

# EMI Test Report

Tested in accordance with  
Federal Communications Commission (FCC)  
Personal Communications Services  
CFR 47, Parts 2, 22, 24, 27  
IC RSS-130, 132, 133, 139, 195 and RSS-GEN



**REPORT NO.:** RTS-6066-1510-13C

**PRODUCT MODEL NO.:** RHK211LW (STV100-1), RHM181LW (STV100-4),  
RHT181LW (STV100-2)

**TYPE NAME:** BlackBerry® smartphone

**FCC ID:** L6ARHK210LW, L6ARHM180LW, L6ARHT180LW

**IC:** 2503A-RHK210LW

**EMISSION DESIGNATOR (GSM):** 247KGXW

**EMISSION DESIGNATOR (EDGE):** 246KG7W

**EMISSION DESIGNATOR (WCDMA):** 4M15F9W

**EMISSION DESIGNATOR (LTE QPSK):** See details in Appendix

**EMISSION DESIGNATOR (LTE 16QAM):** See details in Appendix

**DATE:** November 16, 2015

RTS is accredited  
according to  
EN ISO/IEC 17025 by:



592

|                                                                                   |                                                                                                                   |                                                                                   |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### **Statement of Performance:**

The BlackBerry® smartphone, model RHK211LW (STV100-1) part number CER-62541-001 Rev4-x06-01 and accessories when configured and operated per BlackBerry's operation instructions performs within the requirements of the test standards.

The BlackBerry® smartphone, model RHM181LW (STV100-4) part number CER-62543-001 Rev2-x06-01 and accessories when configured and operated per BlackBerry's operation instructions performs within the requirements of the test standards.

The BlackBerry® smartphone, model RHT181LW (STV100-2) part number CER-62544-001 Rev 1-x08-00 and accessories when configured and operated per BlackBerry's operation instructions performs within the requirements of the test standards.

|                                                                                   |                                                                                                                   |                                                                                   |
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**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:

Reviewed by:

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Kevin Guo  
Compliance Specialist I

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Savtej Sandhu  
Compliance Specialist II

Reviewed and Approved by:

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Masud S. Attayi, P.Eng.  
Sr. Manager, Regulatory Certification & Compliance

|                                                                                   |                                                                                                                   |                                                                                   |
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## A. Scope

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

- FCC CFR 47 Part 2, Subpart J, Equipment Authorization Procedures, October, 2014.
- FCC CFR 47 Part 22, Subpart H, Cellular Radiotelephone Services, October, 2014.
- FCC CFR 47 Part 24, Subpart E, Broadband PCS, October, 2014.
- FCC CFR 47 Part 27, Subpart C, Technical Standards, October, 2014.
- FCC CFR 47 Part 27, Subpart D, Competitive Bidding Procedures for the 2305–2320 MHz and 2345–2360 MHz Bands
- FCC CFR 47 Part 27, Subpart F, Competitive Bidding Procedures for the 698–806 MHz Band
- FCC CFR 47 Part 27, Subpart H, Competitive Bidding Procedures for the 698–746 MHz Band
- FCC CFR 47 Part 27, Subpart L, 1695–1710 MHz, 1710–1755 MHz, 1755–1780 MHz, 2110–2155 MHz 2155–2180 MHz, 2180–2200 MHz Bands
- Industry Canada, RSS-132 Issue 3, January 2013, Cellular Telephone Systems Operating in the Bands 824-849 MHz and 869-894 MHz.
- Industry Canada, RSS-133 Issue 6, January 2013, 2 GHz Personal Communications Services.
- Industry Canada, RSS-GEN Issue 4, November 2014, General Requirements for Compliance of Radio Apparatus.
- Industry Canada, RSS-139 Issue 3, July 2015, Advanced Wireless Services Equipment Operating in the Bands 1710-1755 MHz and 2110-2155 MHz.
- Industry Canada, RSS-130 Issue 1, October 2013, Mobile Broadband Services (MBS) Equipment Operating in the Frequency Bands 698-756 MHz and 777-787 MHz.
- Industry Canada, RSS-195 Issue 2, April 2014, Wireless Communication Service (WCS) Equipment Operating in the Bands 2305-2320 MHz and 2345-2360 MHz.

\*Note: RSS-195 is currently not in the BlackBerry RTS ISO/IEC 17025 scope of accreditation, whereas all the other listed RSS standards are.

|                                                                                   |                                                                                                                   |                                                                                   |
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## B. Associated Documents

- 1) RHK211LW-HW\_CER-62541-001 - Rev3-x06-02
- 2) RHK211LW-HW\_CER-62541-001 - Rev4-x06-01
- 3) MultiSourceDeclaration\_AAC056\_upto\_AAC273
- 4) MultiSourceDeclaration\_AAC273\_upto\_AAC380
- 5) MultiSourceDeclaration\_AAC380\_upto\_AAC396
- 6) Test Report RTS-6066-1509-13
- 7) Test Report RTS-6066-1509-13B
- 8) RHM181LW-HW\_CER-62543-001 – Rev2-x06-01
- 9) BlackBerrySystemSimilarity\_RHK211LW\_ RHM181LW
- 10)BlackBerrySystemSimilarity\_ RHM181LW \_RHT181LW
- 11)Test report :1-0042/15-01-05
- 12)Test report :1-0042/15-01-06
- 13)Test report :1-0042/15-01-07
- 14)Test report :1-0042/15-01-08

## C. Product Identification

Manufactured by BlackBerry Limited whose headquarters is located at:  
2200 University Ave. E.  
Waterloo, Ontario  
Canada, N2K 0A7  
Phone: 519 888 7465  
Fax: 519 888 7884

The equipment under test (EUT) was tested at the following locations:  
BlackBerry RTS EMC test facilities

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

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

The testing was performed from July 21 to October 26, 2015.

|                                                                                   |                                                                                                                   |                                                                                   |
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### BlackBerry® smartphone Samples Tested

| Sample | Model               | Hardware Information       | IMEI            | Software Information   |
|--------|---------------------|----------------------------|-----------------|------------------------|
| 1      | RHK211LW (STV100-1) | CER-62541-01 Rev2-x06-01   | 004402243067430 | Software build: AAC056 |
| 2      | RHK211LW (STV100-1) | CER-62541-01 Rev2-x06-01   | 004402243068065 | Software build: AAC056 |
| 3      | RHK211LW (STV100-1) | CER-62541-001 Rev3-x06-01  | 004402243071358 | Software Build: AAC056 |
| 4      | RHK211LW (STV100-1) | CER-62541-001 Rev3-x06-01  | 004402243071390 | Software Build: AAC056 |
| 5      | RHK211LW (STV100-1) | CER-62541-001 Rev3-x06-01  | 004402243070640 | Software Build: AAC056 |
| 6      | RHK211LW (STV100-1) | CER-62541-001 Rev4-x06-01  | 004402243079534 | Software Build: AAC273 |
| 7      | RHK211LW (STV100-1) | CER-62541-001 Rev4-x06-01  | 004402243079500 | Software Build: AAC346 |
| 8      | RHK211LW (STV100-1) | CER-62541-001 Rev4-x06-01  | 004402243079518 | Software Build: AAC396 |
| 9      | RHM181LW (STV100-4) | CER-62543-001 Rev1-x06-01  | 004402243069253 | Software Build: AAC056 |
| 11     | RHM181LW (STV100-4) | CER-62543-001 Rev1-x06-01  | 004402243069311 | Software Build: AAC056 |
| 12     | RHM181LW (STV100-4) | CER-62543-001 Rev 2-x06-01 | 004402243079914 | Software Build: AAC273 |
| 13     | RHM181LW (STV100-4) | CER-62543-001 Rev 2-x06-01 | 004402243080045 | Software Build: AAC273 |
| 14     | RHT181LW (STV100-2) | CER-62544-001 Rev 1-x08-00 | 990004319919183 | Software Build: AAC684 |
| 15     | RHT181LW (STV100-2) | CER-62544-001 Rev 1-x08-00 | 990004319918524 | Software Build: AAC684 |
| 16     | RHT181LW (STV100-2) | CER-62544-001 Rev 1-x08-00 | 990004319918599 | Software Build: AAC684 |

RF Conducted Emissions testing was performed on samples 1, 2,9,10,11,14.

Radiated Emissions testing was performed on samples 3, 4, 5, 6, 7,8,12,13,15,16.

The characteristics that may have been affected by the changes from Rev3-x06-01 to Rev4-x06-01 for RHK211LW were verified/re-tested when necessary.

|                                                                                   |                                                                                                                   |                                                                                   |
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For more details, refer to RHK211LW-HW\_CER-62541-001-Rev3-x06-02, RHK211LW-HW\_CER-62541-001-Rev4-x06-01 and RHM181LW-HW\_CER-62543-001-Rev2-x06-01.

To view the differences between software builds AAC056 to AAC396 for RHK211LW, see document MultiSourceDeclaration\_AAC056\_upto\_AAC273, MultiSourceDeclaration\_AAC273\_upto\_AAC380, and MultiSourceDeclaration\_AAC380\_upto\_AAC396.

The characteristics that may have been affected by the changes from RHK211LW to RHM181LW were verified/re-tested when necessary.  
For more details, refer to BlackBerrySystemSimilarity\_RHK211LW\_RHM181LW

The characteristics that may have been affected by the changes from Rev1-x06-01 to Rev2-x06-01 for RHM181LW were verified/re-tested when necessary.  
For more details, refer to RHM181LW-HW\_CER-62543-001-Rev2-x06-01.

To view the differences between software builds AAC056 to AAC273 for RHM181LW, see document MultiSourceDeclaration\_AAC056\_upto\_AAC273,

The characteristics that may have been affected by the changes from RHK211LW to RHT181LW were verified/re-tested when necessary.  
For more details, refer to BlackBerrySystemSimilarity\_RHM181LW\_RHT181LW

#### **D. Support Equipment Used for the Testing of the EUT**

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

|                                                                                   |                                                                                                                   |                                                                                   |
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## E. Test Results Chart

| SPECIFICATION                                                          |                                              | TEST TYPE                                                           | RESULT | TEST DATA APPENDIX                          |
|------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------------|--------|---------------------------------------------|
| FCC CFR 47                                                             | IC                                           |                                                                     |        |                                             |
| Part 2.1051<br>Part 2.1057<br>Part 22.917<br>Part 24.238               | RSS-132, 5.5<br>RSS-133, 6.5                 | GSM850 / PCS1900 Conducted Spurious Emissions                       | Pass   | 1A                                          |
| Part 2.202<br>Part 2.1049<br>Part 22.917<br>Part 24.238                | RSS-GEN, 6.6                                 | GSM 850 / PCS1900 Occupied Bandwidth and Band Edge                  | Pass   | 1A                                          |
| Part 24.232(d)                                                         | RSS-133, 6.4                                 | PCS1900 Peak to Average Ratio measurements                          | Pass   | 1A                                          |
| Part 2.1055<br>Part 22.863<br>Part 24.235                              | RSS-132, 5.3<br>RSS-133, 6.3                 | GSM 850 /PCS 1900 Frequency Stability vs. Temperature and Voltage   | Pass   | 1B                                          |
| Part 2.1046<br>Part 22.913(a)(2)<br>Part 24.232(b)(c)                  | RSS-132, 5.4<br>RSS-133, 6.4                 | GSM850 ERP<br>PCS1900 EIRP                                          | Pass   | 1C<br>&<br>Test report :<br>1-0042/15-01-05 |
| Part 2.1053<br>Part 22.917<br>Part 24.238                              | RSS-132, 5.5<br>RSS-133, 6.5                 | GSM850 / PCS1900 Radiated Spurious/Harmonic Emissions               | Pass   | 1C<br>&<br>Test report :<br>1-0042/15-01-05 |
| Part 2.1051<br>Part 22.917<br>Part 24.238<br>Part 27.53(h)             | RSS-132, 5.5<br>RSS-133, 6.5<br>RSS-139, 6.5 | WCDMA Band V/III/IV Conducted Spurious Emissions                    | Pass   | 2A                                          |
| Part 2.1049<br>Part 22.917<br>Part 24.238<br>Part 27.53(h)             | RSS-GEN, 6.6                                 | WCDMA Band V/III/IV Occupied Bandwidth and Band Edge                | Pass   | 2A                                          |
| Part 24.232(d)<br>Part 27.50(d)(5)                                     | RSS-133, 6.4<br>RSS-139, 6.4                 | WCDMA Band II/IV Peak to Average Ratio measurements                 | Pass   | 2A                                          |
| Part 2.1055(a)(d)<br>Part 22.917<br>Part 24.235<br>Part 27.54          | RSS-132, 5.3<br>RSS-133, 6.3<br>RSS-139, 6.3 | WCDMA Band V/III/IV Frequency Stability vs. Temperature and Voltage | Pass   | 2B                                          |
| Part 2.1046<br>Part 22.913(a)(2)<br>Part 24.232(c)<br>Part 27.50(d)(4) | RSS-132, 5.4<br>RSS-133, 6.4<br>RSS-139, 6.4 | WCDMA Band V ERP<br>WCDMA Band II/IV EIRP                           | Pass   | 2C<br>&<br>Test report :<br>1-0042/15-01-05 |
| Part 2.1053<br>Part 22.917<br>Part 24.238<br>Part 27.53(h)             | RSS-132, 5.5<br>RSS-133, 6.5<br>RSS-139, 6.5 | WCDMA Band V/III/IV Radiated Spurious/Harmonic Emissions            | Pass   | 2C<br>&<br>Test report :<br>1-0042/15-01-05 |

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|                                                                                   |                                                                                                                   |                                                                                   |
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|                                  |              |                                                            |      |                                             |
|----------------------------------|--------------|------------------------------------------------------------|------|---------------------------------------------|
| Part 2.1051<br>Part 24.238(a)    | RSS-133, 6.5 | LTE Band 2 Conducted Spurious Emissions                    | Pass | 3A                                          |
| Part 2.1049<br>Part 24.238       | RSS-GEN, 6.6 | LTE Band 2 Occupied Bandwidth and Band Edge                | Pass | 3A                                          |
| Part 24.232(d)                   | RSS-133, 6.4 | LTE Band 2 Peak to Average Ratio measurements              | Pass | 3A                                          |
| Part 2.1055(a)(d)<br>Part 24.235 | RSS-133, 6.3 | LTE Band 2 Frequency Stability vs. Temperature and Voltage | Pass | 3B                                          |
| Part 2.1046<br>Part 24.232(b)(c) | RSS-133, 6.4 | LTE Band 2 EIRP                                            | Pass | 3C<br>&<br>Test report :<br>1-0042/15-01-06 |
| Part 2.1053<br>Part 24.238       | RSS-133, 6.5 | LTE Band 2 Radiated Spurious/Harmonic Emissions            | Pass | 3C<br>&<br>Test report :<br>1-0042/15-01-06 |
| Part 2.1051<br>Part 22.917       | RSS-132, 5.5 | LTE Band 5 Conducted Spurious Emissions                    | Pass | 4A                                          |
| Part 2.1049<br>Part 22.917       | RSS-GEN, 6.6 | LTE Band 5 Occupied Bandwidth and Band Edge                | Pass | 4A                                          |
| Part 2.1055(a)(d)<br>Part 22.917 | RSS-132, 5.3 | LTE Band 5 Frequency Stability vs. Temperature and Voltage | Pass | 4B                                          |
| Part 2.1046<br>Part 22.913(a)(2) | RSS-132, 5.4 | LTE Band 5 ERP                                             | Pass | 4C                                          |
| Part 2.1053<br>Part 22.917       | RSS-132, 5.5 | LTE Band 5 Radiated Spurious/Harmonic Emissions            | Pass | 4C                                          |
| Part 2.1051<br>Part 27.53(h)     | RSS-139, 6.5 | LTE Band 4 Conducted Spurious Emissions                    | Pass | 5A                                          |
| Part 2.1049<br>Part 27.53(h)     | RSS-GEN, 6.6 | LTE Band 4 Occupied Bandwidth and Band Edge                | Pass | 5A                                          |
| Part 27.50(d)(5)                 | RSS-139, 6.4 | LTE Band 4 Peak to Average Ratio measurements              | Pass | 5A                                          |
| Part 2.1055<br>Part 27.54        | RSS-139, 6.3 | LTE Band 4 Frequency Stability vs. Temperature and Voltage | Pass | 5B                                          |
| Part 2.1046<br>Part 27.50(d)(4)  | RSS-139, 6.4 | LTE Band 4 EIRP                                            | Pass | 5C<br>&<br>Test report :<br>1-0042/15-01-07 |

|                                                                                   |                                                                                                                   |                                                                                   |
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|                                  |              |                                                                |      |                                             |
|----------------------------------|--------------|----------------------------------------------------------------|------|---------------------------------------------|
| Part 2.1053<br>Part 27.53(h)     | RSS-139, 6.5 | LTE Band 4 Radiated<br>Spurious/Harmonic Emissions             | Pass | 5C<br>&<br>Test report :<br>1-0042/15-01-07 |
| Part 2.1051<br>Part 27.53(g)     | RSS-130, 4.6 | LTE Band 12 Conducted<br>Spurious Emissions                    | Pass | 6A                                          |
| Part 2.1049<br>Part 27.53(g)     | RSS-GEN, 6.6 | LTE Band 12 Occupied<br>Bandwidth and Band Edge                | Pass | 6A                                          |
| Part 27.50(c)(11)                | RSS-130, 4.4 | LTE Band 12 Peak to Average<br>Ratio measurements              | Pass | 6A                                          |
| Part 2.1055<br>Part 27.54        | RSS-130, 4.3 | LTE Band 12 Frequency Stability<br>vs. Temperature and Voltage | Pass | 6B                                          |
| Part 2.1046<br>Part 27.50(c)(10) | RSS-130, 4.4 | LTE Band 12 ERP                                                | Pass | 6C                                          |
| Part 2.1053<br>Part 27.53(g)     | RSS-130, 4.6 | LTE Band 12 Radiated<br>Spurious/Harmonic Emissions            | Pass | 6C                                          |
| Part 2.1051<br>Part 27.53(g)     | RSS-130, 4.6 | LTE Band 17 Conducted<br>Spurious Emissions                    | Pass | 7A                                          |
| Part 2.1049<br>Part 27.53(g)     | RSS-GEN, 6.6 | LTE Band 17 Occupied<br>Bandwidth and Band Edge                | Pass | 7A                                          |
| Part 27.50(c)(11)                | RSS-130, 4.4 | LTE Band 17 Peak to Average<br>Ratio measurements              | Pass | 7A                                          |
| Part 2.1055<br>Part 27.54        | RSS-130, 4.3 | LTE Band 17 Frequency Stability<br>vs. Temperature and Voltage | Pass | 7B                                          |
| Part 2.1046<br>Part 27.50(c)(10) | RSS-130, 4.4 | LTE Band 17 ERP                                                | Pass | 7C<br>&<br>Test report :<br>1-0042/15-01-07 |
| Part 2.1053<br>Part 27.53(g)     | RSS-130, 4.6 | LTE Band 17 Radiated<br>Spurious/Harmonic Emissions            | Pass | 7C<br>&<br>Test report :<br>1-0042/15-01-07 |
| Part 2.1051<br>Part 27.53(a)(4)  | RSS-195, 5.6 | LTE Band 30 Conducted<br>Spurious Emissions                    | Pass | 8A                                          |
| Part 2.1049<br>Part 27.53(a)(4)  | RSS-GEN, 6.6 | LTE Band 30 Occupied<br>Bandwidth and Band Edge                | Pass | 8A                                          |
| Part 27.50(a)(3)                 | RSS-195, 5.5 | LTE Band 30 Peak to Average<br>Ratio measurements              | Pass | 8A                                          |

|                                                                                   |                                                                                                                   |                                                                                   |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

|                                                    |                              |                                                                     |      |                                             |
|----------------------------------------------------|------------------------------|---------------------------------------------------------------------|------|---------------------------------------------|
| Part 2.1055<br>Part 27.54                          | RSS-195, 5.4                 | LTE Band 30 Frequency Stability vs. Temperature and Voltage         | Pass | 8B                                          |
| Part 2.1046<br>Part 27.50(a)(3)                    | RSS-195, 5.5                 | LTE Band 30 ERP                                                     | Pass | 8C                                          |
| Part 2.1053<br>Part 27.53(a)(4)                    | RSS-195, 5.6                 | LTE Band 30 Radiated Spurious/Harmonic Emissions                    | Pass | 8C                                          |
| Part 2.1051<br>Part 27.53(c)                       | RSS-130, 4.6                 | LTE Band 13 Conducted Spurious Emissions                            | Pass | 9A                                          |
| Part 2.1049<br>Part 27.53(c)                       | RSS-GEN, 6.6                 | LTE Band 13 Occupied Bandwidth and Band Edge                        | Pass | 9A                                          |
| Part 27.50(b)(12)                                  | RSS-130, 4.4                 | LTE Band 13 Peak to Average Ratio measurements                      | Pass | 9A                                          |
| Part 2.1055<br>Part 27.54                          | RSS-130, 4.3                 | LTE Band 13 Frequency Stability vs. Temperature and Voltage         | Pass | 9B                                          |
| Part 2.1046<br>Part 27.50(b)(10)                   | RSS-130, 4.4                 | LTE Band 13 ERP                                                     | Pass | 9C<br>&<br>Test report :<br>1-0042/15-01-07 |
| Part 2.1053<br>Part 27.53(c)                       | RSS-130, 4.6                 | LTE Band 13 Radiated Spurious/Harmonic Emissions                    | Pass | 9C<br>&<br>Test report :<br>1-0042/15-01-07 |
| Part 2.1051<br>Part 22.917<br>Part 24.238          | RSS-132, 5.5<br>RSS-133, 6.5 | CDMA Cellular / PCS Conducted Spurious Emissions                    | Pass | 10A                                         |
| Part 2.1049<br>Part 22.917<br>Part 24.238          | RSS-GEN, 6.6                 | CDMA Cellular / PCS Occupied Bandwidth and Band Edge                | Pass | 10A                                         |
| Part 24.232(d)                                     | RSS-133, 6.4                 | CDMA PCS Peak to Average Ratio measurements                         | Pass | 10A                                         |
| Part 2.1055(a)(d)<br>Part 22.917<br>Part 24.235    | RSS-132, 5.3<br>RSS-133, 6.3 | CDMA Cellular / PCS Frequency Stability vs. Temperature and Voltage | Pass | 10B                                         |
| Part 2.1046<br>Part 22.913(a)(2)<br>Part 24.232(c) | RSS-132, 5.4<br>RSS-133, 6.4 | CDMA Cellular ERP<br>CDMA PCS EIRP                                  | Pass | 10C                                         |
| Part 2.1053<br>Part 22.917<br>Part 24.238          | RSS-132, 5.5<br>RSS-133, 6.5 | CDMA Cellular / PCS Radiated Spurious/Harmonic Emissions            | Pass | 10C                                         |

|                                                                                   |                                                                                                                   |                                                                                   |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## F.Summary of Results

### 1) Conducted RF Emission Measurements

The following test configurations were measured on model RHK211LW (STV100-1):

- The BlackBerry® smartphone, herein after referred to as EUT, met the requirements of the Tx Conducted Spurious Emissions in the GSM850 as per 47 CFR 2.1051, 22.917, 22.901(d) and RSS-132, 5.5. The EUT was measured on the low, middle and high channels. The frequency range investigated was from 30 MHz to 10 GHz.

See APPENDIX 1A for test data.

The EUT met the requirements of the Tx Conducted Spurious Emissions in the PCS1900 as per 47 CFR 2.1051, 24.238(a) and RSS-133, 6.5. The EUT was measured on the low, middle and high channels. The frequency range investigated was from 30 MHz to 20 GHz.

See APPENDIX 1A for test data

The EUT met the requirements of the Occupied Bandwidth and Band Edge in the GSM850 as per 47 CFR 2.202, 22.917 and RSS-GEN, 6.6. The EUT was measured in GSM and EDGE mode on the low, middle and high channels. The worst case occupied bandwidth was 246 kHz on low channel in CALL mode, and 246 kHz on middle channel in EDGE mode.

See APPENDIX 1A for test data.

The EUT met the requirements of the Occupied Bandwidth and Band Edge in the PCS1900 as per 47 CFR 2.202, 24.238 and RSS-GEN, 6.6. The EUT was measured in GSM and EDGE mode on the low, middle and high channels. The worst case occupied bandwidth was 247.0 kHz on middle channel in CALL mode, and 245 kHz on the middle channel in EDGE mode.

See APPENDIX 1A for test data.

The EUT met the requirements of the Tx Peak to Average Ratio in the PCS1900 as per 47 CFR 24.232 (5)(d) and RSS-133, 6.4. The EUT was measured on the low, middle and high channels. The worst case Peak to Average Ratio was 9.79 dB on mid channel.

See APPENDIX 1A for test data

|                                                                                   |                                                                                                                   |                                                                                   |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

The EUT met the requirements of the Frequency Stability in the GSM850 as per 47 CFR 2.1055, 22.917 and RSS-132, 5.3. The EUT was measured in GSM850 mode on the low, middle and high channels.  
See APPENDIX 1B for test data.

The EUT met the requirements of the Frequency Stability in the PCS1900 as per 47 CFR 2.1055, 24.235 and RSS-133, 6.3. The EUT was measured in PCS1900 mode on the low, middle and high channels.  
See APPENDIX 1B for test data.

- The EUT met the requirements of the Tx Conducted Spurious Emissions in the WCDMA band V as per 47 CFR 2.1051, 22.917, 22.901(d) and RSS-132, 5.5. The EUT was measured on the low, middle and high channels. The frequency range investigated was from 30 MHz to 10 GHz.  
See APPENDIX 2A for test data.

The EUT met the requirements of the Tx Conducted Spurious Emissions in the WCDMA band II as per 47 CFR 2.1051, 24.238(a) and RSS-133, 6.5. The EUT was measured on the low, middle and high channels. The frequency range investigated was from 30 MHz to 20 GHz.  
See APPENDIX 2A for test data

The EUT met the requirements of the Tx Conducted Spurious Emissions in the WCDMA Band IV as per 47 CFR 2.1051, 27.53 and RSS-139, 6.5. The EUT was measured on the low, middle and high channels. The frequency range investigated was from 30 MHz to 20 GHz.  
See APPENDIX 2A for test data

The EUT met the requirements of the Occupied Bandwidth and channel mask in the WCDMA band V as per 47 CFR 2.202, 22.917 and RSS-GEN, 6.6. The EUT was measured in Voice and HSUPA mode on the low, middle and high channels. The worst case occupied bandwidth was 4.140 MHz on all channels in Loopback mode, and 4.150 MHz on the high channel in HSUPA mode.  
See APPENDIX 2A for test data.

The EUT met the requirements of the Occupied Bandwidth and channel mask in the WCDMA band II as per 47 CFR 2.202, 24.238 and RSS-GEN, 6.6. The EUT was measured in Voice and HSUPA mode on the low, middle and high channels. The worst case occupied bandwidth was 4.155 MHz on the middle channel in Loopback mode, and 4.155 MHz on the low and middle channel in HSUPA mode.  
See APPENDIX 2A for test data.

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|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

The EUT met the requirements of the Occupied Bandwidth and channel mask in the WCDMA band IV as per 47 CFR 2.1051, 27.53 and RSS-GEN, 6.6. The EUT was measured in Voice and HSUPA mode on the low, middle and high channels. The worst case occupied bandwidth was 4.135 MHz on the low and high channel in Loopback mode, and 4.140 MHz on the all channels in HSUPA mode. See APPENDIX 2A for test data.

The EUT met the requirements of the Tx Peak to Average Ratio in the WCDMA Band II as per 47 CFR Part 27.50 (d)(5) and RSS-139, 6.4. The EUT was measured on the low, middle and high channels. The worst case Peak to Average Ratio was 7.17 dB on middle channel. See APPENDIX 2A for test data

The EUT met the requirements of the Tx Peak to Average Ratio in the WCDMA Band IV as per 47 CFR 24.232 (5)(d) and RSS-139, 6.4. The EUT was measured on the low, middle and high channels. The worst case Peak to Average Ratio was 6.99 dB on high channel. See APPENDIX 2A for test data

The EUT met the requirements of the Frequency Stability in the WCDMA band V as per 47 CFR 2.1055 and RSS-132, 5.3. The EUT was measured in WCDMA band V mode on the low, middle and high channels. See APPENDIX 2B for test data.

The EUT met the requirements of the Frequency Stability in the WCDMA band II as per 47 CFR 2.1055, 24.235 and RSS-133, 6.3. The EUT was measured in WCDMA band II mode on the low, middle and high channels. See APPENDIX 2B for test data.

The EUT met the requirements of the Frequency Stability in the WCDMA Band IV as per 47 CFR 2.1055, 27.54 and RSS-139, 6.3. The EUT was measured in WCDMA Band IV mode on the low, middle and high channels. See APPENDIX 2B for test data.

- The EUT met the requirements of the Tx Conducted Spurious Emissions in the LTE Band 2 as per 47 CFR 2.1051, 24.238, 24.50(d), RSS-133, 6.5. The EUT was measured on the low, middle and high channels in all bandwidths for LTE Band 2 with both QPSK and 16-QAM modulations. Resource Block allocations 100, 50, 25, 6, 3 and 1 were tested. The frequency range investigated was from 30 MHz to 20 GHz. See APPENDIX 3A for test data.

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|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

The EUT met the requirements of the Occupied Bandwidth and Band Edge in the LTE Band 2 as per 47 CFR 2.202, 24.238 and RSS-GEN, 6.6. The EUT was measured on the low, middle and high channels in all bandwidths and both modulations. Resource Block allocations 100, 75, 50, 25, 15 and 6 were tested. The worst case occupied bandwidth was 17.93 MHz on the low and high channel in 20MHz BW, RB allocation 100 and QPSK modulation.

See Appendix 3A for test data

The EUT met the requirements of the Tx Peak to Average Ratio in the LTE Band 2 as per 47 CFR 24.232 (5)(d) and RSS-133, 6.4. The EUT was measured on the low, middle and high channels in all bandwidths with both modulations QPSK and 16-QAM. RB allocations 100, 50, 25, 6 and 3 were tested. The worst case Peak to Average Ratio was 10.70 dB on mid channel in 10MHz bandwidth with RB allocation 50.

See APPENDIX 3A for test data

The EUT met the requirements of the Frequency Stability in the LTE Band 2 as per 47 CFR 2.1055, 24.235 and RSS-133, 6.3. The EUT was measured in LTE Band 2 mode on the low, middle and high channels in 20MHz BW with RB allocation 100 and QPSK modulation.

See APPENDIX 3B for test data.

- The EUT met the requirements of the Tx Conducted Spurious Emissions in the LTE Band 5 as per 47 CFR 2.1051, 22.917, 22.901(d), RSS-132, 5.5. The EUT was measured on the low, middle and high channels in all bandwidths for LTE Band 5 with QPSK and 16-QAM modulations. Resource Block allocations 50, 25, 15, 6, 3 and 1 were tested. The frequency range investigated was from 30 MHz to 10 GHz.

See APPENDIX 4A for test data.

The EUT met the requirements of the Occupied Bandwidth and Band Edge in the LTE Band 5 as per 47 CFR 2.202, 22.917 and RSS-GEN, 6.6. The EUT was measured on the low, middle and high channels in 1.4MHz, 3MHz, and 5MHz and 10MHz bandwidths for LTE Band 5 with QPSK and 16-QAM modulations. Resource Block allocations 50, 25, 15 and 6 were tested. The worst case occupied bandwidth was 8.97 MHz on the low and high channel in 10MHz BW, RB allocation 50 and 16QAM modulation.

See APPENDIX 4A for test data.

The EUT met the requirements of the Frequency Stability in the LTE Band 5 as per 47 CFR 2.1055, 22.917 and RSS-132, 5.3. The EUT was measured on the low, middle and high channels in all bandwidths for LTE Band 5 with QPSK and 16-QAM modulations. RB allocation 100 was tested.

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|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

See APPENDIX 4B for test data.

- The EUT met the requirements of the Tx Conducted Spurious Emissions in the LTE Band 4 as per 47 CFR 2.1051, 27.53 and RSS-139, 6.5. The EUT was measured on the low, middle and high channels in all bandwidths for LTE Band 4 with QPSK and 16-QAM modulations. Resource Block allocations 100, 50, 25, 6, 3 and 1 were tested. The frequency range investigated was from 30 MHz to 20 GHz.

The EUT met the requirements of the Occupied Bandwidth and Band Edge in the LTE Band 4 as per 47 CFR 2.1049, 27.53 and RSS-GEN, 6.6. The EUT was measured on the low, middle and high channels in all bandwidths and both modulations. Resource Block allocations 100, 75, 50, 15 and 6 were tested. The worst case occupied bandwidth was 17.98 MHz on the high channel in 20MHz BW, RB allocation 100 and 16QAM modulation.

See Appendix 5A for test data

The EUT met the requirements of the Tx Peak to Average Ratio in the LTE Band 4 as per 47 CFR 27.50 (5)(d) and RSS-139, 6.4. The EUT was measured on the low, middle and high channels in all bandwidths for LTE Band 4 with QPSK and 16-QAM modulations. RB allocations 100, 50, 25, 6 and 3 were tested. The worst case Peak to Average Ratio was 9.96 dB on middle channel in 10MHz bandwidth with RB allocation 50.

See APPENDIX 5A for test data

The EUT met the requirements of the Frequency Stability in the LTE Band 4 as per 47 CFR 2.1055, 27.54 and RSS-139, 6.3. The EUT was measured in LTE Band 4 mode on the low, middle and high channels in 20MHz BW with RB allocation 100 and QPSK modulation.

See APPENDIX 5B for test data.

- The EUT met the requirements of the Tx Conducted Spurious Emissions in the LTE Band 12 as per 47 CFR 2.1051, 27.53 and RSS-130, 4.6. The EUT was measured on the low, middle and high channels in 5MHz and 10MHz, bandwidths for LTE Band 12 with QPSK and 16-QAM modulations. Resource Block Allocations 100, 50, 25 and 1 were tested. The frequency range investigated was from 30 MHz to 20 GHz.

See Appendix 6A for test data

The EUT met the requirements of the Occupied Bandwidth and Band Edge in the LTE Band 12 as per 47 CFR 2.1049, 27.53 and RSS-GEN, 6.6. The EUT was measured on the low, middle and high channels. Resource Block allocations 50 and 25 were tested. The worst case occupied bandwidth was 8.966 MHz on the middle channel in 10MHz BW, RB allocation 50 and QPSK modulation.

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|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

See Appendix 6A for test data

The EUT met the requirements of the Tx Peak to Average Ratio in the LTE Band 12 as per 47 CFR 27.50 (5)(d). The EUT was measured on the low, middle and high channels in 5MHz and 10MHz bandwidths for LTE Band 12 with QPSK and 16-QAM modulations. Resource Block allocation 50, 25 and 15 were tested. The worst case Peak to Average Ratio was 9.70 dB on middle channel in 10MHz bandwidth with RB allocation 25.

See APPENDIX 6A for test data

The EUT met the requirements of the Frequency Stability in the LTE Band 12 as per 47 CFR 2.1055, 27.54 and RSS-GEN, 4.3. The EUT was measured in LTE Band 12 mode on the low, middle and high channels in 20MHz BW with RB allocation 100 and QPSK modulation.

See APPENDIX 6B for test data.

- The EUT met the requirements of the Tx Conducted Spurious Emissions in the LTE Band 17 as per 47 CFR 2.1051, 27.53, and RSS-130, 4.6. The EUT was measured on the low, middle and high channels in 5MHz and 10MHz, bandwidths for LTE Band 17 with QPSK and 16-QAM modulations. Resource Block Allocations 100, 50, 25 and 1 were tested. The frequency range investigated was from 30 MHz to 20 GHz.

See Appendix 7A for test data

The EUT met the requirements of the Occupied Bandwidth and Band Edge in the LTE Band 17 as per 47 CFR 2.1049, 27.53 and RSS-GEN, 6.6. The EUT was measured on the low, middle and high channels. The worst case occupied bandwidth was 8.990MHz on the high channel in 10MHz BW, RB allocation 50 and QPSK modulation.

See Appendix 7A for test data

The EUT met the requirements of the Tx Peak to Average Ratio in the LTE Band 17 as per 47 CFR 27.50 (5)(d). The EUT was measured on the low, middle and high channels in 5MHz and 10MHz bandwidths for LTE Band 17 with QPSK and 16-QAM modulations. Resource Block allocations 50, 25 and 15 were tested. The worst case Peak to Average Ratio was 9.93 dB on middle channel in 10MHz bandwidth with RB allocation 50.

See APPENDIX 7A for test data

The EUT met the requirements of the Frequency Stability in the LTE Band 17 as per 47 CFR 2.1055, 27.54 and RSS-130, 4.3. The EUT was measured in LTE Band 17 mode on the low, middle and high channels in 20MHz BW with RB allocation 100 and QPSK modulation.

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|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

See APPENDIX 7B for test data.

- The EUT met the requirements of the Tx Conducted Spurious Emissions in the LTE Band 30 as per 47 CFR 2.1051, 27.53, and RSS-130, 4.6. The EUT was measured on the low, middle and high channels in 5MHz and 10MHz, bandwidths for LTE Band 30 with QPSK and 16-QAM modulations. Resource Block Allocations 100, 50, 25 and 1 were tested. The frequency range investigated was from 30 MHz to 20 GHz.

See Appendix 8A for test data

The EUT met the requirements of the Occupied Bandwidth and Band Edge in the LTE Band 30 as per 47 CFR 2.1049, 27.53 and RSS-GEN, 6.6. The EUT was measured on the low, middle and high channels. The worst case occupied bandwidth was 8.940MHz on the middle channel in 10MHz BW, RB allocation 50 and QPSK modulation.

See Appendix 8A for test data

The EUT met the requirements of the Tx Peak to Average Ratio in the LTE Band 30 as per 47 CFR 27.50 (5)(d). The EUT was measured on the low, middle and high channels in 5MHz and 10MHz bandwidths for LTE Band 30 with QPSK and 16-QAM modulations. Resource Block allocations 50, 25 and 15 were tested. The worst case Peak to Average Ratio was 9.93 dB on middle channel in 10MHz bandwidth with RB allocation 50.

See APPENDIX 8A for test data

The EUT met the requirements of the Frequency Stability in the LTE Band 30 as per 47 CFR 2.1055, 27.54 and RSS-130, 4.3. The EUT was measured in LTE Band 30 mode on the low, middle and high channels in 20MHz BW with RB allocation 100 and QPSK modulation.

See APPENDIX 8B for test data.

The following test configurations were measured on model RHT181LW (STV100-2):

#### LTE 13

- The EUT met the requirements of the Tx Conducted Spurious Emissions in the LTE Band 13 as per 47 CFR 2.1051, 27.53, and RSS-130, 4.6. The EUT was measured on the low, middle and high channels in 5MHz and 10MHz, bandwidths for LTE Band 13 with QPSK and 16-QAM modulations. Resource Block Allocations 100, 50, 25 and 1 were tested. The frequency range investigated was from 30 MHz to 20 GHz.

See Appendix 9A for test data

|                                                                                   |                                                                                                                   |                                                                                   |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

The EUT met the requirements of the Occupied Bandwidth and Band Edge in the LTE Band 13 as per 47 CFR 2.1049, 27.53. The EUT was measured on the low, middle and high channels. The worst case occupied bandwidth was 8.942 MHz on the middle channel in 10MHz BW, RB allocation 50 and QPSK modulation. See Appendix 9A for test data

The EUT met the requirements of the Tx Peak to Average Ratio in the LTE Band 13 as per 47 CFR 27.50 (5)(d). The EUT was measured on the low, middle and high channels in 5MHz and 10MHz bandwidths for LTE Band 13 with QPSK and 16-QAM modulations. Resource Block allocations 50, 25 and 15 were tested. The worst case Peak to Average Ratio was 10.22 dB on middle channel in 10MHz bandwidth with RB allocation 50. See APPENDIX 9A for test data

The EUT met the requirements of the Frequency Stability in the LTE Band 13 as per 47 CFR 2.1055, 27.54. The EUT was measured in LTE Band 13 mode on the low, middle and high channels in 10MHz BW with RB allocation 100 and QPSK modulation. See APPENDIX 9B for test data.

- The EUT met the requirements of the Conducted Spurious Emissions in the CDMA Cellular band as per 47 CFR 2.1051, CFR 22.917 and RSS-Gen, 4.9. The EUT was measured in Loopback and 1xEVDO mode on the low, middle and high channels. The frequency range investigated was from 30 MHz to 10 GHz. See APPENDIX 10A for the test data.

The BlackBerry® smartphone met the requirements of the Conducted Spurious Emissions in the CDMA PCS band as per 47 CFR 2.1051, CFR 24.238. The EUT was measured in Loopback and 1xEVDO mode on the low, middle and high channels. The frequency range investigated was from 30 MHz to 20 GHz. See APPENDIX 10A for the test data.

The BlackBerry® smartphone met the requirements of the Occupied Bandwidth in the CDMA Cellular band as per 47 CFR 2.1049, CFR 22.917. The EUT was measured in Loopback and 1xEVDO mode on the low, middle and high channels. The worst case occupied bandwidth was 1.286 MHz on low channel in Loopback mode and 1.274 MHz on low and middle channel in 1xEVDO mode. See APPENDIX 10A for the test data.

The BlackBerry® smartphone met the requirements of the Occupied Bandwidth and channel mask in the CDMA PCS band as per 47 CFR 2.1049, CFR 24.238. The EUT was measured in Loopback and 1xEVDO mode on the low, middle and high

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|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

channels. The worst case occupied bandwidth was 1.284 MHz on middle channel in Loopback mode and 1.282 MHz on low channel in 1xEVDO mode.

See APPENDIX 10A for the test data.

The BlackBerry® smartphone met the requirements of the Frequency Stability vs. Temperature and Voltage for CDMA Cellular band as per 47 CFR 2.1055. The EUT was measured in Cellular mode on the low, middle and high channels.

See APPENDIX 10B for test data.

The BlackBerry® smartphone met the requirements of the Frequency Stability vs. Temperature and Voltage requirements for the PCS band as per 47 CFR 2.1055, CFR 24.238. The EUT was measured in CDMA PCS mode on the low, middle and high channels.

See APPENDIX 10B for test data.

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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## 2) Radiated Emission Measurements

The radiated spurious emissions/harmonics and ERP/EIRP were measured for GSM 850 and PCS 1900. The results are within the limits. The BlackBerry® smartphone was placed on a nonconductive styrofoam table, 80 cm high that was positioned on a remotely controlled turntable. The test distance used between the BlackBerry® smartphone and the receiving antenna was three meters. Then the emissions were maximized by elevating the antenna in the range of 1 to 4 meters. 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 meters. The signal generator output was then adjusted to match the BlackBerry® smartphone output reading. The signal generator output was recorded.

The following measurements were done in a semi-anechoic chamber (SAC) below 1 GHz and a CISPR compliant modified Semi-anechoic Chamber (Mod 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 modified 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 on model RHK211LW (STV100-1):

- a) The radiated spurious emissions/harmonics and ERP/EIRP were measured for GSM 850 and PCS 1900. The results are within the limits.
  - The highest ERP in the 850 band Call mode measured was 30.18 dBm (1.04 W) at 848.80 MHz (channel 251)
  - The highest ERP in the 850 band EDGE mode measured was 28.18 dBm (0.66 W) at 836.60 MHz (channel 190).
  - The highest EIRP in the PCS band Call mode measured was 30.94 dBm (1.24 W) at 1880 MHz (channel 661).
  - The highest EIRP in the PCS band EDGE mode measured was 30.01 dBm (1.00 W) at 1850.20 MHz (channel 512).

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|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

The radiated spurious emission and carrier harmonics were measured up to the 10<sup>th</sup> harmonic for low, middle, and high channels in the GSM 850 and PCS 1900. Each band was measured in CALL and EDGE modes, with both the horizontal and vertical polarizations.

- The worst margin was 19.7 dB below the limit at 2509.72 MHz in Call mode in band GSM850.
- All margins in the GSM850 for harmonic emissions were at least 25 dB below the limit for all test frequencies in EDGE mode.
- All margins in the PCS1900 for harmonic emissions were at least 25 dB below the limit for all test frequencies in CALL mode.
- All margins in the PCS1900 for harmonic emissions were at least 25 dB below the limit for all test frequencies in EDGE mode.

See Appendix 1C for test data.

b) The radiated spurious emissions/harmonics and ERP/EIRP were measured for WCDMA Band II/IV/V.

- The highest ERP in the WCDMA band V, Call Service mode was 23.58 dBm (0.23 W) at 846.60 MHz (channel 4233).
- The highest ERP in the WCDMA band V, HSUPA mode was 21.43 dBm (0.14 W) at 846.60 MHz (channel 4233).
- The highest EIRP in the WCDMA band II, Call Service mode measured was 27.65 dBm (0.58 W) at 1852.4 MHz (channel 9262).
- The highest EIRP in the WCDMA band II, HSUPA mode measured was 25.95 dBm (0.39 W) at 1852.4 MHz (channel 9262).
- The highest EIRP in the WCDMA band IV, Call Service mode measured was 26.89 dBm (0.49 W) at 1752.6 MHz (channel 1513).
- The highest EIRP in the WCDMA band IV, HSUPA mode measured was 25.60 dBm (0.36 W) at 1712.4 MHz (channel 1312).

The radiated spurious emissions and harmonics were measured up to the 10<sup>th</sup> harmonic for low, middle and high channels in the WCDMA Band V, WCDMA Band

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|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

II, and WCDMA Band IV. Each band was measured in Call, and HSUPA modes. Both the horizontal and vertical polarizations were measured.

- All margins in the WCDMA Band V for harmonic emissions were at least 25 dB below the limit for all test frequencies.
- All margins in the WCDMA Band II for harmonic emissions were at least 25 dB below the limit for all test frequencies.
- All margins in the WCDMA Band IV for harmonic emissions were at least 25 dB below the limit for all test frequencies.

See Appendix 2C for test data.

- c) The radiated spurious emissions/harmonics and ERP were measured for LTE Band 2.

The EUT was measured on the low, middle and high channels in 20MHz bandwidths for LTE Band 2 with QPSK and 16-QAM modulations. Resource Block Allocation 1 was measured.

