20	19	0.0230
1013	824.700	4.2	-10	19	0.0230
1013	824.700	4.2	0	-45	-0.0546
1013	824.700	4.2	10	36	0.0437
1013	824.700	4.2	20	35	0.0424
1013	824.700	4.2	30	31	0.0376
1013	824.700	4.2	40	31	0.0376
1013	824.700	4.2	50	-7	-0.0085
1013	824.700	4.2	60	-11	-0.0133


	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Cellular Results: channel 384 @ maximum transmitted power

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
384	836.520	3.6	-30	22	0.0263
384	836.520	3.6	-20	-32	-0.0383
384	836.520	3.6	-10	-21	-0.0251
384	836.520	3.6	0	-22	-0.0263
384	836.520	3.6	10	22	0.0263
384	836.520	3.6	20	30	0.0359
384	836.520	3.6	30	13	0.0155
384	836.520	3.6	40	-31	-0.0371
384	836.520	3.6	50	14	0.0167
384	836.520	3.6	60	-22	-0.0263

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
384	836.520	3.7	-30	20	0.0239
384	836.520	3.7	-20	32	0.0383
384	836.520	3.7	-10	-20	-0.0239
384	836.520	3.7	0	-37	-0.0442
384	836.520	3.7	10	-31	-0.0371
384	836.520	3.7	20	-29	-0.0347
384	836.520	3.7	30	13	0.0155
384	836.520	3.7	40	12	0.0143
384	836.520	3.7	50	-18	-0.0215
384	836.520	3.7	60	-24	-0.0287

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
384	836.520	4.2	-30	-31	-0.0371
384	836.520	4.2	-20	33	0.0394
384	836.520	4.2	-10	-18	-0.0215
384	836.520	4.2	0	34	0.0406
384	836.520	4.2	10	-34	-0.0406
384	836.520	4.2	20	-33	-0.0394
384	836.520	4.2	30	11	0.0131
384	836.520	4.2	40	-12	-0.0143
384	836.520	4.2	50	9	0.0108
384	836.520	4.2	60	11	0.0131


	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Cellular Results: channel 777 @ maximum transmitted power

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
777	848.310	3.6	-30	-29	-0.0342
777	848.310	3.6	-20	24	0.0283
777	848.310	3.6	-10	27	0.0318
777	848.310	3.6	0	31	-0.0153
777	848.310	3.6	10	14	0.0165
777	848.310	3.6	20	11	0.0130
777	848.310	3.6	30	7	0.0083
777	848.310	3.6	40	-11	-0.0130
777	848.310	3.6	50	-18	-0.0212
777	848.310	3.6	60	-13	-0.0153

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
777	848.310	3.7	-30	15	0.0177
777	848.310	3.7	-20	14	0.0165
777	848.310	3.7	-10	14	0.0165
777	848.310	3.7	0	23	0.0271
777	848.310	3.7	10	13	0.0153
777	848.310	3.7	20	-13	-0.0153
777	848.310	3.7	30	8	0.0094
777	848.310	3.7	40	16	0.0189
777	848.310	3.7	50	-28	-0.0330
777	848.310	3.7	60	-13	-0.0153

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
777	848.310	4.2	-30	-32	-0.0377
777	848.310	4.2	-20	10	0.0118
777	848.310	4.2	-10	31	0.0365
777	848.310	4.2	0	22	0.0259
777	848.310	4.2	10	13	0.0153
777	848.310	4.2	20	16	0.0189
777	848.310	4.2	30	10	0.0118
777	848.310	4.2	40	-27	-0.0318
777	848.310	4.2	50	-18	-0.0212
777	848.310	4.2	60	-12	-0.0141


	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

PCS Channel results: channels 25, 600, & 1175 @ 20°C maximum transmitted power

Traffic Channel Number	PCS Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
25	1851.20	3.6	20	-18	-0.0097
600	1880.00	3.6	20	9	0.0048
1175	1908.75	3.6	20	18	0.0094

Traffic Channel Number	PCS Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
25	1851.20	3.7	20	-15	-0.0081
600	1880.00	3.7	20	9	0.0048
1175	1908.75	3.7	20	15	0.0079

Traffic Channel Number	PCS Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
25	1851.20	4.2	20	-17	-0.0092
600	1880.00	4.2	20	36	0.0191
1175	1908.75	4.2	20	9	0.0047


	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

PCS Results: channel 9262 @ maximum transmitted power

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
25	1851.20	3.6	-30	29	0.0157
25	1851.20	3.6	-20	14	0.0076
25	1851.20	3.6	-10	-17	-0.0092
25	1851.20	3.6	0	-13	0.0059
25	1851.20	3.6	10	-11	-0.0059
25	1851.20	3.6	20	-18	-0.0097
25	1851.20	3.6	30	-49	-0.0265
25	1851.20	3.6	40	9	0.0049
25	1851.20	3.6	50	9	0.0049
25	1851.20	3.6	60	11	0.0059

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
25	1851.20	3.7	-30	19	0.0103
25	1851.20	3.7	-20	-15	-0.0081
25	1851.20	3.7	-10	-15	-0.0081
25	1851.20	3.7	0	-17	-0.0092
25	1851.20	3.7	10	20	0.0108
25	1851.20	3.7	20	-15	-0.0081
25	1851.20	3.7	30	8	0.0043
25	1851.20	3.7	40	18	0.0097
25	1851.20	3.7	50	35	0.0189
25	1851.20	3.7	60	16	0.0086

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
25	1851.20	4.2	-30	-23	-0.0124
25	1851.20	4.2	-20	-45	-0.0243
25	1851.20	4.2	-10	-15	-0.0081
25	1851.20	4.2	0	-19	-0.0103
25	1851.20	4.2	10	-12	-0.0065
25	1851.20	4.2	20	-17	-0.0092
25	1851.20	4.2	30	17	0.0092
25	1851.20	4.2	40	25	0.0135
25	1851.20	4.2	50	12	0.0065
25	1851.20	4.2	60	12	0.0065


