

# EMI Test Report

Tested in accordance with  
Federal Communications Commission (FCC)  
Personal Communications Services  
CFR 47 Parts 2, 22, 24 and 27  
&  
Industry Canada (IC) RSS- Gen, 132, 133 and 139




**A division of Research In Motion Limited**

**REPORT NO: RTS-2579-1107-62B**

|                                     |                              |
|-------------------------------------|------------------------------|
| <b>PRODUCT MODEL NO:</b>            | RDD71UW, RDX71UW             |
| <b>TYPE NAME:</b>                   | BlackBerry® smartphone       |
| <b>FCC ID:</b>                      | L6ARDD70UW, L6ARDX70UW       |
| <b>IC:</b>                          | 2503A-RDD70UW, 2503A-RDX70UW |
| <b>EMISSION DESIGNATOR (GSM):</b>   | 248KGXW                      |
| <b>EMISSION DESIGNATOR (EDGE):</b>  | 245KG7W                      |
| <b>EMISSION DESIGNATOR (WCDMA):</b> | 4M22F9W                      |

**DATE:** July 14, 2011

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**Statement of Performance:**

The BlackBerry® smartphone, model RDD71UW, part number CER-39234-001 Rev4 and accessories performs within the requirements of the test standards when configured and operated per RIM's instructions.

The BlackBerry® smartphone, model RDX71UW, part number CER-39229-001 Rev3 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: 14 July 2011

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Date: 19 July 2011

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|---|--|--|
|  |  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW            |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

## Table of Contents

|   |   |    |
|---|---|----|
| A)  | Scope .....   | 5  |
| B)  | Associated Documents .....                              | 5  |
| C)  | Product Identification .....                            | 6  |
| D)  | Support Equipment Used for the Testing of the EUT ..... | 7  |
| E)  | Test Voltage .....                                      | 8  |
| F)  | Test Results Chart.....                                 | 9  |
| G)  | Summary of Results .....                                | 11 |
| H)  | Compliance Test Equipment Used .....                    | 17 |
| APPENDIX 1A – GSM CONDUCTED RF EMISSIONS TEST DATA/PLOTS.....     |   | 19 |
| APPENDIX 1B – UMTS 4 CONDUCTED RF EMISSIONS TEST DATA/PLOTS.....  |   | 36 |
| APPENDIX 1C– UMTS 2/5 CONDUCTED RF EMISSIONS TEST DATA/PLOTS..... |   | 46 |
| APPENDIX 2A – GSM CONDUCTED RF OUTPUT POWER TEST DATA.....        |   | 62 |

|   |  |  |
|---|--|--|
|  |  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW            |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

APPENDIX 2B – UMTS 4 CONDUCTED RF OUTPUT POWER TEST DATA..... 64

APPENDIX 2C – UMTS 2/5 CONDUCTED RF OUTPUT POWER TEST DATA..... 66


APPENDIX 3A – GSM FREQUENCY STABILITY TEST DATA ..... 68

APPENDIX 3B – UMTS 4 FREQUENCY STABILITY TEST DATA ..... 80

APPENDIX 3C – UMTS 2/5 FREQUENCY STABILITY TEST DATA ..... 88

APPENDIX 4A – GSM RADIATED EMISSIONS TEST DATA..... 100

APPENDIX 4B – UMTS 4 RADIATED EMISSIONS TEST DATA..... 103

|   |  |  |
|---|--|--|
|  |  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW            |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |


## A) Scope

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

- FCC CFR 47 Part 2, Oct, 2010
- FCC CFR 47 Part 22, Subpart H, Cellular Radiotelephone Services, Oct., 2010
- FCC CFR 47 Part 24 Subpart E, Broadband PCS, Oct., 2010
- FCC CFR 47 Part 27, Subpart C, Technical Standards, Oct, 2010 (Model: RDD71UW only)
- Industry Canada, RSS-132 Issue 2, September 2005, Cellular Telephones Employing New Technologies Operating in the Bands 824-849 MHz and 869-894 MHz.
- Industry Canada, RSS-133 Issue 5, February 2009, 2 GHz Personal Communications Services.
- Industry Canada, RSS-GEN Issue 3, December 2010, General Requirements and Information for the Certification of Radiocommunication Equipment
- Industry Canada, RSS-139 Issue 2, February 2009, Advanced Wireless Services Equipment Operating in the Bands 1710-1755 MHz and 2110-2155 MHz. (Model: RDD71UW only)

## B) Associated Documents

1. RDX71UW\_HW\_Declaration CER-39229-001\_ Rev2
2. RDX71UW\_HW\_Declaration CER-39229-001\_ Rev3
3. RDD71UW\_HW\_Declaration CER-39234-001\_ Rev4
4. BlackBerrySystemSimilarity\_ RDD71UW\_RDX71UW
5. MultiSourceDeclaration\_ RDD71UW\_b1069
6. Test Report: 1-3314-01-02\_11-C
7. Test Report: 1-3314-01-06\_11-A
8. Test Report: 1-3314-01-07\_11-C

|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW |  |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011                      | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

**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 14 to July 11, 2011.

|   |  |  |
|---|--|--|
|  |  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW            |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

The sample EUT included:

| Sample | Model   | CER NUMBER         | PIN      | Software Information                               |
|--------|---------|--------------------|----------|--|
| 1      | RDD71UW | CER-39234-001 Rev3 | 279CCF51 | V7.0.0.118<br>(Platform: 8.0.0.233)<br>Bundle 887  |
| 2      | RDD71UW | CER-39234-001 Rev4 | 27AE9E1E | V7.0.0.169<br>(Platform: 8.0.0.267)<br>Bundle 1069 |
| 3      | RDD71UW | CER-39234-001 Rev4 | 29AE9E19 | V7.0.0.118<br>(Platform: 8.0.0.233)<br>Bundle 887  |
| 4      | RDX71UW | CER-39229-001 Rev3 | 27BC61A5 | V7.0.0.169<br>(Platform: 8.0.0.267)<br>Bundle 1069 |
| 5      | RDX71UW | CER-39229-001 Rev1 | 2727113D | V7.0.0.118<br>(Platform: 8.0.0.233)<br>Bundle 887  |


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

Only the characteristics that have been affected by the changes from Model RDD71UW Rev3 to RDD71UW Rev4 were retested. For more information see document:  
RDD71UW\_HW\_Declaration CER-39234-001\_Rev4

Only the characteristics that have been affected by the changes from Model RDX71UW Rev1 to RDX71UW Rev3 were retested. For more information see document:  
RDX71UW\_HW\_Declaration CER-39229-001\_Rev2 and RDX71UW\_HW\_Declaration CER-39229-001\_Rev3.

Only the characteristics that have been affected by the changes from Model RDD71UW to RDX71UW were retested. For more information see document:  
BlackBerrySystemSimilarity\_RDD71UW\_RDX71UW

To view the differences between Bundle 887 to 1069, see document:  
MultiSourceDeclaration\_RDD71UW\_b1069

|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW |  |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011                      | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

**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.





**Test Report No.**  
RTS-2579-1107-62B

**Dates of Test**  
June 14 to July 11, 2011


**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

**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 24, Subpart E                        | RSS-GEN, 4.8                 | GSM 1900 EIRP   | Pass                                  | 4A                 |
| Part 22, Subpart H                        | RSS-GEN, 4.8                 | GSM 850 ERP   | See test report:<br>1-3314-01-02_11-C | -                  |
| Part 22, Subpart H<br>Part 24, Subpart E  | RSS-GEN, 4.9                 | GSM Radiated Spurious/Harmonic Emissions                          | See test report:<br>1-3314-01-02_11-C | -                  |
| Part 27.53                                | RSS-139, 6.5                 | WCDMA UMTS Band 4 Conducted Spurious Emissions                    | Pass                                  | 1B                 |
| Part 2.202<br>Part 27.53                  | RSS-GEN, 2.3                 | WCDMA UMTS Band 4 Occupied Bandwidth and Channel Mask             | Pass                                  | 1B                 |
| Part 2.1046(a)                            | RSS-139, 6.4                 | WCDMA UMTS Band 4 Conducted RF Output Power                       | Pass                                  | 2B                 |
| Part 2.1055(a)(d)<br>Part 27.54           | RSS-139, 6.3                 | WCDMA UMTS Band 4 Frequency Stability vs. Temperature and Voltage | Pass                                  | 3B                 |
| Part 27.53                                | RSS-139, 6.5                 | WCDMA UMTS Band 4 Radiated Spurious/Harmonic Emissions            | Pass                                  | 4B                 |
| Part 27.50                                | RSS-139, 6.4                 | WCDMA UMTS Band 4 EIRP  | Pass                                  | 4B                 |

**Test Report No.**  
RTS-2579-1107-62B**Dates of Test**  
June 14 to July 11, 2011**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW**Test Results Chart cont'd**

|  |                              |   |                                       |    |
|--|------------------------------|---|---------------------------------------|----|
| Part 2.1051<br>Part 22.917<br>Part 22.901(d) | RSS-GEN, 4.9                 | UMTS Band 5 Conducted Spurious Emissions                    | Pass                                  | 1C |
| Part 2.1051<br>Part 24.238(a)                | RSS-GEN, 4.9                 | UMTS Band 2 Conducted Spurious Emissions                    | Pass                                  | 1C |
| Part 2.202<br>Part 22.917                    | RSS-GEN, 4.6                 | UMTS Band 5 Occupied Bandwidth and Channel Mask             | Pass                                  | 1C |
| Part 2.202<br>Part 24.238                    | RSS-GEN, 4.6                 | UMTS Band 2 Occupied Bandwidth and Channel Mask             | Pass                                  | 1C |
| Part 2.1046(a)                               | RSS-133, 6.4<br>RSS-132, 4.4 | UMTS Band 2 and 5 Conducted RF Output Power                 | Pass                                  | 2C |
| Part 2.1055(a)(d)<br>Part 22.917             | RSS-132, 4.3                 | UMTS Band 5 Frequency Stability vs. Temperature and Voltage | Pass                                  | 3C |
| Part 2.1055(a)(d)<br>Part 24.235             | RSS-GEN, 4.7                 | UMTS Band 2 Frequency Stability vs. Temperature and Voltage | Pass                                  | 3C |
| Part 22, Subpart H                           | RSS-GEN, 4.9                 | UMTS Band 5 Radiated Spurious/Harmonic Emissions, ERP       | See test report:<br>1-3314-01-07_11-C | -  |
| Part 24, Subpart E                           | RSS-GEN, 4.9                 | UMTS Band 2 Radiated Spurious/Harmonic Emissions, EIRP      | See test report:<br>1-3314-01-07_11-C | -  |

|   |  |  |
|---|--|--|
|  |  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW            |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

## **g) Summary of Results**

### **1) Conducted Emission Measurements**

The following test configurations were measured for model RDD71UW:

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 247 kHz on low channel in GSM mode, and 245 kHz on low, middle and high channel in EDGE mode.

See APPENDIX 1A for test data.

The BlackBerry® smartphone met the requirements of the Occupied Bandwidth and channel mask requirements in the PCS1900 as per 47 CFR 2.202, CFR 24.238 and RSS-GEN, 4.6. The EUT was measured in GSM and EDGE mode on the low, middle and high channels. The worst case occupied bandwidth was 248 kHz on high channel in GSM, and 245 kHz on low, middle 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.

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.

See APPENDIX 2A for test data

|   |  |  |
|---|--|--|
|  |  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW            |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

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

See APPENDIX 3A for test data.

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

See APPENDIX 3A for test data.

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

See APPENDIX 1B for the test data.

f) The BlackBerry® smartphone met the requirements of the Occupied Bandwidth in the UMTS band 4 as per 47 CFR 2.202, CFR 27.53 and RSS-139, 2.3. The low, middle and high channels were measured. The worst case occupied bandwidth was 4.200 MHz on middle channel in Loopback and 4.217 MHz on low and high channel in HSUPA mode.


See APPENDIX 1B for the test data.

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

See APPENDIX 2B for test data.

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

See APPENDIX 3B for test data.

|   |  |  |
|---|--|--|
|  |  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW            |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

The following test configurations were measured for model RDX71UW:

a) The BlackBerry® smartphone met the requirements of the Conducted Spurious Emissions in the UMTS band 5 as per 47 CFR 2.1057, CFR 22.917, CFR 22.901(d) CFR 22.901(d) and RSS-GEN, 4.9. The EUT was measured in Loopback and HSUPA mode on the low, middle and high channels. The frequency range investigated was from 10 MHz to 10 GHz. See APPENDIX 1C for the test data.


The BlackBerry® smartphone met the requirements of the Conducted Spurious Emissions in the UMTS band 2 band as per 47 CFR 2.1057, CFR 24.238(a) and RSS-GEN, 4.9. The EUT was measured in Loopback and HSUPA mode on the low, middle and high channels. The frequency range investigated was from 10 MHz to 20 GHz. See APPENDIX 1C for the test data.

b) The BlackBerry® smartphone met the requirements of the Occupied Bandwidth and channel mask in the UMTS band 5 as per 47 CFR 2.202, CFR 22.917 and RSS-GEN, 4.6. The channels were measured in Loopback and HSUPA mode on the low, middle and high channels. The worst case occupied bandwidth was 4.208 MHz on middle channel in Loopback and 4.217 MHz on low channels in HSUPA mode. See APPENDIX 1C for the test data.

The BlackBerry® smartphone met the requirements of the Occupied Bandwidth and channel mask in the UMTS Band 2 as per 47 CFR 2.202, CFR 24.238 and RSS-GEN, 4.6. The channels were measured in Loopback and HSUPA mode on the low, middle and high channels. The worst case occupied bandwidth was 4.225 MHz on low channel in Loopback and 4.217 MHz on low, middle and high channels in HSUPA mode. See APPENDIX 1C for the test data.

c) The BlackBerry® smartphone met the requirements of the Tx Conducted RF output Power requirements in the UMTS 5 as per 47 CFR 2.1046, and RSS-GEN, 4.4. The EUT was measured on the low, middle and high channels. See APPENDIX 2C for test data.

The BlackBerry® smartphone met the requirements of the Tx Conducted RF output Power requirements in the UMTS 2 as per 47 CFR 2.1046, and RSS-GEN, 6.4. The EUT was on the low, middle and high channels. See APPENDIX 2C for test data


|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW |  |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011                      | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

d) The BlackBerry® smartphone met the requirements of the Frequency Stability requirements in the UMTS 5 as per 47 CFR 2.1055, CFR 22.917 and RSS-GEN, 4.3. The EUT was measured in UMTS 5 mode on the low, middle and high channels.

See APPENDIX 3C for test data.

The BlackBerry® smartphone met the requirements of the Frequency Stability requirements in the UMTS 2 as per 47 CFR 2.1055, CFR 24.235 and RSS-GEN, 4.7. The EUT was measured in UMTS 2 mode on the low, middle and high channels.

See APPENDIX 3C for test data.

|   |  |  |
|---|--|--|
|  |  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW            |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

## 2) Radiated Emission Measurements

The radiated spurious emissions/harmonics and ERP/EIRP were measured for PCS 1900 and UMTS 4. 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 RDD71UW:

The highest EIRP in the PCS band call mode measured was 32.47 dBm (1.77 W) at 1909.80 MHz (channel 810).

The highest EIRP in the PCS band EDGE mode measured was 30.70 dBm (1.18 W) at 1880.0 MHz (channel 661).

The highest ERP in the UMTS band 4, Call Service mode was 23.91 dBm (0.25 W) at 1752.6 MHz (channel 1513).

The highest ERP in the UMTS band 4, HSUPA mode was 24.70 dBm (0.30 W) at 1752.6 MHz (channel 1513).

|   |  |  |
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|  |  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW            |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

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

The margins in the UMTS band 4 for harmonic emissions were greater than 25 dB below the accepted limits for all test frequencies.

The following test configurations were measured for model RDX71CW:

The highest EIRP in the PCS band call mode measured was 32.31 dBm (1.70 W) at 1850.20 MHz (channel 512).

The highest EIRP in the PCS band EDGE mode measured was 29.28 dBm (0.85 W) at 1850.20 MHz (channel 512).

#### **b) Co-Location Measurements**

The following test configurations were measured for model RDD71UW:

See Test Report: 1-3314-01-06\_11-A

#### **Sample Calculation:**

Corrected Signal Level (CSL) is calculated as follows:

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


To view the test data see APPENDIX 4A.

#### **Measurement Uncertainty ±4.6 dB**



**Test Report No.**  
RTS-2579-1107-62B**Dates of Test**  
June 14 to July 11, 2011**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW**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                         | Emco                | 3117         | 47563                | 11-07-15                          | Radiated Emissions     |
| Horn Antenna                         | CMT                 | LHA 0180     | R52734-001           | 12-01-21                          | Radiated Emissions     |
| Dipole Antenna                       | Schwarzbeck         | UHAP         | 973                  | 12-02-21                          | Radiated Emissions     |
| Dipole Antenna                       | Schwarzbeck         | UHAP         | 974                  | 13-02-21                          | Radiated Emissions     |
| Universal Radio Communication Tester | Rohde & Schwarz     | CMU 200      | 837493/073           | 11-10-01                          | Radiated Emissions     |
| Universal Radio Communication Tester | Rohde & Schwarz     | CMU 200      | 112394               | 11-10-01                          | Radiated Emissions     |
| Universal Radio Communication Tester | Rohde & Schwarz     | CMU 200      | 102204               | 11-11-30                          | RF Conducted Emissions |
| EMI Receiver                         | Rohde & Schwarz     | ESIB-40      | 100255               | 11-11-28                          | Radiated Emissions     |
| EMI Receiver                         | Rohde & Schwarz     | ESU-40       | 100162               | 11-11-30                          | Radiated Emissions     |
| Spectrum Analyzer                    | HP                  | 8563E        | 3745A08112           | 11-09-30                          | RF Conducted Emissions |
| DC Power Supply                      | HP                  | 6632B        | US37472178           | 11-11-19                          | RF Conducted Emissions |
| Environment Monitor                  | Omega               | iTHX-SD      | 0380561              | 11-10-13                          | Radiated Emissions     |

|   |  |  |
|---|--|--|
|  |  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW            |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

### Compliance Test Equipment Used cont'd

| <u>UNIT</u>         | <u>MANUFACTURER</u> | <u>MODEL</u> | <u>SERIAL NUMBER</u> | <u>CAL DUE DATE (YY MM DD)</u> | <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

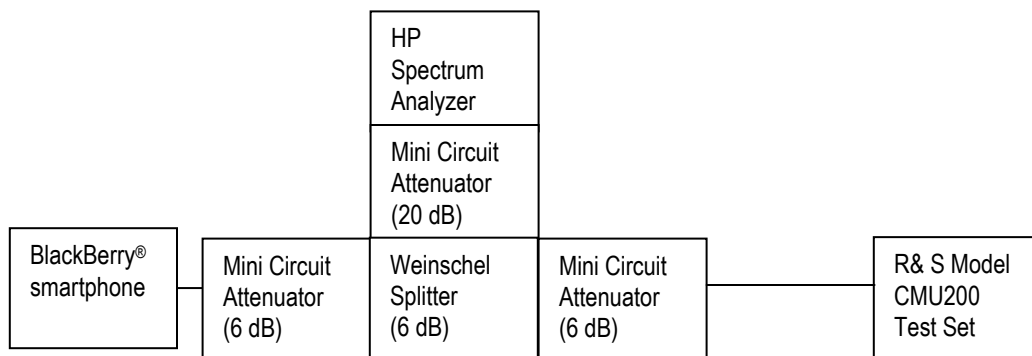
|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW |  |
|   | <b>APPENDIX 1A</b>  |  |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011                      | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

GSM Conducted RF Emission Test Data

The following test configurations were measured for model RDD71UW:

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: July 6, 2011

The environmental test conditions were:

Temperature: 23 °C  
 Relative Humidity: 37 %

The following measurements were performed by Maurice Battler.

|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW |  |
|   | <b>APPENDIX 1A</b>  |  |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011                      | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

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 277 kHz, and for the PCS1900 band was measured to be 275 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                    | 277                    | 247.0                        |
| 837.6                    | 270                    | 245.0                        |
| 848.8                    | 272                    | 245.0                        |


| 1900 band Frequency (MHz) | -26dBc Bandwidth (kHz) | 99% Occupied Bandwidth (kHz) |
|---------------------------|------------------------|------------------------------|
| 1850.2                    | 275                    | 247.0                        |
| 1880.0                    | 270                    | 245.0                        |
| 1909.8                    | 268                    | 248.0                        |

**Measurement Plots for 850 and 1900 in GSM mode**

Refer to the following measurement plots for more detail.

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

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

|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW |  |
|   | <b>APPENDIX 1A</b>  |  |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011                      | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

GSM Conducted RF Emission Test Data cont'd

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

| 850 band<br>Frequency<br>(MHz) | 99% Occupied Bandwidth<br>(kHz) |
|--------------------------------|---------------------------------|
| 824.2                          | 245.0                           |
| 837.6                          | 245.0                           |
| 848.8                          | 245.0                           |

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

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

Refer to the following measurement plots for more detail.

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

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


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

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

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

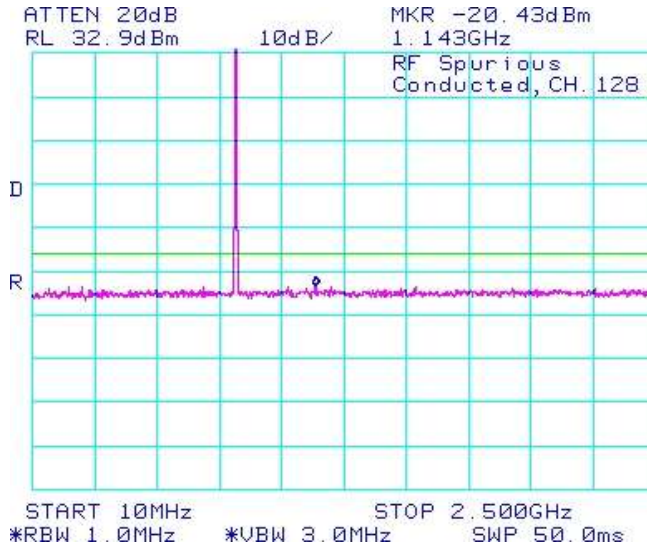
See Figures 1-39a to 1-50a for the plots of the conducted spurious emissions EDGE results

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

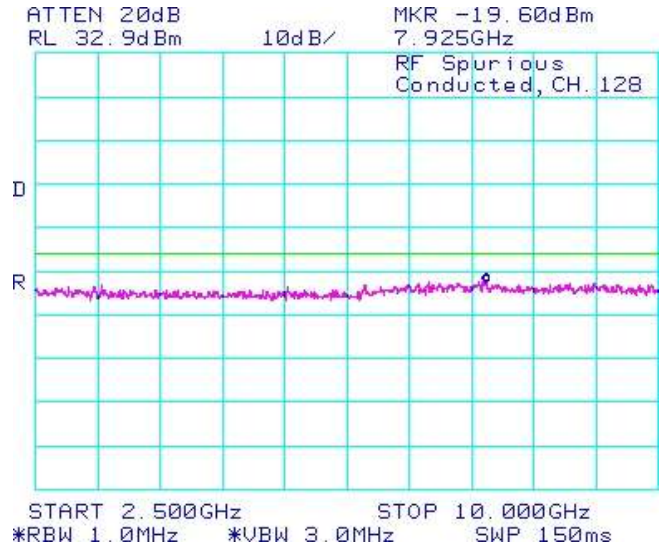
|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW |  |
|   | <b>APPENDIX 1A</b>  |  |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011                      | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

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

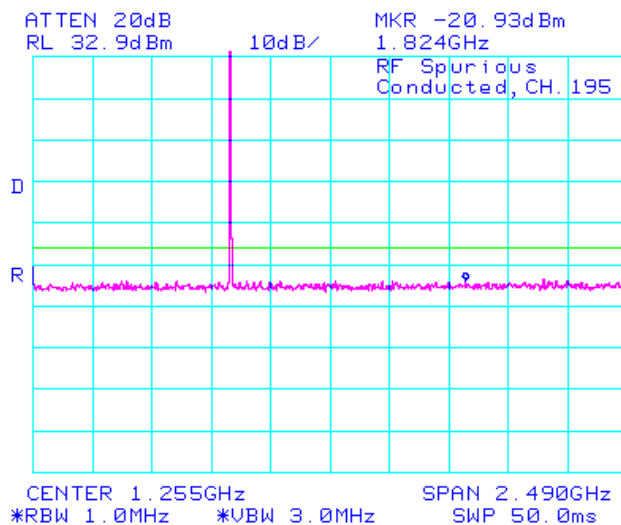
**Figure 1-1a: GSM850 band, Spurious Conducted Emissions, Low channel**



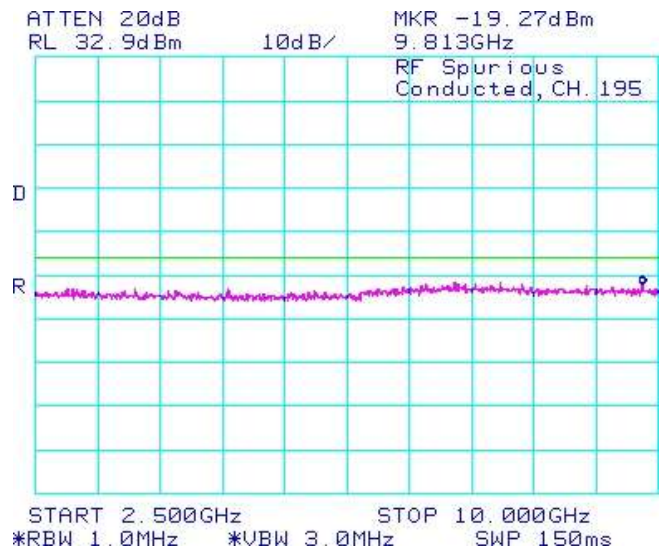
**Figure 1-2a: GSM850 band, Spurious Conducted Emissions, Low channel**




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



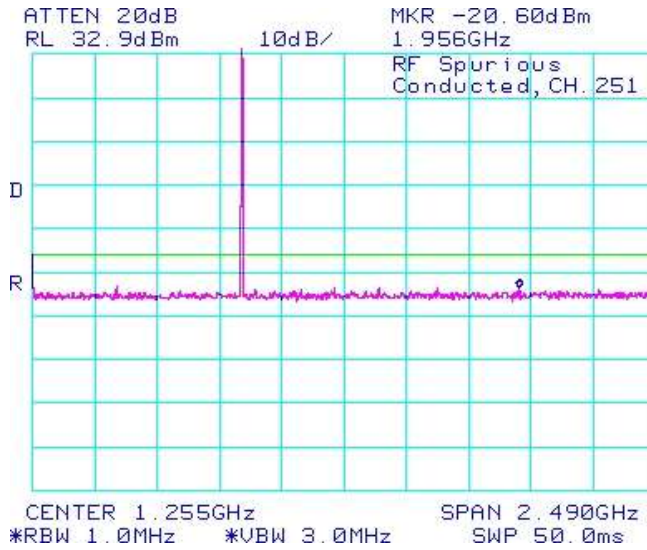
**Figure 1-4a: GSM850 band, Spurious Conducted Emissions, Middle Channel**



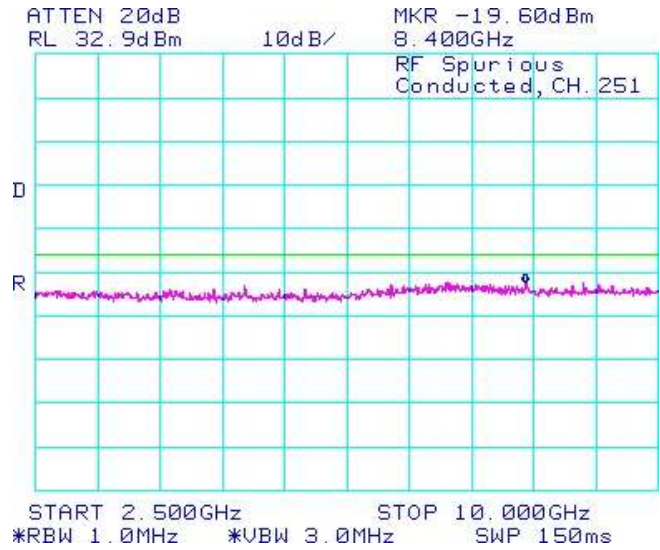
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|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW<br><b>APPENDIX 1A</b> |  |
|   | <b>Test Report No.</b><br>RTS-2579-1107-62B   | <b>Dates of Test</b><br>June 14 to July 11, 2011 |

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

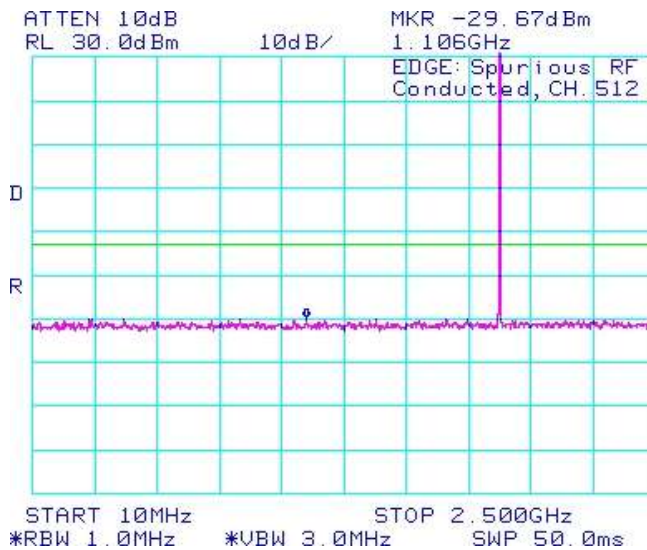
**Figure 1-5a: GSM850 band, Spurious Conducted Emissions, High Channel**