- The highest EIRP in the LTE Band 2 measured was 24.92 dBm (0.31 W) at 1899.90 MHz (channel 19099) in 20 MHz BW, RB allocation 1 and QPSK modulation and
- The highest EIRP in the LTE Band 2 measured was 23.98 dBm (0.25 W) at 1880.00 MHz (channel 18900) in 20 MHz BW, RB allocation 1 and 16-QAM modulation.

The radiated spurious emissions and harmonics were measured up to the 10<sup>th</sup> harmonic. The EUT was measured on the low, middle and high channels in the worst bandwidth 15MHz bandwidth for LTE Band 2 with QPSK and 16-QAM modulations as per conducted power. Resource Block Allocation 1 was measured.

- All margins in the LTE Band 2 for harmonic emissions were at least 25 dB below the limit for all test frequencies.

See Appendix 3C for test data.

- d) The radiated spurious emissions/harmonics and ERP were measured for LTE Band 5.

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|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

The EUT was measured on the low, middle and high channels in 3 and 10 MHz bandwidth for LTE Band 5 with QPSK and 16-QAM modulations. Resource Block Allocation 1 was measured.

- The highest EIRP in the LTE Band 5 measured was 20.43dBm (0.11 W) at 826.50 MHz (channel 20425) in 5 MHz BW, 1 RB and QPSK modulation.
- The highest EIRP in the LTE Band 5 measured was 19.72dBm (0.09 W) at 846.40 MHz (channel 20624) in 5 MHz BW, 1 RB and 16-QAM modulation.

The radiated spurious emission and harmonics were measured up to the 10<sup>th</sup> harmonic. The EUT was measured on the low, middle and high channels in the worst bandwidth 3MHz bandwidths for LTE Band 5 with QPSK and 16-QAM modulations as per conducted power. Resource Block Allocation 1 was measured.

- All margins in the LTE Band 5 for harmonic emissions were at least 25 dB below the accepted limits for all test frequencies.

See Appendix 4C for test data.

- e) The radiated spurious emissions/harmonics and ERP were measured for LTE Band 4.

The EUT was measured on the low, middle and high channels in 1.4MHz, 5MHz and 20MHz bandwidths for LTE Band 4 with QPSK and 16-QAM modulations. Resource Block Allocation 1 was measured.

- The highest EIRP in the LTE Band 4 measured was 25.94 dBm (0.39 W) at 1732.50 MHz (channel 20175) in 20MHz BW, RB allocation 1 and QPSK modulation.
- The highest EIRP in the LTE Band 4 measured was 25.11 dBm (0.32 W) at 1715.00 MHz (channel 20000) in 20MHz BW, RB allocation 1 and 16-QAM modulation.

The radiated spurious emission and harmonics were measured up to the 10<sup>th</sup> harmonic. The EUT was measured on the low, middle and high channels in the worst bandwidth 5MHz bandwidth for LTE Band 4 with QPSK and 16-QAM modulations as per conducted power. Resource Block Allocation 1 was measured

- All margins in the LTE Band 4 for harmonic emissions were at least 25 dB below the limit for all test frequencies.

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|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

See Appendix 5C for test data.

- f) The radiated spurious emissions/harmonics and ERP were measured for LTE Band 12.

The EUT was measured on the low, middle and high channels in 5MHz and 10MHz bandwidths for LTE Band 12 with QPSK and 16-QAM modulations. Resource Block Allocation 25 was measured.

- The highest EIRP in the LTE Band 12 measured was 22.17 dBm (0.16 W) at 713.40 MHz (channel 23154) in 5MHz BW, 25 RB and QPSK modulation.
- The highest EIRP in the LTE Band 12 measured was 21.14 dBm (0.13 W) at 713.40MHz (channel 23154) in 5MHz BW, 25 RB and 16-QAM modulation.

The radiated spurious emission and harmonics were measured up to the 10<sup>th</sup> harmonic. The EUT was measured on the low, middle and high channels in the worst bandwidth 10MHz bandwidth for LTE Band 12 with QPSK and 16-QAM modulations as per conducted power. Resource Block Allocation 25 was measured

- All margins in the LTE Band 12 for harmonic emissions were at least 25 dB below the limit for all test frequencies.

See Appendix 6C for test data.

- g) The radiated spurious emissions/harmonics and ERP were measured for LTE Band 17.

The EUT was measured on the low, middle and high channels in 5MHz and 10 MHz bandwidths for LTE band 17 with QPSK and 16-QAM modulations. Block Allocation 1 was measured.

- The highest EIRP in the LTE band 17 measured was 20.70 dBm (0.12 W) at 710.00 MHz (channel 23790) in 10MHz BW, RB allocation 1 and QPSK modulation.
- The highest EIRP in the LTE band 17 measured was 19.80 dBm (0.10 W) at 709.00 MHz (channel 23780) in 10MHz BW, RB allocation 1 and 16-QAM modulation.

The radiated spurious emission and harmonics were measured up to the 10<sup>th</sup> harmonic. The EUT was measured on the low, middle and high channels in the worst bandwidth 10 MHz bandwidth for LTE Band 17 with QPSK and 16-QAM modulations as per conducted power. Resource Block Allocation 1 was measured.

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|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

- All margins in the LTE Band 17 for harmonic emissions were at least 25 dB below the limit for all test frequencies.

See Appendix 7C for test data.

- h) The radiated spurious emissions/harmonics and ERP were measured for LTE Band 30.

The EUT was measured on the low, middle and high channels in 5MHz and 10 MHz bandwidths for LTE band 30 with QPSK and 16-QAM modulations. Block Allocation 1 was measured.

- The highest EIRP in the LTE band 30 measured was 23.52 dBm (0.22 W) at 2312.40 MHz (channel 23154) in 5MHz BW, RB allocation 1 and QPSK modulation.
- The highest EIRP in the LTE band 30 measured was 22.95 dBm (0.20 W) at 2310 MHz (channel 27710) in 10MHz BW, RB allocation 1 and 16-QAM modulation.

The radiated spurious emission and harmonics were measured up to the 10<sup>th</sup> harmonic. The EUT was measured on the low, middle and high channels in the worst bandwidth 10 MHz bandwidth for LTE Band 30 with QPSK and 16-QAM modulations as per conducted power. Resource Block Allocation 1 was measured.

- All margins in the LTE Band 30 for harmonic emissions were at least 25 dB below the limit for all test frequencies.

See Appendix 8C for test data.

The following test configurations were measured on model RHT181LW (STV100-2):

- a) The radiated spurious emissions/harmonics and ERP/EIRP were measured for GSM 850. The results are within the limits.
- The highest ERP in the GSM 850 Call mode measured was 29.39 dBm (0.87 W) at 836.60 MHz (channel 190)
  - The highest ERP in the GSM 850 EDGE mode measured was 29.59 dBm (0.91 W) at 848.80 MHz (channel 251).

The radiated spurious emission and harmonics were measured up to the 10<sup>th</sup> harmonic for low, middle, and high channels in the GSM 850. Each band was

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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

measured in CALL and EDGE modes, with both the horizontal and vertical polarizations.

- All margins in the GSM850 for harmonic emissions were at least 25 dB below the limit for all test frequencies in Call mode.
- All margins in the GSM850 for harmonic emissions were at least 25 dB below the limit for all test frequencies in EDGE mode.

See Appendix 1C for test data.

b) The radiated spurious emissions/harmonics and ERP/EIRP were measured for WCDMA Band V.

- The highest ERP in the WCDMA band V, Call Service mode was 20.49 dBm (0.11 W) at 826.40 MHz (channel 4132).
- The highest ERP in the WCDMA band V, HSUPA mode was 18.80 dBm (0.08 W) at 826.40 MHz (channel 4132).

The radiated spurious emissions and harmonics were measured up to the 10<sup>th</sup> harmonic for low, middle and high channels in the WCDMA Band V. Each band was measured in Call, and HSUPA modes. Both the horizontal and vertical polarizations were measured.

- All margins in the WCDMA Band V for harmonic emissions were at least 25 dB below the limit for all test frequencies.

See Appendix 2C for test data.

c) The radiated spurious emissions/harmonics and ERP were measured for LTE Band 5.

The EUT was measured on the low, middle and high channels in 3 MHz bandwidth for LTE Band 5 with QPSK and 5 MHz bandwidth for LTE Band 5 with 16-QAM modulations. Resource Block Allocation 1 was measured.

- The highest ERP in the LTE Band 5 measured was 20.00 dBm (0.10 W) at 826.50 MHz (channel 20425) in 3 MHz BW, 1 RB and QPSK modulation.
- The highest ERP in the LTE Band 5 measured was 19.11 dBm (0.08 W) at 826.50 MHz (channel 20425) in 5 MHz BW, 1 RB and 16-QAM modulation.

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|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

The radiated spurious emission and harmonics were measured up to the 10<sup>th</sup> harmonic. The EUT was measured on the low, middle and high channels in the worst bandwidth 3MHz bandwidths for LTE Band 5 with QPSK and 16-QAM modulations as per conducted power. Resource Block Allocation 1 was measured.

- All margins in the LTE Band 5 for harmonic emissions were at least 25 dB below the accepted limits for all test frequencies.

See Appendix 4C for test data.

- d) The radiated spurious emissions/harmonics and ERP were measured for LTE Band 13.

The EUT was measured on the low, middle and high channels in 5MHz and 10 MHz bandwidths for LTE band 13 with QPSK and 16-QAM modulations. Block Allocation 1 was measured.

- The highest ERP in the LTE band 30 measured was 21.11 dBm (0.13 W) at 784.4 MHz (channel 23254) in 5MHz BW, RB allocation 1 and QPSK modulation.
- The highest ERP in the LTE band 13 measured was 20.45 dBm (0.11 W) at 782.0 MHz (channel 23230) in 10MHz BW, RB allocation 1 and 16-QAM modulation.

The radiated spurious emission and harmonics were measured up to the 10<sup>th</sup> harmonic. The EUT was measured on the low, middle and high channels in the worst bandwidth 10 MHz bandwidth for LTE Band 13 with QPSK and 16-QAM modulations as per conducted power. Resource Block Allocation 1 was measured.

- All margins in the LTE Band 13 for harmonic emissions were at least 25 dB below the limit for all test frequencies.

See Appendix 9C for test data.

- i) The radiated spurious emissions/harmonics and ERP/EIRP were measured for CDMA Cellular and CDMA PCS. The results are within the limits.

- The highest ERP measured in the CDMA Cellular band, Loopback Service mode, was 24.34 dBm (0.27 W) at 824.70 MHz (channel 1013).
- The highest ERP measured in the CDMA Cellular band, 1xEVDO mode, was 22.48 dBm (0.18 W) at 824.70 MHz (channel 1013).

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|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

- The highest EIRP measured in the CDMA PCS band, Loopback Service mode, was 27.76 dBm (0.60 W) at 1908.75 MHz (channel 1175).
- The highest EIRP measured in the CDMA PCS band, 1xEVDO mode, was 26.47 dBm (0.44 W) at 1908.75 MHz (channel 1175).

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

- All emissions were greater than 25 dB below the accepted limits for all test frequencies.

See Appendix 10C for test data.

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|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### 3) Co-Location Radiated Measurements

The following test configurations were measured on model RHK211LW (STV100-1):

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

- GSM 850 + Bluetooth(DH5) + 802.11b
- PCS 1900 + Bluetooth(2DH5) + 802.11ac
- WCDMA Band II + Bluetooth(3DH5)+ 802.11n(2.4GHz).
- WCDMA Band IV + Bluetooth(DH5) + 802.11b
- WCDMA Band V + Bluetooth(DH5) + 802.11a
- LTE B2 + Bluetooth(2DH5) + 802.11b
- LTE B4 + Bluetooth(3DH5) + 802.11g
- LTE B5 + Bluetooth(DH5) + 802.11n(2.4GHz)
- LTE B13 + Bluetooth(3DH5) + 802.11n(2.4GHz)
- LTE B17 + Bluetooth(DH5) + 802.11a

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

The following test configurations were measured on model RHM181LW (STV100-4):

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

- GSM 850 + Bluetooth(DH5) + 802.11b
- WCDMA Band V + Bluetooth(2DH5) + 802.11g
- LTE B5 + Bluetooth(2DH5) + 802.11g
- LTE B12 + Bluetooth(3DH5) + 802.11n(2.4GHz)
- LTE B13 + Bluetooth(DH5) + 802.11n(2.4GHz)
- LTE B17 + Bluetooth(2DH5) + 802.11g
- LTE B25 + Bluetooth(2DH5) + 802.11a
- LTE B30 + Bluetooth(DH5) + 802.11ac
- LTE B41 + Bluetooth(DH5) + 802.11b

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

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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

The following test configurations were measured on model RHT181LW (STV100-2):

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

- GSM 850 + Bluetooth(DH5) + 802.11b
- CDMA BC0 + Bluetooth(DH5) + 802.11a
- CDMA BC1 + Bluetooth(2DH5) + 802.11ac
- WCDMA Band V + Bluetooth(2DH5) + 802.11g
- LTE B5 + Bluetooth(2DH5) + 802.11g
- LTE B13 + Bluetooth(DH5) + 802.11n(2.4GHz)

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

#### **Sample Calculation:**

Corrected Signal level (CSL) is calculated as follows:

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

**Measurement Uncertainty ±4.3 dB**

|                                                                                                     |                                                                                                                   |                                                                                   |
|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  <b>BlackBerry</b> | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                                        | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## G. Compliance Test Equipment Used

| <u>UNIT</u>                          | <u>MANUFACTURER</u> | <u>MODEL</u> | <u>SERIAL<br/>NUMBER</u> | <u>CAL DUE<br/>DATE</u><br>(YY MM DD) | <u>USE</u>             |
|--------------------------------------|---------------------|--------------|--------------------------|---------------------------------------|------------------------|
| Preamplifier                         | Sonoma              | 310N/11909A  | 185831                   | 16-10-16                              | Radiated Emissions     |
| Preamplifier system                  | TDK RF Solutions    | PA-02        | 080010                   | 16-10-16                              | Radiated Emissions     |
| Preamplifier                         | Rohde & Schwarz     | TS-ANA4-SP   | 001                      | 16-10-23                              | Radiated Emissions     |
| Preamplifier                         | Rohde & Schwarz     | TS-ANA-SP    | 001                      | 16-10-23                              | Radiated Emissions     |
| Hybrid Log Antenna                   | EMC Automation      | HLP-3003C    | 017301                   | 16-08-13                              | Radiated Emissions     |
| Horn Antenna                         | CMT                 | LHA0180      | R52734-001               | 16-03-31                              | Radiated Emissions     |
| Horn Antenna                         | Emco                | 3117         | 47563                    | 17-08-07                              | Radiated Emissions     |
| Horn Antenna                         | ETS                 | 3116         | 2538                     | 16-09-29                              | Radiated Emissions     |
| Dipole Antenna                       | Schwarzbeck         | UHAP         | 974                      | 16-11-27                              | Radiated Emissions     |
| Universal Radio Communication Tester | Rohde & Schwarz     | CMU 200      | 837493/073               | 15-11-24                              | Radiated Emissions     |
| Universal Radio Communication Tester | Rohde & Schwarz     | CMU 200      | 112394                   | 15-11-25                              | Radiated Emissions     |
| Universal Radio Communication Tester | Rohde & Schwarz     | CMU 200      | 109747                   | 15-11-25                              | RF Conducted Emissions |
| EMI Receiver                         | Rohde & Schwarz     | ESIB-40      | 100255                   | 15-12-11                              | Radiated Emissions     |
| EMI Receiver                         | Rohde & Schwarz     | ESU-40       | 100162                   | 15-12-08                              | Radiated Emissions     |
| Environment Monitor                  | Omega               | iTHX-SD      | 0380561                  | 16-11-15                              | Radiated Emissions     |
| Environment Monitor                  | Omega               | iTHX-SD      | 0340060                  | 16-11-15                              | RF Conducted Emissions |
| Environment Monitor                  | Omega               | iTHX-SD      | 0380567                  | 16-11-15                              | Radiated Emissions     |

|                                                                                   |                                                                                                                   |                                                                                   |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### Compliance Test Equipment Used cont'd

| <u>UNIT</u>                          | <u>MANUFACTURER</u> | <u>MODEL</u> | <u>SERIAL<br/>NUMBER</u> | <u>CAL DUE DATE</u><br>(YY MM DD) | <u>USE</u>                      |
|--------------------------------------|---------------------|--------------|--------------------------|-----------------------------------|---------------------------------|
| Universal Radio Communication Tester | Rohde & Schwarz     | CMW500       | 101469                   | 15-12-09                          | Radiated /RF Conducted Emission |
| Universal Radio Communication Tester | Rohde & Schwarz     | CMW500       | 109949                   | 15-12-07                          | Radiated /RF Conducted Emission |
| Signal Generator                     | Agilent             | E8257D       | MY45140527               | 15-12-10                          | Radiated Emissions              |
| Signal Generator                     | Agilent             | 83630B       | 3844A00927               | 15-11-23                          | Radiated Emissions              |
| Spectrum Analyzer                    | Rohde & Schwarz     | FSV          | 101820                   | 15-11-21                          | RF Conducted Emissions          |
| Spectrum Analyzer                    | Rohde & Schwarz     | FSP          | 100884                   | 15-11-21                          | RF Conducted Emissions          |

### H. Test Software used

| <u>SOFTWARE</u>            | <u>COMPANY</u>   | <u>VERSION</u> | <u>USE</u>         |
|----------------------------|------------------|----------------|--------------------|
| EMC32                      | Rohde & Schwarz  | 8.53.0         | Radiated Emissions |
| TDK Standard Emission Test | TDK RF Solutions | 8.53.1.62      | Radiated Emissions |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

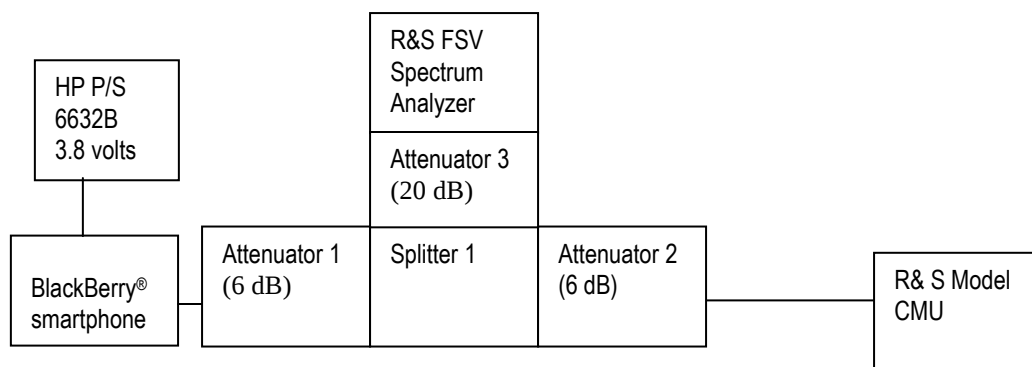
## APPENDIX 1A – GSM CONDUCTED RF EMISSIONS TEST DATA/PLOTS

|                                              |                                                                                                                                         |                                                                                   |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>BlackBerry</b>                            | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### GSM Conducted RF Emission Test Data

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



A reference offset of 31.4 dB was applied to the spectrum analyzer reference level for the attenuators and coaxial cable loss in the test circuit.

| <u>UNIT</u>  | <u>MANUFACTURER</u> | <u>MODEL</u>  | <u>SERIAL NUMBER</u> |
|--------------|---------------------|---------------|----------------------|
| Attenuator 1 | Mini-Circuits       | BW-S6W2+      | 0647                 |
| Attenuator 2 | Mini-Circuits       | BW-S6W2+      | 0648                 |
| Attenuator 3 | Mini-Circuits       | BW-S20-2W263+ | 1234                 |
| Splitter 1   | Weinschel           | 1515          | MES 92               |

The environmental test conditions were:

Temperature: 26 °C  
Relative Humidity: 41.3 %

The following measurements were performed by Sijia Li.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

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

The following test configurations were measured on RHK211LW (STV100-1):

**The conducted spurious emissions** – As per 47 CFR 2.1051, 22.917, 24.238(a) were measured from 30 MHz to 20 GHz.

#### **–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 265kHz, and for the PCS1900 band was measured to be 259kHz as shown below. Results were derived 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 GSM850 band and PCS1900 band in Call mode**

| <b>GSM850 band<br/>Frequency<br/>(MHz)</b> | <b>-26dBc Bandwidth<br/>(kHz)</b> | <b>99% Occupied Bandwidth<br/>(kHz)</b> |
|--------------------------------------------|-----------------------------------|-----------------------------------------|
| 824.2                                      | 265                               | <b>246</b>                              |
| 837.6                                      | 250                               | 244                                     |
| 848.8                                      | 253                               | 243                                     |

| <b>PCS1900 band<br/>Frequency<br/>(MHz)</b> | <b>-26dBc Bandwidth<br/>(kHz)</b> | <b>99% Occupied Bandwidth<br/>(kHz)</b> |
|---------------------------------------------|-----------------------------------|-----------------------------------------|
| 1850.2                                      | 258                               | 244                                     |
| 1880.0                                      | 250                               | <b>247</b>                              |
| 1909.8                                      | 259                               | 244                                     |

#### **Measurement Plots for 850 and 1900 bands in Call mode**

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 1-51a to 1-53a for the plots of Peak to Average Ratio.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

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

#### Test Data for GSM850 and PCS1900 bands in EDGE mode

| <b>GSM850 band<br/>Frequency<br/>(MHz)</b> | <b>99% Occupied Bandwidth<br/>(kHz)</b> |
|--------------------------------------------|-----------------------------------------|
| 824.2                                      | 243                                     |
| 837.6                                      | 245                                     |
| 848.8                                      | <b>246</b>                              |

| <b>PCS1900 band<br/>Frequency<br/>(MHz)</b> | <b>99% Occupied Bandwidth<br/>(kHz)</b> |
|---------------------------------------------|-----------------------------------------|
| 1850.2                                      | 244                                     |
| 1880.0                                      | <b>245</b>                              |
| 1909.8                                      | 244                                     |

#### ***Measurement Plots for GSM850 and PCS1900 bands in EDGE mode***

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

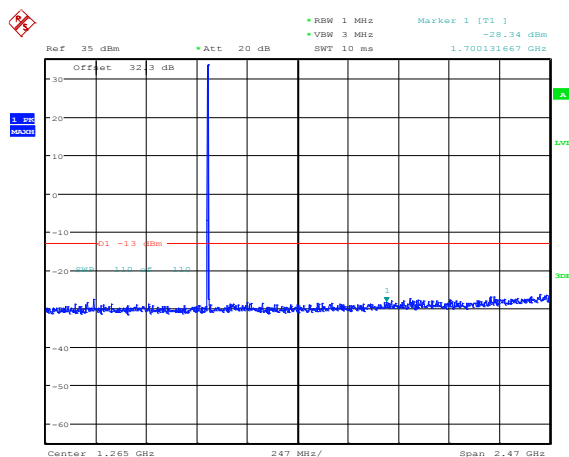
See Figures 1-35a to 1-38a for the plots of channel mask EDGE results.

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

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

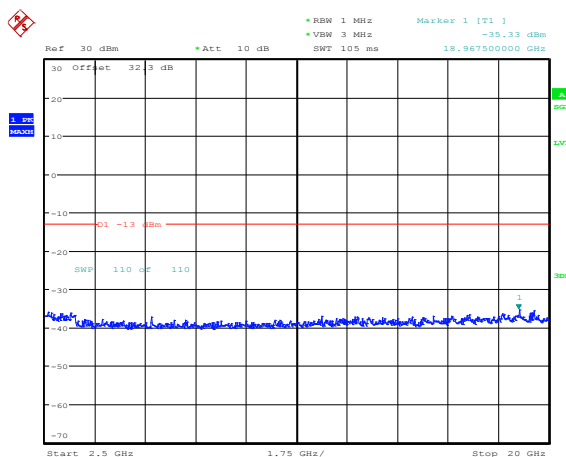
## GSM Conducted RF Emission Test Data cont'd

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



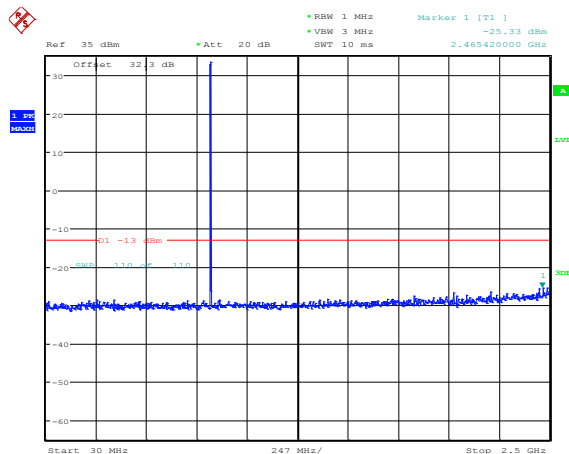
Date: 22.APR.2015 12:13:34

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



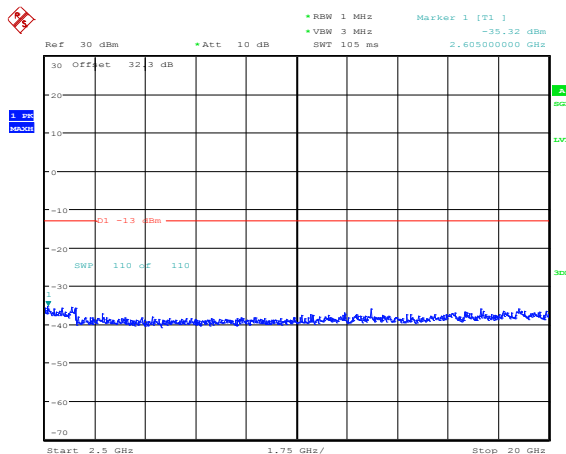
Date: 22.APR.2015 12:14:13

**Figure 1-2a: GSM850 band, Spurious Conducted Emissions, Middle Channel**



Date: 22.APR.2015 12:15:11

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

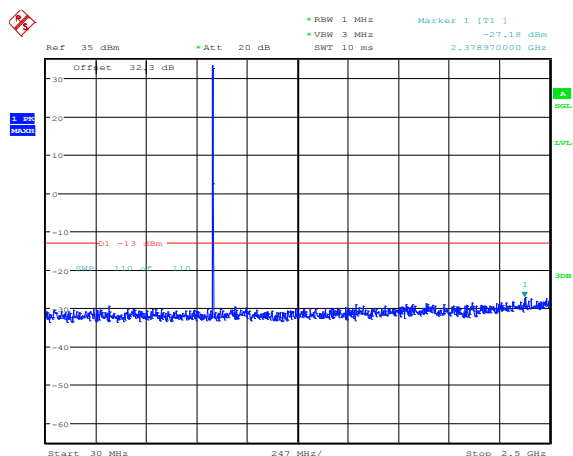


Date: 22.APR.2015 12:15:54

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

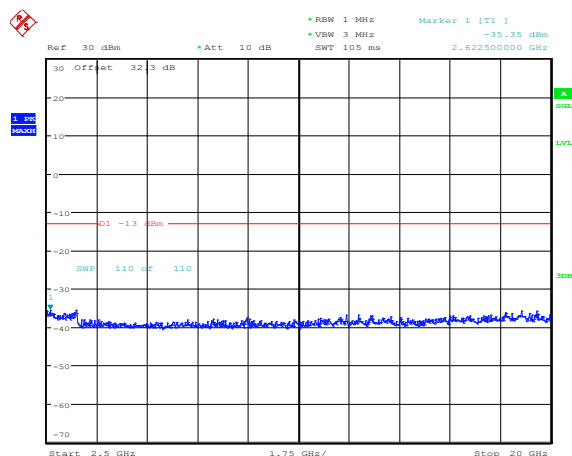
## GSM Conducted RF Emission Test Data cont'd

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



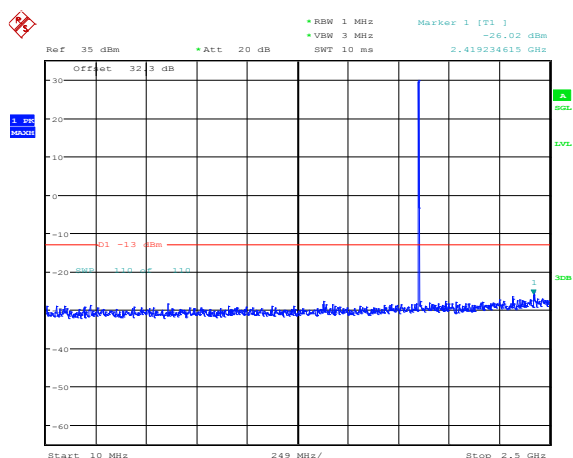
Date: 22.APR.2015 12:16:16

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



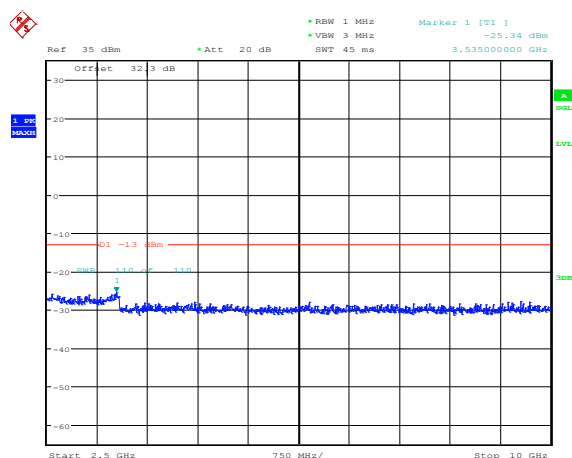
Date: 22.APR.2015 12:17:01

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



Date: 23.APR.2015 13:14:22

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

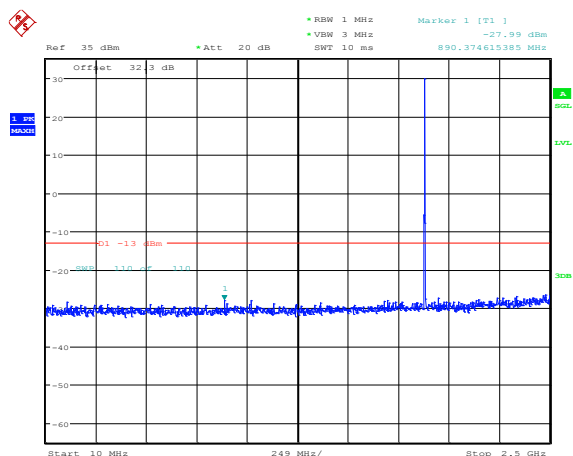


Date: 23.APR.2015 13:17:01

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

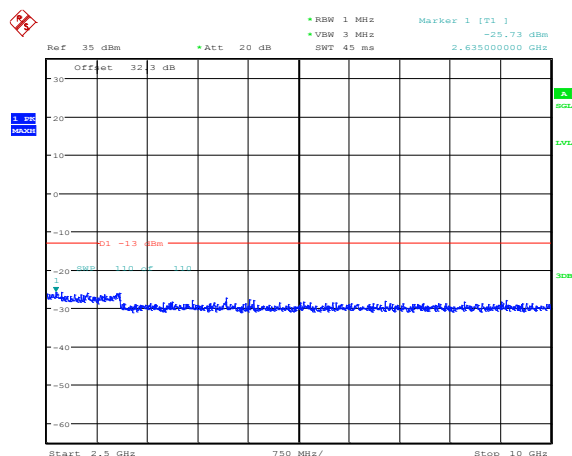
## GSM Conducted RF Emission Test Data cont'd

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



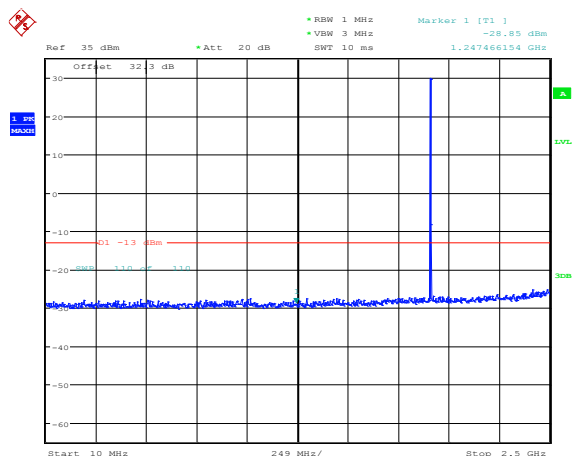
Date: 23.APR.2015 13:20:35

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



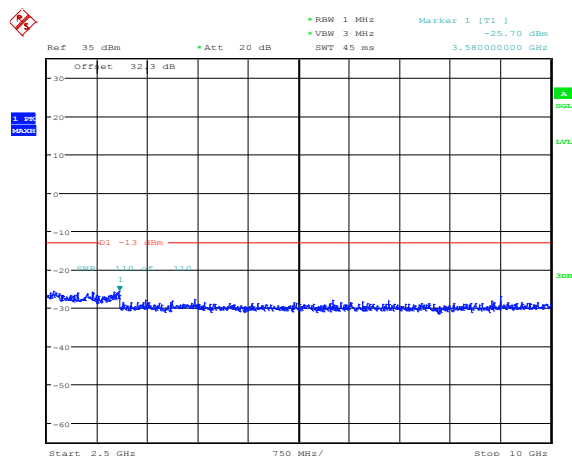
Date: 23.APR.2015 13:21:31

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



Date: 23.APR.2015 13:25:41

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

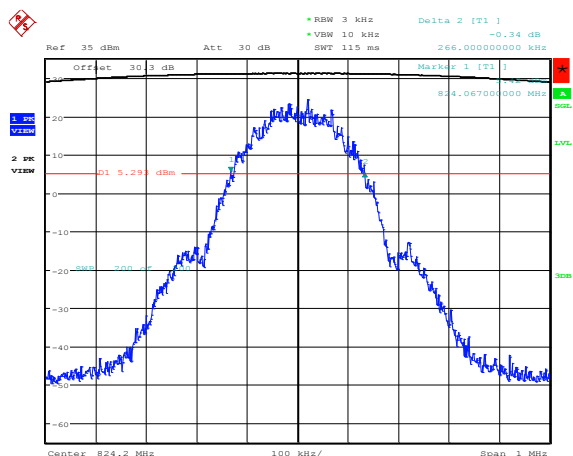


Date: 23.APR.2015 13:26:14

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

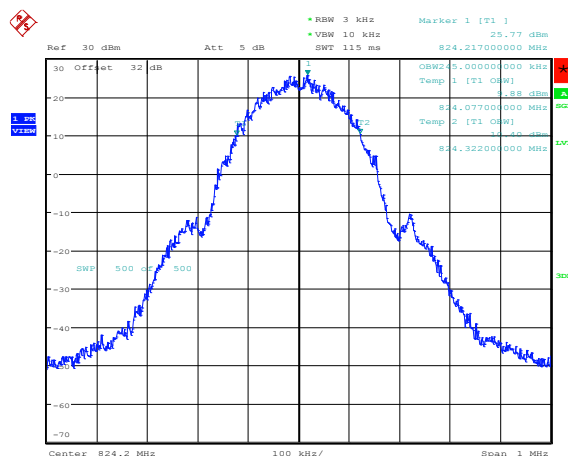
## GSM Conducted RF Emission Test Data cont'd

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



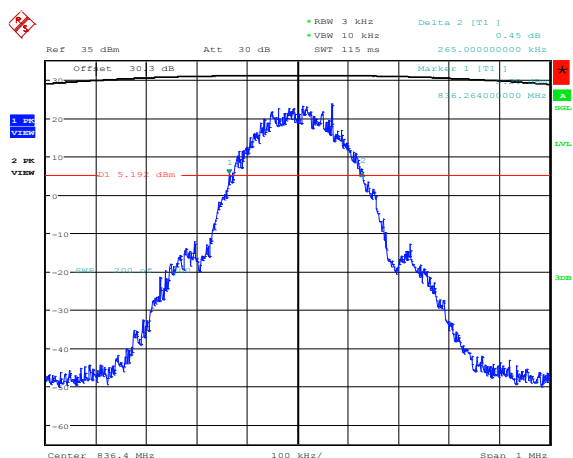
Date: 22.APR.2015 13:56:23

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



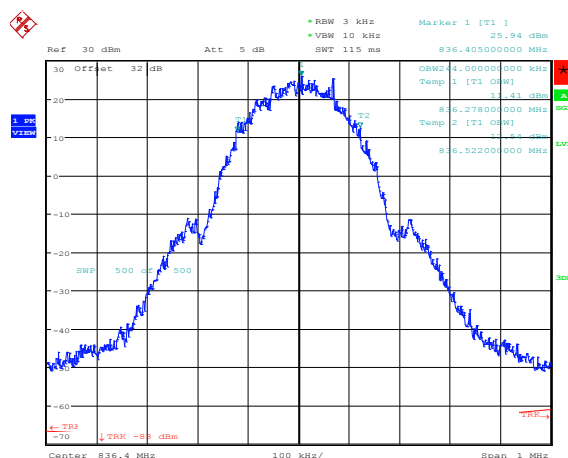
Date: 22.APR.2015 14:41:55

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



Date: 22.APR.2015 14:36:48

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



Date: 22.APR.2015 14:44:08

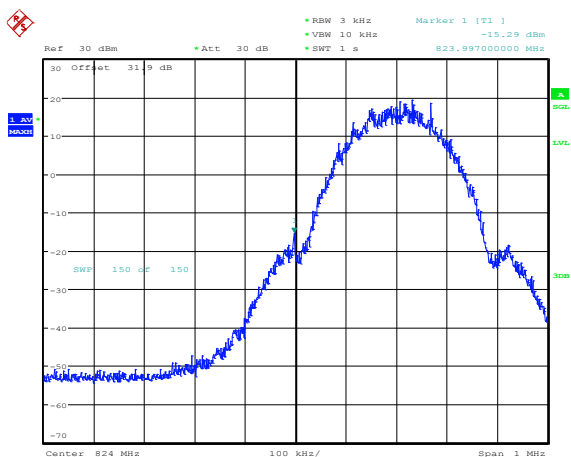




|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

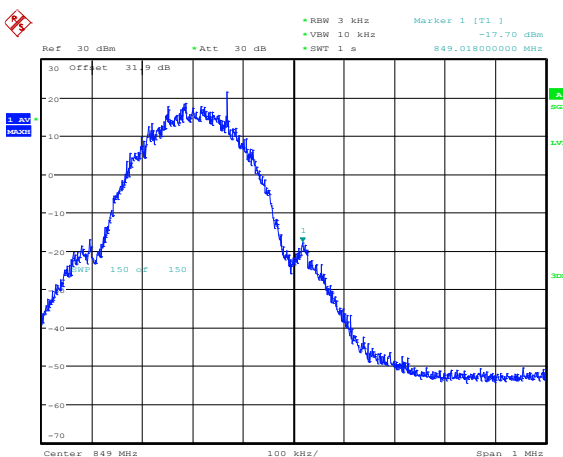
## GSM Conducted RF Emission Test Data cont'd

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



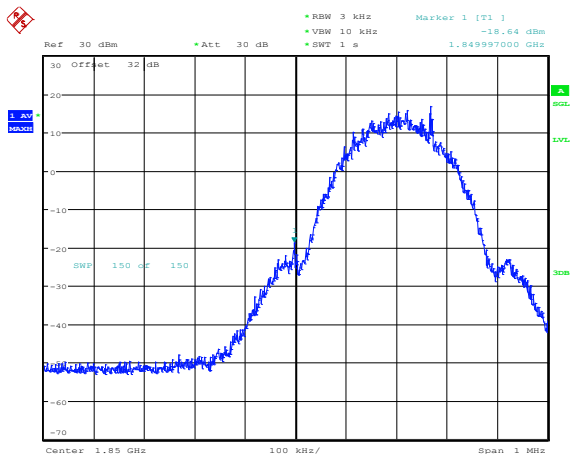
Date: 1.SEP.2015 12:12:40

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



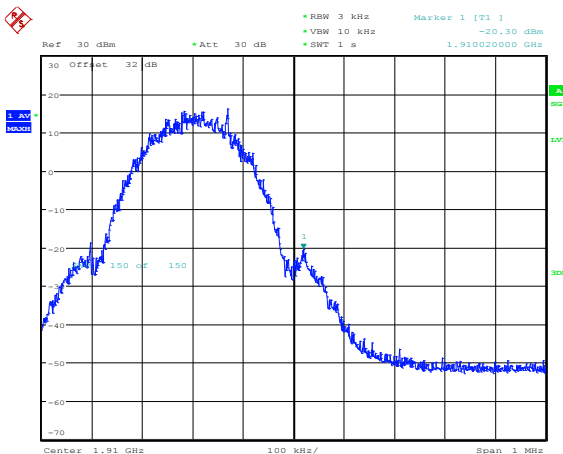
Date: 1.SEP.2015 12:07:48

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



Date: 1.SEP.2015 13:18:04

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

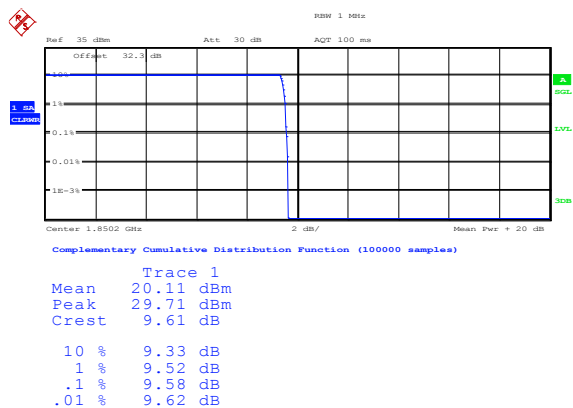


Date: 1.SEP.2015 13:21:57

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

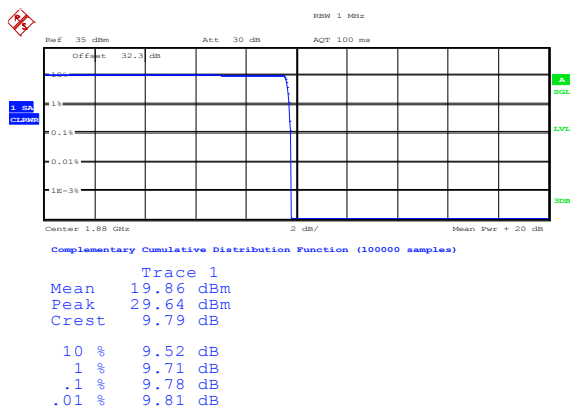
## GSM Conducted RF Emission Test Data cont'd

**Figure 1-51a: PCS1900 Band, PAR Low Channel**



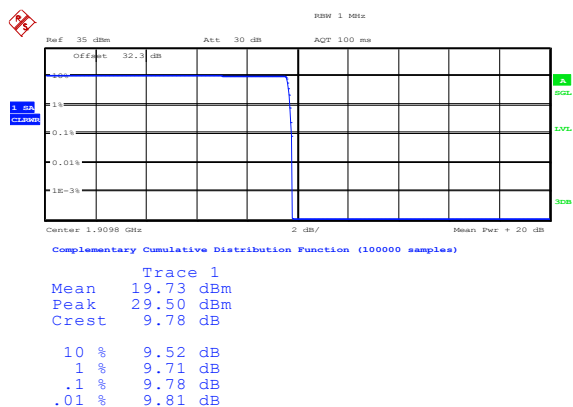
Date: 23.APR.2015 13:50:03

**Figure 1-52a: PCS1900 Band, PAR Mid Channel**



Date: 23.APR.2015 13:50:52

**Figure 1-53a: PCS1900 Band, PAR High Channel**

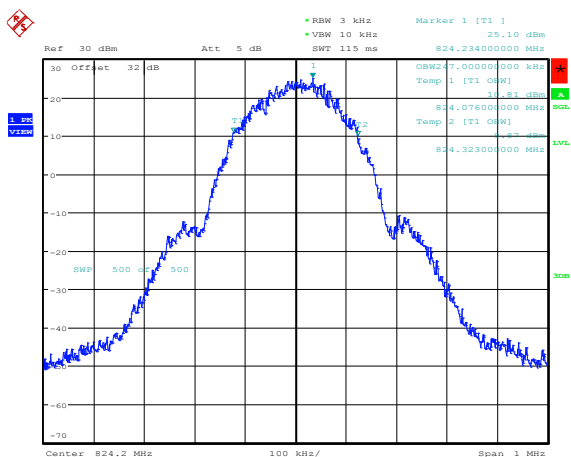


Date: 23.APR.2015 13:51:20

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

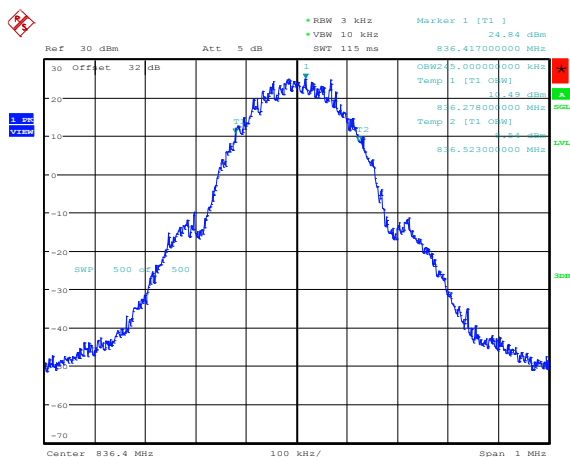
## GSM Conducted RF Emission Test Data cont'd