	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

PCS Results: channel 9400 @ maximum transmitted power

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
600	1880.00	3.6	-30	43	0.0229
600	1880.00	3.6	-20	40	0.0213
600	1880.00	3.6	-10	45	0.0239
600	1880.00	3.6	0	10	-0.0293
600	1880.00	3.6	10	46	0.0245
600	1880.00	3.6	20	9	0.0048
600	1880.00	3.6	30	9	0.0048
600	1880.00	3.6	40	-6	-0.0032
600	1880.00	3.6	50	16	0.0085
600	1880.00	3.6	60	-55	-0.0293

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
600	1880.00	3.7	-30	18	0.0096
600	1880.00	3.7	-20	-41	-0.0218
600	1880.00	3.7	-10	14	0.0074
600	1880.00	3.7	0	41	0.0218
600	1880.00	3.7	10	19	0.0101
600	1880.00	3.7	20	9	0.0048
600	1880.00	3.7	30	20	0.0106
600	1880.00	3.7	40	33	0.0176
600	1880.00	3.7	50	14	0.0074
600	1880.00	3.7	60	-20	-0.0106

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
600	1880.00	4.2	-30	12	0.0064
600	1880.00	4.2	-20	-26	-0.0138
600	1880.00	4.2	-10	12	0.0064
600	1880.00	4.2	0	-49	-0.0261
600	1880.00	4.2	10	12	0.0064
600	1880.00	4.2	20	36	0.0191
600	1880.00	4.2	30	9	0.0048
600	1880.00	4.2	40	-10	-0.0053
600	1880.00	4.2	50	-8	-0.0043
600	1880.00	4.2	60	20	0.0106

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW


PCS Results: channel 9538 @ maximum transmitted power

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1175	1908.75	3.6	-30	-61	-0.0320
1175	1908.75	3.6	-20	17	0.0089
1175	1908.75	3.6	-10	-61	-0.0320
1175	1908.75	3.6	0	20	-0.0105
1175	1908.75	3.6	10	11	0.0058
1175	1908.75	3.6	20	18	0.0094
1175	1908.75	3.6	30	-33	-0.0173
1175	1908.75	3.6	40	-15	-0.0079
1175	1908.75	3.6	50	-21	-0.0110
1175	1908.75	3.6	60	-20	-0.0105

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1175	1908.75	3.7	-30	43	0.0225
1175	1908.75	3.7	-20	18	0.0094
1175	1908.75	3.7	-10	36	0.0189
1175	1908.75	3.7	0	34	0.0178
1175	1908.75	3.7	10	13	0.0068
1175	1908.75	3.7	20	15	0.0079
1175	1908.75	3.7	30	-14	-0.0073
1175	1908.75	3.7	40	-17	-0.0089
1175	1908.75	3.7	50	-18	-0.0094
1175	1908.75	3.7	60	27	0.0141

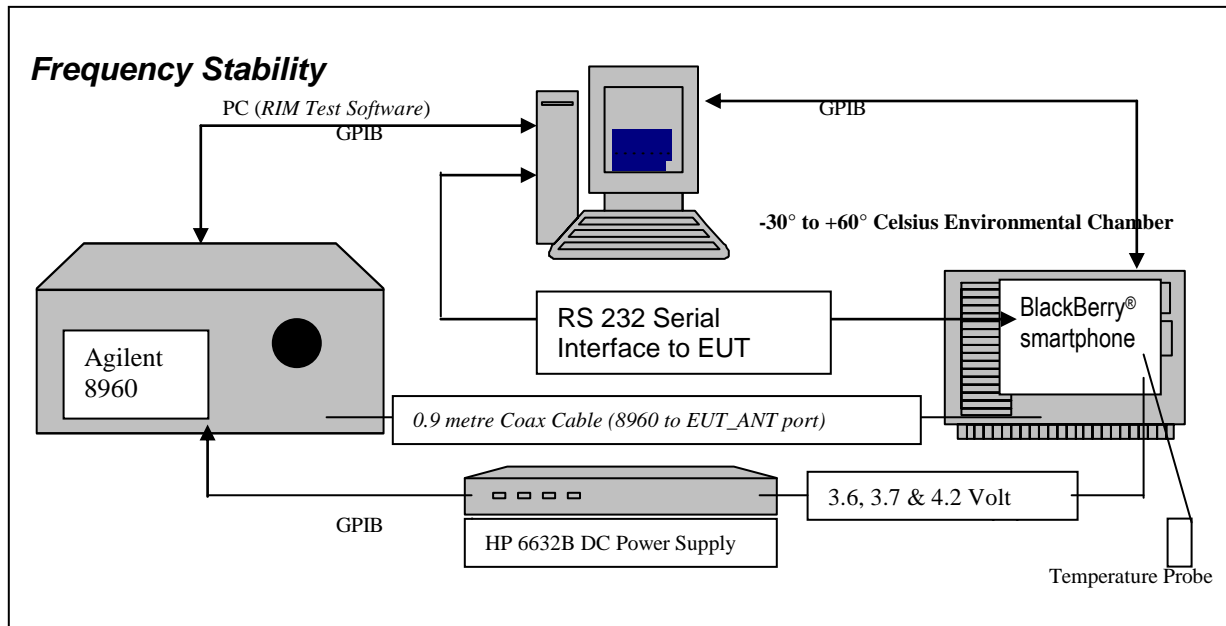
Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1175	1908.75	4.2	-30	16	0.0084
1175	1908.75	4.2	-20	19	0.0100
1175	1908.75	4.2	-10	-50	-0.0262
1175	1908.75	4.2	0	43	0.0225
1175	1908.75	4.2	10	13	0.0068
1175	1908.75	4.2	20	9	0.0047
1175	1908.75	4.2	30	-18	-0.0094
1175	1908.75	4.2	40	30	0.0157
1175	1908.75	4.2	50	-18	-0.0094
1175	1908.75	4.2	60	-22	-0.0115

APPENDIX 3C – UMTS FREQUENCY STABILITY TEST DATA

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

UMTS Frequency Stability Test Data

The following test configurations were measured for model RDQ71UW:



The following measurements were performed by Maurice Battler.