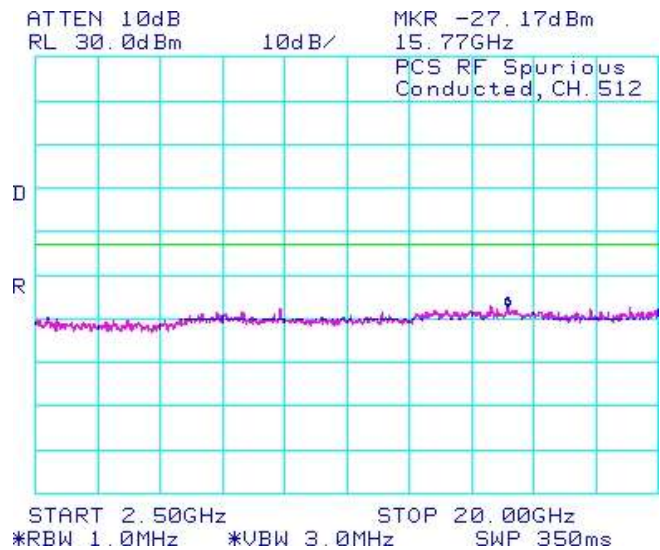
**Figure 1-6a: GSM850 band, Spurious Conducted Emissions, High Channel**




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



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

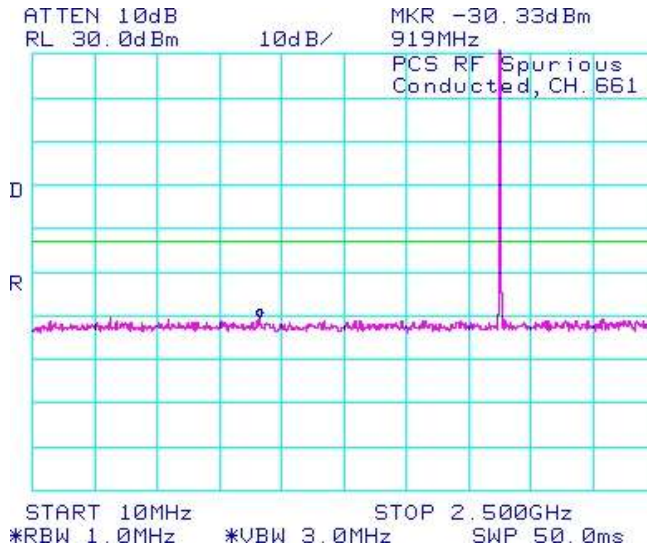




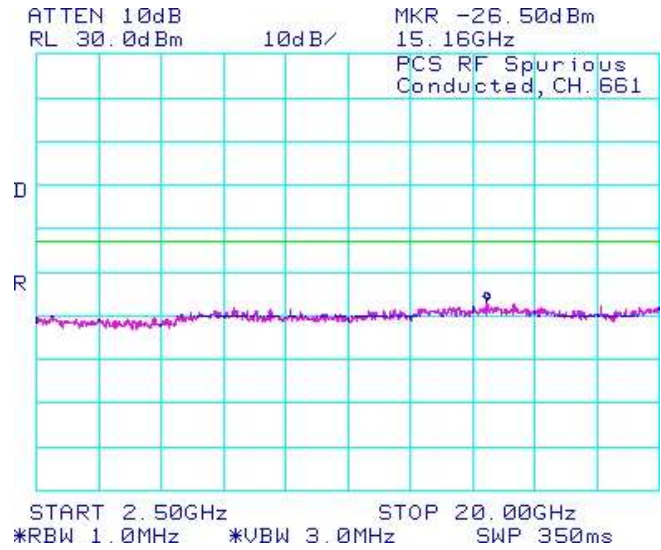
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|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW<br><b>APPENDIX 1A</b> |  |
|   | <b>Test Report No.</b><br>RTS-2579-1107-62B   | <b>Dates of Test</b><br>June 14 to July 11, 2011 |

GSM Conducted RF Emission Test Data cont'd

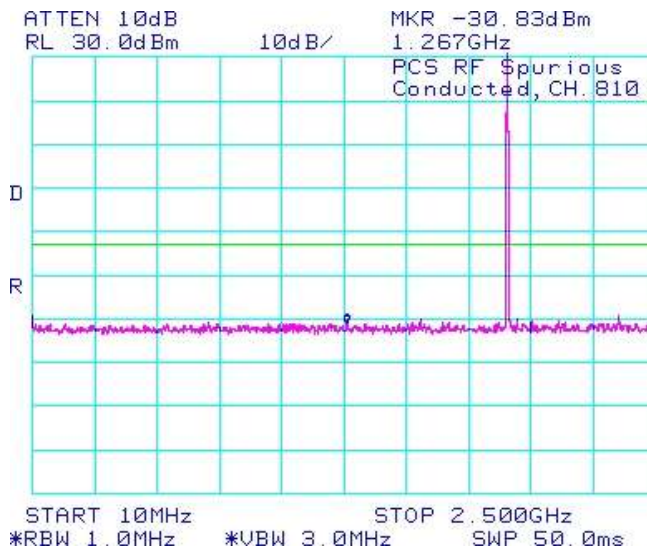
**Figure 1-9a: PCS1900 band, Spurious Conducted Emissions, Middle Channel**



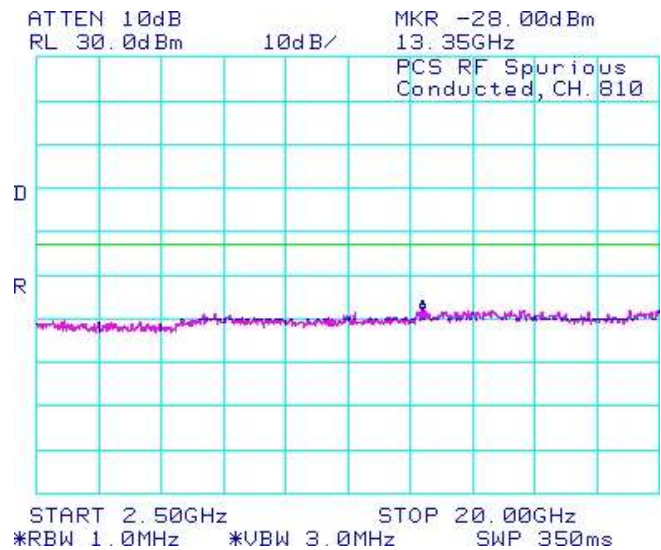
**Figure 1-10a: PCS1900 band, Spurious Conducted Emissions, Middle Channel**




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



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

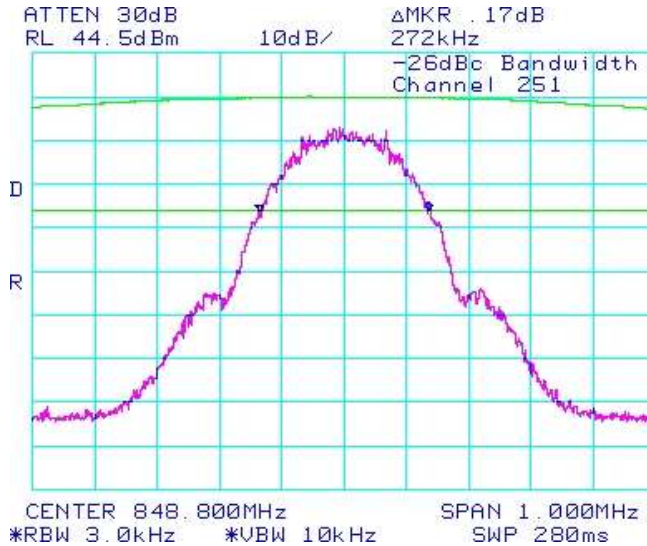




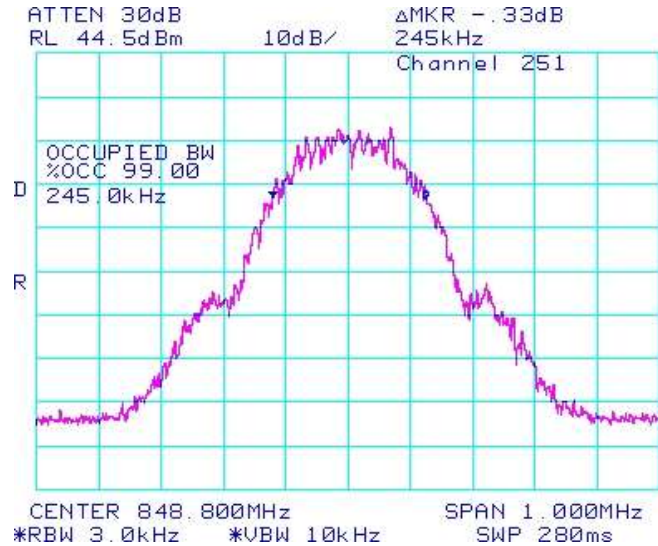
|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW<br><b>APPENDIX 1A</b> |  |
|   | <b>Test Report No.</b><br>RTS-2579-1107-62B   | <b>Dates of Test</b><br>June 14 to July 11, 2011 |

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

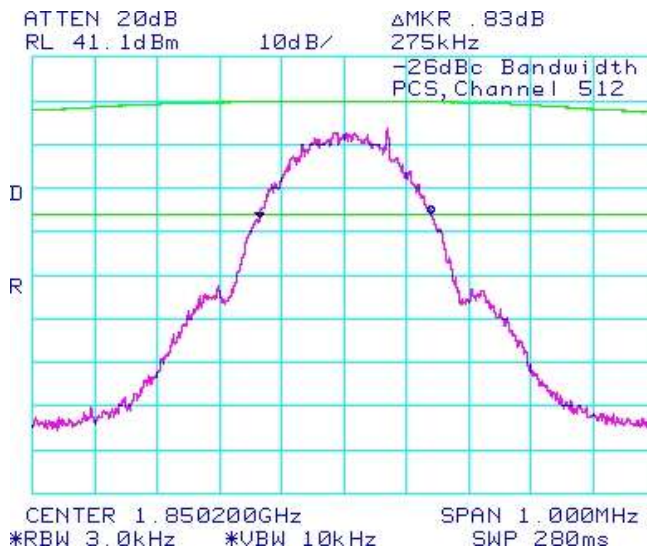
**Figure 1-17a: -26dBc bandwidth, GSM850 band High Channel in GSM mode**



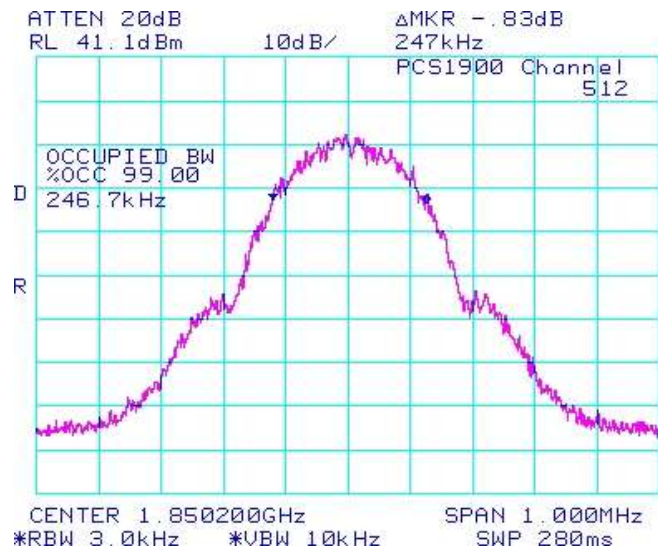
**Figure 1-18a: Occupied Bandwidth, GSM850 band High Channel in GSM mode**




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



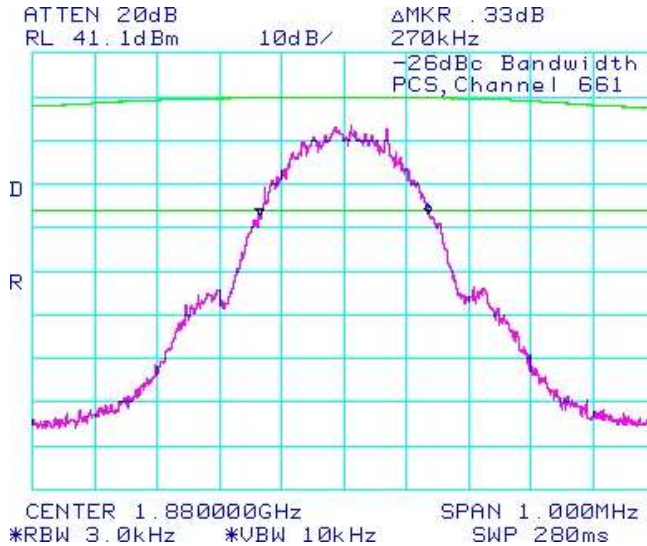
**Figure 1-20a: Occupied Bandwidth, PCS1900 Low Channel in GSM mode**



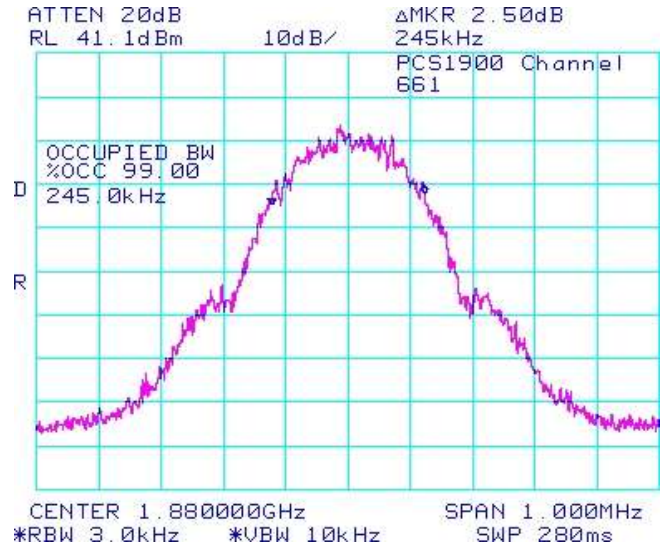
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|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW<br><b>APPENDIX 1A</b> |  |
|   | <b>Test Report No.</b><br>RTS-2579-1107-62B   | <b>Dates of Test</b><br>June 14 to July 11, 2011 |

GSM Conducted RF Emission Test Data cont'd

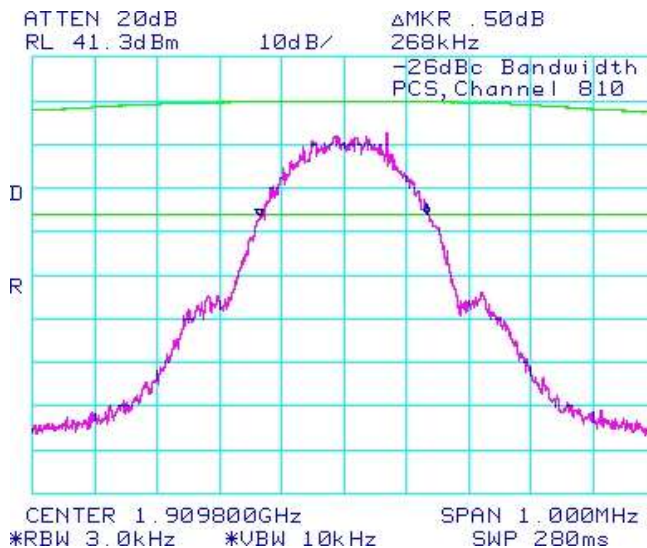
**Figure 1-21a: -26dBc bandwidth, PCS1900 Middle Channel in GSM mode**



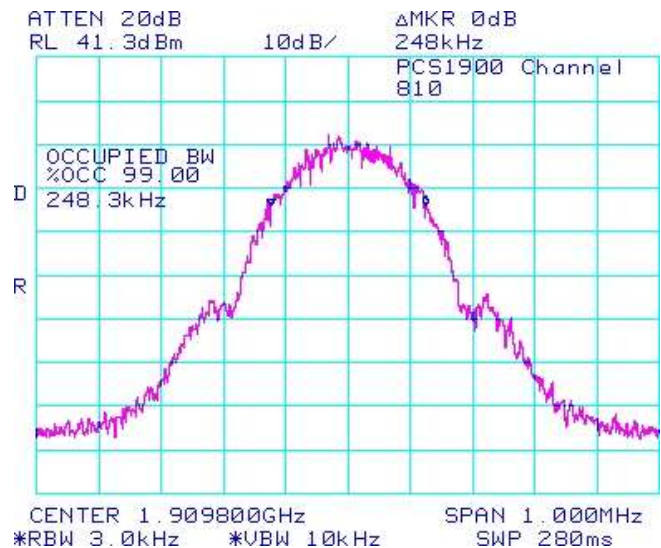
**Figure 1-22a: Occupied Bandwidth, PCS1900 Middle Channel in GSM mode**




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



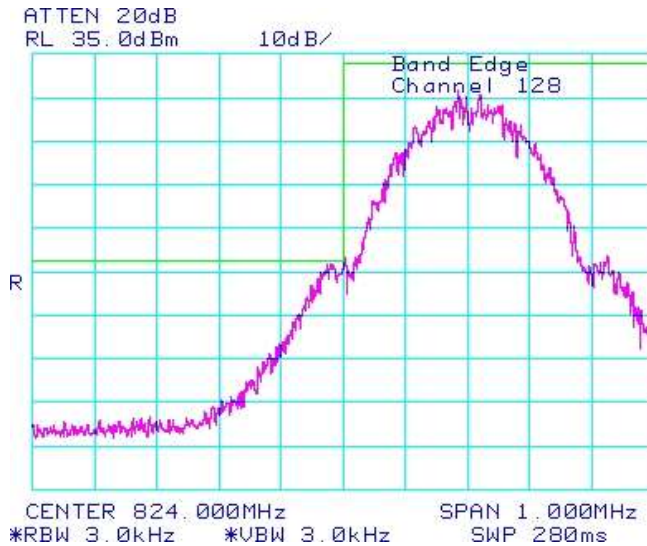
**Figure 1-24a: Occupied Bandwidth, PCS1900 High Channel in GSM mode**



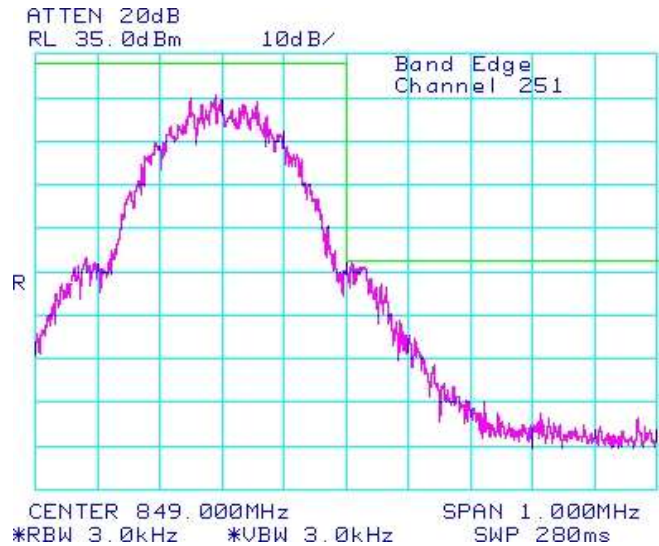
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|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW<br><b>APPENDIX 1A</b> |  |
|   | <b>Test Report No.</b><br>RTS-2579-1107-62B   | <b>Dates of Test</b><br>June 14 to July 11, 2011 |

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

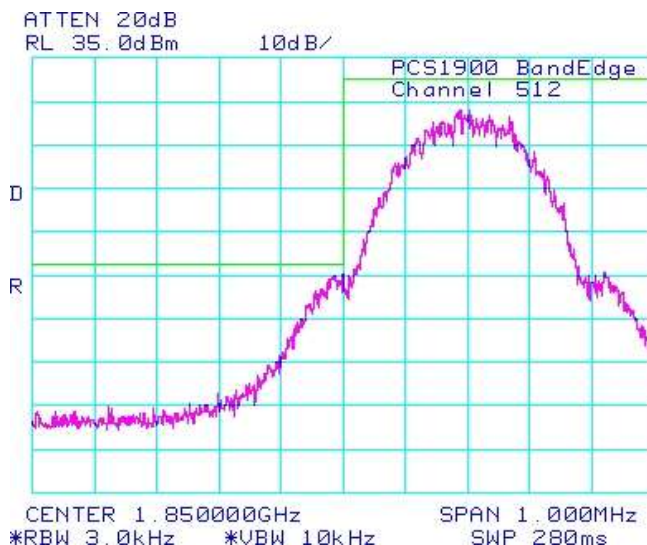
**Figure 1-25a: GSM850 band, Low Channel Mask in GSM mode**



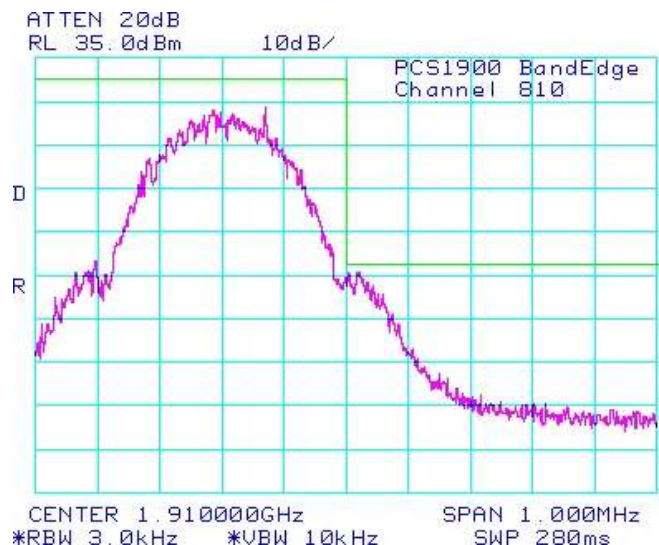
**Figure 1-26a: GSM850 band High Channel Mask in GSM mode**




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



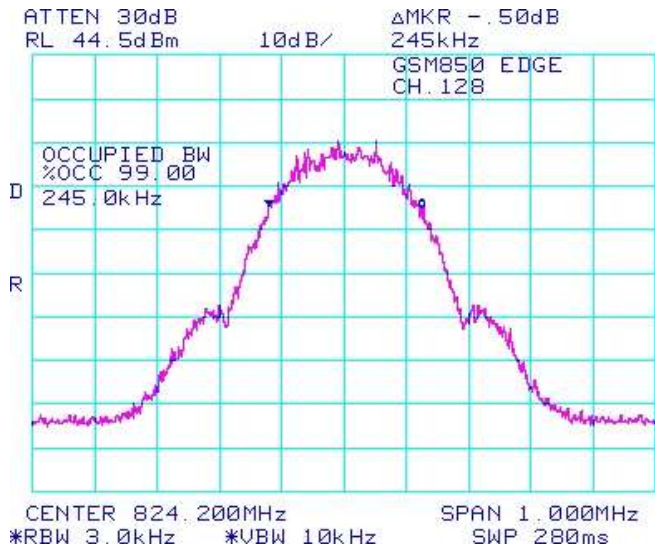
**Figure 1-28a: PCS1900, High Channel Mask in GSM mode**



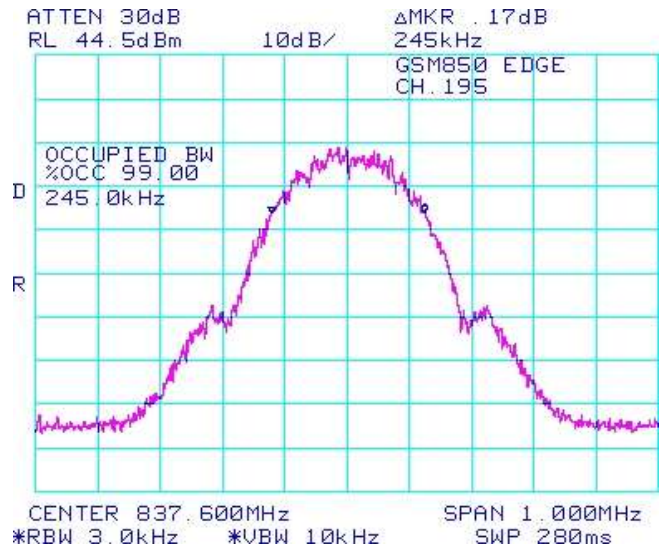
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|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW<br><b>APPENDIX 1A</b> |  |
|   | <b>Test Report No.</b><br>RTS-2579-1107-62B   | <b>Dates of Test</b><br>June 14 to July 11, 2011 |

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

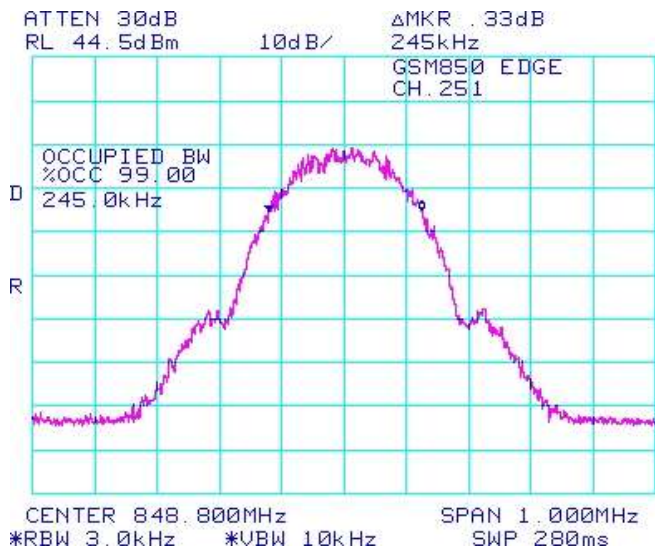
**Figure 1-29a: Occupied Bandwidth, GSM850 Band, Low Channel in EDGE mode**



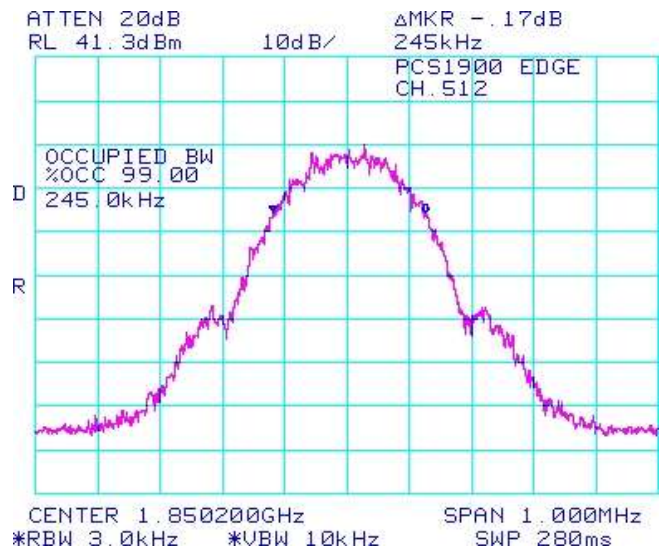
**Figure 1-30a: Occupied Bandwidth, GSM850 Band, Middle Channel in EDGE mode**




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



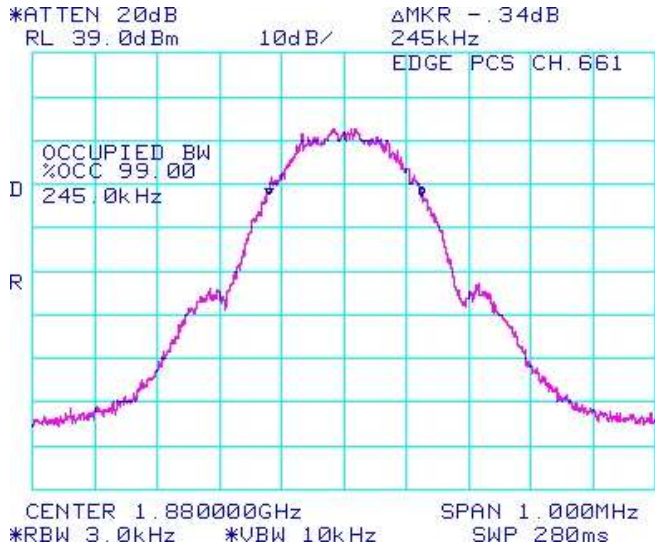
**Figure 1-32a: Occupied Bandwidth, PCS1900 Band, Low Channel in EDGE mode**



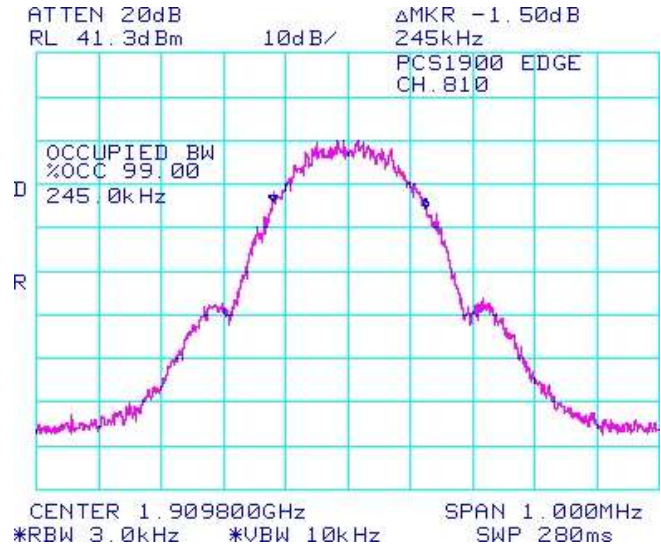
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|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW<br><b>APPENDIX 1A</b> |  |
|   | <b>Test Report No.</b><br>RTS-2579-1107-62B   | <b>Dates of Test</b><br>June 14 to July 11, 2011 |

GSM Conducted RF Emission Test Data cont'd

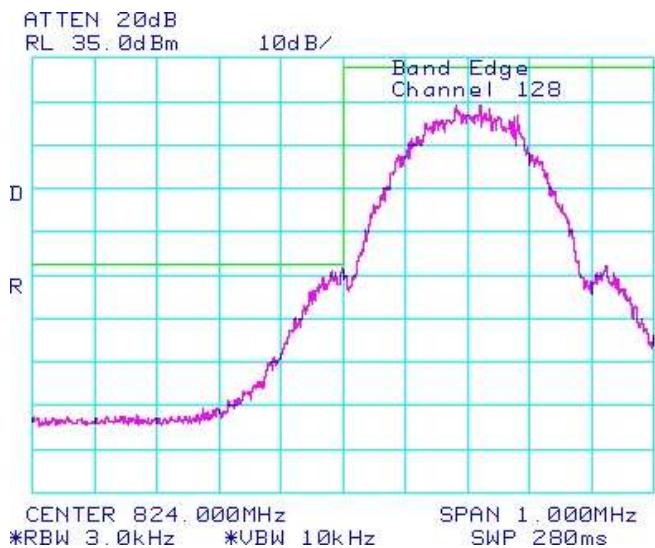
**Figure 1-33a: Occupied Bandwidth, PCS1900 Band, Middle Channel in EDGE mode**



