

# 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-2604-1106-131B**

|                                    |                              |
|------------------------------------|------------------------------|
| <b>PRODUCT MODEL NO:</b>           | RDR61CW, RDZ21CW             |
| <b>TYPE NAME:</b>                  | BlackBerry® smartphone       |
| <b>FCC ID:</b>                     | L6ARDR60CW, L6ARDZ20CW       |
| <b>IC:</b>                         | 2503A-RDR60CW, 2503A-RDZ20CW |
| <b>EMISSION DESIGNATOR (GSM):</b>  | 247KGXW                      |
| <b>EMISSION DESIGNATOR (EDGE):</b> | 247KG7W                      |
| <b>EMISSION DESIGNATOR (CDMA):</b> | 1M29F9W                      |

**DATE:** 27 July 2011

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**Statement of Performance:**

The BlackBerry® smartphone, model RDR61CW, part number CER-41454-001 Rev5 and accessories performs within the requirements of the test standards when configured and operated per RIM's instructions.

The BlackBerry® smartphone, model RDZ21CW part number CER-39236-001 Rev1 and accessories performs within the requirements of the test standards when configured and operated per RIM's instructions.

**Declaration:**

We hereby certify that:

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

Documented by:



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Date: August 03, 2011

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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
- 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

## B) Associated Documents

1. RDR61CW\_HW\_Declaration\_CER-41454-001\_Rev4
2. RDR61CW\_HW\_Declaration\_CER-41454-001\_Rev5
3. BlackBerrySystemSimilarity \_RDR61CW\_RDZ21CW


## C) Product Identification

Manufactured by Research In Motion Limited whose headquarters is located at:  
295 Phillip Street  
Waterloo, Ontario  
Canada, N2L 3W8  
Phone: 519 888 7465  
Fax: 519 888 6906

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

|  |                     |
|--|---------------------|
| RIM Testing Services EMI test facilities |                     |
| 305 Phillip Street                       | 440 Phillip Street  |
| Waterloo, Ontario                        | Waterloo, Ontario,  |
| Canada, N2L 3W8                          | Canada , N2L 5R9    |
| Phone: 519 888 7465                      | Phone: 519 888 7465 |
| Fax: 519 888 6906                        | Fax: 519 888 6906   |

The testing was performed from June 2 to June 28 and July 25 to July 27, 2011.

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The sample EUT included:

| Sample | Model   | CER NUMBER         | PIN      | Software Information                             |
|--------|---------|--------------------|----------|--|
| 1      | RDR61CW | CER-41454-001 Rev3 | 32EAF912 | V7.0.0.100<br>(Platorm 5.0.0.267)<br>Bundle 848  |
| 2      | RDR61CW | CER-41454-001 Rev3 | 32EAFAD3 | V7.0.0.100<br>(Platorm 5.0.0.267)<br>Bundle 848  |
| 3      | RDR61CW | CER-41454-001 Rev4 | 32EFD957 | V7.0.0.100<br>(Platorm 5.0.0.267)<br>Bundle 848  |
| 4      | RDR61CW | CER-41454-001 Rev4 | 32EFD941 | V7.0.0.100<br>(Platorm 5.0.0.267)<br>Bundle 848  |
| 5      | RDR61CW | CER-41454-001 Rev4 | 32EFD945 | V7.0.0.100<br>(Platorm 5.0.0.267)<br>Bundle 848  |
| 6      | RDR61CW | CER-41454-001 Rev5 | 32F2900E | V7.0.0.100<br>(Platorm 5.0.0.267)<br>Bundle 848  |
| 7      | RDZ21CW | CER-39236-001 Rev1 | 32F66A0D | V7.0.0.238<br>(Platorm 5.0.0.440)<br>Bundle 1292 |
| 8      | RDZ21CW | CER-39236-001 Rev1 | 32F66A21 | V7.0.0.238<br>(Platorm 5.0.0.440)<br>Bundle 1292 |

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

Only the characteristics that have been affected by the changes from Model RDR61CW Rev 3 to RDR61CW Rev 5 were retested. For more information see documents:  
RDR61CW\_HW\_Declaration\_CER-41454-001\_Rev4 and  
RDR61CW\_HW\_Declaration\_CER-41454-001\_Rev5

Only the characteristics that have been affected by the changes from Model RDR61CW to RDZ21CW were retested. For more information see document:  
BlackBerrySystemSimilarity\_RDR61CW\_RDZ21CW


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#### 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.

#### 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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## F) Test Results Chart

| SPECIFICATION                                |                              | TEST TYPE   | RESULT | TEST DATA APPENDIX |
|--|------------------------------|---|--------|--------------------|
| FCC CFR 47                                   | IC                           |   |        |                    |
| Part 2.1051<br>Part 22.917<br>Part 22.901    | RSS-GEN, 4.9                 | GSM 850 Conducted Spurious Emissions                      | Pass   | 1A                 |
| Part 2.1051<br>Part 24.238(a)                | RSS-GEN, 4.9                 | PCS 1900 Conducted Spurious Emissions                     | Pass   | 1A                 |
| Part 2.202<br>Part 22.917                    | RSS-GEN, 4.6                 | GSM 850 Occupied Bandwidth and Channel Mask               | Pass   | 1A                 |
| Part 2.202<br>Part 24.238                    | RSS-GEN, 4.6                 | PCS 1900 Occupied Bandwidth and Channel Mask              | Pass   | 1A                 |
| Part 2.1046(a)                               | RSS-133, 6.4<br>RSS-132, 4.4 | GSM Conducted RF Output Power                             | Pass   | 2A                 |
| Part 2.1055(a)(d)<br>Part 22.917             | RSS-132, 4.3                 | GSM 850 Frequency Stability vs. Temperature and Voltage   | Pass   | 3A                 |
| Part 2.1055(a)(d)<br>Part 24.235             | RSS-132, 4.3                 | PCS 1900 Frequency Stability vs. Temperature and Voltage  | Pass   | 3A                 |
| Part 22, Subpart H,<br>Part 24, Subpart E    | RSS-GEN, 4.9                 | GSM ERP, EIRP   | Pass   | 4A                 |
| Part 22, Subpart H<br>Part 24, Subpart E     | RSS-GEN, 4.9                 | GSM Radiated Spurious/Harmonic Emissions                  | Pass   | 4A                 |
| Part 2.1051<br>Part 22.917<br>Part 22.901(d) | RSS-GEN, 4.9                 | CDMA Cell Conducted Spurious Emissions                    | Pass   | 1B                 |
| Part 2.1051<br>Part 24.238(a)                | RSS-GEN, 4.9                 | CDMA PCS Conducted Spurious Emissions                     | Pass   | 1B                 |
| Part 2.202<br>Part 22.917                    | RSS-GEN, 4.6                 | CDMA Cell Occupied Bandwidth and Channel Mask             | Pass   | 1B                 |
| Part 2.202<br>Part 24.238                    | RSS-GEN, 4.6                 | CDMA PCS Occupied Bandwidth and Channel Mask              | Pass   | 1B                 |
| Part 2.1046(a)                               | RSS-133, 6.4<br>RSS-132, 4.4 | CDMA Conducted RF Output Power                            | Pass   | 2B                 |
| Part 2.1055(a)(d)<br>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)<br>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 |

## G) Summary of Results

### 1) Conducted Emission Measurements

The following test configurations were measured for model RDR61CW:

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 246.7 kHz on middle channel in GSM mode, and 245 kHz on low and middle 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

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kHz on low and high channel in GSM, and 246.7 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.

See APPENDIX 2A for test data

d) The BlackBerry® smartphone met the requirements of the Frequency Satbility 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 Satbility 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

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channels. The worst case occupied bandwidth was 1.273 MHz on middle channel in Loopback mode and 1.280 MHz on middle and high channel in 1xEVDO mode. 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 low, middle and high channel in Loopback mode and 1.290 MHz on low and high channel in 1xEVDO mode. 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.

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.

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## 2) Radiated Emission Measurements

### a) Radiated Spurious and Harmonic Emissions

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 RDR61CW:

The highest ERP in the 850 band call mode measured was 32.11 dBm (1.63 W) at 824.20 MHz (channel 128).

The highest ERP in the 850 band EDGE mode measured was 30.42dBm (1.10 W ) at 824.20 MHz (channel 128) and 836.60 MHz (channel 190).

The highest EIRP in the PCS band call mode measured was 32.35 dBm (1.72 W) at 1880.0 MHz (channel 661).

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The highest EIRP in the PCS band EDGE mode measured was 31.54 dBm (1.43 W) at 1880.0 MHz (channel 661).

The highest ERP measured in the Cellular band, Loopback Service mode, was 25.04 dBm (0.32 W) at 824.70 MHz (channel 1013).

The highest ERP measured in the Cellular band, 1xEVDO mode, was 26.18 dBm (0.42 W) at 836.52 MHz (channel 384).

The highest EIRP measured in the PCS band, Loopback Service mode, was 27.19 dBm (0.52 W) at 1880.00 MHz (channel 600).

The highest EIRP measured in the PCS band, 1xEVDO mode, was 27.39 dBm (0.55 W) at 1880.00 MHz (channel 600)

The radiated spurious emission and carrier harmonics were measured up to the 10<sup>th</sup> 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 margins in the GSM 850 and EDGE for harmonic emissions were greater than 25 dB below the accepted limits for all test frequencies.

The margins in the PCS 1900 and EDGE for harmonic emissions were greater than 25 dB below the accepted limits for all test frequencies.


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

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

The margins in the 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 RDZ21CW:

The radiated carrier harmonics were measured up to the 10<sup>th</sup> harmonic for middle channel in the CDMA Cellular. Each band was measured in Call and Data mode, with both the horizontal and vertical polarizations.

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

The margin in the CDMA Cellular Call and Data modes for harmonic emissions was greater than 25 dB below the accepted limits for all test frequencies.

The margin in the CDMA PCS Call and Data modes for harmonic emissions was greater than 25 dB below the accepted limits for all test frequencies.

**b) Co-Location Measurements**

The following test configurations were measured for model RDR61CW:

The radiated emissions were measured up to 18 GHz for middle channels for simultaneous transmission in the following test configuration combinations: CDMA CELL/Bluetooth/802.11b, CDMA PCS/Bluetooth/802.11b, GSM 850/Bluetooth/802.11b and PCS 1900/Bluetooth/802.11b.

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:

$$\text{CSL (dBm)} = \text{Measured Level (dB}\mu\text{V)} - \text{Antenna Gain (dBi)} + \text{Free Space Loss (dB)} - 107 \text{ (dB)} + \text{Cable Loss (dB)} - \text{Preamp (dB)} + \text{Filter Loss (dB)} - 2.15 \text{ (dB)}$$


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

**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><br>(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                         | ETS-Lindgren        | 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 RDR61CW, RDZ21CW |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011     | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

**Compliance Test Equipment Used cont'd**

| <u>UNIT</u>         | <u>MANUFACTURER</u> | <u>MODEL</u> | <u>SERIAL NUMBER</u> | <u>CAL DUE DATE</u><br>(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

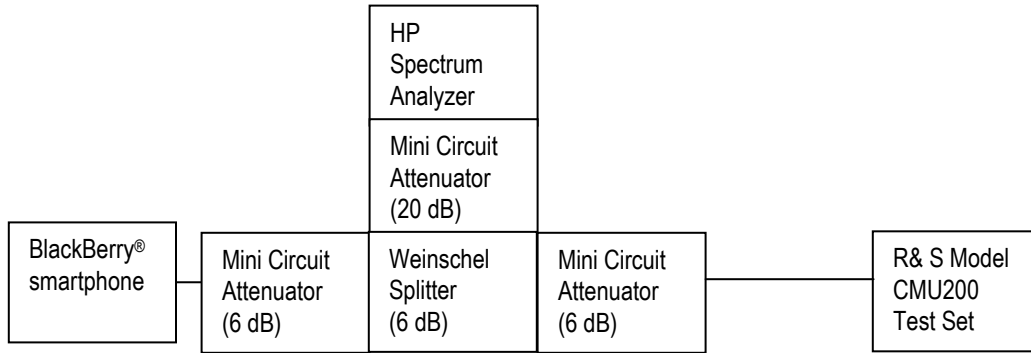
|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

**GSM Conducted RF Emission Test Data**

The following test configurations were measured for model RDR61CW:

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: June 27, 2011

The environmental test conditions were:

Temperature: 24.0 °C  
Relative Humidity: 47.0 %

The following measurements were performed by Maurice Battler.

|   |  |   |
|---|--|---|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1A |   |
|   | <b>Test Report No.</b><br>RTS-2604-1106-131B   | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011 |

### 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 273 kHz, and for the PCS1900 band was measured to be 268 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                    | 273                    | 241.7                        |
| 837.6                    | 272                    | 246.7                        |
| 848.8                    | 265                    | 241.7                        |


| 1900 band Frequency (MHz) | -26dBc Bandwidth (kHz) | 99% Occupied Bandwidth (kHz) |
|---------------------------|------------------------|------------------------------|
| 1850.2                    | 265                    | 243.3                        |
| 1880.0                    | 265                    | 241.7                        |
| 1909.8                    | 268                    | 243.3                        |

#### **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 RDR61CW, RDZ21CW<br>APPENDIX 1A |   |
|   | <b>Test Report No.</b><br>RTS-2604-1106-131B   | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011 |

GSM Conducted RF Emission Test Data cont'd

Date of Test: June 27, 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                    | 245.0                        |
| 848.8                    | 243.3                        |


| 1900 band Frequency (MHz) | 99% Occupied Bandwidth (kHz) |
|---------------------------|------------------------------|
| 1850.2                    | 246.7                        |
| 1880.0                    | 245.0                        |
| 1909.8                    | 246.7                        |

***Measurement Plots for 850 and 1900 bands in EDGE mode***

Refer to the following measurement plots for more detail.

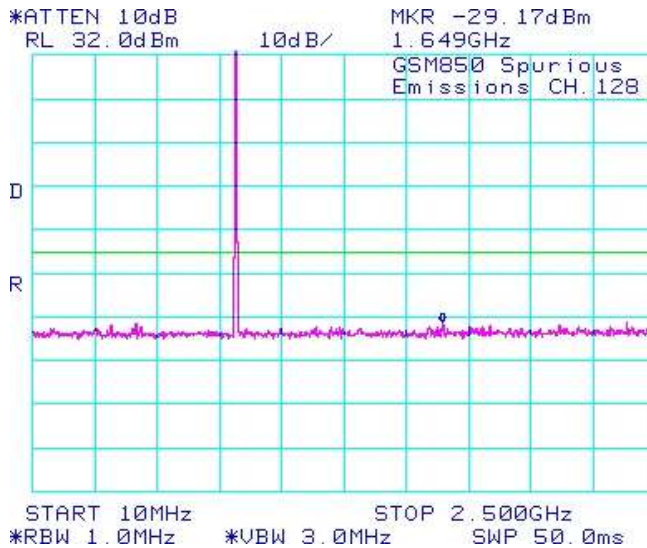
- See Figures 1-1a to 1-12a for the plots of the conducted spurious emissions.
- See Figures 1-13a to 1-24a for the plots of 26dBc/99% Occupied Bandwidth.
- See Figures 1-25a to 1-28a for the plots of the Channel mask.
- See Figures 1-29a to 1-34a for the plots of the 99% Occupied Bandwidth EDGE results.
- 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.

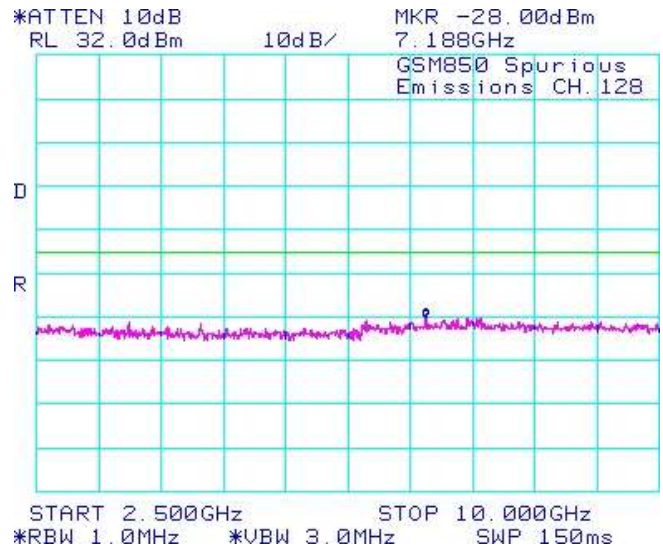
|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

### GSM Conducted RF Emission Test Data cont'd

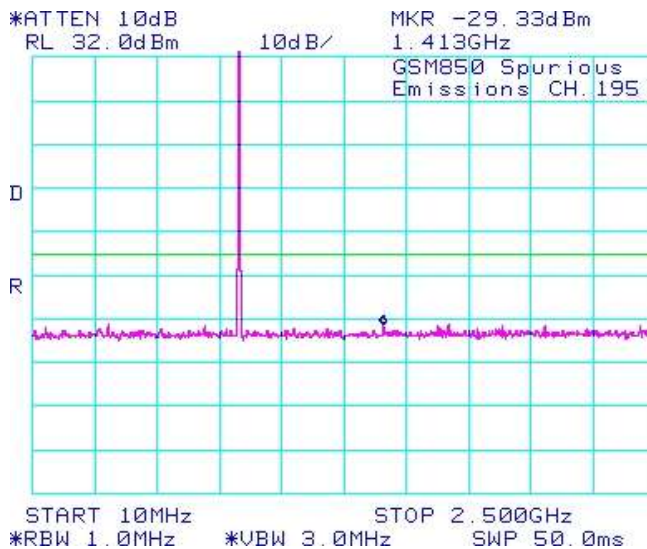
**Figure 1-1a: GSM850 band, Spurious Conducted Emissions, Low channel**



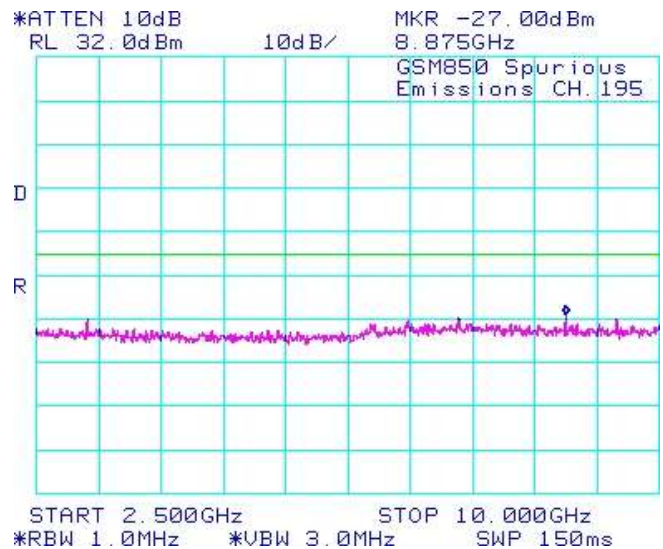
**Figure 1-2a: GSM850 band, Spurious Conducted Emissions, Low channel**




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



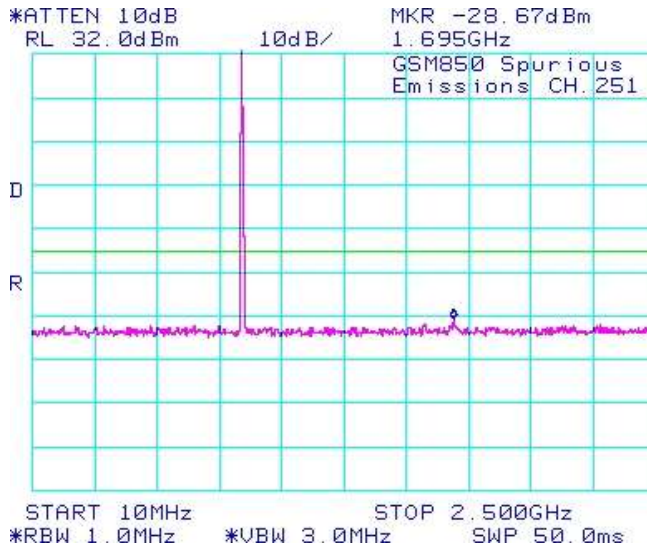
**Figure 1-4a: GSM850 band, Spurious Conducted Emissions, Middle Channel**



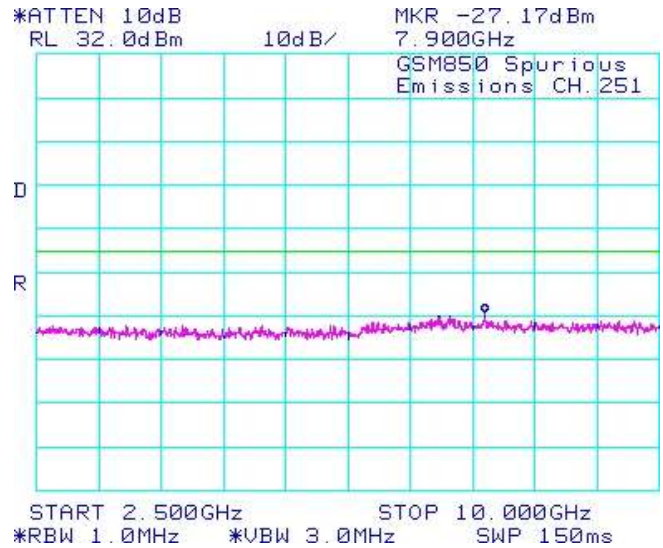
|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

### GSM Conducted RF Emission Test Data cont'd

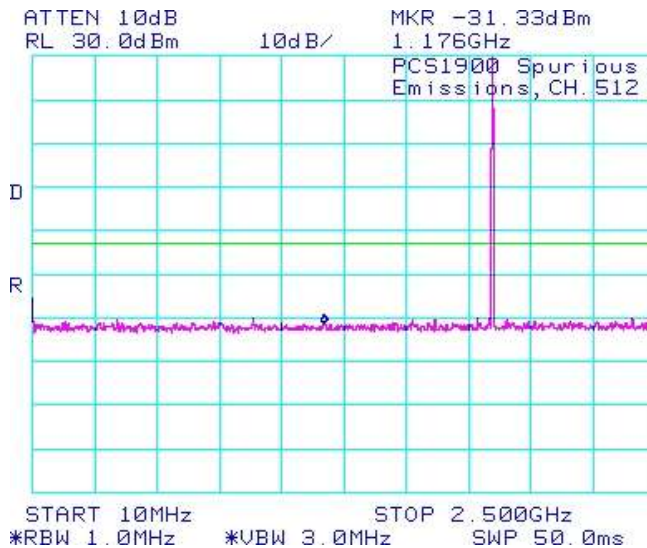
**Figure 1-5a: GSM850 band, Spurious Conducted Emissions, High Channel**



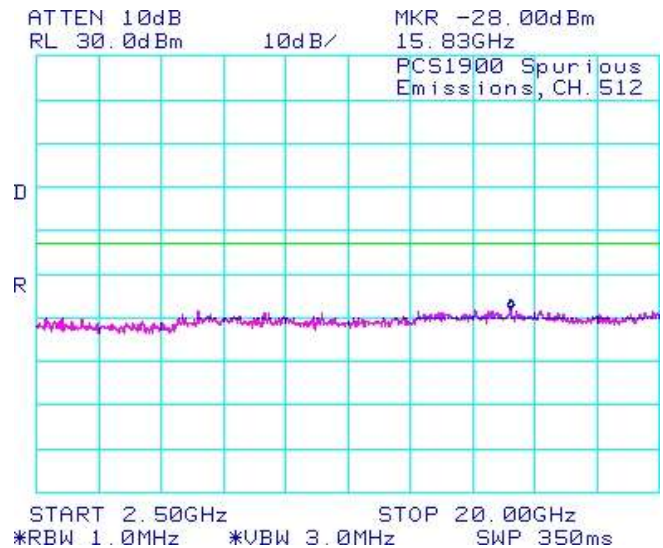
**Figure 1-6a: GSM850 band, Spurious Conducted Emissions, High Channel**




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



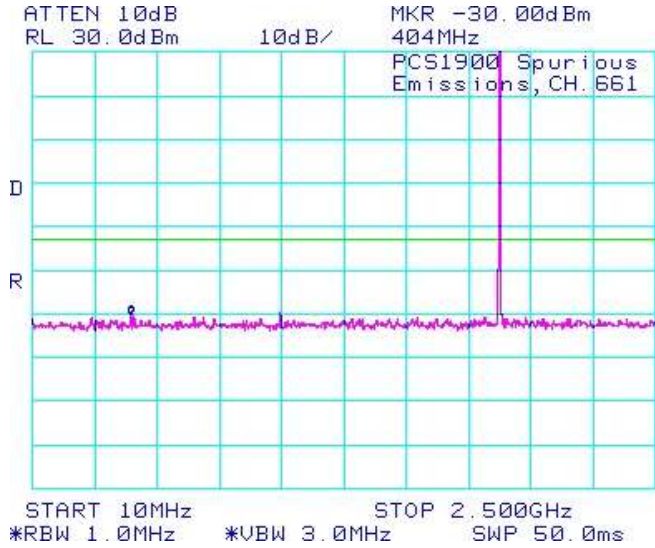
**Figure 1-8a: PCS1900 band, Spurious Conducted Emissions, Low Channel**