CFR 47 Chapter 1 - Federal Communications Commission Rules

Part 2 Required Measurements

2.1055 Frequency Stability - Procedures

(a,b) Frequency Stability - Temperature Variation


(d) Frequency Stability - Voltage Variation

24.235 *Frequency Stability.*

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

The EUT meets the requirements as stated in CFR 47 chapter 1, Section 27.54, CFR 47 and RSS-139, 6.3 Frequency Stability.

Frequency Stability measurement devices were configured as presented in the block diagram recording frequency, power, data, temperatures, and stepped voltages controlled via a GPIB interface linked to the Environmental chamber, a DC power supply, and the Communications Test Set. A 0.9-metre coax cable was calibrated to characterize the insertion loss for the transmitted frequencies between the RF input/output of the CMU 200 and the EUT antenna port.

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Procedure:

The EUT was placed in the Temperature chamber and connected to CMU 200 outside as shown in the figure above. Dry air was pumped inside the temperature chamber to maintain a backpressure during the test. The EUT was kept in the off condition at all times except when the following measurements were to be made.


The chamber was switched on and the temperature was set to -30°C. After the chamber stabilized at -30 °C there was a soak period of one hour to alleviate moisture in the chamber, the EUT voltage was enabled. The system software recorded the frequency, power, and associated measurements.

A Computer system controlled the automated software. This application was given the command of activating all machines intrinsic to the temperature and voltage tests controlling the CMU 200 via the GPIB Bus. The Environmental Chamber was instructed through an RS-232 serial line. The EUT dialogue was passed through a serial connection.

The EUT repetitively transmitted 100 bursts for each set of programmed parameters recording temperature, voltage settings, and systematically selected frequencies. The power supply was cycled from minimum voltage 3.6 volts, to 3.7 volts to 4.2 volts maximum voltage. The frequency error was measured at a maximum output power and recorded by the automated system test software.

The EUT output power and frequency was measured at 3.6 volts, 3.7 volts and 4.2 volts. The transmit frequency was varied in 3 steps consisting of 1852.4, 1880.0 and 1907.6 MHz for the UMTS band 2. This frequency was recorded in MHz and deviation from nominal, in Parts Per Million.

After the initial one-hour soak at the beginning of the tests, a period of thirty minutes soak was initialized between each ascending temperature step, before proceeding to the next measurement test cycle.

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW


PROCEDURE:

The test system software for commencing the Frequency Stability Tests carried through the following cycle.

15. Switch on the HP 6632B power supply; CMU 200 Communications test Set, and Environmental Chamber.
16. Start test program
17. Set the Temperature to –30°C and maintain a period of one- hour soak time, with the EUT supply voltage disabled.
18. Set power supply voltage to 3.6 volts.
19. Set up CMU 200 Radio Communication Tester.
20. Command the CMU 200 to switch to the low channel.
21. Enable the voltage to the EUT, and connect a link to the CMU 200 test set.
22. EUT is commanded to Transmit 100 Bursts.
23. Software logs the following data from the CMU 200, power supply and temperature chamber: Traffic Channel Number, Traffic Channel Frequency, Power Level, Chamber Temperature, Supply Voltage, Power and Frequency Error.
24. The CMU 200 commands the EUT to change frequency to the middle channel and high channel and repeats steps 7 to 9.
25. Repeat steps 5 to 10 changing the supply voltage to 3.7 Volts
26. Increase temperature by 10°C and soak for 1/2 hour.
27. Repeat steps 4 - 12 for temperatures –30°C to 60°C.
28. Repeat steps 5 to 10 changing the supply voltage to 4.2 volts

Procedure 5 to 10 was repeated at room temperature (20°C) with the power supply voltage set to 3.6, 3.7 and 4.2 volts

The maximum frequency error in the UMTS band 4 measured was **-0.0479 PPM**.


	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

UMTS Band 4 Channel results: channels 1312, 1412 and 1513 @ 20°C maximum transmitted power

Traffic Channel Number	UMTS band 4 Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1312	1712.4	3.6	20	25	0.0146
1412	1732.4	3.6	20	-32	-0.0185
1513	1752.6	3.6	20	-33	-0.0188

Traffic Channel Number	UMTS band 4 Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1312	1712.4	3.7	20	-35	-0.0204
1412	1732.4	3.7	20	-36	-0.0208
1513	1752.6	3.7	20	-32	-0.0205

Traffic Channel Number	UMTS band 4 Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1312	1712.4	4.2	20	-45	-0.0263
1412	1732.4	4.2	20	-30	-0.0173
1513	1752.6	4.2	20	-36	-0.0171

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

UMTS band 4 Results: channel 1312 @ maximum transmitted power

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1312	1712.4	3.6	-30	-37	-0.0216
1312	1712.4	3.6	-20	-45	-0.0263
1312	1712.4	3.6	-10	-54	-0.0315
1312	1712.4	3.6	0	-45	-0.0263
1312	1712.4	3.6	10	-37	-0.0216
1312	1712.4	3.6	20	25	0.0146
1312	1712.4	3.6	30	45	0.0263
1312	1712.4	3.6	40	53	0.0426
1312	1712.4	3.6	50	73	0.0426
1312	1712.4	3.6	60	59	0.0345