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



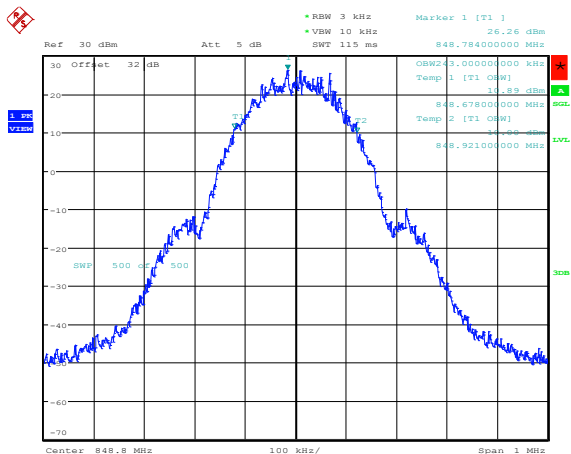
Date: 23.APR.2015 12:48:47

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



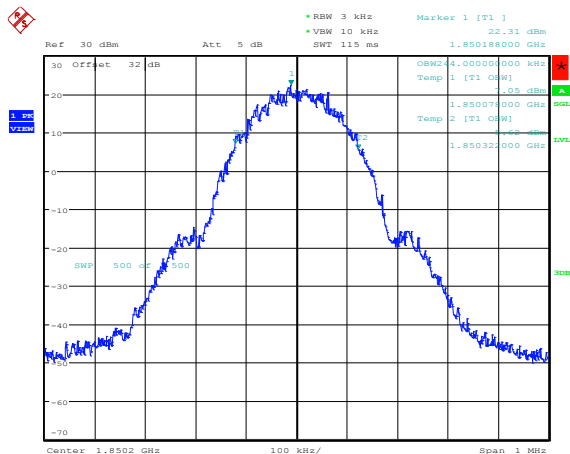
Date: 23.APR.2015 13:00:21

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



Date: 23.APR.2015 12:56:06

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

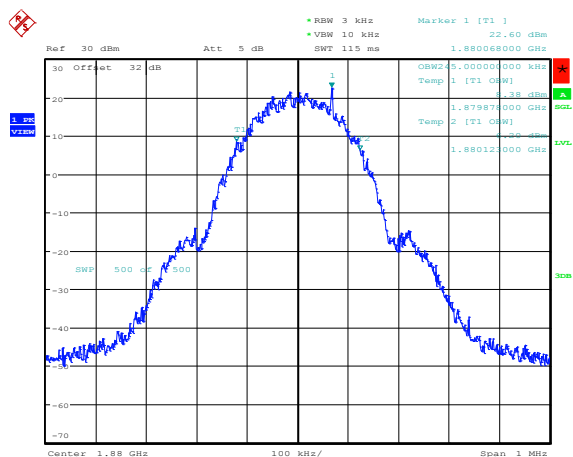


Date: 23.APR.2015 14:05:53

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

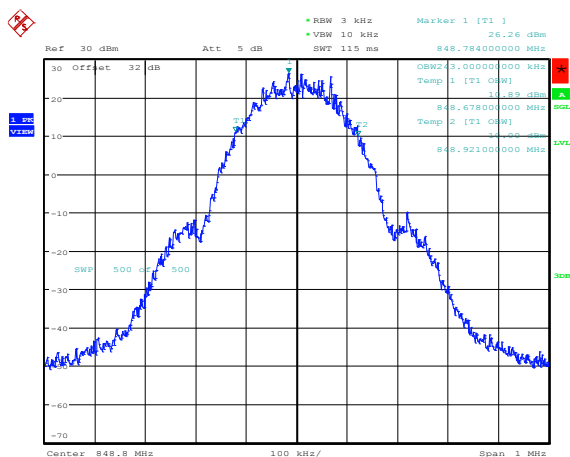
## GSM Conducted RF Emission Test Data cont'd

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



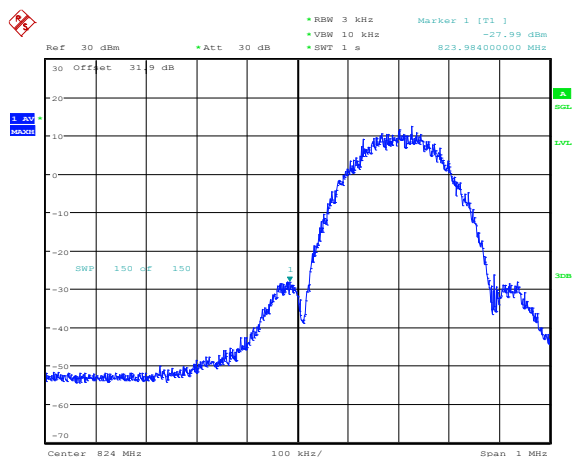
Date: 23.APR.2015 14:09:00

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



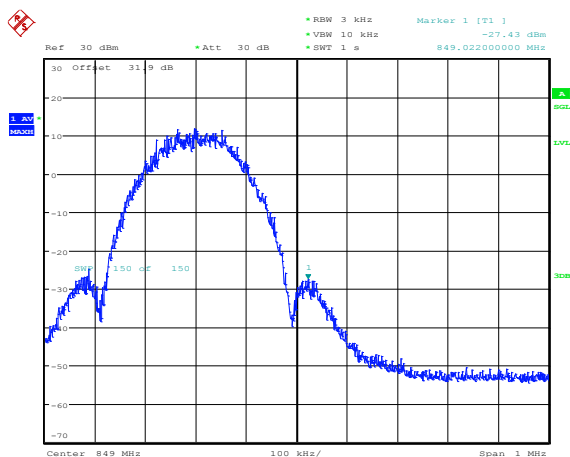
Date: 23.APR.2015 12:56:06

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



Date: 1.SEP.2015 12:17:51

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

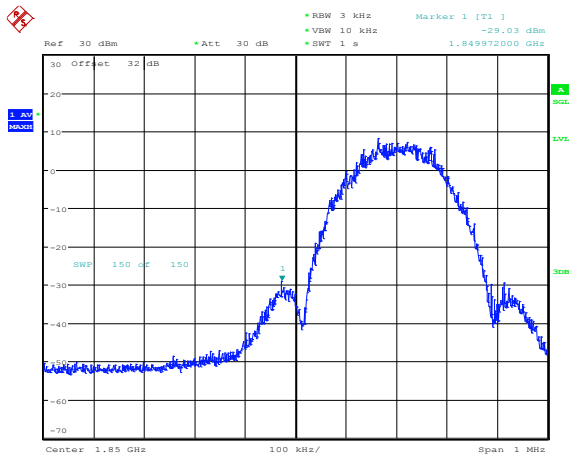


Date: 1.SEP.2015 12:22:09

|                                                                                   |                                                                                                                                          |                                                                                   |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW (STV100-2)<br><b>APPENDIX 1A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                     | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

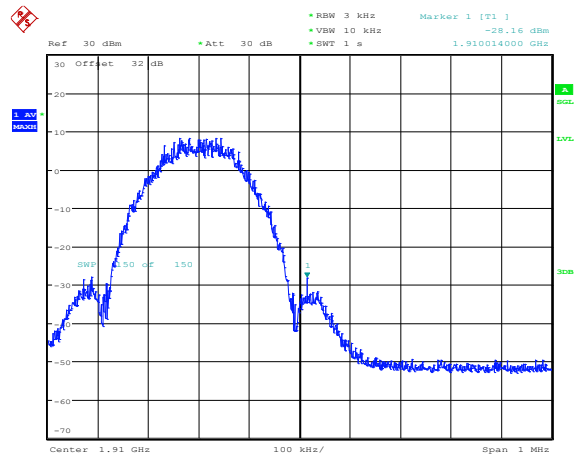
## GSM Conducted RF Emission Test Data cont'd

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



Date: 1.SEP.2015 13:38:09

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

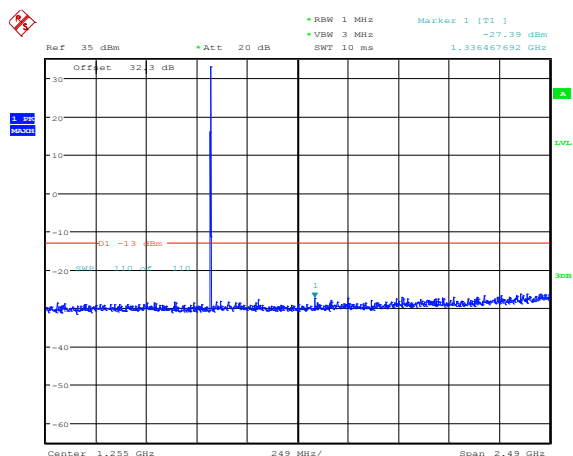


Date: 1.SEP.2015 13:33:51

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

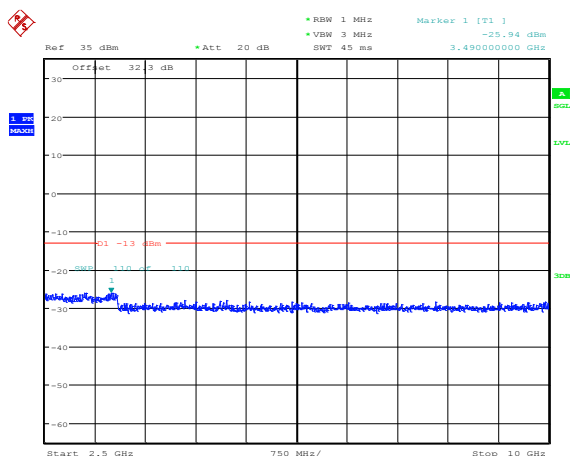
## GSM Conducted RF Emission Test Data cont'd

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



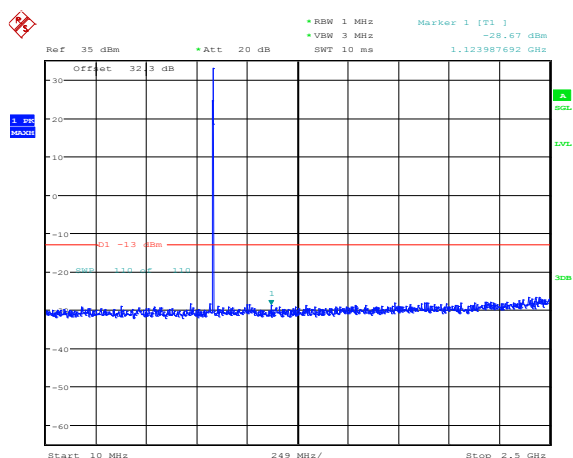
Date: 23.APR.2015 12:41:22

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



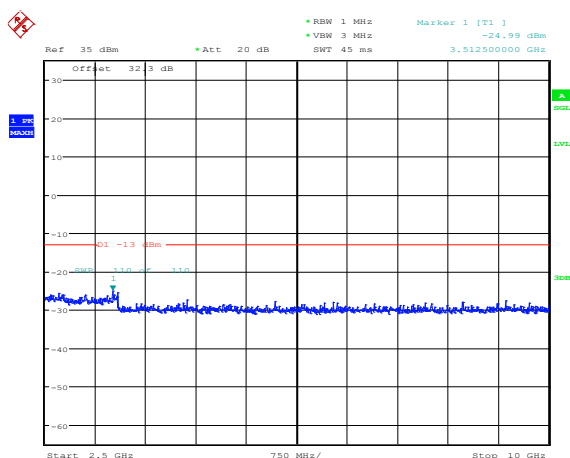
Date: 23.APR.2015 12:42:23

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



Date: 23.APR.2015 12:43:24

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

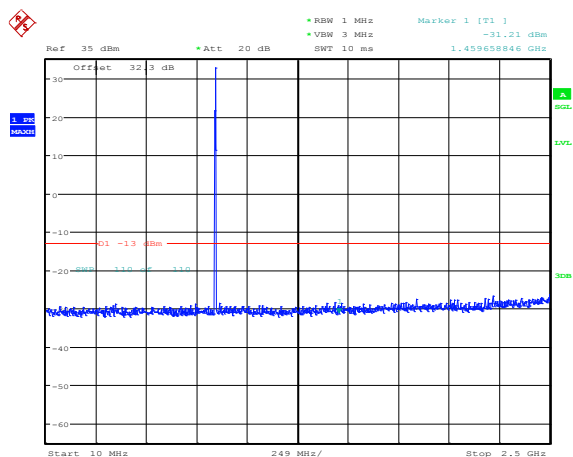


Date: 23.APR.2015 12:44:27

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

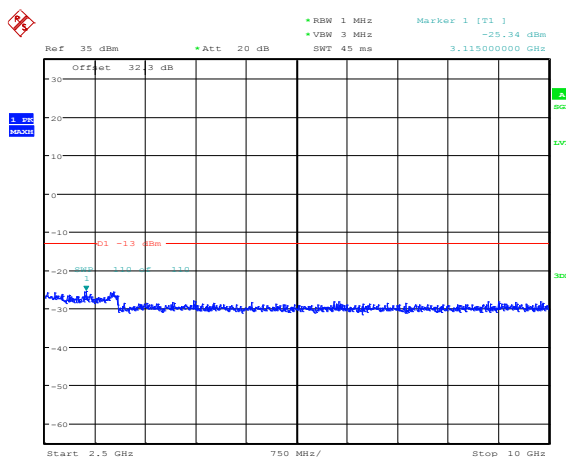
## GSM Conducted RF Emission Test Data cont'd

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



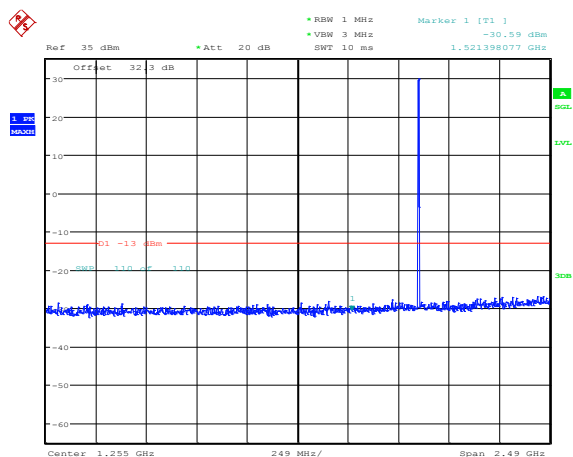
Date: 23.APR.2015 12:44:55

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



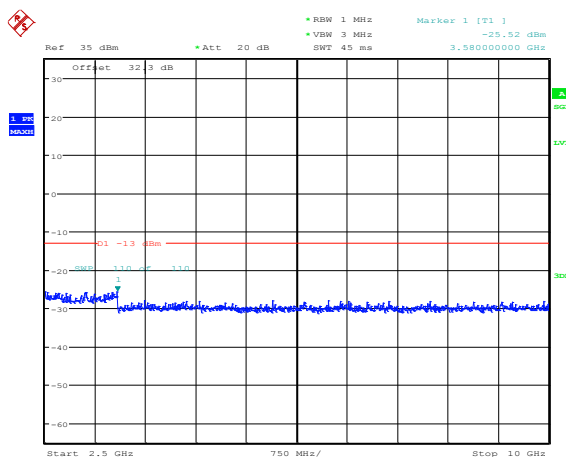
Date: 23.APR.2015 12:46:32

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



Date: 23.APR.2015 13:55:02

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

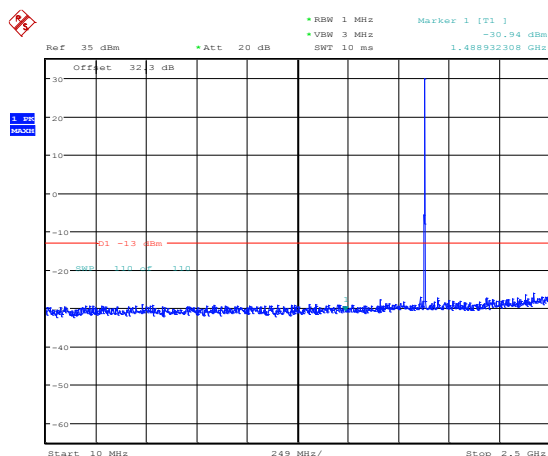


Date: 23.APR.2015 13:56:35

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

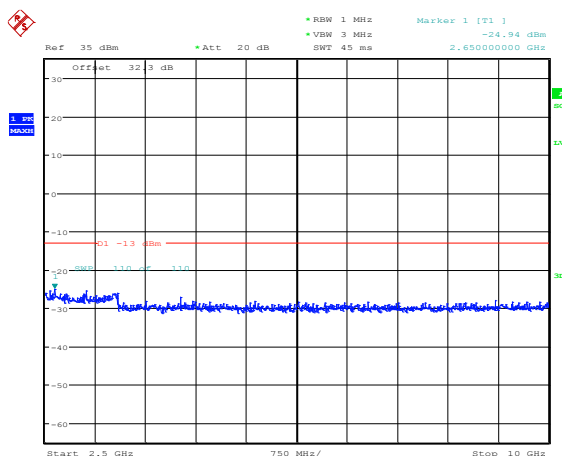
## GSM Conducted RF Emission Test Data cont'd

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



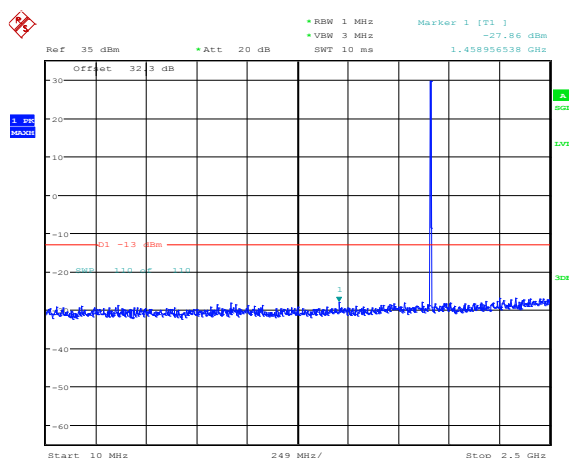
Date: 23.APR.2015 13:58:49

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



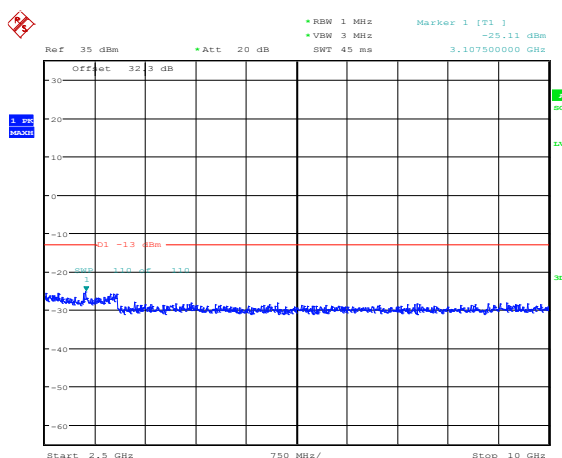
Date: 23.APR.2015 13:59:39

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



Date: 23.APR.2015 14:01:56

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

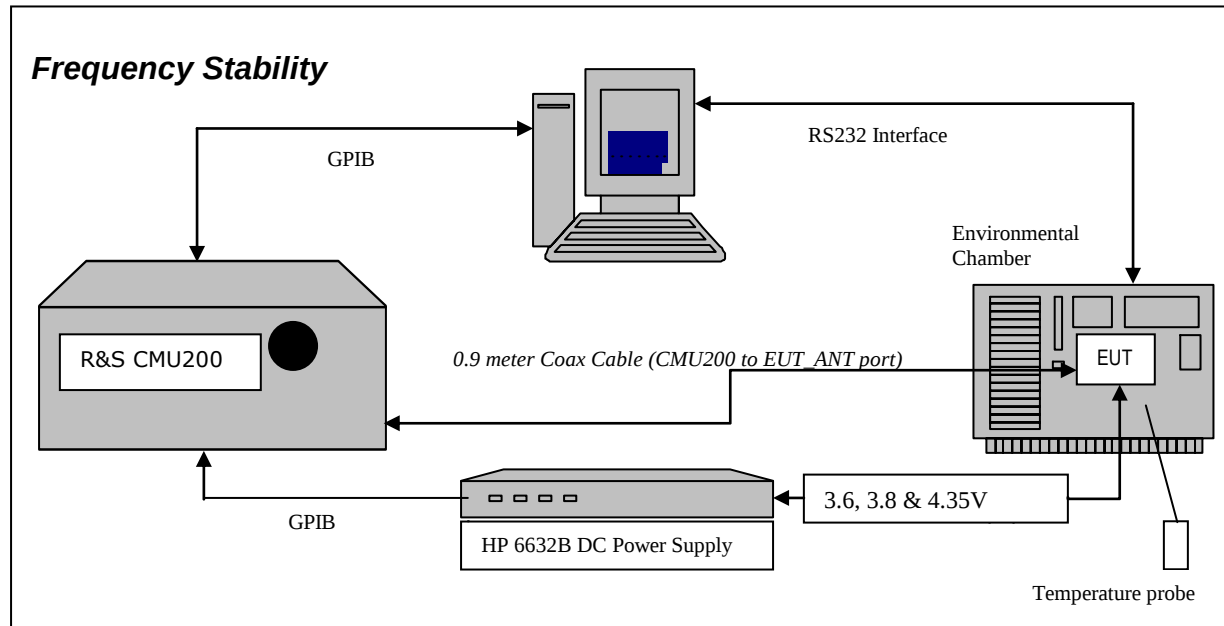


Date: 23.APR.2015 14:04:12

## APPENDIX 1B – GSM FREQUENCY STABILITY TEST DATA

|                                              |                                                                                                                                         |                                                                                   |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>BlackBerry</b>                            | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### GSM Frequency Stability Test Data



The measurements were performed by Sijia Li.

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 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 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.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

#### Test setup:

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 3.8 and to 4.35 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, 3.8 and 4.35 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.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

#### Procedure:

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

1. Switch on the HP 6632B power supply; CMU 200 Communications test Set, and Environmental Chamber.
2. Start test program
3. Set the Temperature to –30°C and maintain a period of one- hour soak time, with the EUT supply voltage disabled.
4. Set power supply voltage to 3.6 volts.
5. Set up CMU 200 Radio Communication Tester.
6. Command the CMU 200 to switch to the low channel.
7. Enable the voltage to the EUT, and connect a link to the CMU 200 test set.
8. EUT is commanded to Transmit 100 Bursts.
9. Software logs the following data from the CMU 200, power supply and temperature chamber: Traffic Channel Number, Traffic Channel Frequency, Power Level, Chamber Temperature, Supply Voltage, Power and Frequency Error.
10. The CMU 200 commands the EUT to change frequency to the middle channel and high channel and repeats steps 7 to 9.
11. Repeat steps 5 to 10 changing the supply voltage to 3.8 Volts
12. Increase temperature by 10°C and soak for 1/2 hour.
13. Repeat steps 4 - 12 for temperatures –30°C to 60°C.
14. Repeat steps 5 to 10 changing the supply voltage to 4.35 volts

Procedure 5 to 10 was repeated at room temperature (20°C) with the power supply voltage set to 3.6, 3.8 and 4.35 volts.

The following configurations were measured for model RHK211LW (STV100-1):

The maximum frequency error in the GSM850 band measured was **0.0289 PPM**.  
The maximum frequency error in the PCS1900 band measured was **0.0243 PPM**.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

The following configurations were measured for model RHK211LW (STV100-1):

Date of Test: August 13, 2015

**GSM850 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                    | 10.14                | 0.0123 |
| 189                    | 836.40                 | 3.6             | 20                    | 16.40                | 0.0196 |
| 251                    | 848.60                 | 3.6             | 20                    | 19.24                | 0.0227 |

| Traffic Channel Number | GSM850 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM    |
|------------------------|------------------------|-----------------|-----------------------|----------------------|--------|
| 128                    | 824.20                 | 3.8             | 20                    | 10.59                | 0.0128 |
| 189                    | 836.40                 | 3.8             | 20                    | 14.59                | 0.0174 |
| 251                    | 848.60                 | 3.8             | 20                    | 12.66                | 0.0149 |

| Traffic Channel Number | GSM850 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM    |
|------------------------|------------------------|-----------------|-----------------------|----------------------|--------|
| 128                    | 824.20                 | 4.35            | 20                    | 10.59                | 0.0128 |
| 189                    | 836.40                 | 4.35            | 20                    | 9.23                 | 0.0110 |
| 251                    | 848.60                 | 4.35            | 20                    | 16.21                | 0.0191 |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### 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                   | 6.20                 | 0.0075  |
| 128                    | 824.20          | 3.6             | -20                   | 10.01                | 0.0121  |
| 128                    | 824.20          | 3.6             | -10                   | 8.59                 | 0.0104  |
| 128                    | 824.20          | 3.6             | 0                     | 10.14                | 0.0123  |
| 128                    | 824.20          | 3.6             | 10                    | -6.78                | -0.0082 |
| 128                    | 824.20          | 3.6             | 20                    | 8.72                 | 0.0106  |
| 128                    | 824.20          | 3.6             | 30                    | 14.27                | 0.0173  |
| 128                    | 824.20          | 3.6             | 40                    | 13.62                | 0.0165  |
| 128                    | 824.20          | 3.6             | 50                    | 13.24                | 0.0161  |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 128                    | 824.20          | 3.8             | -30                   | 9.49                 | 0.0115  |
| 128                    | 824.20          | 3.8             | -20                   | 13.50                | 0.0164  |
| 128                    | 824.20          | 3.8             | -10                   | 6.97                 | 0.0085  |
| 128                    | 824.20          | 3.8             | 0                     | 10.59                | 0.0128  |
| 128                    | 824.20          | 3.8             | 10                    | -7.94                | -0.0096 |
| 128                    | 824.20          | 3.8             | 20                    | 10.53                | 0.0128  |
| 128                    | 824.20          | 3.8             | 30                    | -3.87                | -0.0047 |
| 128                    | 824.20          | 3.8             | 40                    | -6.72                | -0.0082 |
| 128                    | 824.20          | 3.8             | 50                    | -10.07               | -0.0122 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 128                    | 824.20          | 4.35            | -30                   | -8.39                | -0.0102 |
| 128                    | 824.20          | 4.35            | -20                   | -6.07                | -0.0074 |
| 128                    | 824.20          | 4.35            | -10                   | -6.26                | -0.0076 |
| 128                    | 824.20          | 4.35            | 0                     | 10.59                | 0.0128  |
| 128                    | 824.20          | 4.35            | 10                    | -4.78                | -0.0058 |
| 128                    | 824.20          | 4.35            | 20                    | -9.49                | -0.0115 |
| 128                    | 824.20          | 4.35            | 30                    | -11.69               | -0.0142 |
| 128                    | 824.20          | 4.35            | 40                    | -11.24               | -0.0136 |
| 128                    | 824.20          | 4.35            | 50                    | -12.98               | -0.0157 |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**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                   | 16.47                | 0.0197        |
| 189                    | 836.40          | 3.6             | -20                   | 16.40                | 0.0196        |
| 189                    | 836.40          | 3.6             | -10                   | 10.46                | 0.0125        |
| 189                    | 836.40          | 3.6             | 0                     | 16.40                | 0.0196        |
| 189                    | 836.40          | 3.6             | 10                    | 11.56                | 0.0138        |
| 189                    | 836.40          | 3.6             | 20                    | 11.24                | 0.0134        |
| 189                    | 836.40          | 3.6             | 30                    | 13.04                | 0.0156        |
| 189                    | 836.40          | 3.6             | 40                    | 15.17                | 0.0181        |
| 189                    | 836.40          | 3.6             | 50                    | 24.15                | <b>0.0289</b> |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM           |
| 189                    | 836.40          | 3.8             | -30                   | 7.10                 | 0.0085        |
| 189                    | 836.40          | 3.8             | -20                   | 15.17                | 0.0181        |
| 189                    | 836.40          | 3.8             | -10                   | 14.53                | 0.0174        |
| 189                    | 836.40          | 3.8             | 0                     | 14.59                | 0.0174        |
| 189                    | 836.40          | 3.8             | 10                    | 9.75                 | 0.0117        |
| 189                    | 836.40          | 3.8             | 20                    | 15.88                | 0.0190        |
| 189                    | 836.40          | 3.8             | 30                    | 11.56                | 0.0138        |
| 189                    | 836.40          | 3.8             | 40                    | 11.69                | 0.0140        |
| 189                    | 836.40          | 3.8             | 50                    | 7.81                 | 0.0093        |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM           |
| 189                    | 836.40          | 4.35            | -30                   | 6.20                 | 0.0074        |
| 189                    | 836.40          | 4.35            | -20                   | 9.10                 | 0.0109        |
| 189                    | 836.40          | 4.35            | -10                   | -9.36                | -0.0112       |
| 189                    | 836.40          | 4.35            | 0                     | 9.23                 | 0.0110        |
| 189                    | 836.40          | 4.35            | 10                    | -13.82               | -0.0165       |
| 189                    | 836.40          | 4.35            | 20                    | 4.58                 | 0.0055        |
| 189                    | 836.40          | 4.35            | 30                    | -15.11               | -0.0181       |
| 189                    | 836.40          | 4.35            | 40                    | -14.59               | -0.0174       |
| 189                    | 836.40          | 4.35            | 50                    | -15.43               | -0.0184       |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**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                   | 13.75                | 0.0162  |
| 251                    | 848.8           | 3.6             | -20                   | 18.92                | 0.0223  |
| 251                    | 848.8           | 3.6             | -10                   | 14.01                | 0.0165  |
| 251                    | 848.8           | 3.6             | 0                     | 19.24                | 0.0227  |
| 251                    | 848.8           | 3.6             | 10                    | 16.34                | 0.0193  |
| 251                    | 848.8           | 3.6             | 20                    | 16.47                | 0.0194  |
| 251                    | 848.8           | 3.6             | 30                    | 17.50                | 0.0206  |
| 251                    | 848.8           | 3.6             | 40                    | 17.24                | 0.0203  |
| 251                    | 848.8           | 3.6             | 50                    | 18.79                | 0.0221  |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 251                    | 848.8           | 3.8             | -30                   | 10.01                | 0.0118  |
| 251                    | 848.8           | 3.8             | -20                   | 18.27                | 0.0215  |
| 251                    | 848.8           | 3.8             | -10                   | 13.24                | 0.0156  |
| 251                    | 848.8           | 3.8             | 0                     | 12.66                | 0.0149  |
| 251                    | 848.8           | 3.8             | 10                    | 15.63                | 0.0184  |
| 251                    | 848.8           | 3.8             | 20                    | 10.91                | 0.0129  |
| 251                    | 848.8           | 3.8             | 30                    | 18.73                | 0.0221  |
| 251                    | 848.8           | 3.8             | 40                    | 15.11                | 0.0178  |
| 251                    | 848.8           | 3.8             | 50                    | 8.39                 | 0.0099  |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 251                    | 848.8           | 4.35            | -30                   | -4.20                | -0.0049 |
| 251                    | 848.8           | 4.35            | -20                   | 16.27                | 0.0192  |
| 251                    | 848.8           | 4.35            | -10                   | 12.91                | 0.0152  |
| 251                    | 848.8           | 4.35            | 0                     | 16.21                | 0.0191  |
| 251                    | 848.8           | 4.35            | 10                    | 10.27                | 0.0121  |
| 251                    | 848.8           | 4.35            | 20                    | -20.02               | -0.0236 |
| 251                    | 848.8           | 4.35            | 30                    | -15.43               | -0.0182 |
| 251                    | 848.8           | 4.35            | 40                    | -5.55                | -0.0065 |
| 251                    | 848.8           | 4.35            | 50                    | -19.37               | -0.0228 |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**PCS 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                    | 12.79                | 0.0069 |
| 661                    | 1880.00             | 3.6             | 20                    | 16.47                | 0.0088 |
| 810                    | 1909.80             | 3.6             | 20                    | 16.85                | 0.0088 |

| Traffic Channel Number | PCS Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|---------------------|-----------------|-----------------------|----------------------|---------|
| 512                    | 1850.20             | 3.8             | 20                    | -7.81                | -0.0042 |
| 661                    | 1880.00             | 3.8             | 20                    | 16.14                | 0.0086  |
| 810                    | 1909.80             | 3.8             | 20                    | -8.39                | -0.0044 |

| Traffic Channel Number | PCS Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|---------------------|-----------------|-----------------------|----------------------|---------|
| 512                    | 1850.20             | 4.35            | 20                    | -11.43               | -0.0062 |
| 661                    | 1880.00             | 4.35            | 20                    | 15.50                | 0.0082  |
| 810                    | 1909.80             | 4.35            | 20                    | 8.91                 | 0.0047  |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**PCS1900 Results: channel 512 @ maximum transmitted power**

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM           |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------------|
| 512                    | 1850.20         | 3.6             | -30                   | 12.98                | 0.0070        |
| 512                    | 1850.20         | 3.6             | -20                   | 44.88                | <b>0.0243</b> |
| 512                    | 1850.20         | 3.6             | -10                   | 30.74                | 0.0166        |
| 512                    | 1850.20         | 3.6             | 0                     | 37.13                | 0.0201        |
| 512                    | 1850.20         | 3.6             | 10                    | 24.34                | 0.0132        |
| 512                    | 1850.20         | 3.6             | 20                    | 12.79                | 0.0069        |
| 512                    | 1850.20         | 3.6             | 30                    | 40.23                | 0.0217        |
| 512                    | 1850.20         | 3.6             | 40                    | 19.50                | 0.0105        |
| 512                    | 1850.20         | 3.6             | 50                    | 17.56                | 0.0095        |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM           |
| 512                    | 1850.20         | 3.8             | -30                   | -10.53               | -0.0057       |
| 512                    | 1850.20         | 3.8             | -20                   | 43.46                | 0.0235        |
| 512                    | 1850.20         | 3.8             | -10                   | 22.86                | 0.0124        |
| 512                    | 1850.20         | 3.8             | 0                     | 30.09                | 0.0163        |
| 512                    | 1850.20         | 3.8             | 10                    | 19.76                | 0.0107        |
| 512                    | 1850.20         | 3.8             | 20                    | -7.81                | -0.0042       |
| 512                    | 1850.20         | 3.8             | 30                    | 37.65                | 0.0203        |
| 512                    | 1850.20         | 3.8             | 40                    | 27.51                | 0.0149        |
| 512                    | 1850.20         | 3.8             | 50                    | 7.88                 | 0.0043        |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM           |
| 512                    | 1850.20         | 4.35            | -30                   | -8.72                | -0.0047       |
| 512                    | 1850.20         | 4.35            | -20                   | 38.16                | 0.0206        |
| 512                    | 1850.20         | 4.35            | -10                   | 22.54                | 0.0122        |
| 512                    | 1850.20         | 4.35            | 0                     | 26.35                | 0.0142        |
| 512                    | 1850.20         | 4.35            | 10                    | 9.62                 | 0.0052        |
| 512                    | 1850.20         | 4.35            | 20                    | -11.43               | -0.0062       |
| 512                    | 1850.20         | 4.35            | 30                    | 26.60                | 0.0144        |
| 512                    | 1850.20         | 4.35            | 40                    | -14.92               | -0.0081       |
| 512                    | 1850.20         | 4.35            | 50                    | -7.04                | -0.0038       |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**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                   | 21.05                | 0.0112  |
| 661                    | 1880.00         | 3.6             | -20                   | 19.63                | 0.0104  |
| 661                    | 1880.00         | 3.6             | -10                   | 40.49                | 0.0215  |
| 661                    | 1880.00         | 3.6             | 0                     | 26.09                | 0.0139  |
| 661                    | 1880.00         | 3.6             | 10                    | 29.44                | 0.0157  |
| 661                    | 1880.00         | 3.6             | 20                    | 16.47                | 0.0088  |
| 661                    | 1880.00         | 3.6             | 30                    | -7.81                | -0.0042 |
| 661                    | 1880.00         | 3.6             | 40                    | 26.54                | 0.0141  |
| 661                    | 1880.00         | 3.6             | 50                    | 28.54                | 0.0152  |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 661                    | 1880.00         | 3.8             | -30                   | 14.79                | 0.0079  |
| 661                    | 1880.00         | 3.8             | -20                   | 13.37                | 0.0071  |
| 661                    | 1880.00         | 3.8             | -10                   | 18.79                | 0.0100  |
| 661                    | 1880.00         | 3.8             | 0                     | 17.43                | 0.0093  |
| 661                    | 1880.00         | 3.8             | 10                    | 24.60                | 0.0131  |
| 661                    | 1880.00         | 3.8             | 20                    | 16.14                | 0.0086  |
| 661                    | 1880.00         | 3.8             | 30                    | -20.34               | -0.0108 |
| 661                    | 1880.00         | 3.8             | 40                    | 16.79                | 0.0089  |
| 661                    | 1880.00         | 3.8             | 50                    | 9.30                 | 0.0049  |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 661                    | 1880.00         | 4.35            | -30                   | 7.10                 | 0.0038  |
| 661                    | 1880.00         | 4.35            | -20                   | 6.65                 | 0.0035  |
| 661                    | 1880.00         | 4.35            | -10                   | 21.57                | 0.0115  |
| 661                    | 1880.00         | 4.35            | 0                     | 19.44                | 0.0103  |
| 661                    | 1880.00         | 4.35            | 10                    | 24.73                | 0.0132  |
| 661                    | 1880.00         | 4.35            | 20                    | 15.50                | 0.0082  |
| 661                    | 1880.00         | 4.35            | 30                    | -25.05               | -0.0133 |
| 661                    | 1880.00         | 4.35            | 40                    | 10.07                | 0.0054  |
| 661                    | 1880.00         | 4.35            | 50                    | 7.62                 | 0.0041  |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**PCS1900 Results: channel 810 @ maximum transmitted power**

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 810                    | 1909.80         | 3.6             | -30                   | 22.15                | 0.0116  |
| 810                    | 1909.80         | 3.6             | -20                   | 39.45                | 0.0207  |
| 810                    | 1909.80         | 3.6             | -10                   | 33.90                | 0.0178  |
| 810                    | 1909.80         | 3.6             | 0                     | 26.86                | 0.0141  |
| 810                    | 1909.80         | 3.6             | 10                    | 29.64                | 0.0155  |
| 810                    | 1909.80         | 3.6             | 20                    | 16.85                | 0.0088  |
| 810                    | 1909.80         | 3.6             | 30                    | 19.37                | 0.0101  |
| 810                    | 1909.80         | 3.6             | 40                    | 28.35                | 0.0148  |
| 810                    | 1909.80         | 3.6             | 50                    | 19.69                | 0.0103  |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 810                    | 1909.80         | 3.8             | -30                   | 15.69                | 0.0082  |
| 810                    | 1909.80         | 3.8             | -20                   | 35.00                | 0.0183  |
| 810                    | 1909.80         | 3.8             | -10                   | 31.64                | 0.0166  |
| 810                    | 1909.80         | 3.8             | 0                     | 23.70                | 0.0124  |
| 810                    | 1909.80         | 3.8             | 10                    | 20.08                | 0.0105  |
| 810                    | 1909.80         | 3.8             | 20                    | -8.39                | -0.0044 |
| 810                    | 1909.80         | 3.8             | 30                    | 13.30                | 0.0070  |
| 810                    | 1909.80         | 3.8             | 40                    | -25.18               | -0.0132 |
| 810                    | 1909.80         | 3.8             | 50                    | 7.55                 | 0.0040  |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 810                    | 1909.80         | 4.35            | -30                   | 10.91                | 0.0057  |
| 810                    | 1909.80         | 4.35            | -20                   | 23.37                | 0.0122  |
| 810                    | 1909.80         | 4.35            | -10                   | 25.89                | 0.0136  |
| 810                    | 1909.80         | 4.35            | 0                     | 14.08                | 0.0074  |
| 810                    | 1909.80         | 4.35            | 10                    | 19.89                | 0.0104  |
| 810                    | 1909.80         | 4.35            | 20                    | 8.91                 | 0.0047  |
| 810                    | 1909.80         | 4.35            | 30                    | -12.66               | -0.0066 |
| 810                    | 1909.80         | 4.35            | 40                    | 21.37                | 0.0112  |
| 810                    | 1909.80         | 4.35            | 50                    | -10.07               | -0.0053 |

## APPENDIX 1C – GSM RADIATED EMISSIONS TEST DATA

|                                                                                   |                                                                                                                                         |                                                                                   |  |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1C</b> |                                                                                   |  |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |  |

### Radiated Power Test Data Results

The following test configurations were measured on model RHK211LW (STV100-1):

Date of test: August 11, 2015

The following measurements were performed by Savtej Sandhu.

The environmental tests conditions were: Temperature: 27 °C  
Relative Humidity: 37 %

The BlackBerry® smartphone was standalone, horizontal down and top pointing to RX antenna when the turntable is at 0 degree position.

Test Distance was 3.0 meters with the RX antenna height scans between 1-4 meters height.

#### GSM850 Band in Call Mode

| EUT  |     |           |      | Rx Antenna |      | Spectrum Analyzer |        | Substitution Method |         |                   |       |       |          |
|------|-----|-----------|------|------------|------|-------------------|--------|---------------------|---------|-------------------|-------|-------|----------|
|      |     |           |      |            |      |                   |        | Tracking Generator  |         |                   |       |       |          |
| Type | Ch  | Frequency | Band | Type       | Pol. | Reading           | Max    | Pol.                | Reading | Corrected Reading |       | Limit | Diff. To |
|      |     | (MHz)     |      |            |      | (dBuV)            | (V,H)  |                     |         | (dBm)             | Tx-Rx |       |          |
| F0   | 128 | 824.20    | 850  | Dipole     | V    | -33.79            | -24.00 | V-V                 | 10.55   | 28.53             | 0.71  | 38.50 | 9.97     |
| F0   | 128 | 824.20    | 850  | Dipole     | H    | -24.00            |        | H-H                 | 9.41    |                   |       |       |          |
| F0   | 190 | 836.60    | 850  | Dipole     | V    | -33.05            | -23.64 | V-V                 | 12.04   | 29.70             | 0.93  | 38.50 | 8.80     |
| F0   | 190 | 836.60    | 850  | Dipole     | H    | -23.64            |        | H-H                 | 11.32   |                   |       |       |          |
| F0   | 251 | 848.80    | 850  | Dipole     | V    | -33.11            | -23.93 | V-V                 | 12.55   | 30.18             | 1.04  | 38.50 | 8.32     |
| F0   | 251 | 848.80    | 850  | Dipole     | H    | -23.93            |        | H-H                 | 11.91   |                   |       |       |          |

#### GSM850 Band in EDGE Mode

| EUT  |     |                    |      | Rx Antenna |      | Spectrum Analyzer |                       | Substitution Method |                  |                                           |      |                |                        |
|------|-----|--------------------|------|------------|------|-------------------|-----------------------|---------------------|------------------|-------------------------------------------|------|----------------|------------------------|
|      |     |                    |      |            |      |                   |                       | Tracking Generator  |                  |                                           |      |                |                        |
| Type | Ch  | Frequency<br>(MHz) | Band | Type       | Pol. | Reading<br>(dBuV) | Max<br>(V,H)<br>(dBm) | Pol.<br><br>Tx-Rx   | Reading<br>(dBm) | Corrected Reading<br>(relative to Dipole) |      | Limit<br>(dBm) | Diff. To<br>Limit (dB) |
|      |     |                    |      |            |      |                   |                       |                     |                  | (dBm)                                     | (W)  |                |                        |
| F0   | 128 | 824.20             | 850  | Dipole     | V    | -34.56            | -25.34                | V-V                 | 9.19             | 27.17                                     | 0.52 | 38.50          | 11.33                  |
| F0   | 128 | 824.20             | 850  | Dipole     | H    | -25.34            |                       | H-H                 | 8.02             |                                           |      |                |                        |
| F0   | 190 | 836.60             | 850  | Dipole     | V    | -34.12            | -25.11                | V-V                 | 10.52            | 28.18                                     | 0.66 | 38.50          | 10.32                  |
| F0   | 190 | 836.60             | 850  | Dipole     | H    | -25.11            |                       | H-H                 | 9.84             |                                           |      |                |                        |
| F0   | 251 | 848.80             | 850  | Dipole     | V    | -34.55            | -25.90                | V-V                 | 10.52            | 28.15                                     | 0.65 | 38.50          | 10.35                  |
| F0   | 251 | 848.80             | 850  | Dipole     | H    | -25.90            |                       | H-H                 | 9.88             |                                           |      |                |                        |

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|                                                                                   |                                                                                                                   |                                                                                   |  |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2) |                                                                                   |  |
|                                                                                   | <b>APPENDIX 1C</b>                                                                                                |                                                                                   |  |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                              | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |  |

### Radiated Power Test Data Results cont'd

Date of test: July 23, 2015

The following measurements were performed by Savtej Sandhu.

The environmental tests conditions were: Temperature: 27.6 °C  
Relative Humidity: 44.7 %

The BlackBerry® smartphone was standalone, side button up and LCD Screen pointing to RX antenna when the turntable is at 0 degree position.

Test Distance was 3.0 meters with the RX antenna height scans between 1-4 meters height.

#### PCS1900 Band in Call Mode

|      |     |                    |      |                 |      |                   |                  | Substitution Method |                  |                                                       |      |                |                       |
|------|-----|--------------------|------|-----------------|------|-------------------|------------------|---------------------|------------------|-------------------------------------------------------|------|----------------|-----------------------|
| EUT  |     |                    |      | Receive Antenna |      | Spectrum Analyzer |                  | Tracking Generator  |                  |                                                       |      |                |                       |
| Type | Ch  | Frequency<br>(MHz) | Band | Type            | Pol. | Reading<br>(dBm)  | Max (V,H)<br>dBm | Pol.<br>Tx-Rx       | Reading<br>(dBm) | Corrected Reading<br>(relative to Isotropic Radiator) |      | Limit<br>(dBm) | Diff to Limit<br>(dB) |
|      |     |                    |      |                 |      |                   |                  |                     |                  | (dBm)                                                 | (W)  |                |                       |
| F0   | 512 | 1850.20            | 1900 | Horn            | V    | -19.30            | -19.30           | V-V                 | -9.99            | 30.91                                                 | 1.23 | 33             | 2.09                  |
| F0   | 512 | 1850.20            | 1900 | Horn            | H    | -20.04            |                  | H-H                 | -8.77            |                                                       |      |                |                       |
| F0   | 661 | 1880.00            | 1900 | Horn            | V    | -19.36            | -19.36           | V-V                 | -9.54            | <b>30.94</b>                                          | 1.24 | 33             | 2.06                  |
| F0   | 661 | 1880.00            | 1900 | Horn            | H    | -20.62            |                  | H-H                 | -8.46            |                                                       |      |                |                       |
| F0   | 810 | 1909.80            | 1900 | Horn            | V    | -20.04            | -20.04           | V-V                 | -9.58            | 30.42                                                 | 1.10 | 33             | 2.58                  |
| F0   | 810 | 1909.80            | 1900 | Horn            | H    | -21.21            |                  | H-H                 | -9.02            |                                                       |      |                |                       |

#### PCS1900 Band in EDGE Mode

| EUT  |     |           |      |                 |      |                   |           | Substitution Method |         |                                                       |      |       |               |
|------|-----|-----------|------|-----------------|------|-------------------|-----------|---------------------|---------|-------------------------------------------------------|------|-------|---------------|
| EUT  |     |           |      | Receive Antenna |      | Spectrum Analyzer |           | Tracking Generator  |         |                                                       |      |       |               |
|      |     | Frequency |      |                 |      | Reading           | Max (V,H) | Pol.                | Reading | Corrected Reading<br>(relative to Isotropic Radiator) |      | Limit | Diff to Limit |
| Type | Ch  | (MHz)     | Band | Type            | Pol. | (dBuV)            | dBuV      | Tx-Rx               | (dBm)   | (dBm)                                                 | (W)  | (dBm) | (dB)          |
| F0   | 512 | 1850.20   | 1900 | Horn            | V    | -20.28            | -20.28    | V-V                 | -10.40  | 30.01                                                 | 1.00 | 33    | 2.99          |
| F0   | 512 | 1850.20   | 1900 | Horn            | H    | -21.61            |           | H-H                 | -9.67   |                                                       |      |       |               |
| F0   | 661 | 1880.00   | 1900 | Horn            | V    | -20.92            | -20.92    | V-V                 | -10.42  | 29.47                                                 | 0.89 | 33    | 3.53          |
| F0   | 661 | 1880.00   | 1900 | Horn            | H    | -22.38            |           | H-H                 | -9.93   |                                                       |      |       |               |
| F0   | 810 | 1909.80   | 1900 | Horn            | V    | -21.88            | -21.88    | V-V                 | -10.64  | 29.28                                                 | 0.85 | 33    | 3.72          |
| F0   | 810 | 1909.80   | 1900 | Horn            | H    | -23.03            |           | H-H                 | -10.16  |                                                       |      |       |               |

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|                                                                                   |                                                                                                                                         |                                                                                   |  |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 1C</b> |                                                                                   |  |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |  |

### Radiated Power Test Data Results cont'd

The following test configurations were measured on model RHT181LW (STV100-2):

Date of test: October 13, 2015

The following measurements were performed by Savtej Sandhu.