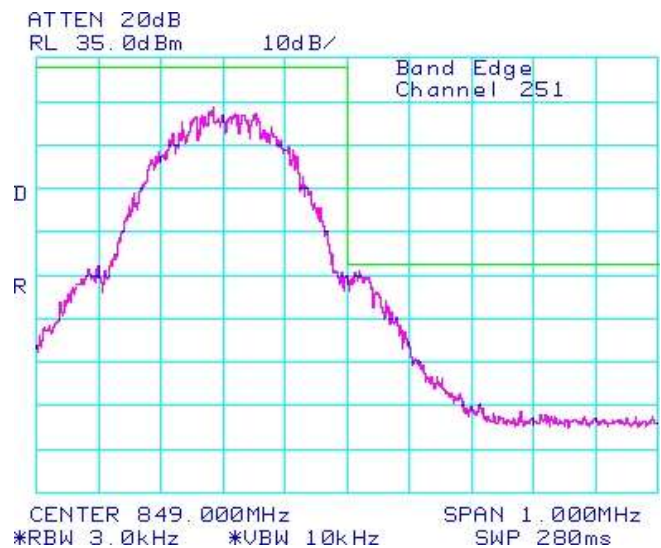
**Figure 1-34a: Occupied Bandwidth, PCS1900 Band, High Channel in EDGE mode**




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



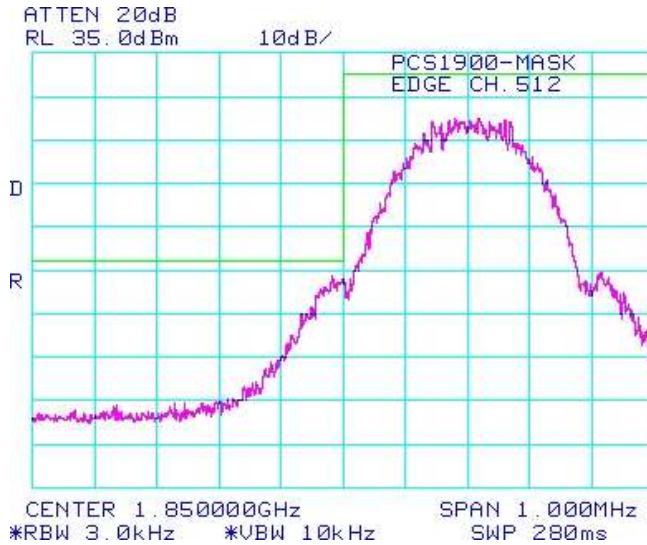
**Figure 1-36a: GSM850 Band, High Channel Mask in EDGE mode**



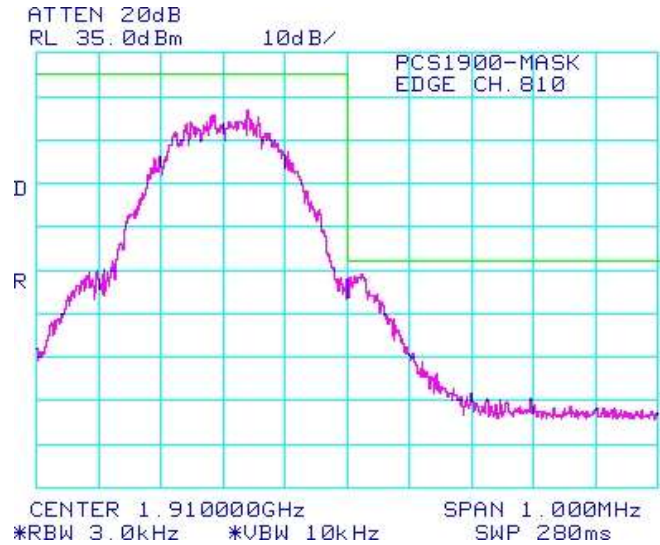
|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW<br><b>APPENDIX 1A</b> |  |
|   | <b>Test Report No.</b><br>RTS-2579-1107-62B   | <b>Dates of Test</b><br>June 14 to July 11, 2011 |

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**

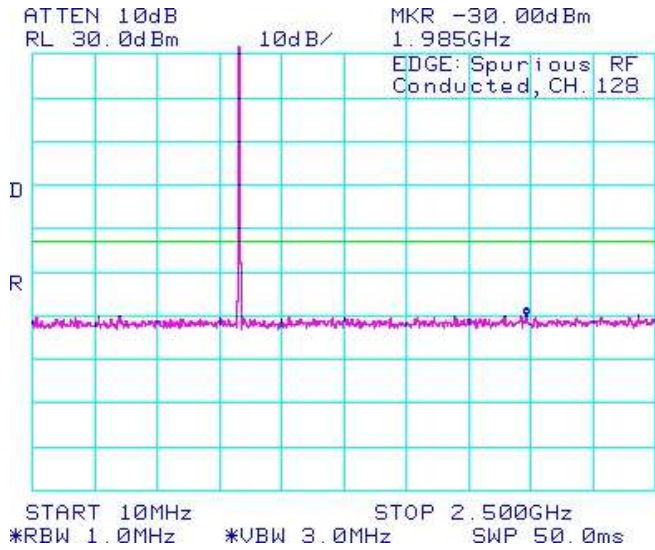




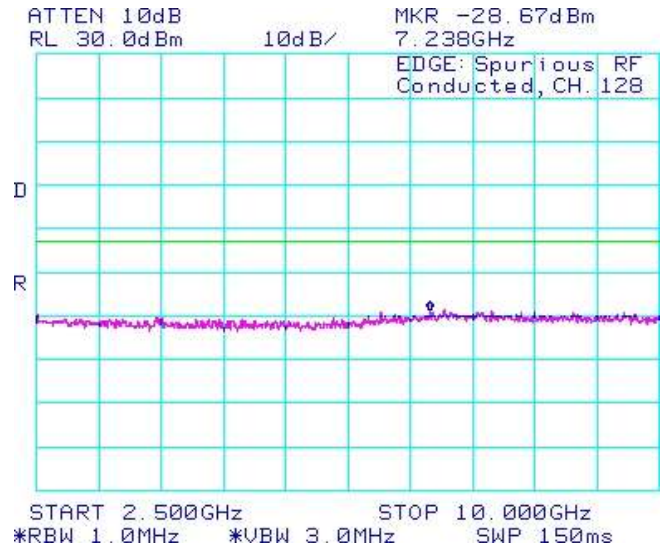
|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW |  |
|   | <b>APPENDIX 1A</b>  |  |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011                      | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

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

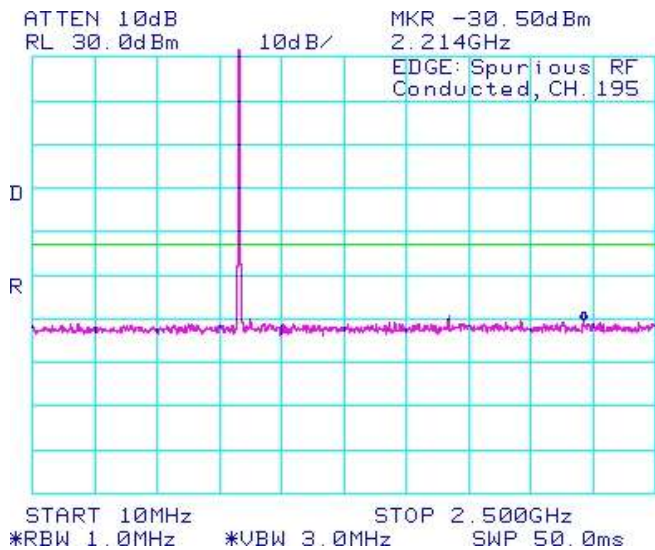
**Figure 1-39a: GSM850 band, Spurious Conducted Emissions, Low channel in Edge Mode**



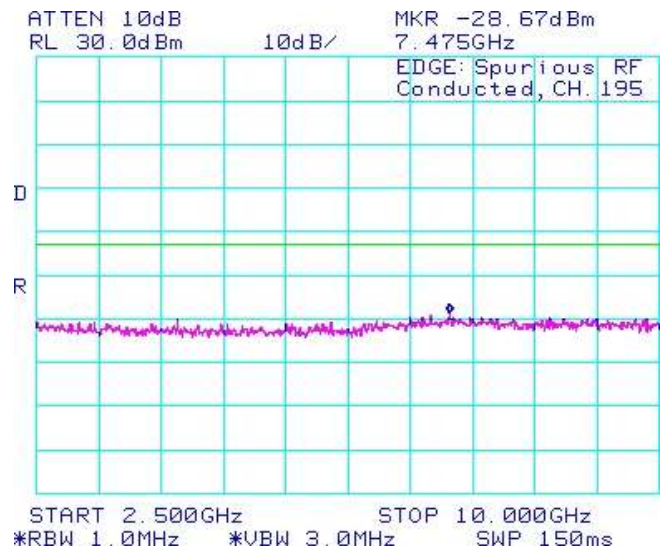
**Figure 1-40a: GSM850 band, Spurious Conducted Emissions, Low channel in Edge Mode**




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



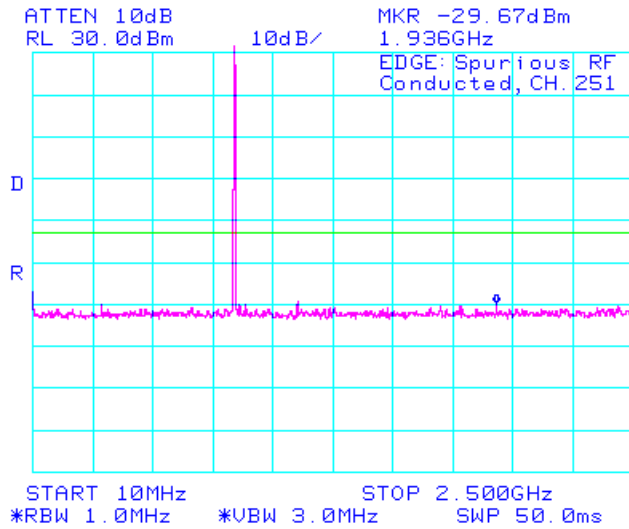
**Figure 1-42a: GSM850 band, Spurious Conducted Emissions, Middle channel in Edge Mode**



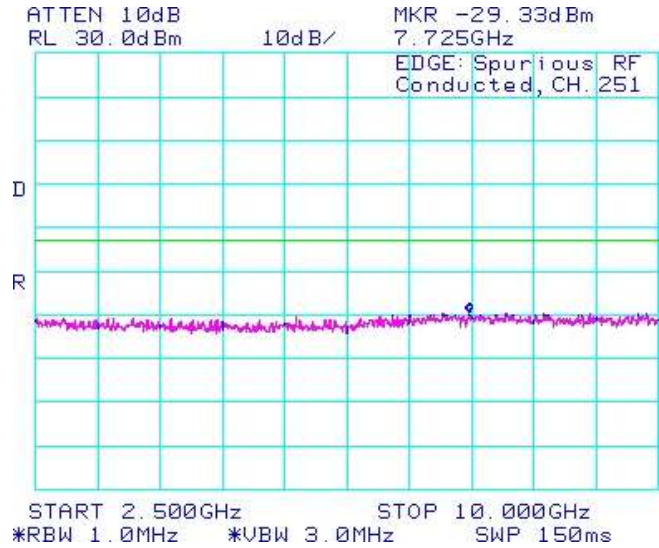
|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW<br><b>APPENDIX 1A</b> |  |
|   | <b>Test Report No.</b><br>RTS-2579-1107-62B   | <b>Dates of Test</b><br>June 14 to July 11, 2011 |

GSM Conducted RF Emission Test Data cont'd

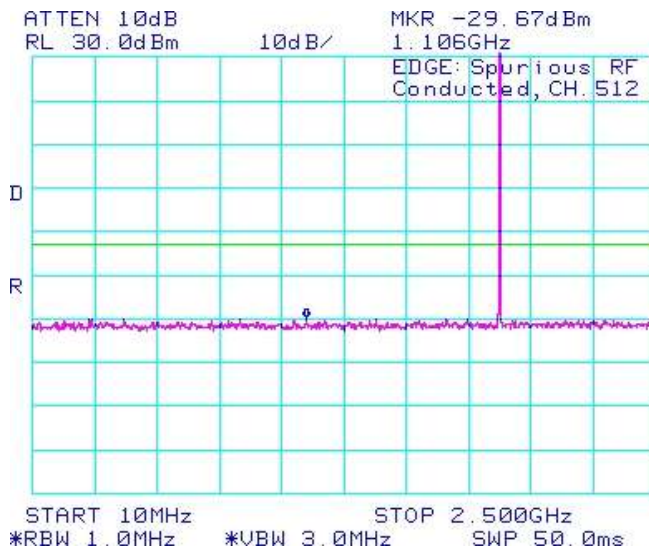
**Figure 1-43a: GSM850 band, Spurious Conducted Emissions, High channel in Edge Mode**



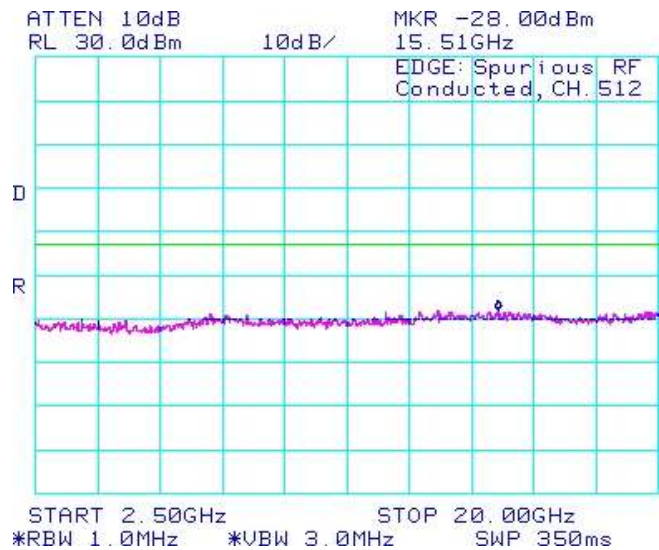
**Figure 1-44a: GSM850 band, Spurious Conducted Emissions, High channel in Edge Mode**




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



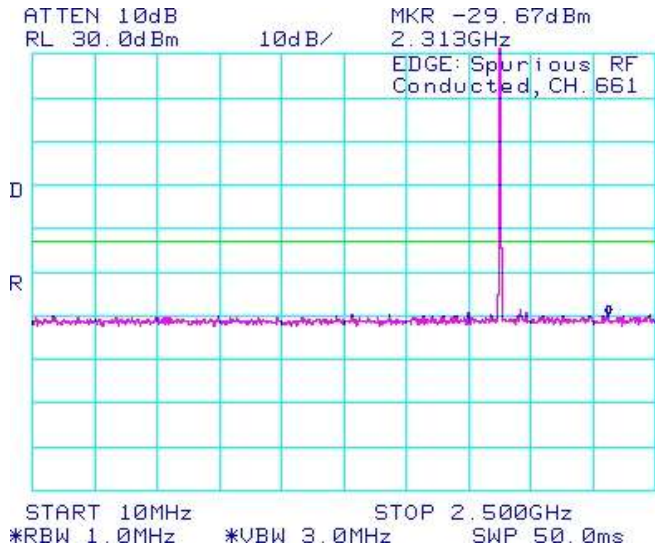
**Figure 1-46a: PCS1900 band, Spurious Conducted Emissions, Low channel in Edge Mode**



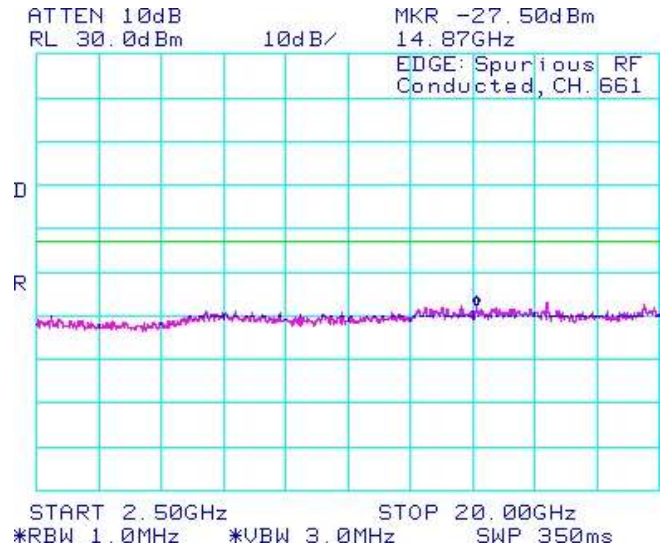
|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW<br><b>APPENDIX 1A</b> |  |
|   | <b>Test Report No.</b><br>RTS-2579-1107-62B   | <b>Dates of Test</b><br>June 14 to July 11, 2011 |

GSM Conducted RF Emission Test Data cont'd

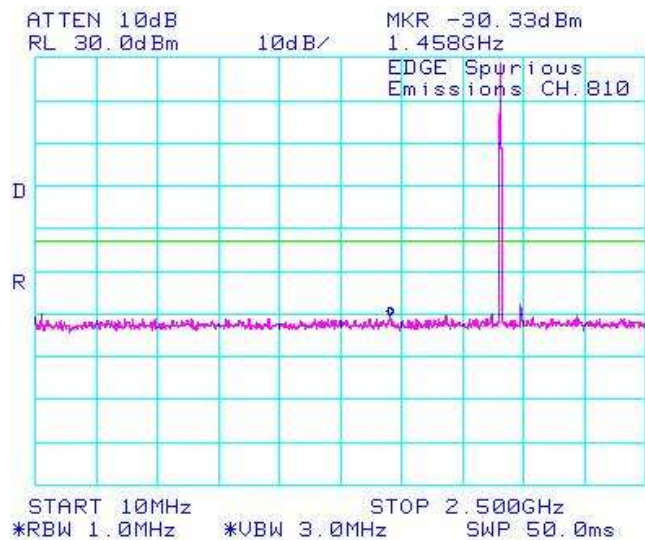
**Figure 1-47a: PCS1900 band, Spurious Conducted Emissions, Middle channel in Edge Mode**



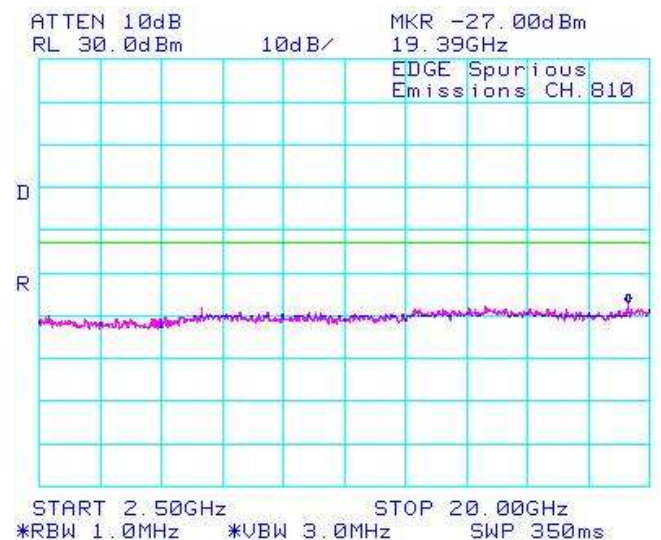
**Figure 1-48a: PCS1900 band, Spurious Conducted Emissions, Middle channel in Edge Mode**




**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 – UMTS 4 CONDUCTED RF EMISSIONS TEST DATA/PLOTS

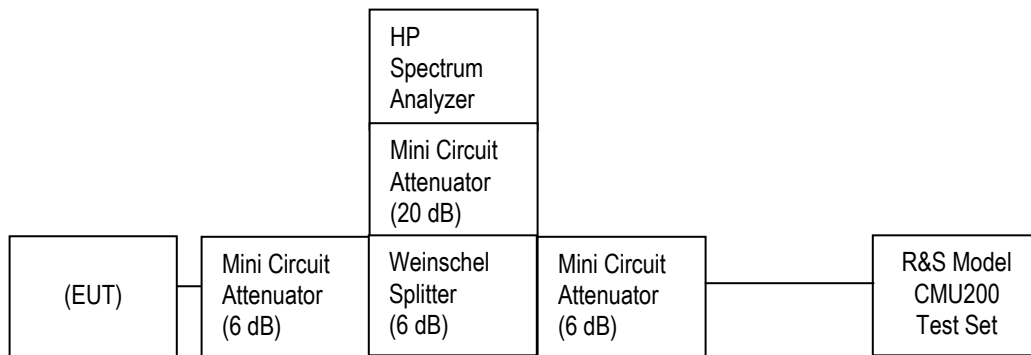
|   |  |   |
|---|--|---|
|  |  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW<br><b>APPENDIX 1B</b> |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW            |

### UMTS Conducted RF Emission Test Data


The following test configurations were measured for model RDD71UW:

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

### **Test Setup Diagram**



The environmental test conditions were: Temperature: 23 °C  
 Relative Humidity: 37 %

|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW |  |
|   | <b>APPENDIX 1B</b>  |  |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011                      | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

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

**The conducted spurious emissions** – As per 47 CFR 2.1051, CFR 24.238(a), CFR 4.202, CFR 22 Subpart H, RSS-132 and RSS - 133 were measured from 10 MHz to 20 GHz.

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

Date of Test: May 12, 2011

#### ***Test Data UMTS Band 4 selected Frequencies in Call mode***

| UMTS band 4<br>Frequency (MHz) | 26dBc Occupied Bandwidth<br>(MHz) | 99% Occupied Bandwidth<br>(MHz) |
|--------------------------------|-----------------------------------|---------------------------------|
| 1712.400                       | 4.733                             | 4.192                           |
| 1732.600                       | 4.725                             | 4.200                           |
| 1752.600                       | 4.700                             | 4.183                           |

#### ***Test Data for UMTS band 4 selected Frequencies in Call mode***

Refer to the following measurement plots for more detail.

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

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

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

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

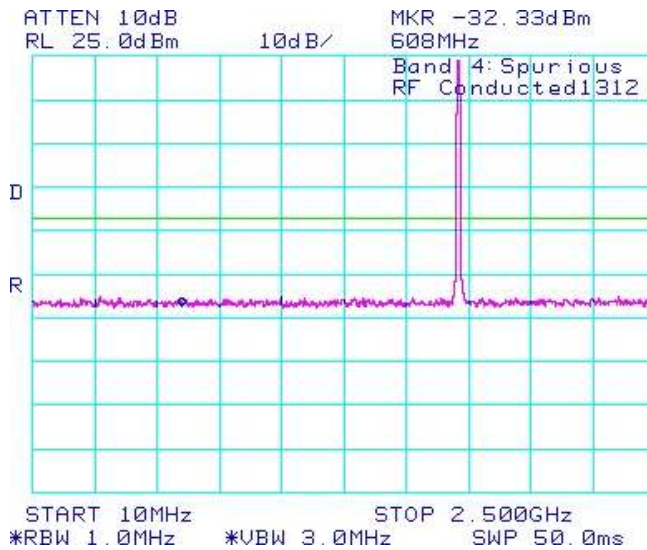
**Test Report No.**  
 RTS-2579-1107-62B

**Dates of Test**  
 June 14 to July 11, 2011

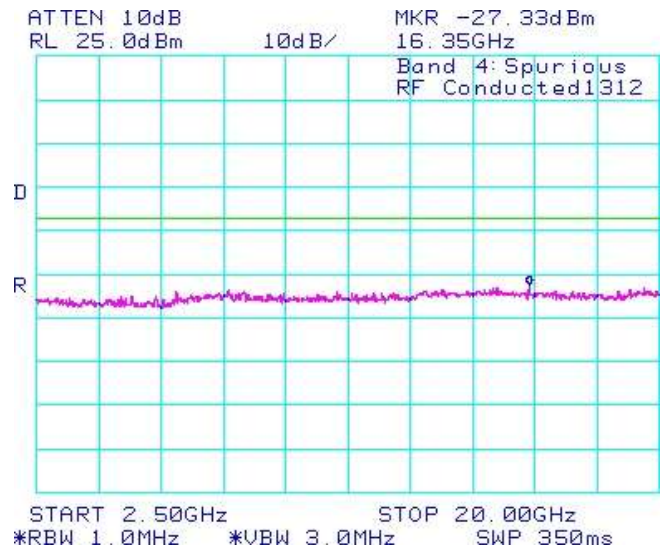
**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

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

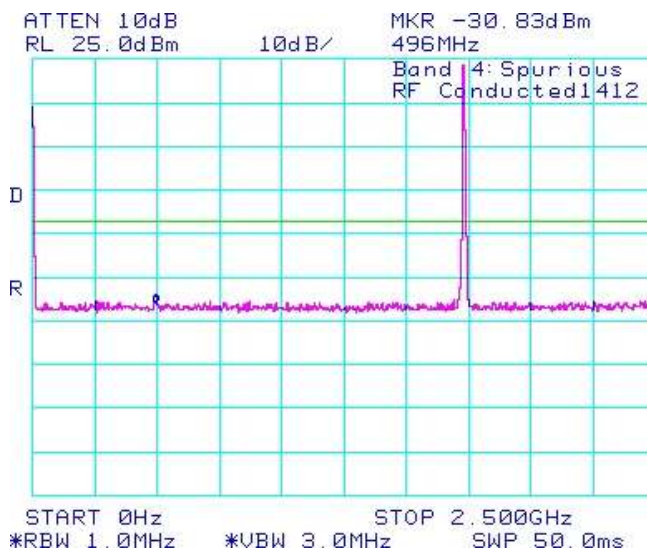
**Figure 1-1c: Band 4, Spurious Conducted Emissions, Low channel**



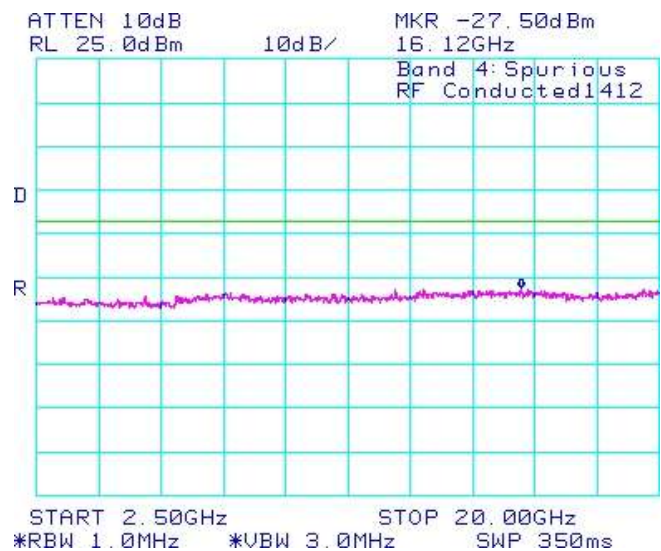
**Figure 1-2c: Band 4, Spurious Conducted Emissions, Low channel**




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



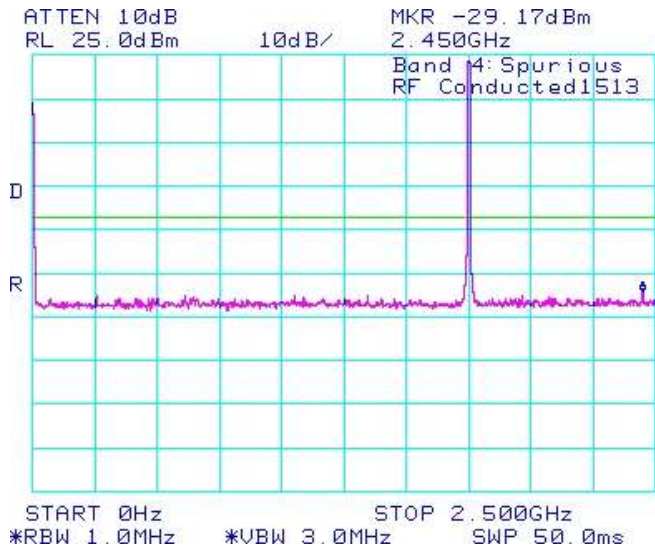
**Figure 1-4c: Band 4, Spurious Conducted Emissions, Middle channel**



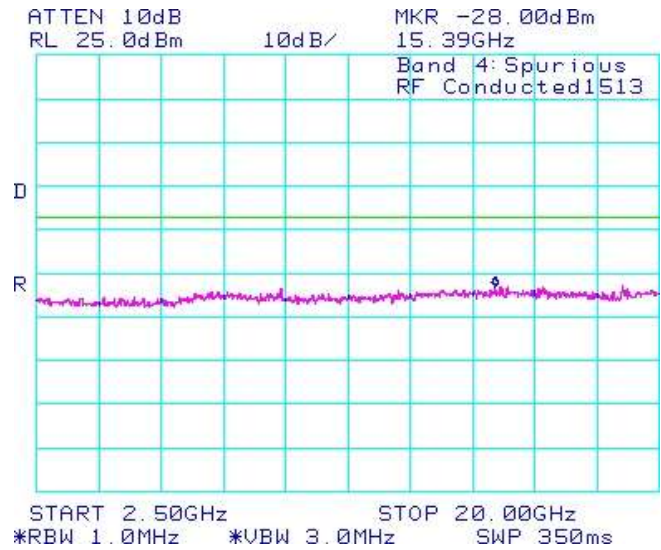
|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW<br><b>APPENDIX 1B</b> |  |
|   | <b>Test Report No.</b><br>RTS-2579-1107-62B   | <b>Dates of Test</b><br>June 14 to July 11, 2011 |