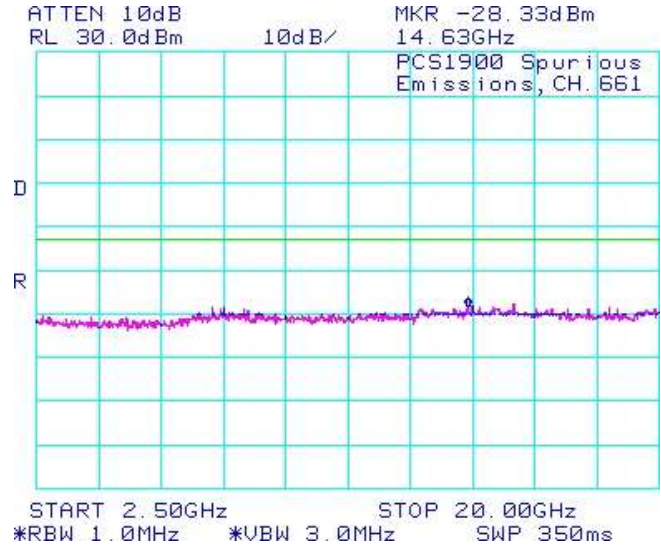
|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

**GSM Conducted RF Emission Test Data cont'd**

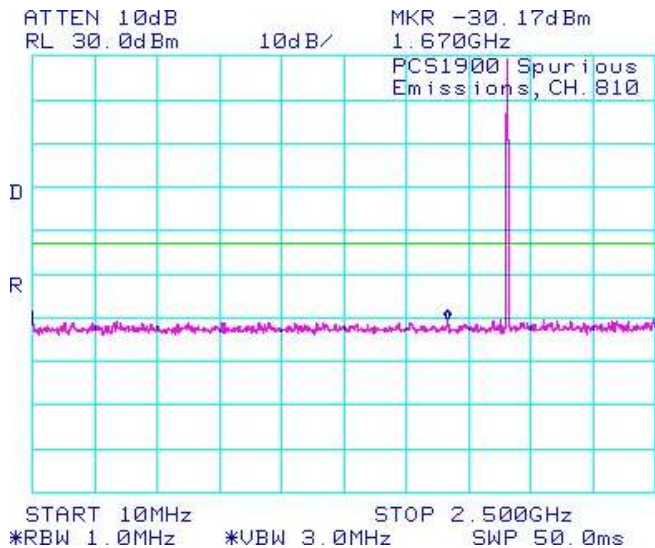
**Figure 1-9a: PCS1900 band, Spurious Conducted Emissions, Middle Channel**



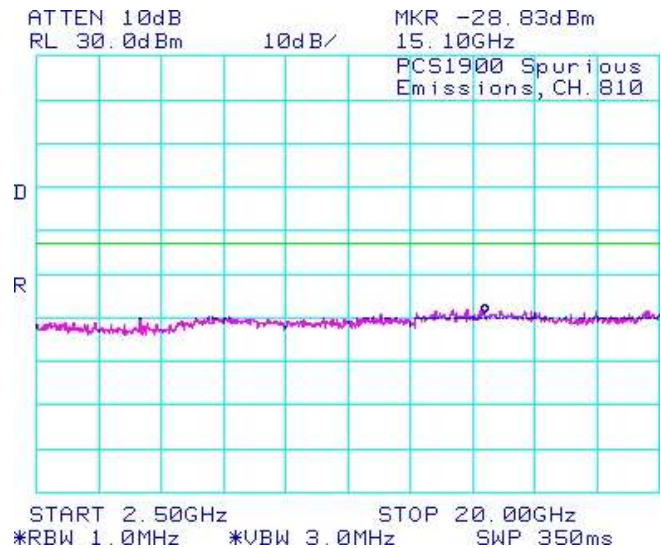
**Figure 1-10a: PCS1900 band, Spurious Conducted Emissions, Middle Channel**




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



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



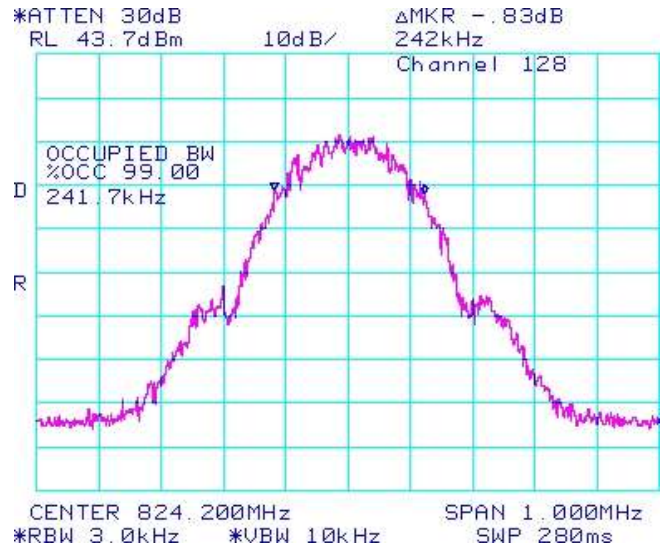
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|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

### GSM Conducted RF Emission Test Data cont'd

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



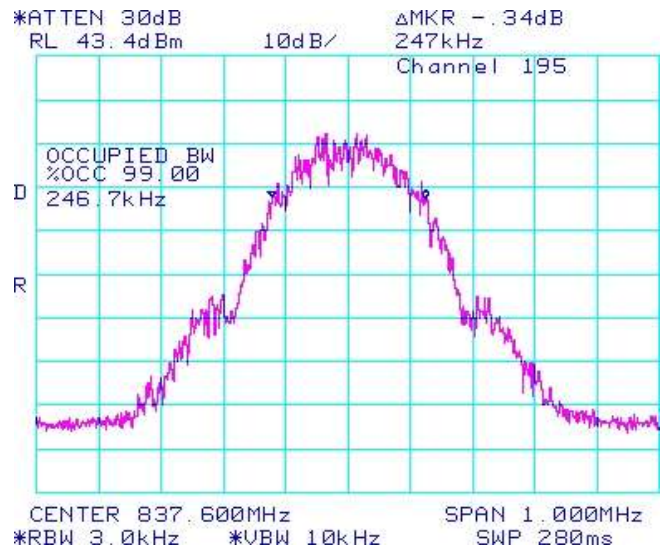
**Figure 1-14a: Occupied Bandwidth, GSM850 band Low Channel in GSM mode**




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



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

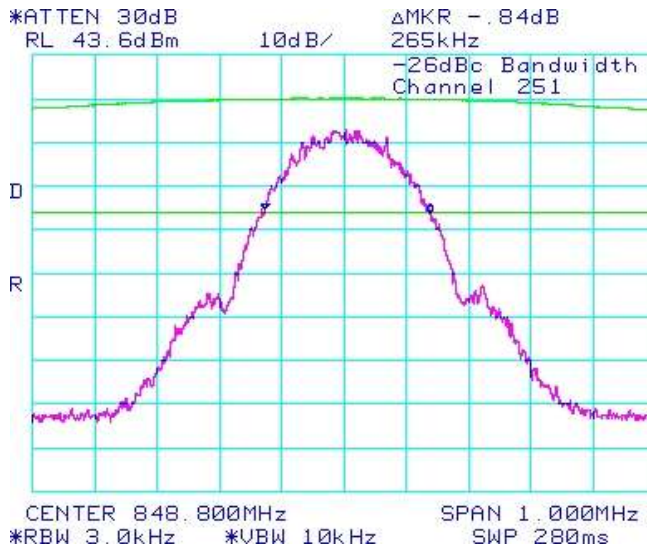




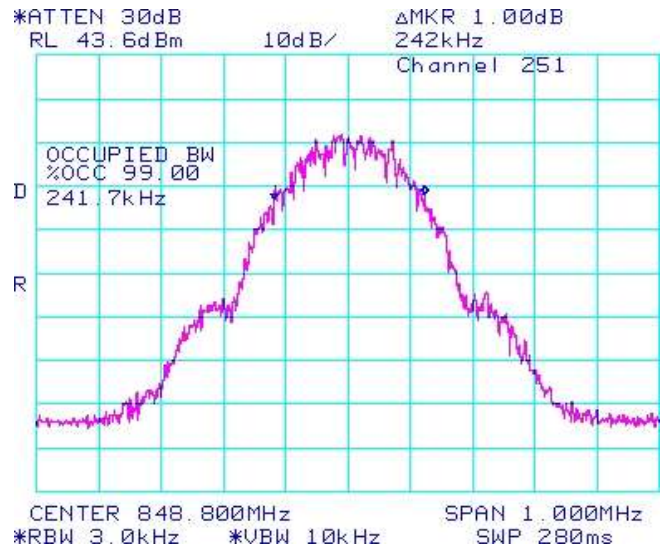
|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

### GSM Conducted RF Emission Test Data cont'd

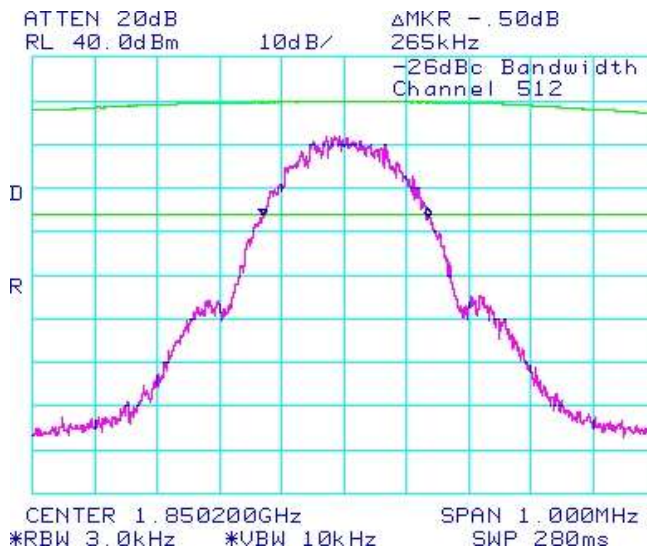
**Figure 1-17a: -26dBc bandwidth, GSM850 band High Channel in GSM mode**



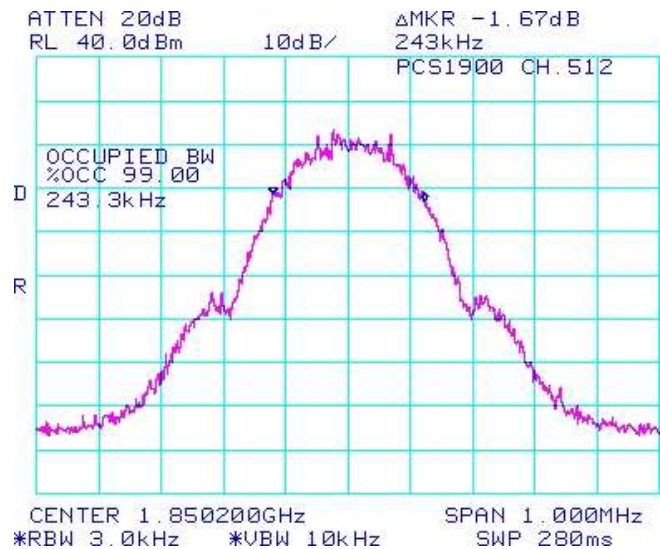
**Figure 1-18a: Occupied Bandwidth, GSM850 band High Channel in GSM mode**




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



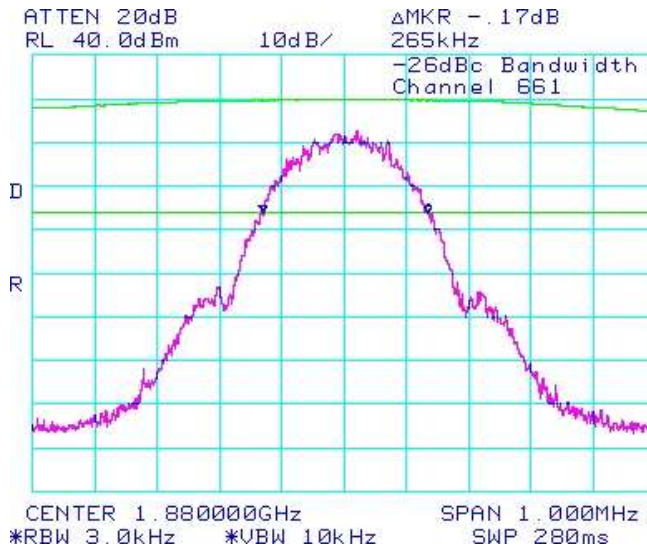
**Figure 1-20a: Occupied Bandwidth, PCS1900 Low Channel in GSM mode**



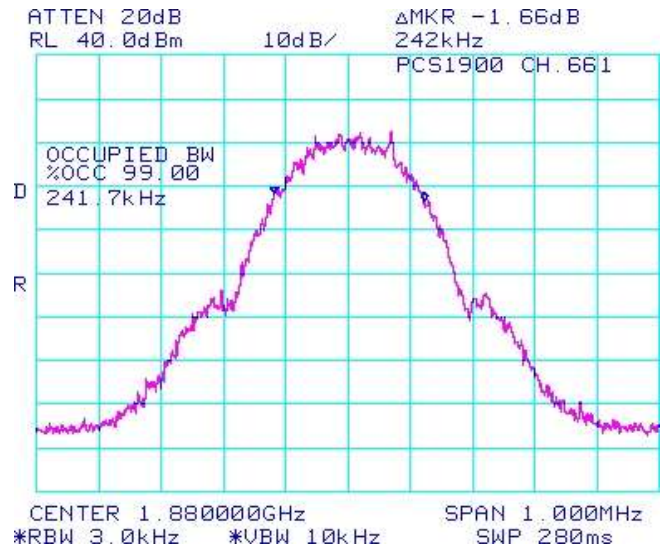
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|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

### GSM Conducted RF Emission Test Data cont'd

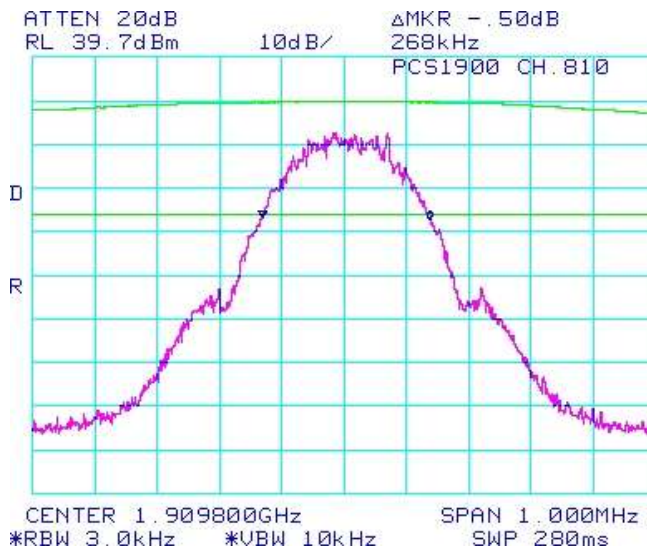
**Figure 1-21a: -26dBc bandwidth, PCS1900 Middle Channel in GSM mode**



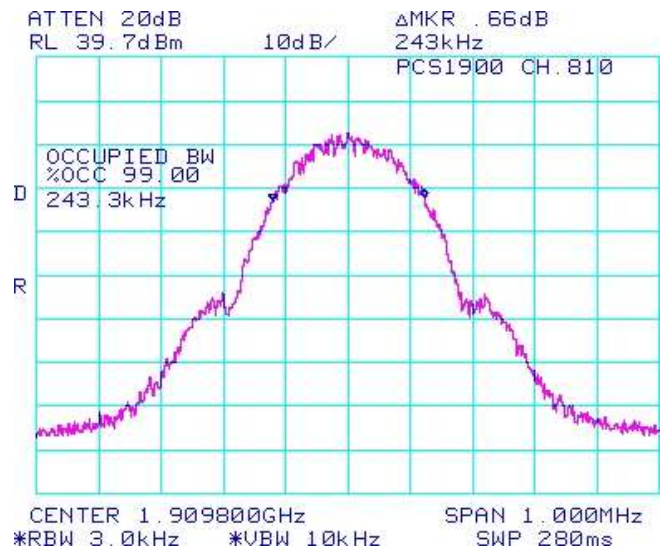
**Figure 1-22a: Occupied Bandwidth, PCS1900 Middle Channel in GSM mode**




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



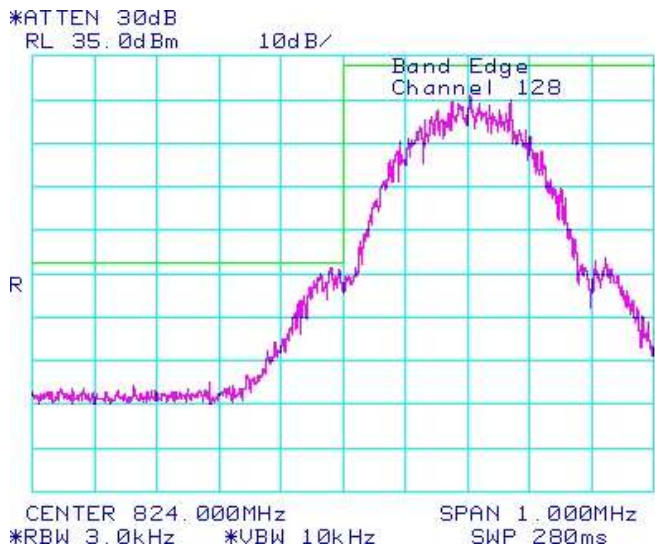
**Figure 1-24a: Occupied Bandwidth, PCS1900 High Channel in GSM mode**



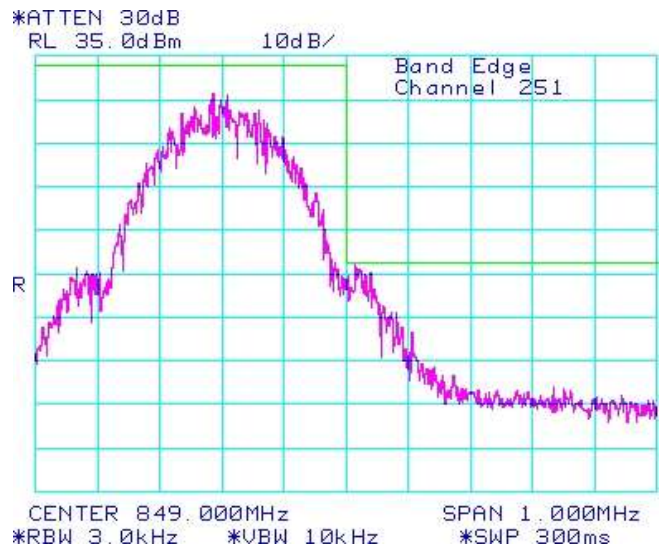
|   |  |  |
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|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

GSM Conducted RF Emission Test Data cont'd

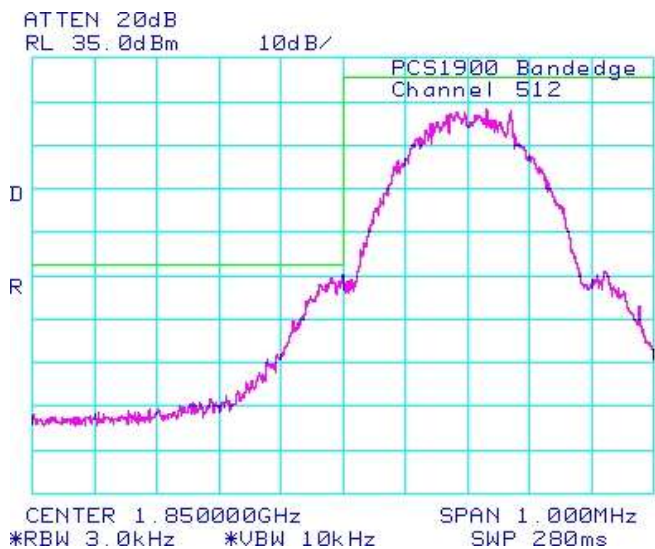
**Figure 1-25a: GSM850 band, Low Channel Mask in GSM mode**



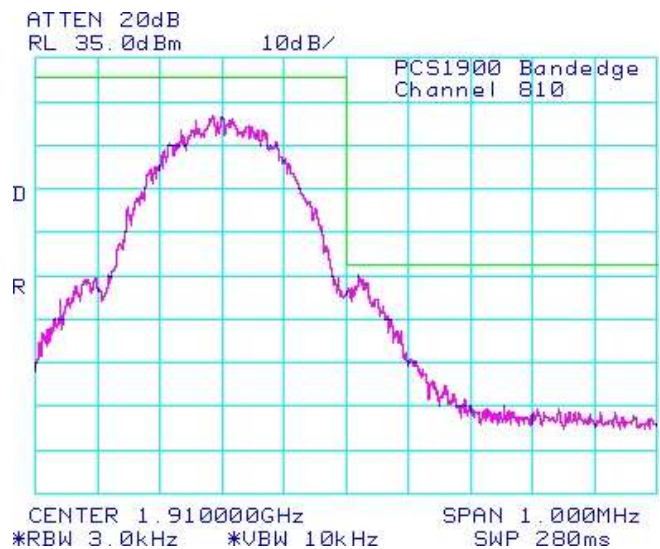
**Figure 1-26a: GSM850 band High Channel Mask in GSM mode**




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



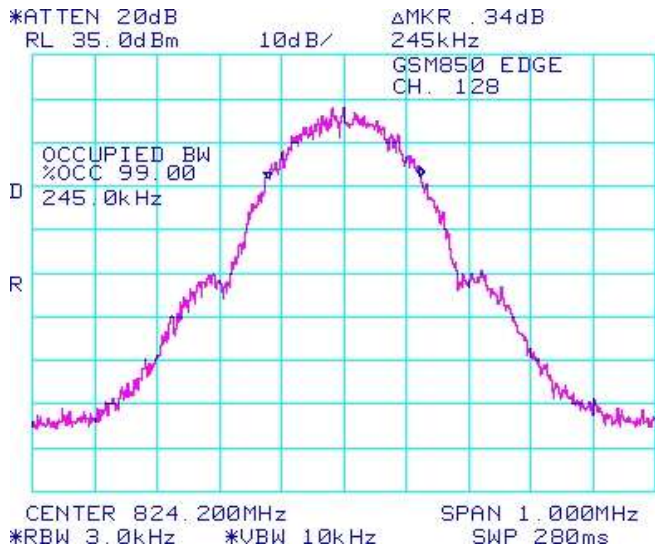
**Figure 1-28a: PCS1900, High Channel Mask in GSM mode**



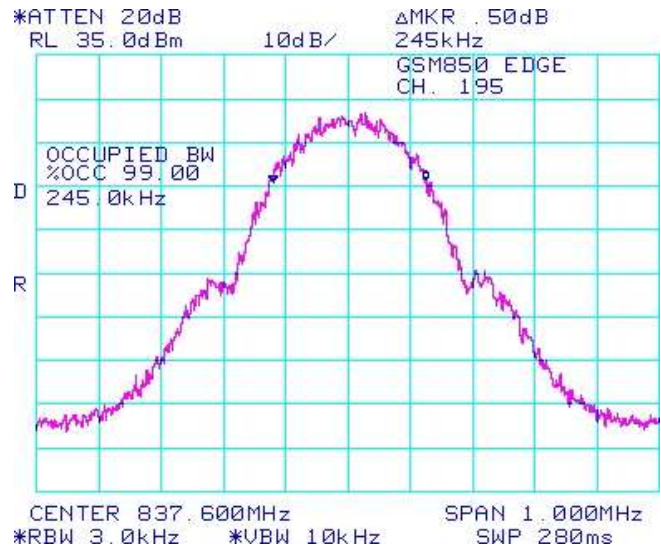
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|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