The environmental tests conditions were: Temperature: 26 °C  
Relative Humidity: 36.4 %

The BlackBerry® smartphone was standalone, horizontal down and top pointing to RX antenna when the turntable is at 0 degree position.

Test Distance was 3.0 meters with the RX antenna height scans between 1-4 meters height.

### GSM850 Band in Call Mode

| EUT  |     |                 |      | Rx Antenna |      | Spectrum Analyzer |                 | Substitution Method |               |                                        |      |             |                     |
|------|-----|-----------------|------|------------|------|-------------------|-----------------|---------------------|---------------|----------------------------------------|------|-------------|---------------------|
|      |     |                 |      |            |      |                   |                 | Tracking Generator  |               |                                        |      |             |                     |
| Type | Ch  | Frequency (MHz) | Band | Type       | Pol. | Reading (dBuV)    | Max (V,H) (dBm) | Pol. Tx-Rx          | Reading (dBm) | Corrected Reading (relative to Dipole) |      | Limit (dBm) | Diff. To Limit (dB) |
|      |     |                 |      |            |      |                   |                 |                     |               | (dBm)                                  | (W)  |             |                     |
| F0   | 128 | 824.20          | 850  | Dipole     | V    | -34.80            | -26.56          | V-V                 | 7.90          | 27.03                                  | 0.50 | 38.50       | 11.47               |
| F0   | 128 | 824.20          | 850  | Dipole     | H    | -26.56            |                 | H-H                 | 9.05          |                                        |      |             |                     |
| F0   | 190 | 836.60          | 850  | Dipole     | V    | -33.41            | -24.99          | V-V                 | 9.64          | <b>29.39</b>                           | 0.87 | 38.50       | 9.11                |
| F0   | 190 | 836.60          | 850  | Dipole     | H    | -24.99            |                 | H-H                 | 11.73         |                                        |      |             |                     |
| F0   | 251 | 848.80          | 850  | Dipole     | V    | -32.37            | -24.20          | V-V                 | 11.25         | 29.18                                  | 0.83 | 38.50       | 9.32                |
| F0   | 251 | 848.80          | 850  | Dipole     | H    | -24.20            |                 | H-H                 | 11.55         |                                        |      |             |                     |

### GSM850 Band in EDGE Mode

| EUT  |     |                 |      | Rx Antenna |      | Spectrum Analyzer |                 | Substitution Method |               |                                        |      |             |                     |
|------|-----|-----------------|------|------------|------|-------------------|-----------------|---------------------|---------------|----------------------------------------|------|-------------|---------------------|
|      |     |                 |      |            |      |                   |                 | Tracking Generator  |               |                                        |      |             |                     |
| Type | Ch  | Frequency (MHz) | Band | Type       | Pol. | Reading (dBuV)    | Max (V,H) (dBm) | Pol. Tx-Rx          | Reading (dBm) | Corrected Reading (relative to Dipole) |      | Limit (dBm) | Diff. To Limit (dB) |
|      |     |                 |      |            |      |                   |                 |                     |               | (dBm)                                  | (W)  |             |                     |
| F0   | 128 | 824.20          | 850  | Dipole     | V    | -37.41            | -29.04          | V-V                 | 5.37          | 25.05                                  | 0.32 | 38.50       | 13.45               |
| F0   | 128 | 824.20          | 850  | Dipole     | H    | -29.04            |                 | H-H                 | 7.07          |                                        |      |             |                     |
| F0   | 190 | 836.60          | 850  | Dipole     | V    | -36.03            | -27.32          | V-V                 | 7.28          | 27.17                                  | 0.52 | 38.50       | 11.33               |
| F0   | 190 | 836.60          | 850  | Dipole     | H    | -27.32            |                 | H-H                 | 9.51          |                                        |      |             |                     |
| F0   | 251 | 848.80          | 850  | Dipole     | V    | -34.82            | -27.01          | V-V                 | 8.48          | <b>29.59</b>                           | 0.91 | 38.50       | 8.91                |
| F0   | 251 | 848.80          | 850  | Dipole     | H    | -27.01            |                 | H-H                 | 11.96         |                                        |      |             |                     |

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|                                                                                   |                                                                                                                                          |                                                                                   |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW (STV100-2)<br><b>APPENDIX 1C</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                     | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### Radiated Emissions Test Data Results cont'd

The following test configurations were measured on model RHK211LW (STV100-1):

#### **GSM850 Call Mode**

The following measurements were performed by Imran Kanji.

Date of Test: August 7, 2015

The environmental test conditions were: Temperature: 25.7 °C  
Relative Humidity: 36.4 %

Test Distance was 3.0 meters with the RX antenna height scans between 1-4 meters height, and a frequency range of 30 MHz to 1000 MHz.

The BlackBerry® smartphone was standalone, with horizontal facing down and top pointing to the RX antenna when the turntable is at 0 degree position.

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

All emissions were at least 25.0 dB below the limit.

The following measurements were performed by Kevin Guo.

Date of Test: August 7, 2015

The environmental test conditions were: Temperature: 25.4 °C  
Relative Humidity: 41.7 %

Test Distance was 3.0 meters with the RX antenna height scans between 1-4 meters height, and a frequency range of 1 GHz to 9 GHz.

The BlackBerry® smartphone was standalone, with horizontal down and the top pointing to the RX antenna when the turntable is at 0 degree position.

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

| Frequency<br>(MHz) | Channel<br>Of<br>Occurrence | Antenna       |                    | Test<br>Angle<br>(Deg.) | Detector<br>(PK or QP) | Measured<br>Level<br>(dBμV) | Correction Factor<br>for<br>preamp/antenna/<br>cables/ filter<br>(dB) | Field Strength<br>Level<br>(reading+corr)<br>(dBm) | Limit @<br>3.0 m<br>(dBm) | Test<br>Margin<br>(dB) |
|--------------------|-----------------------------|---------------|--------------------|-------------------------|------------------------|-----------------------------|-----------------------------------------------------------------------|----------------------------------------------------|---------------------------|------------------------|
|                    |                             | Pol.<br>(V/H) | Height<br>(meters) |                         |                        |                             |                                                                       |                                                    |                           |                        |
| 2509.72            | 190                         | H             | 2.60               | 175                     | PK                     | 47.25                       | -87.972                                                               | -32.683                                            | -13.00                    | -19.7                  |

All other emissions were at least 25.0 dB below the limit.

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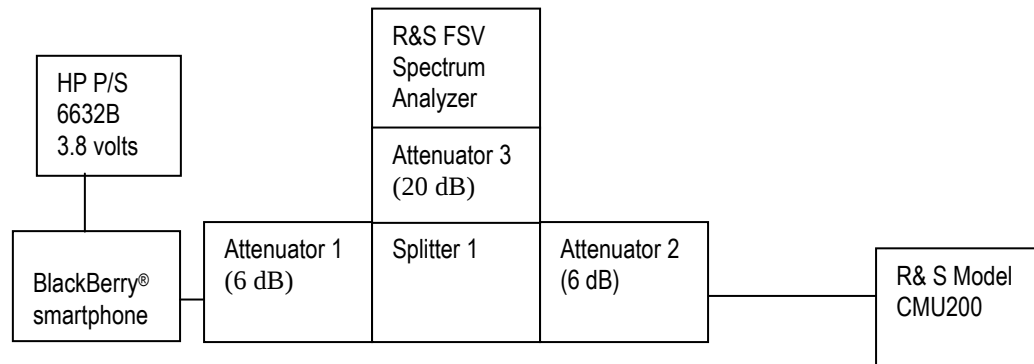
## APPENDIX 2A– WCDMA Band II/IV/V CONDUCTED RF EMISSIONS TEST DATA/PLOTS

|                                              |                                                                                                                                         |                                                                                   |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>BlackBerry</b>                            | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### WCDMA Band II/IV/V Conducted RF Emission Test Data

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

#### Test Setup Diagram



A reference offset of 31.4 dB was applied to the spectrum analyzer reference level for the attenuators and coaxial cable loss in the test circuit.

| <u>UNIT</u>  | <u>MANUFACTURER</u> | <u>MODEL</u>  | <u>SERIAL NUMBER</u> |
|--------------|---------------------|---------------|----------------------|
| Attenuator 1 | Mini-Circuits       | BW-S6W2+      | 0647                 |
| Attenuator 2 | Mini-Circuits       | BW-S6W2+      | 0648                 |
| Attenuator 3 | Mini-Circuits       | BW-S20-2W263+ | 1234                 |
| Splitter 1   | Weinschel           | 1515          | MES 92               |

The following configurations were measured for model RHK211LW (STV100-1):

Date of Test: August 6 - 14, 2015

The environmental test conditions were:      Temperature:      21.5°C  
                                                                          Relative Humidity:      44.4%

The following measurements were performed by Sijia Li and Landon Martin.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

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

**The conducted spurious emissions** – As per 47 CFR 2.1051, 22.917, 24.238(a), 27.53, RSS-132, 5.5, RSS – 133, 6.5, and RSS-139, 6.5 were measured from 30 MHz to 20 GHz.

#### **–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 WCDMA Band V was measured to be 4.573 MHz, WCDMA Band II was measured to be 4.618 MHz and for the WCDMA Band IV it was measured to be 4.557 MHz as shown below. Results were derived in a 100 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 WCDMA Band II/IV/V selected Frequencies in Loopback mode**

| <b>WCDMA Band V<br/>Frequency (MHz)</b> | <b>26dBc Occupied Bandwidth<br/>(MHz)</b> | <b>99% Occupied Bandwidth<br/>(MHz)</b> |
|-----------------------------------------|-------------------------------------------|-----------------------------------------|
| 826.400                                 | <b>4.573</b>                              | <b>4.140</b>                            |
| 836.400                                 | 4.550                                     | <b>4.140</b>                            |
| 846.600                                 | 4.548                                     | <b>4.140</b>                            |

| <b>WCDMA Band II<br/>Frequency (MHz)</b> | <b>26dBc Occupied Bandwidth<br/>(MHz)</b> | <b>99% Occupied Bandwidth<br/>(MHz)</b> |
|------------------------------------------|-------------------------------------------|-----------------------------------------|
| 1852.400                                 | 4.588                                     | 4.150                                   |
| 1880.000                                 | 4.595                                     | <b>4.155</b>                            |
| 1907.600                                 | <b>4.618</b>                              | 4.140                                   |

| <b>WCDMA Band IV<br/>Frequency (MHz)</b> | <b>26dBc Occupied Bandwidth<br/>(MHz)</b> | <b>99% Occupied Bandwidth<br/>(MHz)</b> |
|------------------------------------------|-------------------------------------------|-----------------------------------------|
| 1712.4                                   | 4.541                                     | <b>4.135</b>                            |
| 1732.6                                   | 4.553                                     | 4.125                                   |
| 1752.6                                   | <b>4.557</b>                              | <b>4.135</b>                            |

|                                                                                   |                                                                                                                                          |                                                                                   |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW (STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                     | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## Measurement Plots for WCDMA Band II/IV/V Voice mode

See Figures 2-1a to 2-12a for the plots of the conducted spurious emissions.

See Figures 2-13a to 2-24a for the plots of 99% Occupied Bandwidth and -26 dBc Bandwidth.

See Figures 2-25a to 2-28a for the plots of the Channel mask.

See Figures 2-29a to 2-31a for the plots of the Peak to Average Ratio (WCDMA Band II).

See Figures 2-1b to 2-6b for the plots of the conducted spurious emissions.

See Figures 2-7b to 2-12b for the plots of 99% Occupied Bandwidth and -26 dBc Bandwidth.

See Figures 2-13b to 2-14b for the plots of the Channel mask.

See Figures 2-15b to 2-17b for the plots of the Peak to Average Ratio (WCDMA Band IV).

|                                                                                   |                                                                                                                                          |                                                                                   |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW (STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                     | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### **Test Data for WCDMA Band II/IV/V selected Frequencies in HSUPA mode**

| <b>WCDMA Band V<br/>Frequency (MHz)</b> | <b>99% Occupied Bandwidth<br/>(MHz)</b> |
|-----------------------------------------|-----------------------------------------|
| 826.400                                 | 4.145                                   |
| 836.400                                 | 4.140                                   |
| 846.600                                 | <b>4.150</b>                            |

| <b>WCDMA Band II<br/>Frequency (MHz)</b> | <b>99% Occupied Bandwidth<br/>(MHz)</b> |
|------------------------------------------|-----------------------------------------|
| 1852.400                                 | <b>4.155</b>                            |
| 1880.000                                 | <b>4.155</b>                            |
| 1907.600                                 | 4.145                                   |

| <b>WCDMA Band IV<br/>Frequency (MHz)</b> | <b>99% Occupied Bandwidth<br/>(MHz)</b> |
|------------------------------------------|-----------------------------------------|
| 1712.4                                   | <b>4.140</b>                            |
| 1732.6                                   | <b>4.140</b>                            |
| 1752.6                                   | <b>4.140</b>                            |

### ***Measurement Plots for WCDMA Band V/II/IV in HSUPA mode***

Refer to the following measurement plots for more detail:

See Figures 2-32a to 2-43a for the plots of the conducted spurious emissions.

See Figures 2-44a to 2-49a for the plots of 99% Occupied Bandwidth.

See Figures 2-50a to 2-53a for the plots of the Channel mask.

See Figures 2-18b to 2-23b for the plots of the conducted spurious emissions.

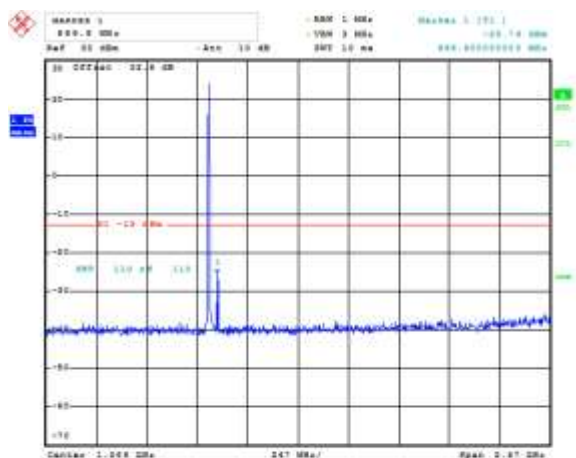
See Figures 2-24b to 2-26b for the plots of 99% Occupied Bandwidth.

See Figures 2-27b to 2-28b for the plots of the Channel mask.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

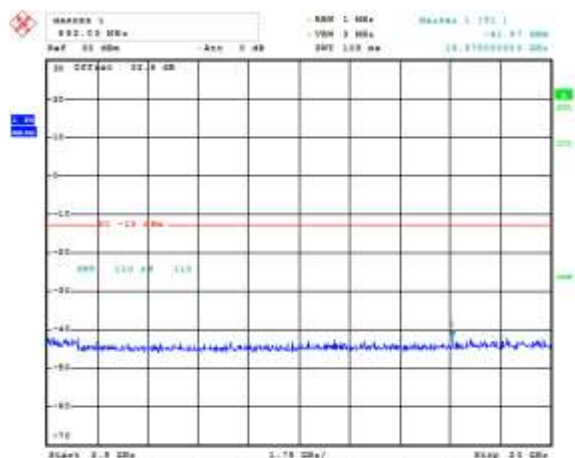
## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-1a: Band V, Spurious Conducted Emissions, Low channel**



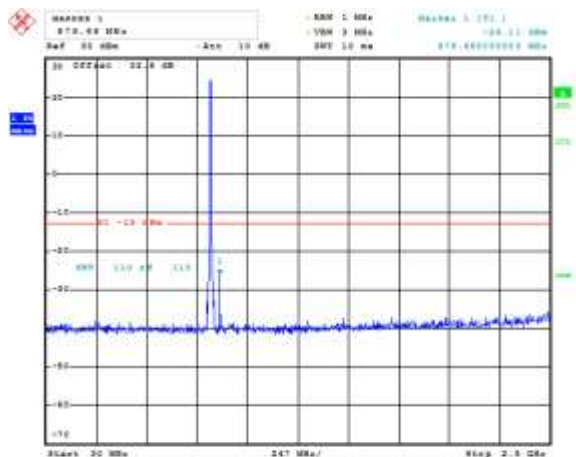
Date: T:\JPG\_0018 13:15:38

**Figure 2-2a: Band V, Spurious Conducted Emissions, Low channel**



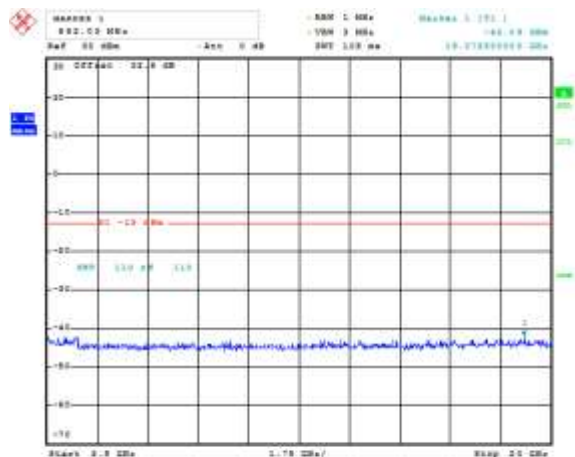
Date: T:\JPG\_0018 13:22:18

**Figure 2-3a: Band V, Spurious Conducted Emissions, Middle channel**



Date: T:\JPG\_0018 13:16:01

**Figure 2-4a: Band V, Spurious Conducted Emissions, Middle channel**

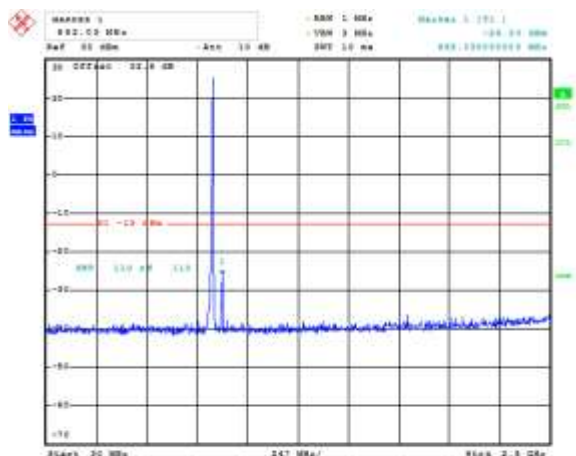


Date: T:\JPG\_0018 13:22:58

|                                                                                   |                                                                                                                                          |                                                                                   |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW (STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                     | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

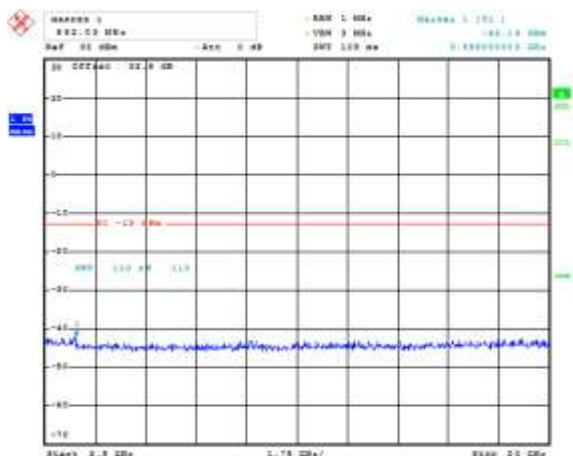
## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-5a: Band V, Spurious Conducted Emissions, High Channel**



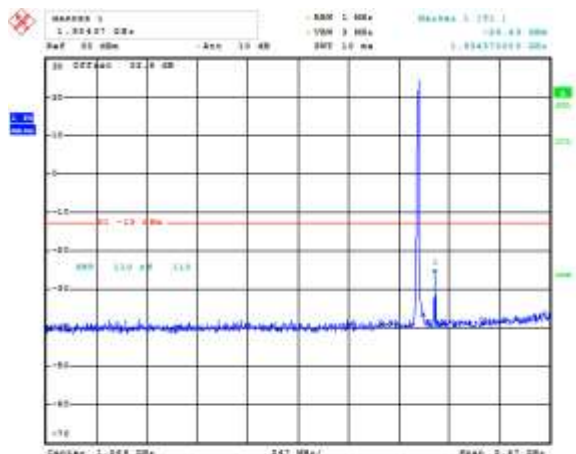
Date: 7.AUG.2015 15:16:22

**Figure 2-6a: Band V, Spurious Conducted Emissions, High Channel**



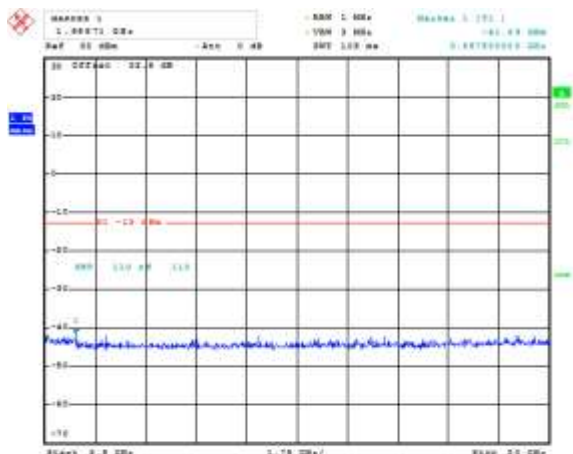
Date: 7.AUG.2015 15:20:37

**Figure 2-2a: BAND II Spurious Conducted Emissions, Low Channel**



Date: 6.AUG.2015 23:09:38

**Figure 2-8a: BAND II, Spurious Conducted Emissions, Low Channel**

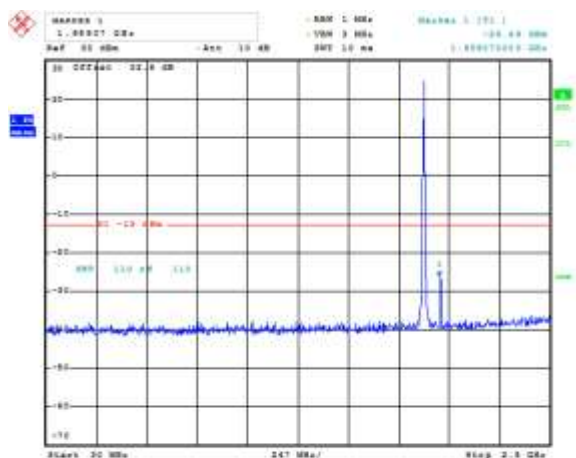


Date: 6.AUG.2015 23:11:57

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

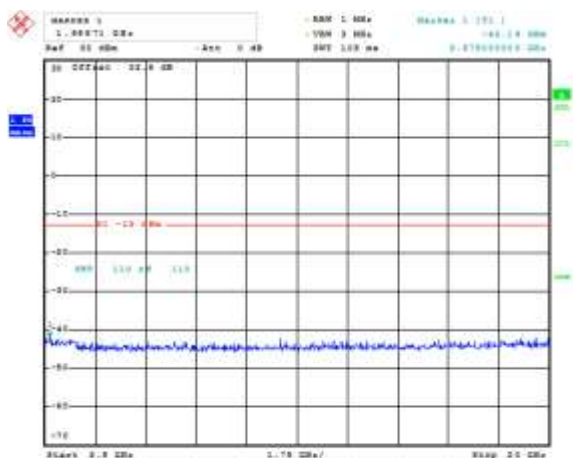
## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-9a: BAND II, Spurious Conducted Emissions, Middle Channel**



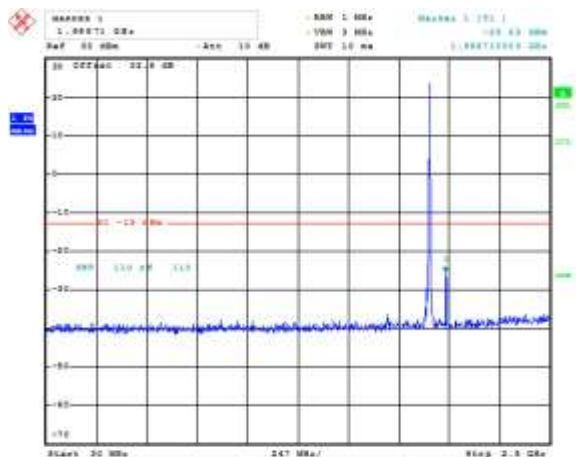
Date: 6.AUG.2015 23:10:08

**Figure 2-10a: BAND II, Spurious Conducted Emissions, Middle Channel**



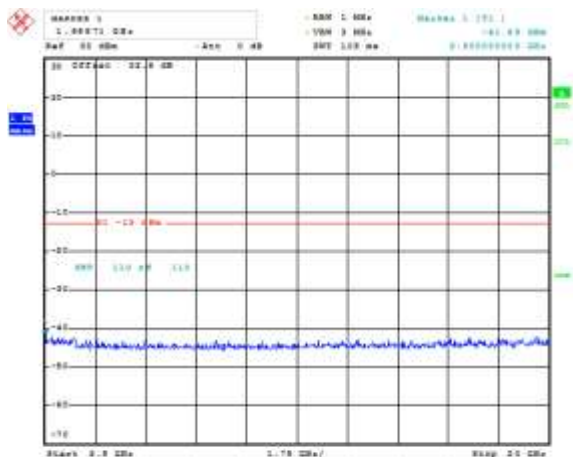
Date: 6.AUG.2015 23:12:28

**Figure 2-11a: BAND II, Spurious Conducted Emissions, High Channel**



Date: 6.AUG.2015 23:11:04

**Figure 2-12a: BAND II, Spurious Conducted Emissions, High Channel**

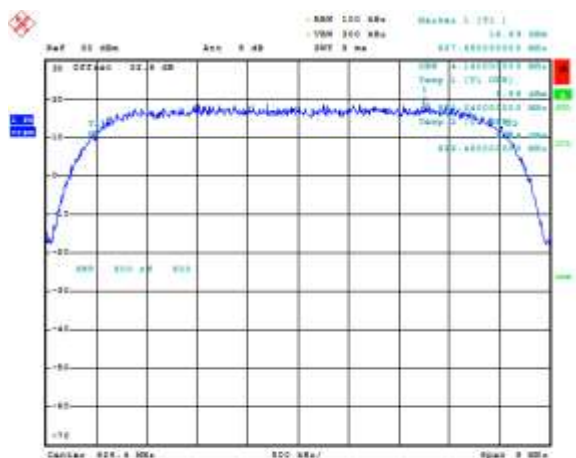


Date: 6.AUG.2015 23:10:18

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

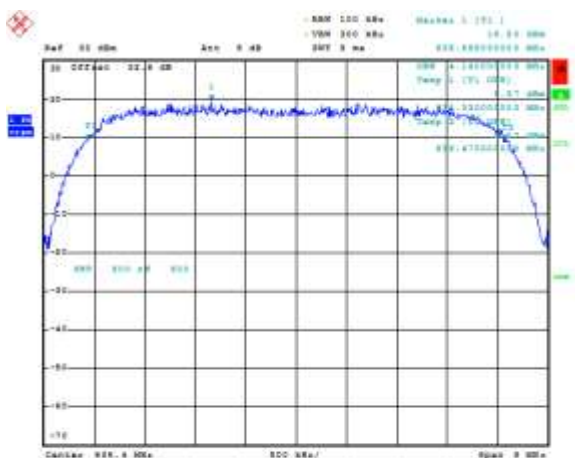
## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-13a: Occupied Bandwidth, Band V Low Channel**



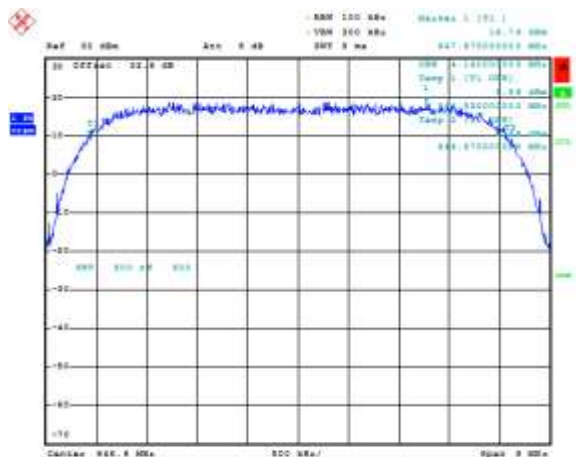
Date: 7.AUG.2015 13:26:28

**Figure 2-14a: Occupied Bandwidth, Band V Middle Channel**



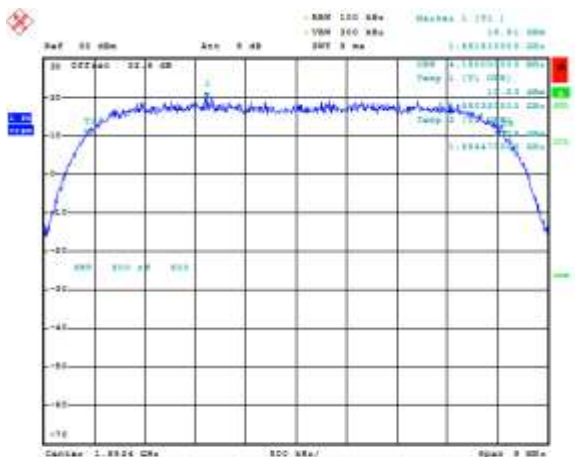
Date: 7.AUG.2015 13:29:08

**Figure 2-15a: Occupied Bandwidth, Band V High Channel**



Date: 7.AUG.2015 13:29:26

**Figure 2-16a: Occupied Bandwidth, Band II Low Channel**

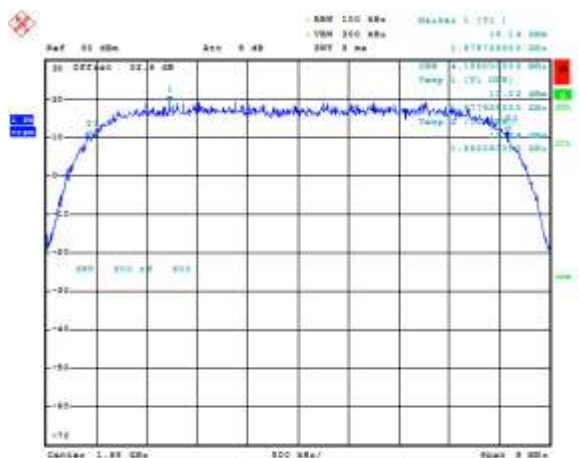


Date: 8.AUG.2015 23:16:56

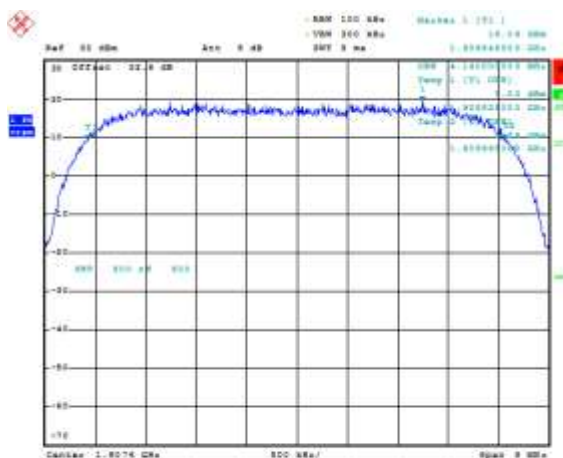
|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## WCDMA Conducted RF Emission Test Data cont'd

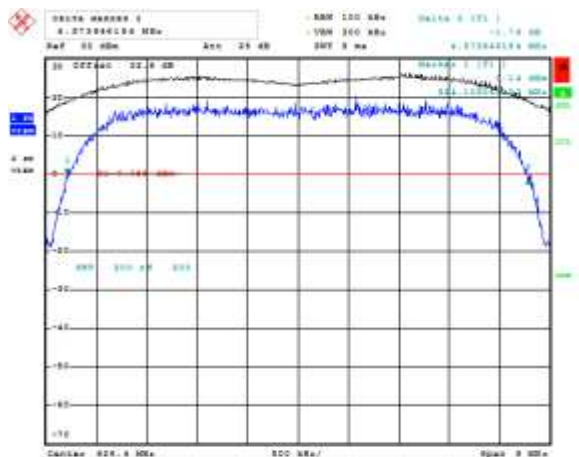
**Figure 2-17a: Occupied Bandwidth, Band II Middle Channel**



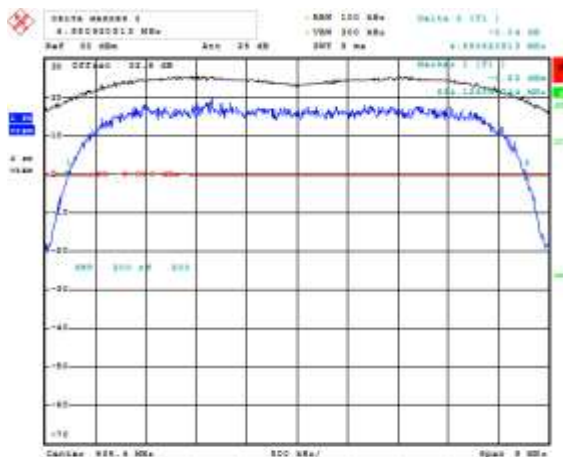
**Figure 2-18a: Occupied Bandwidth, Band II High Channel**



**Figure 2-19a: -26 dBc Bandwidth, Band V Low Channel**



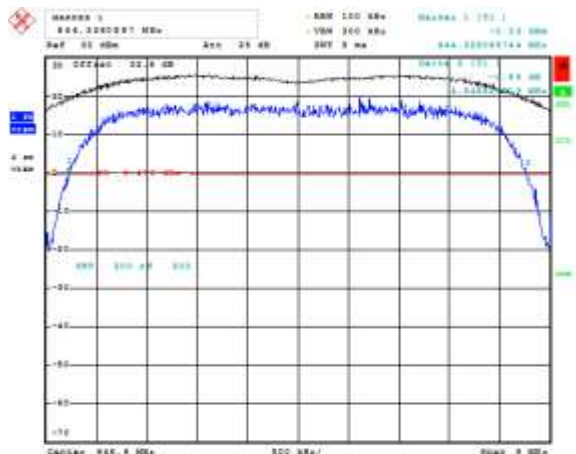
**Figure 2-20a: -26 dBc Bandwidth, Band V Middle Channel**



|                                                                                   |                                                                                                                                          |                                                                                   |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW (STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                     | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

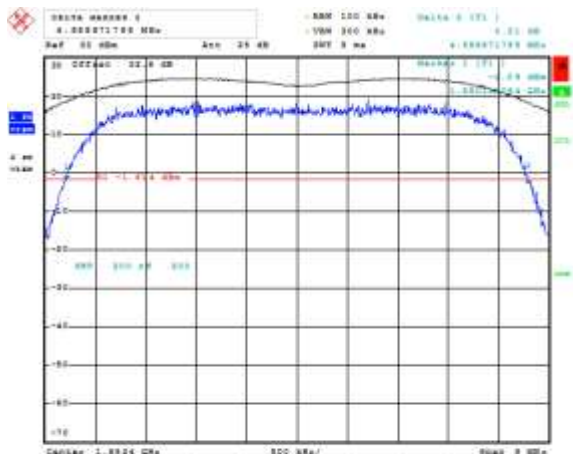
## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-21a: -26 dBc Bandwidth, Band V High Channel**



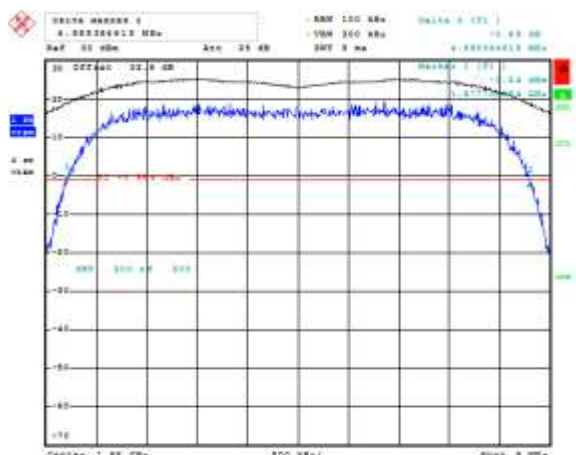
Date: 7.AUG.2015 12:27:57

**Figure 2-22a: -26 dBc Bandwidth, Band II Low Channel**



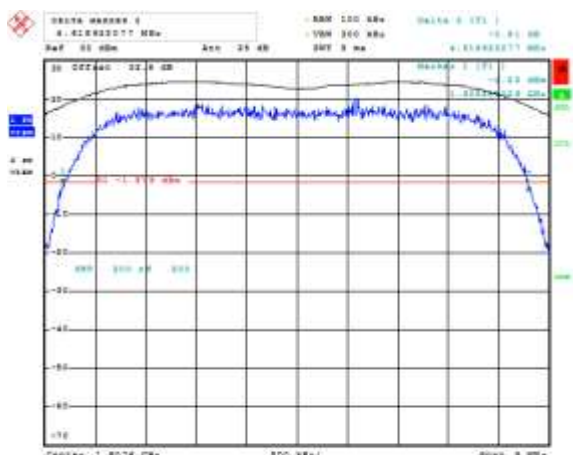
Date: 6.AUG.2015 23:16:33

**Figure 2-23a: -26 dBc Bandwidth, Band II Middle Channel**



Date: 6.AUG.2015 23:15:32

**Figure 2-24a: -26 dBc Bandwidth, Band II High Channel**



Date: 6.AUG.2015 23:16:28

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

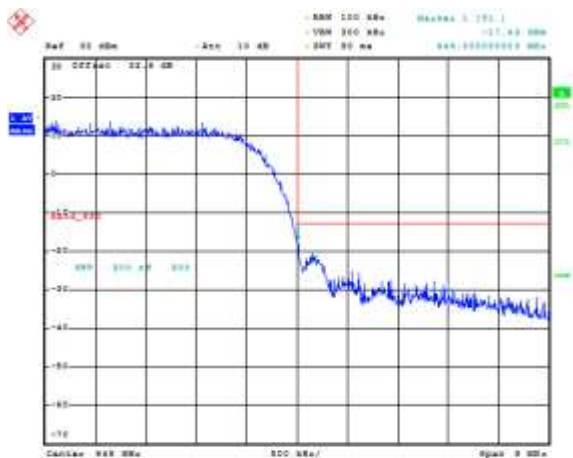
## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-25a: Band V Low Channel Mask**



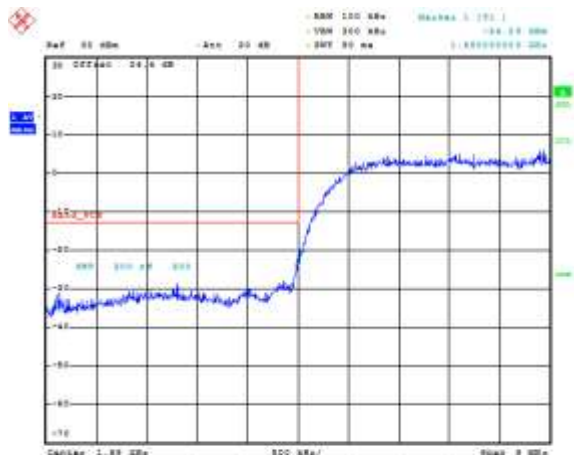
Date: T:2015-01-13 13:50:48

**Figure 2-26a: Band V High Channel Mask**



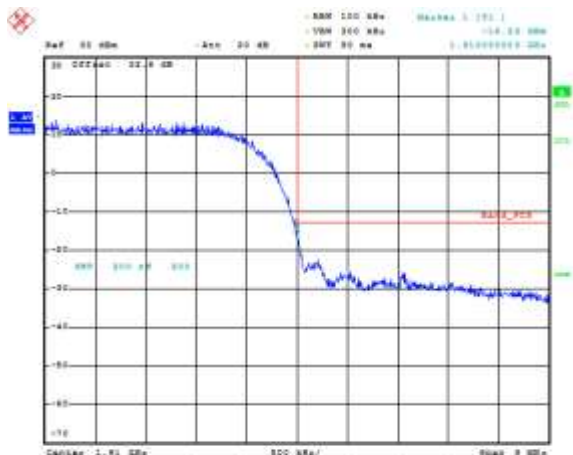
Date: T:2015-01-13 13:50:58

**Figure 2-27a: Band II Low Channel Mask**



Date: T:2015-01-13 13:50:58

**Figure 2-28a: Band II High Channel Mask**

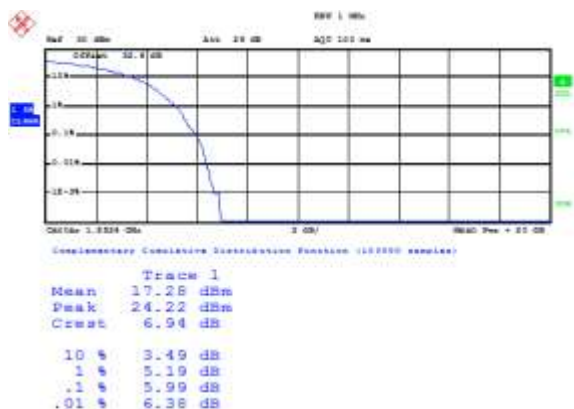


Date: T:2015-01-13 13:50:58

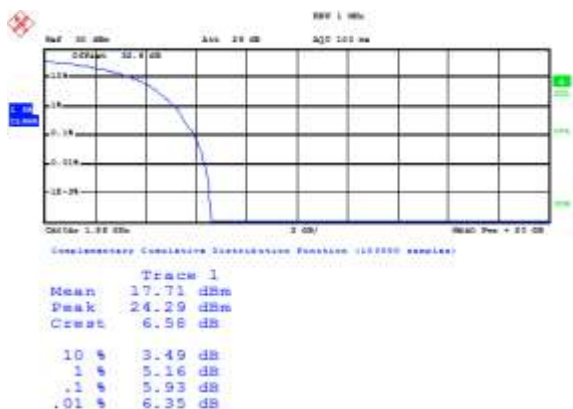
|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## WCDMA Conducted RF Emission Test Data cont'd

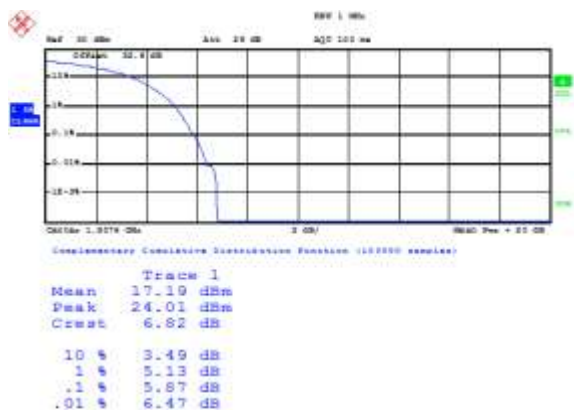
**Figure 2-29a: Band II, PAR Low Channel**



**Figure 2-30a: Band II, PAR Mid Channel**



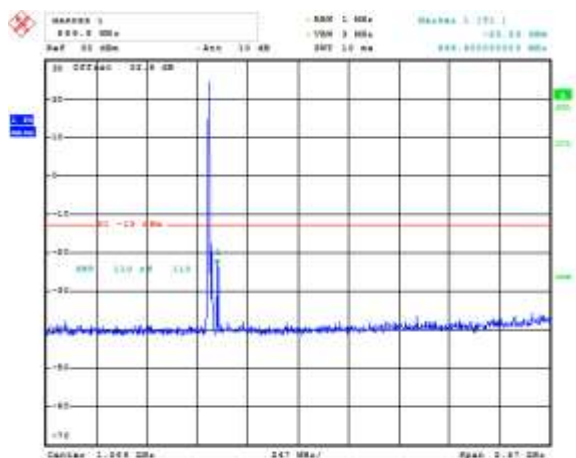
**Figure 2-31a: Band II, PAR High Channel**



|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

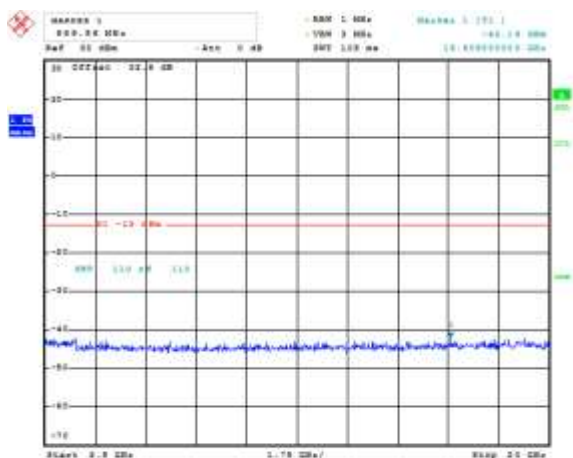
## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-32a: Band V HSUPA, Spurious Conducted Emissions, Low channel**