UMTS Conducted RF Emission Test Data cont'd

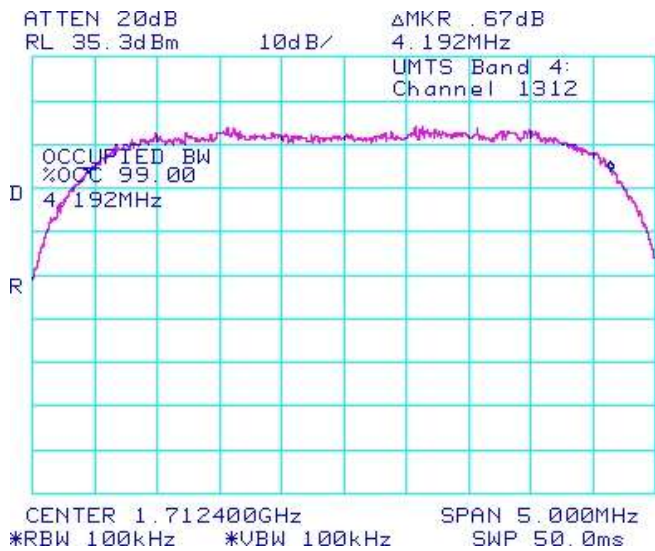
**Figure 1-5c: Band 4, Spurious Conducted Emissions, High channel**



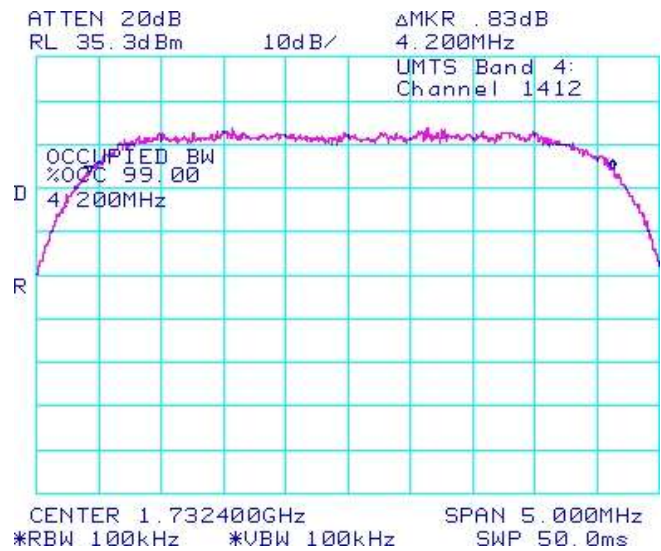
**Figure 1-6c: Band 4, Spurious Conducted Emissions, High channel**



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



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

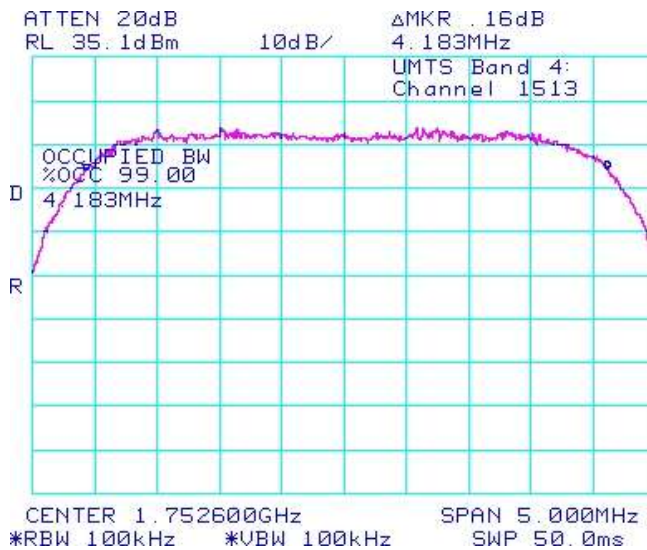




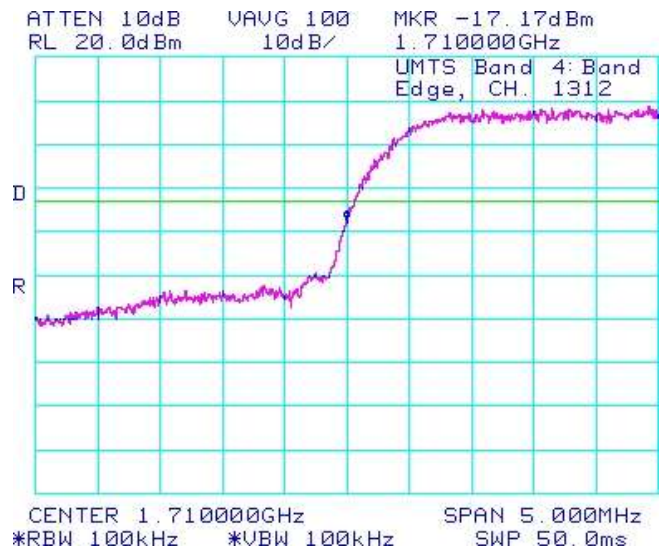
|   |  |  |
|---|--|--|
| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

UMTS Conducted RF Emission Test Data cont'd

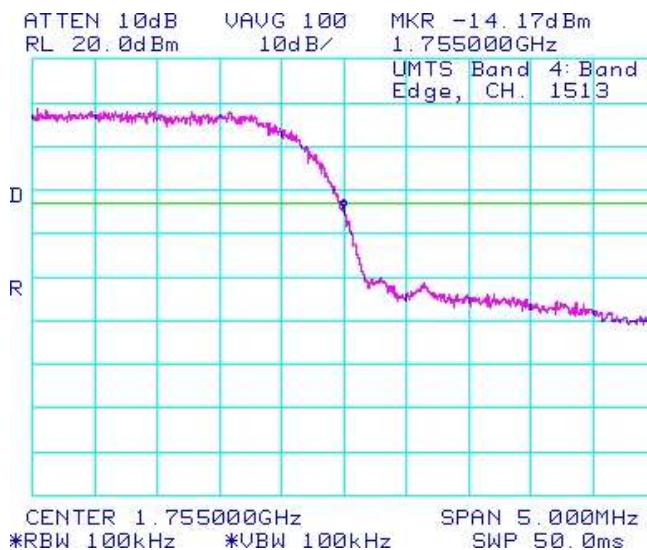
**Figure 1-9c: Occupied Bandwidth, Band 4 High Channel**



**Figure 1-10c: Band 4 Low Channel Mask**



**Figure 1-11c: Band 4 High Channel Mask**

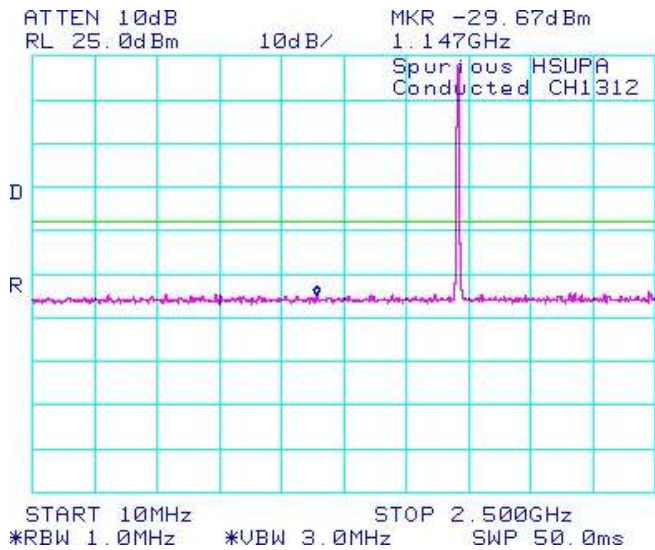




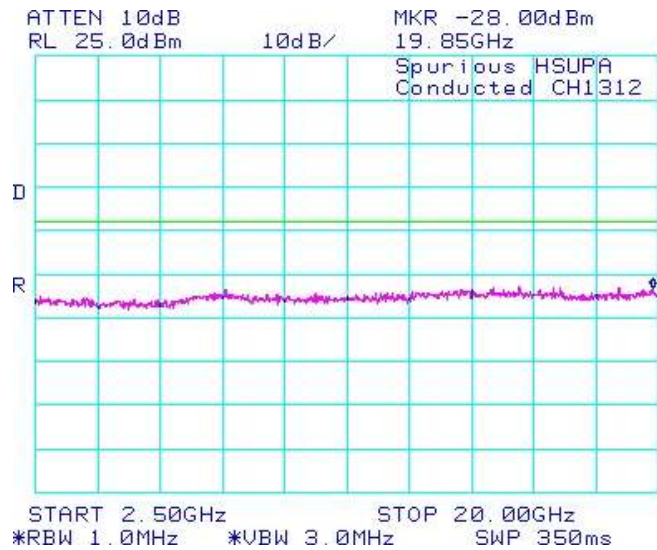
|   |  |  |
|---|--|--|
| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

UMTS Conducted RF Emission Test Data cont'd

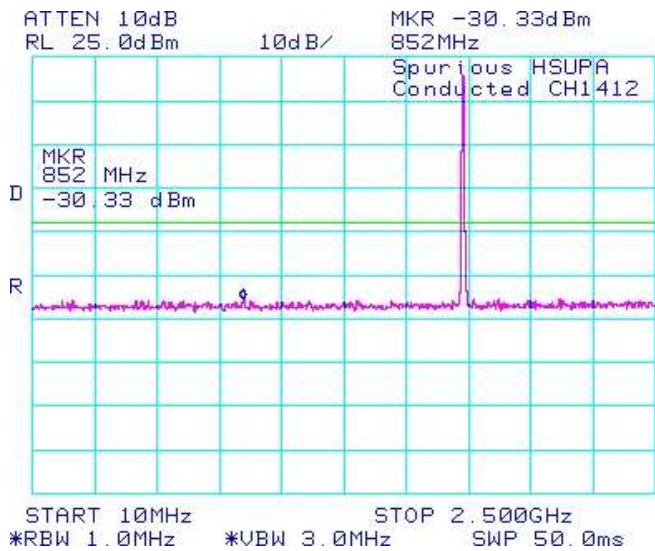
**Figure 1-12c: Band 4 , Spurious Conducted Emissions, Low channel**



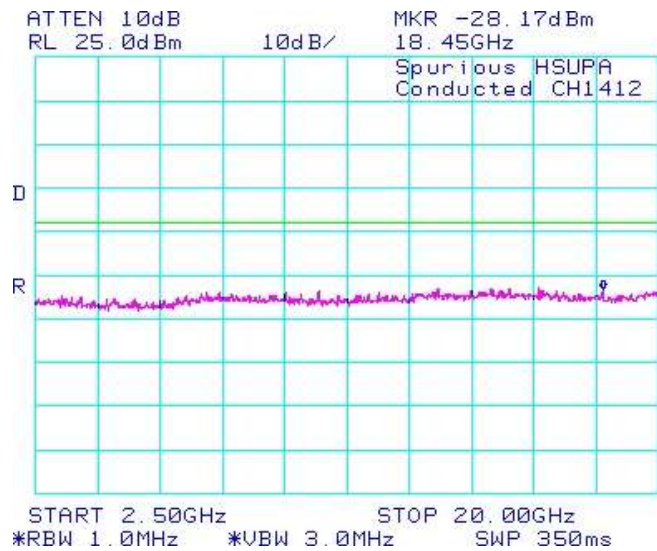
**Figure 1-13c: Band 4 , Spurious Conducted Emissions, Low channel**



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



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



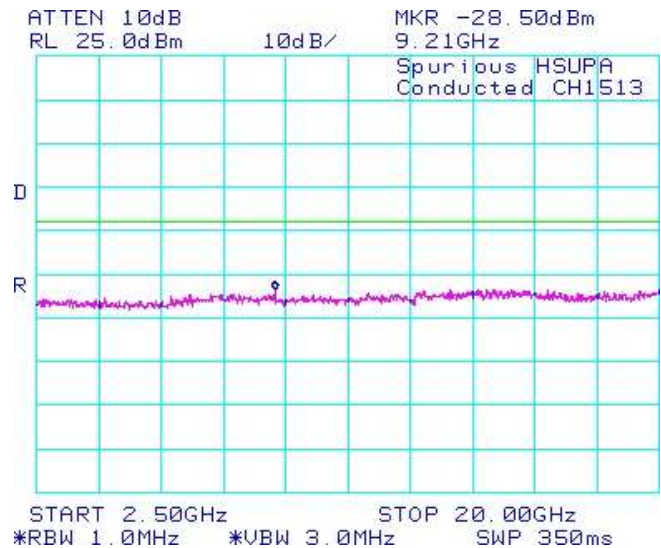
|   |  |  |
|---|--|--|
| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

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

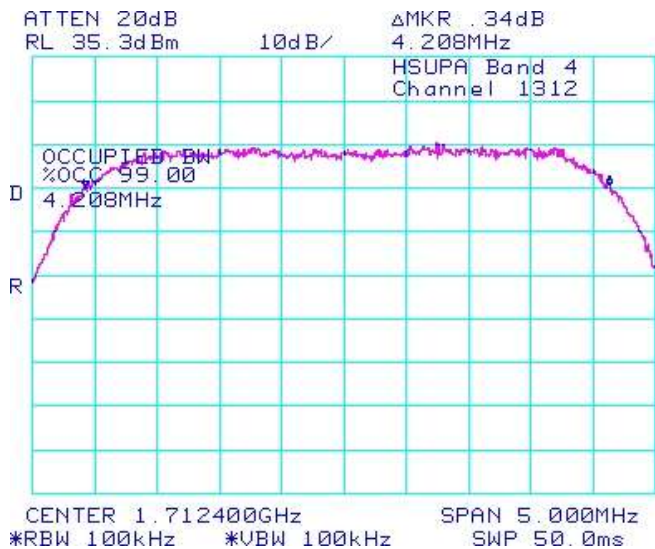
**Figure 1-16c: Band 4 , Spurious Conducted Emissions, High Channel**



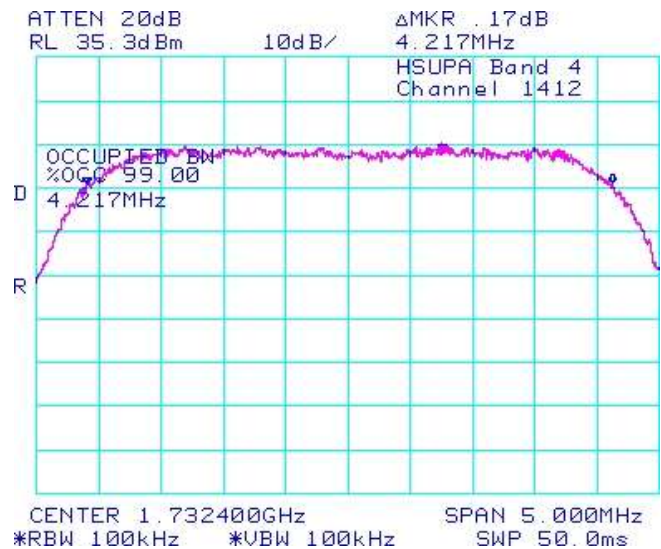
**Figure 1-17c: Band 4 , Spurious Conducted Emissions, High Channel**



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



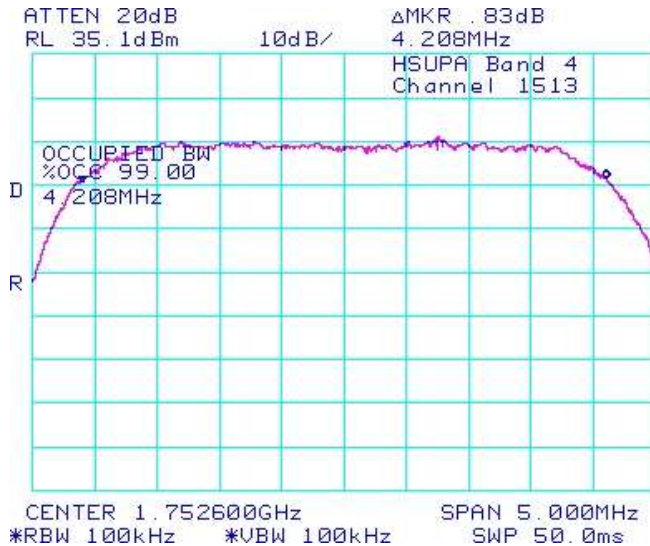
**Figure 1-19c: Occupied Bandwidth, Band 4 Middle Channel**



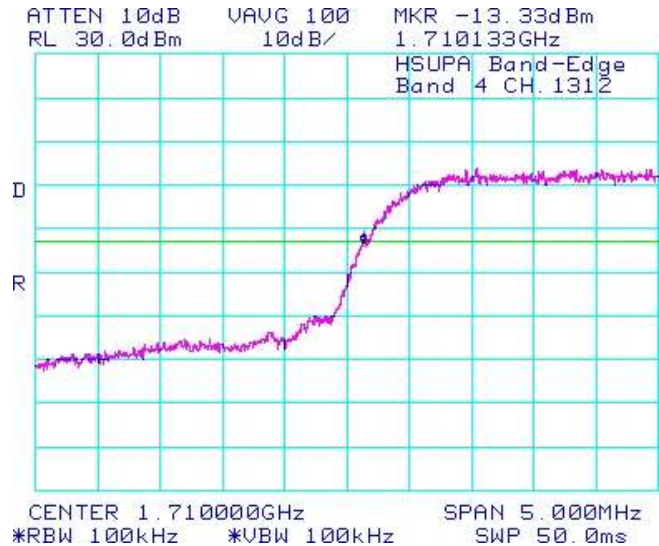
|   |  |  |
|---|--|--|
| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

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

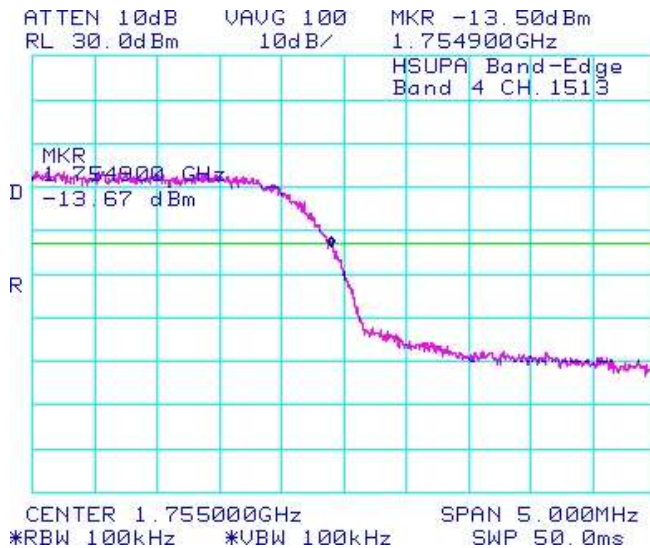
**Figure 1-20c: Occupied Bandwidth, Band 4 High Channel**



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




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



## APPENDIX 1C– UMTS 2/5 CONDUCTED RF EMISSIONS TEST DATA/PLOTS



|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RXC71UW |  |
|   | <b>APPENDIX 1C</b>  |  |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011                      | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

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

**The conducted spurious emissions** – As per 47 CFR 2.1051, CFR 24.238(a), CFR 4.202, CFR 22 Subpart H, RSS-132 and RSS - 133 were measured from 10 MHz to 20 GHz.

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

Date of Test: July 6, 2011

#### ***Test Data for UMTS Band 5/2 selected Frequencies in Loopback mode***

| UMTS band 5<br>Frequency (MHz) | 26dBc Occupied Bandwidth<br>(MHz) | 99% Occupied Bandwidth<br>(MHz) |
|--------------------------------|-----------------------------------|---------------------------------|
| 826.400                        | 4.725                             | 4.183                           |
| 836.400                        | 4.725                             | 4.208                           |
| 846.600                        | 4.683                             | 4.192                           |

| UMTS band 2<br>Frequency (MHz) | 26dBc Occupied Bandwidth<br>(MHz) | 99% Occupied Bandwidth<br>(MHz) |
|--------------------------------|-----------------------------------|---------------------------------|
| 1852.400                       | 4.758                             | 4.225                           |
| 1880.000                       | 4.733                             | 4.208                           |
| 1907.600                       | 4.725                             | 4.200                           |

#### ***Test Data for UMTS band 5/2 selected Frequencies in Call mode***

Refer to the following measurement plots for more detail.

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

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

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

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



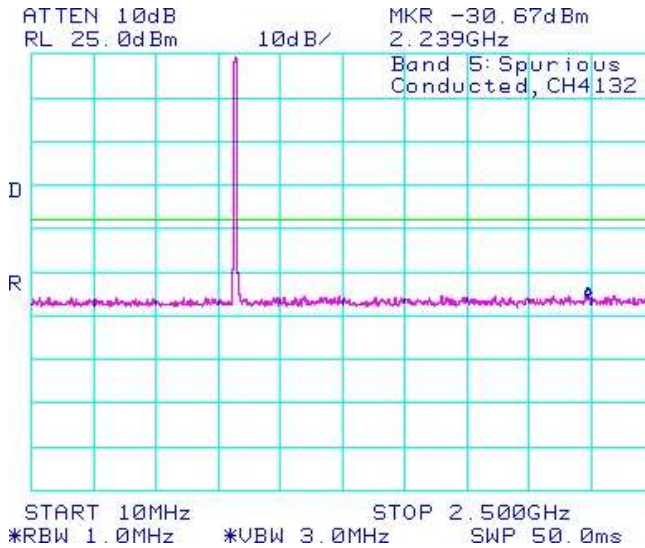
**Test Report No.**  
RTS-2579-1107-62B

**Dates of Test**  
June 14 to July 11, 2011

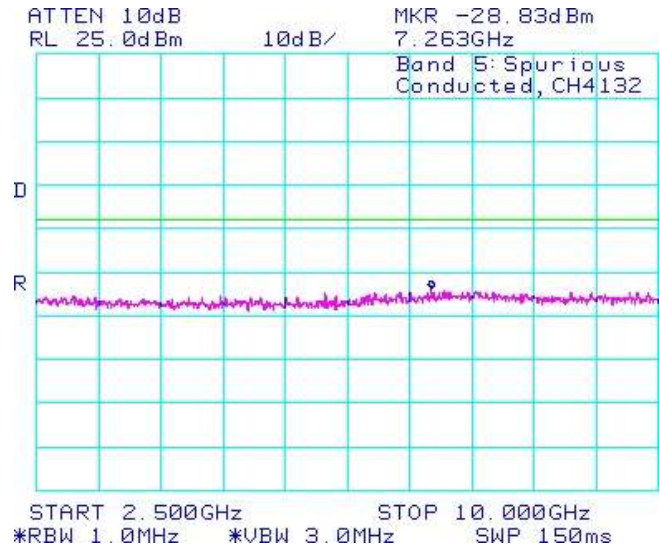
**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

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

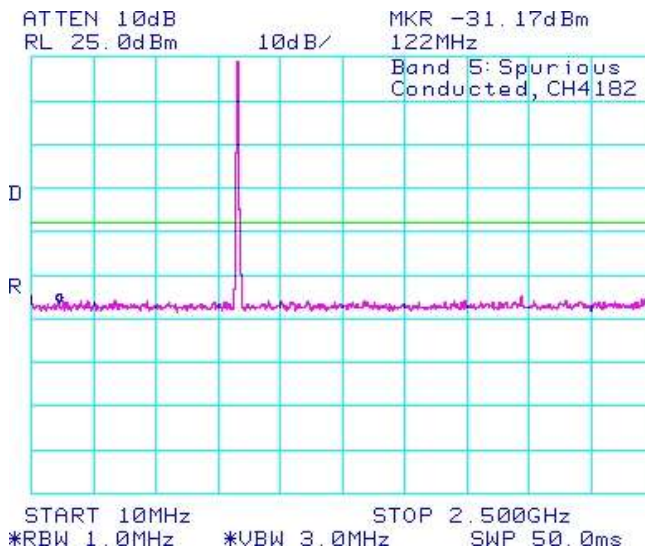
**Figure 1-1c: Band 5, Spurious Conducted Emissions, Low channel**



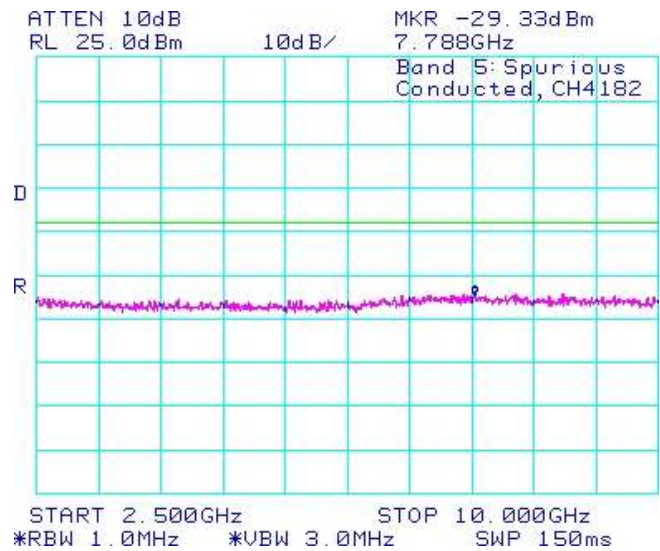
**Figure 1-2c: Band 5, Spurious Conducted Emissions, Low channel**



**Figure 1-3c: Band 5, Spurious Conducted Emissions, Middle channel**



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



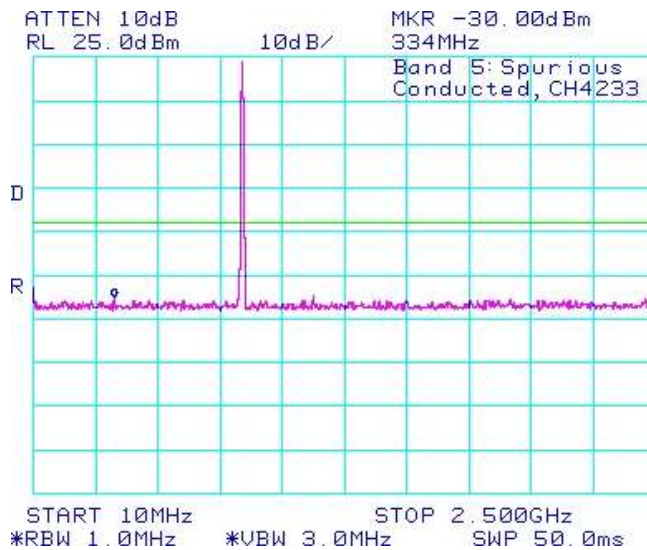
**Test Report No.**  
RTS-2579-1107-62B

**Dates of Test**  
June 14 to July 11, 2011

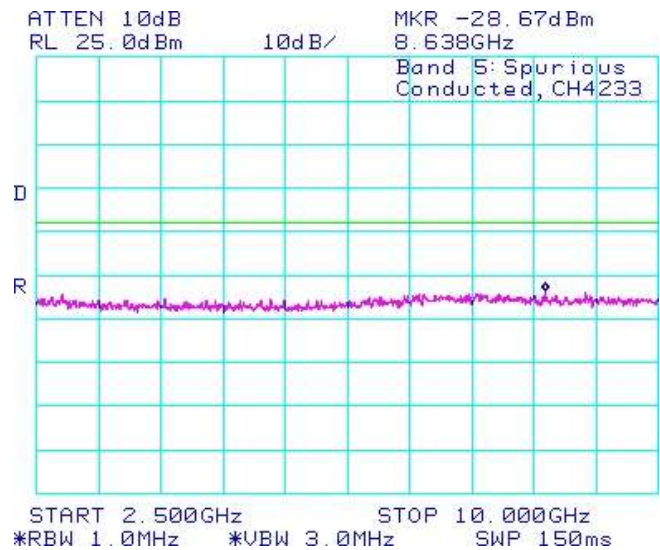
**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

UMTS Conducted RF Emission Test Data cont'd

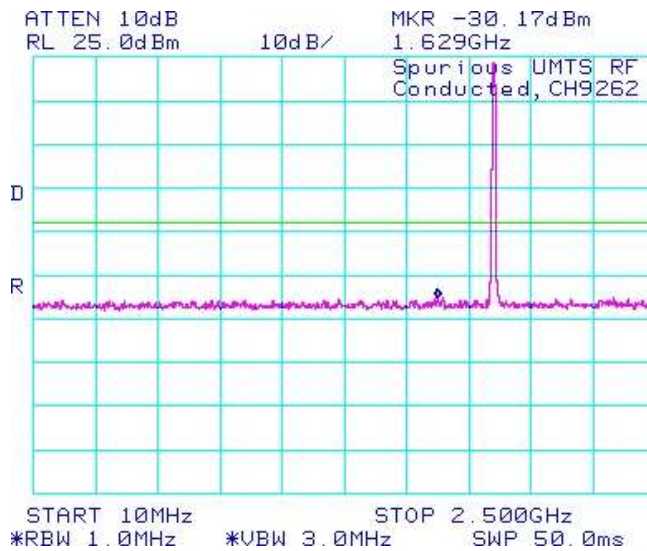
**Figure 1-5c: Band 5, Spurious Conducted Emissions, High Channel**



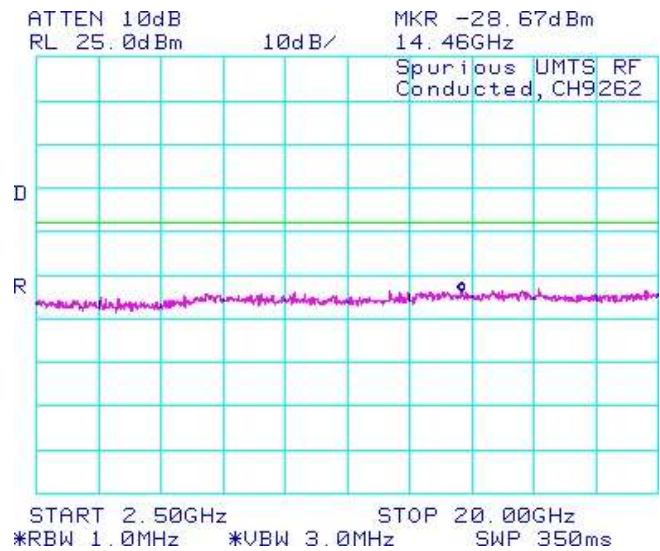
**Figure 1-6c: Band 5, Spurious Conducted Emissions, High Channel**