### GSM Conducted RF Emission Test Data cont'd

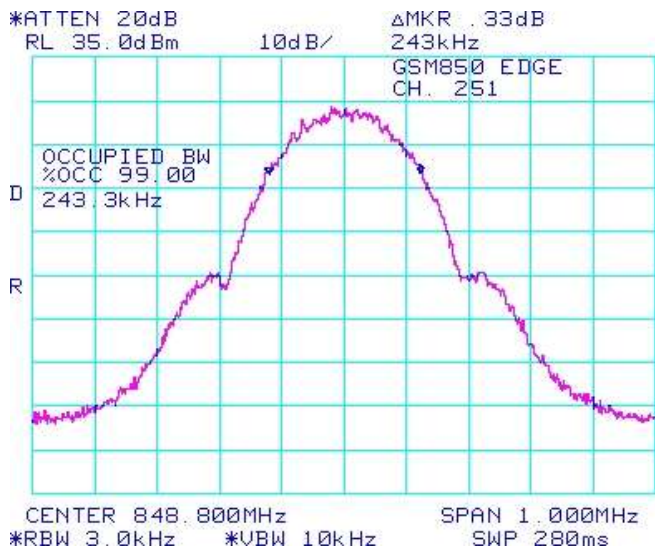
**Figure 1-29a: Occupied Bandwidth, GSM850 Band, Low Channel in EDGE mode**



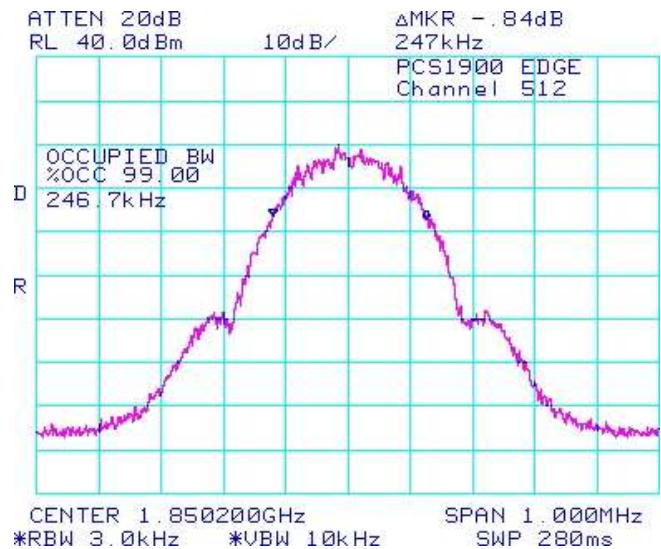
**Figure 1-30a: Occupied Bandwidth, GSM850 Band, Middle Channel in EDGE mode**




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



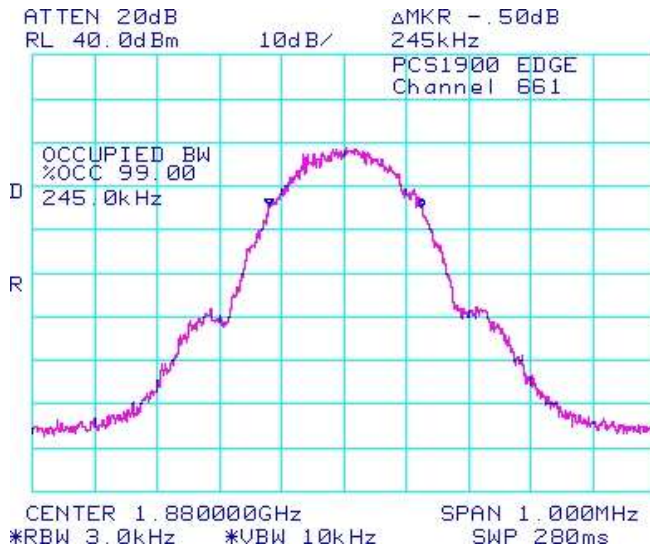
**Figure 1-32a: Occupied Bandwidth, PCS1900 Band, Low Channel in EDGE mode**



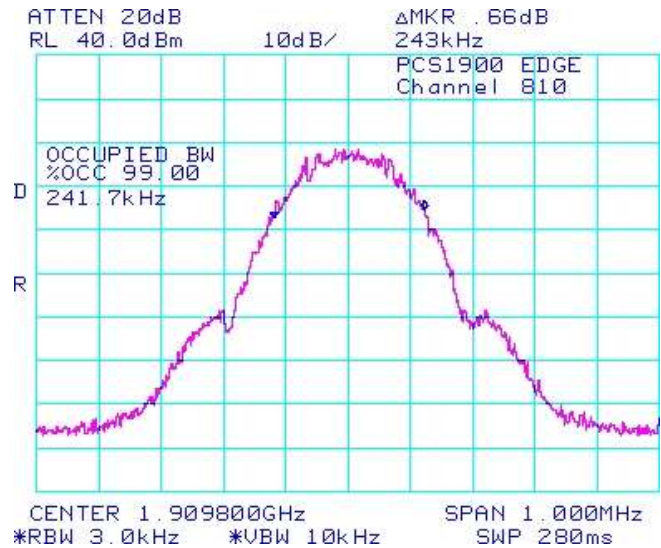
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|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

### GSM Conducted RF Emission Test Data cont'd

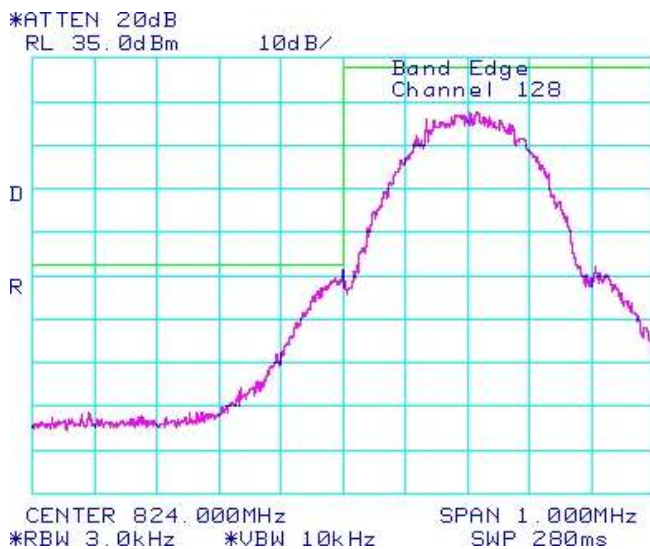
**Figure 1-33a: Occupied Bandwidth, PCS1900 Band, Middle Channel in EDGE mode**



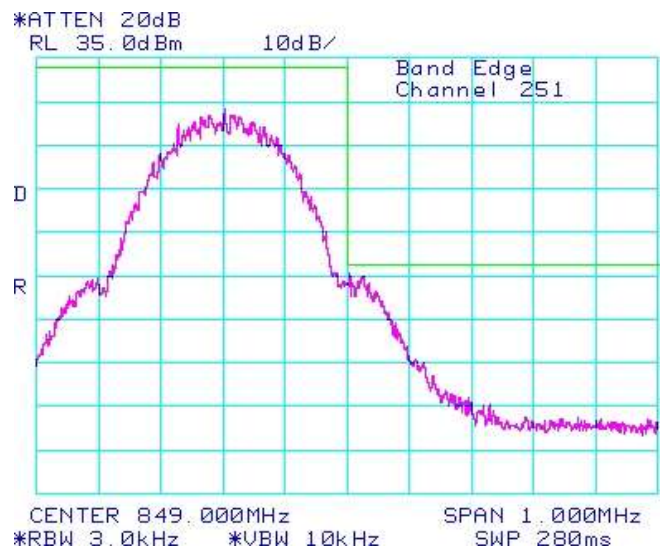
**Figure 1-34a: Occupied Bandwidth, PCS1900 Band, High Channel in EDGE mode**




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



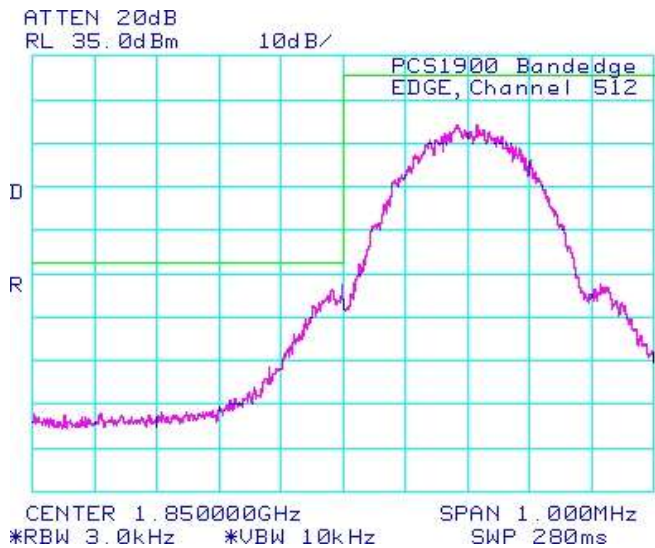
**Figure 1-36a: GSM850 Band, High Channel Mask in EDGE mode**



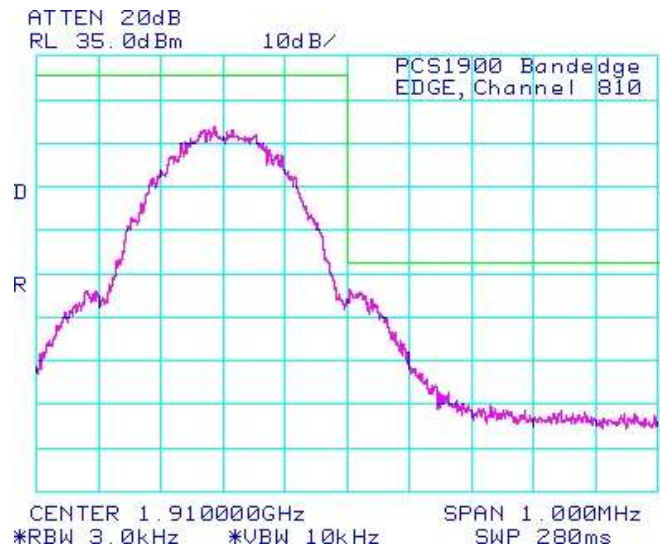
|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |


GSM Conducted RF Emission Test Data cont'd

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



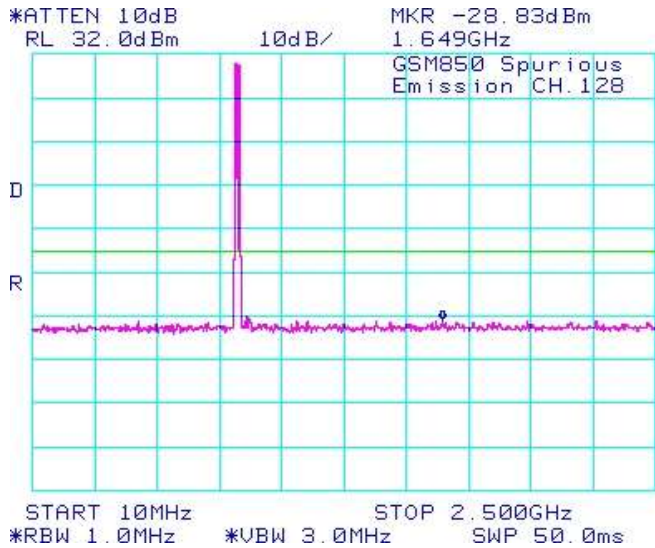
**Figure 1-38a: PCS1900 Band, High Channel Mask in EDGE mode**



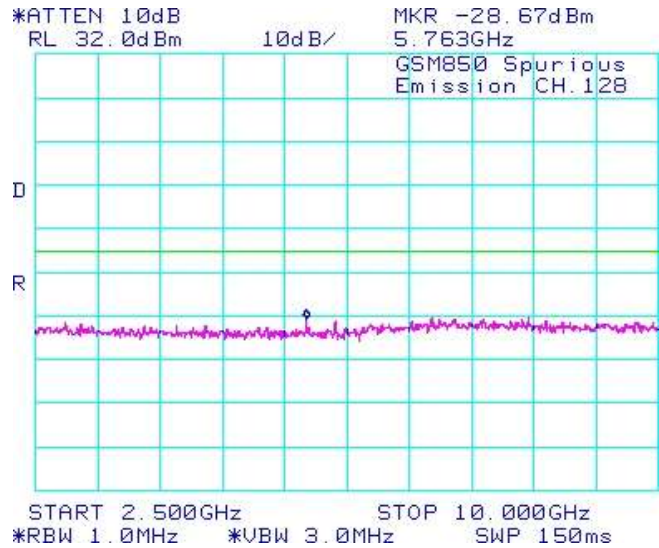
|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

**GSM Conducted RF Emission Test Data cont'd**

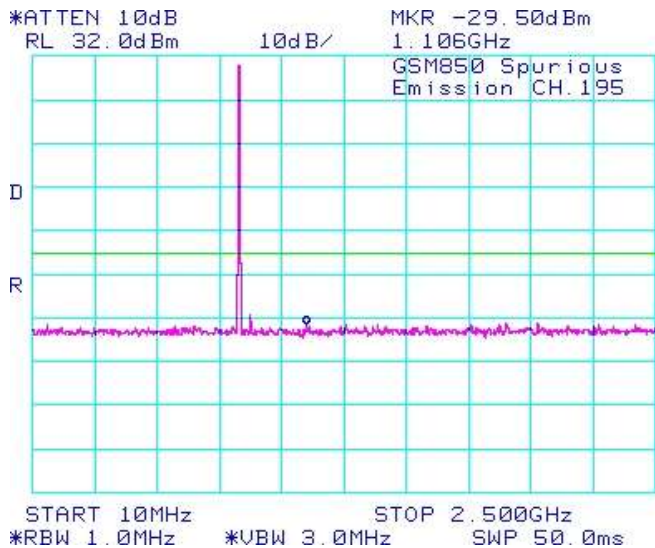
**Figure 1-39a: GSM850 band, Spurious Conducted Emissions, Low channel in Edge Mode**



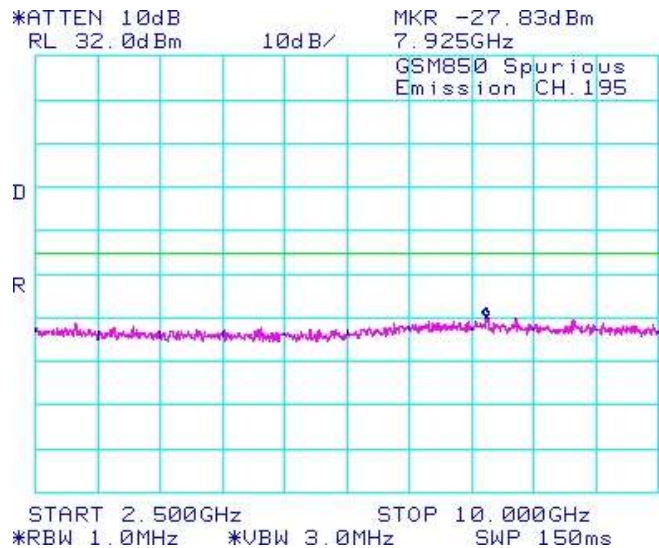
**Figure 1-40a: GSM850 band, Spurious Conducted Emissions, Low channel in Edge Mode**




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



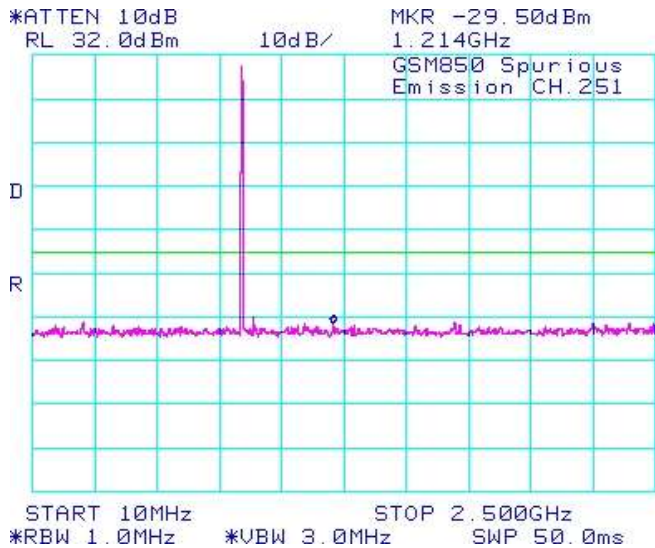
**Figure 1-42a: GSM850 band, Spurious Conducted Emissions, Middle channel in Edge Mode**



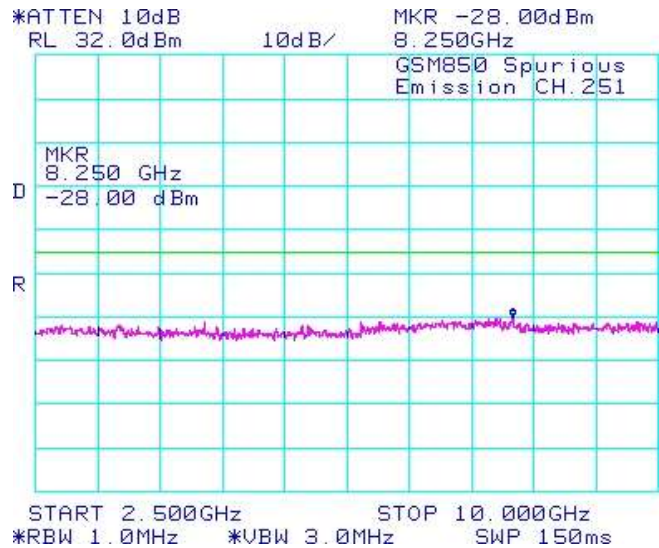
|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

### GSM Conducted RF Emission Test Data cont'd

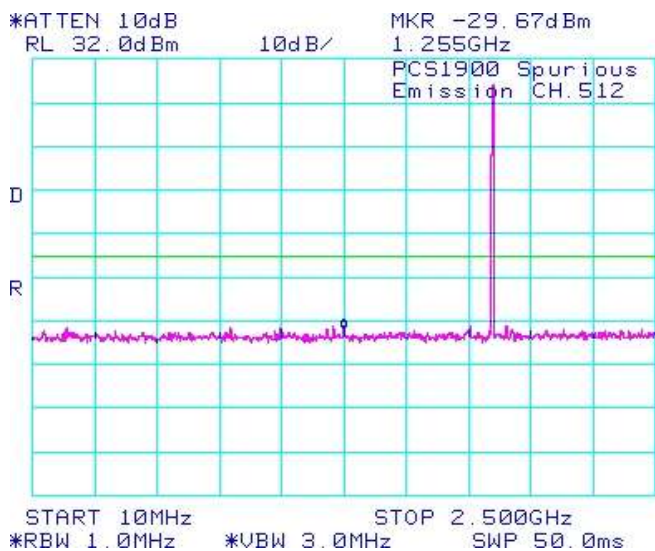
**Figure 1-43a: GSM850 band, Spurious Conducted Emissions, High channel in Edge Mode**



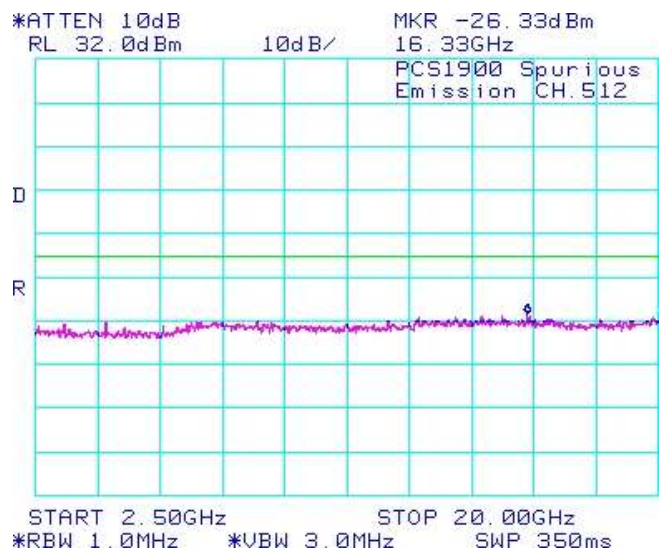
**Figure 1-44a: GSM850 band, Spurious Conducted Emissions, High channel in Edge Mode**




**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**

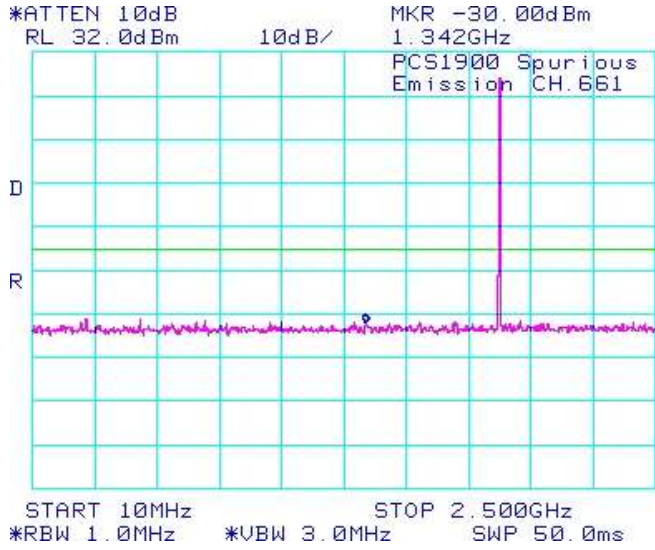




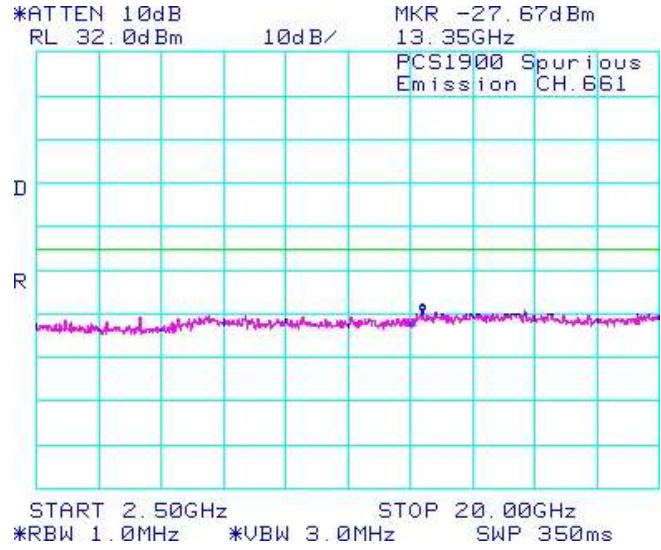
|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

GSM Conducted RF Emission Test Data cont'd

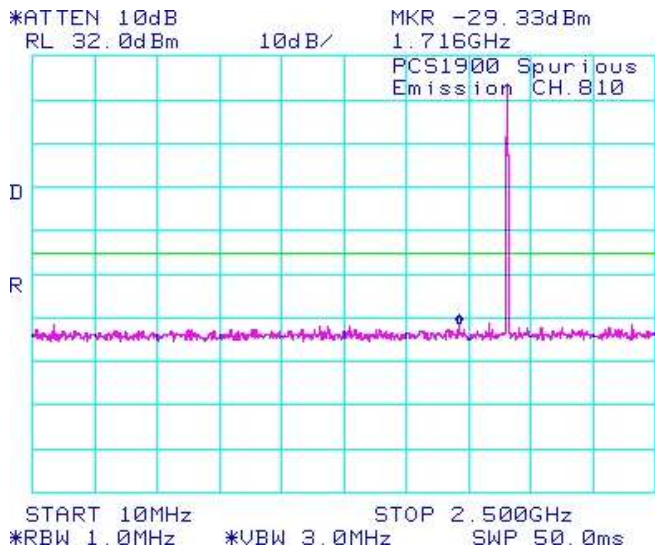
**Figure 1-47a: PCS1900 band, Spurious Conducted Emissions, Low channel in Edge Mode**



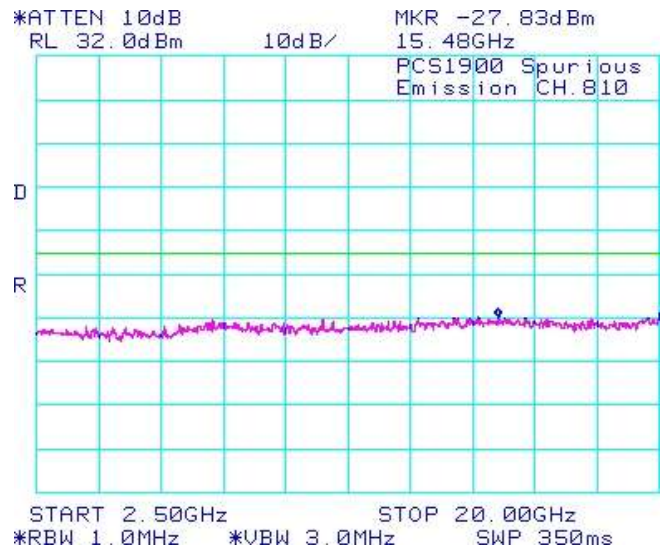
**Figure 1-48a: PCS1900 band, Spurious Conducted Emissions, Low channel in Edge Mode**



**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 RDR61CW, RDZ21CW<br>APPENDIX 1B |   |
|   | <b>Test Report No.</b><br>RTS-2604-1106-131B   | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011 |

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: June 27, 2011

***Test Data for Cellular and PCS selected Frequencies in Loopback mode***

| <b>Cellular Frequency (MHz)</b> | <b>99% Occupied Bandwidth (MHz)</b> |
|---------------------------------|-------------------------------------|
| 824.700                         | 1.267                               |
| 836.520                         | 1.273                               |
| 848.310                         | 1.267                               |

| <b>PCS Frequency (MHz)</b> | <b>99% Occupied Bandwidth (MHz)</b> |
|----------------------------|-------------------------------------|
| 1851.200                   | 1.280                               |
| 1880.000                   | 1.280                               |
| 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 1-24b for the plots of the Channel mask.