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1312	1712.4	3.7	-30	-40	-0.0234
1312	1712.4	3.7	-20	-36	-0.0210
1312	1712.4	3.7	-10	-48	-0.0280
1312	1712.4	3.7	0	-49	-0.0286
1312	1712.4	3.7	10	-32	-0.0187
1312	1712.4	3.7	20	-35	-0.0204
1312	1712.4	3.7	30	49	0.0280
1312	1712.4	3.7	40	48	0.0350
1312	1712.4	3.7	50	60	0.0350
1312	1712.4	3.7	60	63	0.0368

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1312	1712.4	4.2	-30	-30	-0.0175
1312	1712.4	4.2	-20	-36	-0.0210
1312	1712.4	4.2	-10	-44	-0.0257
1312	1712.4	4.2	0	-43	-0.0251
1312	1712.4	4.2	10	-34	-0.0199
1312	1712.4	4.2	20	-45	-0.0263
1312	1712.4	4.2	30	43	0.0251
1312	1712.4	4.2	40	46	0.0339
1312	1712.4	4.2	50	58	0.0339
1312	1712.4	4.2	60	62	0.0362

UMTS band 4 Results: channel 1412 @ maximum transmitted power

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Test Report No.
RTS-2605-1105-02B


Dates of Test
January 17 to Feb 10, April 12 and
18, 2011

FCC ID: L6ARDH70CW **IC:** 2503A-RDH70CW
FCC ID: L6ARDQ70UW **IC:** 2503A-RDQ70UW

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1412	1732.4	3.6	-30	-28	-0.0162
1412	1732.4	3.6	-20	-37	-0.0214
1412	1732.4	3.6	-10	-52	-0.0300
1412	1732.4	3.6	0	-24	-0.0139
1412	1732.4	3.6	10	-21	-0.0121
1412	1732.4	3.6	20	-32	-0.0185
1412	1732.4	3.6	30	-30	-0.0173
1412	1732.4	3.6	40	-32	-0.0231
1412	1732.4	3.6	50	-40	-0.0231
1412	1732.4	3.6	60	-39	-0.0225

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1412	1732.4	3.7	-30	-29	-0.0167
1412	1732.4	3.7	-20	-35	-0.0202
1412	1732.4	3.7	-10	-41	-0.0237
1412	1732.4	3.7	0	-24	-0.0139
1412	1732.4	3.7	10	-27	-0.0156
1412	1732.4	3.7	20	-36	-0.0208
1412	1732.4	3.7	30	-31	-0.0208
1412	1732.4	3.7	40	-28	-0.0214
1412	1732.4	3.7	50	-37	-0.0214
1412	1732.4	3.7	60	-36	-0.0208

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1412	1732.4	4.2	-30	26	0.0150
1412	1732.4	4.2	-20	-41	-0.0237
1412	1732.4	4.2	-10	-50	-0.0289
1412	1732.4	4.2	0	-39	-0.0225
1412	1732.4	4.2	10	-25	-0.0144
1412	1732.4	4.2	20	-30	-0.0173
1412	1732.4	4.2	30	-31	-0.0179
1412	1732.4	4.2	40	37	-0.0225
1412	1732.4	4.2	50	-39	-0.0225
1412	1732.4	4.2	60	36	0.0208

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW


UMTS band 4 Results: channel 1513 @ maximum transmitted power

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1513	1752.6	3.6	-30	37	0.0211
1513	1752.6	3.6	-20	49	0.0280
1513	1752.6	3.6	-10	48	0.0274
1513	1752.6	3.6	0	42	0.0240
1513	1752.6	3.6	10	36	0.0205
1513	1752.6	3.6	20	-33	-0.0188
1513	1752.6	3.6	30	-55	-0.0314
1513	1752.6	3.6	40	-60	-0.0342
1513	1752.6	3.6	50	-84	-0.0479
1513	1752.6	3.6	60	-60	-0.0342

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1513	1752.6	3.7	-30	41	0.0234
1513	1752.6	3.7	-20	41	0.0234
1513	1752.6	3.7	-10	59	0.0337
1513	1752.6	3.7	0	44	0.0251
1513	1752.6	3.7	10	55	0.0314
1513	1752.6	3.7	20	-32	0.0314
1513	1752.6	3.7	30	-53	-0.0302
1513	1752.6	3.7	40	-60	-0.0342
1513	1752.6	3.7	50	-68	-0.0388
1513	1752.6	3.7	60	-60	-0.0342

Traffic Channel Number	Frequency (MHz)	Voltage (Volts)	Temperature (Celsius)	Frequency Error (Hz)	PPM
1513	1752.6	4.2	-30	36	0.0205
1513	1752.6	4.2	-20	46	0.0262
1513	1752.6	4.2	-10	55	0.0314
1513	1752.6	4.2	0	47	0.0268
1513	1752.6	4.2	10	43	0.0245
1513	1752.6	4.2	20	-36	0.0245
1513	1752.6	4.2	30	-48	-0.0274
1513	1752.6	4.2	40	-51	-0.0291
1513	1752.6	4.2	50	-74	-0.0422
1513	1752.6	4.2	60	-70	-0.0399

APPENDIX 4A – GSM RADIATED EMISSIONS TEST DATA

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW		
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW	

Radiated Power Test Data Results

The following test configurations were measured for model RDH71CW:

Date of test: April 18, 2011

The following measurements were performed by Kevin Rose.