**Figure 1-7c: BAND 2 Spurious Conducted Emissions, Low Channel**



**Figure 1-8c: BAND 2, Spurious Conducted Emissions, Low Channel**



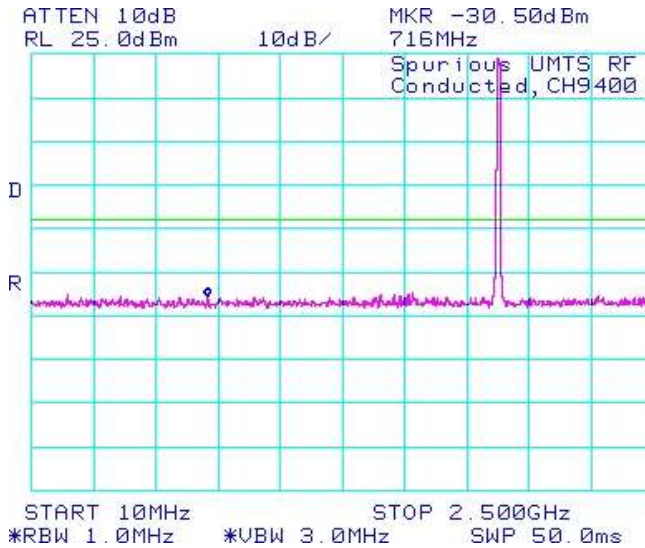
**Test Report No.**  
 RTS-2579-1107-62B

**Dates of Test**  
 June 14 to July 11, 2011

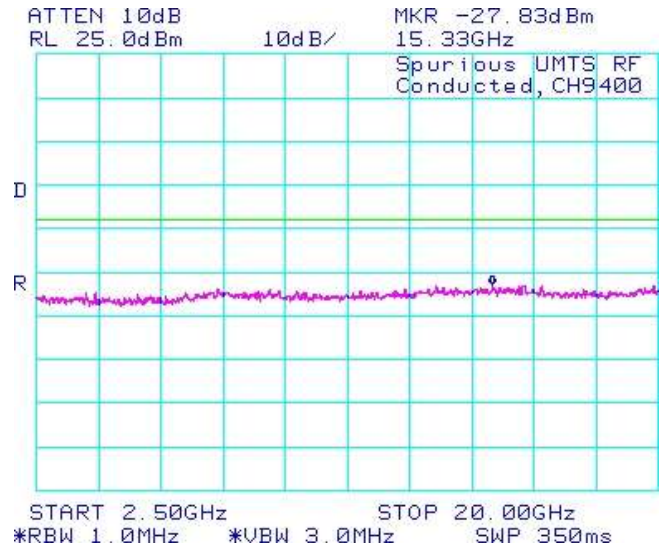
**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

UMTS Conducted RF Emission Test Data cont'd

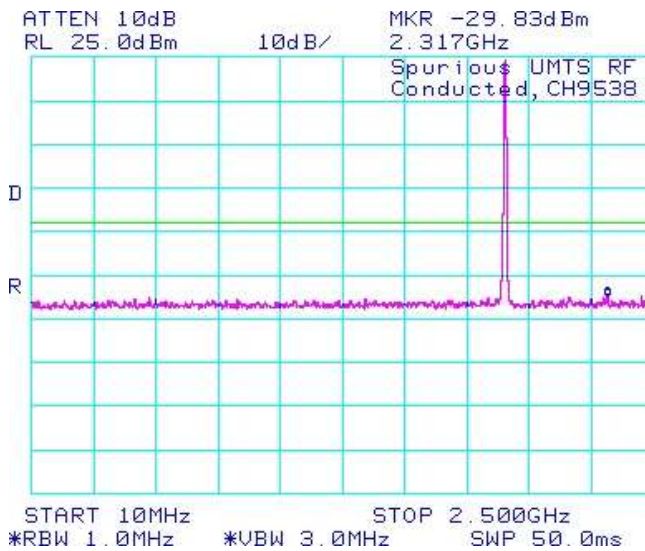
**Figure 1-9c: BAND 2, Spurious Conducted Emissions, Middle Channel**



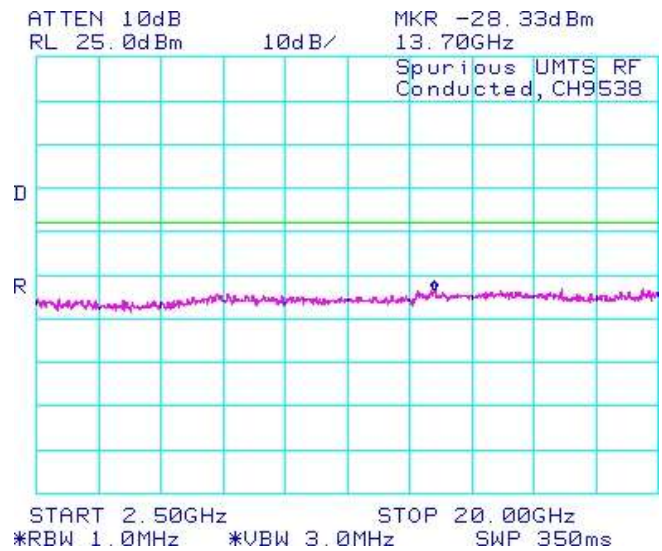
**Figure 1-10c: BAND 2, Spurious Conducted Emissions, Middle Channel**



**Figure 1-11c: BAND 2, Spurious Conducted Emissions, High Channel**



**Figure 1-12c: BAND 2, Spurious Conducted Emissions, High Channel**



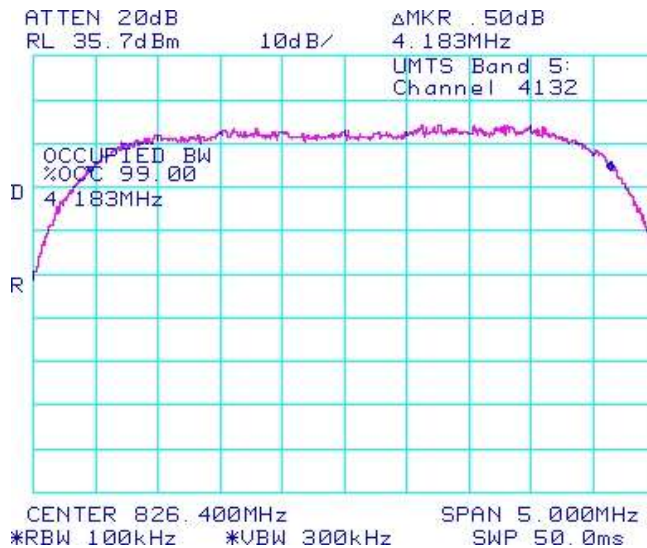
**Test Report No.**  
RTS-2579-1107-62B

**Dates of Test**  
June 14 to July 11, 2011

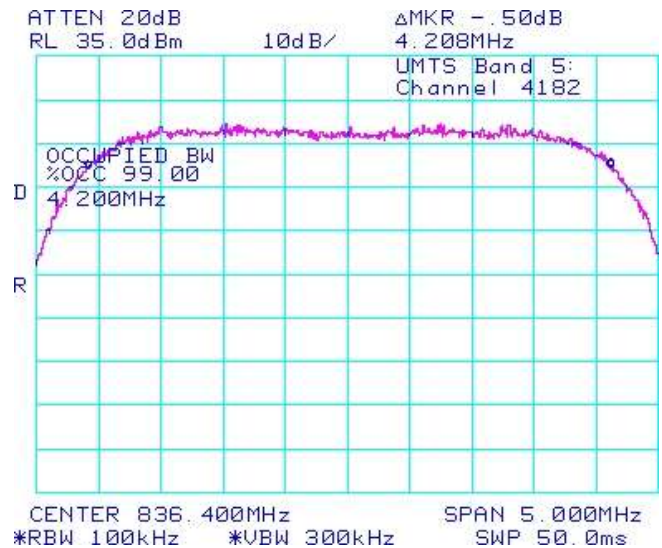
**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

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

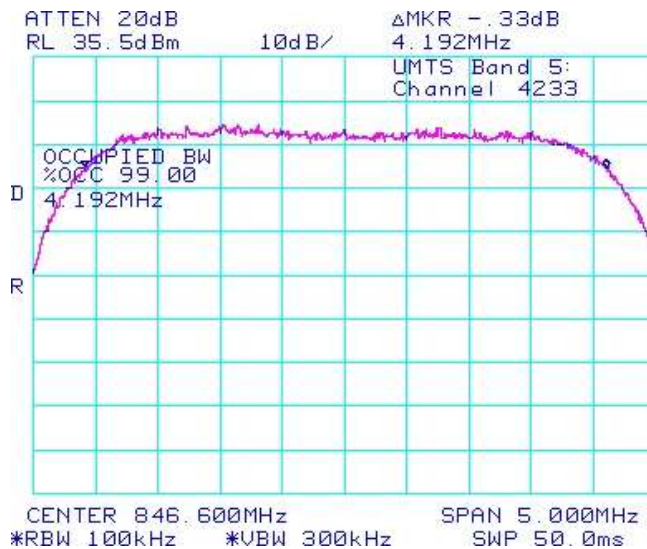
**Figure 1-13c: Occupied Bandwidth, Band 5 Low Channel**



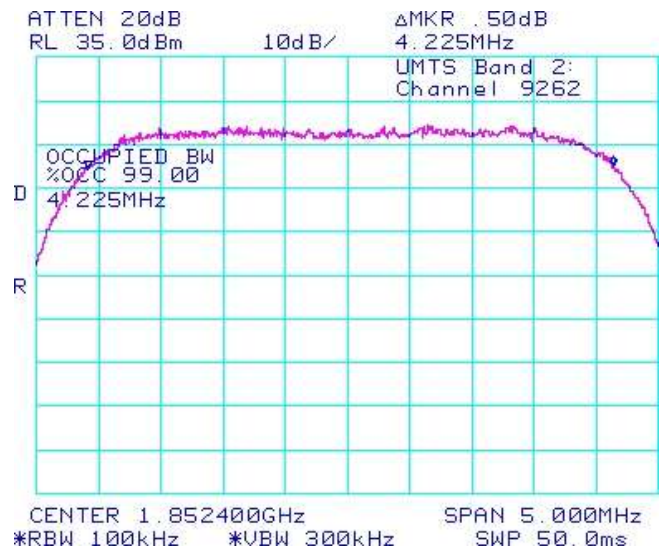
**Figure 1-14c: Occupied Bandwidth, Band 5 Middle Channel**



**Figure 1-15c: Occupied Bandwidth, Band 5 High Channel**



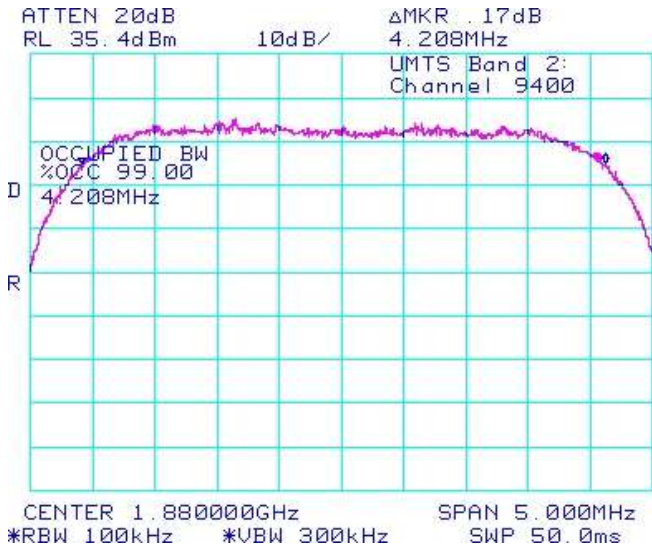
**Figure 1-16c: Occupied Bandwidth, BAND 2 Low Channel**



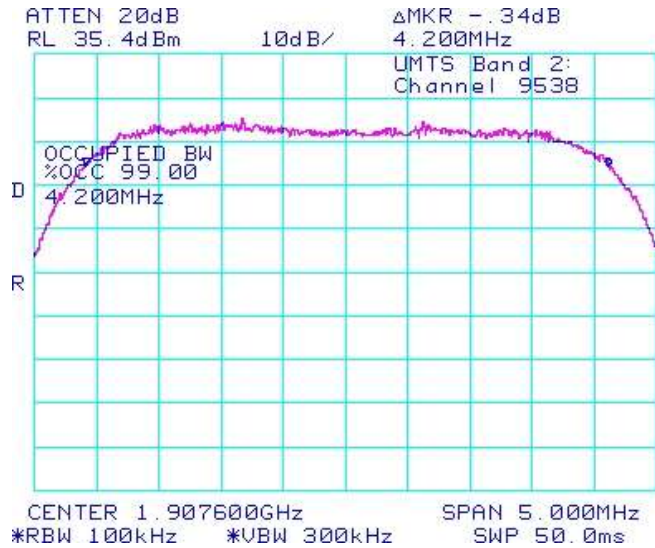
|   |  |  |
|---|--|--|
| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

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

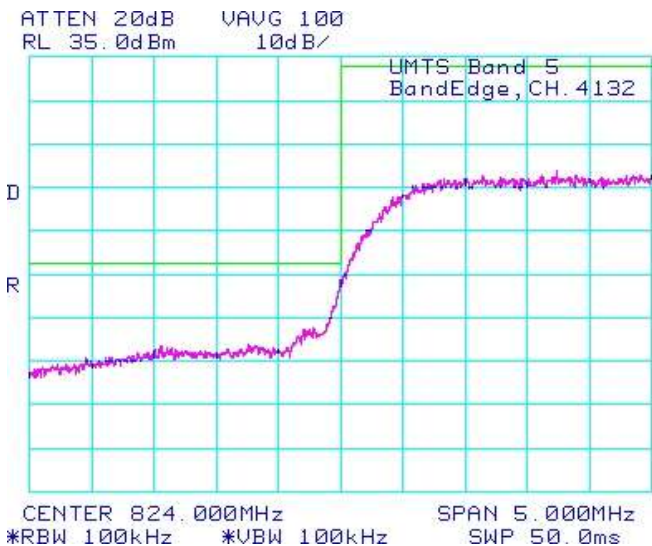
**Figure 1-17c: Occupied Bandwidth, BAND 2 Middle Channel**



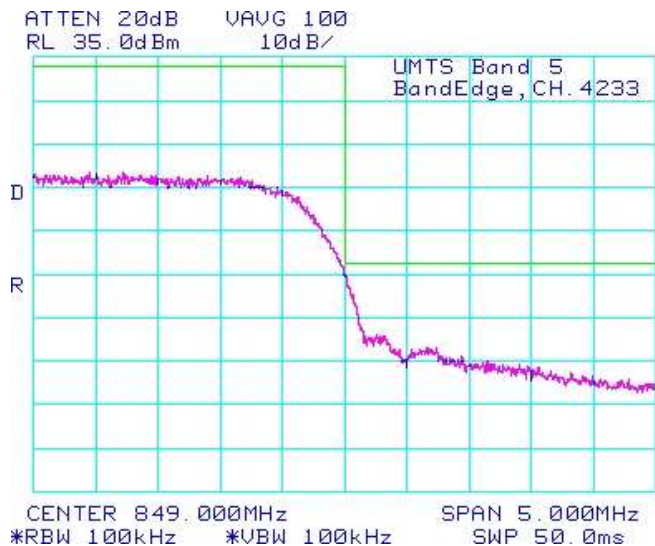
**Figure 1-18c: Occupied Bandwidth, BAND 2 High Channel**



**Figure 1-19c: Band 5 Low Channel Mask**



**Figure 1-20c: Band 5 High Channel Mask**



**Test Report No.**  
 RTS-2579-1107-62B

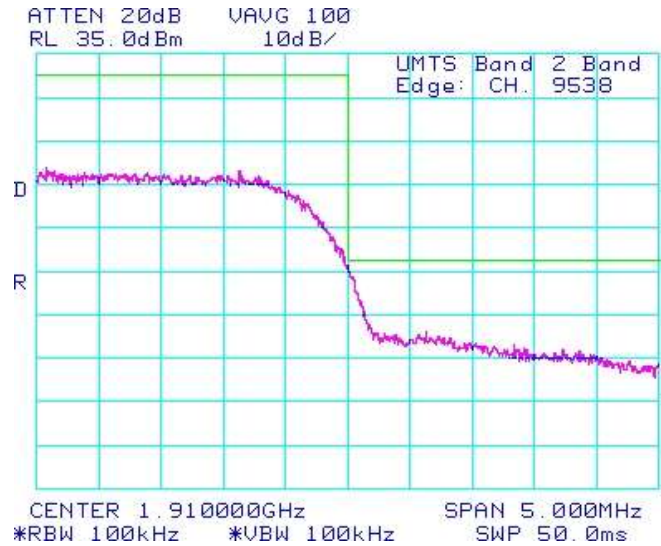
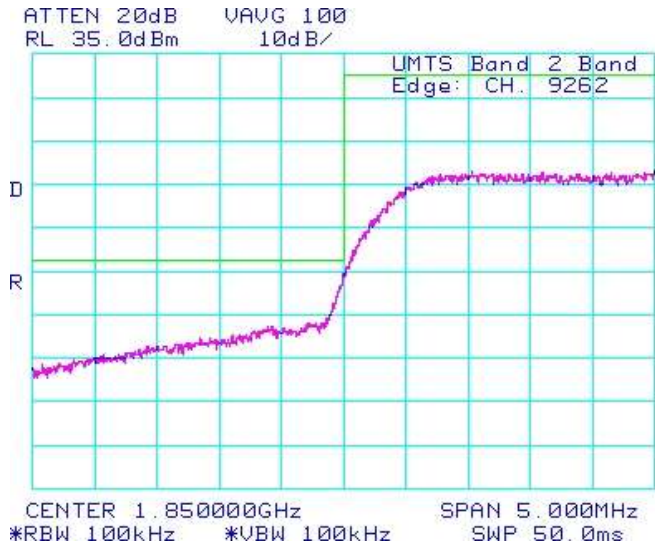
**Dates of Test**  
 June 14 to July 11, 2011


**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

UMTS Conducted RF Emission Test Data cont'd

**Figure 1-21c: BAND 2 Low Channel Mask**

**Figure 1-22c: BAND 2 High Channel Mask**



|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RXC71UW |  |
|   | <b>APPENDIX 1C</b>  |  |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011                      | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

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

**The conducted spurious emissions** – As per 47 CFR 2.1051, CFR 24.238(a), CFR 22 Subpart H, RSS-132 and RSS - 133 were measured from 10 MHz to 20 GHz. See figures 1-29b to 1-40b for the plots of the conducted spurious emissions. Date of Test: July 6, 2011

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

#### ***Test Data for UMTS Band 5 and UMTS BAND 2 selected Frequencies in HSUPA mode***

| <b>Band 5<br/>Frequency (MHz)</b> | <b>99% Occupied Bandwidth<br/>(MHz)</b> |
|-----------------------------------|---|
| 826.400                           | 4.217                                   |
| 836.400                           | 4.192                                   |
| 846.600                           | 4.200                                   |

| <b>BAND 2<br/>Frequency (MHz)</b> | <b>99% Occupied Bandwidth<br/>(MHz)</b> |
|-----------------------------------|---|
| 1852.400                          | 4.217                                   |
| 1880.000                          | 4.217                                   |
| 1907.600                          | 4.217                                   |

#### ***Measurement Plots for UMTS Band 5 and UMTS BAND 2 in HSUPA mode***

Refer to the following measurement plots for more detail.

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

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

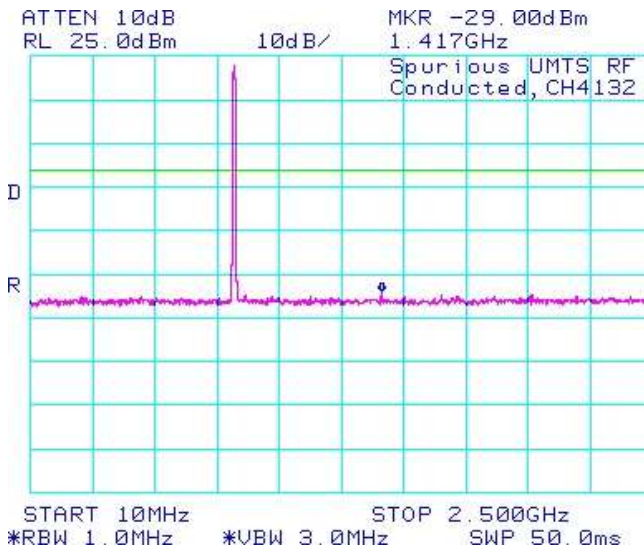
**Test Report No.**  
 RTS-2579-1107-62B

**Dates of Test**  
 June 14 to July 11, 2011

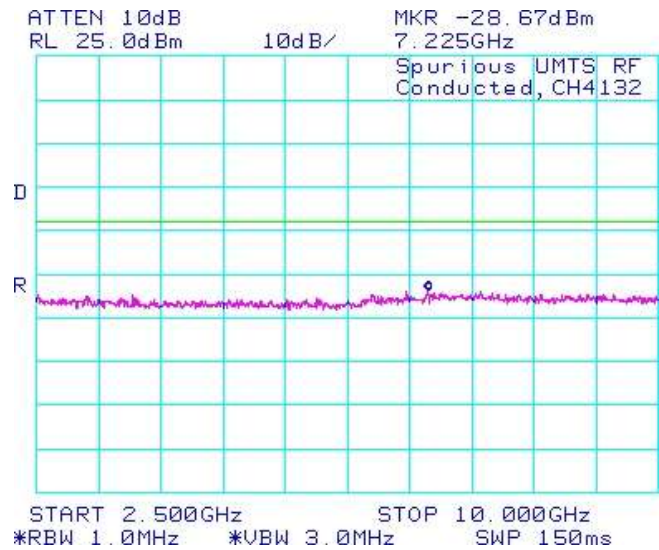
**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

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

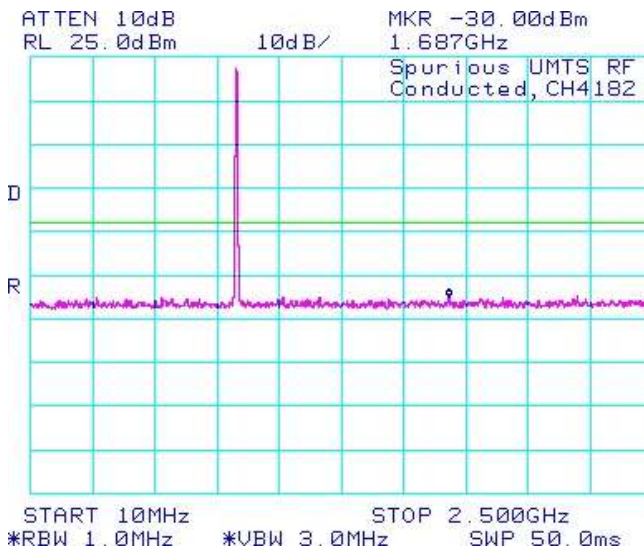
**Figure 1-23b: Band 5 , Spurious Conducted Emissions, Low channel**



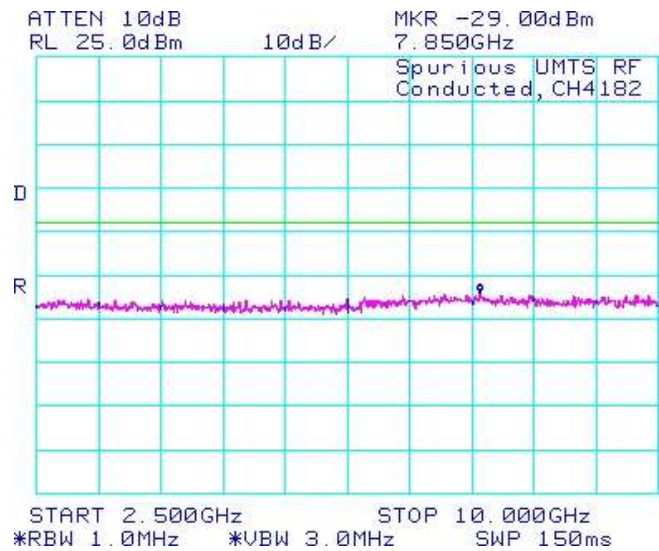
**Figure 1-24b: Band 5 , Spurious Conducted Emissions, Low channel**



**Figure 1-25b: Band 5 , Spurious Conducted Emissions, Middle channel**



**Figure 1-26b: Band 5 , Spurious Conducted Emissions, Middle channel**

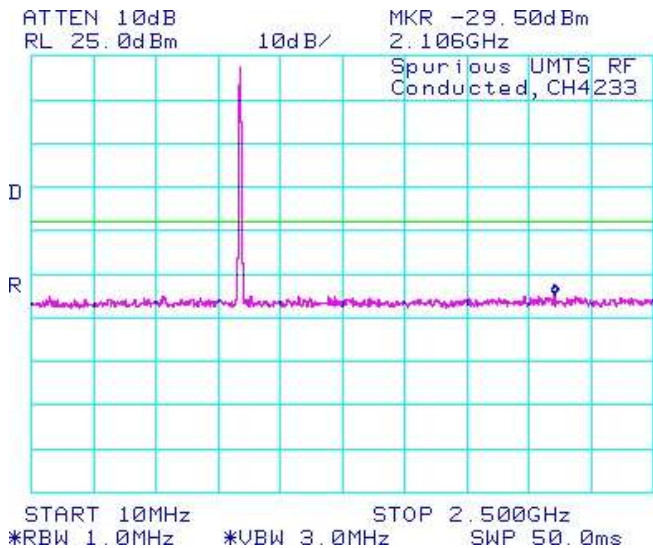




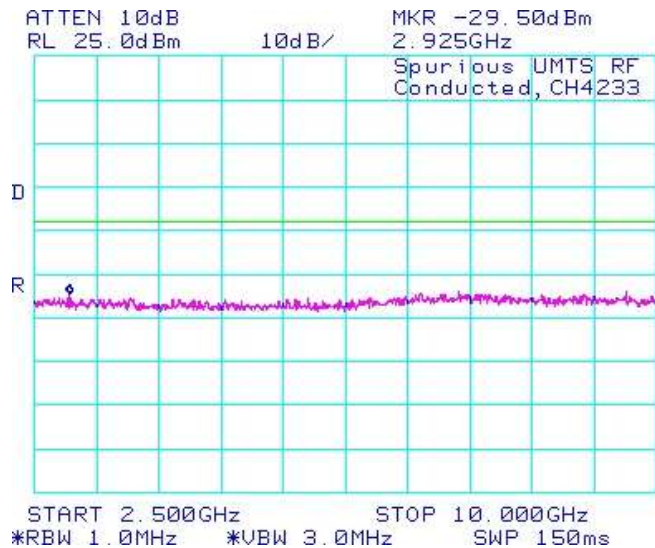
|   |  |  |
|---|--|--|
| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

UMTS Conducted RF Emission Test Data cont'd

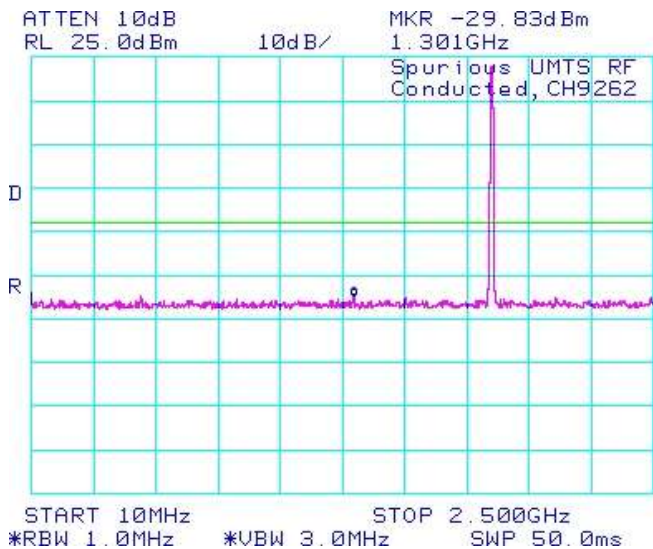
**Figure 1-27b: Band 5, Spurious Conducted Emissions, High Channel**



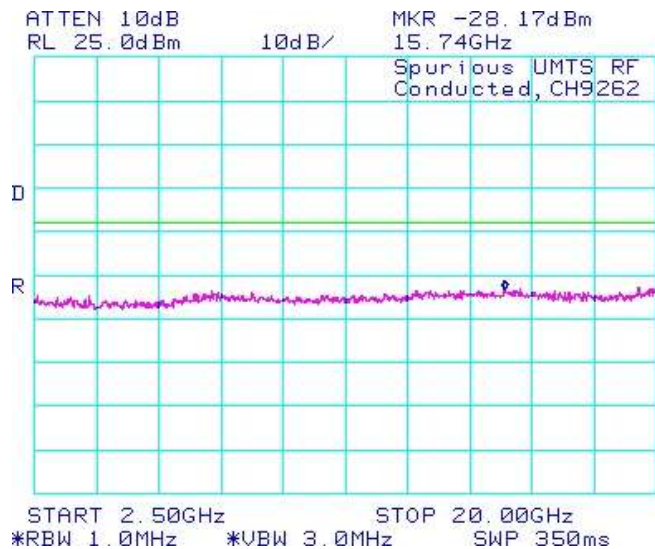
**Figure 1-28b: Band 5, Spurious Conducted Emissions, High Channel**