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

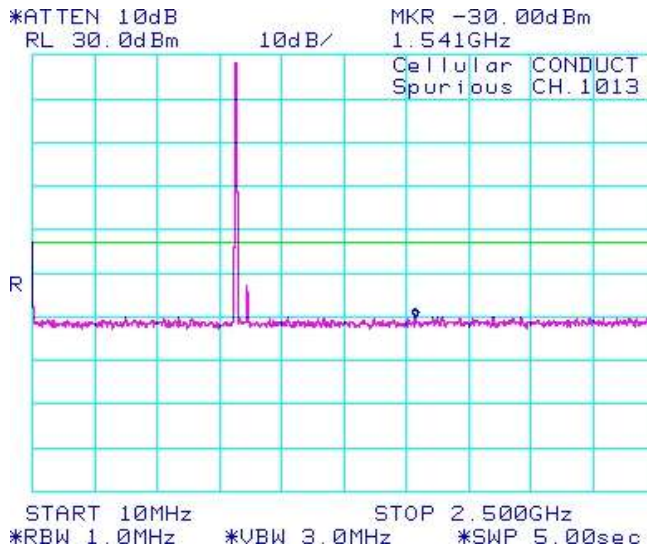
**Test Report No.**  
RTS-2604-1106-131B

**Dates of Test**  
June 2 to June 28 and July 25 to 27,  
2011

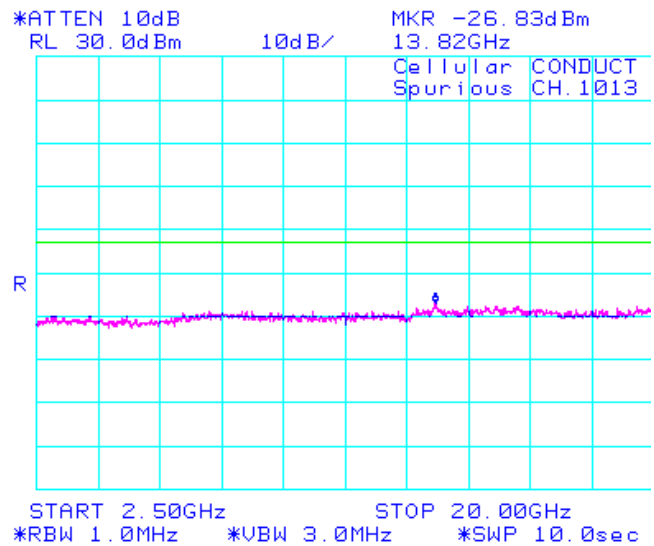
**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW

CDMA Conducted RF Emission Test Data cont'd

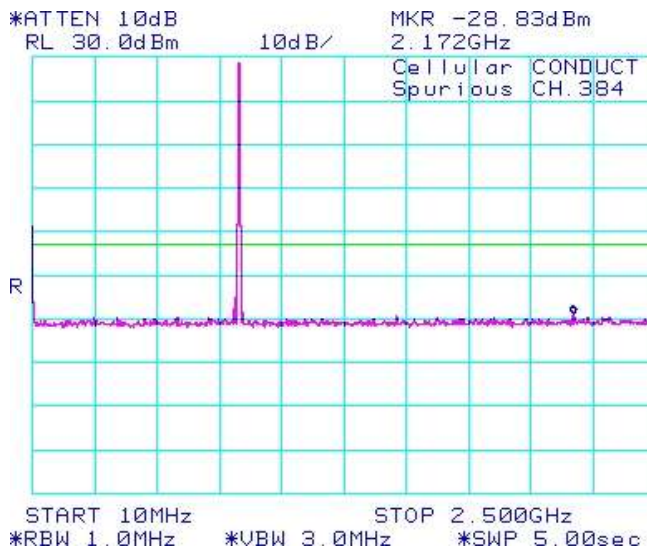
**Figure 1-1b: Cellular, Spurious Conducted Emissions, Low channel**



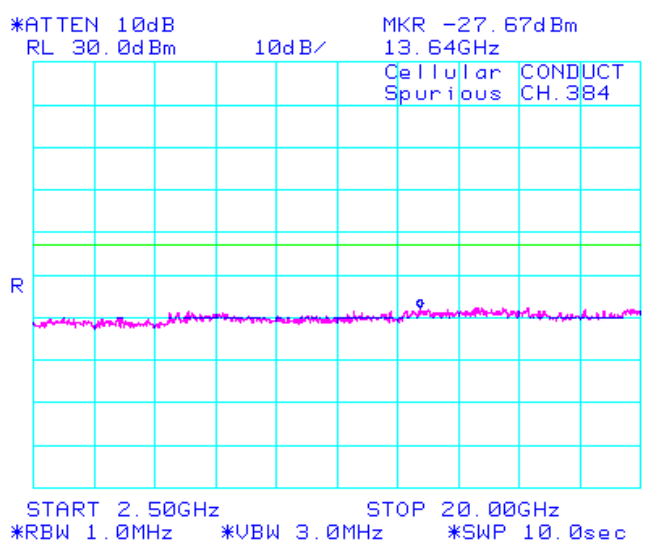
**Figure 1-2b: Cellular, Spurious Conducted Emissions, Low channel**



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



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



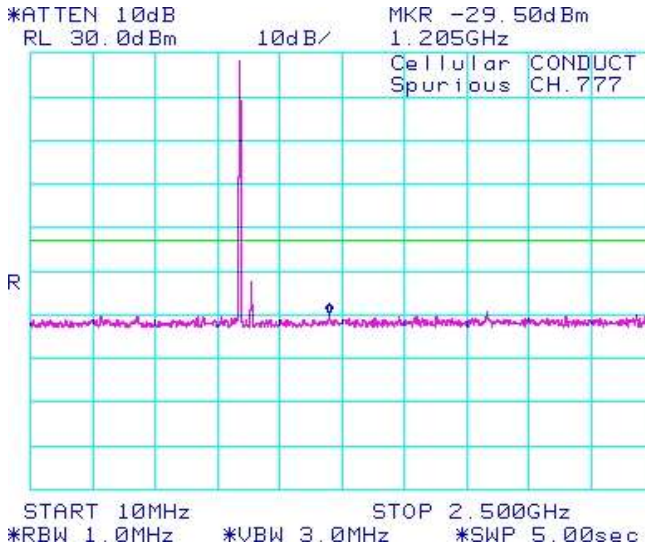
**Test Report No.**  
RTS-2604-1106-131B

**Dates of Test**  
June 2 to June 28 and July 25 to 27,  
2011

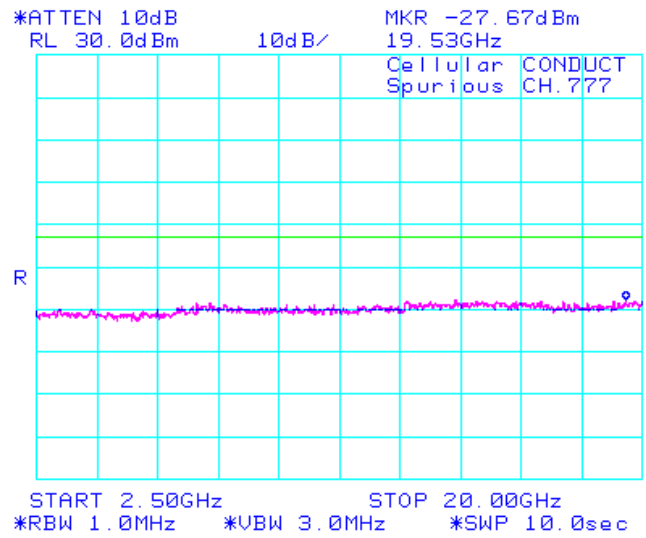
**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW

**UMTS Conducted RF Emission Test Data cont'd**

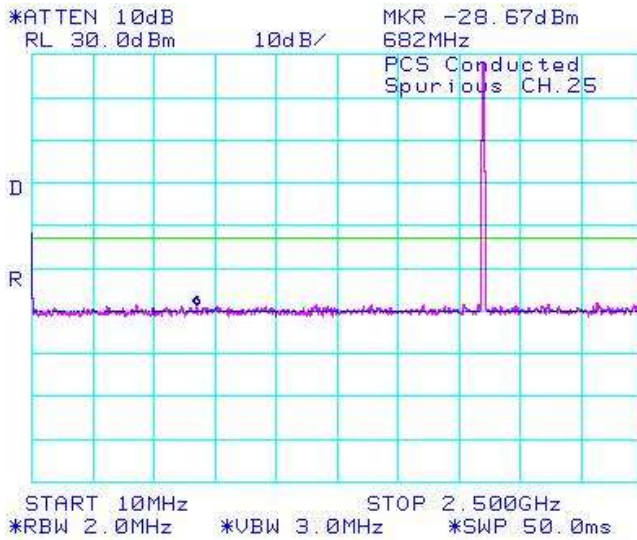
**Figure 7-5b: Cellular, Spurious Conducted Emissions, High Channel**



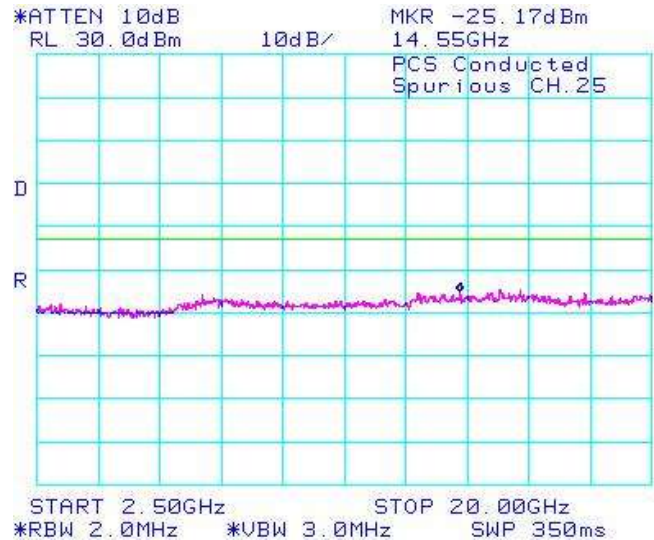
**Figure 1-6b: Cellular, Spurious Conducted Emissions, High Channel**




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



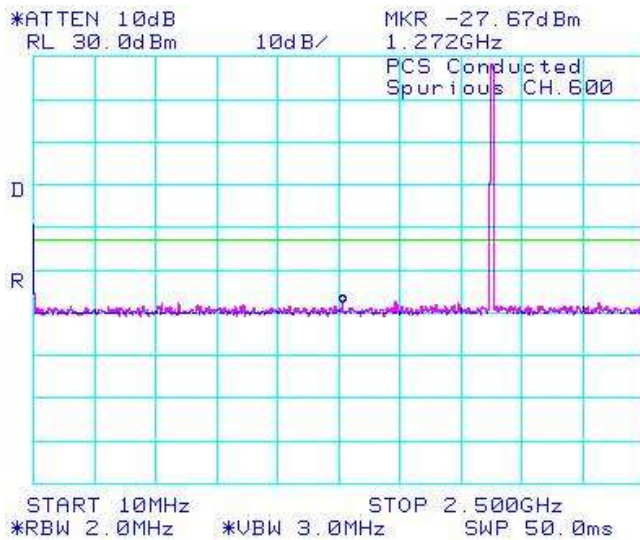
**Figure 1-8b: PCS, Spurious Conducted Emissions, Low Channel**



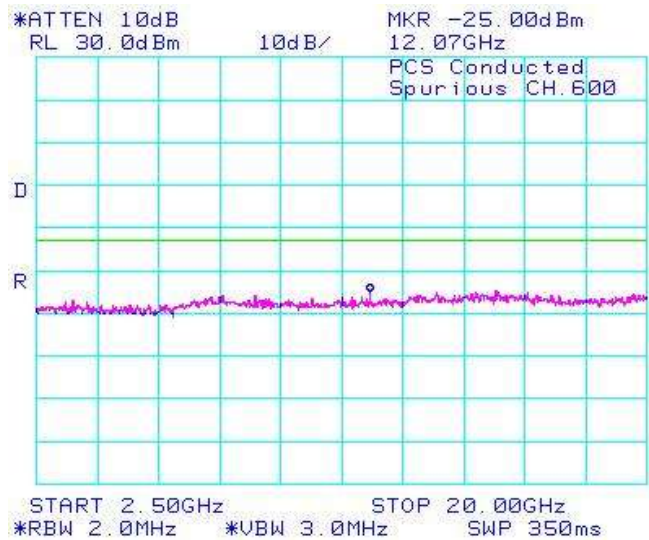
|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

CDMA Conducted RF Emission Test Data cont'd

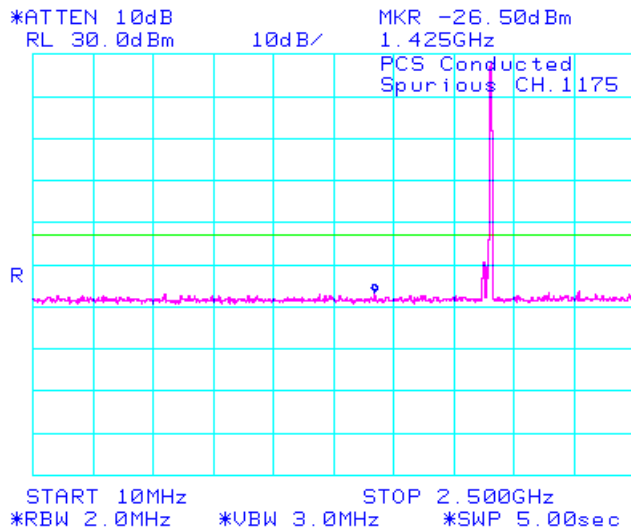
**Figure 1-9b: PCS, Spurious Conducted Emissions, Middle Channel**



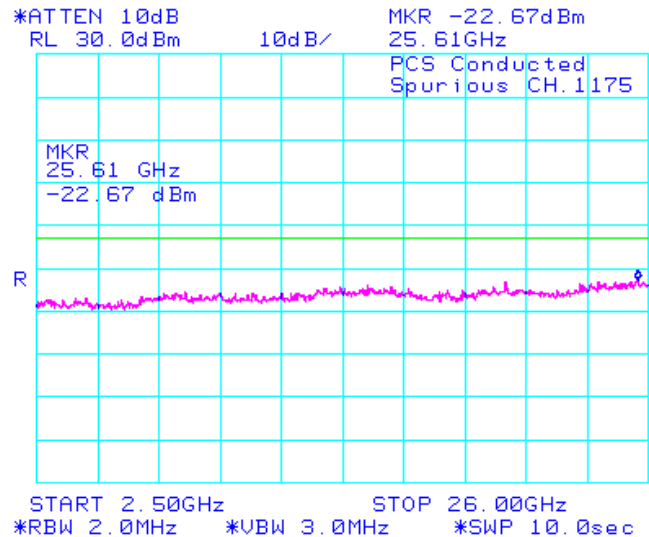
**Figure 1-10b: PCS, Spurious Conducted Emissions, Middle Channel**




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



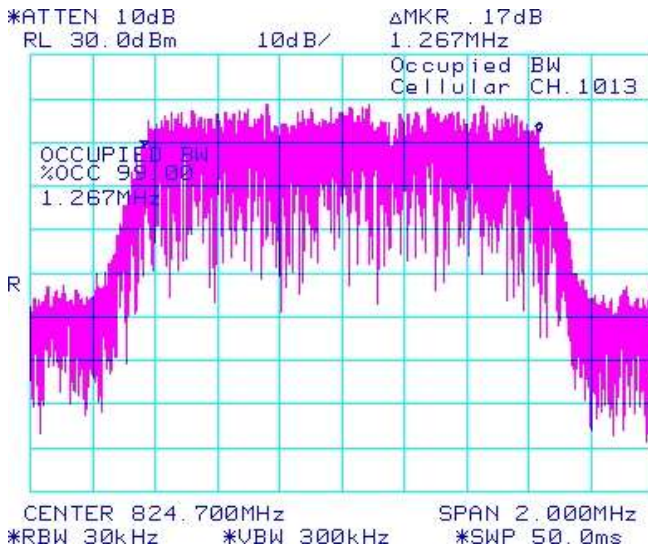
**Figure 1-12b: PCS, Spurious Conducted Emissions, High Channel**



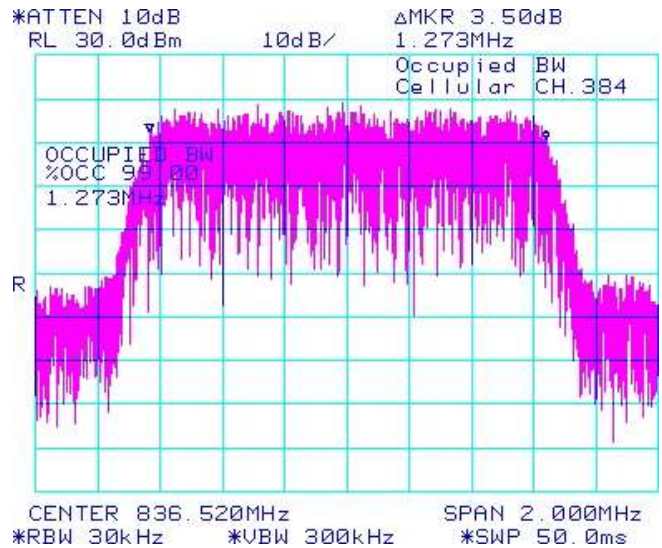
|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

CDMA Conducted RF Emission Test Data cont'd

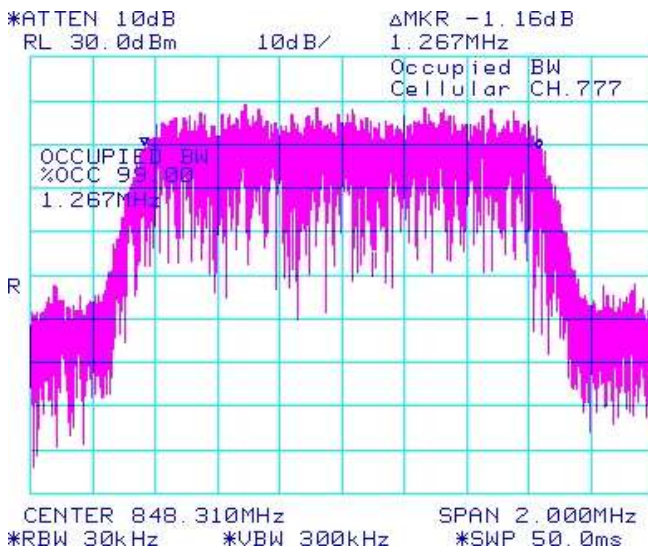
**Figure 1-13b: Occupied Bandwidth, Cellular Low Channel**



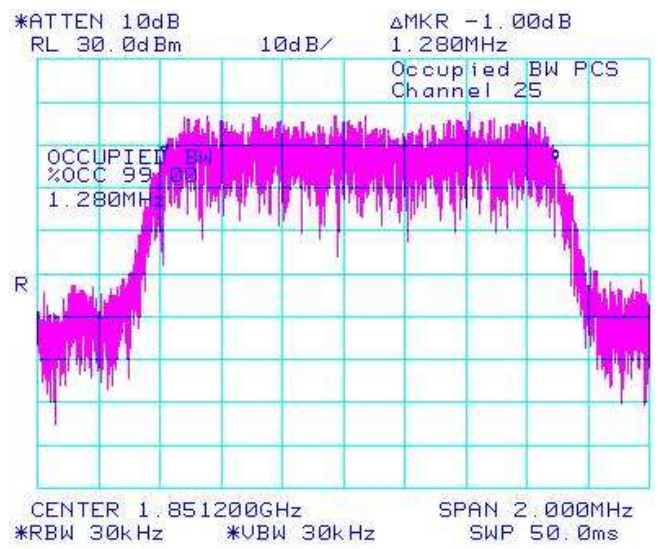
**Figure 1-14b: Occupied Bandwidth, Cellular Middle Channel**




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



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

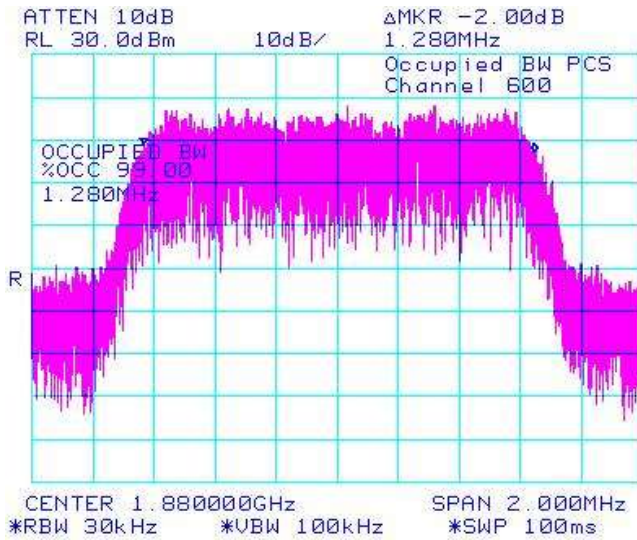




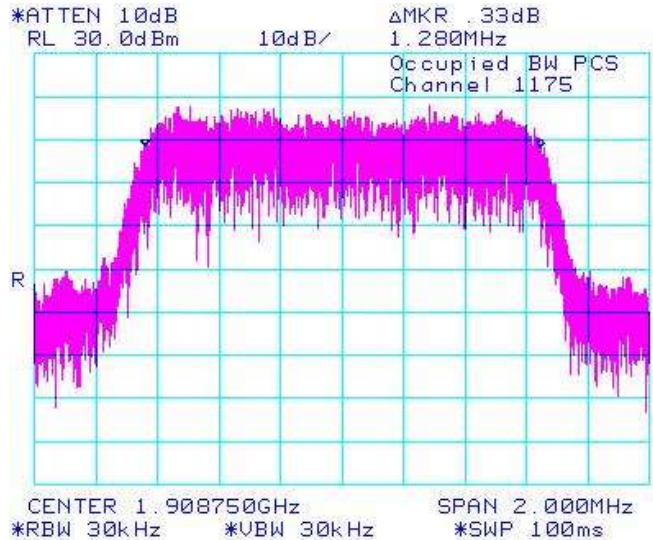
|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

CDMA Conducted RF Emission Test Data cont'd

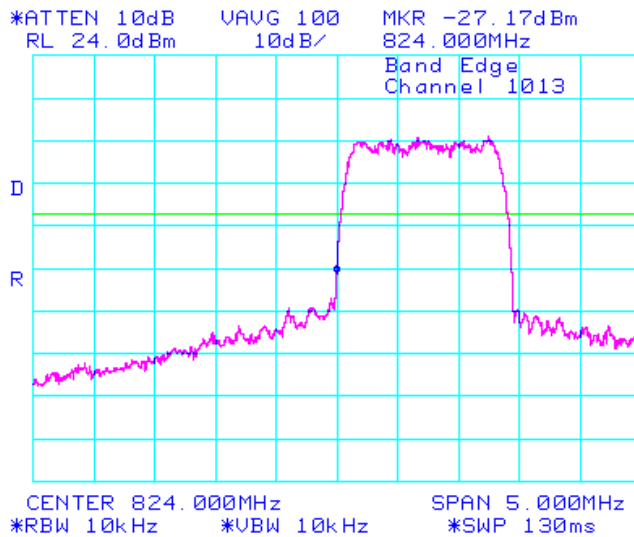
**Figure 1-17b: Occupied Bandwidth, PCS Middle Channel**



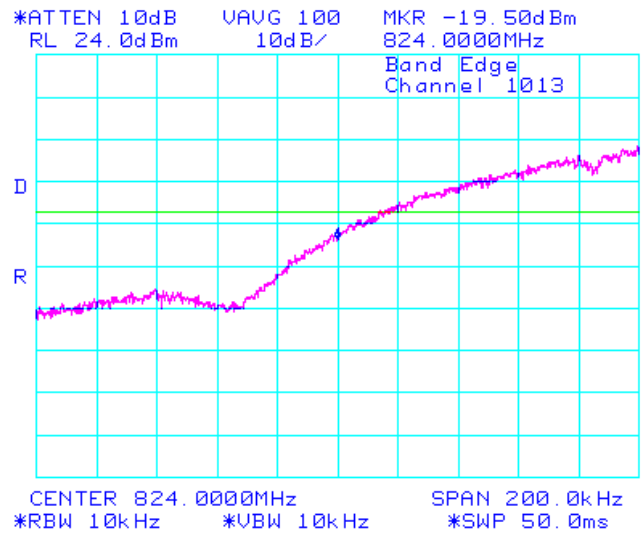
**Figure 1-18b: Occupied Bandwidth, PCS High Channel**