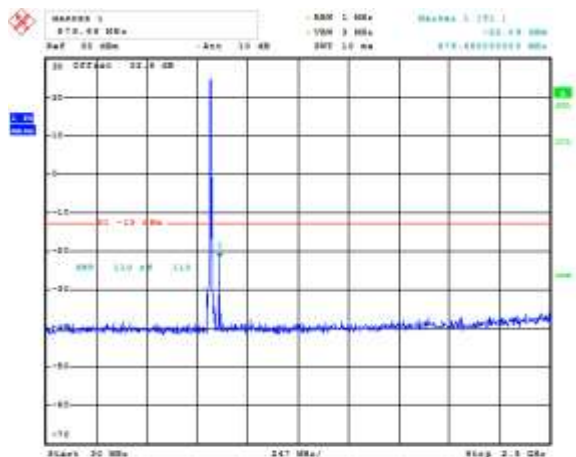
Date: T:09:00:15 21:27:25

**Figure 2-33a: Band V HSUPA, Spurious Conducted Emissions, Low channel**



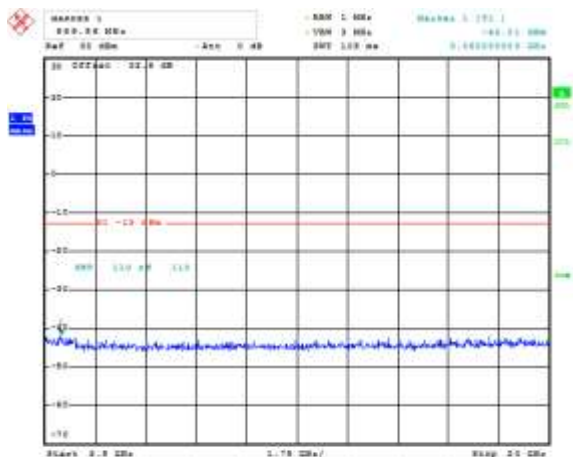
Date: T:09:00:15 21:29:04

**Figure 2-34a: Band V HSUPA, Spurious Conducted Emissions, Middle channel**



Date: T:09:00:15 21:27:56

**Figure 2-35a: Band V HSUPA, Spurious Conducted Emissions, Middle channel**

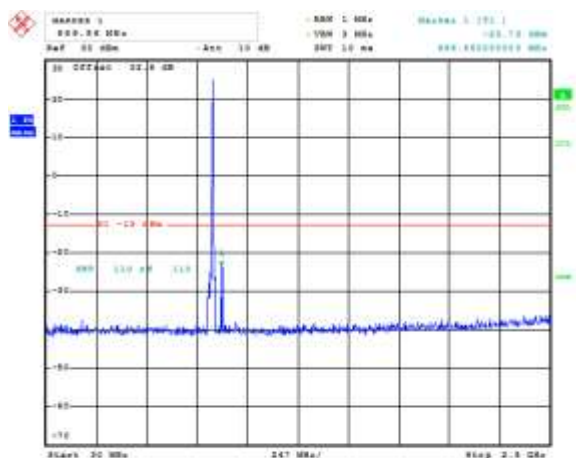


Date: T:09:00:15 21:28:55

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|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

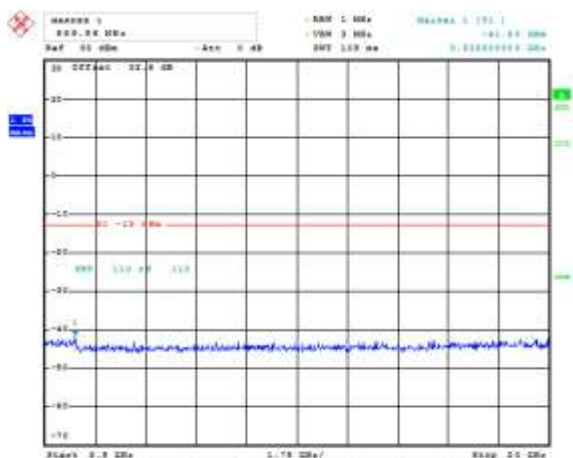
## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-36a: Band V HSUPA, Spurious Conducted Emissions, High Channel**



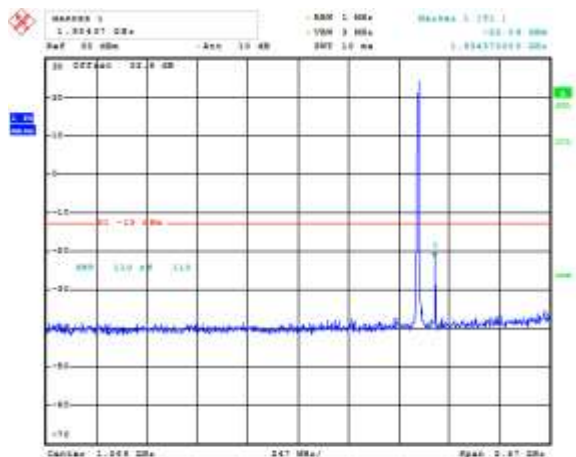
Date: T:JPG:2015 21:25:28

**Figure 2-37a: Band V HSUPA, Spurious Conducted Emissions, High Channel**



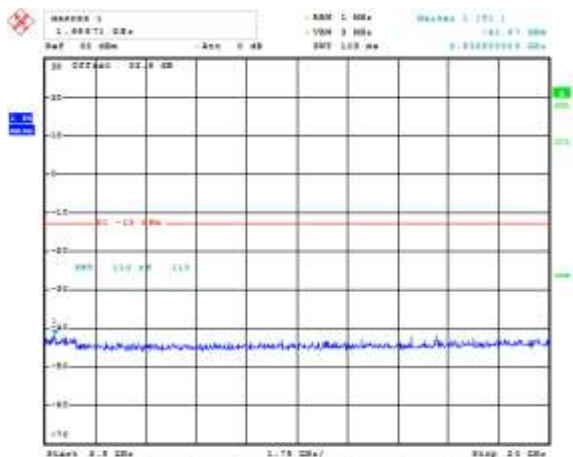
Date: T:JPG:2015 21:30:31

**Figure 2-38a: Band II HSUPA, Spurious Conducted Emissions, Low Channel**



Date: T:JPG:2015 21:01:51

**Figure 2-39a: Band II HSUPA, Spurious Conducted Emissions, Low Channel**

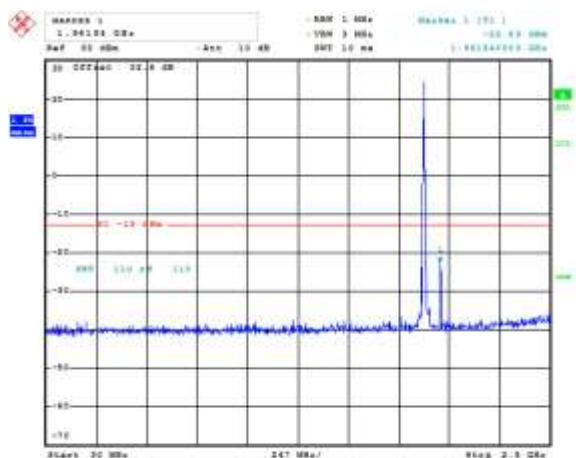


Date: T:JPG:2015 21:00:08

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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

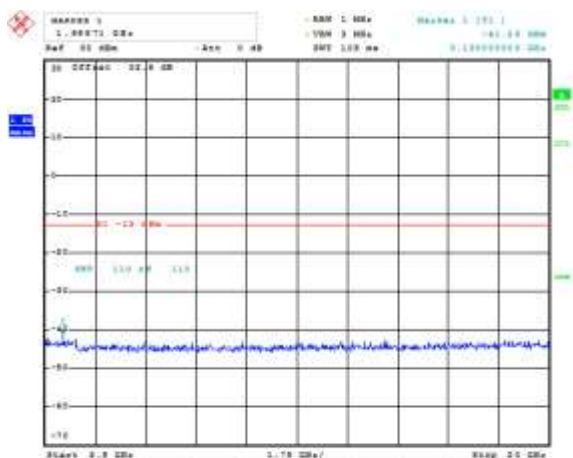
## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-40a: Band II HSUPA, Spurious Conducted Emissions, Middle Channel**



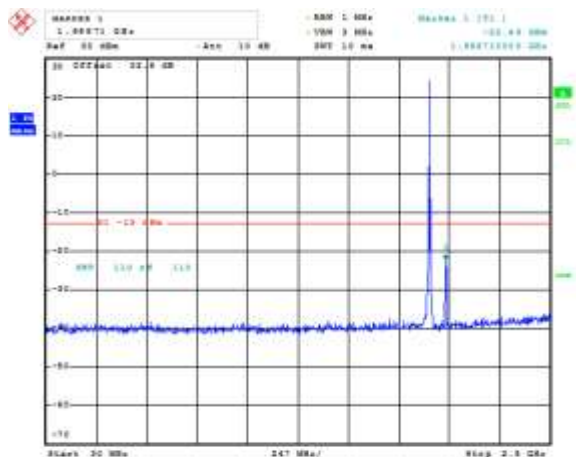
Date: T.A99.0018 21:01:51

**Figure 2-41a: Band II HSUPA, Spurious Conducted Emissions, Middle Channel**



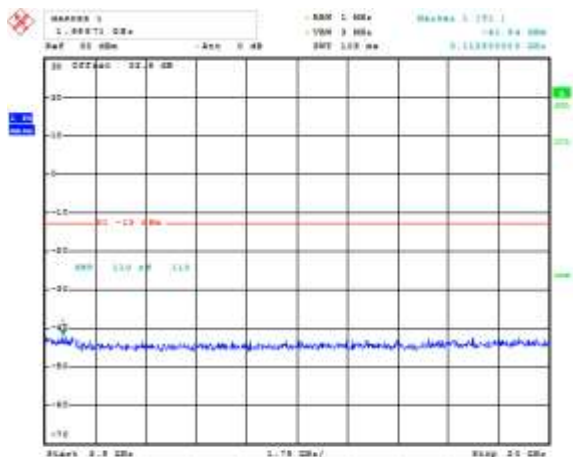
Date: T.A99.0018 21:00:58

**Figure 2-42a: Band II HSUPA, Spurious Conducted Emissions, High Channel**



Date: T.A99.0018 21:02:19

**Figure 2-43a: Band II HSUPA, Spurious Conducted Emissions, High Channel**

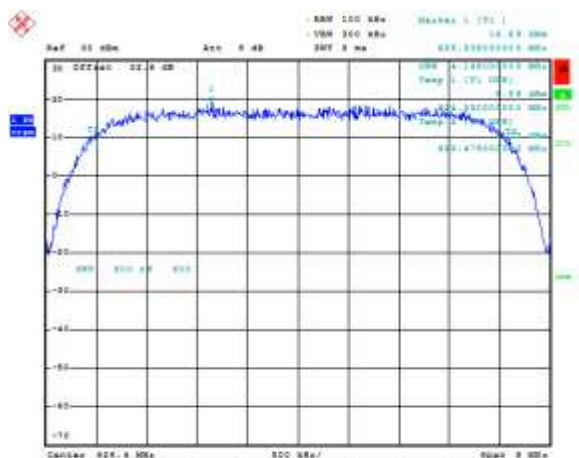


Date: T.A99.0018 21:00:28

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|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

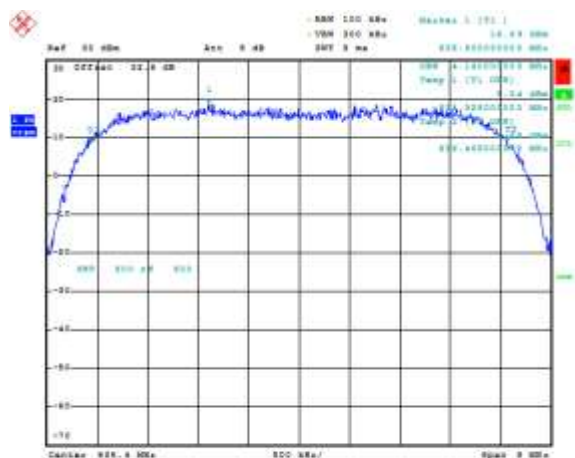
## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-44a: Occupied Bandwidth, Band V  
HSUPA Low Channel**



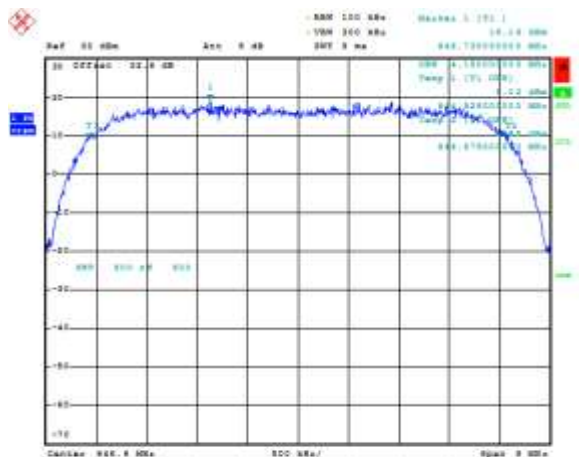
Date: T.A99.0018 21:51:58

**Figure 2-45a: Occupied Bandwidth, Band V  
HSUPA Middle Channel**



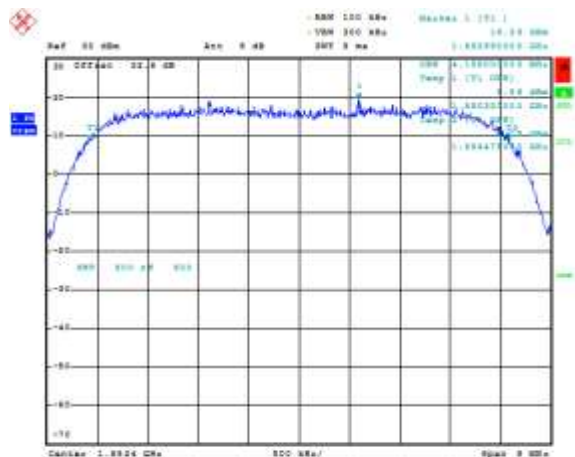
Date: T.A99.0018 21:51:58

**Figure 2-46a: Occupied Bandwidth, Band V  
HSUPA High Channel**



Date: T.A99.0018 21:52:08

**Figure 2-47a: Occupied Bandwidth, Band II  
HSUPA Low Channel**

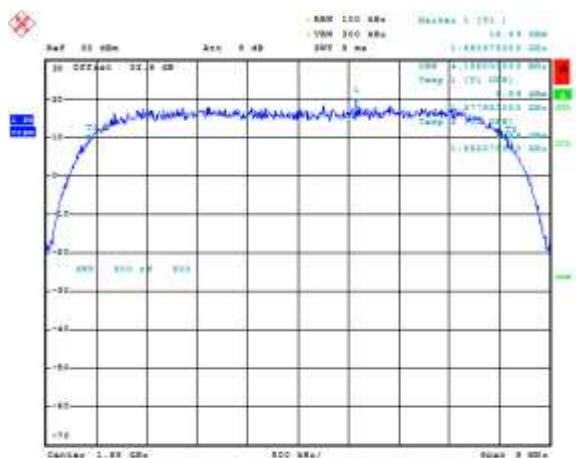


Date: T.A99.0018 21:55:57

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|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

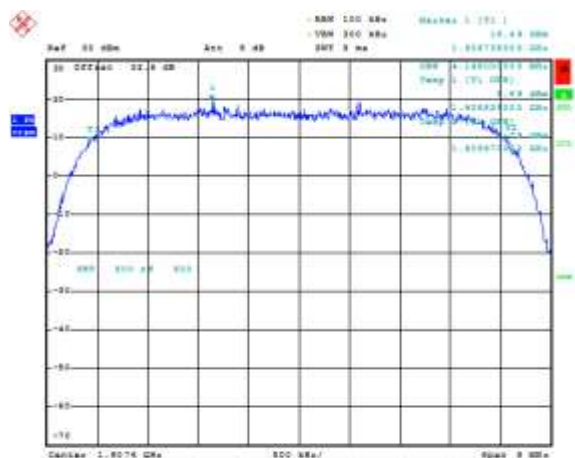
## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-48a: Occupied Bandwidth, Band II  
HSUPA Middle Channel**



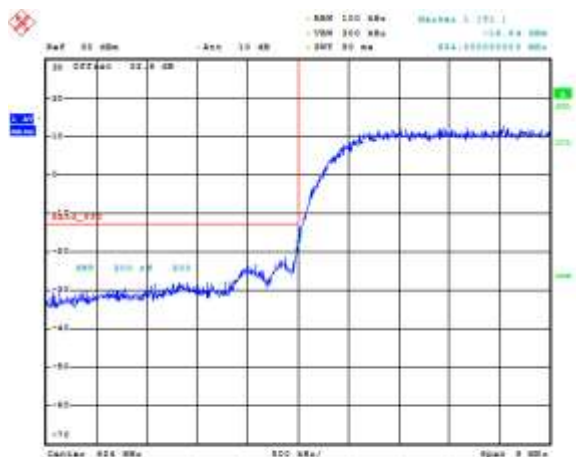
Date: T.A99.0018 21:06:18

**Figure 2-49a: Occupied Bandwidth, Band II  
HSUPA High Channel**



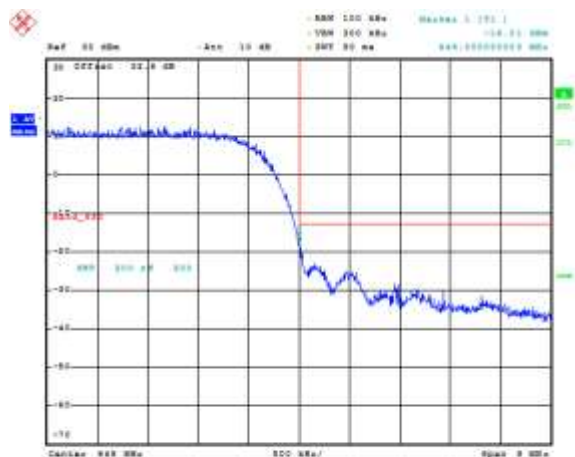
Date: T.A99.0018 21:06:41

**Figure 2-50a: Band V , HSUPA Low Channel Mask**



Date: T.A99.0018 21:06:18

**Figure 2-51a: Band V , HSUPA High Channel Mask**

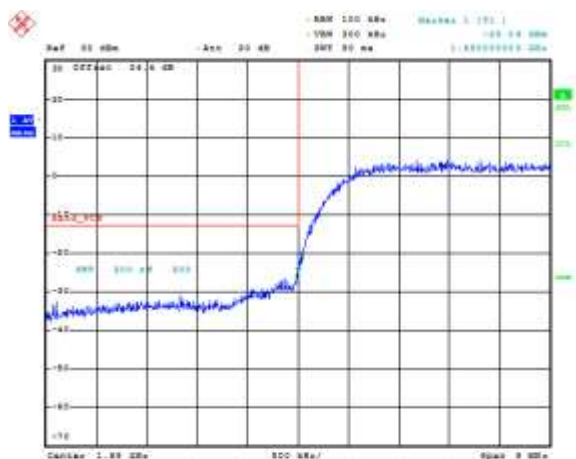


Date: T.A99.0018 21:06:11

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|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

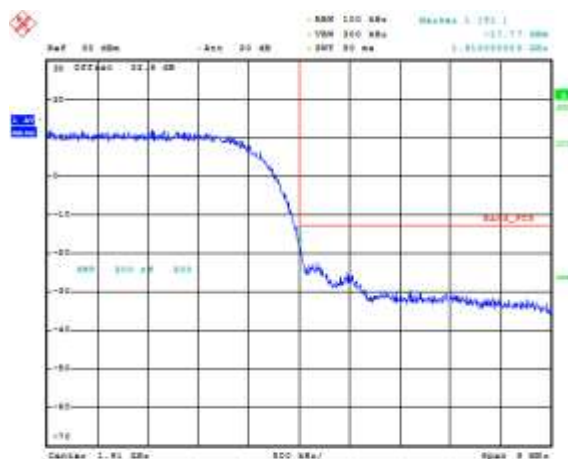
## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-52a: Band II, HSUPA Low Channel Mask**



Date: T.A99.2015 21:09:08

**Figure 2-53a: Band II, HSUPA High Channel Mask**

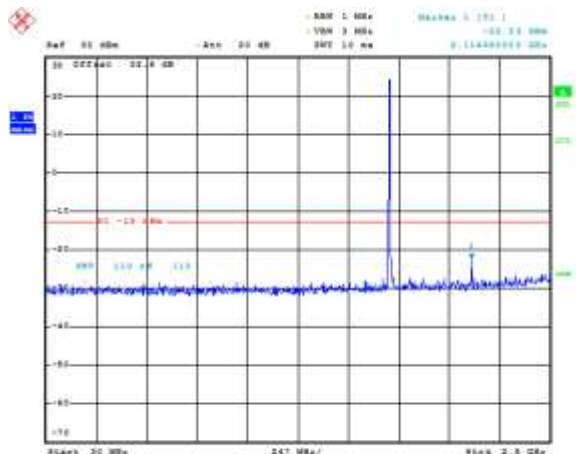


Date: T.A99.2015 21:09:08

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

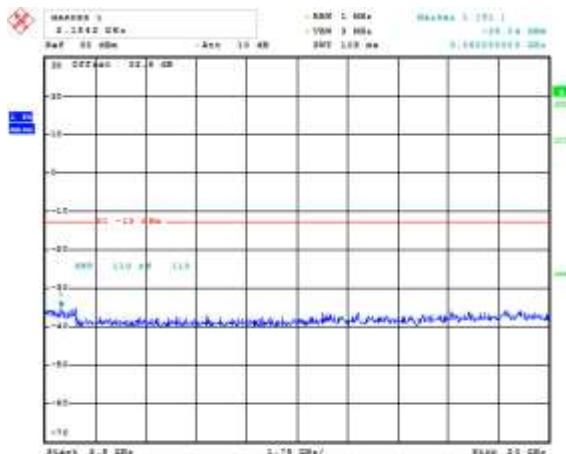
## WCDMA Conducted RF Emission Test Data cont'd

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



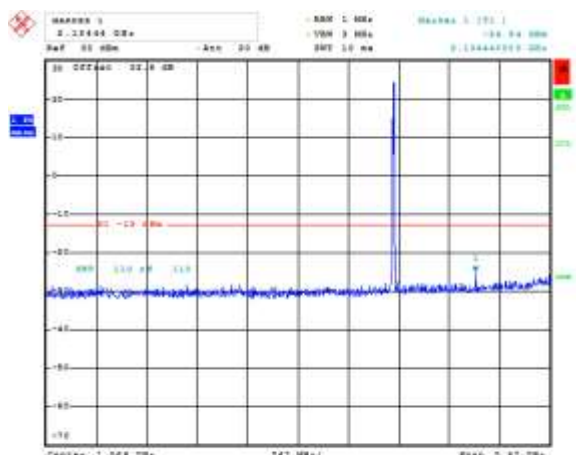
Date: T:09G.2015 13:17:58

**Figure 2-2b: Band IV, Spurious Conducted Emissions, Low channel**



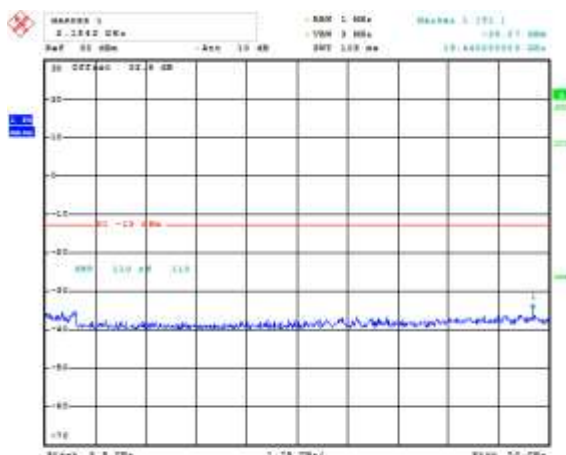
Date: T:09G.2015 13:18:26

**Figure 2-3b: Band IV, Spurious Conducted Emissions, Middle channel**



Date: T:09G.2015 13:18:24

**Figure 2-4b: Band IV, Spurious Conducted Emissions, Middle channel**

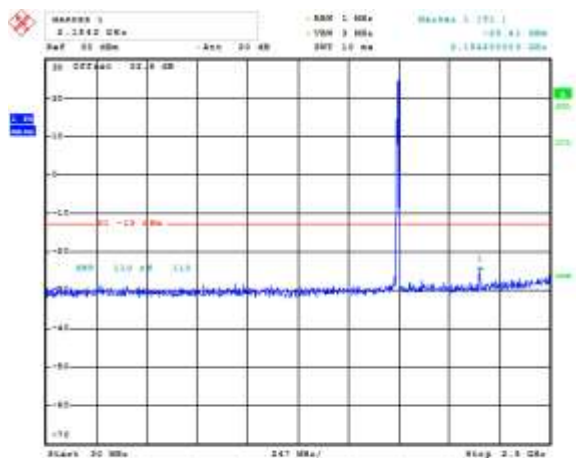


Date: T:09G.2015 13:18:28

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

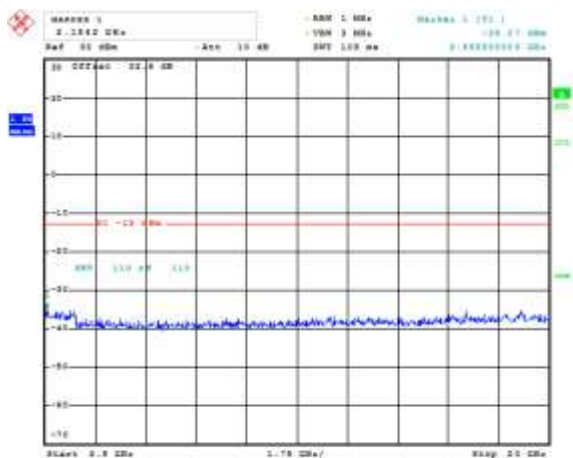
## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-5b: Band IV, Spurious Conducted Emissions, High Channel**



Date: T.A99.2015 19:10:48

**Figure 2-6b: Band IV, Spurious Conducted Emissions, High Channel**

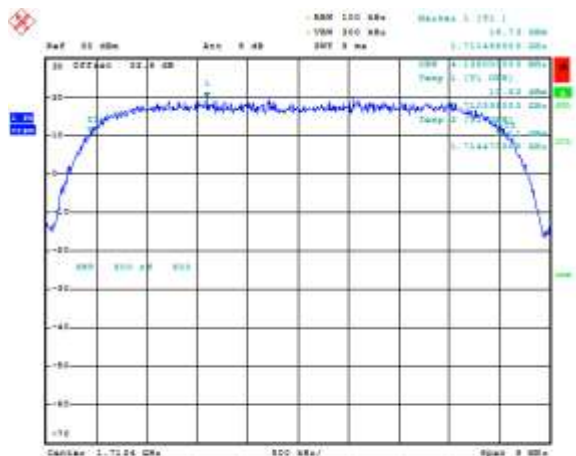


Date: T.A99.2015 19:11:11

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-7b: Occupied Bandwidth, Band IV Low Channel**



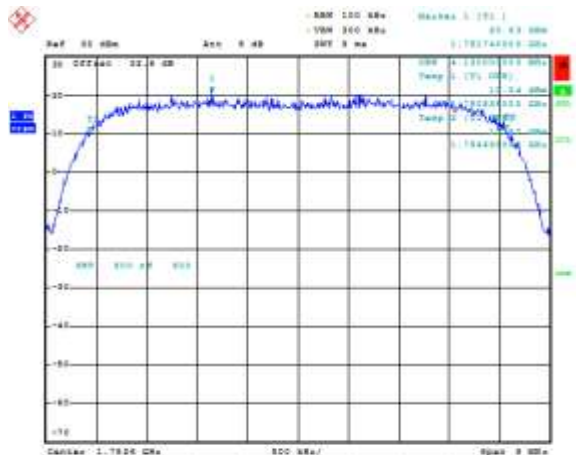
Date: T:\JPG\0015 15-10-08

**Figure 2-8b: Occupied Bandwidth, Band IV Middle Channel**



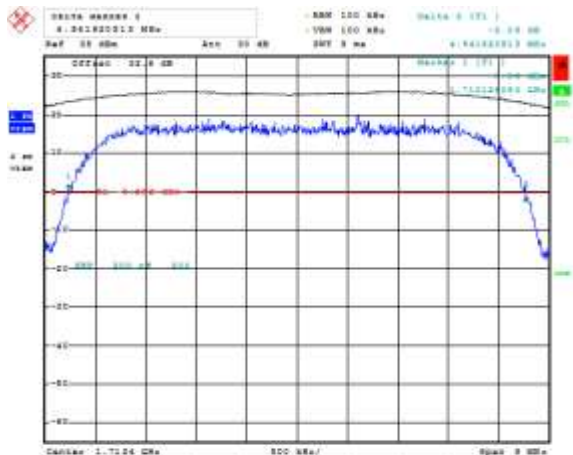
Date: T:\JPG\0015 15-10-08

**Figure 2-9b: Occupied Bandwidth, Band IV High Channel**



Date: T:\JPG\0015 15-10-08

**Figure 2-10b: -26 dBc Bandwidth, Band IV Low Channel**



Date: T:\JPG\0015 15-10-08

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**Figure 2-11b: -26 dBc Bandwidth, Band IV Middle Channel**



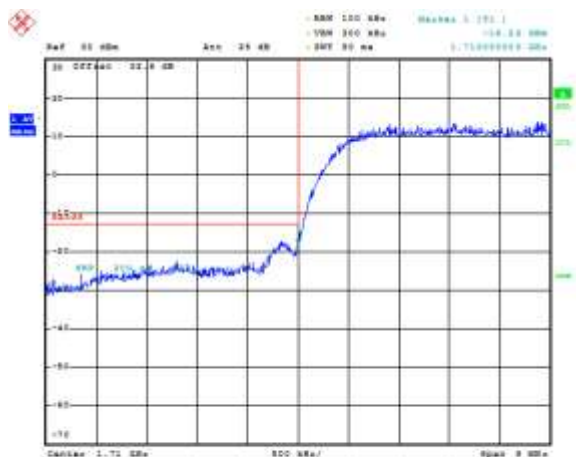
Date: 7.AUG.2015 19:20:28

**Figure 2-12b: -26 dBc Bandwidth, Band IV High Channel**



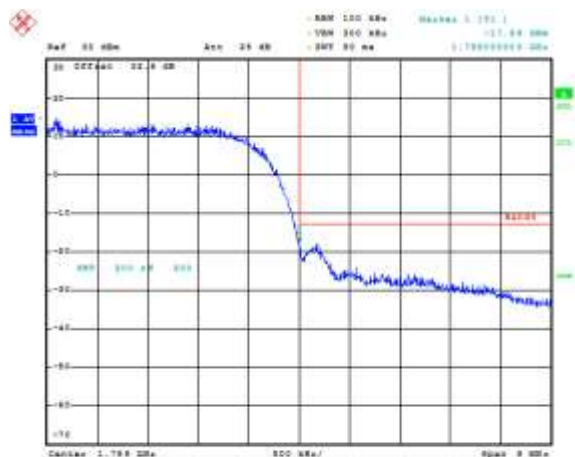
Date: 7.AUG.2015 19:26:32

**Figure 2-13b: Band IV Low Channel Mask**



Date: 7.AUG.2015 19:26:58

**Figure 2-14b: Band IV High Channel Mask**

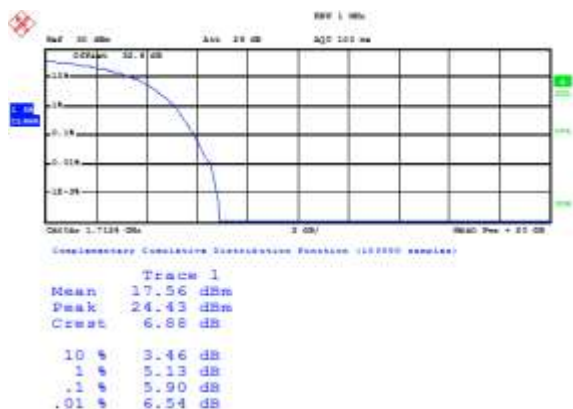


Date: 7.AUG.2015 19:20:12

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|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

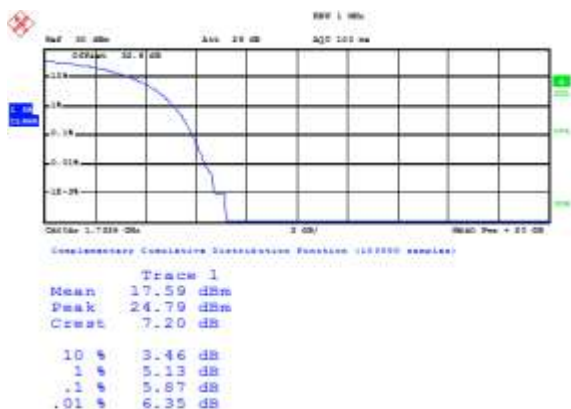
## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-15b: Band IV, PAR Low Channel**



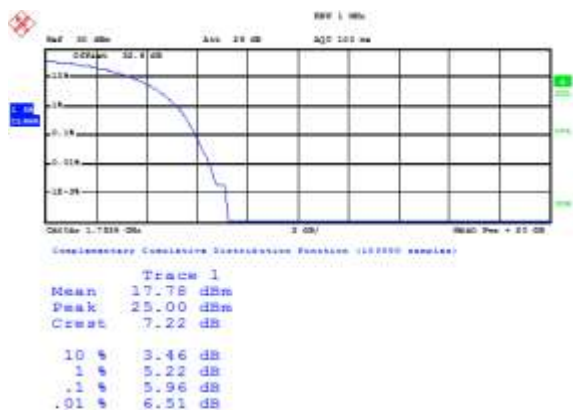
Date: 11-ATG-2015 18:10:11

**Figure 2-16b: Band IV, PAR Mid Channel**



Date: 11-ATG-2015 18:10:14

**Figure 2-17b: Band IV, PAR High Channel**

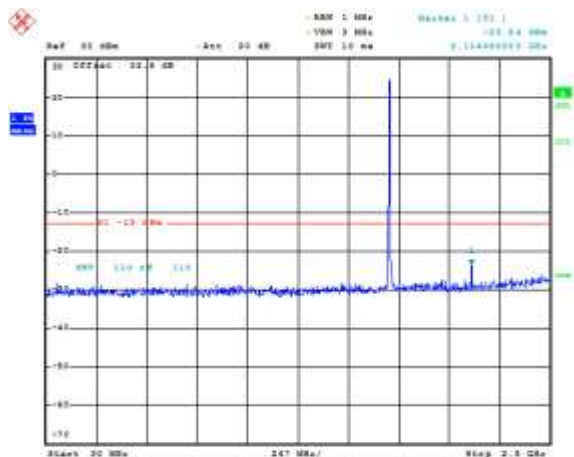


Date: 11-ATG-2015 18:10:17

|                                                                                   |                                                                                                                                            |                                                                                   |
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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

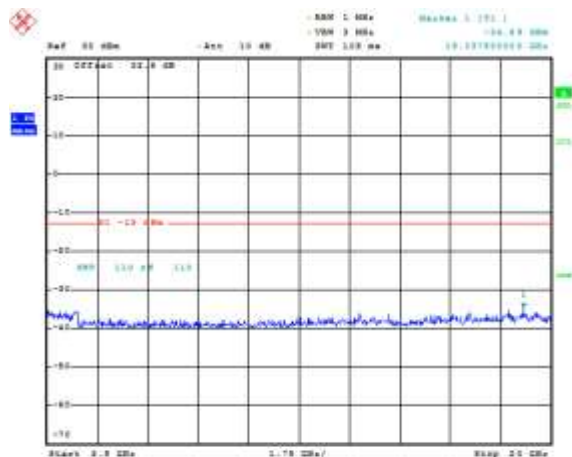
## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-18b: Band IV HSUPA, Spurious  
Conducted Emissions, Low channel**



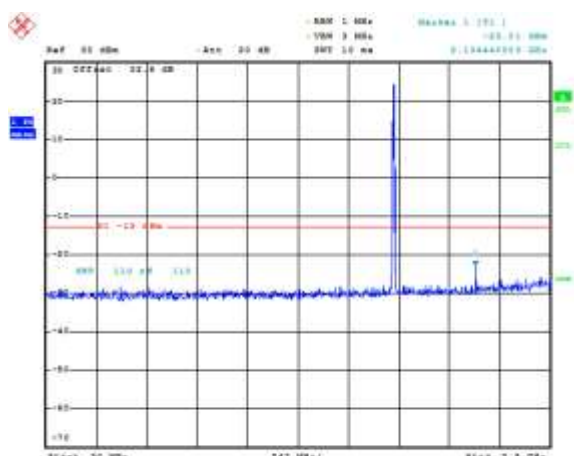
Date: T.A99.2015 20:51:58

**Figure 2-19b: Band IV HSUPA, Spurious  
Conducted Emissions, Low channel**



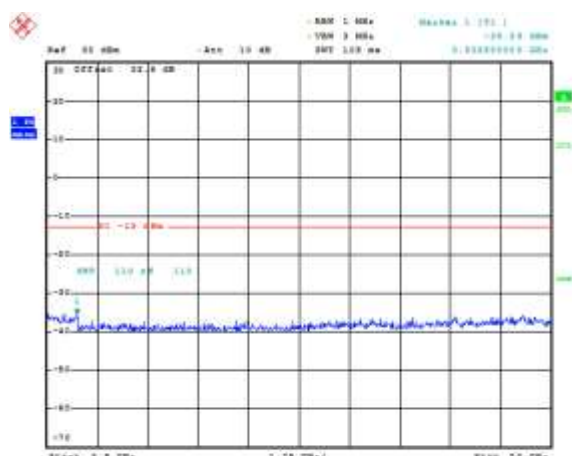
Date: T.A99.2015 20:50:48

**Figure 2-20b: Band IV HSUPA, Spurious  
Conducted Emissions, Middle channel**



Date: T.A99.2015 20:52:27

**Figure 2-21b: Band IV HSUPA, Spurious  
Conducted Emissions, Middle channel**

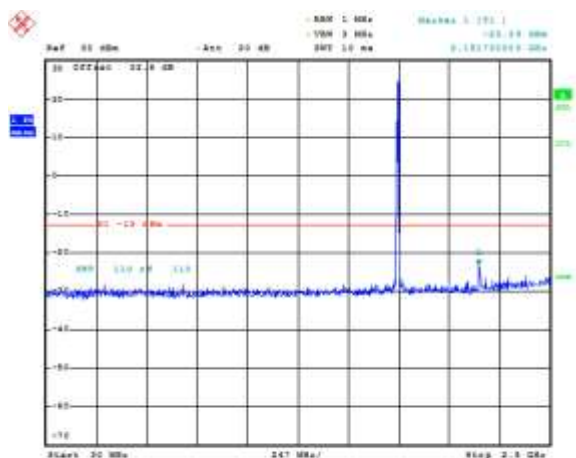


Date: T.A99.2015 20:56:22

|                                                                                   |                                                                                                                                          |                                                                                   |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW (STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                     | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

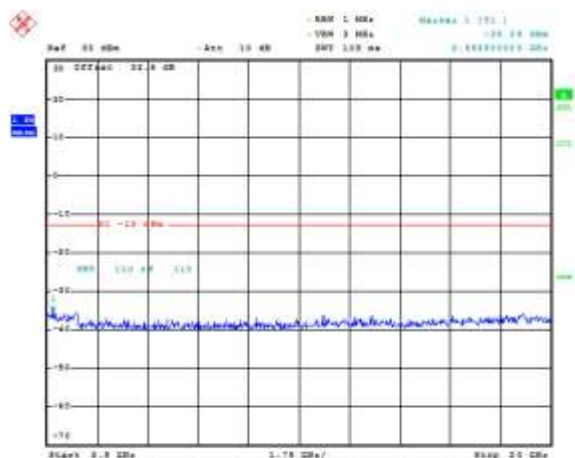
## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-22b: Band IV HSUPA, Spurious Conducted Emissions, High Channel**



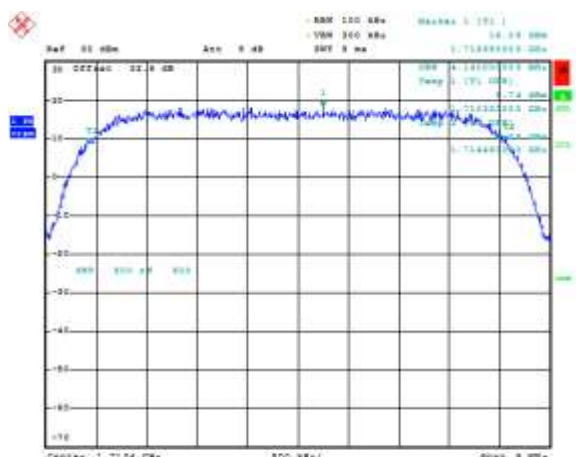
Date: T.A99.0015 23:55:58

**Figure 2-23b: Band IV HSUPA, Spurious Conducted Emissions, High Channel**



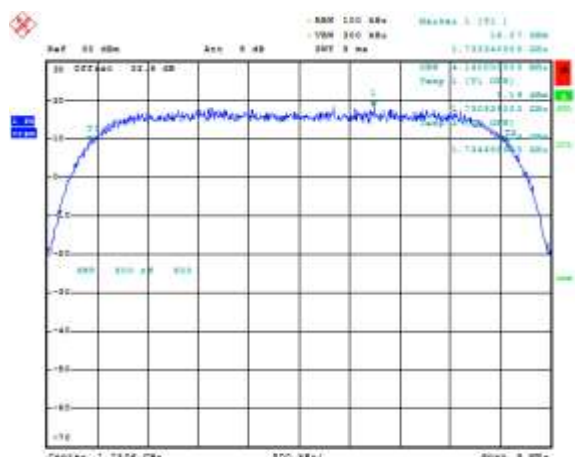
Date: T.A99.0015 23:55:58

**Figure 2-24b: Occupied Bandwidth, Band IV HSUPA Low Channel**



Date: T.A99.0015 23:55:57

**Figure 2-25b: Occupied Bandwidth, Band IV HSUPA Middle Channel**

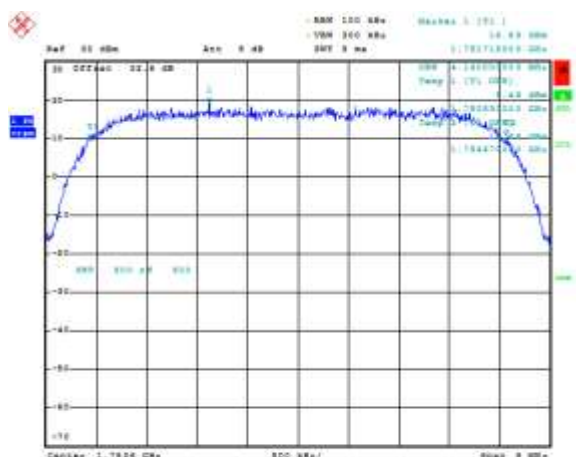


Date: T.A99.0015 23:55:57

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

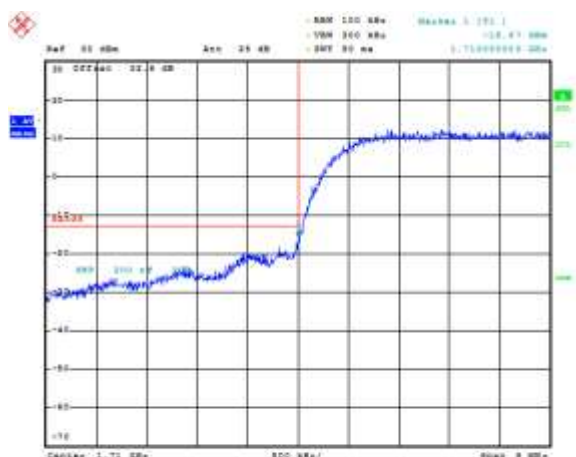
## WCDMA Conducted RF Emission Test Data cont'd

**Figure 2-26b: Occupied Bandwidth, Band IV  
HSUPA High Channel**



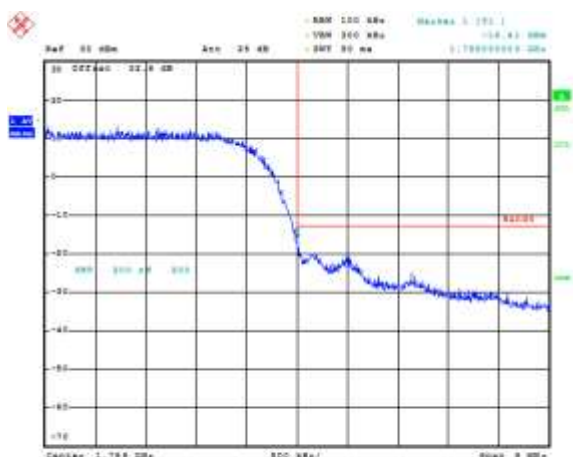
Date: 7.30.2015 20:56:35

**Figure 2-27b: Band IV , HSUPA Low Channel Mask**



Date: 7.30.2015 20:57:04

**Figure 2-28b: Band IV , HSUPA High Channel Mask**

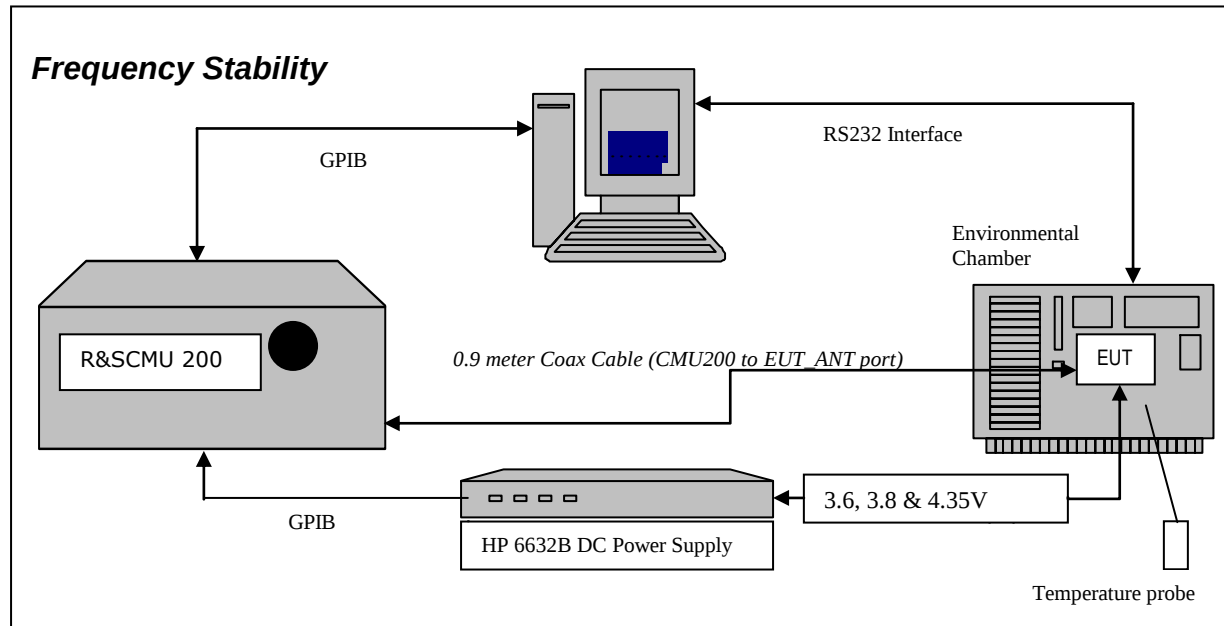


Date: 7.30.2015 20:57:38

## APPENDIX 2B – WCDMA Band II/IV/V FREQUENCY STABILITY TEST DATA

|                                              |                                                                                                                                         |                                                                                   |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>BlackBerry</b>                            | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### WCDMA Frequency Stability Test Data



The following measurements were performed by Sijia Li and Landon Martin.