**Figure 1-29b: Band 2, Spurious Conducted Emissions, Low Channel**



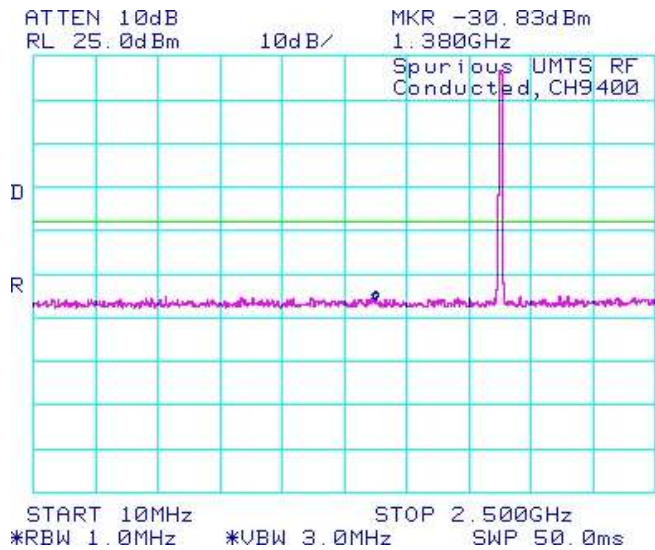
**Figure 1-30b: Band 2, Spurious Conducted Emissions, Low Channel**



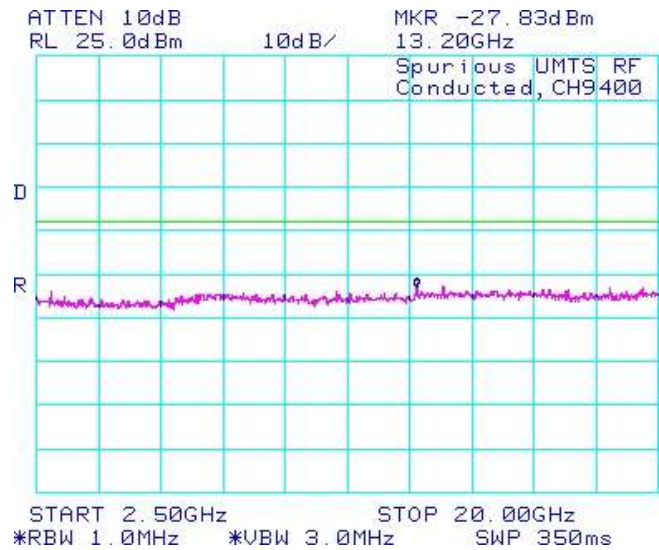
|   |  |  |
|---|--|--|
| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

UMTS Conducted RF Emission Test Data cont'd

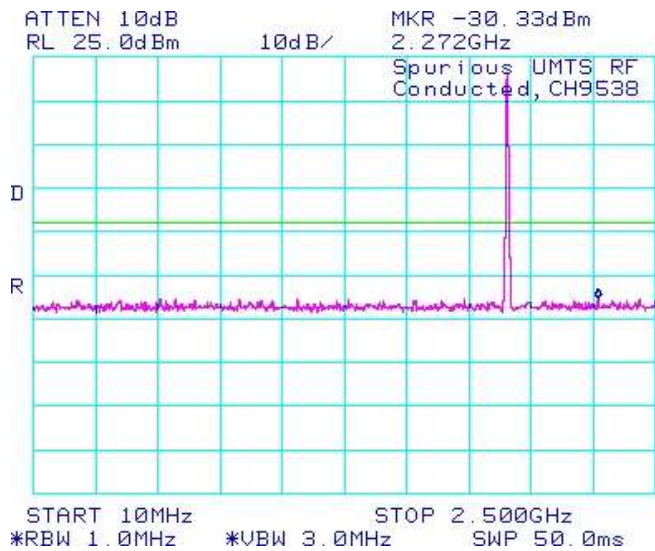
**Figure 1-31b: Band 2, Spurious Conducted Emissions, Middle Channel**



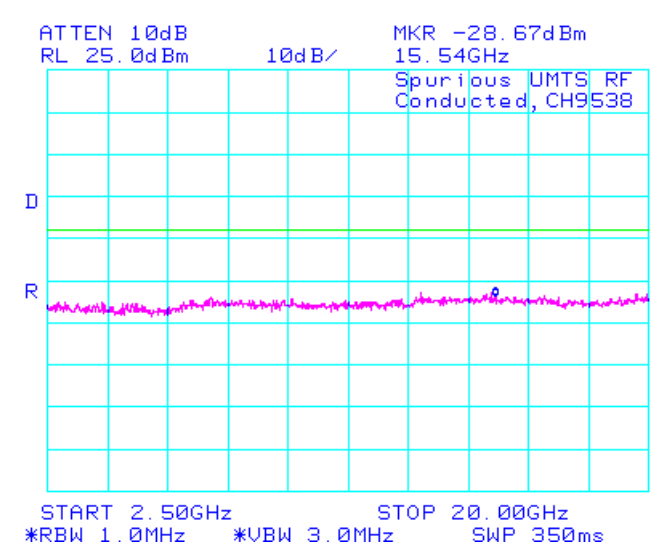
**Figure 1-32b: Band 2, Spurious Conducted Emissions, Middle Channel**



**Figure 1-33b: Band 2, Spurious Conducted Emissions, High Channel**



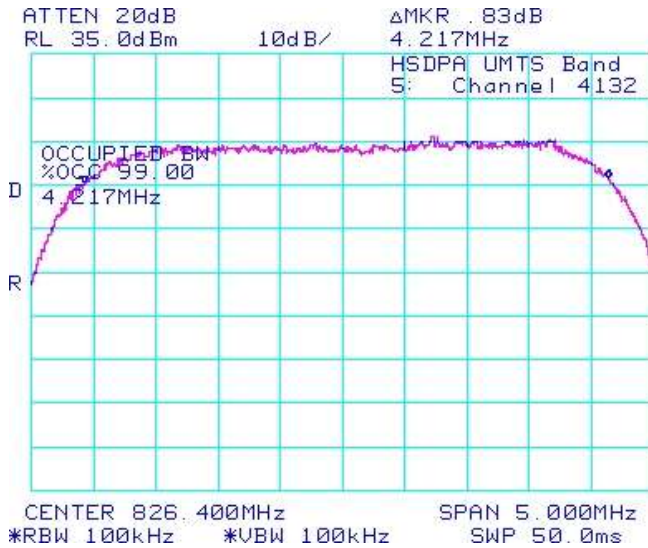
**Figure 1-34b: Band 2, Spurious Conducted Emissions, High Channel**



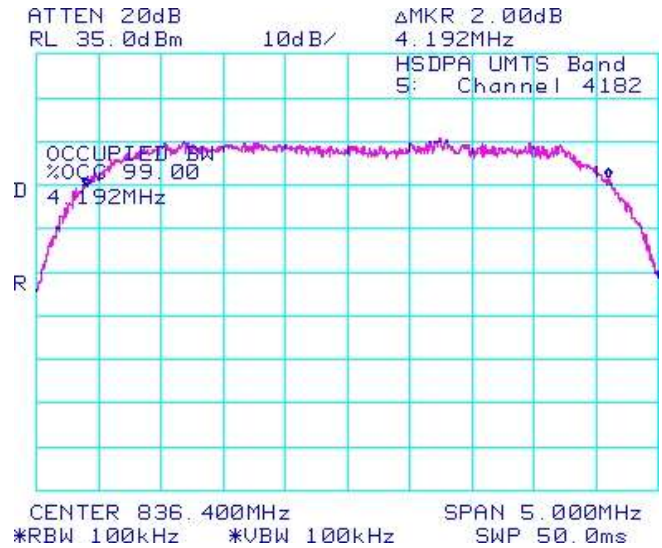
|   |  |  |
|---|--|--|
| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

UMTS Conducted RF Emission Test Data cont'd

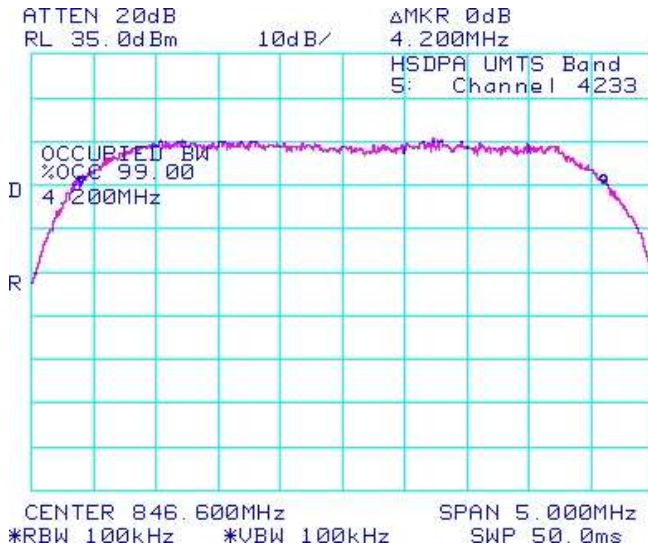
**Figure 1-35b: Occupied Bandwidth, Band 5 Low Channel**



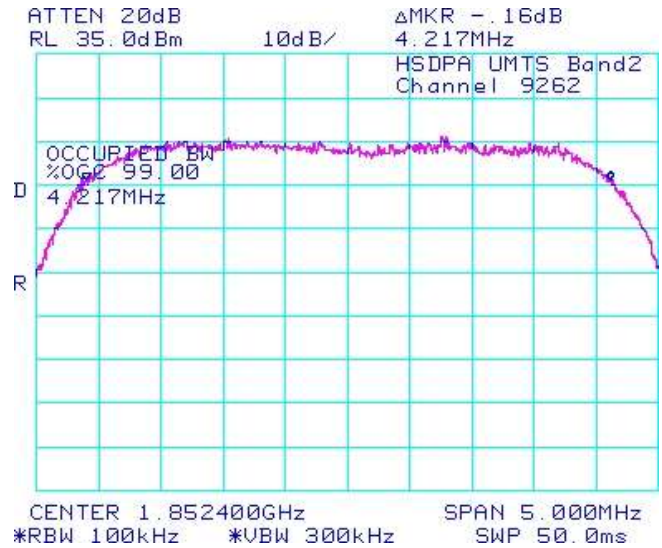
**Figure 1-36b: Occupied Bandwidth, Band 5 Middle Channel**



**Figure 1-37b: Occupied Bandwidth, Band 5 High Channel**



**Figure 1-38b: Occupied Bandwidth, BAND 2 Low Channel**



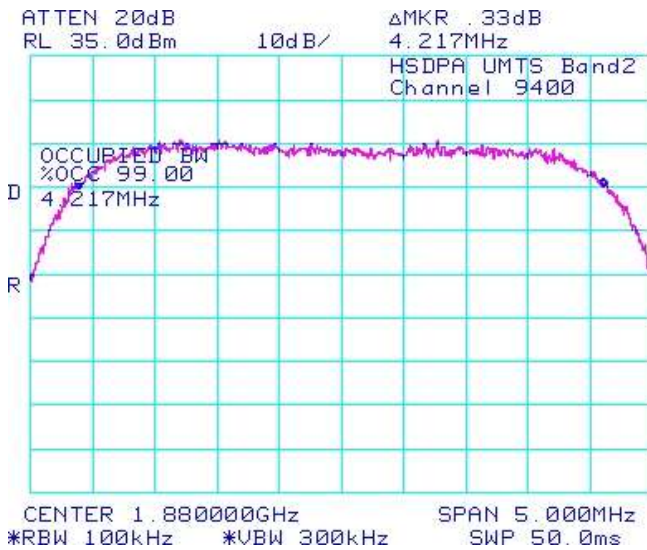
**Test Report No.**  
 RTS-2579-1107-62B

**Dates of Test**  
 June 14 to July 11, 2011

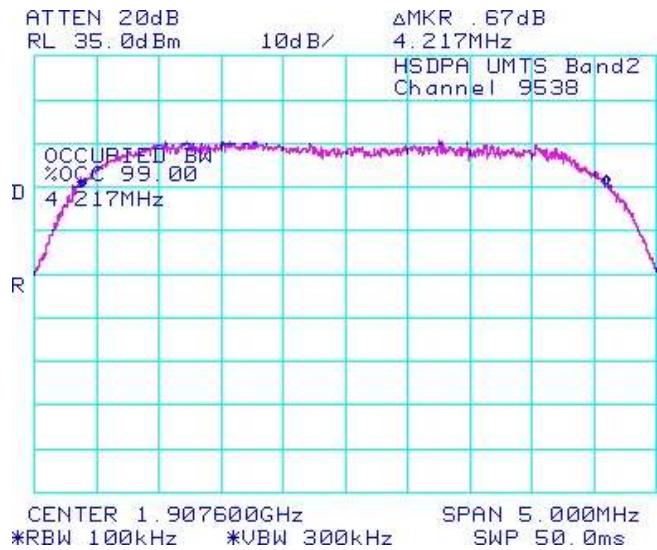
**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

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

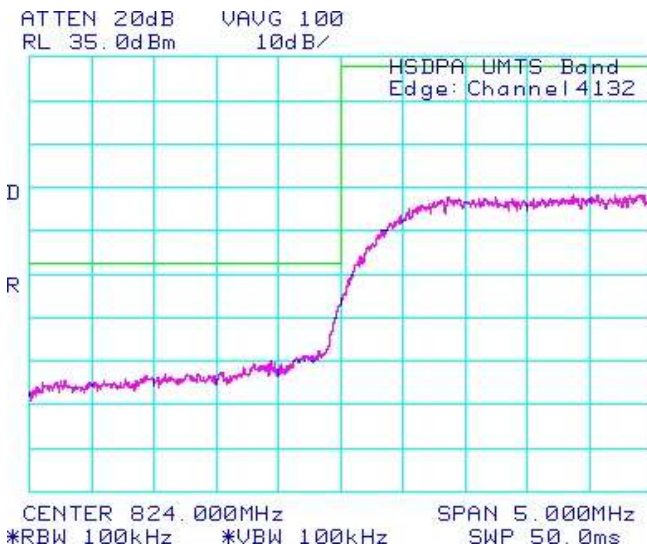
**Figure 1-38b: Occupied Bandwidth, BAND 2 Middle Channel**



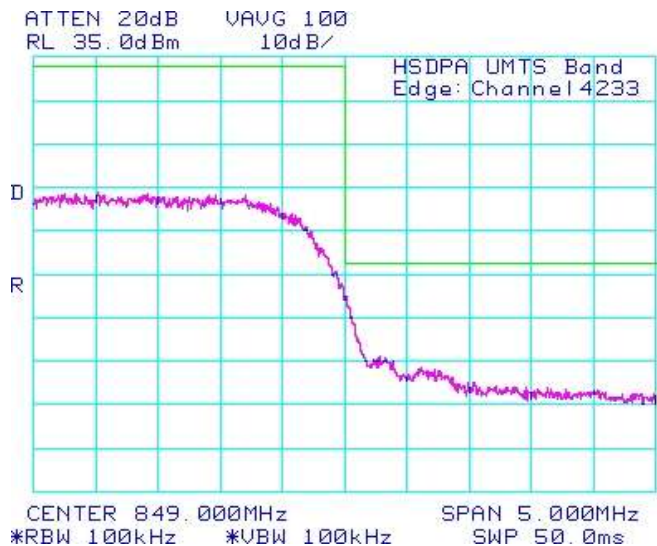
**Figure 1-39b: Occupied Bandwidth, BAND 2 High Channel**



**Figure 1-40b: Band 5, Low Channel Mask**



**Figure 1-41b: Band 5, High Channel Mask**

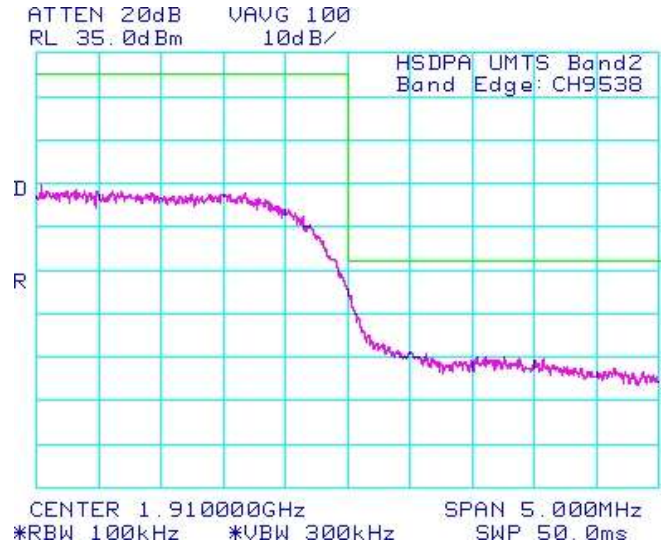
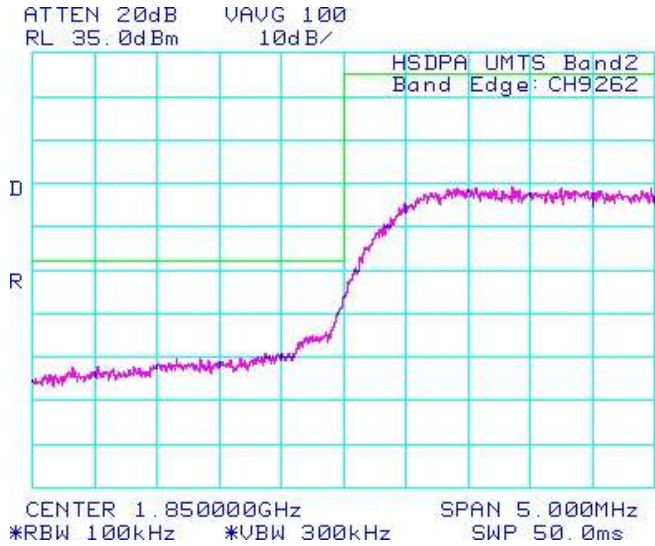


|   |  |  |
|---|--|--|
| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

UMTS Conducted RF Emission Test Data cont'd

**Figure 1-42b: Band 2, Low Channel Mask**

**Figure 1-43b: Band 2, High Channel Mask**



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



## APPENDIX 2B – UMTS 4 CONDUCTED RF OUTPUT POWER TEST DATA






## APPENDIX 2C – UMTS 2/5 CONDUCTED RF OUTPUT POWER TEST DATA

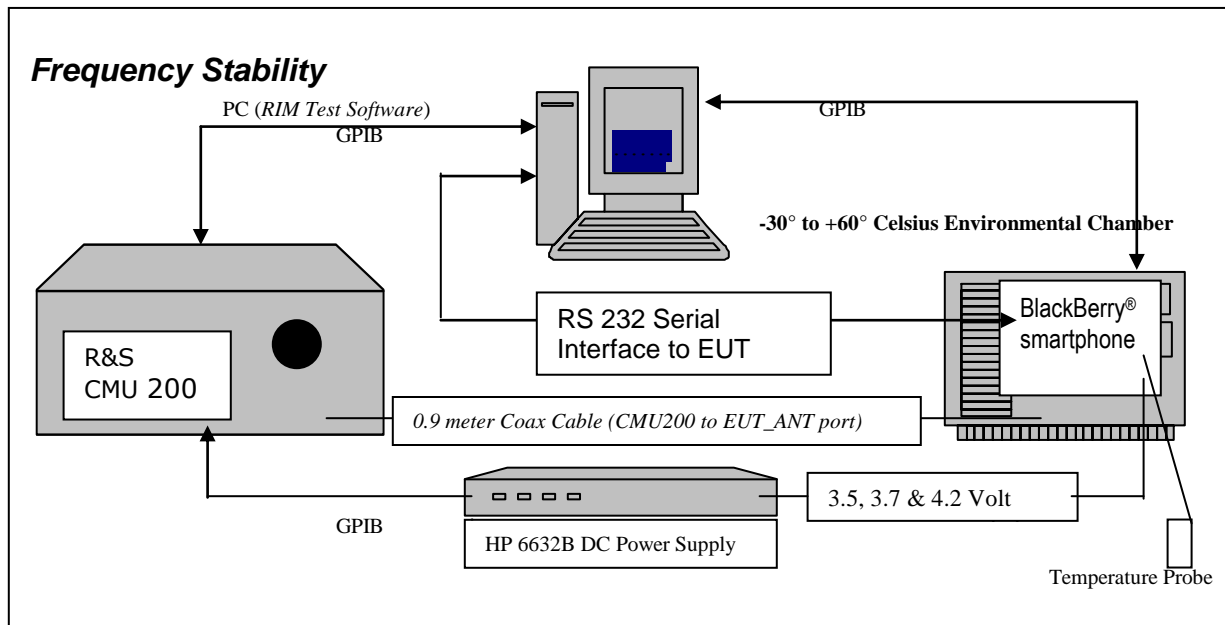


## APPENDIX 3A – GSM FREQUENCY STABILITY TEST DATA

|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW<br><b>APPENDIX 3A</b> |  |
|   | <b>Test Report No.</b><br>RTS-2579-1107-62B   | <b>Dates of Test</b><br>June 14 to July 11, 2011 |

### GSM Frequency Stability Test Data

The following test configurations were measured for model RDD71UW:



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.

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

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|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW |  |
|   | <b>APPENDIX 3A</b>  |  |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011                      | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

**Procedure:**


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

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

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

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

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

|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW |  |
|   | <b>APPENDIX 3A</b>  |  |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011                      | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

**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  $-30^{\circ}\text{C}$  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  $10^{\circ}\text{C}$  and soak for 1/2 hour.
13. Repeat steps 4 - 12 for temperatures  $-30^{\circ}\text{C}$  to  $60^{\circ}\text{C}$ .
14. Repeat steps 5 to 10 changing the supply voltage to 4.2 volts

Procedure 5 to 10 was repeated at room temperature ( $20^{\circ}\text{C}$ ) 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 **0.3051PPM**.  
The maximum frequency error in the PCS1900 band measured was **0.0429PPM**.

**Test Report No.**  
 RTS-2579-1107-62B

**Dates of Test**  
 June 14 to July 11, 2011

**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

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

| Traffic Channel Number | GSM850 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM    |
|------------------------|------------------------|-----------------|-----------------------|----------------------|--------|
| 128                    | 824.20                 | 3.6             | 20                    | 18                   | 0.0218 |
| 189                    | 836.40                 | 3.6             | 20                    | 20                   | 0.0239 |
| 251                    | 848.60                 | 3.6             | 20                    | 13                   | 0.0153 |

| Traffic Channel Number | GSM850 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM    |
|------------------------|------------------------|-----------------|-----------------------|----------------------|--------|
| 128                    | 824.20                 | 3.7             | 20                    | 10                   | 0.0121 |
| 189                    | 836.40                 | 3.7             | 20                    | 13                   | 0.0155 |
| 251                    | 848.60                 | 3.7             | 20                    | 6                    | 0.0071 |

| Traffic Channel Number | GSM850 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|------------------------|-----------------|-----------------------|----------------------|---------|
| 128                    | 824.20                 | 4.2             | 20                    | 7                    | 0.0085  |
| 189                    | 836.40                 | 4.2             | 20                    | 10                   | 0.0120  |
| 251                    | 848.60                 | 4.2             | 20                    | -4                   | -0.0047 |



**Test Report No.**  
 RTS-2579-1107-62B

**Dates of Test**  
 June 14 to July 11, 2011

**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

GSM850 Results: channel 128 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 128                    | 824.20          | 3.6             | -30                   | 33                   | 0.0400  |
| 128                    | 824.20          | 3.6             | -20                   | 39                   | 0.0473  |
| 128                    | 824.20          | 3.6             | -10                   | 26                   | 0.0315  |
| 128                    | 824.20          | 3.6             | 0                     | 35                   | -0.0352 |
| 128                    | 824.20          | 3.6             | 10                    | 30                   | 0.0364  |
| 128                    | 824.20          | 3.6             | 20                    | 18                   | 0.0218  |
| 128                    | 824.20          | 3.6             | 30                    | -13                  | -0.0158 |
| 128                    | 824.20          | 3.6             | 40                    | -6                   | -0.0073 |
| 128                    | 824.20          | 3.6             | 50                    | -13                  | -0.0158 |
| 128                    | 824.20          | 3.6             | 60                    | -29                  | 0.0643  |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 128                    | 824.20          | 3.7             | -30                   | 39                   | 0.0473  |
| 128                    | 824.20          | 3.7             | -20                   | 49                   | 0.0595  |
| 128                    | 824.20          | 3.7             | -10                   | 20                   | 0.0243  |
| 128                    | 824.20          | 3.7             | 0                     | 33                   | 0.0400  |
| 128                    | 824.20          | 3.7             | 10                    | 29                   | 0.0352  |
| 128                    | 824.20          | 3.7             | 20                    | 10                   | 0.0121  |
| 128                    | 824.20          | 3.7             | 30                    | -21                  | -0.0255 |
| 128                    | 824.20          | 3.7             | 40                    | -16                  | -0.0194 |
| 128                    | 824.20          | 3.7             | 50                    | -19                  | -0.0231 |
| 128                    | 824.20          | 3.7             | 60                    | -39                  | 0.0667  |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 128                    | 824.20          | 4.2             | -30                   | 44                   | 0.0534  |
| 128                    | 824.20          | 4.2             | -20                   | 55                   | 0.0667  |
| 128                    | 824.20          | 4.2             | -10                   | 21                   | 0.0255  |
| 128                    | 824.20          | 4.2             | 0                     | 39                   | 0.0473  |
| 128                    | 824.20          | 4.2             | 10                    | 33                   | 0.0400  |
| 128                    | 824.20          | 4.2             | 20                    | 7                    | 0.0085  |
| 128                    | 824.20          | 4.2             | 30                    | -27                  | -0.0328 |
| 128                    | 824.20          | 4.2             | 40                    | -25                  | -0.0303 |
| 128                    | 824.20          | 4.2             | 50                    | -35                  | -0.0425 |
| 128                    | 824.20          | 4.2             | 60                    | -11                  | 0.0643  |



**Test Report No.**  
RTS-2579-1107-62B

**Dates of Test**  
June 14 to July 11, 2011

**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

GSM850 Results: channel 189 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 189                    | 836.40          | 3.6             | -30                   | 19                   | 0.0227  |
| 189                    | 836.40          | 3.6             | -20                   | 53                   | 0.0634  |
| 189                    | 836.40          | 3.6             | -10                   | 41                   | 0.0490  |
| 189                    | 836.40          | 3.6             | 0                     | 22                   | -0.0335 |
| 189                    | 836.40          | 3.6             | 10                    | 10                   | 0.0120  |
| 189                    | 836.40          | 3.6             | 20                    | 20                   | 0.0239  |
| 189                    | 836.40          | 3.6             | 30                    | -21                  | -0.0251 |
| 189                    | 836.40          | 3.6             | 40                    | -22                  | -0.0263 |
| 189                    | 836.40          | 3.6             | 50                    | 12                   | 0.0143  |
| 189                    | 836.40          | 3.6             | 60                    | -28                  | -0.0335 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 189                    | 836.40          | 3.7             | -30                   | 61                   | 0.0729  |
| 189                    | 836.40          | 3.7             | -20                   | 45                   | 0.0538  |
| 189                    | 836.40          | 3.7             | -10                   | 38                   | 0.0454  |
| 189                    | 836.40          | 3.7             | 0                     | 15                   | 0.0179  |
| 189                    | 836.40          | 3.7             | 10                    | 56                   | 0.0670  |
| 189                    | 836.40          | 3.7             | 20                    | 13                   | 0.0155  |
| 189                    | 836.40          | 3.7             | 30                    | -25                  | -0.0299 |
| 189                    | 836.40          | 3.7             | 40                    | -26                  | -0.0311 |
| 189                    | 836.40          | 3.7             | 50                    | -43                  | -0.0514 |
| 189                    | 836.40          | 3.7             | 60                    | -32                  | -0.0383 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 189                    | 836.40          | 4.2             | -30                   | 34                   | 0.0407  |
| 189                    | 836.40          | 4.2             | -20                   | 31                   | 0.0371  |
| 189                    | 836.40          | 4.2             | -10                   | 32                   | 0.0383  |
| 189                    | 836.40          | 4.2             | 0                     | 49                   | 0.0586  |
| 189                    | 836.40          | 4.2             | 10                    | 46                   | 0.0550  |
| 189                    | 836.40          | 4.2             | 20                    | 10                   | 0.0120  |
| 189                    | 836.40          | 4.2             | 30                    | -28                  | -0.0335 |
| 189                    | 836.40          | 4.2             | 40                    | -28                  | -0.0335 |
| 189                    | 836.40          | 4.2             | 50                    | -42                  | -0.0502 |
| 189                    | 836.40          | 4.2             | 60                    | -30                  | -0.0359 |

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|---|--|--|
| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

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                   | 21                   | 0.0247  |
| 251                    | 848.8           | 3.6             | -20                   | 52                   | 0.0613  |
| 251                    | 848.8           | 3.6             | -10                   | 33                   | 0.0389  |
| 251                    | 848.8           | 3.6             | 0                     | 21                   | -0.0424 |
| 251                    | 848.8           | 3.6             | 10                    | 9                    | 0.0106  |
| 251                    | 848.8           | 3.6             | 20                    | 13                   | 0.0153  |
| 251                    | 848.8           | 3.6             | 30                    | -29                  | -0.0342 |
| 251                    | 848.8           | 3.6             | 40                    | -30                  | -0.0353 |
| 251                    | 848.8           | 3.6             | 50                    | -6                   | -0.0071 |
| 251                    | 848.8           | 3.6             | 60                    | -36                  | -0.0424 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 251                    | 848.8           | 3.7             | -30                   | 30                   | 0.0353  |
| 251                    | 848.8           | 3.7             | -20                   | 55                   | 0.0648  |
| 251                    | 848.8           | 3.7             | -10                   | 25                   | 0.0295  |
| 251                    | 848.8           | 3.7             | 0                     | 21                   | 0.0247  |
| 251                    | 848.8           | 3.7             | 10                    | 7                    | 0.0082  |
| 251                    | 848.8           | 3.7             | 20                    | 6                    | 0.0071  |
| 251                    | 848.8           | 3.7             | 30                    | -34                  | -0.0401 |
| 251                    | 848.8           | 3.7             | 40                    | -39                  | -0.0459 |
| 251                    | 848.8           | 3.7             | 50                    | -12                  | -0.0141 |
| 251                    | 848.8           | 3.7             | 60                    | -46                  | -0.0542 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM           |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------------|
| 251                    | 848.8           | 4.2             | -30                   | 35                   | 0.0412        |
| 251                    | 848.8           | 4.2             | -20                   | 15                   | 0.0177        |
| 251                    | 848.8           | 4.2             | -10                   | 27                   | 0.0318        |
| 251                    | 848.8           | 4.2             | 0                     | 259                  | <b>0.3051</b> |
| 251                    | 848.8           | 4.2             | 10                    | 12                   | 0.0141        |
| 251                    | 848.8           | 4.2             | 20                    | -4                   | -0.0047       |
| 251                    | 848.8           | 4.2             | 30                    | -39                  | -0.0459       |
| 251                    | 848.8           | 4.2             | 40                    | -44                  | -0.0518       |
| 251                    | 848.8           | 4.2             | 50                    | -19                  | -0.0224       |
| 251                    | 848.8           | 4.2             | 60                    | -14                  | -0.0165       |