**Figure 1-19b: Cellular Low Channel Mask**



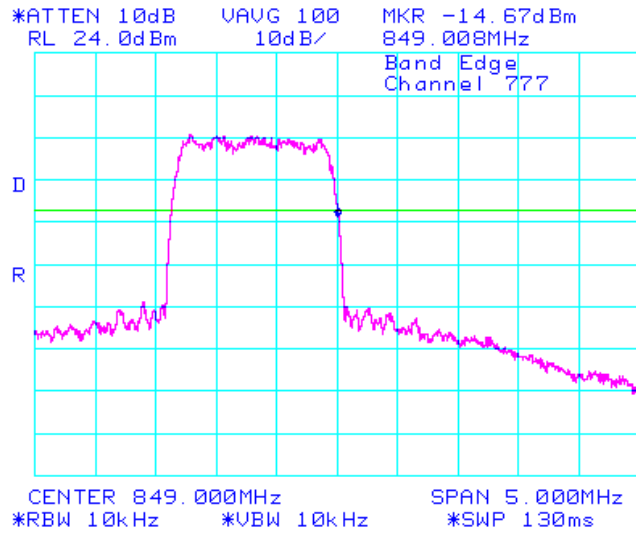
**Figure 1-20b: Cellular Low Channel Mask**



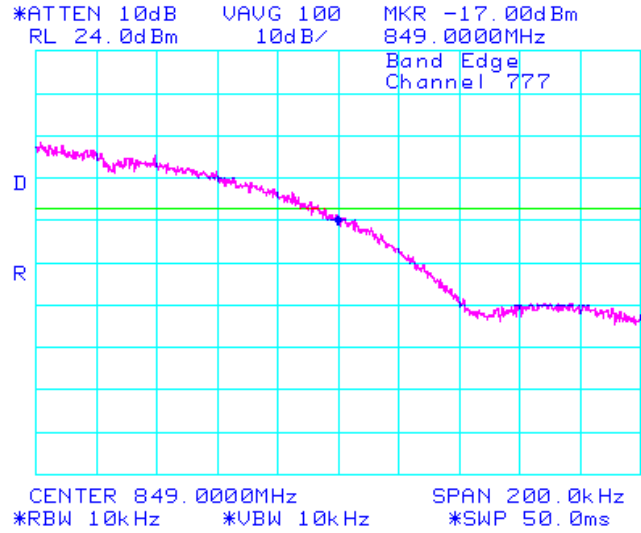
|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

CDMA Conducted RF Emission Test Data cont'd

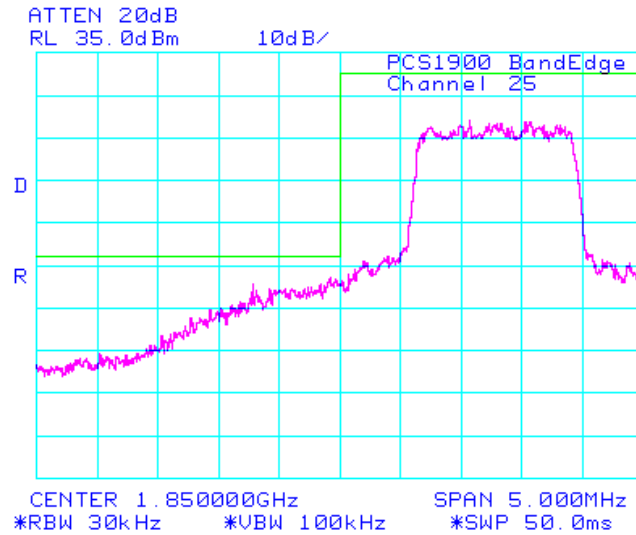
**Figure 1-21b: Cellular High Channel Mask**



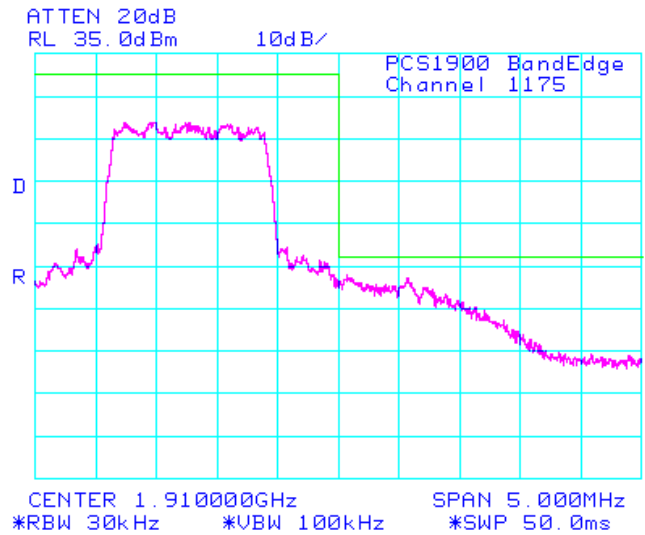
**Figure 1-22b: Cellular High Channel Mask**



**Figure 1-23b: PCS Low Channel Mask**



**Figure 1-24b: PCS High Channel Mask**





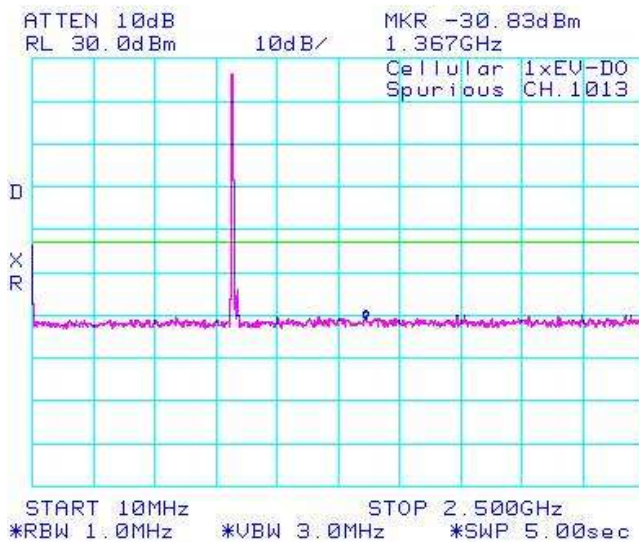
**Test Report No.**  
RTS-2604-1106-131B

**Dates of Test**  
June 2 to June 28 and July 25 to 27,  
2011

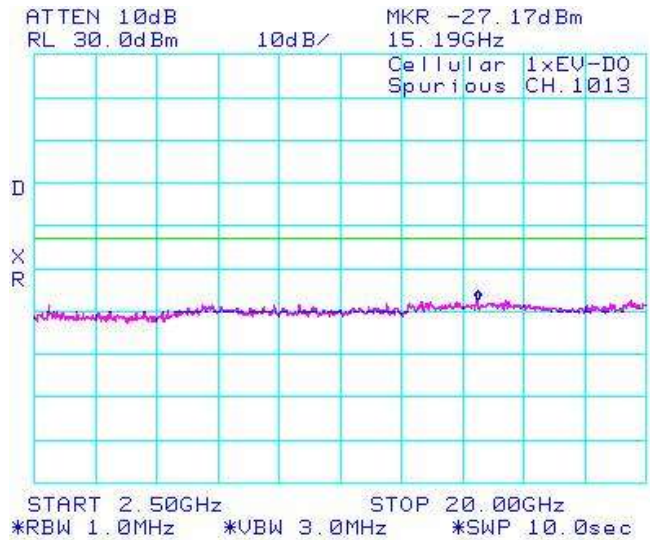
**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW

CDMA EVDO Conducted RF Emission Test Data cont'd

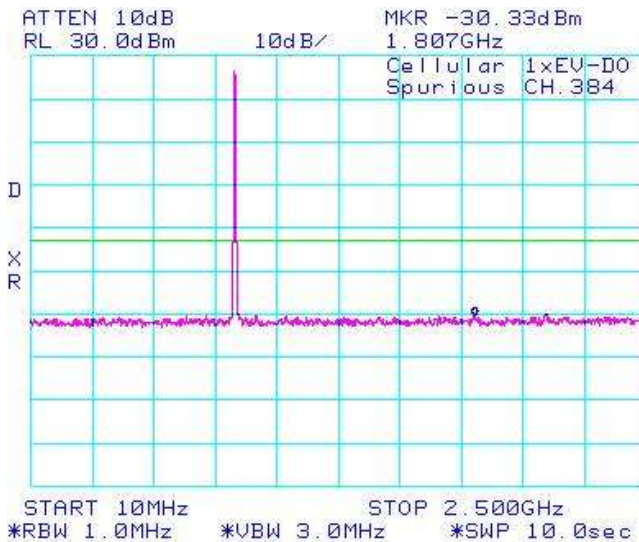
**Figure 1-23b: Cellular , Spurious Conducted Emissions, Low channel**



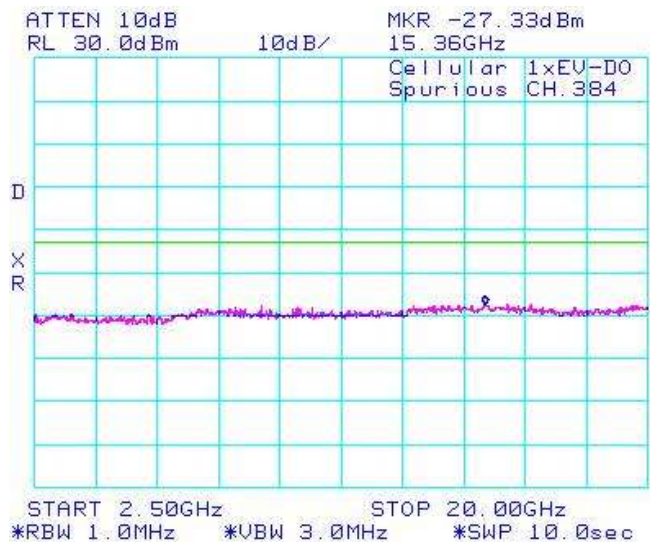
**Figure 1-24b: Cellular , Spurious Conducted Emissions, Low channel**




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



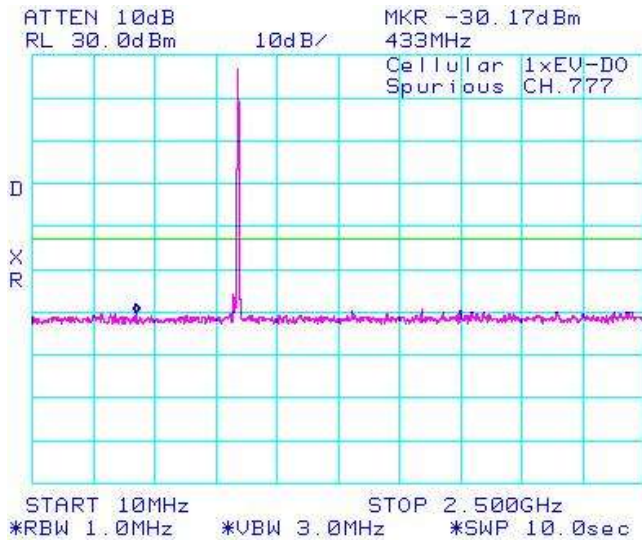
**Figure 1-26b: Cellular , Spurious Conducted Emissions, Middle channel**



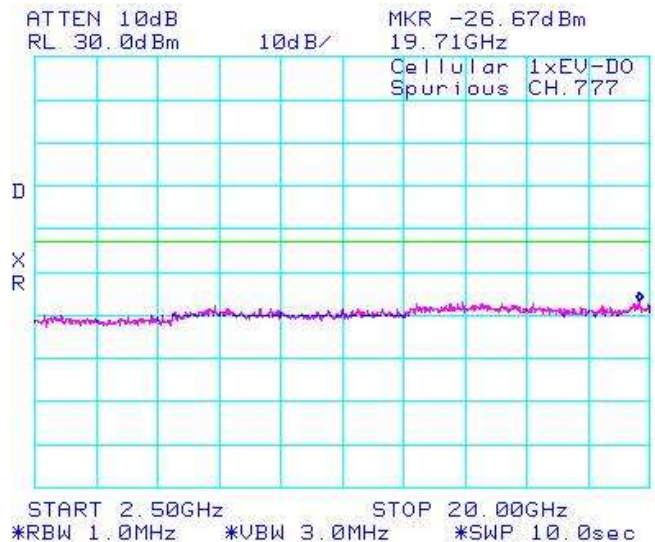
|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

CDMA Conducted RF Emission Test Data cont'd

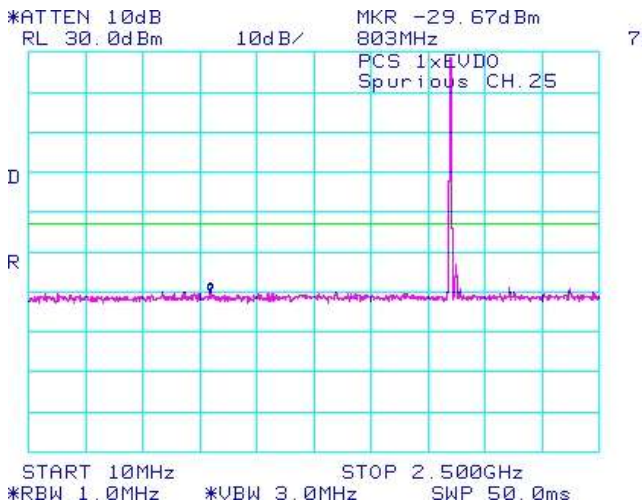
**Figure 8-27b: Cellular , Spurious Conducted Emissions, High Channel**



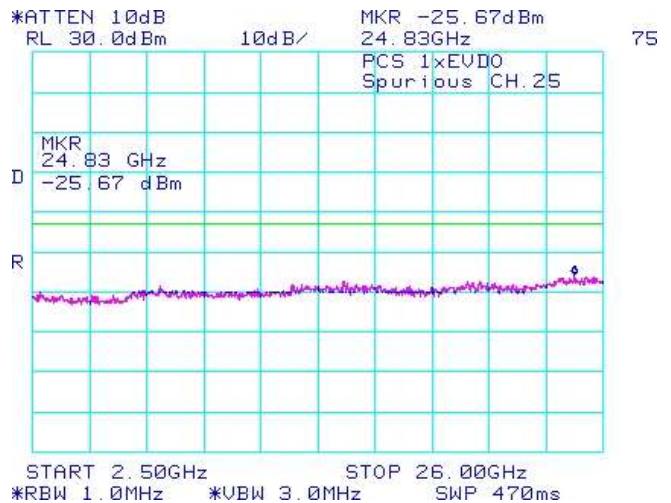
**Figure 1-28b: Cellular , Spurious Conducted Emissions, High Channel**



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



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



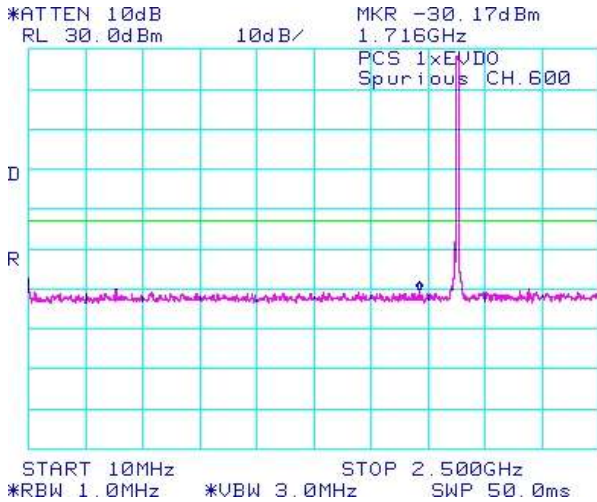
**Test Report No.**  
RTS-2604-1106-131B

**Dates of Test**  
June 2 to June 28 and July 25 to 27,  
2011

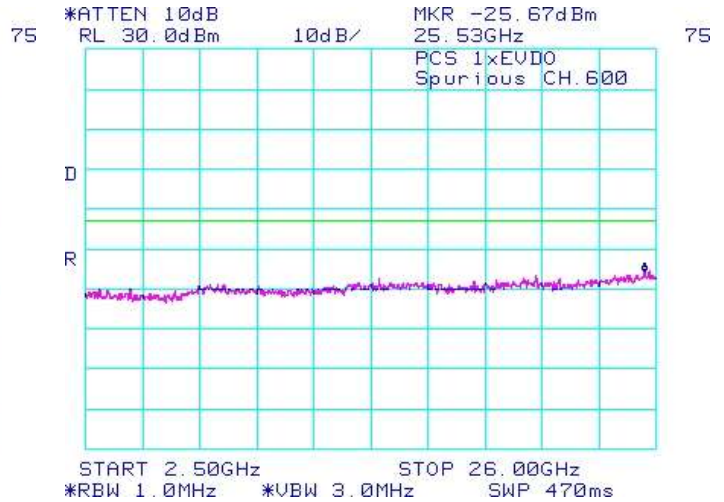
**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW

CDMA Conducted RF Emission Test Data cont'd

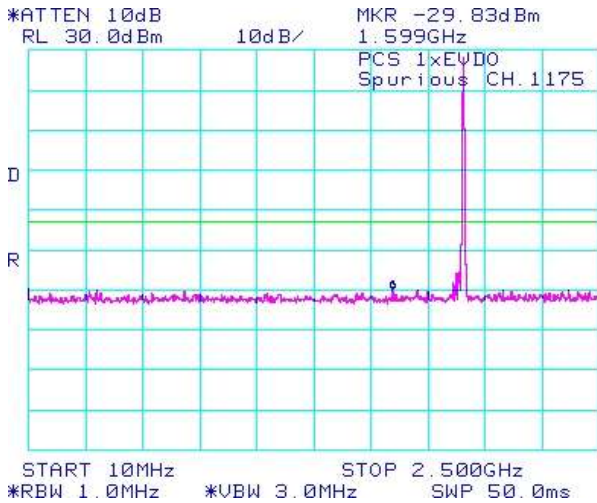
**Figure 1-31b: CDMA PCS, Spurious Conducted Emissions, Middle Channel**



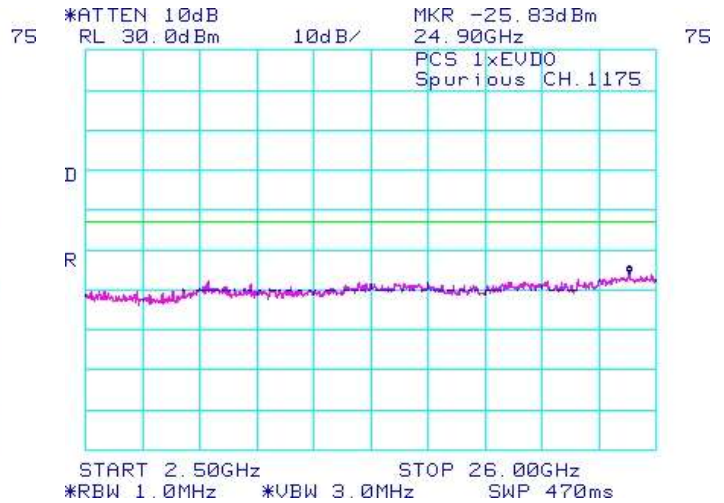
**Figure 1-32b: CDMA PCS, Spurious Conducted Emissions, Middle Channel**




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



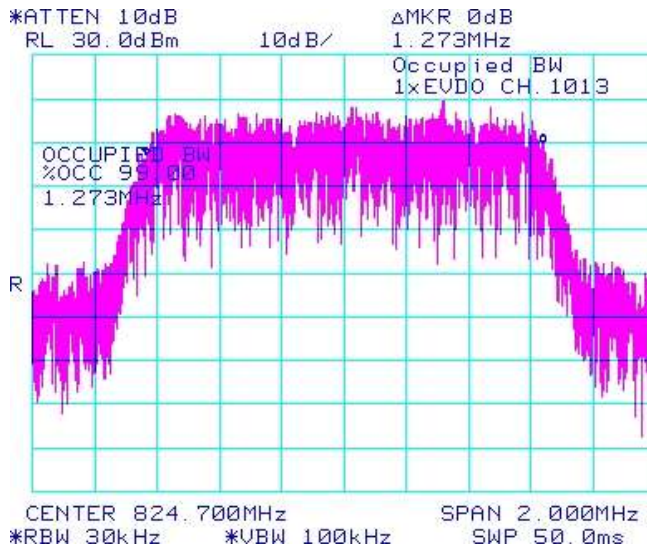
**Figure 1-34b: CDMA PCS, Spurious Conducted Emissions, High Channel**



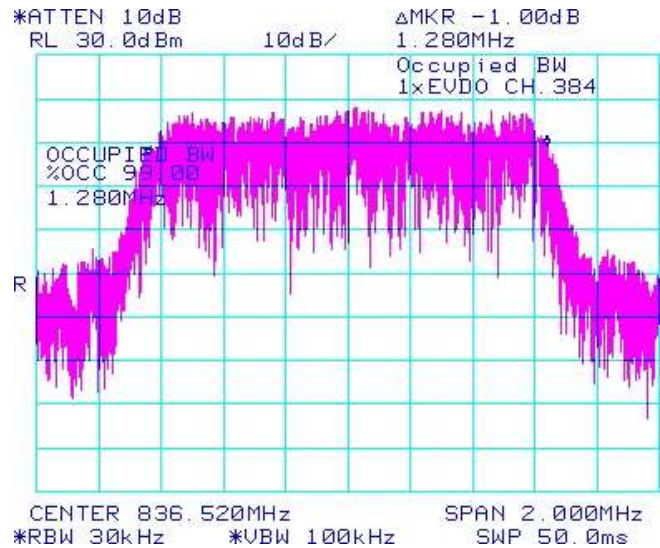
|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

CDMA Conducted RF Emission Test Data cont'd

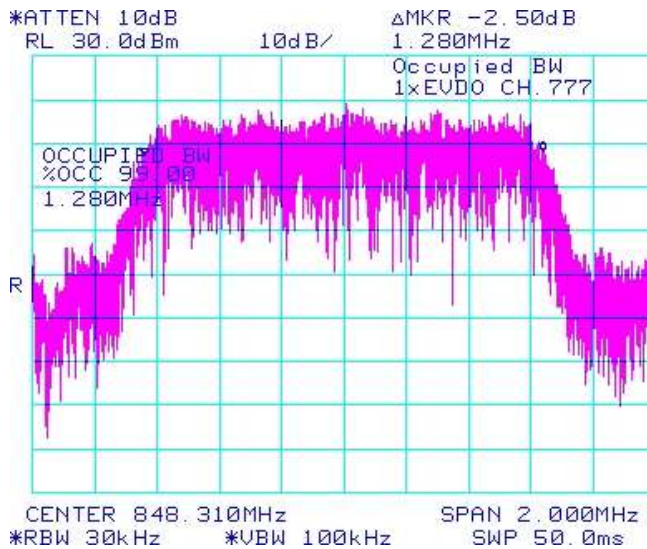
**Figure 1-35b: Occupied Bandwidth, Cellular Low Channel**



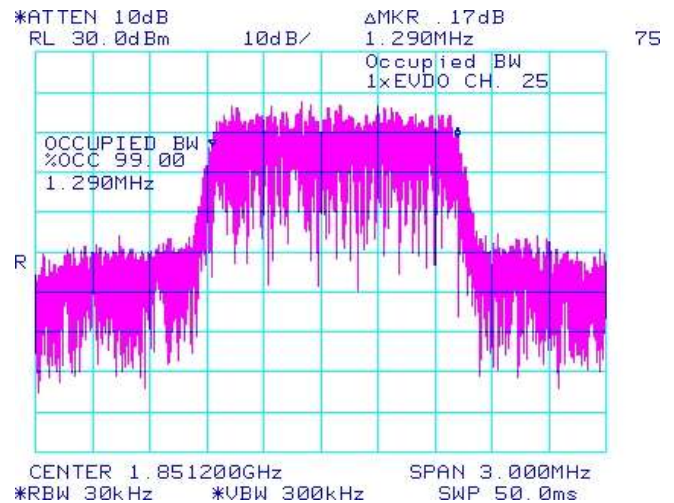
**Figure 1-36b: Occupied Bandwidth, Cellular Middle Channel**