The environmental tests conditions were: Temperature: 23.8 °C
Relative Humidity: 15.9 %


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

GSM850 Band 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)		Limit (dBm)	Diff. To Limit (dB)
										(dBm)	(W)		
F0	128	824.20	850	Dipole	V	75.89	88.28	V-V	15.66	31.49	1.41	38.50	-7.01
F0	128	824.20	850	Dipole	H	88.28		H-H	13.84				
F0	190	836.60	850	Dipole	V	75.79	88.01	V-V	16.18	32.16	1.64	38.50	-6.34
F0	190	836.60	850	Dipole	H	88.01		H-H	13.75				
F0	251	848.80	850	Dipole	V	75.26	88.41	V-V	16.29	32.1	1.62	38.50	-6.40
F0	251	848.80	850	Dipole	H	88.41		H-H	14.46				

GSM850 Band 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 Dipole)		Limit (dBm)	Diff. To Limit (dB)
										(dBm)	(W)		
F0	128	824.20	850	Dipole	V	72.97	84.51	V-V	11.87	27.70	0.59	38.50	-10.80
F0	128	824.20	850	Dipole	H	84.51		H-H	9.96				
F0	190	836.60	850	Dipole	V	71.62	84.30	V-V	12.43	28.41	0.69	38.50	-10.09
F0	190	836.60	850	Dipole	H	84.3		H-H	9.96				
F0	251	848.80	850	Dipole	V	72.15	84.42	V-V	12.24	28.05	0.64	38.50	-10.45
F0	251	848.80	850	Dipole	H	84.42		H-H	10.41				

		EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B		Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Radiated Power Test Data Results cont'd

Date of test: June 09, 2011

The following measurements were performed by Shuo Wang.

The environmental tests conditions were: Temperature: 23.9

Relative Humidity: 43.3

The BlackBerry® smartphone was in standalone, Horizontal Face down position.

Test distance is 3.0 metres.

PCS1900 Band Call Mode

EUT								Substitution Method					
				Receive Antenna		Spectrum Analyzer		Tracking Generator					
Type	Ch	Frequency (MHz)	Band	Type	Pol.	Reading (dBuV)	Max (V,H) dBuV	Pol.	Reading (dBm)	Corrected Reading (relative to Isotropic Radiator)		Limit (dBm)	Diff to Limit (dB)
								Tx-Rx		(dBm)	(W)		
F0	512	1850.20	1900	Horn	V	85.63	90.81	V-V	-3.06	31.75	1.50	33.00	-1.25
F0	512	1850.20	1900	Horn	H	90.81		H-H	-3.14				
F0	661	1880.00	1900	Horn	V	84.72	90.78	V-V	-2.96	32.29	1.69	33.00	-0.71
F0	661	1880.00	1900	Horn	H	90.78		H-H	-2.61				
F0	810	1909.80	1900	Horn	V	85.36	90.14	V-V	-2.80	31.25	1.33	33.00	-1.75
F0	810	1909.80	1900	Horn	H	90.14		H-H	-2.70				

PCS1900 Band EDGE Mode


EUT								Substitution Method					
				Receive Antenna		Spectrum Analyzer		Tracking Generator					
Type	Ch	Frequency (MHz)	Band	Type	Pol.	Reading (dBuV)	Max (V,H) dBuV	Pol.	Reading (dBm)	Corrected Reading (relative to Isotropic Radiator)		Limit (dBm)	Diff to Limit (dB)
								Tx-Rx		(dBm)	(W)		
F0	512	1850.20	1900	Horn	V	80.47	80.47	V-V	-5.13	29.68	0.93	33.00	-3.32
F0	512	1850.20	1900	Horn	H	88.74		H-H	-5.21				
F0	661	1880.00	1900	Horn	V	80.32	88.74	V-V	-5.05	30.20	1.05	33.00	-2.80
F0	661	1880.00	1900	Horn	H	88.69		H-H	-4.70				
F0	810	1909.80	1900	Horn	V	80.76	88.69	V-V	-4.36	29.69	0.93	33.00	-3.31
F0	810	1909.80	1900	Horn	H	88.58		H-H	-4.26				

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	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Radiated Emissions Test Data Results cont'd

GSM850 Call Mode

Date of Test: Jan 19, 2011

The following measurements were performed by Quan (Jerry) Ma.

The environmental test conditions were: Temperature: 24.3 °C
Relative Humidity: 11 %

Test Distance was 3.0 metres with a height of 1.0 metres, and a frequency range of 30 MHz to 1000 MHz.

The BlackBerry® smartphone was in standalone, USB Up position.

The measurements were performed in GSM850 Call Tx mode, channels 128, 190, 251.

All emissions had a test margin greater than 25.0 dB.

Date of Test: Jan 20, 2011

The following measurements were performed by Heng Lin.

The environmental test conditions were: Temperature: 24.1 °C
Relative Humidity: 40.6 %


Test Distance was 3.0 metres with a height of 1metre, and a frequency range of 1 GHz to 9 GHz.

The BlackBerry® smartphone was in standalone, USB Up position.

The measurements were performed in GSM850 Call Tx mode, channels 128, 190, 251.

Frequency (MHz)	Channel Of Occurrence	Antenna		Test Angle (Deg.)	Detector (PK or QP)	Measured Level (dBm)	Correction Factor for preamp/antenna/ cables/ filter (dB)	Field Strength Level (reading+corr) (dBm)	Limit @ 3.0 m (dBm)	Test Margin (dB)
		Pol. (V/H)	Height (metres)							
1648.568	128	V	2.00	231	PK	-31.81	-90.30	-31.81	-13	-18.8
1673.372	190	V	1.00	254	PK	-31.30	-90.73	-31.30	-13	-18.3
1697.992	251	V	1.35	60	PK	-37.45	-91.18	-37.45	-13	-24.5

All other emissions had a test margin greater than 25.0 dB

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Radiated Emissions Test Data Results cont'd

GSM850 EDGE Mode

Date of Test: Jan 19, 2011

The following measurements were performed by Quan (Jerry) Ma.

The environmental test conditions were: Temperature: 24.3 °C
Relative Humidity: 14.3 %

Test Distance was 3.0 metres with a height of 1.0 metres, and a frequency range of 30 MHz to 1000 MHz.

The BlackBerry® smartphone was in standalone, USB Up position.