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|---|--|--|
| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

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

| Traffic Channel Number | PCS Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|---------------------|-----------------|-----------------------|----------------------|---------|
| 512                    | 1850.20             | 3.6             | 20                    | -35                  | -0.0189 |
| 661                    | 1880.00             | 3.6             | 20                    | -29                  | -0.0154 |
| 810                    | 1909.80             | 3.6             | 20                    | -34                  | -0.0178 |

| Traffic Channel Number | PCS Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|---------------------|-----------------|-----------------------|----------------------|---------|
| 512                    | 1850.20             | 3.7             | 20                    | -34                  | -0.0184 |
| 661                    | 1880.00             | 3.7             | 20                    | -25                  | -0.0133 |
| 810                    | 1909.80             | 3.7             | 20                    | -36                  | -0.0189 |

| Traffic Channel Number | PCS Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|---------------------|-----------------|-----------------------|----------------------|---------|
| 512                    | 1850.20             | 4.2             | 20                    | -34                  | -0.0184 |
| 661                    | 1880.00             | 4.2             | 20                    | -28                  | -0.0149 |
| 810                    | 1909.80             | 4.2             | 20                    | -34                  | -0.0178 |

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|---|--|--|
| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

PCS1900 Results: channel 512 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 512                    | 1850.20         | 3.6             | -30                   | -11                  | -0.0059 |
| 512                    | 1850.20         | 3.6             | -20                   | -38                  | -0.0205 |
| 512                    | 1850.20         | 3.6             | -10                   | 33                   | 0.0178  |
| 512                    | 1850.20         | 3.6             | 0                     | 20                   | -0.0297 |
| 512                    | 1850.20         | 3.6             | 10                    | 25                   | 0.0135  |
| 512                    | 1850.20         | 3.6             | 20                    | -35                  | -0.0189 |
| 512                    | 1850.20         | 3.6             | 30                    | -37                  | -0.0200 |
| 512                    | 1850.20         | 3.6             | 40                    | -47                  | -0.0254 |
| 512                    | 1850.20         | 3.6             | 50                    | -73                  | -0.0395 |
| 512                    | 1850.20         | 3.6             | 60                    | -55                  | -0.0297 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 512                    | 1850.20         | 3.7             | -30                   | 16                   | 0.0086  |
| 512                    | 1850.20         | 3.7             | -20                   | -31                  | -0.0168 |
| 512                    | 1850.20         | 3.7             | -10                   | 48                   | 0.0259  |
| 512                    | 1850.20         | 3.7             | 0                     | 21                   | 0.0114  |
| 512                    | 1850.20         | 3.7             | 10                    | 13                   | 0.0070  |
| 512                    | 1850.20         | 3.7             | 20                    | -34                  | -0.0184 |
| 512                    | 1850.20         | 3.7             | 30                    | -40                  | -0.0216 |
| 512                    | 1850.20         | 3.7             | 40                    | -53                  | -0.0286 |
| 512                    | 1850.20         | 3.7             | 50                    | -30                  | -0.0162 |
| 512                    | 1850.20         | 3.7             | 60                    | -71                  | -0.0384 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 512                    | 1850.20         | 4.2             | -30                   | 18                   | 0.0097  |
| 512                    | 1850.20         | 4.2             | -20                   | -26                  | -0.0141 |
| 512                    | 1850.20         | 4.2             | -10                   | 61                   | 0.0330  |
| 512                    | 1850.20         | 4.2             | 0                     | 22                   | 0.0119  |
| 512                    | 1850.20         | 4.2             | 10                    | 11                   | 0.0059  |
| 512                    | 1850.20         | 4.2             | 20                    | -34                  | -0.0184 |
| 512                    | 1850.20         | 4.2             | 30                    | -44                  | -0.0238 |
| 512                    | 1850.20         | 4.2             | 40                    | -63                  | -0.0341 |
| 512                    | 1850.20         | 4.2             | 50                    | -50                  | -0.0270 |
| 512                    | 1850.20         | 4.2             | 60                    | -40                  | -0.0216 |



**Test Report No.**  
RTS-2579-1107-62B

**Dates of Test**  
June 14 to July 11, 2011

**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

PCS1900 Results: channel 661 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 661                    | 1880.00         | 3.6             | -30                   | 14                   | 0.0074  |
| 661                    | 1880.00         | 3.6             | -20                   | 37                   | 0.0197  |
| 661                    | 1880.00         | 3.6             | -10                   | 20                   | 0.0106  |
| 661                    | 1880.00         | 3.6             | 0                     | 36                   | -0.0362 |
| 661                    | 1880.00         | 3.6             | 10                    | 20                   | 0.0106  |
| 661                    | 1880.00         | 3.6             | 20                    | -29                  | -0.0154 |
| 661                    | 1880.00         | 3.6             | 30                    | -60                  | -0.0319 |
| 661                    | 1880.00         | 3.6             | 40                    | -42                  | -0.0223 |
| 661                    | 1880.00         | 3.6             | 50                    | -44                  | -0.0234 |
| 661                    | 1880.00         | 3.6             | 60                    | -68                  | -0.0362 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 661                    | 1880.00         | 3.7             | -30                   | 10                   | 0.0053  |
| 661                    | 1880.00         | 3.7             | -20                   | 32                   | 0.0170  |
| 661                    | 1880.00         | 3.7             | -10                   | 20                   | 0.0106  |
| 661                    | 1880.00         | 3.7             | 0                     | 39                   | 0.0207  |
| 661                    | 1880.00         | 3.7             | 10                    | 21                   | 0.0112  |
| 661                    | 1880.00         | 3.7             | 20                    | -25                  | -0.0133 |
| 661                    | 1880.00         | 3.7             | 30                    | -53                  | -0.0282 |
| 661                    | 1880.00         | 3.7             | 40                    | -37                  | -0.0197 |
| 661                    | 1880.00         | 3.7             | 50                    | -30                  | -0.0160 |
| 661                    | 1880.00         | 3.7             | 60                    | -55                  | -0.0293 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 661                    | 1880.00         | 4.2             | -30                   | -12                  | -0.0064 |
| 661                    | 1880.00         | 4.2             | -20                   | 17                   | 0.0090  |
| 661                    | 1880.00         | 4.2             | -10                   | -14                  | -0.0074 |
| 661                    | 1880.00         | 4.2             | 0                     | 32                   | 0.0170  |
| 661                    | 1880.00         | 4.2             | 10                    | 18                   | 0.0096  |
| 661                    | 1880.00         | 4.2             | 20                    | -28                  | -0.0149 |
| 661                    | 1880.00         | 4.2             | 30                    | -49                  | -0.0261 |
| 661                    | 1880.00         | 4.2             | 40                    | -71                  | -0.0378 |
| 661                    | 1880.00         | 4.2             | 50                    | -72                  | -0.0383 |
| 661                    | 1880.00         | 4.2             | 60                    | -80                  | -0.0426 |

**Test Report No.**  
RTS-2579-1107-62B

**Dates of Test**  
June 14 to July 11, 2011

**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

PCS1900 Results: channel 810 @ maximum transmitted power


| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | 20BPPM         |
|------------------------|-----------------|-----------------|-----------------------|----------------------|----------------|
| 810                    | 1909.80         | 3.6             | -30                   | 14                   | 0.0073         |
| 810                    | 1909.80         | 3.6             | -20                   | 46                   | 0.0241         |
| 810                    | 1909.80         | 3.6             | -10                   | 22                   | 0.0115         |
| 810                    | 1909.80         | 3.6             | 0                     | 32                   | <b>-0.0429</b> |
| 810                    | 1909.80         | 3.6             | 10                    | 13                   | 0.0068         |
| 810                    | 1909.80         | 3.6             | 20                    | -34                  | -0.0178        |
| 810                    | 1909.80         | 3.6             | 30                    | -67                  | -0.0351        |
| 810                    | 1909.80         | 3.6             | 40                    | -55                  | -0.0288        |
| 810                    | 1909.80         | 3.6             | 50                    | -57                  | -0.0298        |
| 810                    | 1909.80         | 3.6             | 60                    | -82                  | -0.0429        |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 810                    | 1909.80         | 3.7             | -30                   | 17                   | 0.0089  |
| 810                    | 1909.80         | 3.7             | -20                   | 58                   | 0.0304  |
| 810                    | 1909.80         | 3.7             | -10                   | 28                   | 0.0147  |
| 810                    | 1909.80         | 3.7             | 0                     | 34                   | 0.0178  |
| 810                    | 1909.80         | 3.7             | 10                    | 12                   | 0.0063  |
| 810                    | 1909.80         | 3.7             | 20                    | -36                  | -0.0189 |
| 810                    | 1909.80         | 3.7             | 30                    | -69                  | -0.0361 |
| 810                    | 1909.80         | 3.7             | 40                    | -58                  | -0.0304 |
| 810                    | 1909.80         | 3.7             | 50                    | -71                  | -0.0372 |
| 810                    | 1909.80         | 3.7             | 60                    | -33                  | -0.0173 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 810                    | 1909.80         | 4.2             | -30                   | 14                   | 0.0073  |
| 810                    | 1909.80         | 4.2             | -20                   | 60                   | 0.0314  |
| 810                    | 1909.80         | 4.2             | -10                   | 36                   | 0.0189  |
| 810                    | 1909.80         | 4.2             | 0                     | 43                   | 0.0225  |
| 810                    | 1909.80         | 4.2             | 10                    | 14                   | 0.0073  |
| 810                    | 1909.80         | 4.2             | 20                    | -34                  | -0.0178 |
| 810                    | 1909.80         | 4.2             | 30                    | -72                  | -0.0377 |
| 810                    | 1909.80         | 4.2             | 40                    | -64                  | -0.0335 |
| 810                    | 1909.80         | 4.2             | 50                    | -79                  | -0.0414 |
| 810                    | 1909.80         | 4.2             | 60                    | -53                  | -0.0278 |

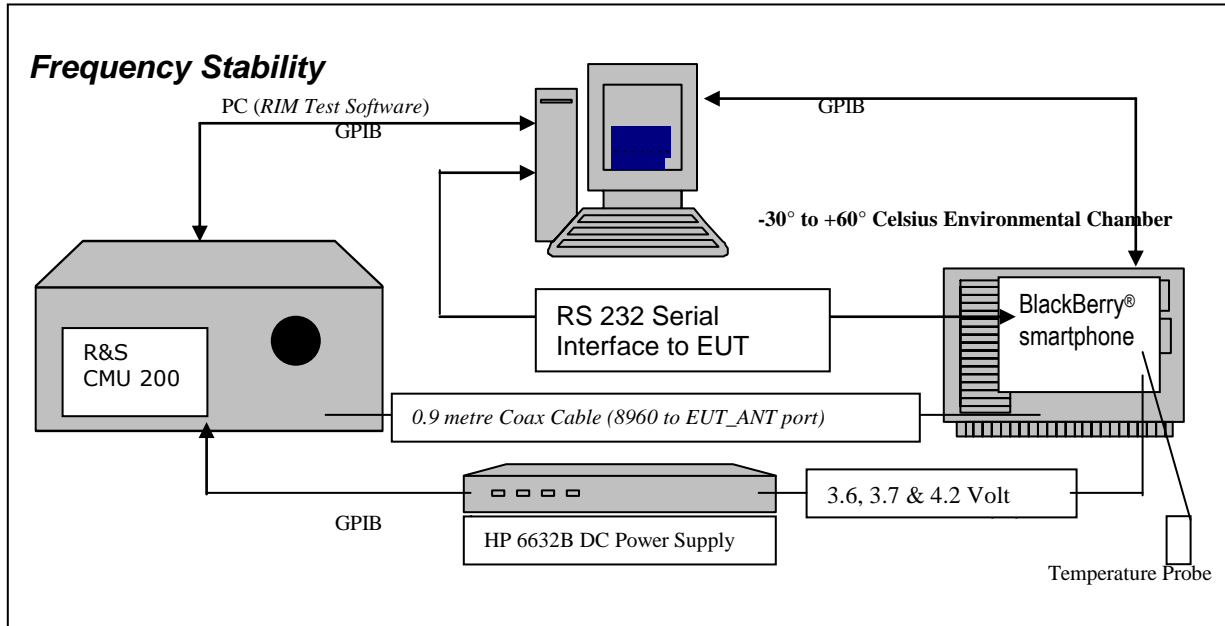
## APPENDIX 3B – UMTS 4 FREQUENCY STABILITY TEST DATA



|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW<br><b>APPENDIX 3B</b> |  |
|   | <b>Test Report No.</b><br>RTS-2579-1107-62B   | <b>Dates of Test</b><br>June 14 to July 11, 2011 |

### UMTS Frequency Stability Test Data

The following test configurations were measured for model RDD71UW:



The following measurements were performed by Maurice Battler.

CFR 47 Chapter 1 - Federal Communications Commission Rules

Part 2 Required Measurements

**2.1055** Frequency Stability - Procedures

(a,b) Frequency Stability - Temperature Variation


(d) Frequency Stability - Voltage Variation

**24.235** *Frequency Stability.*

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

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

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

|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW |  |
|   | <b>APPENDIX 3B</b>  |  |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011                      | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

**Procedure:**

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


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

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

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

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

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

|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW |  |
|   | <b>APPENDIX 3B</b>  |  |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011                      | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

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  $-30^{\circ}\text{C}$  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  $10^{\circ}\text{C}$  and soak for 1/2 hour.
13. Repeat steps 4 - 12 for temperatures  $-30^{\circ}\text{C}$  to  $60^{\circ}\text{C}$ .
14. Repeat steps 5 to 10 changing the supply voltage to 4.2 volts

Procedure 5 to 10 was repeated at room temperature ( $20^{\circ}\text{C}$ ) with the power supply voltage set to 3.6, 3.7 and 4.2 volts

The maximum frequency error in the UMTS band 4 measured was **0.0327 PPM**.

**Test Report No.**  
 RTS-2579-1107-62B

**Dates of Test**  
 June 14 to July 11, 2011

**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

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

| Traffic Channel Number | UMTS band 4 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM    |
|------------------------|-----------------------------|-----------------|-----------------------|----------------------|--------|
| 1312                   | 1712.4                      | 3.6             | 20                    | 34                   | 0.0199 |
| 1412                   | 1732.4                      | 3.6             | 20                    | 26                   | 0.0150 |
| 1513                   | 1752.6                      | 3.6             | 20                    | 32                   | 0.0183 |

| Traffic Channel Number | UMTS band 4 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM    |
|------------------------|-----------------------------|-----------------|-----------------------|----------------------|--------|
| 1312                   | 1712.4                      | 3.7             | 20                    | 32                   | 0.0187 |
| 1412                   | 1732.4                      | 3.7             | 20                    | 24                   | 0.0139 |
| 1513                   | 1752.6                      | 3.7             | 20                    | 31                   | 0.0177 |

| Traffic Channel Number | UMTS band 4 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM    |
|------------------------|-----------------------------|-----------------|-----------------------|----------------------|--------|
| 1312                   | 1712.4                      | 4.2             | 20                    | 31                   | 0.0181 |
| 1412                   | 1732.4                      | 4.2             | 20                    | 27                   | 0.0156 |
| 1513                   | 1752.6                      | 4.2             | 20                    | 32                   | 0.0183 |

**Test Report No.**  
RTS-2579-1107-62B

**Dates of Test**  
June 14 to July 11, 2011

**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

UMTS band 4 Results: channel 1312 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM           |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------------|
| 1312                   | 1712.4          | 3.6             | -30                   | 31                   | 0.0181        |
| 1312                   | 1712.4          | 3.6             | -20                   | 34                   | 0.0199        |
| 1312                   | 1712.4          | 3.6             | -10                   | 29                   | 0.0169        |
| 1312                   | 1712.4          | 3.6             | 0                     | 32                   | 0.0187        |
| 1312                   | 1712.4          | 3.6             | 10                    | 56                   | <b>0.0327</b> |
| 1312                   | 1712.4          | 3.6             | 20                    | 34                   | 0.0199        |
| 1312                   | 1712.4          | 3.6             | 30                    | 30                   | 0.0175        |
| 1312                   | 1712.4          | 3.6             | 40                    | 50                   | 0.0292        |
| 1312                   | 1712.4          | 3.6             | 50                    | 33                   | 0.0193        |
| 1312                   | 1712.4          | 3.6             | 60                    | 32                   | 0.0187        |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM    |
|------------------------|-----------------|-----------------|-----------------------|----------------------|--------|
| 1312                   | 1712.4          | 3.7             | -30                   | 30                   | 0.0175 |
| 1312                   | 1712.4          | 3.7             | -20                   | 34                   | 0.0199 |
| 1312                   | 1712.4          | 3.7             | -10                   | 30                   | 0.0175 |
| 1312                   | 1712.4          | 3.7             | 0                     | 32                   | 0.0187 |
| 1312                   | 1712.4          | 3.7             | 10                    | 35                   | 0.0204 |
| 1312                   | 1712.4          | 3.7             | 20                    | 32                   | 0.0187 |
| 1312                   | 1712.4          | 3.7             | 30                    | 28                   | 0.0164 |
| 1312                   | 1712.4          | 3.7             | 40                    | 31                   | 0.0181 |
| 1312                   | 1712.4          | 3.7             | 50                    | 33                   | 0.0193 |
| 1312                   | 1712.4          | 3.7             | 60                    | 12                   | 0.0070 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM    |
|------------------------|-----------------|-----------------|-----------------------|----------------------|--------|
| 1312                   | 1712.4          | 4.2             | -30                   | 32                   | 0.0175 |
| 1312                   | 1712.4          | 4.2             | -20                   | 35                   | 0.0204 |
| 1312                   | 1712.4          | 4.2             | -10                   | 30                   | 0.0175 |
| 1312                   | 1712.4          | 4.2             | 0                     | 32                   | 0.0187 |
| 1312                   | 1712.4          | 4.2             | 10                    | 32                   | 0.0187 |
| 1312                   | 1712.4          | 4.2             | 20                    | 31                   | 0.0181 |
| 1312                   | 1712.4          | 4.2             | 30                    | 31                   | 0.0181 |
| 1312                   | 1712.4          | 4.2             | 40                    | 31                   | 0.0181 |
| 1312                   | 1712.4          | 4.2             | 50                    | 31                   | 0.0181 |
| 1312                   | 1712.4          | 4.2             | 60                    | 30                   | 0.0175 |

**Test Report No.**  
RTS-2579-1107-62B

**Dates of Test**  
June 14 to July 11, 2011

**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

UMTS band 4 Results: channel 1412 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM    |
|------------------------|-----------------|-----------------|-----------------------|----------------------|--------|
| 1412                   | 1732.4          | 3.6             | -30                   | 27                   | 0.0156 |
| 1412                   | 1732.4          | 3.6             | -20                   | 27                   | 0.0156 |
| 1412                   | 1732.4          | 3.6             | -10                   | 26                   | 0.0150 |
| 1412                   | 1732.4          | 3.6             | 0                     | 26                   | 0.0150 |
| 1412                   | 1732.4          | 3.6             | 10                    | 52                   | 0.0300 |
| 1412                   | 1732.4          | 3.6             | 20                    | 26                   | 0.0150 |
| 1412                   | 1732.4          | 3.6             | 30                    | 24                   | 0.0139 |
| 1412                   | 1732.4          | 3.6             | 40                    | 27                   | 0.0156 |
| 1412                   | 1732.4          | 3.6             | 50                    | 27                   | 0.0156 |
| 1412                   | 1732.4          | 3.6             | 60                    | 25                   | 0.0144 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM    |
|------------------------|-----------------|-----------------|-----------------------|----------------------|--------|
| 1412                   | 1732.4          | 3.7             | -30                   | 28                   | 0.0162 |
| 1412                   | 1732.4          | 3.7             | -20                   | 27                   | 0.0156 |
| 1412                   | 1732.4          | 3.7             | -10                   | 24                   | 0.0139 |
| 1412                   | 1732.4          | 3.7             | 0                     | 27                   | 0.0156 |
| 1412                   | 1732.4          | 3.7             | 10                    | 52                   | 0.0300 |
| 1412                   | 1732.4          | 3.7             | 20                    | 24                   | 0.0139 |
| 1412                   | 1732.4          | 3.7             | 30                    | 29                   | 0.0167 |
| 1412                   | 1732.4          | 3.7             | 40                    | 27                   | 0.0156 |
| 1412                   | 1732.4          | 3.7             | 50                    | 28                   | 0.0162 |
| 1412                   | 1732.4          | 3.7             | 60                    | 11                   | 0.0063 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM    |
|------------------------|-----------------|-----------------|-----------------------|----------------------|--------|
| 1412                   | 1732.4          | 4.2             | -30                   | 27                   | 0.0156 |
| 1412                   | 1732.4          | 4.2             | -20                   | 27                   | 0.0156 |
| 1412                   | 1732.4          | 4.2             | -10                   | 24                   | 0.0139 |
| 1412                   | 1732.4          | 4.2             | 0                     | 25                   | 0.0144 |
| 1412                   | 1732.4          | 4.2             | 10                    | 53                   | 0.0306 |
| 1412                   | 1732.4          | 4.2             | 20                    | 27                   | 0.0156 |
| 1412                   | 1732.4          | 4.2             | 30                    | 27                   | 0.0156 |
| 1412                   | 1732.4          | 4.2             | 40                    | 28                   | 0.0162 |
| 1412                   | 1732.4          | 4.2             | 50                    | 26                   | 0.0150 |
| 1412                   | 1732.4          | 4.2             | 60                    | 28                   | 0.0162 |

**Test Report No.**  
RTS-2579-1107-62B

**Dates of Test**  
June 14 to July 11, 2011

**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

UMTS band 4 Results: channel 1513 @ maximum transmitted power


| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM    |
|------------------------|-----------------|-----------------|-----------------------|----------------------|--------|
| 1513                   | 1752.6          | 3.6             | -30                   | 34                   | 0.0194 |
| 1513                   | 1752.6          | 3.6             | -20                   | 33                   | 0.0188 |
| 1513                   | 1752.6          | 3.6             | -10                   | 29                   | 0.0165 |
| 1513                   | 1752.6          | 3.6             | 0                     | 31                   | 0.0177 |
| 1513                   | 1752.6          | 3.6             | 10                    | 55                   | 0.0314 |
| 1513                   | 1752.6          | 3.6             | 20                    | 32                   | 0.0183 |
| 1513                   | 1752.6          | 3.6             | 30                    | 31                   | 0.0177 |
| 1513                   | 1752.6          | 3.6             | 40                    | 34                   | 0.0194 |
| 1513                   | 1752.6          | 3.6             | 50                    | 32                   | 0.0183 |
| 1513                   | 1752.6          | 3.6             | 60                    | 30                   | 0.0171 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM    |
|------------------------|-----------------|-----------------|-----------------------|----------------------|--------|
| 1513                   | 1752.6          | 3.7             | -30                   | 32                   | 0.0183 |
| 1513                   | 1752.6          | 3.7             | -20                   | 27                   | 0.0154 |
| 1513                   | 1752.6          | 3.7             | -10                   | 32                   | 0.0183 |
| 1513                   | 1752.6          | 3.7             | 0                     | 29                   | 0.0165 |
| 1513                   | 1752.6          | 3.7             | 10                    | 30                   | 0.0171 |
| 1513                   | 1752.6          | 3.7             | 20                    | 31                   | 0.0177 |
| 1513                   | 1752.6          | 3.7             | 30                    | 33                   | 0.0188 |
| 1513                   | 1752.6          | 3.7             | 40                    | 36                   | 0.0205 |
| 1513                   | 1752.6          | 3.7             | 50                    | 34                   | 0.0194 |
| 1513                   | 1752.6          | 3.7             | 60                    | 12                   | 0.0068 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM    |
|------------------------|-----------------|-----------------|-----------------------|----------------------|--------|
| 1513                   | 1752.6          | 4.2             | -30                   | 34                   | 0.0194 |
| 1513                   | 1752.6          | 4.2             | -20                   | 30                   | 0.0171 |
| 1513                   | 1752.6          | 4.2             | -10                   | 33                   | 0.0188 |
| 1513                   | 1752.6          | 4.2             | 0                     | 34                   | 0.0194 |
| 1513                   | 1752.6          | 4.2             | 10                    | 28                   | 0.0160 |
| 1513                   | 1752.6          | 4.2             | 20                    | 32                   | 0.0183 |
| 1513                   | 1752.6          | 4.2             | 30                    | 32                   | 0.0183 |
| 1513                   | 1752.6          | 4.2             | 40                    | 31                   | 0.0177 |
| 1513                   | 1752.6          | 4.2             | 50                    | 33                   | 0.0188 |
| 1513                   | 1752.6          | 4.2             | 60                    | 31                   | 0.0177 |

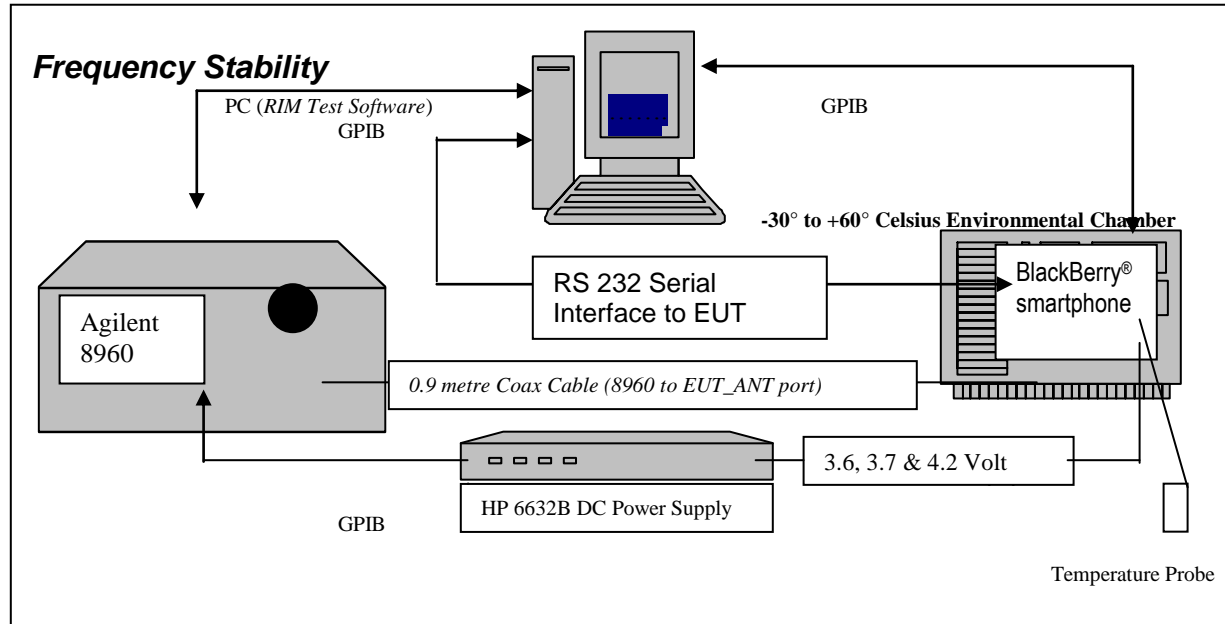
## APPENDIX 3C – UMTS 2/5 FREQUENCY STABILITY TEST DATA



|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW<br><b>APPENDIX 3C</b> |  |
|   | <b>Test Report No.</b><br>RTS-2579-1107-62B   | <b>Dates of Test</b><br>June 14 to July 11, 2011 |

### UMTS Frequency Stability Test Data

The following test configurations were measured for model RDX71UW:



The following measurements were performed by Maurice Battler.

CFR 47 Chapter 1 - Federal Communications Commission Rules

Part 2 Required Measurements

**2.1055** Frequency Stability - Procedures

(a,b) Frequency Stability - Temperature Variation


(d) Frequency Stability - Voltage Variation

**24.236** *Frequency Stability.*

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

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

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

|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RXC71UW |  |
|   | <b>APPENDIX 3C</b>  |  |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011                      | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

**Procedure:**

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

\_\_\_\_\_


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

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

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

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

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

|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RXC71UW |  |
|   | <b>APPENDIX 3C</b>  |  |
| <b>Test Report No.</b><br>RTS-2579-1107-62B                                       | <b>Dates of Test</b><br>June 14 to July 11, 2011                      | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |

PROCEDURE:

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

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

Procedure 5 to 10 was repeated at room temperature ( $20^{\circ}\text{C}$ ) with the power supply voltage set to 3.6, 3.7 and 4.2 volts

The maximum frequency error in the UMTS band 5 measured was **0.0315PPM**.  
The maximum frequency error in the UMTS band 2 measured was **0.0151 PPM**.