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



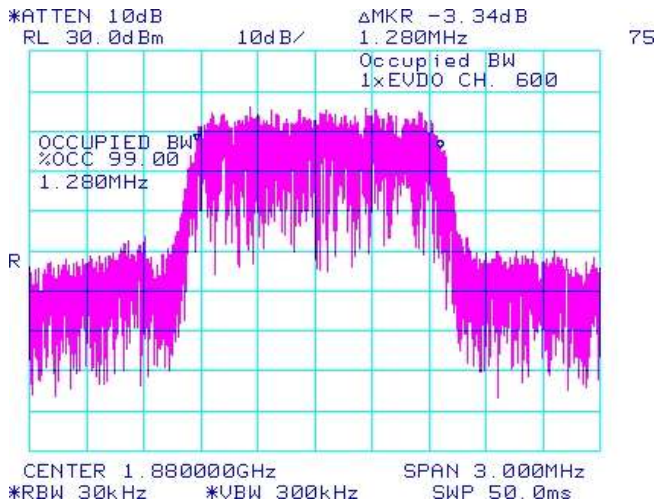
**Figure 1-38b: Occupied Bandwidth, PCS Low Channel**



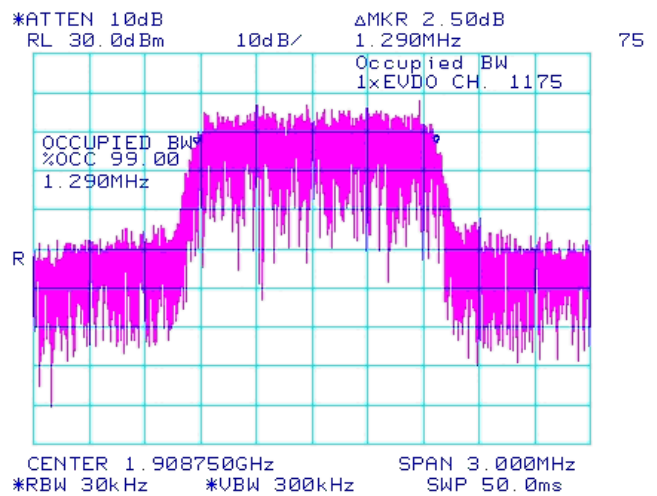
|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

**CDMA Conducted RF Emission Test Data cont'd**

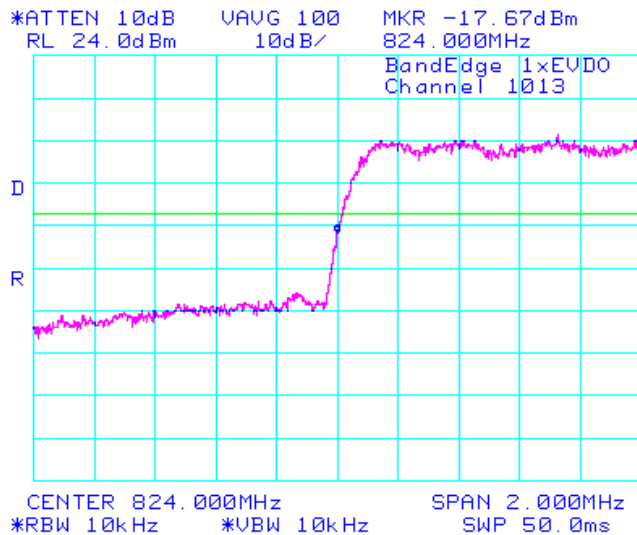
**Figure 1-38b: Occupied Bandwidth, PCS Middle Channel**



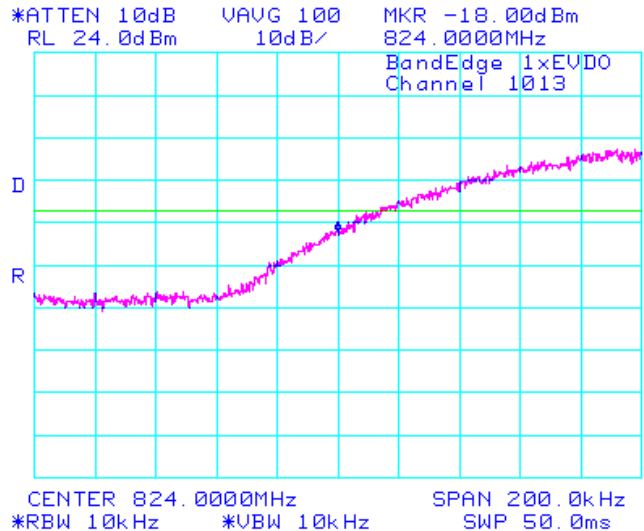
**Figure 1-39b: Occupied Bandwidth, PCS High Channel**




**Figure 1-40b: Cellular , Low Channel Mask**



**Figure 1-41b: Cellular , Low Channel Mask**

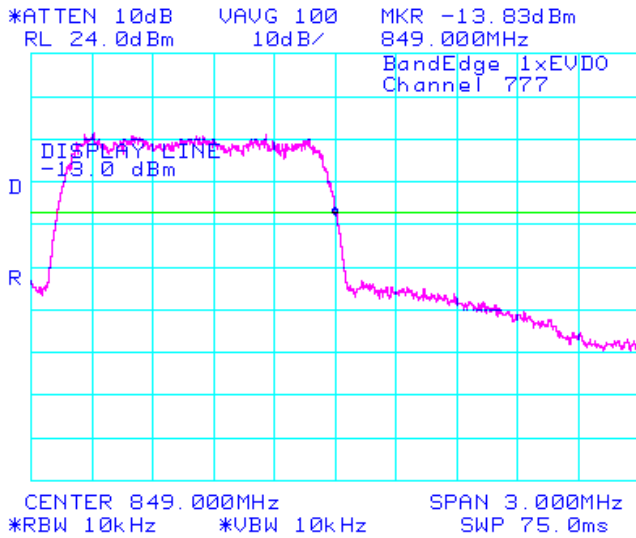




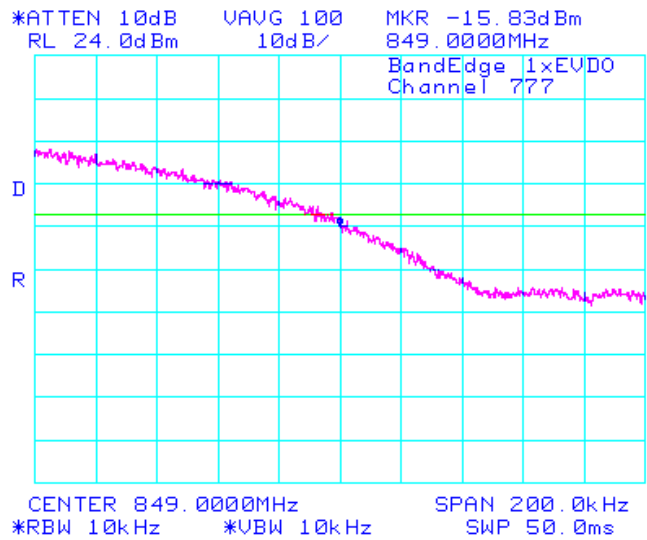
|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 1B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

CDMA Conducted RF Emission Test Data cont'd

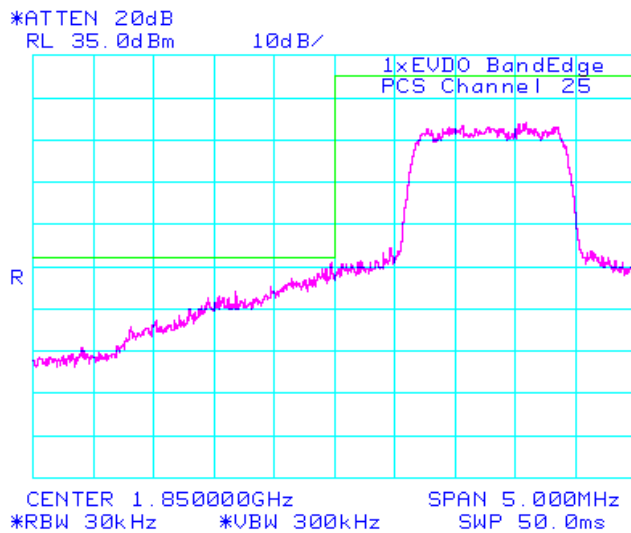
**Figure 1-42b: Cellular , High Channel Mask**



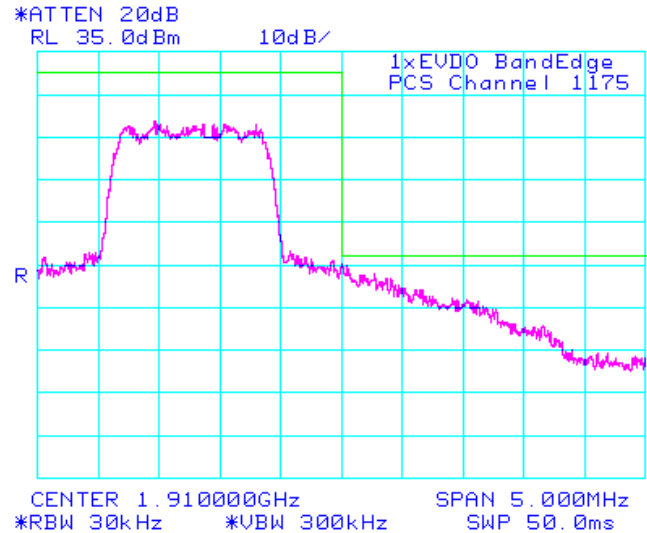
**Figure 1-43b: Cellular , High Channel Mask**



**Figure 1-44b: PCS , Low Channel Mask**



**Figure 1-45b: PCS , High Channel Mask**




## APPENDIX 2A – GSM CONDUCTED RF OUTPUT POWER TEST DATA



## APPENDIX 2B – CDMA CONDUCTED RF OUTPUT POWER TEST DATA

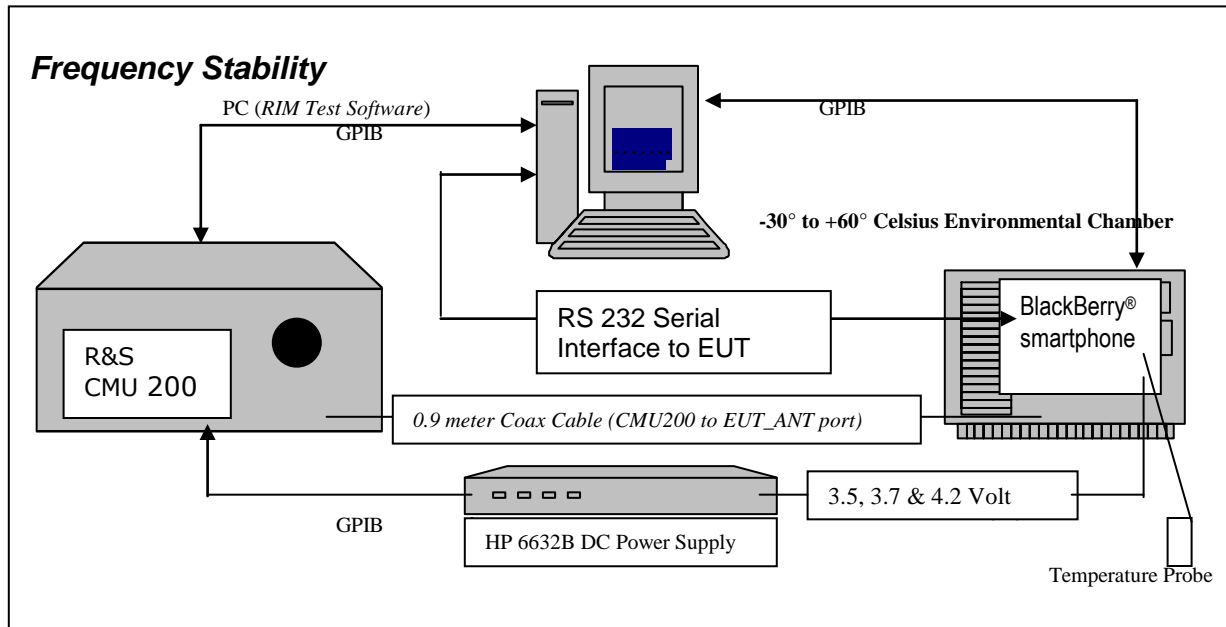


## APPENDIX 3A – GSM FREQUENCY STABILITY TEST DATA

|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 3A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

### GSM Frequency Stability Test Data

The following test configurations were measured for model RDR61CW:



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 RDR61CW, RDZ21CW<br>APPENDIX 3A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27,<br>2011                 | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

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, 837.6, 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 RDR61CW, RDZ21CW<br>APPENDIX 3A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27,<br>2011                 | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

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 **0.0370 PPM**.  
The maximum frequency error in the PCS1900 band measured was **0.0377 PPM**.



EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW  
APPENDIX 3A

**Test Report No.**  
RTS-2604-1106-131B

**Dates of Test**  
June 2 to June 28 and July 25 to 27,  
2011

**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW

GSM850 Channel results: channels 128, 195 and 251 @ 20°C maximum transmitted power

| Traffic Channel Number | GSM850 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|------------------------|-----------------|-----------------------|----------------------|---------|
| 128                    | 824.2                  | 3.6             | 20                    | -8                   | -0.0097 |
| 195                    | 837.6                  | 3.6             | 20                    | -9                   | -0.0107 |
| 251                    | 848.8                  | 3.6             | 20                    | -6                   | -0.0071 |

| Traffic Channel Number | GSM850 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|------------------------|-----------------|-----------------------|----------------------|---------|
| 128                    | 824.2                  | 3.7             | 20                    | -14                  | -0.0170 |
| 195                    | 837.6                  | 3.7             | 20                    | -8                   | -0.0096 |
| 251                    | 848.8                  | 3.7             | 20                    | 10                   | 0.0118  |

| Traffic Channel Number | GSM850 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|------------------------|-----------------|-----------------------|----------------------|---------|
| 128                    | 824.2                  | 4.2             | 20                    | -13                  | -0.0158 |
| 195                    | 837.6                  | 4.2             | 20                    | -13                  | -0.0155 |
| 251                    | 848.8                  | 4.2             | 20                    | -12                  | -0.0141 |

**Test Report No.**  
RTS-2604-1106-131B

**Dates of Test**  
June 2 to June 28 and July 25 to 27,  
2011

**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW

GSM850 Results: channel 128 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 128                    | 824.2           | 3.6             | -30                   | -14                  | -0.0170 |
| 128                    | 824.2           | 3.6             | -20                   | 16                   | 0.0194  |
| 128                    | 824.2           | 3.6             | -10                   | 22                   | 0.0267  |
| 128                    | 824.2           | 3.6             | 0                     | 28                   | -0.0218 |
| 128                    | 824.2           | 3.6             | 10                    | 16                   | 0.0194  |
| 128                    | 824.2           | 3.6             | 20                    | -8                   | -0.0097 |
| 128                    | 824.2           | 3.6             | 30                    | 8                    | 0.0097  |
| 128                    | 824.2           | 3.6             | 40                    | -13                  | -0.0158 |
| 128                    | 824.2           | 3.6             | 50                    | -15                  | -0.0182 |
| 128                    | 824.2           | 3.6             | 60                    | -18                  | -0.0218 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 128                    | 824.2           | 3.7             | -30                   | -9                   | -0.0109 |
| 128                    | 824.2           | 3.7             | -20                   | 11                   | 0.0133  |
| 128                    | 824.2           | 3.7             | -10                   | 25                   | 0.0146  |
| 128                    | 824.2           | 3.7             | 0                     | 28                   | 0.0340  |
| 128                    | 824.2           | 3.7             | 10                    | 12                   | 0.0146  |
| 128                    | 824.2           | 3.7             | 20                    | -14                  | -0.0170 |
| 128                    | 824.2           | 3.7             | 30                    | -13                  | -0.0158 |
| 128                    | 824.2           | 3.7             | 40                    | -11                  | -0.0133 |
| 128                    | 824.2           | 3.7             | 50                    | -11                  | -0.0133 |
| 128                    | 824.2           | 3.7             | 60                    | -16                  | -0.0194 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 128                    | 824.2           | 4.2             | -30                   | 18                   | 0.0218  |
| 128                    | 824.2           | 4.2             | -20                   | 17                   | 0.0206  |
| 128                    | 824.2           | 4.2             | -10                   | 26                   | 0.0315  |
| 128                    | 824.2           | 4.2             | 0                     | 26                   | 0.0315  |
| 128                    | 824.2           | 4.2             | 10                    | 10                   | 0.0121  |
| 128                    | 824.2           | 4.2             | 20                    | -13                  | -0.0158 |
| 128                    | 824.2           | 4.2             | 30                    | -14                  | -0.0170 |
| 128                    | 824.2           | 4.2             | 40                    | -14                  | -0.0170 |
| 128                    | 824.2           | 4.2             | 50                    | -14                  | -0.0170 |
| 128                    | 824.2           | 4.2             | 60                    | 9                    | 0.0109  |

**Test Report No.**  
RTS-2604-1106-131B

**Dates of Test**  
June 2 to June 28 and July 25 to 27,  
2011

**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW

GSM850 Results: channel 195 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 195                    | 837.6           | 3.6             | -30                   | -13                  | -0.0155 |
| 195                    | 837.6           | 3.6             | -20                   | 11                   | 0.0131  |
| 195                    | 837.6           | 3.6             | -10                   | 27                   | 0.0322  |
| 195                    | 837.6           | 3.6             | 0                     | 28                   | -0.0143 |
| 195                    | 837.6           | 3.6             | 10                    | 9                    | 0.0107  |
| 195                    | 837.6           | 3.6             | 20                    | -9                   | -0.0107 |
| 195                    | 837.6           | 3.6             | 30                    | 7                    | 0.0084  |
| 195                    | 837.6           | 3.6             | 40                    | -8                   | -0.0096 |
| 195                    | 837.6           | 3.6             | 50                    | -14                  | -0.0167 |
| 195                    | 837.6           | 3.6             | 60                    | -12                  | -0.0143 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 195                    | 837.6           | 3.7             | -30                   | 10                   | 0.0119  |
| 195                    | 837.6           | 3.7             | -20                   | 16                   | 0.0191  |
| 195                    | 837.6           | 3.7             | -10                   | 26                   | 0.0310  |
| 195                    | 837.6           | 3.7             | 0                     | 27                   | 0.0322  |
| 195                    | 837.6           | 3.7             | 10                    | 9                    | 0.0107  |
| 195                    | 837.6           | 3.7             | 20                    | -8                   | -0.0096 |
| 195                    | 837.6           | 3.7             | 30                    | 9                    | 0.0107  |
| 195                    | 837.6           | 3.7             | 40                    | -11                  | -0.0131 |
| 195                    | 837.6           | 3.7             | 50                    | -9                   | -0.0107 |
| 195                    | 837.6           | 3.7             | 60                    | -12                  | -0.0143 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM           |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------------|
| 195                    | 837.6           | 4.2             | -30                   | 11                   | 0.0131        |
| 195                    | 837.6           | 4.2             | -20                   | 20                   | 0.0239        |
| 195                    | 837.6           | 4.2             | -10                   | 31                   | <b>0.0370</b> |
| 195                    | 837.6           | 4.2             | 0                     | 26                   | 0.0310        |
| 195                    | 837.6           | 4.2             | 10                    | 12                   | 0.0143        |
| 195                    | 837.6           | 4.2             | 20                    | -13                  | -0.0155       |
| 195                    | 837.6           | 4.2             | 30                    | 11                   | 0.0131        |
| 195                    | 837.6           | 4.2             | 40                    | -13                  | -0.0155       |
| 195                    | 837.6           | 4.2             | 50                    | -15                  | -0.0179       |
| 195                    | 837.6           | 4.2             | 60                    | 9                    | 0.0107        |

**Test Report No.**  
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**Dates of Test**  
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2011


**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW

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                   | -14                  | -0.0165 |
| 251                    | 848.8           | 3.6             | -20                   | 12                   | 0.0141  |
| 251                    | 848.8           | 3.6             | -10                   | 24                   | 0.0283  |
| 251                    | 848.8           | 3.6             | 0                     | 28                   | -0.0094 |
| 251                    | 848.8           | 3.6             | 10                    | 11                   | 0.0130  |
| 251                    | 848.8           | 3.6             | 20                    | -6                   | -0.0071 |
| 251                    | 848.8           | 3.6             | 30                    | -9                   | -0.0106 |
| 251                    | 848.8           | 3.6             | 40                    | 9                    | 0.0106  |
| 251                    | 848.8           | 3.6             | 50                    | 8                    | 0.0094  |
| 251                    | 848.8           | 3.6             | 60                    | -8                   | -0.0094 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 251                    | 848.8           | 3.7             | -30                   | -7                   | -0.0082 |
| 251                    | 848.8           | 3.7             | -20                   | 14                   | 0.0165  |
| 251                    | 848.8           | 3.7             | -10                   | 27                   | 0.0318  |
| 251                    | 848.8           | 3.7             | 0                     | 30                   | 0.0353  |
| 251                    | 848.8           | 3.7             | 10                    | 15                   | 0.0177  |
| 251                    | 848.8           | 3.7             | 20                    | 10                   | 0.0118  |
| 251                    | 848.8           | 3.7             | 30                    | -12                  | -0.0141 |
| 251                    | 848.8           | 3.7             | 40                    | -8                   | -0.0094 |
| 251                    | 848.8           | 3.7             | 50                    | -11                  | -0.0130 |
| 251                    | 848.8           | 3.7             | 60                    | -9                   | -0.0106 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 251                    | 848.8           | 4.2             | -30                   | 17                   | 0.0200  |
| 251                    | 848.8           | 4.2             | -20                   | 17                   | 0.0200  |
| 251                    | 848.8           | 4.2             | -10                   | 27                   | 0.0318  |
| 251                    | 848.8           | 4.2             | 0                     | 27                   | 0.0318  |
| 251                    | 848.8           | 4.2             | 10                    | 14                   | 0.0165  |
| 251                    | 848.8           | 4.2             | 20                    | -12                  | -0.0141 |
| 251                    | 848.8           | 4.2             | 30                    | -12                  | -0.0141 |
| 251                    | 848.8           | 4.2             | 40                    | -14                  | -0.0165 |
| 251                    | 848.8           | 4.2             | 50                    | -8                   | -0.0094 |
| 251                    | 848.8           | 4.2             | 60                    | -13                  | -0.0153 |

|   |  |   |
|---|--|---|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 3A |   |
|   | <b>Test Report No.</b><br>RTS-2604-1106-131B   | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011 |

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                    | 1850.2              | 3.6             | 20                    | 17                   | 0.0092  |
| 661                    | 1880.0              | 3.6             | 20                    | 13                   | 0.0069  |
| 810                    | 1909.8              | 3.6             | 20                    | -11                  | -0.0058 |

| Traffic Channel Number | PCS Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|---------------------|-----------------|-----------------------|----------------------|---------|
| 512                    | 1850.2              | 3.7             | 20                    | -10                  | -0.0054 |
| 661                    | 1880.0              | 3.7             | 20                    | -14                  | -0.0074 |
| 810                    | 1909.8              | 3.7             | 20                    | -12                  | -0.0063 |

| Traffic Channel Number | PCS Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|---------------------|-----------------|-----------------------|----------------------|---------|
| 512                    | 1850.2              | 4.2             | 20                    | -13                  | -0.0070 |
| 661                    | 1880.0              | 4.2             | 20                    | -17                  | -0.0090 |
| 810                    | 1909.8              | 4.2             | 20                    | -21                  | -0.0110 |