The measurements were performed in GSM850 EDGE Tx mode, channels 128, 190, 251.

All emissions had a test margin greater than 25.0 dB.

Date of Test: Jan 28, 2011

The following measurements were performed by Heng Lin.

The environmental test conditions were: Temperature: 24.0 °C
Relative Humidity: 37.1 %


Test Distance was 3.0 metres with a height of 1-4 metres, and a frequency range of 1 GHz to 9 GHz.

The BlackBerry® smartphone was in standalone, horizontal position.

The measurements were performed in GSM850 EDGE Tx mode, channels 128, 190, 251.

Frequency (MHz)	Channel Of Occurrence	Antenna		Test Angle (Deg.)	Detector (PK or QP)	Measured Level (dBm)	Correction Factor for preamp/antenna/ cables/ filter (dB)	Field Strength Level (reading+corr) (dBm)	Limit @ 3.0 m (dBm)	Test Margin (dB)
		Pol. (V/H)	Height (metres)							
1673.290	251	V	2.50	262	PK	-32.90	-90.73	-32.90	-13.00	-19.9
1648.276	190	V	1.42	206	PK	-34.05	-90.30	-34.05	-13.00	-21.1

All other emissions had a test margin greater than 25.0 dB

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Radiated Emissions Test Data Results cont'd

PCS1900 GSM Mode

Date of Test: Jan 20, 2011

The following measurements were performed by Quan (Jerry) Ma.

The environmental test conditions were: Temperature: 23.9 °C

Relative Humidity: 12.2 %

Test Distance was 3.0 metres with a height of 1-4 meters, and a frequency range of 30 - 1000 MHz.

The BlackBerry® smartphone was in standalone, USB down position.

The measurements were performed in PCS1900 Call Tx mode, channels 512, 661, 810.

All emissions had a test margin greater than 25.0 dB.

Date of Test: Jan 20, 2011

The following measurements were performed by Heng Lin.

The environmental test conditions were: Temperature: 24.5 °C

Relative Humidity: 37.6 %


Test Distance was 3.0 metres with a height of 1.0 metres, and a frequency range of 1 GHz to 20 GHz.

The BlackBerry® smartphone was in standalone, Horizontal position.

The measurements were performed in PCS1900, channels 512, 661, 810.

Frequency (MHz)	Channel Of Occurrence	Antenna		Test Angle (Deg.)	Detector (PK or QP)	Measured Level (dBm)	Correction Factor for preamp/antenna/ cables/ filter (dB)	Field Strength Level (reading+corr) (dBm)	Limit @ 3.0 m (dBm)	Test Margin (dB)
		Pol. (V/H)	Height (metres)							
3700.568	512	H	3.00	91	PK	-34.15	-81.13	-34.15	-13	-21.2
1707.208	661	H	1.65	209	PK	-36.33	-92.11	-36.33	-13	-23.3
1995.257	661	H	1.67	199	PK	-35.83	-89.27	-35.83	-13	-22.8
3760.448	661	H	2.95	89	PK	-33.01	-81.57	-33.01	-13	-20.0
1737.236	810	H	2.21	188	PK	-36.26	-92.27	-36.26	-13	-23.3
3819.388	810	H	4.00	140	PK	-30.81	-81.67	-30.81	-13	-17.8

All emissions had a test margin greater than 25.0 dB.

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Radiated Emissions Test Data Results cont'd

PCS1900 EDGE Mode

Date of Test: Jan 20, 2011

The following measurements were performed by Quan (Jerry) Ma.

The environmental test conditions were: Temperature: 24.3 °C
Relative Humidity: 13.2 %

Test Distance was 3.0 metres with a height of 1metre, and a frequency range of 30 - 1000 MHz.

The BlackBerry® smartphone was in standalone, USB down position.

The measurements were performed in PCS1900 Edge Tx mode, channels 512, 661, 810.

All emissions had a test margin greater than 25.0 dB.

Date of Test: February 10, 2011

The following measurements were performed by Heng Lin.

The environmental test conditions were: Temperature: 24.5 °C
Relative Humidity: 38.0 %

Test Distance was 3.0 metres with a height of 1.0 metres, and a frequency range of 1 GHz to 20 GHz.


The BlackBerry® smartphone was in standalone, Horizontal position.

The measurements were performed in PCS1900 Edge Tx mode, channels 512, 661, 810.

Frequency (MHz)	Channel Of Occurrence	Antenna		Test Angle (Deg.)	Detector (PK or QP)	Measured Level (dBm)	Correction Factor for preamp/antenna/ cables/ filter (dB)	Field Strength Level (reading+corr) (dBm)	Limit @ 3.0 m (dBm)	Test Margin (dB)
		Pol. (V/H)	Height (metres)							
5550.148	512	H	4.00	308	PK	-35.84	-73.91	-35.84	-13	-22.8
3759.932	661	H	2.95	87	PK	-35.57	-81.56	-35.57	-13	-22.6
5639.664	661	V	3.08	70	PK	-29.22	-73.59	-29.21	-13	-16.2
3819.564	810	H	2.81	136	PK	-32.77	-81.68	-32.77	-12	-19.8

All emissions had a test margin greater than 25.0 dB.

APPENDIX 4B – CDMA RADIATED EMISSIONS TEST DATA

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW		
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW	

Radiated Power Test Data Results

The following test configurations were measured for model RDH71CW:

Date of Test: April 18, 2011

The following measurements were performed by Quan (Jerry) Ma.