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 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.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## Test Setup:

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, 3.8 volts and to 4.35 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, 3.8 volts and 4.35 volts. The transmit frequency was varied in 3 steps consisting of 826.4, 836.4 and 846.6 MHz for the WCDMA band V. 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.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

Procedure:

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

1. Switch on the HP 6632B power supply; CMU 200 Communications test Set, and Environmental Chamber.
2. Start test program
3. Set the Temperature to –30°C and maintain a period of one- hour soak time, with the EUT supply voltage disabled.
4. Set power supply voltage to 3.6 volts.
5. Set up CMU 200 Radio Communication Tester.
6. Command the CMU 200 to switch to the low channel.
7. Enable the voltage to the EUT, and connect a link to the CMU 200 test set.
8. EUT is commanded to Transmit 100 Bursts.
9. Software logs the following data from the CMU 200, power supply and temperature chamber: Traffic Channel Number, Traffic Channel Frequency, Power Level, Chamber Temperature, Supply Voltage, Power and Frequency Error.
10. The CMU 200 commands the EUT to change frequency to the middle channel and high channel and repeats steps 7 to 9.
11. Repeat steps 5 to 10 changing the supply voltage to 3.8 Volts
12. Increase temperature by 10°C and soak for 1/2 hour.
13. Repeat steps 4 - 12 for temperatures –30°C to 60°C.
14. Repeat steps 5 to 10 changing the supply voltage to 4.35 volts

Procedure 5 to 10 was repeated at room temperature (20°C) with the power supply voltage set to 3.6, 3.8 and 4.35 volts

The following configurations were measured for model RHK211LW (STV100-1):

The maximum frequency error in the WCDMA band V measured was **0.0114 PPM**.  
The maximum frequency error in the WCDMA band II measured was **0.0082 PPM**.  
The maximum frequency error in the WCDMA Band IV measured was **0.0141 PPM**.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

The following configurations were measured for model RHK211LW (STV100-1):

**WCDMA Band V results: channels 4132, 4182 and 4233 @ 20°C maximum transmitted power**

| Traffic Channel Number | WCDMA Band V Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|------------------------------|-----------------|-----------------------|----------------------|---------|
| 4132                   | 826.4                        | 3.6             | 20                    | -5.16                | -0.0062 |
| 4182                   | 836.4                        | 3.6             | 20                    | 5.19                 | 0.0062  |
| 4233                   | 846.6                        | 3.6             | 20                    | 3.31                 | 0.0039  |

| Traffic Channel Number | WCDMA Band V Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM           |
|------------------------|------------------------------|-----------------|-----------------------|----------------------|---------------|
| 4132                   | 826.4                        | 3.8             | 20                    | -5.25                | -0.0064       |
| 4182                   | 836.4                        | 3.8             | 20                    | 5.39                 | 0.0064        |
| 4233                   | 846.6                        | 3.8             | 20                    | 9.61                 | <b>0.0114</b> |

| Traffic Channel Number | WCDMA Band V Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|------------------------------|-----------------|-----------------------|----------------------|---------|
| 4132                   | 826.4                        | 4.35            | 20                    | -5.71                | -0.0069 |
| 4182                   | 836.4                        | 4.35            | 20                    | -3.72                | -0.0045 |
| 4233                   | 846.6                        | 4.35            | 20                    | -3.77                | -0.0045 |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**WCDMA Band V 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                   | -4.44                | -0.0054 |
| 4132                   | 826.4           | 3.6             | -20                   | 5.52                 | 0.0067  |
| 4132                   | 826.4           | 3.6             | -10                   | -6.42                | -0.0078 |
| 4132                   | 826.4           | 3.6             | 0                     | -6.65                | -0.0081 |
| 4132                   | 826.4           | 3.6             | 10                    | -6.93                | -0.0084 |
| 4132                   | 826.4           | 3.6             | 20                    | -5.16                | -0.0062 |
| 4132                   | 826.4           | 3.6             | 30                    | -5.16                | -0.0062 |
| 4132                   | 826.4           | 3.6             | 40                    | 7.81                 | 0.0095  |
| 4132                   | 826.4           | 3.6             | 50                    | -3.88                | -0.0047 |
| 4132                   | 826.4           | 3.6             | 60                    | -4.23                | -0.0051 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 4132                   | 826.4           | 3.8             | -30                   | -3.85                | -0.0047 |
| 4132                   | 826.4           | 3.8             | -20                   | 8.59                 | 0.0104  |
| 4132                   | 826.4           | 3.8             | -10                   | -6.61                | -0.0080 |
| 4132                   | 826.4           | 3.8             | 0                     | -6.82                | -0.0083 |
| 4132                   | 826.4           | 3.8             | 10                    | -6.03                | -0.0073 |
| 4132                   | 826.4           | 3.8             | 20                    | -5.25                | -0.0064 |
| 4132                   | 826.4           | 3.8             | 30                    | 5.51                 | 0.0067  |
| 4132                   | 826.4           | 3.8             | 40                    | -4.09                | -0.0049 |
| 4132                   | 826.4           | 3.8             | 50                    | 3.43                 | 0.0042  |
| 4132                   | 826.4           | 3.8             | 60                    | -3.36                | -0.0041 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 4132                   | 826.4           | 4.35            | -30                   | 5.43                 | 0.0066  |
| 4132                   | 826.4           | 4.35            | -20                   | -4.47                | -0.0054 |
| 4132                   | 826.4           | 4.35            | -10                   | -5.91                | -0.0071 |
| 4132                   | 826.4           | 4.35            | 0                     | -7.60                | -0.0092 |
| 4132                   | 826.4           | 4.35            | 10                    | -6.76                | -0.0082 |
| 4132                   | 826.4           | 4.35            | 20                    | -5.71                | -0.0069 |
| 4132                   | 826.4           | 4.35            | 30                    | -4.55                | -0.0055 |
| 4132                   | 826.4           | 4.35            | 40                    | 7.63                 | 0.0092  |
| 4132                   | 826.4           | 4.35            | 50                    | -5.68                | -0.0069 |
| 4132                   | 826.4           | 4.35            | 60                    | 4.46                 | 0.0054  |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

WCDMA Band V 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                   | -6.09                | -0.0073 |
| 4182                   | 836.4           | 3.6             | -20                   | -4.76                | -0.0057 |
| 4182                   | 836.4           | 3.6             | -10                   | -5.26                | -0.0063 |
| 4182                   | 836.4           | 3.6             | 0                     | -4.84                | -0.0058 |
| 4182                   | 836.4           | 3.6             | 10                    | -4.38                | -0.0052 |
| 4182                   | 836.4           | 3.6             | 20                    | 5.19                 | 0.0062  |
| 4182                   | 836.4           | 3.6             | 30                    | -4.32                | -0.0052 |
| 4182                   | 836.4           | 3.6             | 40                    | -5.28                | -0.0063 |
| 4182                   | 836.4           | 3.6             | 50                    | -4.70                | -0.0056 |
| 4182                   | 836.4           | 3.6             | 60                    | -4.30                | -0.0051 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 4182                   | 836.4           | 3.8             | -30                   | -5.05                | -0.0060 |
| 4182                   | 836.4           | 3.8             | -20                   | 7.51                 | 0.0090  |
| 4182                   | 836.4           | 3.8             | -10                   | -5.91                | -0.0071 |
| 4182                   | 836.4           | 3.8             | 0                     | 7.75                 | 0.0093  |
| 4182                   | 836.4           | 3.8             | 10                    | -4.07                | -0.0049 |
| 4182                   | 836.4           | 3.8             | 20                    | 5.39                 | 0.0064  |
| 4182                   | 836.4           | 3.8             | 30                    | -4.56                | -0.0055 |
| 4182                   | 836.4           | 3.8             | 40                    | 3.11                 | 0.0037  |
| 4182                   | 836.4           | 3.8             | 50                    | -4.18                | -0.0050 |
| 4182                   | 836.4           | 3.8             | 60                    | -4.36                | -0.0052 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 4182                   | 836.4           | 4.35            | -30                   | -5.52                | -0.0066 |
| 4182                   | 836.4           | 4.35            | -20                   | 5.07                 | 0.0061  |
| 4182                   | 836.4           | 4.35            | -10                   | -5.80                | -0.0069 |
| 4182                   | 836.4           | 4.35            | 0                     | -3.45                | -0.0041 |
| 4182                   | 836.4           | 4.35            | 10                    | -2.99                | -0.0036 |
| 4182                   | 836.4           | 4.35            | 20                    | -3.72                | -0.0045 |
| 4182                   | 836.4           | 4.35            | 30                    | -4.49                | -0.0054 |
| 4182                   | 836.4           | 4.35            | 40                    | -3.63                | -0.0043 |
| 4182                   | 836.4           | 4.35            | 50                    | -6.01                | -0.0072 |
| 4182                   | 836.4           | 4.35            | 60                    | 9.03                 | 0.0108  |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**WCDMA Band V 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                   | -6.30                | -0.0074 |
| 4233                   | 846.6           | 3.6             | -20                   | -5.54                | -0.0065 |
| 4233                   | 846.6           | 3.6             | -10                   | 8.99                 | 0.0106  |
| 4233                   | 846.6           | 3.6             | 0                     | 4.53                 | 0.0054  |
| 4233                   | 846.6           | 3.6             | 10                    | 5.83                 | 0.0069  |
| 4233                   | 846.6           | 3.6             | 20                    | 3.31                 | 0.0039  |
| 4233                   | 846.6           | 3.6             | 30                    | -5.62                | -0.0066 |
| 4233                   | 846.6           | 3.6             | 40                    | -4.97                | -0.0059 |
| 4233                   | 846.6           | 3.6             | 50                    | -6.59                | -0.0078 |
| 4233                   | 846.6           | 3.6             | 60                    | -5.40                | -0.0064 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 4233                   | 846.6           | 3.8             | -30                   | -5.92                | -0.0070 |
| 4233                   | 846.6           | 3.8             | -20                   | -5.65                | -0.0067 |
| 4233                   | 846.6           | 3.8             | -10                   | 4.90                 | 0.0058  |
| 4233                   | 846.6           | 3.8             | 0                     | 4.76                 | 0.0056  |
| 4233                   | 846.6           | 3.8             | 10                    | 4.43                 | 0.0052  |
| 4233                   | 846.6           | 3.8             | 20                    | 9.61                 | 0.0114  |
| 4233                   | 846.6           | 3.8             | 30                    | -5.05                | -0.0060 |
| 4233                   | 846.6           | 3.8             | 40                    | -5.39                | -0.0064 |
| 4233                   | 846.6           | 3.8             | 50                    | -5.48                | -0.0065 |
| 4233                   | 846.6           | 3.8             | 60                    | -6.39                | -0.0076 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 4233                   | 846.6           | 4.35            | -30                   | -9.52                | -0.0112 |
| 4233                   | 846.6           | 4.35            | -20                   | -4.47                | -0.0053 |
| 4233                   | 846.6           | 4.35            | -10                   | 4.78                 | 0.0056  |
| 4233                   | 846.6           | 4.35            | 0                     | 5.68                 | 0.0067  |
| 4233                   | 846.6           | 4.35            | 10                    | 5.11                 | 0.0060  |
| 4233                   | 846.6           | 4.35            | 20                    | -3.77                | -0.0045 |
| 4233                   | 846.6           | 4.35            | 30                    | -6.24                | -0.0074 |
| 4233                   | 846.6           | 4.35            | 40                    | -5.49                | -0.0065 |
| 4233                   | 846.6           | 4.35            | 50                    | -5.54                | -0.0065 |
| 4233                   | 846.6           | 4.35            | 60                    | -5.08                | -0.0060 |

|                                                                                   |                                                                                                                                         |                                                                                   |
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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**WCDMA Band II results: channels 9262, 9400, & 9538 @ 20°C maximum transmitted power**

| Traffic Channel Number | WCDMA1900 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|---------------------------|-----------------|-----------------------|----------------------|---------|
| 9262                   | 1852.40                   | 3.6             | 20                    | -7.64                | -0.0041 |
| 9400                   | 1880.00                   | 3.6             | 20                    | -7.28                | -0.0039 |
| 9538                   | 1907.60                   | 3.6             | 20                    | -5.72                | -0.0030 |

| Traffic Channel Number | WCDMA1900 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|---------------------------|-----------------|-----------------------|----------------------|---------|
| 9262                   | 1852.40                   | 3.8             | 20                    | -7.03                | -0.0038 |
| 9400                   | 1880.00                   | 3.8             | 20                    | -7.51                | -0.0040 |
| 9538                   | 1907.60                   | 3.8             | 20                    | -7.58                | -0.0040 |

| Traffic Channel Number | WCDMA1900 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|---------------------------|-----------------|-----------------------|----------------------|---------|
| 9262                   | 1852.40                   | 4.35            | 20                    | -7.92                | -0.0043 |
| 9400                   | 1880.00                   | 4.35            | 20                    | -6.96                | -0.0037 |
| 9538                   | 1907.60                   | 4.35            | 20                    | -7.31                | -0.0038 |

|                                                                                   |                                                                                                                                         |                                                                                   |
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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**WCDMA Band II 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                   | 12.44                | 0.0067  |
| 9262                   | 1852.40         | 3.6             | -20                   | -8.42                | -0.0045 |
| 9262                   | 1852.40         | 3.6             | -10                   | -9.60                | -0.0052 |
| 9262                   | 1852.40         | 3.6             | 0                     | -10.12               | -0.0055 |
| 9262                   | 1852.40         | 3.6             | 10                    | -8.61                | -0.0046 |
| 9262                   | 1852.40         | 3.6             | 20                    | -7.64                | -0.0041 |
| 9262                   | 1852.40         | 3.6             | 30                    | -3.27                | -0.0018 |
| 9262                   | 1852.40         | 3.6             | 40                    | -3.62                | -0.0020 |
| 9262                   | 1852.40         | 3.6             | 50                    | -4.18                | -0.0023 |
| 9262                   | 1852.40         | 3.6             | 60                    | -6.50                | -0.0035 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 9262                   | 1852.40         | 3.8             | -30                   | -6.18                | -0.0033 |
| 9262                   | 1852.40         | 3.8             | -20                   | -6.84                | -0.0037 |
| 9262                   | 1852.40         | 3.8             | -10                   | -9.00                | -0.0049 |
| 9262                   | 1852.40         | 3.8             | 0                     | -10.71               | -0.0058 |
| 9262                   | 1852.40         | 3.8             | 10                    | -9.98                | -0.0054 |
| 9262                   | 1852.40         | 3.8             | 20                    | -7.03                | -0.0038 |
| 9262                   | 1852.40         | 3.8             | 30                    | -6.24                | -0.0034 |
| 9262                   | 1852.40         | 3.8             | 40                    | 3.36                 | 0.0018  |
| 9262                   | 1852.40         | 3.8             | 50                    | -4.46                | -0.0024 |
| 9262                   | 1852.40         | 3.8             | 60                    | -5.13                | -0.0028 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 9262                   | 1852.40         | 4.35            | -30                   | 4.67                 | 0.0025  |
| 9262                   | 1852.40         | 4.35            | -20                   | -5.68                | -0.0031 |
| 9262                   | 1852.40         | 4.35            | -10                   | -9.58                | -0.0052 |
| 9262                   | 1852.40         | 4.35            | 0                     | -12.85               | -0.0069 |
| 9262                   | 1852.40         | 4.35            | 10                    | -9.20                | -0.0050 |
| 9262                   | 1852.40         | 4.35            | 20                    | -7.92                | -0.0043 |
| 9262                   | 1852.40         | 4.35            | 30                    | -6.71                | -0.0036 |
| 9262                   | 1852.40         | 4.35            | 40                    | -4.33                | -0.0023 |
| 9262                   | 1852.40         | 4.35            | 50                    | -6.41                | -0.0035 |
| 9262                   | 1852.40         | 4.35            | 60                    | -5.72                | -0.0031 |

|                                                                                   |                                                                                                                                         |                                                                                   |
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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**WCDMA Band II 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                   | -11.70               | -0.0062 |
| 9400                   | 1880.00         | 3.6             | -20                   | -7.81                | -0.0042 |
| 9400                   | 1880.00         | 3.6             | -10                   | -7.80                | -0.0041 |
| 9400                   | 1880.00         | 3.6             | 0                     | -6.70                | -0.0036 |
| 9400                   | 1880.00         | 3.6             | 10                    | -6.94                | -0.0037 |
| 9400                   | 1880.00         | 3.6             | 20                    | -7.28                | -0.0039 |
| 9400                   | 1880.00         | 3.6             | 30                    | -6.94                | -0.0037 |
| 9400                   | 1880.00         | 3.6             | 40                    | -7.97                | -0.0042 |
| 9400                   | 1880.00         | 3.6             | 50                    | -8.53                | -0.0045 |
| 9400                   | 1880.00         | 3.6             | 60                    | -8.01                | -0.0043 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 9400                   | 1880.00         | 3.8             | -30                   | -12.48               | 0.0066  |
| 9400                   | 1880.00         | 3.8             | -20                   | -6.94                | -0.0037 |
| 9400                   | 1880.00         | 3.8             | -10                   | -8.51                | -0.0045 |
| 9400                   | 1880.00         | 3.8             | 0                     | -7.72                | -0.0041 |
| 9400                   | 1880.00         | 3.8             | 10                    | -7.31                | -0.0039 |
| 9400                   | 1880.00         | 3.8             | 20                    | -7.51                | -0.0040 |
| 9400                   | 1880.00         | 3.8             | 30                    | -8.36                | -0.0044 |
| 9400                   | 1880.00         | 3.8             | 40                    | -7.95                | -0.0042 |
| 9400                   | 1880.00         | 3.8             | 50                    | -7.89                | -0.0042 |
| 9400                   | 1880.00         | 3.8             | 60                    | -7.69                | -0.0041 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 9400                   | 1880.00         | 4.35            | -30                   | -8.47                | -0.0045 |
| 9400                   | 1880.00         | 4.35            | -20                   | -7.48                | -0.0040 |
| 9400                   | 1880.00         | 4.35            | -10                   | -6.87                | -0.0037 |
| 9400                   | 1880.00         | 4.35            | 0                     | -7.06                | -0.0038 |
| 9400                   | 1880.00         | 4.35            | 10                    | -8.87                | -0.0047 |
| 9400                   | 1880.00         | 4.35            | 20                    | -6.96                | -0.0037 |
| 9400                   | 1880.00         | 4.35            | 30                    | -8.15                | -0.0043 |
| 9400                   | 1880.00         | 4.35            | 40                    | -8.29                | -0.0044 |
| 9400                   | 1880.00         | 4.35            | 50                    | -7.20                | -0.0038 |
| 9400                   | 1880.00         | 4.35            | 60                    | -7.26                | -0.0039 |

|                                                                                   |                                                                                                                                         |                                                                                   |
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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**WCDMA Band II Results: channel 9538 @ maximum transmitted power**

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 9538                   | 1907.60         | 3.6             | -30                   | -15.61               | -0.0082 |
| 9538                   | 1907.60         | 3.6             | -20                   | -10.24               | -0.0054 |
| 9538                   | 1907.60         | 3.6             | -10                   | -5.68                | -0.0030 |
| 9538                   | 1907.60         | 3.6             | 0                     | -4.91                | -0.0026 |
| 9538                   | 1907.60         | 3.6             | 10                    | -5.37                | -0.0028 |
| 9538                   | 1907.60         | 3.6             | 20                    | -5.72                | -0.0030 |
| 9538                   | 1907.60         | 3.6             | 30                    | -8.04                | -0.0042 |
| 9538                   | 1907.60         | 3.6             | 40                    | -9.92                | -0.0052 |
| 9538                   | 1907.60         | 3.6             | 50                    | -12.94               | -0.0068 |
| 9538                   | 1907.60         | 3.6             | 60                    | -9.52                | -0.0050 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 9538                   | 1907.60         | 3.8             | -30                   | -13.69               | -0.0072 |
| 9538                   | 1907.60         | 3.8             | -20                   | -8.80                | -0.0046 |
| 9538                   | 1907.60         | 3.8             | -10                   | -4.96                | -0.0026 |
| 9538                   | 1907.60         | 3.8             | 0                     | -4.38                | -0.0023 |
| 9538                   | 1907.60         | 3.8             | 10                    | -4.36                | -0.0023 |
| 9538                   | 1907.60         | 3.8             | 20                    | -7.58                | -0.0040 |
| 9538                   | 1907.60         | 3.8             | 30                    | -8.94                | -0.0047 |
| 9538                   | 1907.60         | 3.8             | 40                    | -11.09               | -0.0058 |
| 9538                   | 1907.60         | 3.8             | 50                    | -10.77               | -0.0056 |
| 9538                   | 1907.60         | 3.8             | 60                    | -11.18               | -0.0059 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 9538                   | 1907.60         | 4.35            | -30                   | -12.04               | -0.0063 |
| 9538                   | 1907.60         | 4.35            | -20                   | -7.80                | -0.0041 |
| 9538                   | 1907.60         | 4.35            | -10                   | -4.39                | -0.0023 |
| 9538                   | 1907.60         | 4.35            | 0                     | -6.01                | -0.0032 |
| 9538                   | 1907.60         | 4.35            | 10                    | -4.71                | -0.0025 |
| 9538                   | 1907.60         | 4.35            | 20                    | -7.31                | -0.0038 |
| 9538                   | 1907.60         | 4.35            | 30                    | -9.95                | -0.0052 |
| 9538                   | 1907.60         | 4.35            | 40                    | -10.28               | -0.0054 |
| 9538                   | 1907.60         | 4.35            | 50                    | -12.30               | -0.0064 |
| 9538                   | 1907.60         | 4.35            | 60                    | -9.78                | -0.0051 |

|                                                                                   |                                                                                                                                         |                                                                                   |
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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**WCDMA Band IV results: channels 1312, 1413 and 1513 @ 20°C maximum transmitted power**

| Traffic Channel Number | WCDMA Band IV Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM    |
|------------------------|-------------------------------|-----------------|-----------------------|----------------------|--------|
| 1312                   | 1712.4                        | 3.6             | 20                    | 9.05                 | 0.0053 |
| 1413                   | 1732.6                        | 3.6             | 20                    | 7.63                 | 0.0044 |
| 1513                   | 1752.6                        | 3.6             | 20                    | 6.06                 | 0.0040 |

| Traffic Channel Number | WCDMA Band IV Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-------------------------------|-----------------|-----------------------|----------------------|---------|
| 1312                   | 1712.4                        | 3.8             | 20                    | -7.05                | -0.0041 |
| 1413                   | 1732.6                        | 3.8             | 20                    | -6.71                | -0.0039 |
| 1513                   | 1752.6                        | 3.8             | 20                    | 4.90                 | 0.0032  |

| Traffic Channel Number | WCDMA Band IV Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-------------------------------|-----------------|-----------------------|----------------------|---------|
| 1312                   | 1712.4                        | 4.35            | 20                    | -8.12                | -0.0047 |
| 1413                   | 1732.6                        | 4.35            | 20                    | -7.34                | -0.0042 |
| 1513                   | 1752.6                        | 4.35            | 20                    | 3.92                 | 0.0026  |

|                                                                                   |                                                                                                                                         |                                                                                   |
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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**WCDMA Band IV Results: channel 1312 @ maximum transmitted power**

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 1312.00                | 1712.40         | 3.6             | -30                   | 12.33                | 0.0072  |
| 1312.00                | 1712.40         | 3.6             | -20                   | 5.02                 | 0.0029  |
| 1312.00                | 1712.40         | 3.6             | -10                   | -14.27               | -0.0083 |
| 1312.00                | 1712.40         | 3.6             | 0                     | -15.64               | -0.0091 |
| 1312.00                | 1712.40         | 3.6             | 10                    | -13.34               | -0.0078 |
| 1312.00                | 1712.40         | 3.6             | 20                    | 9.05                 | 0.0053  |
| 1312.00                | 1712.40         | 3.6             | 30                    | 8.42                 | 0.0049  |
| 1312.00                | 1712.40         | 3.6             | 40                    | 13.58                | 0.0079  |
| 1312.00                | 1712.40         | 3.6             | 50                    | 12.44                | 0.0073  |
| 1312.00                | 1712.40         | 3.6             | 60                    | 10.99                | 0.0064  |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 1312.00                | 1712.40         | 3.8             | -30                   | 15.18                | 0.0089  |
| 1312.00                | 1712.40         | 3.8             | -20                   | 5.94                 | 0.0035  |
| 1312.00                | 1712.40         | 3.8             | -10                   | -13.31               | -0.0078 |
| 1312.00                | 1712.40         | 3.8             | 0                     | -16.51               | -0.0096 |
| 1312.00                | 1712.40         | 3.8             | 10                    | -13.18               | -0.0077 |
| 1312.00                | 1712.40         | 3.8             | 20                    | -7.05                | -0.0041 |
| 1312.00                | 1712.40         | 3.8             | 30                    | 6.94                 | 0.0041  |
| 1312.00                | 1712.40         | 3.8             | 40                    | 12.57                | 0.0073  |
| 1312.00                | 1712.40         | 3.8             | 50                    | 13.90                | 0.0081  |
| 1312.00                | 1712.40         | 3.8             | 60                    | 9.74                 | 0.0057  |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 1312.00                | 1712.40         | 4.35            | -30                   | 17.47                | 0.0102  |
| 1312.00                | 1712.40         | 4.35            | -20                   | 6.68                 | 0.0039  |
| 1312.00                | 1712.40         | 4.35            | -10                   | -12.28               | -0.0072 |
| 1312.00                | 1712.40         | 4.35            | 0                     | -15.12               | -0.0088 |
| 1312.00                | 1712.40         | 4.35            | 10                    | -13.73               | -0.0080 |
| 1312.00                | 1712.40         | 4.35            | 20                    | -8.12                | -0.0047 |
| 1312.00                | 1712.40         | 4.35            | 30                    | 6.61                 | 0.0039  |
| 1312.00                | 1712.40         | 4.35            | 40                    | 12.27                | 0.0072  |
| 1312.00                | 1712.40         | 4.35            | 50                    | 15.66                | 0.0091  |
| 1312.00                | 1712.40         | 4.35            | 60                    | 9.34                 | 0.0055  |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

WCDMA Band IV Results: channel 1413 @ maximum transmitted power

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 1413.00                | 1732.60         | 3.6             | -30                   | -11.66               | -0.0067 |
| 1413.00                | 1732.60         | 3.6             | -20                   | -9.05                | -0.0052 |
| 1413.00                | 1732.60         | 3.6             | -10                   | -7.71                | -0.0044 |
| 1413.00                | 1732.60         | 3.6             | 0                     | -7.61                | -0.0044 |
| 1413.00                | 1732.60         | 3.6             | 10                    | -7.16                | -0.0041 |
| 1413.00                | 1732.60         | 3.6             | 20                    | 7.63                 | 0.0044  |
| 1413.00                | 1732.60         | 3.6             | 30                    | -6.71                | -0.0039 |
| 1413.00                | 1732.60         | 3.6             | 40                    | -6.84                | -0.0039 |
| 1413.00                | 1732.60         | 3.6             | 50                    | -8.70                | -0.0050 |
| 1413.00                | 1732.60         | 3.6             | 60                    | -9.74                | -0.0056 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 1413.00                | 1732.60         | 3.8             | -30                   | -9.77                | -0.0056 |
| 1413.00                | 1732.60         | 3.8             | -20                   | -8.67                | -0.0050 |
| 1413.00                | 1732.60         | 3.8             | -10                   | -7.43                | -0.0043 |
| 1413.00                | 1732.60         | 3.8             | 0                     | -8.03                | -0.0046 |
| 1413.00                | 1732.60         | 3.8             | 10                    | -7.90                | -0.0046 |
| 1413.00                | 1732.60         | 3.8             | 20                    | -6.71                | -0.0039 |
| 1413.00                | 1732.60         | 3.8             | 30                    | -5.91                | -0.0034 |
| 1413.00                | 1732.60         | 3.8             | 40                    | -6.59                | -0.0038 |
| 1413.00                | 1732.60         | 3.8             | 50                    | -7.20                | -0.0042 |
| 1413.00                | 1732.60         | 3.8             | 60                    | -9.22                | -0.0053 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 1413.00                | 1732.60         | 4.35            | -30                   | -8.90                | -0.0051 |
| 1413.00                | 1732.60         | 4.35            | -20                   | -7.08                | -0.0041 |
| 1413.00                | 1732.60         | 4.35            | -10                   | -8.10                | -0.0047 |
| 1413.00                | 1732.60         | 4.35            | 0                     | -6.82                | -0.0039 |
| 1413.00                | 1732.60         | 4.35            | 10                    | -6.58                | -0.0038 |
| 1413.00                | 1732.60         | 4.35            | 20                    | -7.34                | -0.0042 |
| 1413.00                | 1732.60         | 4.35            | 30                    | -6.84                | -0.0039 |
| 1413.00                | 1732.60         | 4.35            | 40                    | -7.69                | -0.0044 |
| 1413.00                | 1732.60         | 4.35            | 50                    | -8.26                | -0.0048 |
| 1413.00                | 1732.60         | 4.35            | 60                    | -10.13               | -0.0058 |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 2B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**WCDMA Band IV Results: channel 1513 @ maximum transmitted power**

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM            |
|------------------------|-----------------|-----------------|-----------------------|----------------------|----------------|
| 1513.00                | 1752.6          | 3.6             | -30                   | -20.52               | -0.0136        |
| 1513.00                | 1752.6          | 3.6             | -20                   | -8.13                | -0.0054        |
| 1513.00                | 1752.6          | 3.6             | -10                   | 9.81                 | 0.0065         |
| 1513.00                | 1752.6          | 3.6             | 0                     | 14.11                | 0.0093         |
| 1513.00                | 1752.6          | 3.6             | 10                    | 12.22                | 0.0081         |
| 1513.00                | 1752.6          | 3.6             | 20                    | 6.06                 | 0.0040         |
| 1513.00                | 1752.6          | 3.6             | 30                    | -9.51                | -0.0063        |
| 1513.00                | 1752.6          | 3.6             | 40                    | -16.14               | -0.0107        |
| 1513.00                | 1752.6          | 3.6             | 50                    | -18.94               | -0.0125        |
| 1513.00                | 1752.6          | 3.6             | 60                    | -14.74               | -0.0097        |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM            |
| 1513.00                | 1752.6          | 3.8             | -30                   | -21.19               | -0.0140        |
| 1513.00                | 1752.6          | 3.8             | -20                   | -8.30                | -0.0055        |
| 1513.00                | 1752.6          | 3.8             | -10                   | 11.09                | 0.0073         |
| 1513.00                | 1752.6          | 3.8             | 0                     | 12.80                | 0.0085         |
| 1513.00                | 1752.6          | 3.8             | 10                    | 9.58                 | 0.0063         |
| 1513.00                | 1752.6          | 3.8             | 20                    | 4.90                 | 0.0032         |
| 1513.00                | 1752.6          | 3.8             | 30                    | -9.43                | -0.0062        |
| 1513.00                | 1752.6          | 3.8             | 40                    | -15.96               | -0.0105        |
| 1513.00                | 1752.6          | 3.8             | 50                    | -16.91               | -0.0112        |
| 1513.00                | 1752.6          | 3.8             | 60                    | -11.90               | -0.0079        |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM            |
| 1513.00                | 1752.6          | 4.35            | -30                   | -21.38               | <b>-0.0141</b> |
| 1513.00                | 1752.6          | 4.35            | -20                   | -8.03                | -0.0053        |
| 1513.00                | 1752.6          | 4.35            | -10                   | 10.51                | 0.0069         |
| 1513.00                | 1752.6          | 4.35            | 0                     | 14.04                | 0.0093         |
| 1513.00                | 1752.6          | 4.35            | 10                    | 11.46                | 0.0076         |
| 1513.00                | 1752.6          | 4.35            | 20                    | 3.92                 | 0.0026         |
| 1513.00                | 1752.6          | 4.35            | 30                    | -10.01               | -0.0066        |
| 1513.00                | 1752.6          | 4.35            | 40                    | -16.22               | -0.0107        |
| 1513.00                | 1752.6          | 4.35            | 50                    | -16.77               | -0.0111        |
| 1513.00                | 1752.6          | 4.35            | 60                    | -13.32               | -0.0088        |

## APPENDIX 2C – WCDMA Band II/IV/V RADIATED EMISSIONS TEST DATA

























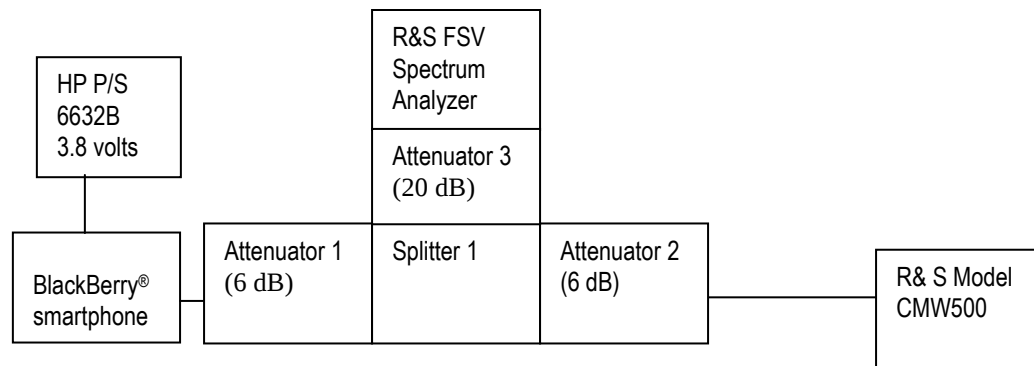
## APPENDIX 3A– LTE Band 2 CONDUCTED RF EMISSIONS TEST DATA/PLOTS

|                                              |                                                                                                                                          |                                                                                   |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>BlackBerry</b>                            | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW (STV100-2)<br><b>APPENDIX 3A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                     | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### LTE Band 2 Conducted RF Emission Test Data

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

### Test Setup Diagram



A reference offset of 31.4 dB was applied to the spectrum analyzer reference level for the attenuators and coaxial cable loss in the test circuit.

| <u>UNIT</u>  | <u>MANUFACTURER</u> | <u>MODEL</u>  | <u>SERIAL<br/>NUMBER</u> |
|--------------|---------------------|---------------|--------------------------|
| Attenuator 1 | Mini-Circuits       | BW-S6W2+      | 0647                     |
| Attenuator 2 | Mini-Circuits       | BW-S6W2+      | 0648                     |
| Attenuator 3 | Mini-Circuits       | BW-S20-2W263+ | 1234                     |
| Splitter 1   | Weinschel           | 1515          | MES 92                   |

The following configurations were measured for model RHK211LW (STV100-1):

Date of Test: July 22 to September 3, 2015

The environmental test conditions were:    Temperature:        26.8°C  
                                                                                  Relative Humidity:    44.70 %

The following measurements were performed by Landon Martin and Sijia Li.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## LTE Band 2 Conducted RF Emission Test Data cont'd

### Emission Designator Table

| Frequency Rane (MHz) | Conducted Output Power (dBm) | Conducted Output Power (W) | Emission Designator | Band   | Bandwidth (MHz) | Modulation |
|----------------------|------------------------------|----------------------------|---------------------|--------|-----------------|------------|
| 1850.7-1909.3        | 25.69                        | 0.37                       | 1M09G7D             | LTE B2 | 1.4             | QPSK       |
| 1850.7-1909.3        | 24.95                        | 0.31                       | 1M09D7W             | LTE B2 | 1.4             | 16QAM      |
| 1851.5-1908.5        | 25.61                        | 0.36                       | 2M69G7D             | LTE B2 | 3               | QPSK       |
| 1851.5-1908.5        | 24.89                        | 0.31                       | 2M69D7W             | LTE B2 | 3               | 16QAM      |
| 1852.5-1907.5        | 25.81                        | 0.38                       | 4M49G7D             | LTE B2 | 5               | QPSK       |
| 1852.5-1907.5        | 25.07                        | 0.32                       | 4M48D7W             | LTE B2 | 5               | 16QAM      |
| 1855-1905            | 25.79                        | 0.38                       | 8M96G7D             | LTE B2 | 10              | QPSK       |
| 1855-1905            | 25.20                        | 0.33                       | 8M94D7W             | LTE B2 | 10              | 16QAM      |
| 1857.5-1902.5        | 25.77                        | 0.38                       | 13M4G7D             | LTE B2 | 15              | QPSK       |
| 1857.5-1902.5        | 24.98                        | 0.31                       | 13M4D7W             | LTE B2 | 15              | 16QAM      |
| 1860-1900            | <b>25.92</b>                 | <b>0.39</b>                | 17M9G7D             | LTE B2 | 20              | QPSK       |
| 1860-1900            | 25.40                        | 0.35                       | 17M9D7W             | LTE B2 | 20              | 16QAM      |

**The conducted spurious emissions** – As per 47 CFR 2.1051, 24.232(d), 2.202, RSS - 133 were measured from 30 MHz to 20 GHz.

### **–26 dBc Bandwidth and Occupied Bandwidth (99%)**

For each 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz and 20MHz with Resource Block allocations 100,50 and 6 as per scalable bandwidths for LTE Band 2, the modulation spectrum was measured by both methods of 99% power bandwidth and –26 dBc bandwidth.

QPSK and 16-QAM modulations were applied to each of the bandwidths. Only the worst case measurements are documented in this report.

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 LTE Band 2 was measured to be 18.6MHz as shown below. Results were derived in a 200 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.

|                                                                                   |                                                                                                                                          |                                                                                   |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW (STV100-2)<br><b>APPENDIX 3A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                     | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

#### **Test Data for LTE Band 2 selected Frequencies in 20MHz bandwidth (RB = 100)**

| LTE Band 2<br>Frequency (MHz) | 26dBc Occupied Bandwidth<br>(MHz) | 99% Occupied Bandwidth<br>(MHz) |              |
|-------------------------------|-----------------------------------|---------------------------------|--------------|
|                               | QPSK                              | QPSK                            | 16QAM        |
| 1852.400                      | 18.44                             | <b>17.93</b>                    | 17.88        |
| 1880.000                      | <b>18.60</b>                      | 17.88                           | 17.88        |
| 1907.600                      | 18.46                             | <b>17.93</b>                    | <b>17.93</b> |

#### **Test Data for LTE Band 2 selected Frequencies in 15MHz bandwidth (RB = 75)**

| LTE Band 2<br>Frequency (MHz) | 99% Occupied Bandwidth<br>(MHz) |       |
|-------------------------------|---------------------------------|-------|
|                               | QPSK                            | 16QAM |
| 1857.5                        | 13.41                           | 13.41 |
| 1880                          | 13.41                           | 13.41 |
| 1902.5                        | 13.45                           | 13.41 |

#### **Test Data for LTE Band 2 selected Frequencies in 10MHz bandwidth (RB = 50)**

| LTE Band 2<br>Frequency (MHz) | 99% Occupied Bandwidth<br>(MHz) |       |
|-------------------------------|---------------------------------|-------|
|                               | QPSK                            | 16QAM |
| 1855                          | 8.94                            | 8.94  |
| 1880                          | 8.94                            | 8.94  |
| 1905                          | 8.97                            | 8.94  |

#### **Test Data for LTE Band 2 selected Frequencies in 5MHz bandwidth (RB = 25)**

| LTE Band 2<br>Frequency (MHz) | 99% Occupied Bandwidth<br>(MHz) |       |
|-------------------------------|---------------------------------|-------|
|                               | QPSK                            | 16QAM |
| 1852.5                        | 4.50                            | 4.48  |
| 1880                          | 4.48                            | 4.48  |
| 1907.5                        | 4.50                            | 4.48  |

#### **Test Data for LTE Band 2 selected Frequencies in 3MHz bandwidth (RB = 15)**

| LTE Band 2<br>Frequency (MHz) | 99% Occupied Bandwidth<br>(MHz) |       |
|-------------------------------|---------------------------------|-------|
|                               | QPSK                            | 16QAM |
| 1851.5                        | 2.69                            | 2.69  |
| 1880                          | 2.70                            | 2.69  |
| 1908.5                        | 2.70                            | 2.69  |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### **Test Data for LTE Band 2 selected Frequencies in 1.4MHz bandwidth (RB = 6)**

| LTE Band 2<br>Frequency (MHz) | 99% Occupied Bandwidth<br>(MHz) |       |
|-------------------------------|---------------------------------|-------|
|                               | QPSK                            | 16QAM |
| 1850.7                        | 1.09                            | 1.09  |
| 1880                          | 1.10                            | 1.09  |
| 1909.3                        | 1.09                            | 1.09  |

### **Peak to Average Ratio (PAR)**

For each 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz and 20 MHz with Resource Block allocations 100,50,25,6 and 3 as per scalable bandwidths for LTE Band 2, the peak to average ratio was measured on the low, middle and high channels with QPSK and 16-QAM modulation.

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

The worst case measured was 10.75 dB on middle channel in 10MHz bandwidth with 50 RBs.

### **Measurement Plots for LTE Band 2**

Refer to the following measurement plots for more detail:

See Figures 3-1a to 3-18a for the plots of the conducted spurious emissions.

See Figures 3-19a to 3-24a and 3-43a to 3-45a for the plots of 99% Occupied Bandwidth and -26 dBc Bandwidth.

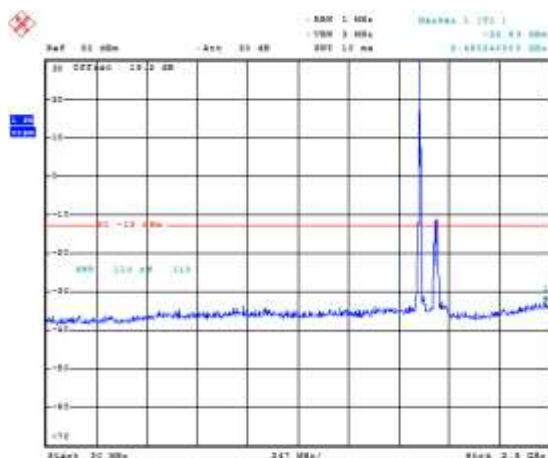
See Figures 3-25a to 3-36a for the plots of the Channel mask.

See Figures 3-37a to 3-42a for the plots of the Peak to Average Ratio.