**Test Report No.**  
RTS-2604-1106-131B

**Dates of Test**  
June 2 to June 28 and July 25 to 27,  
2011

**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW

PCS1900 Results: channel 512 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 512                    | 1850.2          | 3.6             | -30                   | 20                   | 0.0108  |
| 512                    | 1850.2          | 3.6             | -20                   | 26                   | 0.0141  |
| 512                    | 1850.2          | 3.6             | -10                   | 57                   | 0.0308  |
| 512                    | 1850.2          | 3.6             | 0                     | 73                   | -0.0103 |
| 512                    | 1850.2          | 3.6             | 10                    | 42                   | 0.0227  |
| 512                    | 1850.2          | 3.6             | 20                    | 17                   | 0.0092  |
| 512                    | 1850.2          | 3.6             | 30                    | 13                   | 0.0070  |
| 512                    | 1850.2          | 3.6             | 40                    | 15                   | 0.0081  |
| 512                    | 1850.2          | 3.6             | 50                    | -17                  | -0.0092 |
| 512                    | 1850.2          | 3.6             | 60                    | -19                  | -0.0103 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 512                    | 1850.2          | 3.7             | -30                   | 12                   | 0.0065  |
| 512                    | 1850.2          | 3.7             | -20                   | 31                   | 0.0168  |
| 512                    | 1850.2          | 3.7             | -10                   | 53                   | 0.0286  |
| 512                    | 1850.2          | 3.7             | 0                     | 67                   | 0.0362  |
| 512                    | 1850.2          | 3.7             | 10                    | 37                   | 0.0200  |
| 512                    | 1850.2          | 3.7             | 20                    | -10                  | -0.0054 |
| 512                    | 1850.2          | 3.7             | 30                    | 19                   | 0.0103  |
| 512                    | 1850.2          | 3.7             | 40                    | 15                   | 0.0081  |
| 512                    | 1850.2          | 3.7             | 50                    | -15                  | -0.0081 |
| 512                    | 1850.2          | 3.7             | 60                    | -11                  | -0.0059 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 512                    | 1850.2          | 4.2             | -30                   | 29                   | 0.0157  |
| 512                    | 1850.2          | 4.2             | -20                   | 35                   | 0.0189  |
| 512                    | 1850.2          | 4.2             | -10                   | 60                   | 0.0324  |
| 512                    | 1850.2          | 4.2             | 0                     | 62                   | 0.0335  |
| 512                    | 1850.2          | 4.2             | 10                    | 34                   | 0.0184  |
| 512                    | 1850.2          | 4.2             | 20                    | -13                  | -0.0070 |
| 512                    | 1850.2          | 4.2             | 30                    | 18                   | 0.0097  |
| 512                    | 1850.2          | 4.2             | 40                    | -13                  | -0.0070 |
| 512                    | 1850.2          | 4.2             | 50                    | -15                  | -0.0081 |
| 512                    | 1850.2          | 4.2             | 60                    | -12                  | -0.0065 |

**Test Report No.**  
RTS-2604-1106-131B

**Dates of Test**  
June 2 to June 28 and July 25 to 27,  
2011

**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW

PCS1900 Results: channel 661 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 661                    | 1880.0          | 3.6             | -30                   | 16                   | 0.0085  |
| 661                    | 1880.0          | 3.6             | -20                   | 27                   | 0.0144  |
| 661                    | 1880.0          | 3.6             | -10                   | 59                   | 0.0314  |
| 661                    | 1880.0          | 3.6             | 0                     | 67                   | -0.0085 |
| 661                    | 1880.0          | 3.6             | 10                    | 41                   | 0.0218  |
| 661                    | 1880.0          | 3.6             | 20                    | 13                   | 0.0069  |
| 661                    | 1880.0          | 3.6             | 30                    | 16                   | 0.0085  |
| 661                    | 1880.0          | 3.6             | 40                    | -11                  | -0.0059 |
| 661                    | 1880.0          | 3.6             | 50                    | -11                  | -0.0059 |
| 661                    | 1880.0          | 3.6             | 60                    | -16                  | -0.0085 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 661                    | 1880.0          | 3.7             | -30                   | 25                   | 0.0133  |
| 661                    | 1880.0          | 3.7             | -20                   | 23                   | 0.0122  |
| 661                    | 1880.0          | 3.7             | -10                   | 49                   | 0.0261  |
| 661                    | 1880.0          | 3.7             | 0                     | 63                   | 0.0335  |
| 661                    | 1880.0          | 3.7             | 10                    | 40                   | 0.0213  |
| 661                    | 1880.0          | 3.7             | 20                    | -14                  | -0.0074 |
| 661                    | 1880.0          | 3.7             | 30                    | -13                  | -0.0069 |
| 661                    | 1880.0          | 3.7             | 40                    | -12                  | -0.0064 |
| 661                    | 1880.0          | 3.7             | 50                    | -13                  | -0.0069 |
| 661                    | 1880.0          | 3.7             | 60                    | -14                  | -0.0074 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 661                    | 1880.0          | 4.2             | -30                   | 28                   | 0.0149  |
| 661                    | 1880.0          | 4.2             | -20                   | 40                   | 0.0213  |
| 661                    | 1880.0          | 4.2             | -10                   | 52                   | 0.0277  |
| 661                    | 1880.0          | 4.2             | 0                     | 68                   | 0.0362  |
| 661                    | 1880.0          | 4.2             | 10                    | 32                   | 0.0170  |
| 661                    | 1880.0          | 4.2             | 20                    | -17                  | -0.0090 |
| 661                    | 1880.0          | 4.2             | 30                    | 13                   | 0.0069  |
| 661                    | 1880.0          | 4.2             | 40                    | -17                  | -0.0090 |
| 661                    | 1880.0          | 4.2             | 50                    | -11                  | -0.0059 |
| 661                    | 1880.0          | 4.2             | 60                    | -9                   | -0.0048 |



**Test Report No.**  
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**Dates of Test**  
June 2 to June 28 and July 25 to 27,  
2011

**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW


PCS1900 Results: channel 810 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | 20BPPM  |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 810                    | 1909.8          | 3.6             | -30                   | 15                   | 0.0079  |
| 810                    | 1909.8          | 3.6             | -20                   | 19                   | 0.0099  |
| 810                    | 1909.8          | 3.6             | -10                   | 55                   | 0.0288  |
| 810                    | 1909.8          | 3.6             | 0                     | 69                   | -0.0079 |
| 810                    | 1909.8          | 3.6             | 10                    | 39                   | 0.0204  |
| 810                    | 1909.8          | 3.6             | 20                    | -11                  | -0.0058 |
| 810                    | 1909.8          | 3.6             | 30                    | -12                  | -0.0063 |
| 810                    | 1909.8          | 3.6             | 40                    | 13                   | 0.0068  |
| 810                    | 1909.8          | 3.6             | 50                    | -15                  | -0.0079 |
| 810                    | 1909.8          | 3.6             | 60                    | -15                  | -0.0079 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM           |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------------|
| 810                    | 1909.8          | 3.7             | -30                   | 14                   | 0.0073        |
| 810                    | 1909.8          | 3.7             | -20                   | 26                   | 0.0136        |
| 810                    | 1909.8          | 3.7             | -10                   | 49                   | 0.0257        |
| 810                    | 1909.8          | 3.7             | 0                     | 72                   | <b>0.0377</b> |
| 810                    | 1909.8          | 3.7             | 10                    | 34                   | 0.0178        |
| 810                    | 1909.8          | 3.7             | 20                    | -12                  | -0.0063       |
| 810                    | 1909.8          | 3.7             | 30                    | 18                   | 0.0094        |
| 810                    | 1909.8          | 3.7             | 40                    | 10                   | 0.0052        |
| 810                    | 1909.8          | 3.7             | 50                    | -14                  | -0.0073       |
| 810                    | 1909.8          | 3.7             | 60                    | -15                  | -0.0079       |

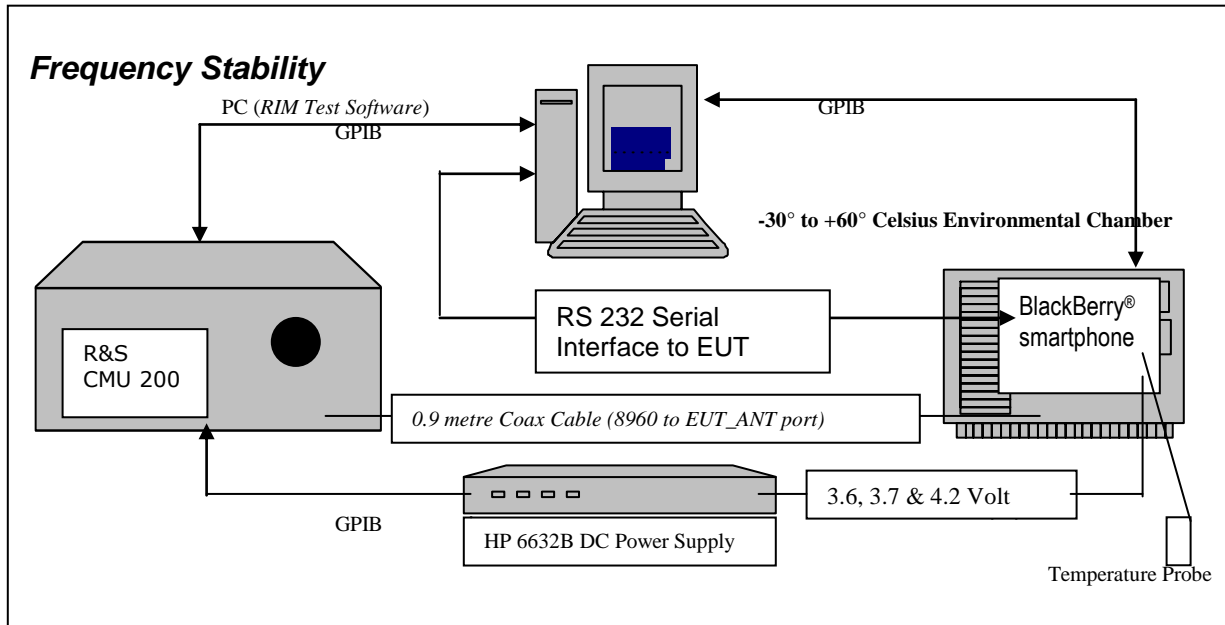
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 810                    | 1909.8          | 4.2             | -30                   | 29                   | 0.0152  |
| 810                    | 1909.8          | 4.2             | -20                   | 32                   | 0.0168  |
| 810                    | 1909.8          | 4.2             | -10                   | 57                   | 0.0298  |
| 810                    | 1909.8          | 4.2             | 0                     | 68                   | 0.0356  |
| 810                    | 1909.8          | 4.2             | 10                    | 36                   | 0.0189  |
| 810                    | 1909.8          | 4.2             | 20                    | -21                  | -0.0110 |
| 810                    | 1909.8          | 4.2             | 30                    | -14                  | -0.0073 |
| 810                    | 1909.8          | 4.2             | 40                    | -16                  | -0.0084 |
| 810                    | 1909.8          | 4.2             | 50                    | -15                  | -0.0079 |
| 810                    | 1909.8          | 4.2             | 60                    | -15                  | -0.0079 |

## APPENDIX 3B – CDMA FREQUENCY STABILITY TEST DATA

|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 3B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011                    | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

### CDMA Frequency Stability Test Data

The following test configurations were measured for model RDR61CW:



## 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 RDR61CW, RDZ21CW<br>APPENDIX 3B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011 | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW     |  |

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) |
|---------------------|-----------------|
| 1851.20             | 1.10            |
| 1880.00             | 1.10            |
| 1908.75             | 1.10            |

| Cellular Frequency (MHz) | Cable loss (dB) |
|--------------------------|-----------------|
| 824.70                   | 0.50            |
| 836.52                   | 0.50            |
| 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 RDR61CW, RDZ21CW<br>APPENDIX 3B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27,<br>2011                 | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |


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 **0.0189 PPM**.  
The maximum frequency error in the CDMA PCS band measured was **0.0135 PPM**.

|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 3B |  |
|   | <b>Test Report No.</b><br>RTS-2604-1106-131B   | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27,<br>2011 |

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                   | 824.70                   | 3.6             | 20                    | 12.00                | 0.0146 |
| 384                    | 836.52                   | 3.6             | 20                    | 15.00                | 0.0179 |
| 777                    | 848.31                   | 3.6             | 20                    | 11.00                | 0.0130 |

| Traffic Channel Number | Cellular Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|--------------------------|-----------------|-----------------------|----------------------|---------|
| 1013                   | 824.70                   | 3.7             | 20                    | 8.00                 | 0.0097  |
| 384                    | 836.52                   | 3.7             | 20                    | -15.00               | -0.0179 |
| 777                    | 848.31                   | 3.7             | 20                    | -13.00               | -0.0153 |

| Traffic Channel Number | Cellular Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|--------------------------|-----------------|-----------------------|----------------------|---------|
| 1013                   | 824.70                   | 4.2             | 20                    | -12.00               | -0.0146 |
| 384                    | 836.52                   | 4.2             | 20                    | -12.00               | -0.0143 |
| 777                    | 848.31                   | 4.2             | 20                    | -15.00               | -0.0177 |



**Test Report No.**  
RTS-2604-1106-131B

**Dates of Test**  
June 2 to June 28 and July 25 to 27,  
2011

**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW

Cellular Results: channel 1013 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 1013                   | 824.70          | 3.6             | -30                   | -10.00               | -0.0121 |
| 1013                   | 824.70          | 3.6             | -20                   | 11.00                | 0.0133  |
| 1013                   | 824.70          | 3.6             | -10                   | 15.00                | 0.0182  |
| 1013                   | 824.70          | 3.6             | 0                     | 10.00                | 0.0121  |
| 1013                   | 824.70          | 3.6             | 10                    | -7.00                | -0.0085 |
| 1013                   | 824.70          | 3.6             | 20                    | 12.00                | 0.0146  |
| 1013                   | 824.70          | 3.6             | 30                    | 10.00                | 0.0121  |
| 1013                   | 824.70          | 3.6             | 40                    | 10.00                | 0.0121  |
| 1013                   | 824.70          | 3.6             | 50                    | -7.00                | -0.0085 |
| 1013                   | 824.70          | 3.6             | 60                    | 10.00                | 0.0121  |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 1013                   | 824.70          | 3.7             | -30                   | -12.00               | -0.0146 |
| 1013                   | 824.70          | 3.7             | -20                   | 12.00                | 0.0146  |
| 1013                   | 824.70          | 3.7             | -10                   | -12.00               | -0.0146 |
| 1013                   | 824.70          | 3.7             | 0                     | -9.00                | -0.0109 |
| 1013                   | 824.70          | 3.7             | 10                    | -9.00                | -0.0109 |
| 1013                   | 824.70          | 3.7             | 20                    | 8.00                 | 0.0097  |
| 1013                   | 824.70          | 3.7             | 30                    | 12.00                | 0.0146  |
| 1013                   | 824.70          | 3.7             | 40                    | -7.00                | -0.0085 |
| 1013                   | 824.70          | 3.7             | 50                    | -13.00               | -0.0158 |
| 1013                   | 824.70          | 3.7             | 60                    | -13.00               | -0.0158 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 1013                   | 824.70          | 4.2             | -30                   | -10.00               | -0.0121 |
| 1013                   | 824.70          | 4.2             | -20                   | -11.00               | -0.0133 |
| 1013                   | 824.70          | 4.2             | -10                   | 11.00                | 0.0133  |
| 1013                   | 824.70          | 4.2             | 0                     | 11.00                | 0.0133  |
| 1013                   | 824.70          | 4.2             | 10                    | -5.00                | -0.0061 |
| 1013                   | 824.70          | 4.2             | 20                    | -12.00               | -0.0146 |
| 1013                   | 824.70          | 4.2             | 30                    | 9.00                 | 0.0109  |
| 1013                   | 824.70          | 4.2             | 40                    | -13.00               | -0.0158 |
| 1013                   | 824.70          | 4.2             | 50                    | -11.00               | -0.0133 |
| 1013                   | 824.70          | 4.2             | 60                    | 10.00                | 0.0121  |

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**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW

Cellular Results: channel 384 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 384                    | 836.52          | 3.6             | -30                   | -13.00               | -0.0155 |
| 384                    | 836.52          | 3.6             | -20                   | -13.00               | -0.0155 |
| 384                    | 836.52          | 3.6             | -10                   | -14.00               | -0.0167 |
| 384                    | 836.52          | 3.6             | 0                     | 12.00                | 0.0120  |
| 384                    | 836.52          | 3.6             | 10                    | -11.00               | -0.0131 |
| 384                    | 836.52          | 3.6             | 20                    | 15.00                | 0.0179  |
| 384                    | 836.52          | 3.6             | 30                    | 11.00                | 0.0131  |
| 384                    | 836.52          | 3.6             | 40                    | -11.00               | -0.0131 |
| 384                    | 836.52          | 3.6             | 50                    | 11.00                | 0.0131  |
| 384                    | 836.52          | 3.6             | 60                    | 10.00                | 0.0120  |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 384                    | 836.52          | 3.7             | -30                   | -13.00               | -0.0155 |
| 384                    | 836.52          | 3.7             | -20                   | 9.00                 | 0.0108  |
| 384                    | 836.52          | 3.7             | -10                   | 13.00                | 0.0155  |
| 384                    | 836.52          | 3.7             | 0                     | -10.00               | -0.0120 |
| 384                    | 836.52          | 3.7             | 10                    | -8.00                | -0.0096 |
| 384                    | 836.52          | 3.7             | 20                    | -15.00               | -0.0179 |
| 384                    | 836.52          | 3.7             | 30                    | -11.00               | -0.0131 |
| 384                    | 836.52          | 3.7             | 40                    | 11.00                | 0.0131  |
| 384                    | 836.52          | 3.7             | 50                    | 9.00                 | 0.0108  |
| 384                    | 836.52          | 3.7             | 60                    | -13.00               | -0.0155 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 384                    | 836.52          | 4.2             | -30                   | 12.00                | 0.0143  |
| 384                    | 836.52          | 4.2             | -20                   | -7.00                | -0.0084 |
| 384                    | 836.52          | 4.2             | -10                   | -14.00               | -0.0167 |
| 384                    | 836.52          | 4.2             | 0                     | 12.00                | 0.0143  |
| 384                    | 836.52          | 4.2             | 10                    | 11.00                | 0.0131  |
| 384                    | 836.52          | 4.2             | 20                    | -12.00               | -0.0143 |
| 384                    | 836.52          | 4.2             | 30                    | 12.00                | 0.0143  |
| 384                    | 836.52          | 4.2             | 40                    | 15.00                | 0.0179  |
| 384                    | 836.52          | 4.2             | 50                    | 9.00                 | 0.0108  |
| 384                    | 836.52          | 4.2             | 60                    | 10.00                | 0.0120  |



**Test Report No.**  
RTS-2604-1106-131B

**Dates of Test**  
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2011

**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW

Cellular Results: channel 777 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 777                    | 848.31          | 3.6             | -30                   | -12.00               | -0.0141 |
| 777                    | 848.31          | 3.6             | -20                   | 11.00                | 0.0130  |
| 777                    | 848.31          | 3.6             | -10                   | 12.00                | 0.0141  |
| 777                    | 848.31          | 3.6             | 0                     | 11.00                | -0.0177 |
| 777                    | 848.31          | 3.6             | 10                    | 5.00                 | 0.0059  |
| 777                    | 848.31          | 3.6             | 20                    | 11.00                | 0.0130  |
| 777                    | 848.31          | 3.6             | 30                    | 13.00                | 0.0153  |
| 777                    | 848.31          | 3.6             | 40                    | 15.00                | 0.0177  |
| 777                    | 848.31          | 3.6             | 50                    | -11.00               | -0.0130 |
| 777                    | 848.31          | 3.6             | 60                    | -15.00               | -0.0177 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 777                    | 848.31          | 3.7             | -30                   | -11.00               | -0.0130 |
| 777                    | 848.31          | 3.7             | -20                   | 10.00                | 0.0118  |
| 777                    | 848.31          | 3.7             | -10                   | 11.00                | 0.0130  |
| 777                    | 848.31          | 3.7             | 0                     | -7.00                | -0.0083 |
| 777                    | 848.31          | 3.7             | 10                    | 6.00                 | 0.0071  |
| 777                    | 848.31          | 3.7             | 20                    | -13.00               | -0.0153 |
| 777                    | 848.31          | 3.7             | 30                    | 13.00                | 0.0153  |
| 777                    | 848.31          | 3.7             | 40                    | 13.00                | 0.0153  |
| 777                    | 848.31          | 3.7             | 50                    | 7.00                 | 0.0083  |
| 777                    | 848.31          | 3.7             | 60                    | 14.00                | 0.0165  |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM           |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------------|
| 777                    | 848.31          | 4.2             | -30                   | -11.00               | -0.0130       |
| 777                    | 848.31          | 4.2             | -20                   | -11.00               | -0.0130       |
| 777                    | 848.31          | 4.2             | -10                   | 14.00                | 0.0165        |
| 777                    | 848.31          | 4.2             | 0                     | 11.00                | 0.0130        |
| 777                    | 848.31          | 4.2             | 10                    | -9.00                | -0.0106       |
| 777                    | 848.31          | 4.2             | 20                    | -15.00               | -0.0177       |
| 777                    | 848.31          | 4.2             | 30                    | 16.00                | <b>0.0189</b> |
| 777                    | 848.31          | 4.2             | 40                    | -8.00                | -0.0094       |
| 777                    | 848.31          | 4.2             | 50                    | -7.00                | -0.0083       |
| 777                    | 848.31          | 4.2             | 60                    | -12.00               | -0.0141       |



**Test Report No.**  
RTS-2604-1106-131B

**Dates of Test**  
June 2 to June 28 and July 25 to 27,  
2011

**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW

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                    | 8.00                 | 0.0043  |
| 600                    | 1880.00             | 3.6             | 20                    | -9.00                | -0.0048 |
| 1175                   | 1908.75             | 3.6             | 20                    | 15.00                | 0.0079  |

| Traffic Channel Number | PCS Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|---------------------|-----------------|-----------------------|----------------------|---------|
| 25                     | 1851.20             | 3.7             | 20                    | 12.00                | 0.0065  |
| 600                    | 1880.00             | 3.7             | 20                    | -12.00               | -0.0064 |
| 1175                   | 1908.75             | 3.7             | 20                    | 15.00                | 0.0079  |

| Traffic Channel Number | PCS Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|---------------------|-----------------|-----------------------|----------------------|---------|
| 25                     | 1851.20             | 4.2             | 20                    | -9.00                | -0.0049 |
| 600                    | 1880.00             | 4.2             | 20                    | 14.00                | 0.0074  |
| 1175                   | 1908.75             | 4.2             | 20                    | -12.00               | -0.0063 |



**Test Report No.**  
RTS-2604-1106-131B

**Dates of Test**  
June 2 to June 28 and July 25 to 27,  
2011

**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW

PCS Results: channel 25 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 25                     | 1851.20         | 3.6             | -30                   | -11.00               | -0.0059 |
| 25                     | 1851.20         | 3.6             | -20                   | -15.00               | -0.0081 |
| 25                     | 1851.20         | 3.6             | -10                   | -19.00               | -0.0103 |
| 25                     | 1851.20         | 3.6             | 0                     | -15.00               | 0.0065  |
| 25                     | 1851.20         | 3.6             | 10                    | -8.00                | -0.0043 |
| 25                     | 1851.20         | 3.6             | 20                    | 8.00                 | 0.0043  |
| 25                     | 1851.20         | 3.6             | 30                    | 19.00                | 0.0103  |
| 25                     | 1851.20         | 3.6             | 40                    | 11.00                | 0.0059  |
| 25                     | 1851.20         | 3.6             | 50                    | 10.00                | 0.0054  |
| 25                     | 1851.20         | 3.6             | -30                   | -11.00               | -0.0059 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 25                     | 1851.20         | 3.7             | -30                   | -10.00               | -0.0054 |
| 25                     | 1851.20         | 3.7             | -20                   | -16.00               | -0.0086 |
| 25                     | 1851.20         | 3.7             | -10                   | -14.00               | -0.0076 |
| 25                     | 1851.20         | 3.7             | 0                     | -19.00               | -0.0103 |
| 25                     | 1851.20         | 3.7             | 10                    | -19.00               | -0.0103 |
| 25                     | 1851.20         | 3.7             | 20                    | 12.00                | 0.0065  |
| 25                     | 1851.20         | 3.7             | 30                    | 20.00                | 0.0108  |
| 25                     | 1851.20         | 3.7             | 40                    | 12.00                | 0.0065  |
| 25                     | 1851.20         | 3.7             | 50                    | 16.00                | 0.0086  |
| 25                     | 1851.20         | 3.7             | 60                    | 17.00                | 0.0092  |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM           |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------------|
| 25                     | 1851.20         | 4.2             | -30                   | 9.00                 | 0.0049        |
| 25                     | 1851.20         | 4.2             | -20                   | -14.00               | -0.0076       |
| 25                     | 1851.20         | 4.2             | -10                   | 10.00                | 0.0054        |
| 25                     | 1851.20         | 4.2             | 0                     | 17.00                | 0.0092        |
| 25                     | 1851.20         | 4.2             | 10                    | -12.00               | -0.0065       |
| 25                     | 1851.20         | 4.2             | 20                    | -9.00                | -0.0049       |
| 25                     | 1851.20         | 4.2             | 30                    | 25.00                | <b>0.0135</b> |
| 25                     | 1851.20         | 4.2             | 40                    | 22.00                | 0.0119        |
| 25                     | 1851.20         | 4.2             | 50                    | -9.00                | -0.0049       |
| 25                     | 1851.20         | 4.2             | 60                    | 9.00                 | 0.0049        |