The environmental tests conditions were: Temperature: 23.2 °C
Relative Humidity: 18.2%


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

Cellular Loopback Service 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)		Limit (dBm)	Diff. To Limit (dB)
F0	1013	824.70	Cell	Dipole	V	71.87	82.15	V-V	9.46	25.29	0.34	38.50	-13.21
F0	1013	824.70	Cell	Dipole	H	82.15		H-H	7.81				
F0	384	836.52	Cell	Dipole	V	71.75	81.81	V-V	9.88	25.86	0.39	38.50	-12.64
F0	384	836.52	Cell	Dipole	H	81.81		H-H	7.44				
F0	777	848.32	Cell	Dipole	V	71.67	81.92	V-V	9.67	25.48	0.35	38.50	-13.02
F0	777	848.32	Cell	Dipole	H	81.92		H-H	7.88				

Cellular EVDO 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)		Limit (dBm)	Diff. To Limit (dB)
F0	1013	824.70	Cell	Dipole	V	71.37	83.01	V-V	10.36	26.19	0.42	38.50	-12.31
F0	1013	824.70	Cell	Dipole	H	83.01		H-H	8.68				
F0	384	836.52	Cell	Dipole	V	72.61	83.16	V-V	11.26	27.24	0.53	38.50	-11.26
F0	384	836.52	Cell	Dipole	H	83.16		H-H	8.75				
F0	777	848.32	Cell	Dipole	V	71.62	82.04	V-V	9.81	25.62	0.36	38.50	-12.88
F0	777	848.32	Cell	Dipole	H	82.04		H-H	7.96				

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Radiated Power Test Data Results cont'd

Date of Test: April 18, 2011

The following measurements were performed by Quan (Jerry) Ma.

The environmental tests conditions were: Temperature: 23.2 °C
Relative Humidity: 18.2%


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

PCS Loopback Service Mode

								Substitution Method					
EUT				Receive Antenna		Spectrum Analyzer		Tracking Generator				Limit	Diff to Limit
Type	Ch	Frequency (MHz)	Band	Type	Pol.	Reading (dBuV)	Max (V,H) (dBuV)	Pol. Tx-Rx	Reading (dBm)	(dBm)	(W)		
F0	25	1851.25	PCS	Horn	V	86.11	86.11	VV	-12.86	27.56	0.57	33.00	-5.44
F0	25	1851.25	PCS	Horn	H	77.66		HH	-11.62				
F0	600	1880.00	PCS	Horn	V	85.77	85.77	VV	-12.56	27.16	0.52	33.00	-5.84
F0	600	1880.00	PCS	Horn	H	77.9		HH	-11.77				
F0	1175	1908.75	PCS	Horn	V	86.21	86.21	VV	-11.61	27.91	0.62	33.00	-5.09
F0	1175	1908.75	PCS	Horn	H	79.73		HH	-11.07				

PCS EVDO Mode

								Substitution Method					
EUT				Receive Antenna		Spectrum Analyzer		Tracking Generator				Limit	Diff to Limit
Type	Ch	Frequency (MHz)	Band	Type	Pol.	Reading (dBuV)	Max (V,H) (dBuV)	Pol. Tx-Rx	Reading (dBm)	(dBm)	(W)		
F0	25	1851.25	PCS	Horn	V	88.28	88.28	VV	-10.69	29.73	0.94	33.00	-3.27
F0	25	1851.25	PCS	Horn	H	80.32		HH	-9.45				
F0	600	1880.00	PCS	Horn	V	87.76	87.76	VV	-10.57	29.15	0.82	33.00	-3.85
F0	600	1880.00	PCS	Horn	H	81.44		HH	-9.78				
F0	1175	1908.75	PCS	Horn	V	87.65	87.65	VV	-10.17	29.35	0.86	33.00	-3.65
F0	1175	1908.75	PCS	Horn	H	79.09		HH	-9.63				

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Radiated Emissions Test Data Results cont'd

Cellular Loopback Service Mode

Date of Test: January 25, 2011

The following measurements were performed by Quan (Jerry) Ma

The environmental test conditions were: Temperature: 24.1 °C
Relative Humidity: 9.6 %

Test Distance was 3.0 metres with a height of 1-4 metres, and a frequency range of 30 MHz to 1000 MHz.

The BlackBerry® smartphone was in standalone, Vertical position.

The following measurements were performed in CDMA Cellular Loopback Tx mode on channels 1013, 384 and 777.

All emissions had a test margin greater than 25.0 dB.

Date of Test: January 25, 2011

The following measurements were performed by Adam Rusinek


The environmental test conditions were: Temperature: 24.2°C
Relative Humidity: 41.2 %

Test Distance was 3.0 metres with a height of 1-4 metres, and a frequency range of 1-9GHz.

The BlackBerry® smartphone was in standalone, USB Down position.

The following measurements were performed in CDMA Cellular Loopback Tx mode on channels 1013, 384 and 777.

All emissions had a test margin greater than 25.0 dB.

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Radiated Emissions Test Data Results cont'd

Cellular 1xEVDO Mode

Date of Test: January 25, 2011

The following measurements were performed by Kevin Rose

The environmental test conditions were: Temperature: 25.2 °C
Relative Humidity: 9.6 %

Test Distance was 3.0 metres with a height of 1-4 metres, and a frequency range of 30 MHz to 1000 MHz.

The BlackBerry® smartphone was in standalone, Vertical position.

The following measurements were performed in CDMA Cellular EVDO Tx mode on channels 1013, 384 and 777.

All emissions had a test margin greater than 25.0 dB.

Date of Test: January 25, 2011

The following measurements were performed by Adam Rusinek


The environmental test conditions were: Temperature: 24.1°C
Relative Humidity: 40.1 %

Test Distance was 3.0 metres with a height of 1-4 metres, and a frequency range of 1-9GHz.

The BlackBerry® smartphone was in standalone, Horizontal Down position.

The following measurements were performed in CDMA Cellular EVDO Tx mode on channels 1013, 384 and 777.

All emissions had a test margin greater than 25.0 dB.