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

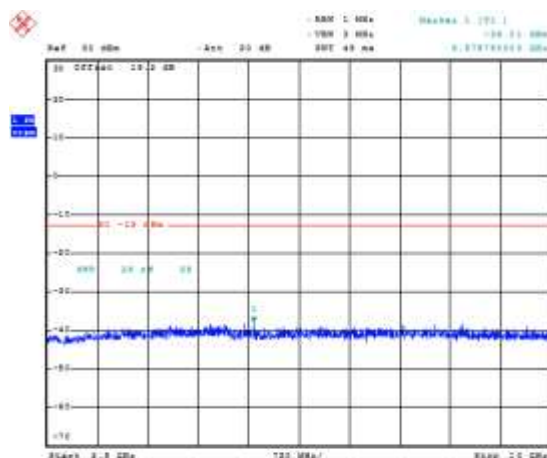
## LTE Band 2 Conducted RF Emission Test Data (cont'd)

**Figure 3-1a: Band 2, Spurious Conducted Emissions, Low channel, 20MHz BW (RB= 1)**



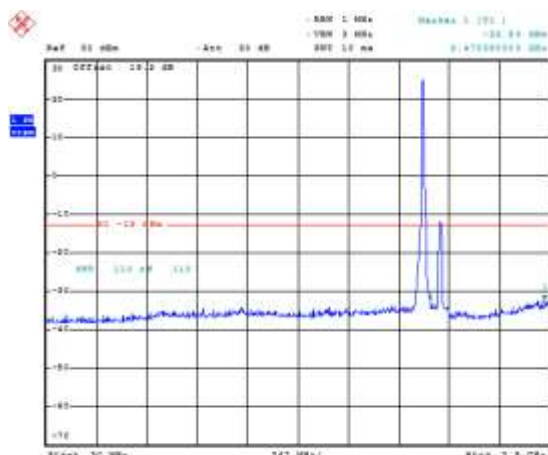
Date: 27-JUL-2015 08:45:00

**Figure 3-2a: Band 2, Spurious Conducted Emissions, Low channel, 20MHz BW (RB= 1)**



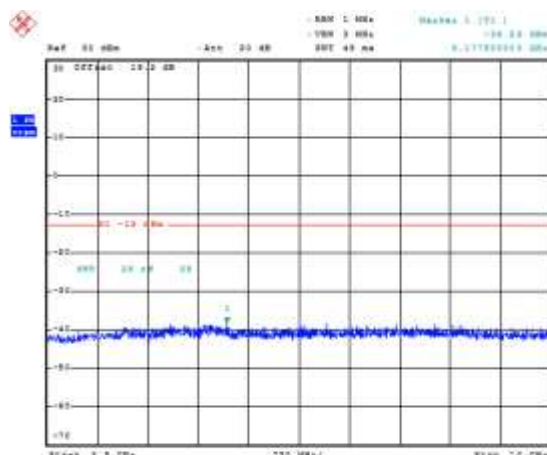
Date: 27-JUL-2015 08:45:17

**Figure 3-3a: Band 2, Spurious Conducted Emissions, Middle channel, 20MHz BW (RB= 50)**



Date: 27-JUL-2015 08:46:11

**Figure 3-4a: Band 2, Spurious Conducted Emissions, Middle channel, 20MHz BW (RB= 50)**

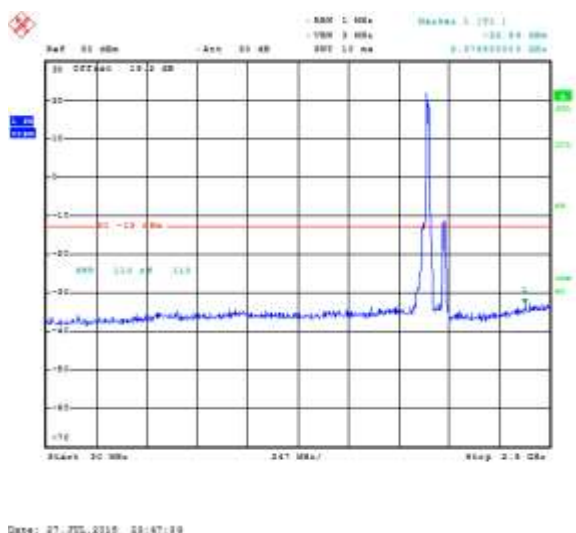


Date: 27-JUL-2015 08:46:39

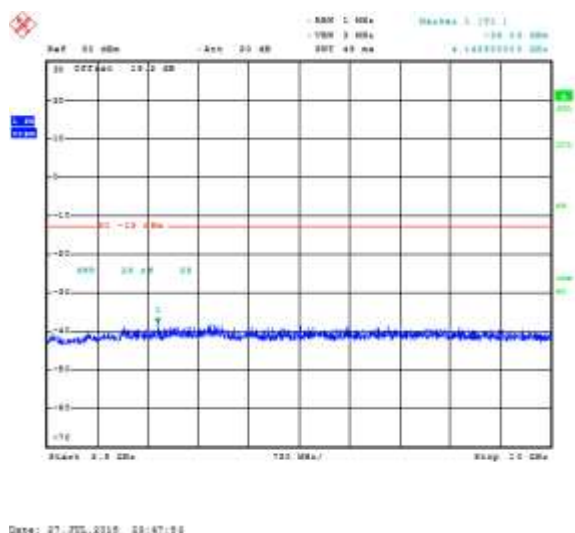
|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## LTE Band 2 Conducted RF Emission Test Data cont'd

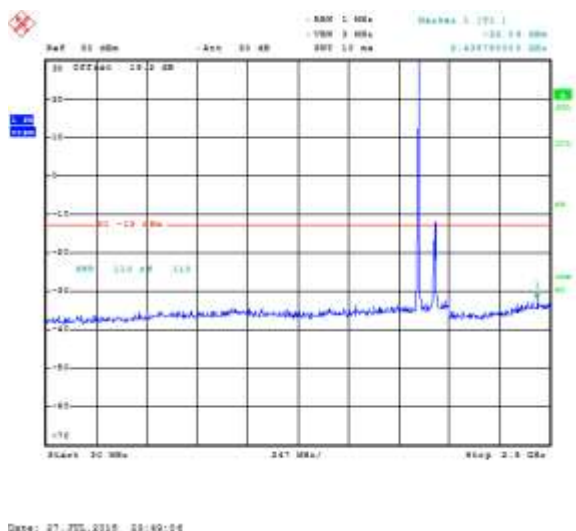
**Figure 3-5a: Band 2, Spurious Conducted Emissions, High Channel, 20MHz BW (RB= 100)**



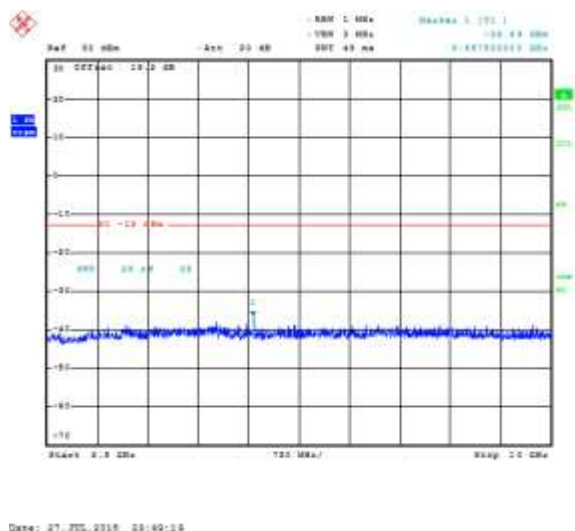
**Figure 3-6a: Band 2, Spurious Conducted Emissions, High Channel, 20MHz BW (RB= 100)**



**Figure 3-7a: Band 2, Spurious Conducted Emissions, Low channel, 10MHz BW (RB= 1)**



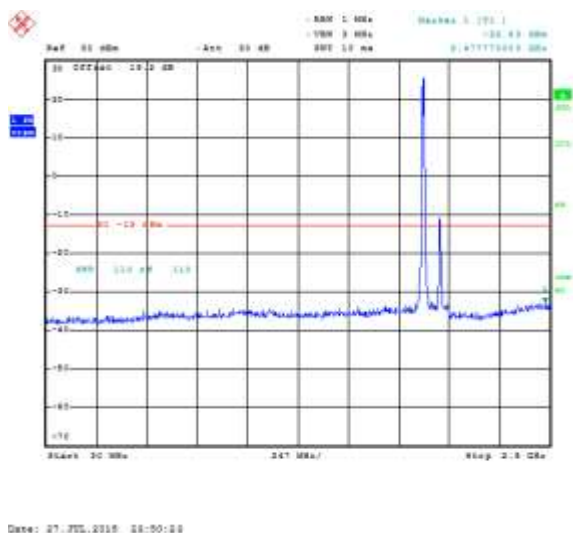
**Figure 3-8a: Band 2, Spurious Conducted Emissions, Low channel, 10MHz BW (RB= 1)**



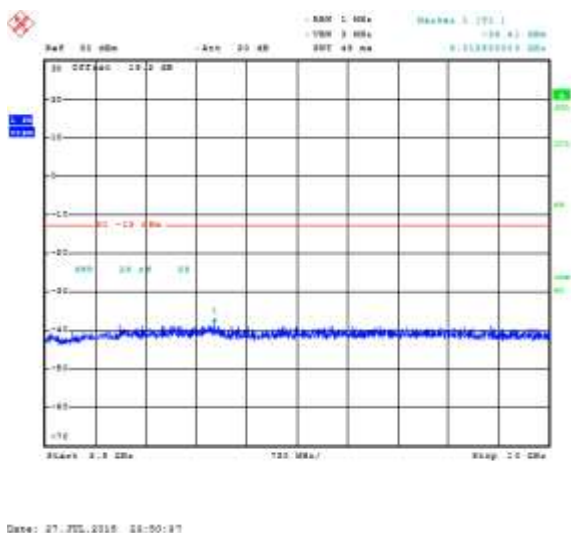
|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## LTE Band 2 Conducted RF Emission Test Data cont'd

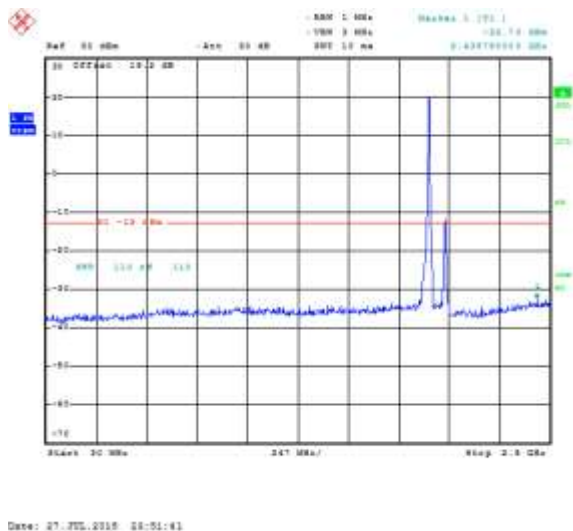
**Figure 3-9a: Band 2, Spurious Conducted Emissions, Middle channel, 10MHz BW (RB= 25)**



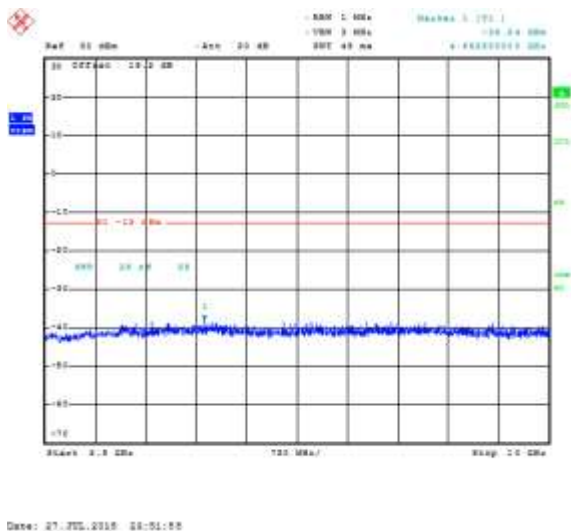
**Figure 3-10a: Band 2, Spurious Conducted Emissions, Middle channel, 10MHz BW (RB= 25)**



**Figure 3-11a: Band 2, Spurious Conducted Emissions, High Channel, 10MHz BW (RB= 50)**



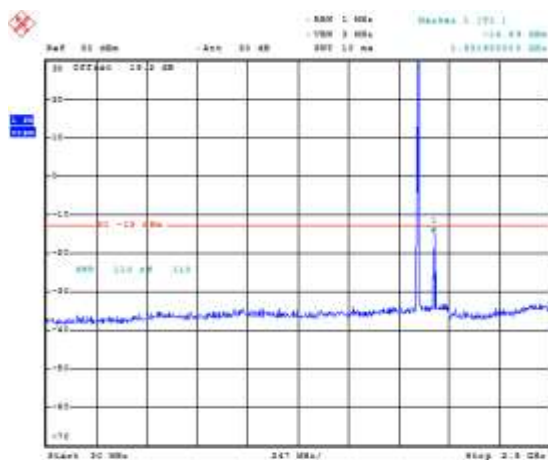
**Figure 3-12a: Band 2, Spurious Conducted Emissions, High Channel, 10MHz BW (RB= 50)**



|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

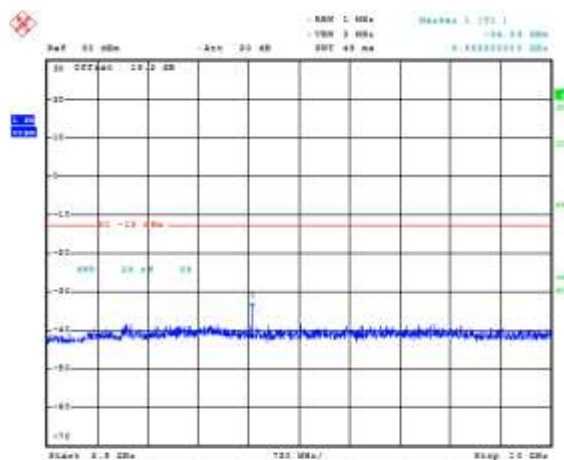
## LTE Band 2 Conducted RF Emission Test Data cont'd

**Figure 3-13a: Band 2, Spurious Conducted Emissions, Low channel, 1.4MHz BW (RB= 1)**



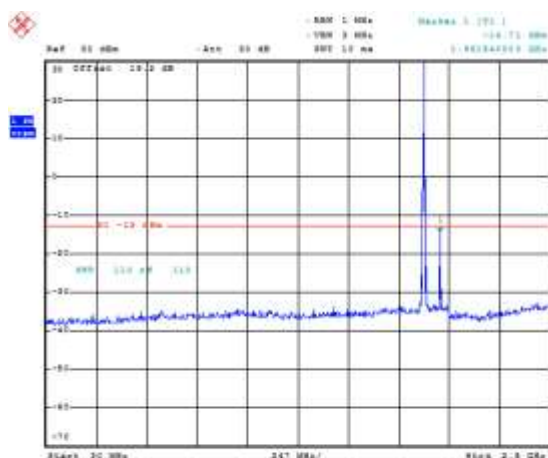
Date: 27-Jul-2015 08:09:00

**Figure 3-14a: Band 2, Spurious Conducted Emissions, Low channel, 1.4MHz BW (RB= 1)**



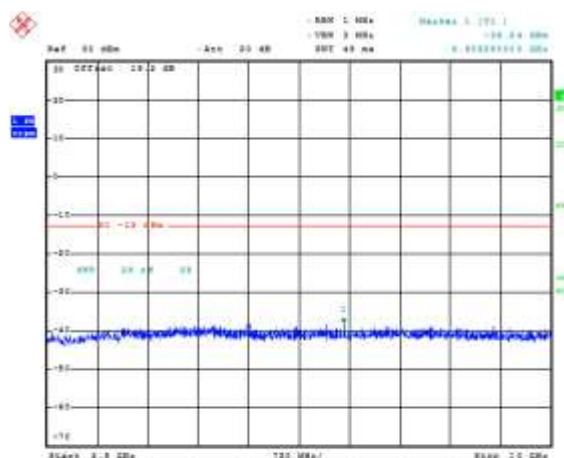
Date: 27-Jul-2015 08:09:00

**Figure 3-15a: Band 2, Spurious Conducted Emissions, Middle channel, 1.4MHz BW (RB= 3)**



Date: 27-Jul-2015 08:09:00

**Figure 3-16a: Band 2, Spurious Conducted Emissions, Middle channel, 1.4MHz BW (RB= 3)**

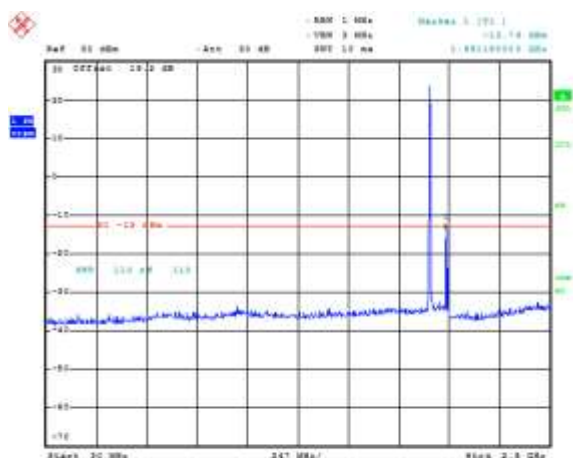


Date: 27-Jul-2015 08:09:00

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

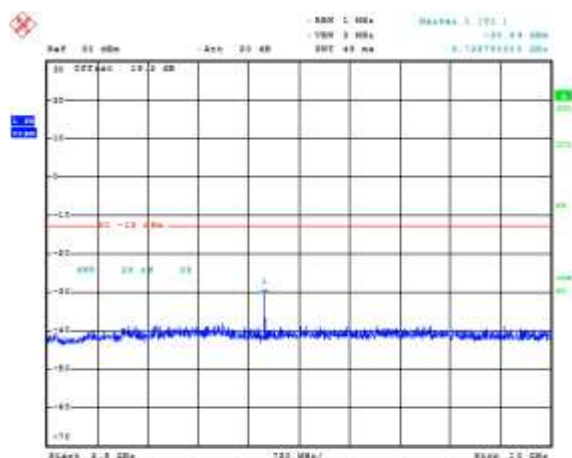
## LTE Band 2 Conducted RF Emission Test Data cont'd

**Figure 3-17a: Band 2, Spurious Conducted Emissions, High Channel, 1.4MHz BW (RB= 6)**



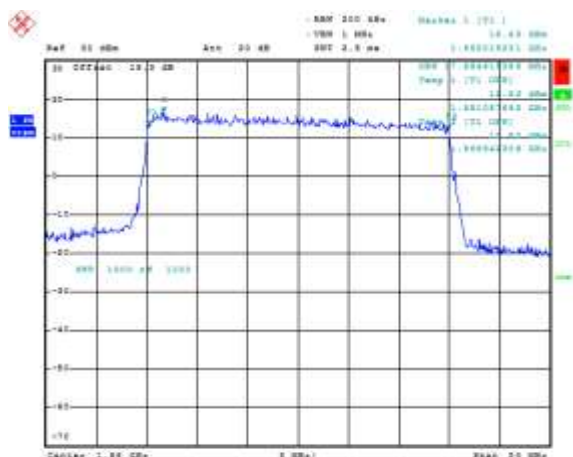
Date: 27.JUL.2015 08:50:49

**Figure 3-18a: Band 2, Spurious Conducted Emissions, High Channel, 1.4MHz BW (RB= 6)**



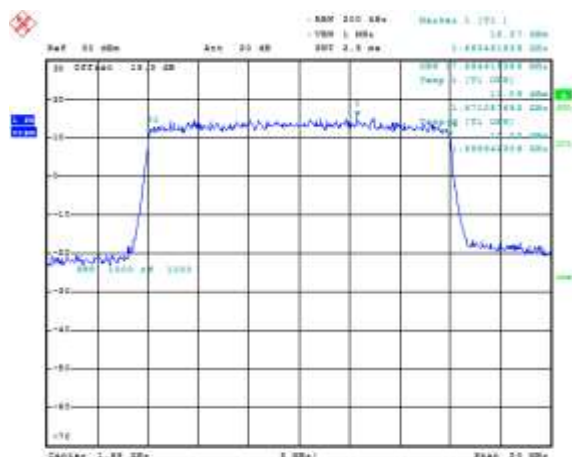
Date: 27.JUL.2015 08:50:57

**Figure 3-19a: Occupied Bandwidth, Band 2 Low Channel, 20MHz BW (RB= 100)**



Date: 22.JUL.2015 08:40:32

**Figure 3-20a: Occupied Bandwidth, Band 2 Middle Channel, 20MHz BW (RB= 100)**

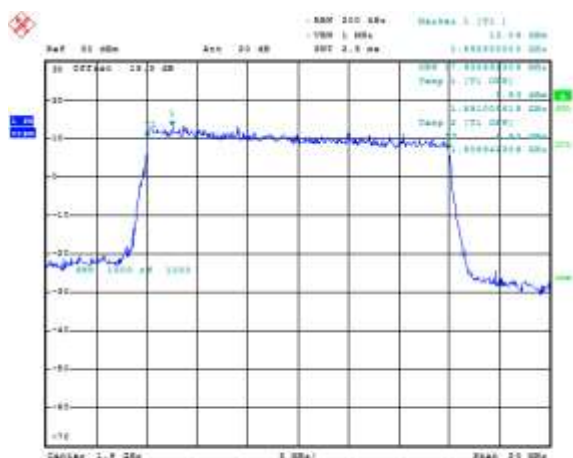


Date: 22.JUL.2015 08:40:58

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

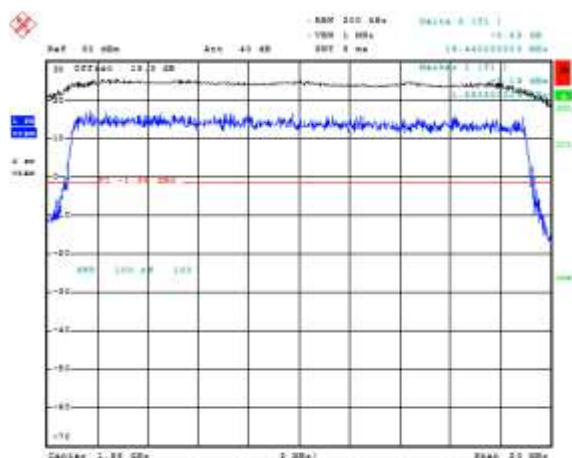
## LTE Band 2 Conducted RF Emission Test Data cont'd

**Figure 3-21a: Occupied Bandwidth, Band 2 High Channel, 20MHz BW (RB= 100)**



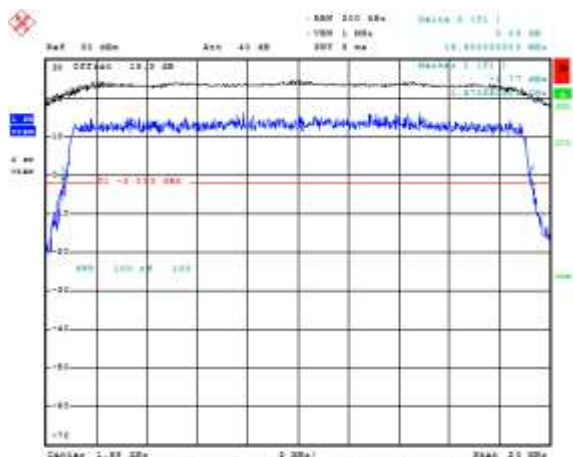
Date: 22-Jul-2015 02:41:49

**Figure 3-22a: -26 dBc Bandwidth, Band 2 Low Channel, 20MHz BW (RB= 100)**



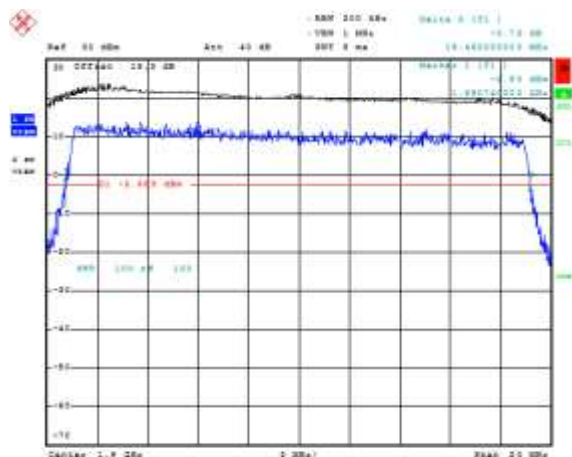
Date: 22-Jul-2015 02:45:47

**Figure 3-23a: -26 dBc Bandwidth, Band 2 Middle Channel, 20MHz BW (RB= 100)**



Date: 22-Jul-2015 02:46:01

**Figure 3-24a: -26 dBc Bandwidth, Band 2 High Channel, 20MHz BW (RB= 100)**

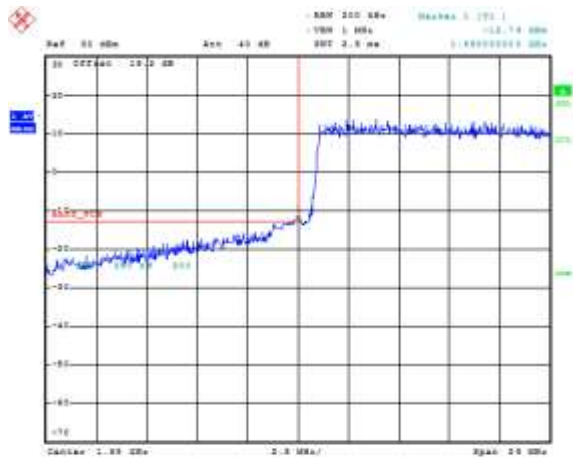


Date: 22-Jul-2015 02:46:17

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|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

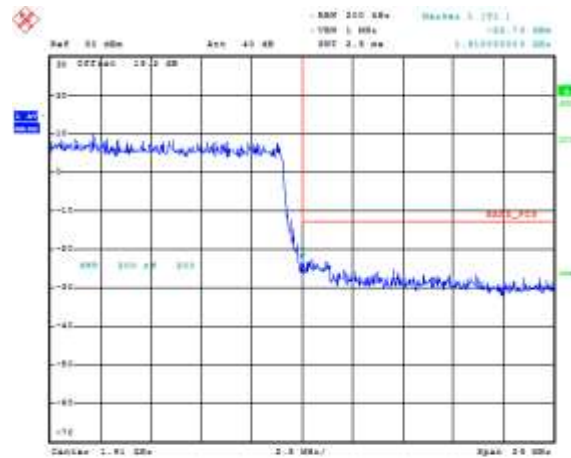
## LTE Band 2 Conducted RF Emission Test Data cont'd

**Figure 3-25a: Band 2 Low Channel Mask, 20MHz  
BW, RB = 100**



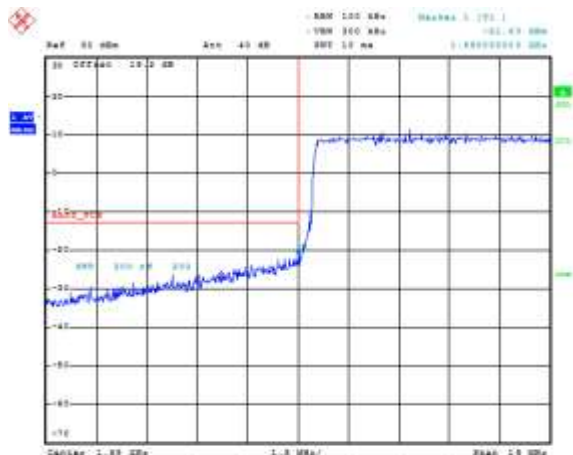
Date: 29-Jul-2015 01:47:10

**Figure 3-26a: Band 2 High Channel Mask, 20MHz  
BW, RB = 100**



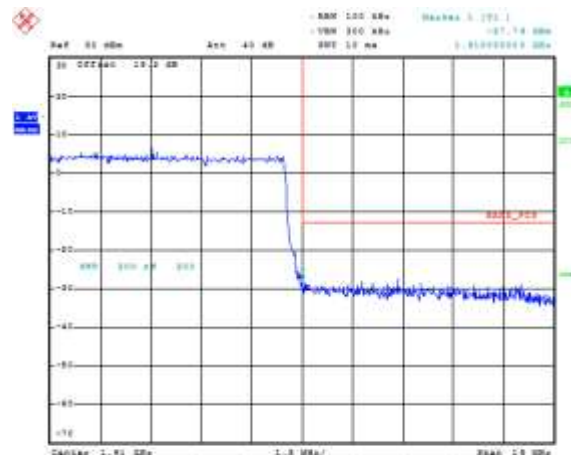
Date: 29-Jul-2015 01:47:41

**Figure 3-27a: Band 2 Low Channel Mask, 10MHz  
BW, RB = 50**



Date: 29-Jul-2015 01:48:11

**Figure 3-28a: Band 2 High Channel Mask, 10MHz  
BW, RB = 50**

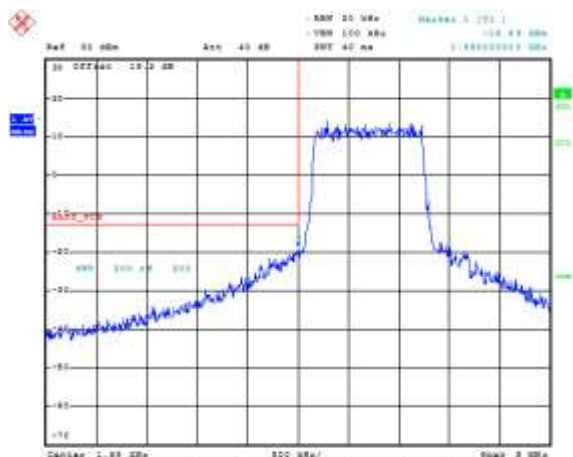


Date: 29-Jul-2015 01:48:54

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

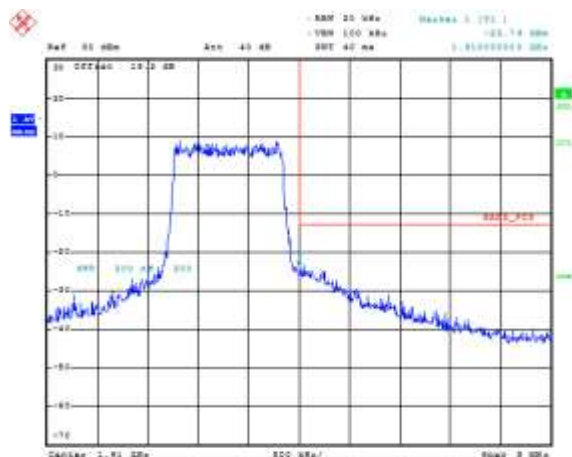
## LTE Band 2 Conducted RF Emission Test Data cont'd

**Figure 3-29a: Band 2 Low Channel Mask, 1.4MHz  
BW, RB = 6**



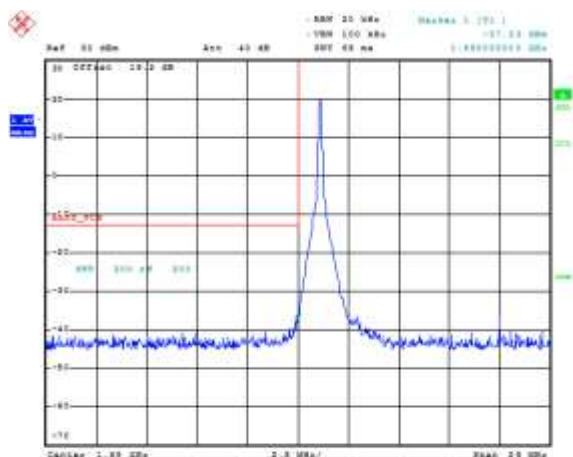
Date: 26-JUL-2015 11:49:35

**Figure 3-30a: Band 2 High Channel Mask, 1.4MHz  
BW, RB = 6**



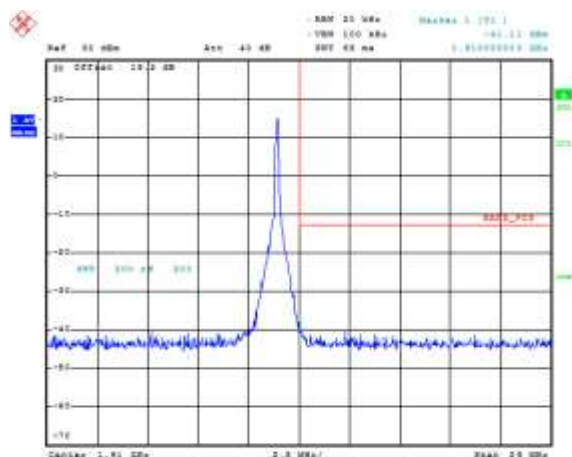
Date: 26-JUL-2015 11:50:12

**Figure 3-31a: Band 2 Low Channel Mask, 20MHz  
BW, RB = 1**



Date: 26-JUL-2015 11:46:45

**Figure 3-32a: Band 2 High Channel Mask, 20MHz  
BW, RB = 1**

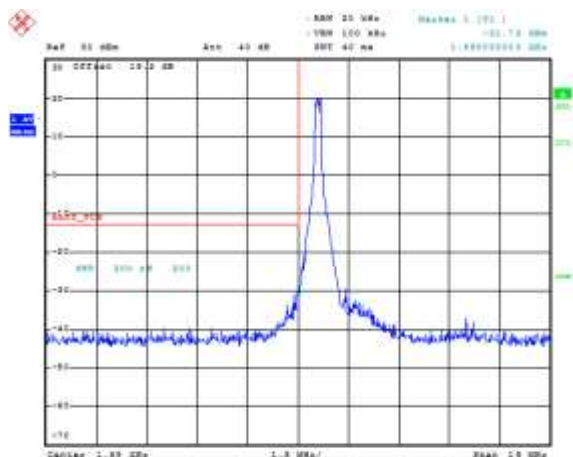


Date: 26-JUL-2015 11:47:37

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

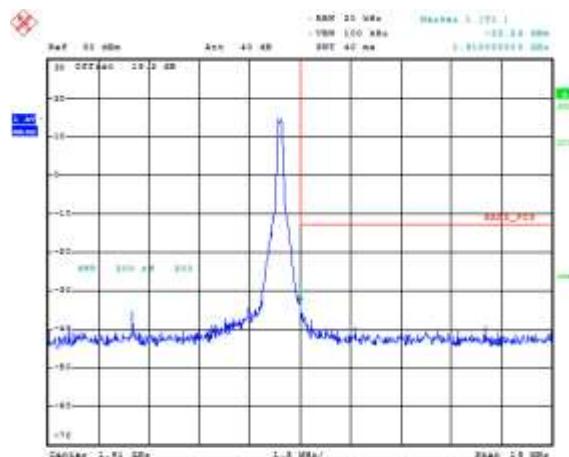
## LTE Band 2 Conducted RF Emission Test Data cont'd

**Figure 3-33a: Band 2 Low Channel Mask, 10MHz  
BW, RB = 1**



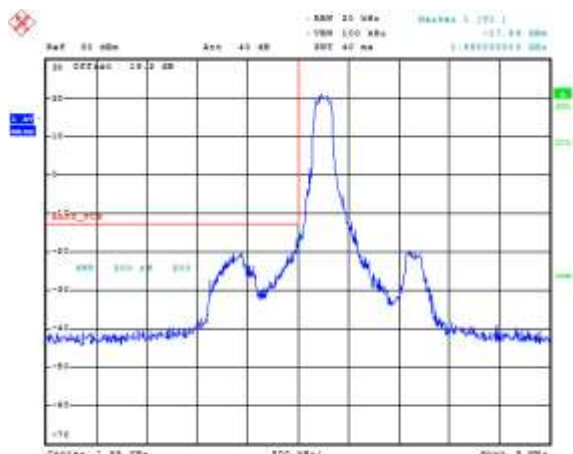
Date: 26-Jul-2015 01:49:50

**Figure 3-34a: Band 2 High Channel Mask, 10MHz  
BW, RB = 1**



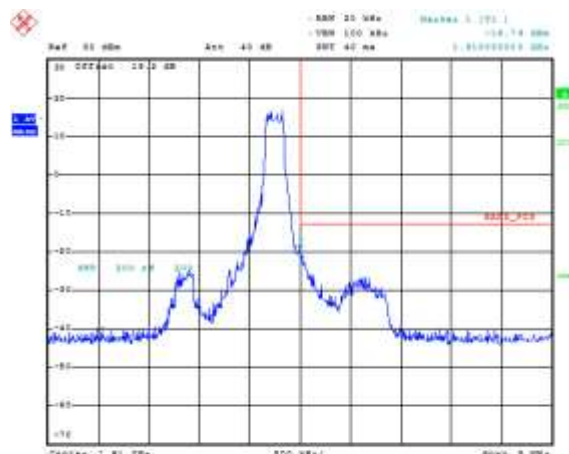
Date: 26-Jul-2015 01:49:42

**Figure 3-35a: Band 2 Low Channel Mask, 1.4MHz  
BW, RB = 1**



Date: 26-Jul-2015 01:49:50

**Figure 3-36a: Band 2 High Channel Mask, 1.4MHz  
BW, RB = 1**

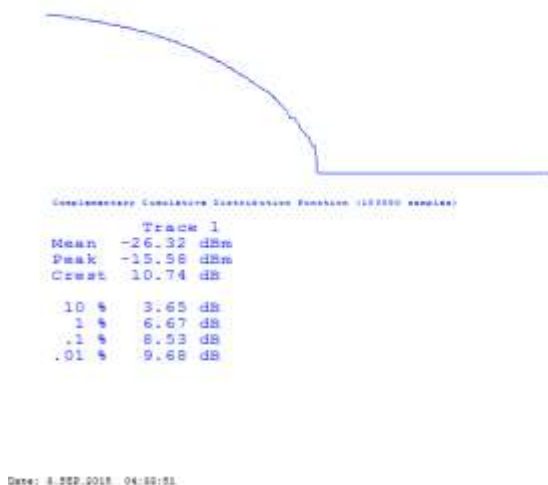


Date: 26-Jul-2015 01:49:56

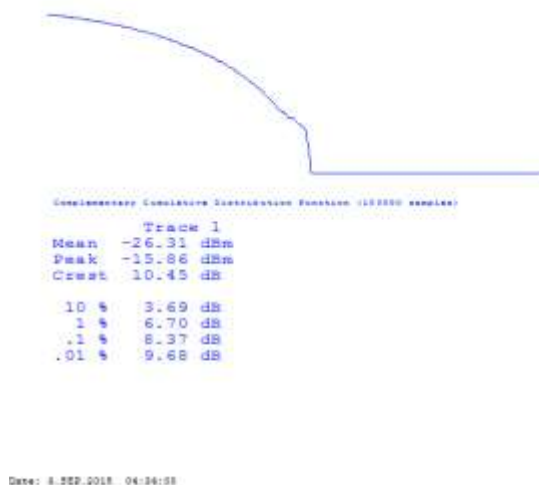
|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## LTE Band 2 Conducted RF Emission Test Data cont'd

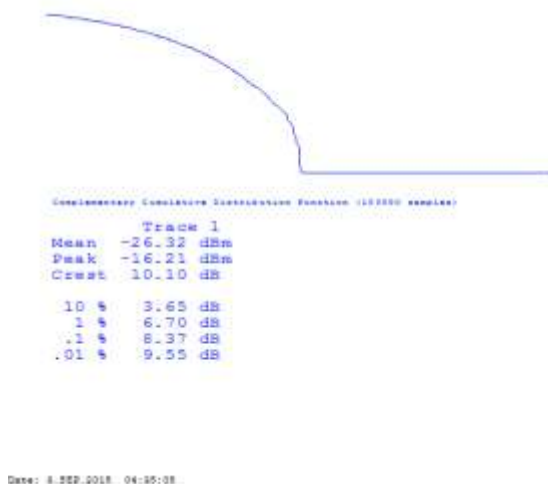
**Figure 3-37a: Band 2, Mid Channel PAR, 20 MHz  
BW, RB = 50 QPSK**



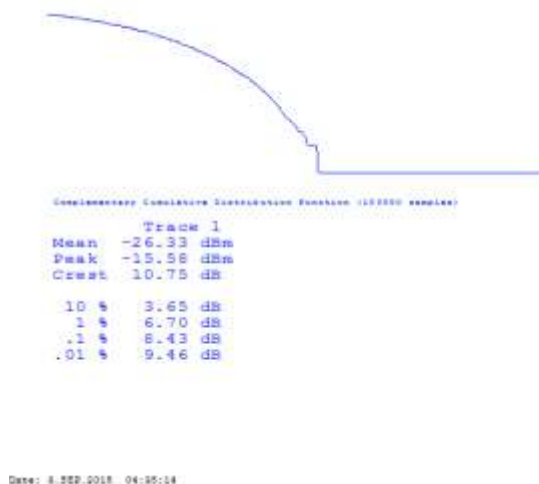
**Figure 3-38a: Band 2, Mid Channel PAR, 20 MHz  
BW, RB = 100 16-QAM**



**Figure 3-39a: Band 2, Mid Channel PAR, 10 MHz  
BW, RB = 25 QPSK**



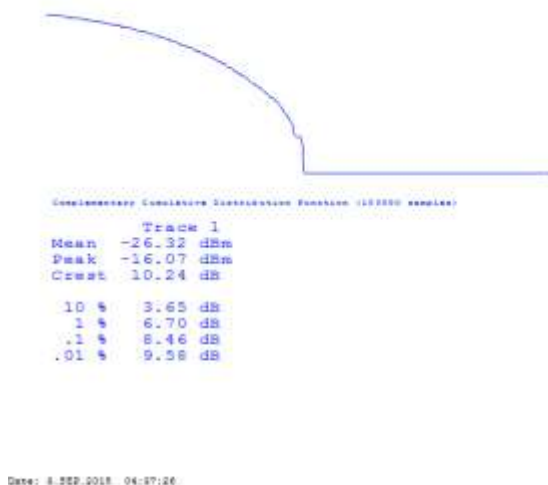
**Figure 3-40a: Band 2, Mid Channel PAR, 10 MHz  
BW, RB = 50 16-QAM**



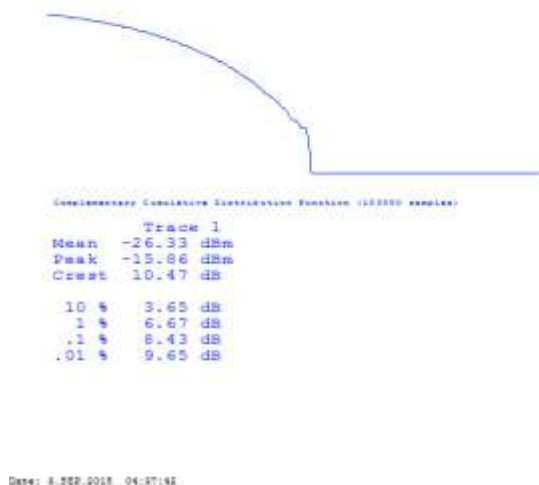
|                                              |                                                                                                                                         |                                                                                   |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>BlackBerry</b>                            | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### LTE Band 2 Conducted RF Emission Test Data cont'd

**Figure 3-41a: Band 2, Mid Channel PAR, 1.4 MHz  
BW, RB = 3 QPSK**



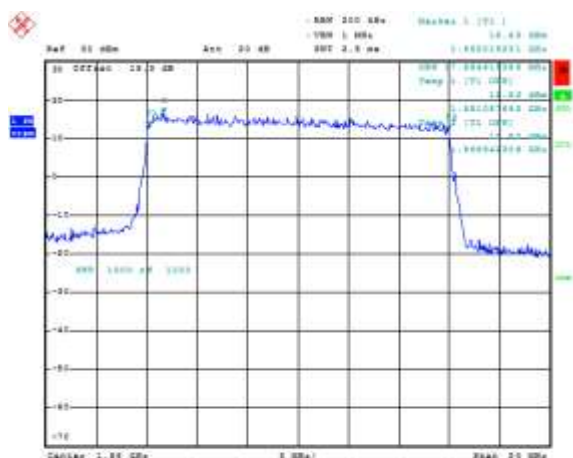
**Figure 3-42a: Band 2, Mid Channel PAR, 1.4 MHz  
BW, RB = 6 16-QAM**



|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## LTE Band 2 Conducted RF Emission Test Data cont'd

**Figure 3-43a: Occupied Bandwidth, Band 2 Low Channel, 20MHz BW (RB= 100) 16-QAM**



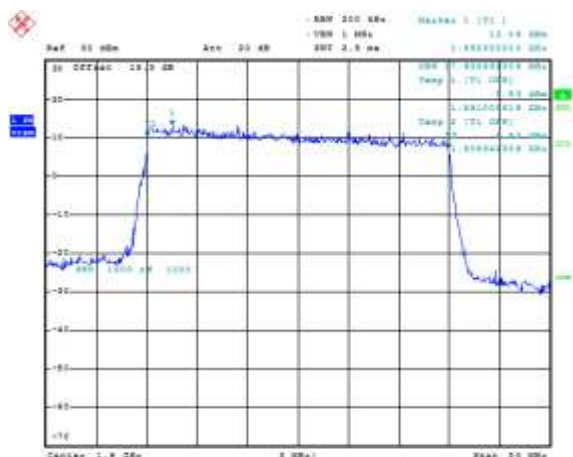
Date: 22-Jul-2015 02:40:32

**Figure 3-44a: Occupied Bandwidth, Band 2 Mid Channel, 20MHz BW (RB= 100) 16-QAM**



Date: 22-Jul-2015 02:40:55

**Figure 3-45a: Occupied Bandwidth, Band 2 High Channel, 20MHz BW (RB= 100) 16-QAM**

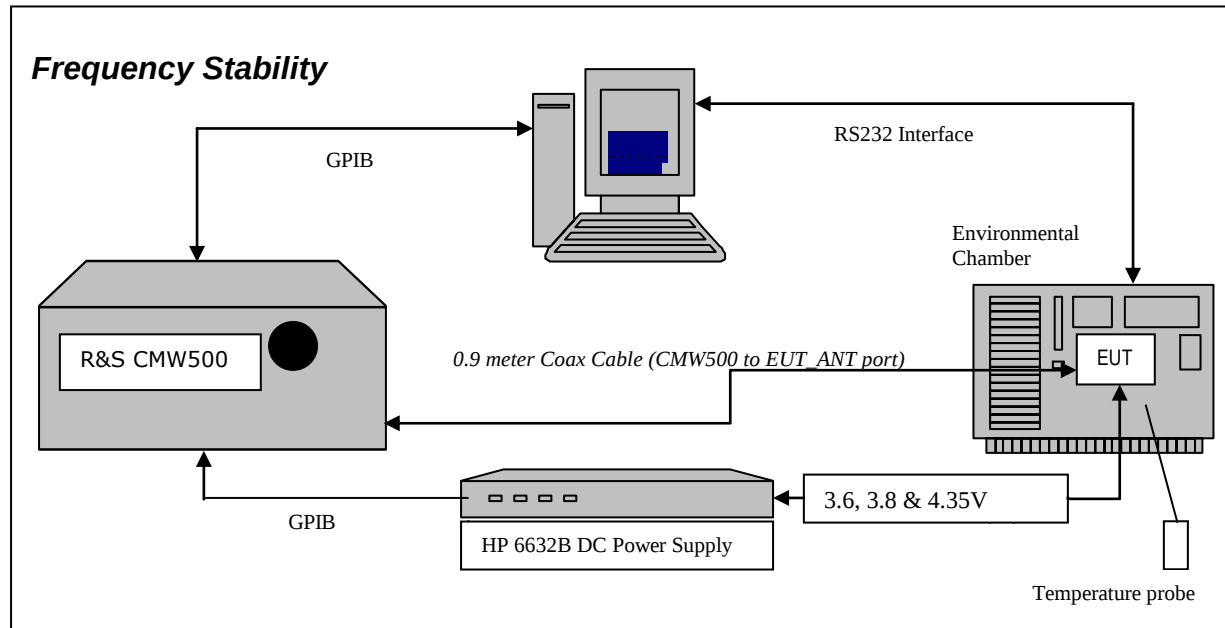


Date: 22-Jul-2015 02:41:49

## APPENDIX 3B – LTE Band 2 FREQUENCY STABILITY TEST DATA

|                                              |                                                                                                                                         |                                                                                   |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>BlackBerry</b>                            | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### LTE Frequency Stability Test Data



The following configurations were measured for model RHK211LW (STV100-1):

The following measurements were performed by Sijia Li.