**Test Report No.**  
RTS-2604-1106-131B

**Dates of Test**  
June 2 to June 28 and July 25 to 27,  
2011

**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW

PCS Results: channel 600 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 600                    | 1880.00         | 3.6             | -30                   | 12.00                | 0.0064  |
| 600                    | 1880.00         | 3.6             | -20                   | 13.00                | 0.0069  |
| 600                    | 1880.00         | 3.6             | -10                   | 17.00                | 0.0090  |
| 600                    | 1880.00         | 3.6             | 0                     | 17.00                | 0.0043  |
| 600                    | 1880.00         | 3.6             | 10                    | 13.00                | 0.0069  |
| 600                    | 1880.00         | 3.6             | 20                    | -9.00                | -0.0048 |
| 600                    | 1880.00         | 3.6             | 30                    | -12.00               | -0.0064 |
| 600                    | 1880.00         | 3.6             | 40                    | 15.00                | 0.0080  |
| 600                    | 1880.00         | 3.6             | 50                    | -8.00                | -0.0043 |
| 600                    | 1880.00         | 3.6             | 60                    | 8.00                 | 0.0043  |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 600                    | 1880.00         | 3.7             | -30                   | 12.00                | 0.0064  |
| 600                    | 1880.00         | 3.7             | -20                   | 13.00                | 0.0069  |
| 600                    | 1880.00         | 3.7             | -10                   | 15.00                | 0.0080  |
| 600                    | 1880.00         | 3.7             | 0                     | 11.00                | 0.0059  |
| 600                    | 1880.00         | 3.7             | 10                    | -11.00               | -0.0059 |
| 600                    | 1880.00         | 3.7             | 20                    | -12.00               | -0.0064 |
| 600                    | 1880.00         | 3.7             | 30                    | -14.00               | -0.0074 |
| 600                    | 1880.00         | 3.7             | 40                    | -12.00               | -0.0064 |
| 600                    | 1880.00         | 3.7             | 50                    | 12.00                | 0.0064  |
| 600                    | 1880.00         | 3.7             | 60                    | -6.00                | -0.0032 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 600                    | 1880.00         | 4.2             | -30                   | 12.00                | 0.0064  |
| 600                    | 1880.00         | 4.2             | -20                   | 9.00                 | 0.0048  |
| 600                    | 1880.00         | 4.2             | -10                   | 9.00                 | 0.0048  |
| 600                    | 1880.00         | 4.2             | 0                     | 19.00                | 0.0101  |
| 600                    | 1880.00         | 4.2             | 10                    | 10.00                | 0.0053  |
| 600                    | 1880.00         | 4.2             | 20                    | 14.00                | 0.0074  |
| 600                    | 1880.00         | 4.2             | 30                    | -8.00                | -0.0043 |
| 600                    | 1880.00         | 4.2             | 40                    | -13.00               | -0.0069 |
| 600                    | 1880.00         | 4.2             | 50                    | 10.00                | 0.0053  |
| 600                    | 1880.00         | 4.2             | 60                    | -9.00                | -0.0048 |



**Test Report No.**  
RTS-2604-1106-131B

**Dates of Test**  
June 2 to June 28 and July 25 to 27,  
2011

**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW


PCS Results: channel 1175 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 1175                   | 1908.75         | 3.6             | -30                   | 18.00                | 0.0094  |
| 1175                   | 1908.75         | 3.6             | -20                   | 16.00                | 0.0084  |
| 1175                   | 1908.75         | 3.6             | -10                   | 18.00                | 0.0094  |
| 1175                   | 1908.75         | 3.6             | 0                     | 16.00                | -0.0047 |
| 1175                   | 1908.75         | 3.6             | 10                    | 16.00                | 0.0084  |
| 1175                   | 1908.75         | 3.6             | 20                    | 15.00                | 0.0079  |
| 1175                   | 1908.75         | 3.6             | 30                    | -14.00               | -0.0073 |
| 1175                   | 1908.75         | 3.6             | 40                    | -15.00               | -0.0079 |
| 1175                   | 1908.75         | 3.6             | 50                    | -16.00               | -0.0084 |
| 1175                   | 1908.75         | 3.6             | 60                    | -9.00                | -0.0047 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 1175                   | 1908.75         | 3.7             | -30                   | 11.00                | 0.0058  |
| 1175                   | 1908.75         | 3.7             | -20                   | 15.00                | 0.0079  |
| 1175                   | 1908.75         | 3.7             | -10                   | 16.00                | 0.0084  |
| 1175                   | 1908.75         | 3.7             | 0                     | 15.00                | 0.0079  |
| 1175                   | 1908.75         | 3.7             | 10                    | 17.00                | 0.0089  |
| 1175                   | 1908.75         | 3.7             | 20                    | 15.00                | 0.0079  |
| 1175                   | 1908.75         | 3.7             | 30                    | -18.00               | -0.0094 |
| 1175                   | 1908.75         | 3.7             | 40                    | -17.00               | -0.0089 |
| 1175                   | 1908.75         | 3.7             | 50                    | -12.00               | -0.0063 |
| 1175                   | 1908.75         | 3.7             | 60                    | -20.00               | -0.0105 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 1175                   | 1908.75         | 4.2             | -30                   | 12.00                | 0.0063  |
| 1175                   | 1908.75         | 4.2             | -20                   | 19.00                | 0.0100  |
| 1175                   | 1908.75         | 4.2             | -10                   | 13.00                | 0.0068  |
| 1175                   | 1908.75         | 4.2             | 0                     | 19.00                | 0.0100  |
| 1175                   | 1908.75         | 4.2             | 10                    | 12.00                | 0.0063  |
| 1175                   | 1908.75         | 4.2             | 20                    | -12.00               | -0.0063 |
| 1175                   | 1908.75         | 4.2             | 30                    | -13.00               | -0.0068 |
| 1175                   | 1908.75         | 4.2             | 40                    | -14.00               | -0.0073 |
| 1175                   | 1908.75         | 4.2             | 50                    | -12.00               | -0.0063 |
| 1175                   | 1908.75         | 4.2             | 60                    | -13.00               | -0.0068 |

## APPENDIX 4A – GSM RADIATED EMISSIONS TEST DATA

|   |  |   |
|---|--|---|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 4A |   |
|   | <b>Test Report No.</b><br>RTS-2604-1106-131B   | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011 |

### Radiated Power Test Data Results

The following test configurations were measured for model RDR61CW:

Date of test: June 2, 2011

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

The environmental tests conditions were:   Temperature:           23.4 °C  
   Relative Humidity:       34.1 %


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

### GSM850 Band Call Mode

| EUT  |     |                 |      | Rx Antenna |      | Spectrum Analyzer |                  | Substitution Method |               |   |             | Limit (dBm) | Diff. To Limit (dB) |
|------|-----|-----------------|------|------------|------|-------------------|------------------|---------------------|---------------|---|-------------|-------------|---------------------|
| Type | Ch  | Frequency (MHz) | Band | Type       | Pol. | Reading (dBuV)    | Max (V,H) (dBuV) | Pol. Tx-Rx          | Reading (dBm) | Tracking Generator Corrected Reading (relative to Dipole) |             |             |                     |
|      |     |                 |      |            |      |                   |                  |                     |               | (dBm)   | (W)         |             |                     |
| F0   | 128 | 824.20          | 850  | Dipole     | V    | 79.76             | 87.62            | V-V                 | 13.83         | <b>32.11</b>  | <b>1.63</b> | 38.50       | <b>-6.39</b>        |
| F0   | 128 | 824.20          | 850  | Dipole     | H    | 87.62             |                  | H-H                 | 12.29         |   |             |             |                     |
| F0   | 190 | 836.60          | 850  | Dipole     | V    | 76.24             | 86.63            | V-V                 | 14.00         | 31.98   | 1.58        | 38.50       | -6.52               |
| F0   | 190 | 836.60          | 850  | Dipole     | H    | 86.63             |                  | H-H                 | 12.86         |   |             |             |                     |
| F0   | 251 | 848.80          | 850  | Dipole     | V    | 74.25             | 84.85            | V-V                 | 13.25         | 31.27   | 1.34        | 38.50       | -7.23               |
| F0   | 251 | 848.80          | 850  | Dipole     | H    | 84.85             |                  | H-H                 | 11.16         |   |             |             |                     |

### GSM850 Band EDGE Mode

| EUT  |     |                 |      | Rx Antenna |      | Spectrum Analyzer |                  | Substitution Method |               |   |             | Limit (dBm) | Diff. To Limit (dB) |
|------|-----|-----------------|------|------------|------|-------------------|------------------|---------------------|---------------|---|-------------|-------------|---------------------|
| Type | Ch  | Frequency (MHz) | Band | Type       | Pol. | Reading (dBuV)    | Max (V,H) (dBuV) | Pol. Tx-Rx          | Reading (dBm) | Tracking Generator Corrected Reading (relative to Dipole) |             |             |                     |
|      |     |                 |      |            |      |                   |                  |                     |               | (dBm)   | (W)         |             |                     |
| F0   | 128 | 824.20          | 850  | Dipole     | V    | 77.73             | 85.95            | V-V                 | 12.14         | <b>30.42</b>  | <b>1.10</b> | 38.50       | <b>-8.08</b>        |
| F0   | 128 | 824.20          | 850  | Dipole     | H    | 85.95             |                  | H-H                 | 10.58         |   |             |             |                     |
| F0   | 190 | 836.60          | 850  | Dipole     | V    | 77.97             | 85.08            | V-V                 | 12.44         | <b>30.42</b>  | <b>1.10</b> | 38.50       | <b>-8.08</b>        |
| F0   | 190 | 836.60          | 850  | Dipole     | H    | 85.08             |                  | H-H                 | 11.28         |   |             |             |                     |
| F0   | 251 | 848.80          | 850  | Dipole     | V    | 72.46             | 83.54            | V-V                 | 11.93         | 29.95   | 0.99        | 38.50       | -8.55               |
| F0   | 251 | 848.80          | 850  | Dipole     | H    | 83.54             |                  | H-H                 | 9.86          |   |             |             |                     |

|   |  |   |
|---|--|---|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 4A |   |
|   | <b>Test Report No.</b><br>RTS-2604-1106-131B   | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27, 2011 |

### Radiated Power Test Data Results cont'd

Date of test: June 02, 2011

The following measurements were performed by Adam Rusinek.

The environmental tests conditions were: Temperature: 25 °C

Relative Humidity: 41.4%

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

Test distance is 3.0 metres.


#### **PCS1900 Band Call Mode**

| EUT  |     |                 |      |                 |      |                   |                | Substitution Method |               |  |             |             |                    |
|------|-----|-----------------|------|-----------------|------|-------------------|----------------|---------------------|---------------|--|-------------|-------------|--------------------|
| EUT  |     |                 |      | Receive Antenna |      | Spectrum Analyzer |                | Tracking Generator  |               |  |             |             |                    |
| Type | Ch  | Frequency (MHz) | Band | Type            | Pol. | Reading (dBuV)    | Max (V,H) dBuV | Pol. Tx-Rx          | Reading (dBm) | Corrected Reading (relative to Isotropic Radiator) |             | Limit (dBm) | Diff to Limit (dB) |
|      |     |                 |      |                 |      |                   |                |                     |               | (dBm)  | (W)         |             |                    |
| F0   | 512 | 1850.20         | 1900 | Horn            | V    | 90.12             | 90.12          | V-V                 | -3.92         | 30.92  | 1.34        | 33.00       | 2.08               |
| F0   | 512 | 1850.20         | 1900 | Horn            | H    | 85.13             |                | H-H                 | -3.89         |  |             |             |                    |
| F0   | 661 | 1880.00         | 1900 | Horn            | V    | 90.6              | 90.6           | V-V                 | -3.08         | <b>32.35</b>                                       | <b>1.72</b> | 33.00       | <b>0.65</b>        |
| F0   | 661 | 1880.00         | 1900 | Horn            | H    | 88.57             |                | H-H                 | -2.55         |  |             |             |                    |
| F0   | 810 | 1909.80         | 1900 | Horn            | V    | 90.66             | 90.66          | V-V                 | -2.04         | 31.91  | 1.55        | 33.00       | 1.09               |
| F0   | 810 | 1909.80         | 1900 | Horn            | H    | 88.87             |                | H-H                 | -2.07         |  |             |             |                    |

#### **PCS1900 Band EDGE Mode**

| EUT  |     |                 |      |                 |      |                   |                | Substitution Method |               |  |             |             |                    |
|------|-----|-----------------|------|-----------------|------|-------------------|----------------|---------------------|---------------|--|-------------|-------------|--------------------|
| EUT  |     |                 |      | Receive Antenna |      | Spectrum Analyzer |                | Tracking Generator  |               |  |             |             |                    |
| Type | Ch  | Frequency (MHz) | Band | Type            | Pol. | Reading (dBuV)    | Max (V,H) dBuV | Pol. Tx-Rx          | Reading (dBm) | Corrected Reading (relative to Isotropic Radiator) |             | Limit (dBm) | Diff to Limit (dB) |
|      |     |                 |      |                 |      |                   |                |                     |               | (dBm)  | (W)         |             |                    |
| F0   | 512 | 1850.20         | 1900 | Horn            | V    | 88.83             | 88.83          | V-V                 | -5.21         | 30.17  | 1.04        | 33.00       | 2.83               |
| F0   | 512 | 1850.20         | 1900 | Horn            | H    | 83.47             |                | H-H                 | -4.64         |  |             |             |                    |
| F0   | 661 | 1880.00         | 1900 | Horn            | V    | 89.02             | 89.02          | V-V                 | -4.66         | <b>31.54</b>                                       | <b>1.43</b> | 33.00       | <b>1.46</b>        |
| F0   | 661 | 1880.00         | 1900 | Horn            | H    | 86.88             |                | H-H                 | -3.36         |  |             |             |                    |
| F0   | 810 | 1909.80         | 1900 | Horn            | V    | 89.31             | 89.31          | V-V                 | -3.39         | 30.84  | 1.21        | 33.00       | 2.16               |
| F0   | 810 | 1909.80         | 1900 | Horn            | H    | 86.98             |                | H-H                 | -3.11         |  |             |             |                    |



|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 4A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27,<br>2011                 | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

Radiated Emissions Test Data Results cont'd

**GSM850 Call Mode**

The following test configurations were measured for model RDR61CW:

Date of Test: June 2, 2011

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

The environmental test conditions were:   Temperature:   25.3 °C  
Relative Humidity: 33.2%

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, vertical 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: June 7, 2011

The following measurements were performed by Adam Rusinek.


The environmental test conditions were:   Temperature:   25.4 °C  
Relative Humidity: 43.6 %

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, vertical position.

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

All other emissions had a test margin greater than 25.0 dB

|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 4A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27,<br>2011                 | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

Radiated Emissions Test Data Results cont'd

**GSM850 EDGE Mode**

Date of Test: June 2, 2011

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, vertical 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: June 7, 2011


The environmental test conditions were:   Temperature:   25.4 °C  
Relative Humidity: 43.6 %

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, vertical position.

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

All other emissions had a test margin greater than 25.0 dB

|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 4A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27,<br>2011                 | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

Radiated Emissions Test Data Results cont'd

**PCS1900 Call Mode**

Date of Test: June 13, 2011

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

The environmental test conditions were: Temperature: 25.4 °C  
Relative Humidity: 33.2 %

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: June 8, 2011

The following measurements were performed by Adam Rusinek.


The environmental test conditions were: Temperature: 25.4 °C  
Relative Humidity: 43.6 %

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 Call Tx, channels 512, 661, 810.

All emissions had a test margin greater than 25.0 dB.

|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 4A |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27,<br>2011                 | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

Radiated Emissions Test Data Results cont'd

**PCS1900 EDGE Mode**

Date of Test: June 13, 2011

The environmental test conditions were:   Temperature:   25.4 °C  
Relative Humidity: 33.2 %

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

The BlackBerry® smartphone was in standalone, horizontal 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: June 13, 2011

The environmental test conditions were:   Temperature:   25.8 °C  
Relative Humidity: 37.5 %

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.

All emissions had a test margin greater than 25.0 dB.

## APPENDIX 4B – CDMA RADIATED EMISSIONS TEST DATA



**Test Report No.**  
 RTS-2604-1106-131B

**Dates of Test**  
 June 2 to June 28 and July 25 to 27,  
 2011

**FCC ID:** L6ARDR60CW, L6ARDZ20CW  
**IC:** 2503A-RDR60CW, 2503A-RDZ20CW

### Radiated Power Test Data Results cont'd

Date of Test: June 2, 2011

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

 The environmental tests conditions were: Temperature: 24 °C  
 Relative Humidity: 30%


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

#### **PCS Loopback Service Mode**

|      |      |                 |      |                 |      |                   |                  |                    |               | Substitution Method |             |             |                    |
|------|------|-----------------|------|-----------------|------|-------------------|------------------|--------------------|---------------|---------------------|-------------|-------------|--------------------|
| EUT  |      |                 |      | Receive Antenna |      | Spectrum Analyzer |                  | Tracking Generator |               |                     |             |             |                    |
| Type | Ch   | Frequency (MHz) | Band | Type            | Pol. | Reading (dBuV)    | Max (V,H) (dBuV) | Pol. Tx-Rx         | Reading (dBm) | (dBm)               | (W)         | Limit (dBm) | Diff to Limit (dB) |
| F0   | 25   | 1851.25         | PCS  | Horn            | V    | 84.83             | 87.15            | VV                 | -12.17        | 26.08               | 0.41        | 33.00       | -6.9               |
| F0   | 25   | 1851.25         | PCS  | Horn            | H    | 87.15             |                  | HH                 | -10.30        |                     |             |             |                    |
| F0   | 600  | 1880.00         | PCS  | Horn            | V    | 79.00             | 88.25            | VV                 | -10.47        | <b>27.19</b>        | <b>0.52</b> | 33.00       | <b>-5.8</b>        |
| F0   | 600  | 1880.00         | PCS  | Horn            | H    | 88.25             |                  | HH                 | -9.09         |                     |             |             |                    |
| F0   | 1175 | 1908.75         | PCS  | Horn            | V    | 76.84             | 85.19            | VV                 | -13.18        | 24.45               | 0.28        | 33.00       | -8.6               |
| F0   | 1175 | 1908.75         | PCS  | Horn            | H    | 85.19             |                  | HH                 | -11.87        |                     |             |             |                    |

#### **PCS EVDO Mode**

|      |      |                 |      |                 |      |                   |                  |                    |               | Substitution Method |             |             |                    |
|------|------|-----------------|------|-----------------|------|-------------------|------------------|--------------------|---------------|---------------------|-------------|-------------|--------------------|
| EUT  |      |                 |      | Receive Antenna |      | Spectrum Analyzer |                  | Tracking Generator |               |                     |             |             |                    |
| Type | Ch   | Frequency (MHz) | Band | Type            | Pol. | Reading (dBuV)    | Max (V,H) (dBuV) | Pol. Tx-Rx         | Reading (dBm) | (dBm)               | (W)         | Limit (dBm) | Diff to Limit (dB) |
| F0   | 25   | 1851.25         | PCS  | Horn            | V    | 85.07             | 87.5             | VV                 | -11.81        | 26.45               | 0.44        | 33.00       | -6.6               |
| F0   | 25   | 1851.25         | PCS  | Horn            | H    | 87.50             |                  | HH                 | -9.93         |                     |             |             |                    |
| F0   | 600  | 1880.00         | PCS  | Horn            | V    | 78.09             | 88.39            | VV                 | -10.28        | <b>27.39</b>        | <b>0.55</b> | 33.00       | <b>-5.6</b>        |
| F0   | 600  | 1880.00         | PCS  | Horn            | H    | 88.39             |                  | HH                 | -8.89         |                     |             |             |                    |
| F0   | 1175 | 1908.75         | PCS  | Horn            | V    | 76.85             | 85.07            | VV                 | -13.35        | 24.32               | 0.27        | 33.00       | -8.7               |
| F0   | 1175 | 1908.75         | PCS  | Horn            | H    | 85.07             |                  | HH                 | -12.00        |                     |             |             |                    |

|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 4B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27,<br>2011                 | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

Radiated Emissions Test Data Results cont'd

**Cellular Loopback Service Mode**

Date of Test: June 2, 2011

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

The environmental test conditions were: Temperature: 25.4 °C  
Relative Humidity: 31.2 %

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, horizontal 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.

Date of Test: June 3, 2011

The following measurements were performed by Adam Rusinek

The environmental test conditions were: Temperature: 24.6°C  
Relative Humidity: 39.2 %


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

The BlackBerry® smartphone was in standalone, horizontal 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 RDR61CW, RDZ21CW<br>APPENDIX 4B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27,<br>2011                 | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

Radiated Emissions Test Data Results cont'd

**Cellular 1xEVDO Mode**

Date of Test: June 2, 2011

The environmental test conditions were: Temperature: 25.4 °C  
Relative Humidity: 31.2 %

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, 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.

Date of Test: June 6, 2011


The environmental test conditions were: Temperature: 24.9°C  
Relative Humidity: 42.8 %

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

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 RDR61CW, RDZ21CW<br>APPENDIX 4B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27,<br>2011                 | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

Radiated Emissions Test Data Results cont'd

**PCS Loopback Service Mode**

Date of Test: June 2, 2011

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

The environmental test conditions were: Temperature: 23.4 °C  
Relative Humidity: 28.2 %

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, 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.

Date of Test: June 6, 2011

The following measurements were performed by Adam Rusinek


The environmental test conditions were: Temperature: 24.6°C  
Relative Humidity: 42.6 %

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

The BlackBerry® smartphone was in standalone, horizontal 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 RDR61CW, RDZ21CW<br>APPENDIX 4B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27,<br>2011                 | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

Radiated Emissions Test Data Results cont'd

**PCS 1xEVDO Mode**

Date of Test: June 2, 2011

The environmental test conditions were: Temperature: 23.4 °C  
Relative Humidity: 28.2 %

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, 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.

Date of Test: June 16, 2011


The environmental test conditions were: Temperature: 25 °C  
Relative Humidity: 42.6%

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

The BlackBerry® smartphone was in standalone, horizontal 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 RDR61CW, RDZ21CW<br>APPENDIX 4B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27,<br>2011                 | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

Radiated Emissions Test Data Results cont'd  
Cellular Loopback Service Mode

The following test configurations were measured for model RDZ21CW:

Date of Test: July 25, 2011

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

The environmental test conditions were: Temperature: 25.1 °C  
Relative Humidity: 35.4 %

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, horizontal position.

The following measurements were performed in CDMA Cellular Loopback Tx mode on channel 384.

All emissions had a test margin greater than 25.0 dB.

Date of Test: July 27, 2011

The following measurements were performed by Shuo Wang


The environmental test conditions were: Temperature: 23.6°C  
Relative Humidity: 49.5 %

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

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

The following measurements were performed in CDMA Cellular Loopback Tx mode on channel 384.

All emissions had a test margin greater than 25.0 dB.

|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 4B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27,<br>2011                 | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

Radiated Emissions Test Data Results cont'd  
**Cellular Data Service Mode**

Date of Test: July 25, 2011

The environmental test conditions were: Temperature: 25.1 °C  
Relative Humidity: 35.4 %

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, horizontal position.

The following measurements were performed in CDMA Cellular Data Tx mode on channel 384.

All emissions had a test margin greater than 25.0 dB.

Date of Test: July 27, 2011


The environmental test conditions were: Temperature: 23.6°C  
Relative Humidity: 49.5 %

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

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

The following measurements were performed in CDMA Cellular Data Tx mode on channel 384.

All emissions had a test margin greater than 25.0 dB.

|   |  |  |
|---|--|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDR61CW, RDZ21CW<br>APPENDIX 4B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27,<br>2011                 | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

Radiated Emissions Test Data Results cont'd

**PCS Loopback Service Mode**

Date of Test: July 27, 2011

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

The environmental test conditions were: Temperature: 24.8 °C  
Relative Humidity: 39.2 %

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, horizontal position.

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

All emissions had a test margin greater than 25.0 dB.

Date of Test: July 25, 2011

The following measurements were performed by Adam Rusinek

The following measurements were performed by Shuo Wang


The environmental test conditions were: Temperature: 23.6°C  
Relative Humidity: 49.5 %

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

The BlackBerry® smartphone was in standalone, horizontal position.

The following measurements were performed in PCS Loopback 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 RDR61CW, RDZ21CW<br>APPENDIX 4B |  |
| <b>Test Report No.</b><br>RTS-2604-1106-131B                                      | <b>Dates of Test</b><br>June 2 to June 28 and July 25 to 27,<br>2011                 | <b>FCC ID:</b> L6ARDR60CW, L6ARDZ20CW<br><b>IC:</b> 2503A-RDR60CW, 2503A-RDZ20CW |

Radiated Emissions Test Data Results cont'd

**PCS Data Service Mode**

Date of Test: July 27, 2011

The environmental test conditions were: Temperature: 24.8 °C  
Relative Humidity: 39.2 %

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, horizontal position.

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

All emissions had a test margin greater than 25.0 dB.

Date of Test: July 25, 2011

The following measurements were performed by Shuo Wang

The environmental test conditions were: Temperature: 23.6°C  
Relative Humidity: 49.5 %

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

The BlackBerry® smartphone was in standalone, horizontal position.

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

All emissions had a test margin greater than 25.0 dB.