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Radiated Emissions Test Data Results cont'd

PCS Loopback Service Mode

Date of Test: January 20, 2011

The following measurements were performed by Quan (Jerry) Ma

The environmental test conditions were: Temperature: 25.2 °C
Relative Humidity: 9.6 %

Test Distance was 3.0 metres with a height of 1-4 metres, and a frequency range of 30 MHz to 1000 MHz.

The BlackBerry® smartphone was in standalone, Vertical position.

The following measurements were performed in PCS Tx mode on channels 25, 600 and 1175.

All emissions had a test margin greater than 25.0 dB.

Date of Test: January 25, 2011

The following measurements were performed by Adam Rusinek


The environmental test conditions were: Temperature: 24.2°C
Relative Humidity: 41.2 %

Test Distance was 3.0 metres with a height of 1-4 metres, and a frequency range of 1-20GHz.

The BlackBerry® smartphone was in standalone, Horizontal Down position.

The following measurements were performed in PCS Tx mode on channels 25, 600 and 1175.

All emissions had a test margin greater than 25.0 dB.

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Radiated Emissions Test Data Results cont'd

PCS 1xEVDO Mode

Date of Test: January 25, 2011

The following measurements were performed by Kevin Rose

The environmental test conditions were: Temperature: 25.1 °C
Relative Humidity: 9.6 %

Test Distance was 3.0 metres with a height of 1-4 metres, and a frequency range of 30 MHz to 1000 MHz.

The BlackBerry® smartphone was in standalone, Vertical position.

The following measurements were performed in PCS Tx mode on channels 25, 600 and 1175.

All emissions had a test margin greater than 25.0 dB.

Date of Test: January 26, 2011

The following measurements were performed by Heng Lin.

The environmental test conditions were: Temperature: 24.1°C
Relative Humidity: 40.1 %


Test Distance was 3.0 metres with a height of 1-4 metres, and a frequency range of 1-20GHz.

The BlackBerry® smartphone was in standalone, Horizontal Down position.

The following measurements were performed in PCS Tx mode on channels 25, 600 and 1175.

All emissions had a test margin greater than 25.0 dB.

APPENDIX 4C – UMTS RADIATED EMISSIONS TEST DATA

		EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011		FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Radiated Power Test Data Results

The following test configurations were measured for model RDQ71UW:

Date of Test: April 26, 2011

The following measurements were performed by Quan (Jerry) Ma.

The environmental tests conditions were: Temperature: 23.2 °C
Relative Humidity: 35.9 %


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

UMTS band 4 Call Service Mode

EUT				Rx Antenna		Spectrum Analyzer		Substitution Method					
Type	Ch	Frequency (MHz)	Band	Type	Pol.	Reading (dBuV)	Max (V,H) (dBuV)	Pol. Tx-Rx	Reading (dBm)	Corrected Reading (relative to Dipole)		Limit (dBm)	Diff. To Limit (dB)
F0	1312	1712.40	4	Horn	V	85.94	85.94	V-V	-13.72	27.53	0.57	33	-5.5
F0	1312	1712.40	4	Horn	H	80.96		H-H	-12.33				
F0	1413	1732.60	4	Horn	V	85.37	85.37	V-V	-14.16	27.14	0.52	33	-5.9
F0	1413	1732.60	4	Horn	H	79.21		H-H	-13.02				
F0	1513	1752.60	4	Horn	V	85.47	85.47	V-V	-13.71	27.55	0.57	33	-5.5
F0	1513	1752.60	4	Horn	H	78.25		H-H	-12.35				

UMTS band 4 HSUPA Mode

EUT				Rx Antenna		Spectrum Analyzer		Substitution Method					
Type	Ch	Frequency (MHz)	Band	Type	Pol.	Reading (dBuV)	Max (V,H) (dBuV)	Pol. Tx-Rx	Reading (dBm)	Corrected Reading (relative to Dipole)		Limit (dBm)	Diff. To Limit (dB)
F0	1312	1712.40	4	Horn	V	85.31	85.31	V-V	-14.36	26.99	0.50	33	-6.0
F0	1312	1712.40	4	Horn	H	81.81		H-H	-12.87				
F0	1413	1732.60	4	Horn	V	85.86	85.86	V-V	-13.67	27.54	0.57	33	-5.5
F0	1413	1732.60	4	Horn	H	80.45		H-H	-12.62				
F0	1513	1752.60	4	Horn	V	86.12	86.12	V-V	-13.21	28.23	0.67	33	-4.8
F0	1513	1752.60	4	Horn	H	80.26		H-H	-11.67				

	EMI Test Report for the BlackBerry® smartphone Model RDH71CW, RDQ71UW	
Test Report No. RTS-2605-1105-02B	Dates of Test January 17 to Feb 10, April 12 and 18, 2011	FCC ID: L6ARDH70CW IC: 2503A-RDH70CW FCC ID: L6ARDQ70UW IC: 2503A-RDQ70UW

Radiated Emissions Test Data Results cont'd
UMTS band 4 Call Service Mode

Date of Test: April 26, 2011

The following measurements were performed by Quan (Jerry) Ma

The environmental test conditions were: Temperature: 23.7 °C
Relative Humidity: 39.2 %

Test Distance was 3.0 metres with a height of 1-4 metres, and a frequency range of 30MHz to 1000MHz.

The BlackBerry® smartphone was in standalone, vertical position.

The following measurements were performed in UMTS band 4 Call mode on channels 1312, 1413, 1513.

All emissions had a test margin greater than 25.0 dB.

Date of Test: April 25, 2011

The following measurements were performed by Adam Rusinek

The environmental test conditions were: Temperature: 24.5 °C
Relative Humidity: 43.3%

Test Distance was 3.0 metres with a height of 1-4 meters, and a frequency range of 1-20GHz.

The BlackBerry® smartphone was in standalone, USB down position.

The following measurements were performed in UMTS band 4 Call mode on channels 1312, 1413, 1513.

All emissions had a test margin greater than 25.0 dB.