**Test Report No.**  
 RTS-2579-1107-62B

**Dates of Test**  
 June 14 to July 11, 2011

**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

UMTS Band 5 Channel results: channels 4132, 4182 and 4233 @ 20°C maximum transmitted power

| Traffic Channel Number | UMTS band 5 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------------------|-----------------|-----------------------|----------------------|---------|
| 4132                   | 826.4                       | 3.6             | 20                    | -15                  | -0.0182 |
| 4182                   | 836.4                       | 3.6             | 20                    | -12                  | -0.0143 |
| 4233                   | 846.6                       | 3.6             | 20                    | -16                  | -0.0189 |

| Traffic Channel Number | UMTS band 5 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------------------|-----------------|-----------------------|----------------------|---------|
| 4132                   | 826.4                       | 3.7             | 20                    | -11                  | -0.0133 |
| 4182                   | 836.4                       | 3.7             | 20                    | -11                  | -0.0132 |
| 4233                   | 846.6                       | 3.7             | 20                    | -10                  | -0.0118 |

| Traffic Channel Number | UMTS band 5 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------------------|-----------------|-----------------------|----------------------|---------|
| 4132                   | 826.4                       | 4.2             | 20                    | 10                   | 0.0121  |
| 4182                   | 836.4                       | 4.2             | 20                    | -10                  | -0.0120 |
| 4233                   | 846.6                       | 4.2             | 20                    | -14                  | -0.0165 |

|   |  |  |
|---|--|--|
| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

UMTS band 5 Results: channel 4132 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM           |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------------|
| 4132                   | 826.4           | 3.6             | -30                   | 23                   | 0.0278        |
| 4132                   | 826.4           | 3.6             | -20                   | 26                   | <b>0.0315</b> |
| 4132                   | 826.4           | 3.6             | -10                   | 22                   | 0.0266        |
| 4132                   | 826.4           | 3.6             | 0                     | 15                   | 0.0182        |
| 4132                   | 826.4           | 3.6             | 10                    | 15                   | 0.0182        |
| 4132                   | 826.4           | 3.6             | 20                    | -15                  | -0.0182       |
| 4132                   | 826.4           | 3.6             | 30                    | 12                   | 0.0145        |
| 4132                   | 826.4           | 3.6             | 40                    | 11                   | 0.0133        |
| 4132                   | 826.4           | 3.6             | 50                    | 24                   | 0.0290        |
| 4132                   | 826.4           | 3.6             | 60                    | 23                   | 0.0278        |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 4132                   | 826.4           | 3.7             | -30                   | 8                    | 0.0097  |
| 4132                   | 826.4           | 3.7             | -20                   | -16                  | -0.0194 |
| 4132                   | 826.4           | 3.7             | -10                   | 24                   | 0.0290  |
| 4132                   | 826.4           | 3.7             | 0                     | 7                    | 0.0085  |
| 4132                   | 826.4           | 3.7             | 10                    | 16                   | 0.0194  |
| 4132                   | 826.4           | 3.7             | 20                    | -11                  | -0.0133 |
| 4132                   | 826.4           | 3.7             | 30                    | -6                   | -0.0073 |
| 4132                   | 826.4           | 3.7             | 40                    | -6                   | -0.0073 |
| 4132                   | 826.4           | 3.7             | 50                    | 25                   | 0.0303  |
| 4132                   | 826.4           | 3.7             | 60                    | 11                   | 0.0133  |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 4132                   | 826.4           | 4.2             | -30                   | 8                    | 0.0097  |
| 4132                   | 826.4           | 4.2             | -20                   | -9                   | -0.0109 |
| 4132                   | 826.4           | 4.2             | -10                   | 22                   | 0.0266  |
| 4132                   | 826.4           | 4.2             | 0                     | 10                   | 0.0121  |
| 4132                   | 826.4           | 4.2             | 10                    | 15                   | 0.0182  |
| 4132                   | 826.4           | 4.2             | 20                    | 10                   | 0.0121  |
| 4132                   | 826.4           | 4.2             | 30                    | -10                  | -0.0121 |
| 4132                   | 826.4           | 4.2             | 40                    | -9                   | -0.0109 |
| 4132                   | 826.4           | 4.2             | 50                    | 22                   | 0.0266  |
| 4132                   | 826.4           | 4.2             | 60                    | 19                   | 0.0230  |

|   |  |  |
|---|--|--|
| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

UMTS band 5 Results: channel 4182 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 4182                   | 836.4           | 3.6             | -30                   | 21                   | 0.0251  |
| 4182                   | 836.4           | 3.6             | -20                   | 15                   | 0.0179  |
| 4182                   | 836.4           | 3.6             | -10                   | 9                    | 0.0108  |
| 4182                   | 836.4           | 3.6             | 0                     | 14                   | 0.0167  |
| 4182                   | 836.4           | 3.6             | 10                    | 16                   | 0.0191  |
| 4182                   | 836.4           | 3.6             | 20                    | -12                  | -0.0143 |
| 4182                   | 836.4           | 3.6             | 30                    | 12                   | 0.0143  |
| 4182                   | 836.4           | 3.6             | 40                    | 12                   | 0.0143  |
| 4182                   | 836.4           | 3.6             | 50                    | -15                  | -0.0179 |
| 4182                   | 836.4           | 3.6             | 60                    | 22                   | 0.0263  |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 4182                   | 836.4           | 3.7             | -30                   | 20                   | 0.0239  |
| 4182                   | 836.4           | 3.7             | -20                   | 24                   | 0.0287  |
| 4182                   | 836.4           | 3.7             | -10                   | 17                   | 0.0203  |
| 4182                   | 836.4           | 3.7             | 0                     | 10                   | 0.0120  |
| 4182                   | 836.4           | 3.7             | 10                    | 18                   | 0.0215  |
| 4182                   | 836.4           | 3.7             | 20                    | -11                  | -0.0132 |
| 4182                   | 836.4           | 3.7             | 30                    | 7                    | 0.0084  |
| 4182                   | 836.4           | 3.7             | 40                    | 11                   | 0.0132  |
| 4182                   | 836.4           | 3.7             | 50                    | -14                  | -0.0167 |
| 4182                   | 836.4           | 3.7             | 60                    | 18                   | 0.0215  |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 4182                   | 836.4           | 4.2             | -30                   | -17                  | -0.0203 |
| 4182                   | 836.4           | 4.2             | -20                   | 21                   | 0.0251  |
| 4182                   | 836.4           | 4.2             | -10                   | -17                  | -0.0203 |
| 4182                   | 836.4           | 4.2             | 0                     | -17                  | -0.0203 |
| 4182                   | 836.4           | 4.2             | 10                    | 19                   | 0.0227  |
| 4182                   | 836.4           | 4.2             | 20                    | -10                  | -0.0120 |
| 4182                   | 836.4           | 4.2             | 30                    | 6                    | 0.0072  |
| 4182                   | 836.4           | 4.2             | 40                    | 19                   | 0.0227  |
| 4182                   | 836.4           | 4.2             | 50                    | 18                   | 0.0215  |
| 4182                   | 836.4           | 4.2             | 60                    | 17                   | 0.0203  |

**Test Report No.**  
RTS-2579-1107-62B

**Dates of Test**  
June 14 to July 11, 2011

**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

UMTS band 5 Results: channel 4233 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 4233                   | 846.6           | 3.6             | -30                   | -8                   | -0.0094 |
| 4233                   | 846.6           | 3.6             | -20                   | 14                   | 0.0165  |
| 4233                   | 846.6           | 3.6             | -10                   | 21                   | 0.0248  |
| 4233                   | 846.6           | 3.6             | 0                     | 19                   | 0.0224  |
| 4233                   | 846.6           | 3.6             | 10                    | 25                   | 0.0295  |
| 4233                   | 846.6           | 3.6             | 20                    | -16                  | -0.0189 |
| 4233                   | 846.6           | 3.6             | 30                    | -8                   | -0.0094 |
| 4233                   | 846.6           | 3.6             | 40                    | 16                   | 0.0189  |
| 4233                   | 846.6           | 3.6             | 50                    | 16                   | 0.0189  |
| 4233                   | 846.6           | 3.6             | 60                    | 23                   | 0.0272  |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 4233                   | 846.6           | 3.7             | -30                   | 10                   | 0.0118  |
| 4233                   | 846.6           | 3.7             | -20                   | 20                   | 0.0236  |
| 4233                   | 846.6           | 3.7             | -10                   | 22                   | 0.0260  |
| 4233                   | 846.6           | 3.7             | 0                     | 23                   | 0.0272  |
| 4233                   | 846.6           | 3.7             | 10                    | 10                   | 0.0118  |
| 4233                   | 846.6           | 3.7             | 20                    | -10                  | -0.0118 |
| 4233                   | 846.6           | 3.7             | 30                    | 7                    | 0.0083  |
| 4233                   | 846.6           | 3.7             | 40                    | 15                   | 0.0177  |
| 4233                   | 846.6           | 3.7             | 50                    | 14                   | 0.0165  |
| 4233                   | 846.6           | 3.7             | 60                    | 25                   | 0.0295  |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 4233                   | 846.6           | 4.2             | -30                   | 12                   | 0.0142  |
| 4233                   | 846.6           | 4.2             | -20                   | 25                   | 0.0295  |
| 4233                   | 846.6           | 4.2             | -10                   | 13                   | 0.0154  |
| 4233                   | 846.6           | 4.2             | 0                     | 22                   | 0.0260  |
| 4233                   | 846.6           | 4.2             | 10                    | 11                   | 0.0130  |
| 4233                   | 846.6           | 4.2             | 20                    | -14                  | -0.0165 |
| 4233                   | 846.6           | 4.2             | 30                    | 17                   | 0.0201  |
| 4233                   | 846.6           | 4.2             | 40                    | 12                   | 0.0142  |
| 4233                   | 846.6           | 4.2             | 50                    | 11                   | 0.0130  |
| 4233                   | 846.6           | 4.2             | 60                    | 23                   | 0.0272  |

**Test Report No.**  
RTS-2579-1107-62B

**Dates of Test**  
June 14 to July 11, 2011

**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

UMTS band 2 Channel results: channels 9262, 9400, & 9538 @ 20°C maximum transmitted power

| Traffic Channel Number | UMTS1900 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|--------------------------|-----------------|-----------------------|----------------------|---------|
| 9262                   | 1852.40                  | 3.6             | 20                    | -25                  | -0.0135 |
| 9400                   | 1880.00                  | 3.6             | 20                    | -18                  | -0.0096 |
| 9538                   | 1907.60                  | 3.6             | 20                    | -12                  | -0.0063 |

| Traffic Channel Number | UMTS1900 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|--------------------------|-----------------|-----------------------|----------------------|---------|
| 9262                   | 1852.40                  | 3.7             | 20                    | -22                  | -0.0119 |
| 9400                   | 1880.00                  | 3.7             | 20                    | 17                   | 0.0090  |
| 9538                   | 1907.60                  | 3.7             | 20                    | 17                   | 0.0089  |

| Traffic Channel Number | UMTS1900 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|--------------------------|-----------------|-----------------------|----------------------|---------|
| 9262                   | 1852.40                  | 4.2             | 20                    | 17                   | 0.0092  |
| 9400                   | 1880.00                  | 4.2             | 20                    | -15                  | -0.0080 |
| 9538                   | 1907.60                  | 4.2             | 20                    | 15                   | 0.0079  |



**Test Report No.**  
 RTS-2579-1107-62B

**Dates of Test**  
 June 14 to July 11, 2011

**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

UMTS band 2 Results: channel 9262 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM            |
|------------------------|-----------------|-----------------|-----------------------|----------------------|----------------|
| 9262                   | 1852.40         | 3.6             | -30                   | 17                   | 0.0092         |
| 9262                   | 1852.40         | 3.6             | -20                   | 12                   | 0.0065         |
| 9262                   | 1852.40         | 3.6             | -10                   | 13                   | 0.0070         |
| 9262                   | 1852.40         | 3.6             | 0                     | 13                   | -0.0135        |
| 9262                   | 1852.40         | 3.6             | 10                    | 15                   | 0.0081         |
| 9262                   | 1852.40         | 3.6             | 20                    | -25                  | -0.0135        |
| 9262                   | 1852.40         | 3.6             | 30                    | 14                   | 0.0076         |
| 9262                   | 1852.40         | 3.6             | 40                    | 15                   | 0.0081         |
| 9262                   | 1852.40         | 3.6             | 50                    | -22                  | -0.0119        |
| 9262                   | 1852.40         | 3.6             | 60                    | -28                  | <b>-0.0151</b> |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 9262                   | 1852.40         | 3.7             | -30                   | 15                   | 0.0081  |
| 9262                   | 1852.40         | 3.7             | -20                   | 16                   | 0.0086  |
| 9262                   | 1852.40         | 3.7             | -10                   | 15                   | 0.0081  |
| 9262                   | 1852.40         | 3.7             | 0                     | -12                  | -0.0119 |
| 9262                   | 1852.40         | 3.7             | 10                    | 15                   | 0.0081  |
| 9262                   | 1852.40         | 3.7             | 20                    | -22                  | -0.0119 |
| 9262                   | 1852.40         | 3.7             | 30                    | 15                   | 0.0081  |
| 9262                   | 1852.40         | 3.7             | 40                    | 17                   | 0.0092  |
| 9262                   | 1852.40         | 3.7             | 50                    | -20                  | -0.0108 |
| 9262                   | 1852.40         | 3.7             | 60                    | 12                   | 0.0065  |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 9262                   | 1852.40         | 4.2             | -30                   | 16                   | 0.0086  |
| 9262                   | 1852.40         | 4.2             | -20                   | 15                   | 0.0081  |
| 9262                   | 1852.40         | 4.2             | -10                   | 15                   | 0.0081  |
| 9262                   | 1852.40         | 4.2             | 0                     | 13                   | 0.0092  |
| 9262                   | 1852.40         | 4.2             | 10                    | -14                  | -0.0076 |
| 9262                   | 1852.40         | 4.2             | 20                    | 17                   | 0.0092  |
| 9262                   | 1852.40         | 4.2             | 30                    | 13                   | 0.0070  |
| 9262                   | 1852.40         | 4.2             | 40                    | 15                   | 0.0081  |
| 9262                   | 1852.40         | 4.2             | 50                    | -23                  | -0.0124 |
| 9262                   | 1852.40         | 4.2             | 60                    | 14                   | 0.0076  |

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| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

UMTS band 2 Results: channel 9400 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 9400                   | 1880.00         | 3.6             | -30                   | -18                  | -0.0096 |
| 9400                   | 1880.00         | 3.6             | -20                   | 12                   | 0.0064  |
| 9400                   | 1880.00         | 3.6             | -10                   | 15                   | 0.0080  |
| 9400                   | 1880.00         | 3.6             | 0                     | 16                   | 0.0085  |
| 9400                   | 1880.00         | 3.6             | 10                    | 16                   | 0.0085  |
| 9400                   | 1880.00         | 3.6             | 20                    | -18                  | -0.0096 |
| 9400                   | 1880.00         | 3.6             | 30                    | -16                  | -0.0085 |
| 9400                   | 1880.00         | 3.6             | 40                    | -19                  | -0.0101 |
| 9400                   | 1880.00         | 3.6             | 50                    | -14                  | -0.0074 |
| 9400                   | 1880.00         | 3.6             | 60                    | 17                   | 0.0090  |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 9400                   | 1880.00         | 3.7             | -30                   | 15                   | 0.0080  |
| 9400                   | 1880.00         | 3.7             | -20                   | 15                   | 0.0080  |
| 9400                   | 1880.00         | 3.7             | -10                   | 19                   | 0.0101  |
| 9400                   | 1880.00         | 3.7             | 0                     | -17                  | -0.0090 |
| 9400                   | 1880.00         | 3.7             | 10                    | 15                   | 0.0080  |
| 9400                   | 1880.00         | 3.7             | 20                    | 17                   | 0.0090  |
| 9400                   | 1880.00         | 3.7             | 30                    | 17                   | 0.0090  |
| 9400                   | 1880.00         | 3.7             | 40                    | -18                  | -0.0096 |
| 9400                   | 1880.00         | 3.7             | 50                    | -18                  | -0.0096 |
| 9400                   | 1880.00         | 3.7             | 60                    | -24                  | -0.0128 |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 9400                   | 1880.00         | 4.2             | -30                   | 15                   | 0.0080  |
| 9400                   | 1880.00         | 4.2             | -20                   | 14                   | 0.0074  |
| 9400                   | 1880.00         | 4.2             | -10                   | -24                  | -0.0128 |
| 9400                   | 1880.00         | 4.2             | 0                     | -19                  | -0.0101 |
| 9400                   | 1880.00         | 4.2             | 10                    | -14                  | -0.0074 |
| 9400                   | 1880.00         | 4.2             | 20                    | -15                  | -0.0080 |
| 9400                   | 1880.00         | 4.2             | 30                    | 14                   | 0.0074  |
| 9400                   | 1880.00         | 4.2             | 40                    | 15                   | 0.0080  |
| 9400                   | 1880.00         | 4.2             | 50                    | -24                  | -0.0128 |
| 9400                   | 1880.00         | 4.2             | 60                    | 16                   | 0.0085  |

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| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

UMTS band 2 Results: channel 9538 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | 21BPPM  |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 9538                   | 1907.60         | 3.6             | -30                   | 21                   | 0.0110  |
| 9538                   | 1907.60         | 3.6             | -20                   | 17                   | 0.0089  |
| 9538                   | 1907.60         | 3.6             | -10                   | 14                   | 0.0073  |
| 9538                   | 1907.60         | 3.6             | 0                     | 16                   | 0.0084  |
| 9538                   | 1907.60         | 3.6             | 10                    | 16                   | 0.0084  |
| 9538                   | 1907.60         | 3.6             | 20                    | -12                  | -0.0063 |
| 9538                   | 1907.60         | 3.6             | 30                    | 17                   | 0.0089  |
| 9538                   | 1907.60         | 3.6             | 40                    | 14                   | 0.0073  |
| 9538                   | 1907.60         | 3.6             | 50                    | -25                  | -0.0131 |
| 9538                   | 1907.60         | 3.6             | 60                    | 17                   | 0.0089  |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 9538                   | 1907.60         | 3.7             | -30                   | 17                   | 0.0089  |
| 9538                   | 1907.60         | 3.7             | -20                   | 14                   | 0.0073  |
| 9538                   | 1907.60         | 3.7             | -10                   | 14                   | 0.0073  |
| 9538                   | 1907.60         | 3.7             | 0                     | 16                   | 0.0084  |
| 9538                   | 1907.60         | 3.7             | 10                    | 18                   | 0.0094  |
| 9538                   | 1907.60         | 3.7             | 20                    | 17                   | 0.0089  |
| 9538                   | 1907.60         | 3.7             | 30                    | 14                   | 0.0073  |
| 9538                   | 1907.60         | 3.7             | 40                    | -17                  | -0.0089 |
| 9538                   | 1907.60         | 3.7             | 50                    | -24                  | -0.0126 |
| 9538                   | 1907.60         | 3.7             | 60                    | 16                   | 0.0084  |

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 9538                   | 1907.60         | 4.2             | -30                   | 18                   | 0.0094  |
| 9538                   | 1907.60         | 4.2             | -20                   | 17                   | 0.0089  |
| 9538                   | 1907.60         | 4.2             | -10                   | 12                   | 0.0063  |
| 9538                   | 1907.60         | 4.2             | 0                     | 11                   | 0.0058  |
| 9538                   | 1907.60         | 4.2             | 10                    | 14                   | 0.0073  |
| 9538                   | 1907.60         | 4.2             | 20                    | 15                   | 0.0079  |
| 9538                   | 1907.60         | 4.2             | 30                    | 14                   | 0.0073  |
| 9538                   | 1907.60         | 4.2             | 40                    | -18                  | -0.0094 |
| 9538                   | 1907.60         | 4.2             | 50                    | 15                   | 0.0079  |
| 9538                   | 1907.60         | 4.2             | 60                    | 15                   | 0.0079  |

## APPENDIX 4A – GSM RADIATED EMISSIONS TEST DATA



|   |  |  |
|---|--|--|
| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

**Radiated Power Test Data Results**

The following test configurations were measured for RDD71UW:

Date of test: July 4, 2011

The following measurements were performed by Shuo Wang.

The environmental tests conditions were: Temperature: 25.0 °C  
 Relative Humidity: 40.3%

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    | 91.24             | 91.24          | V-V                 | -2.57         | 32.30  | 1.70        | 33.00       | 0.70               |
| F0   | 512 | 1850.20         | 1900 | Horn            | H    | 85.70             |                | H-H                 | -2.51         |  |             |             |                    |
| F0   | 661 | 1880.00         | 1900 | Horn            | V    | 91.01             | 91.01          | V-V                 | -2.68         | 32.44  | 1.75        | 33.00       | 0.56               |
| F0   | 661 | 1880.00         | 1900 | Horn            | H    | 85.42             |                | H-H                 | -2.46         |  |             |             |                    |
| F0   | 810 | 1909.80         | 1900 | Horn            | V    | 91.17             | 91.17          | V-V                 | -1.62         | <b>32.47</b>                                       | <b>1.77</b> | 33.00       | <b>0.53</b>        |
| F0   | 810 | 1909.80         | 1900 | Horn            | H    | 84.66             |                | H-H                 | -1.48         |  |             |             |                    |

**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    | 89.44             | 89.44          | V-V                 | -4.37         | 30.44  | 1.11        | 33.00       | 2.56               |
| F0   | 512 | 1850.20         | 1900 | Horn            | H    | 82.29             |                | H-H                 | -4.42         |  |             |             |                    |
| F0   | 661 | 1880.00         | 1900 | Horn            | V    | 89.27             | 89.27          | V-V                 | -4.42         | <b>30.70</b>                                       | <b>1.18</b> | 33.00       | 2.30               |
| F0   | 661 | 1880.00         | 1900 | Horn            | H    | 82.68             |                | H-H                 | -4.2          |  |             |             |                    |
| F0   | 810 | 1909.80         | 1900 | Horn            | V    | 88.54             | 88.54          | V-V                 | -4.25         | 29.84  | 0.96        | 33.00       | 3.16               |
| F0   | 810 | 1909.80         | 1900 | Horn            | H    | 81.13             |                | H-H                 | -4.11         |  |             |             |                    |

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|---|--|--|
| <b>Test Report No.</b><br>RTS-2579-1107-62B | <b>Dates of Test</b><br>June 14 to July 11, 2011 | <b>FCC ID:</b> L6ARDD70UW, L6ARDX70UW<br><b>IC:</b> 2503A-RDD70UW, 2503A-RDX70UW |
|---|--|--|

Radiated Power Test Data Results

The following test configurations were measured for RDX71UW:

Date of test: July 4, 2011

The following measurements were performed by Adam Rusinek.

The environmental tests conditions were: Temperature: 25.1 °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 |               | Limit (dBm)  | Diff to Limit (dB) |             |                    |
|------|-----|-----------------|------|-----------------|------|-------------------|----------------|---------------------|---------------|--|--------------------|-------------|--------------------|
| Type | Ch  | Frequency (MHz) | Band | 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    | 85.49             | 91.03          | V-V                 | -2.78         | 32.03  | 1.60               | 33.00       | 0.97               |
| F0   | 512 | 1850.20         | 1900 | Horn            | H    | 91.03             |                | H-H                 | -2.83         |  |                    |             |                    |
| F0   | 661 | 1880.00         | 1900 | Horn            | V    | 85.11             | 90.88          | V-V                 | -2.81         | <b>32.31</b>                                       | <b>1.70</b>        | 33.00       | <b>0.69</b>        |
| F0   | 661 | 1880.00         | 1900 | Horn            | H    | 90.88             |                | H-H                 | -2.59         |  |                    |             |                    |
| F0   | 810 | 1909.80         | 1900 | Horn            | V    | 86.08             | 90.91          | V-V                 | -1.88         | 32.21  | 1.66               | 33.00       | 0.79               |
| F0   | 810 | 1909.80         | 1900 | Horn            | H    | 90.91             |                | H-H                 | -1.74         |  |                    |             |                    |

**PCS1900 Band EDGE Mode**

| EUT  |     |                 |      |                 |      |                   |                | Substitution Method |               | Limit (dBm)  | Diff to Limit (dB) |             |                    |
|------|-----|-----------------|------|-----------------|------|-------------------|----------------|---------------------|---------------|--|--------------------|-------------|--------------------|
| Type | Ch  | Frequency (MHz) | Band | 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    | 82.16             | 88.28          | V-V                 | -5.53         | <b>29.28</b>                                       | <b>0.85</b>        | 33.00       | <b>3.72</b>        |
| F0   | 512 | 1850.20         | 1900 | Horn            | H    | 88.28             |                | H-H                 | -5.58         |  |                    |             |                    |
| F0   | 661 | 1880.00         | 1900 | Horn            | V    | 82.20             | 87.46          | V-V                 | -6.23         | 28.89  | 0.78               | 33.00       | 4.11               |
| F0   | 661 | 1880.00         | 1900 | Horn            | H    | 87.46             |                | H-H                 | -6.01         |  |                    |             |                    |
| F0   | 810 | 1909.80         | 1900 | Horn            | V    | 83.11             | 87.61          | V-V                 | -5.18         | 28.91  | 0.78               | 33.00       | 4.09               |
| F0   | 810 | 1909.80         | 1900 | Horn            | H    | 87.61             |                | H-H                 | -5.04         |  |                    |             |                    |

## APPENDIX 4B – UMTS 4 RADIATED EMISSIONS TEST DATA

**Test Report No.**  
RTS-2579-1107-62B

**Dates of Test**  
June 14 to July 11, 2011

**FCC ID:** L6ARDD70UW, L6ARDX70UW  
**IC:** 2503A-RDD70UW, 2503A-RDX70UW

**Radiated Power Test Data Results**

The following test configurations were measured for model RDD71UW:

Date of Test: June 28, 2011

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

The environmental tests conditions were: Temperature: 23.4°C  
 Relative Humidity: 44.2%

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


**UMTS band 4 Call Service Mode**

| EUT  |      |                 |      | Rx Antenna |      | Spectrum Analyzer |                  | Substitution Method |               |  |             |             |                     |
|------|------|-----------------|------|------------|------|-------------------|------------------|---------------------|---------------|--|-------------|-------------|---------------------|
| Type | Ch   | Frequency (MHz) | Band | Type       | Pol. | Reading (dBuV)    | Max (V,H) (dBuV) | Tracking Generator  |               | Corrected Reading (relative to Dipole) |             | Limit (dBm) | Diff. To Limit (dB) |
|      |      |                 |      |            |      |                   |                  | Pol. Tx-Rx          | Reading (dBm) | (dBm)                                  | (W)         |             |                     |
| F0   | 1312 | 1712.40         | 4    | Horn       | V    | 77.75             | 84.13            | V-V                 | -16.91        | 23.15                                  | 0.21        | 33          | -9.9                |
| F0   | 1312 | 1712.40         | 4    | Horn       | H    | 84.13             |                  | H-H                 | -16.71        |  |             |             |                     |
| F0   | 1413 | 1732.60         | 4    | Horn       | V    | 77.38             | 84.08            | V-V                 | -16.80        | 23.60                                  | 0.23        | 33          | -9.4                |
| F0   | 1413 | 1732.60         | 4    | Horn       | H    | 84.08             |                  | H-H                 | -16.56        |  |             |             |                     |
| F0   | 1513 | 1752.60         | 4    | Horn       | V    | 76.62             | 83.44            | V-V                 | -16.94        | <b>23.91</b>                           | <b>0.25</b> | 33          | <b>-9.1</b>         |
| F0   | 1513 | 1752.60         | 4    | Horn       | H    | 83.44             |                  | H-H                 | -15.99        |  |             |             |                     |

**UMTS band 4 HSUPA Mode**

| EUT  |      |                 |      | Rx Antenna |      | Spectrum Analyzer |                  | Substitution Method |               |  |             |             |                     |
|------|------|-----------------|------|------------|------|-------------------|------------------|---------------------|---------------|--|-------------|-------------|---------------------|
| Type | Ch   | Frequency (MHz) | Band | Type       | Pol. | Reading (dBuV)    | Max (V,H) (dBuV) | Tracking Generator  |               | Corrected Reading (relative to Dipole) |             | Limit (dBm) | Diff. To Limit (dB) |
|      |      |                 |      |            |      |                   |                  | Pol. Tx-Rx          | Reading (dBm) | (dBm)                                  | (W)         |             |                     |
| F0   | 1312 | 1712.40         | 4    | Horn       | V    | 78.77             | 84.85            | V-V                 | -16.23        | 23.87                                  | 0.24        | 33          | -9.1                |
| F0   | 1312 | 1712.40         | 4    | Horn       | H    | 84.85             |                  | H-H                 | -15.99        |  |             |             |                     |
| F0   | 1413 | 1732.60         | 4    | Horn       | V    | 78.34             | 85.02            | V-V                 | -15.79        | 24.59                                  | 0.29        | 33          | -8.4                |
| F0   | 1413 | 1732.60         | 4    | Horn       | H    | 85.02             |                  | H-H                 | -15.57        |  |             |             |                     |
| F0   | 1513 | 1752.60         | 4    | Horn       | V    | 77.50             | 84.21            | V-V                 | -16.16        | <b>24.70</b>                           | <b>0.30</b> | 33          | <b>-8.3</b>         |
| F0   | 1513 | 1752.60         | 4    | Horn       | H    | 84.21             |                  | H-H                 | -15.20        |  |             |             |                     |



|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW<br><b>APPENDIX 4B</b> |  |
|   | <b>Test Report No.</b><br>RTS-2579-1107-62B   | <b>Dates of Test</b><br>June 14 to July 11, 2011 |

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

Date of Test: June 27, 2011

The following measurements were performed by Quan (Jerry) Ma

The environmental test conditions were: Temperature: 23.9 °C  
Relative Humidity: 38.6 %

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

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

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

All emissions had a test margin greater than 25.0 dB.

Date of Test: July 4, 2011

The following measurements were performed by Shuo Wang


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

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

The BlackBerry® smartphone was in standalone, vertical position.

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

All emissions had a test margin greater than 25.0 dB.

|   |   |  |
|---|---|--|
|  | EMI Test Report for the BlackBerry® smartphone Model RDD71UW, RDX71UW<br><b>APPENDIX 4B</b> |  |
|   | <b>Test Report No.</b><br>RTS-2579-1107-62B   | <b>Dates of Test</b><br>June 14 to July 11, 2011 |

Radiated Emissions Test Data Results cont'd  
**UMTS band 4 HSUPA Mode**

Date of Test: June 27, 2011

The following measurements were performed by Quan(Jerry) Ma

The environmental test conditions were:   Temperature:   23.9 °C  
Relative Humidity: 38.6 %

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

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

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

All emissions had a test margin greater than 25.0 dB.

Date of Test: July 4, 2011

The following measurements were performed by Adam Rusinek

The environmental test conditions were:   Temperature:   25.1 °C  
Relative Humidity: 42.4 %

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

The BlackBerry® smartphone was in standalone, vertical position.

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

All emissions had a test margin greater than 25.0 dB.