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 24.235, CFR 47 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 CMW 500 and the EUT antenna port.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## Test Setup:

The EUT was placed in the Temperature chamber and connected to CMW 500 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 CMW 500 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 3.8 volts and to 4.35 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, 3.8 volts and 4.35 volts. The transmit frequency was varied in 3 steps consisting of 1860.0, 1880.0 and 1900.0 MHz each was measured under bandwidth of 20 MHz with maximum (100) RBs. 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.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

Procedure:

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

1. Switch on the HP 6632B power supply; CMW 500 Communications test Set, and Environmental Chamber.
2. Start test program
3. Set the Temperature to –30°C and maintain a period of one- hour soak time, with the EUT supply voltage disabled.
4. Set power supply voltage to 3.6 volts.
5. Set up CMW 500 Radio Communication Tester.
6. Command the CMW 500 to switch to the low channel.
7. Enable the voltage to the EUT, and connect a link to the CMW 500 test set.
8. EUT is commanded to Transmit 100 Bursts.
9. Software logs the following data from the CMW 500, power supply and temperature chamber: Traffic Channel Number, Traffic Channel Frequency, Power Level, Chamber Temperature, Supply Voltage, Power and Frequency Error.
10. The CMW 500 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 3.8 Volts
12. Increase temperature by 10°C and soak for 1/2 hour.
13. Repeat steps 4 - 12 for temperatures –30°C to 60°C.
14. Repeat steps 5 to 10 changing the supply voltage to 4.35 volts

Procedure 5 to 10 was repeated at room temperature (20°C) with the power supply voltage set to 3.6, 3.8 and 4.35 volts

The maximum frequency error in the LTE band 2 measured was **-0.0037 PPM**.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

Date of test: April 17, 2015

**LTE band 2 results: channels 18600, 18900, & 19199 @ 20°C maximum transmitted power**

| Traffic Channel Number | LTE Band 2 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|----------------------------|-----------------|-----------------------|----------------------|---------|
| 18600                  | 1860.0                     | 3.6             | 20                    | 2.98                 | 0.0016  |
| 18900                  | 1880.0                     | 3.6             | 20                    | -6.45                | -0.0034 |
| 19199                  | 1900.0                     | 3.6             | 20                    | -4.96                | -0.0026 |

| Traffic Channel Number | LTE Band 2 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|----------------------------|-----------------|-----------------------|----------------------|---------|
| 18600                  | 1860.0                     | 3.8             | 20                    | 5.36                 | 0.0029  |
| 18900                  | 1880.0                     | 3.8             | 20                    | -5.29                | -0.0028 |
| 19199                  | 1900.0                     | 3.8             | 20                    | -5.18                | -0.0027 |

| Traffic Channel Number | LTE Band 2 Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM            |
|------------------------|----------------------------|-----------------|-----------------------|----------------------|----------------|
| 18600                  | 1860.0                     | 4.35            | 20                    | 5.51                 | 0.0030         |
| 18900                  | 1880.0                     | 4.35            | 20                    | -6.11                | -0.0032        |
| 19199                  | 1900.0                     | 4.35            | 20                    | -7.08                | <b>-0.0037</b> |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**LTE band 2 Results: channel 18600 @ maximum transmitted power**

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM           |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------------|
| 18600                  | 1860.0          | 3.6             | -30                   | 4.71                 | 0.0025        |
| 18600                  | 1860.0          | 3.6             | -20                   | 7.07                 | 0.0038        |
| 18600                  | 1860.0          | 3.6             | -10                   | 4.48                 | 0.0024        |
| 18600                  | 1860.0          | 3.6             | 0                     | 5.78                 | 0.0031        |
| 18600                  | 1860.0          | 3.6             | 10                    | 6.25                 | 0.0034        |
| 18600                  | 1860.0          | 3.6             | 20                    | 2.98                 | 0.0016        |
| 18600                  | 1860.0          | 3.6             | 30                    | -4.56                | -0.0025       |
| 18600                  | 1860.0          | 3.6             | 40                    | 3.83                 | 0.0021        |
| 18600                  | 1860.0          | 3.6             | 50                    | 5.15                 | 0.0028        |
| 18600                  | 1860.0          | 3.6             | 60                    | 3.19                 | 0.0021        |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM           |
| 18600                  | 1860.0          | 3.8             | -30                   | 5.51                 | 0.0030        |
| 18600                  | 1860.0          | 3.8             | -20                   | 4.59                 | 0.0025        |
| 18600                  | 1860.0          | 3.8             | -10                   | 5.18                 | 0.0028        |
| 18600                  | 1860.0          | 3.8             | 0                     | 7.02                 | 0.0038        |
| 18600                  | 1860.0          | 3.8             | 10                    | 5.79                 | 0.0031        |
| 18600                  | 1860.0          | 3.8             | 20                    | 5.36                 | 0.0029        |
| 18600                  | 1860.0          | 3.8             | 30                    | 4.41                 | 0.0024        |
| 18600                  | 1860.0          | 3.8             | 40                    | 5.89                 | 0.0032        |
| 18600                  | 1860.0          | 3.8             | 50                    | 5.09                 | 0.0024        |
| 18600                  | 1860.0          | 3.8             | 60                    | 5.31                 | 0.0032        |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM           |
| 18600                  | 1860.0          | 4.35            | -30                   | 5.48                 | 0.0029        |
| 18600                  | 1860.0          | 4.35            | -20                   | 3.68                 | 0.0020        |
| 18600                  | 1860.0          | 4.35            | -10                   | 4.61                 | 0.0025        |
| 18600                  | 1860.0          | 4.35            | 0                     | 5.61                 | 0.0030        |
| 18600                  | 1860.0          | 4.35            | 10                    | 4.05                 | 0.0022        |
| 18600                  | 1860.0          | 4.35            | 20                    | 5.51                 | 0.0030        |
| 18600                  | 1860.0          | 4.35            | 30                    | 7.40                 | <b>0.0040</b> |
| 18600                  | 1860.0          | 4.35            | 40                    | 6.34                 | 0.0034        |
| 18600                  | 1860.0          | 4.35            | 50                    | -5.31                | <b>0.0040</b> |
| 18600                  | 1860.0          | 4.35            | 60                    | -5.72                | 0.0034        |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**LTE band 2 Results: channel 18900 @ maximum transmitted power**

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 18900                  | 1880.00         | 3.6             | -30                   | -8.27                | -0.0044 |
| 18900                  | 1880.00         | 3.6             | -20                   | -6.69                | -0.0036 |
| 18900                  | 1880.00         | 3.6             | -10                   | -5.91                | -0.0031 |
| 18900                  | 1880.00         | 3.6             | 0                     | -5.09                | -0.0027 |
| 18900                  | 1880.00         | 3.6             | 10                    | -5.79                | -0.0031 |
| 18900                  | 1880.00         | 3.6             | 20                    | -6.45                | -0.0034 |
| 18900                  | 1880.00         | 3.6             | 30                    | -7.72                | -0.0041 |
| 18900                  | 1880.00         | 3.6             | 40                    | -6.58                | -0.0035 |
| 18900                  | 1880.00         | 3.6             | 50                    | -5.61                | -0.0030 |
| 18900                  | 1880.00         | 3.6             | 60                    | -10.74               | -0.0035 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 18900                  | 1880.00         | 3.8             | -30                   | -6.97                | -0.0037 |
| 18900                  | 1880.00         | 3.8             | -20                   | -7.80                | -0.0041 |
| 18900                  | 1880.00         | 3.8             | -10                   | -5.94                | -0.0032 |
| 18900                  | 1880.00         | 3.8             | 0                     | -7.75                | -0.0041 |
| 18900                  | 1880.00         | 3.8             | 10                    | -6.78                | -0.0036 |
| 18900                  | 1880.00         | 3.8             | 20                    | -5.29                | -0.0028 |
| 18900                  | 1880.00         | 3.8             | 30                    | -6.94                | -0.0037 |
| 18900                  | 1880.00         | 3.8             | 40                    | -7.64                | -0.0041 |
| 18900                  | 1880.00         | 3.8             | 50                    | -4.73                | -0.0037 |
| 18900                  | 1880.00         | 3.8             | 60                    | -6.31                | -0.0041 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 18900                  | 1880.00         | 4.35            | -30                   | -6.55                | -0.0035 |
| 18900                  | 1880.00         | 4.35            | -20                   | -5.56                | -0.0030 |
| 18900                  | 1880.00         | 4.35            | -10                   | -7.02                | -0.0037 |
| 18900                  | 1880.00         | 4.35            | 0                     | -8.01                | -0.0043 |
| 18900                  | 1880.00         | 4.35            | 10                    | -6.41                | -0.0034 |
| 18900                  | 1880.00         | 4.35            | 20                    | -6.11                | -0.0032 |
| 18900                  | 1880.00         | 4.35            | 30                    | -7.61                | -0.0040 |
| 18900                  | 1880.00         | 4.35            | 40                    | -6.67                | -0.0035 |
| 18900                  | 1880.00         | 4.35            | 50                    | -7.05                | -0.0040 |
| 18900                  | 1880.00         | 4.35            | 60                    | -6.78                | -0.0035 |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**LTE band 2 Results: channel 19199 @ maximum transmitted power**

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM            |
|------------------------|-----------------|-----------------|-----------------------|----------------------|----------------|
| 19199                  | 1900.0          | 3.6             | -30                   | -7.37                | -0.0039        |
| 19199                  | 1900.0          | 3.6             | -20                   | -4.25                | -0.0022        |
| 19199                  | 1900.0          | 3.6             | -10                   | -6.35                | -0.0033        |
| 19199                  | 1900.0          | 3.6             | 0                     | -5.61                | -0.0030        |
| 19199                  | 1900.0          | 3.6             | 10                    | -3.98                | -0.0021        |
| 19199                  | 1900.0          | 3.6             | 20                    | -4.96                | -0.0026        |
| 19199                  | 1900.0          | 3.6             | 30                    | -6.24                | -0.0033        |
| 19199                  | 1900.0          | 3.6             | 40                    | -6.65                | -0.0035        |
| 19199                  | 1900.0          | 3.6             | 50                    | -4.31                | -0.0033        |
| 19199                  | 1900.0          | 3.6             | 60                    | -6.54                | -0.0035        |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM            |
| 19199                  | 1900.0          | 3.8             | -30                   | -6.17                | -0.0032        |
| 19199                  | 1900.0          | 3.8             | -20                   | -5.85                | -0.0031        |
| 19199                  | 1900.0          | 3.8             | -10                   | -6.19                | -0.0033        |
| 19199                  | 1900.0          | 3.8             | 0                     | -7.68                | <b>-0.0040</b> |
| 19199                  | 1900.0          | 3.8             | 10                    | -5.11                | -0.0027        |
| 19199                  | 1900.0          | 3.8             | 20                    | -5.18                | -0.0027        |
| 19199                  | 1900.0          | 3.8             | 30                    | -6.35                | -0.0033        |
| 19199                  | 1900.0          | 3.8             | 40                    | -5.36                | -0.0028        |
| 19199                  | 1900.0          | 3.8             | 50                    | -7.61                | -0.0033        |
| 19199                  | 1900.0          | 3.8             | 60                    | -6.90                | -0.0028        |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM            |
| 19199                  | 1900.0          | 4.35            | -30                   | -4.62                | -0.0024        |
| 19199                  | 1900.0          | 4.35            | -20                   | -4.15                | -0.0022        |
| 19199                  | 1900.0          | 4.35            | -10                   | -6.69                | -0.0035        |
| 19199                  | 1900.0          | 4.35            | 0                     | -4.55                | -0.0024        |
| 19199                  | 1900.0          | 4.35            | 10                    | -4.95                | -0.0026        |
| 19199                  | 1900.0          | 4.35            | 20                    | -7.08                | -0.0037        |
| 19199                  | 1900.0          | 4.35            | 30                    | -6.08                | -0.0032        |
| 19199                  | 1900.0          | 4.35            | 40                    | -6.08                | -0.0032        |
| 19199                  | 1900.0          | 4.35            | 50                    | -8.61                | -0.0032        |
| 19199                  | 1900.0          | 4.35            | 60                    | -6.32                | -0.0032        |

## APPENDIX 3C – LTE Band 2 RADIATED EMISSIONS TEST DATA

|                                                                                   |                                                                                                                                         |                                                                                   |  |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3C</b> |                                                                                   |  |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |  |

### Radiated Power Test Data Results

The following configurations were measured for model RHK211LW (STV100-1):

The following measurements were performed by Savtej Sandhu.

Date of Test: July 23, 2015

The environmental tests conditions were: Temperature: 24.1 °C

Relative Humidity: 34.2 %

The BlackBerry® smartphone was standalone, USB Down and LCD facing the RX antenna when the turntable is at 0 degree position.

Measurements were performed with QPSK and 16QAM modulations. The smallest test margins are reported below.

Test Distance was 3.0 meters with the RX antenna height scans between 1-4 meters height.

#### LTE band 2, 20MHz BW, RB=1, QPSK modulation

|      |       |                 |      |            |      |                   |                  | Substitution Method |               |                   |      |             |                    |
|------|-------|-----------------|------|------------|------|-------------------|------------------|---------------------|---------------|-------------------|------|-------------|--------------------|
| EUT  |       |                 |      | Rx 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 |      | Limit (dBm) | Diff to Limit (dB) |
|      |       |                 |      |            |      |                   |                  |                     |               | (dBm)             | (W)  |             |                    |
| F0   | 18700 | 1860.00         | 2    | Horn       | V    | -29.66            | -26.45           | V-V                 | -16.07        | 24.50             | 0.28 | 33.00       | 8.50               |
| F0   | 18700 | 1860.00         | 2    | Horn       | H    | -26.45            |                  | H-H                 | -15.00        |                   |      |             |                    |
| F0   | 18900 | 1880.00         | 2    | Horn       | V    | -28.69            | -26.32           | V-V                 | -15.76        | 24.85             | 0.31 | 33.00       | 8.15               |
| F0   | 18900 | 1880.00         | 2    | Horn       | H    | -26.32            |                  | H-H                 | -14.55        |                   |      |             |                    |
| F0   | 19099 | 1899.90         | 2    | Horn       | V    | -28.48            | -26.20           | V-V                 | -15.48        | <b>24.92</b>      | 0.31 | 33.00       | 8.08               |
| F0   | 19099 | 1899.90         | 2    | Horn       | H    | -26.20            |                  | H-H                 | -14.62        |                   |      |             |                    |

#### LTE band 2, 20MHz BW, RB=1, 16-QAM modulation

|      |       |                 |      |            |      |                   |                  | Substitution Method |               |                   |      |             |                    |
|------|-------|-----------------|------|------------|------|-------------------|------------------|---------------------|---------------|-------------------|------|-------------|--------------------|
| EUT  |       |                 |      | Rx 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 |      | Limit (dBm) | Diff to Limit (dB) |
|      |       |                 |      |            |      |                   |                  |                     |               | (dBm)             | (W)  |             |                    |
| F0   | 18700 | 1860.00         | 2    | Horn       | V    | -30.49            | -27.40           | V-V                 | -17.00        | 23.57             | 0.23 | 33.00       | 9.43               |
| F0   | 18700 | 1860.00         | 2    | Horn       | H    | -27.40            |                  | H-H                 | -15.93        |                   |      |             |                    |
| F0   | 18900 | 1880.00         | 2    | Horn       | V    | -29.72            | -27.25           | V-V                 | -16.74        | <b>23.98</b>      | 0.25 | 33.00       | 9.02               |
| F0   | 18900 | 1880.00         | 2    | Horn       | H    | -27.25            |                  | H-H                 | -15.42        |                   |      |             |                    |
| F0   | 19099 | 1899.90         | 2    | Horn       | V    | -29.38            | -27.20           | V-V                 | -16.44        | 23.91             | 0.25 | 33.00       | 9.09               |
| F0   | 19099 | 1899.90         | 2    | Horn       | H    | -27.20            |                  | H-H                 | -15.63        |                   |      |             |                    |

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|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 3C</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### Radiated Emissions Test Data Results

The following measurements were performed by Savtej Sandhu.

Date of Test: July 21, 2015

The environmental test conditions were:      Temperature:            26.0 °C  
                                                                                 Relative Humidity:        45.0 %

The BlackBerry® smartphone was standalone, side button up and LCD facing the RX antenna when the turntable is at 0 degree position.

Test Distance was 3.0 meters with the RX antenna height scans between 1-4 meters height, and the frequency range scanned was 30MHz – 1GHz.

Measurements were performed in LTE band 2 with QPSK and 16-QAM modulations for 15MHz BW (channel18675, 18900, 19124 with RB allocation 1)

All emissions were at least 25 dB below the limit.

The following measurements were performed by Xing Fang.

Date of Test: July 22 and August 1, 2015

The environmental test conditions were:      Temperature:            26.6 °C  
                                                                                 Relative Humidity:        30.2 %

Test Distance was 3.0 meters with the RX antenna height scans between 1-4 meters height, and a frequency range of 1 GHz to 20 GHz.

The BlackBerry® smartphone was standalone, with side button up LCD facing to the RX antenna when the turntable is at 0 degree position

Measurements were performed in LTE band 2 with QPSK and 16-QAM modulations for 15MHz BW (channel18675, 18900, 19124 with RB allocation 1)

All emissions were at least 25 dB below the limit.

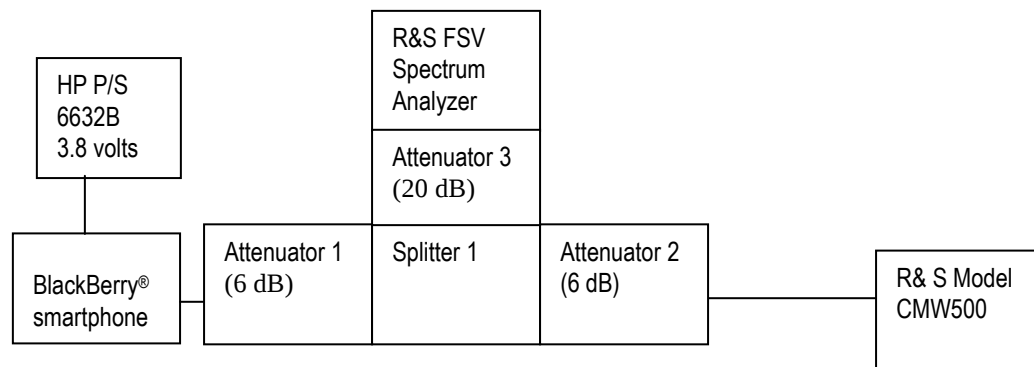
## APPENDIX 4A– LTE Band 5 CONDUCTED RF EMISSIONS TEST DATA/PLOTS

|                                              |                                                                                                                                         |                                                                                   |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>BlackBerry</b>                            | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### LTE Band 5 Conducted RF Emission Test Data

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

#### Test Setup Diagram



A reference offset of 31.4 dB was applied to the spectrum analyzer reference level for the attenuators and coaxial cable loss in the test circuit.

| <u>UNIT</u>  | <u>MANUFACTURER</u> | <u>MODEL</u>  | <u>SERIAL NUMBER</u> |
|--------------|---------------------|---------------|----------------------|
| Attenuator 1 | Mini-Circuits       | BW-S6W2+      | 0647                 |
| Attenuator 2 | Mini-Circuits       | BW-S6W2+      | 0648                 |
| Attenuator 3 | Mini-Circuits       | BW-S20-2W263+ | 1234                 |
| Splitter 1   | Weinschel           | 1515          | MES 92               |

The following test configurations were measured on RHK211LW (STV100-1):

Date of Test: July 24 to August 12, 2015

The environmental test conditions were:    Temperature:        24.6 °C  
                                                                                  Relative Humidity:    37.2 %

The following measurements were performed by Landon Martin.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## LTE Band 5 Conducted RF Emission Test Data cont'd

### Emission Designator Table

| Frequency Range (MHz) | Conducted Output Power (dBm) | Conducted Output Power (W) | Emission Designator | Band   | Bandwidth (MHz) | Modulation |
|-----------------------|------------------------------|----------------------------|---------------------|--------|-----------------|------------|
| 824.7-848.2           | 25.49                        | 0.35                       | 1M09G7D             | LTE B5 | 1.4             | QPSK       |
| 824.7-848.2           | 24.68                        | 0.29                       | 1M09D7W             | LTE B5 | 1.4             | 16QAM      |
| 825.5-847.5           | 25.77                        | 0.38                       | 2M70G7D             | LTE B5 | 3               | QPSK       |
| 825.5-847.5           | 24.93                        | 0.31                       | 2M70D7W             | LTE B5 | 3               | 16QAM      |
| 826.5-846.4           | <b>25.99</b>                 | <b>0.40</b>                | 4M50G7D             | LTE B5 | 5               | QPSK       |
| 826.5-846.4           | 25.17                        | 0.33                       | 4M48D7W             | LTE B5 | 5               | 16QAM      |
| 829-844               | 25.91                        | 0.39                       | 8M97G7D             | LTE B5 | 10              | QPSK       |
| 829-844               | 25.05                        | 0.32                       | 8M97D7W             | LTE B5 | 10              | 16QAM      |

**The conducted spurious emissions** – As per 47 CFR 2.1051, 22.917 and RSS-132, 4.5 were measured from 30 MHz to 20 GHz.

### **–26 dBc Bandwidth and Occupied Bandwidth (99%)**

For each 1.4MHz, 3MHz, 5MHz, 10MHz with different number of RBs as per scalable bandwidths for LTE band 5, the modulation spectrum was measured by both methods of 99% power bandwidth and –26 dBc bandwidth.

QPSK and 16-QAM modulations were applied to each of the bandwidths. Only the worst case measurements are documented in this report.

A minimum RB condition was also measured (RB = 1).

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 LTE band 5 was measured to be 9.21 MHz. Results were derived in a 100 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.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

#### **Test Data for LTE Band 5 selected Frequencies in 10MHz BW (RB = 50)**

| LTE Band 5<br>Frequency (MHz) | 26dBc Occupied Bandwidth<br>(MHz) | 99% Occupied Bandwidth<br>(MHz) |        |
|-------------------------------|-----------------------------------|---------------------------------|--------|
|                               | QPSK                              | QPSK                            | 16-QAM |
| 829.0                         | 9.21                              | 8.97                            | 8.97   |
| 836.5                         | 9.2                               | 8.94                            | 8.97   |
| 843.9                         | 9.2                               | 8.97                            | 8.94   |

#### **Test Data for LTE Band 5 selected Frequencies in 5MHz BW (RB = 25)**

| LTE Band 5<br>Frequency (MHz) | 99% Occupied Bandwidth<br>(MHz) |        |
|-------------------------------|---------------------------------|--------|
|                               | QPSK                            | 16-QAM |
| 826.5                         | 4.48                            | 4.48   |
| 836.5                         | 4.48                            | 4.47   |
| 846.5                         | 4.48                            | 4.47   |

#### **Test Data for LTE Band 5 selected Frequencies in 3MHz BW (RB = 15)**

| LTE Band 5<br>Frequency (MHz) | 99% Occupied Bandwidth<br>(MHz) |        |
|-------------------------------|---------------------------------|--------|
|                               | QPSK                            | 16-QAM |
| 825.5                         | 2.70                            | 2.69   |
| 836.5                         | 2.69                            | 2.69   |
| 847.5                         | 2.70                            | 2.70   |

#### **Test Data for LTE Band 5 selected Frequencies in 1.4MHz BW (RB = 6)**

| LTE Band 5<br>Frequency (MHz) | 99% Occupied Bandwidth<br>(MHz) |        |
|-------------------------------|---------------------------------|--------|
|                               | QPSK                            | 16-QAM |
| 824.7                         | 1.09                            | 1.08   |
| 836.5                         | 1.09                            | 1.09   |
| 848.3                         | 1.09                            | 1.09   |

#### **Measurement Plots for LTE Band 5**

See Figures 4-1a to 4-18a for the plots of the conducted spurious emissions.

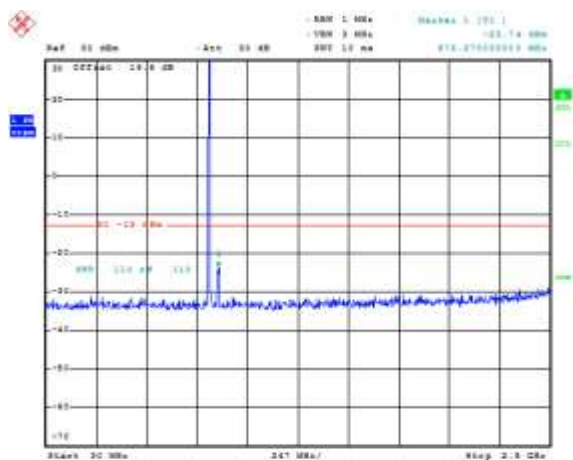
See Figures 4-19a to 4-36a and 4-45a to 4-47a for the plots of 99% Occupied Bandwidth and -26 dBc Bandwidth.

See Figures 4-37a to 4-44a for the plots of the Channel mask.

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

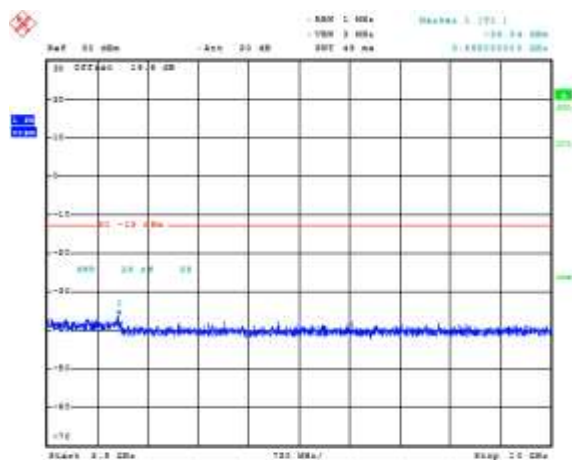
## LTE Band 5 Conducted RF Emission Test Data cont'd

**Figure 4-1a: Band 5, Spurious Conducted Emissions, Low channel, 10MHz BW (RB= 1)**



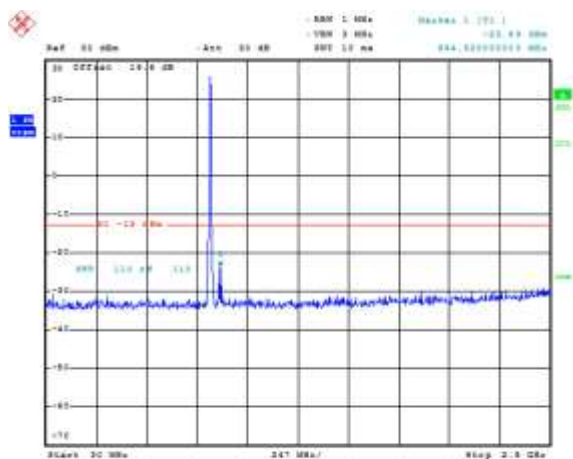
Date: 24-JUL-2015 15:00:55

**Figure 4-2a: Band 5, Spurious Conducted Emissions, Low channel, 10MHz BW (RB= 1)**



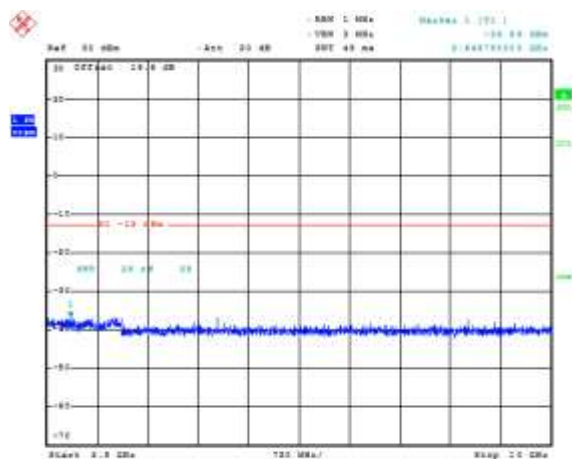
Date: 24-JUL-2015 15:00:55

**Figure 4-3a: Band 5, Spurious Conducted Emissions, Middle channel, 10MHz BW (RB= 25)**



Date: 24-JUL-2015 15:00:55

**Figure 4-4a: Band 5, Spurious Conducted Emissions, Middle channel, 10MHz BW (RB= 25)**



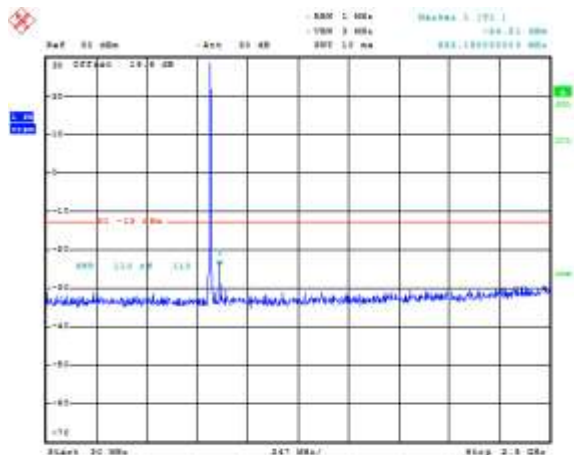
Date: 24-JUL-2015 15:00:55



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|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

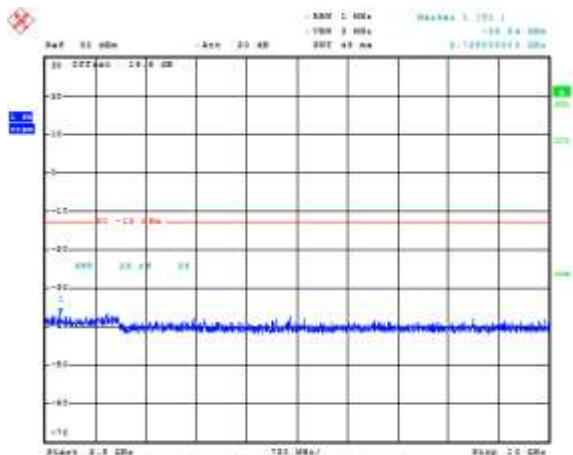
## LTE Band 5 Conducted RF Emission Test Data cont'd

**Figure 4-9a: Band 5, Spurious Conducted Emissions, Middle Channel, 5MHz BW (RB= 15)**



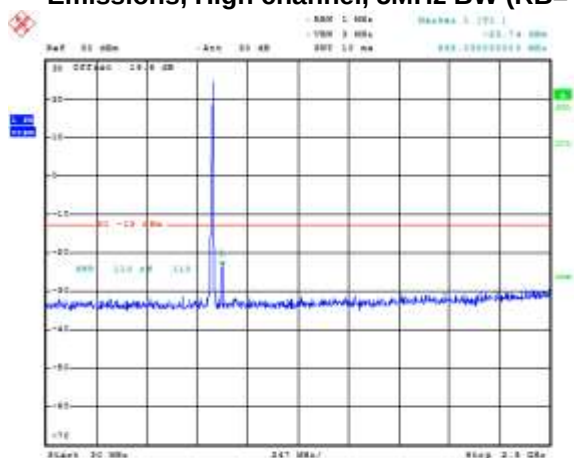
Date: 24.JUL.2015 15:41:10

**Figure 4-10a: Band 5, Spurious Conducted Emissions, Middle Channel, 5MHz BW (RB= 15)**



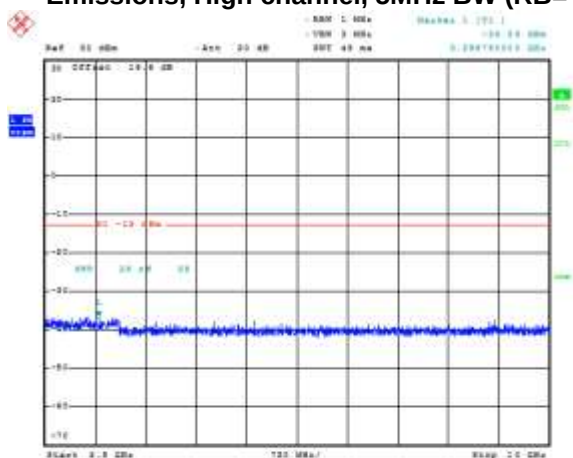
Date: 24.JUL.2015 15:41:10

**Figure 4-11a: Band 5, Spurious Conducted Emissions, High channel, 5MHz BW (RB= 25)**



Date: 24.JUL.2015 15:41:39

**Figure 4-12a: Band 5, Spurious Conducted Emissions, High channel, 5MHz BW (RB= 25)**

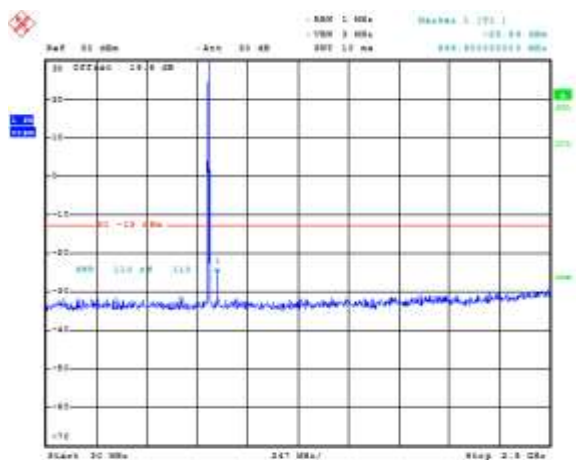


Date: 24.JUL.2015 15:41:39

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|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

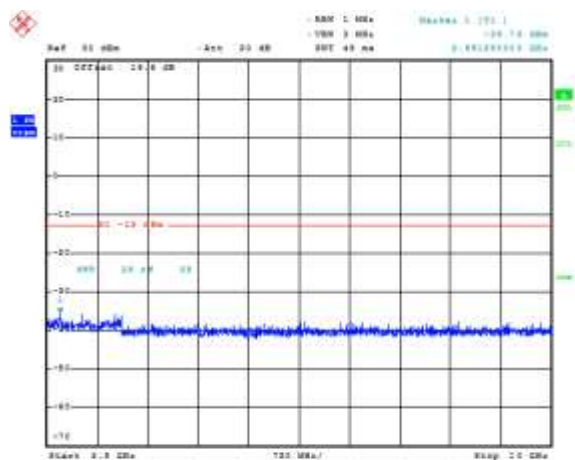
## LTE Band 5 Conducted RF Emission Test Data cont'd

**Figure 4-13a: Band 5, Spurious Conducted Emissions, Low Channel, 1.4MHz BW (RB= 1)**



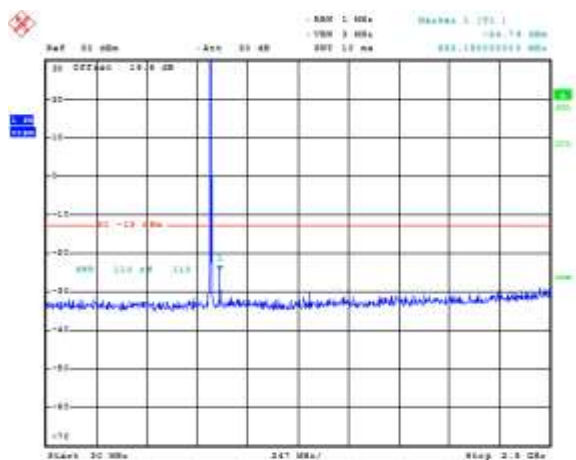
Date: 24.JUL.2015 15:41:54

**Figure 4-14a: Band 5, Spurious Conducted Emissions, Low Channel, 1.4MHz BW (RB= 1)**



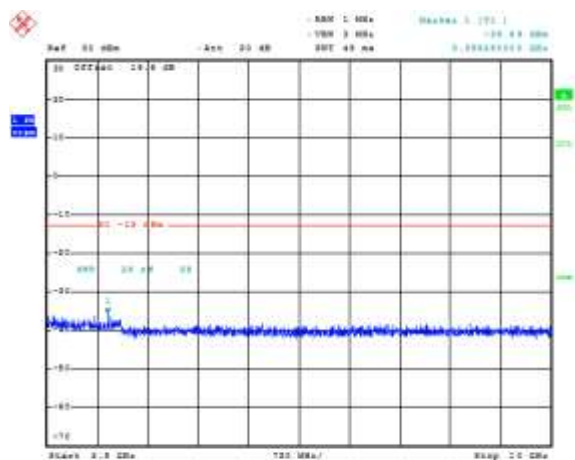
Date: 24.JUL.2015 15:42:02

**Figure 4-15a: Band 5, Spurious Conducted Emissions, Middle channel, 1.4MHz BW (RB= 3)**



Date: 24.JUL.2015 15:42:10

**Figure 4-16a: Band 5, Spurious Conducted Emissions, Middle channel, 1.4MHz BW (RB= 3)**

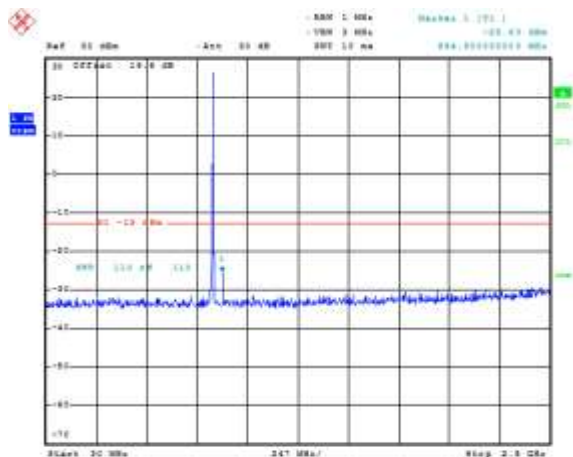


Date: 24.JUL.2015 15:42:19

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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

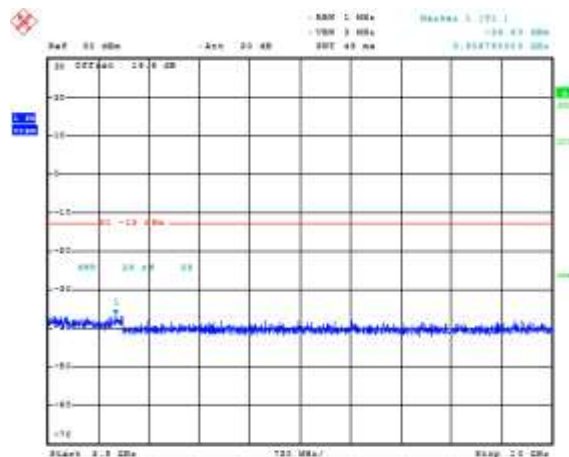
### LTE Band 5 Conducted RF Emission Test Data cont'd

**Figure 4-17a: Band 5, Spurious Conducted Emissions, High channel, 1.4MHz BW (RB= 6)**



Date: 24-JUL-2015 15:42:30

**Figure 4-18a: Band 5, Spurious Conducted Emissions, High channel, 1.4MHz BW (RB= 6)**

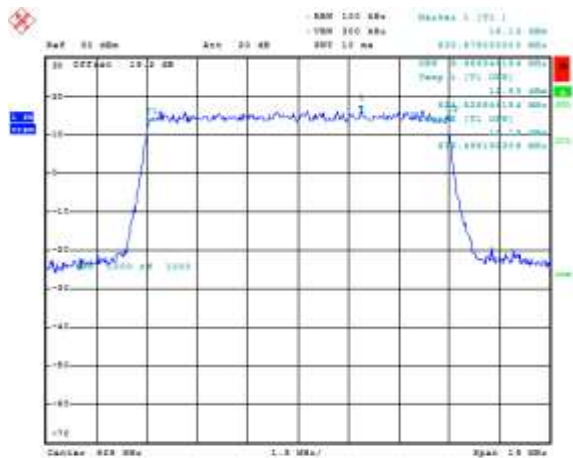


Date: 24-JUL-2015 15:42:36

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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## LTE Band 5 Conducted RF Emission Test Data cont'd

**Figure 4-19a: Occupied Bandwidth, Band 5 Low Channel, 10MHz BW, RB=50**



Date: 24.JUL.2015 18:56:42

**Figure 4-20a: Occupied Bandwidth, Band 5 Middle Channel, 10MHz BW, RB=50**



Date: 24.JUL.2015 18:55:58

**Figure 4-21a: Occupied Bandwidth, Band 5 High Channel, 10MHz BW, RB=50**

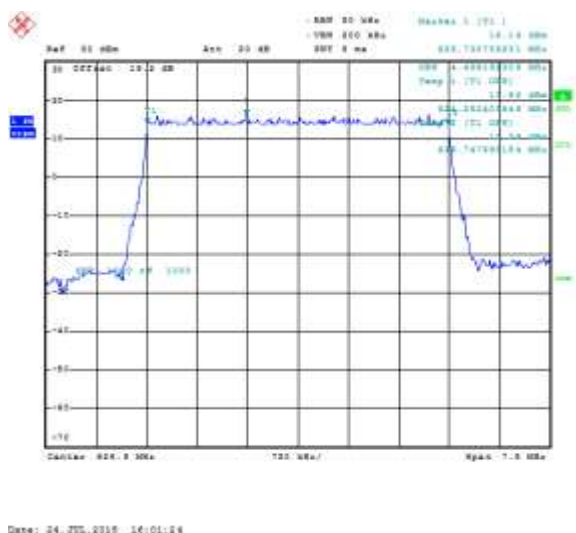


Date: 24.JUL.2015 18:57:38

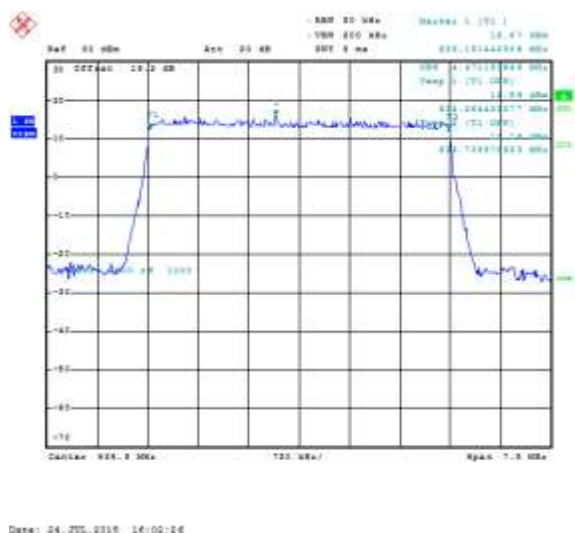
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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## LTE Band 5 Conducted RF Emission Test Data cont'd

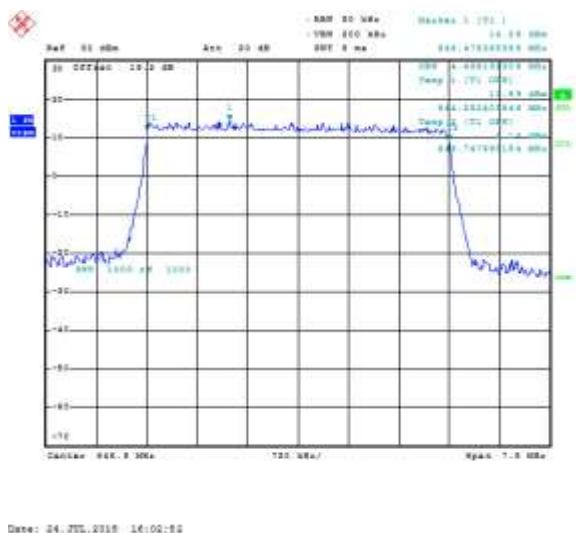
**Figure 4-22a: Occupied Bandwidth, Band 5 Low Channel, 5MHz BW, RB=25**



**Figure 4-23a: Occupied Bandwidth, Band 5 Middle Channel, 5MHz BW, RB=25**



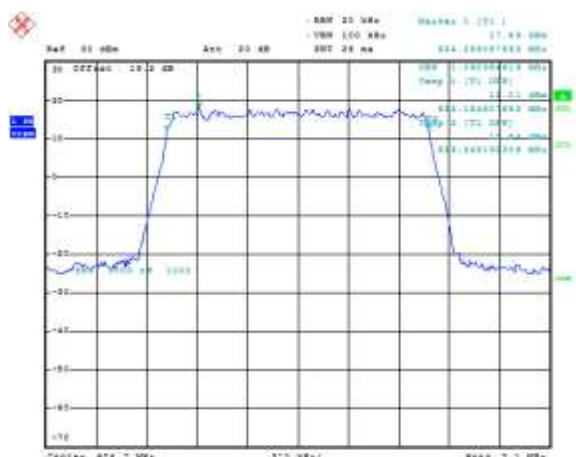
**Figure 4-24a: Occupied Bandwidth, Band 5 High Channel, 5MHz BW, RB=25**



|                                                                                   |                                                                                                                                            |                                                                                   |
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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## LTE Band 5 Conducted RF Emission Test Data cont'd

**Figure 4-25a: Occupied Bandwidth, Band 5 Low Channel, 1.4MHz BW, RB=6**



Date: 24.JUL.2015 16:09:50

**Figure 4-26a: Occupied Bandwidth, Band 5 Middle Channel, 1.4MHz BW, RB=6**



Date: 24.JUL.2015 16:10:46

**Figure 4-27a: Occupied Bandwidth, Band 5 High Channel, 1.4MHz BW, RB=6**

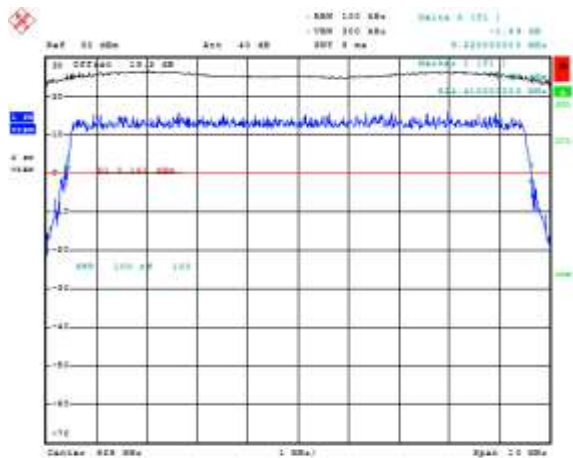


Date: 24.JUL.2015 16:11:56

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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

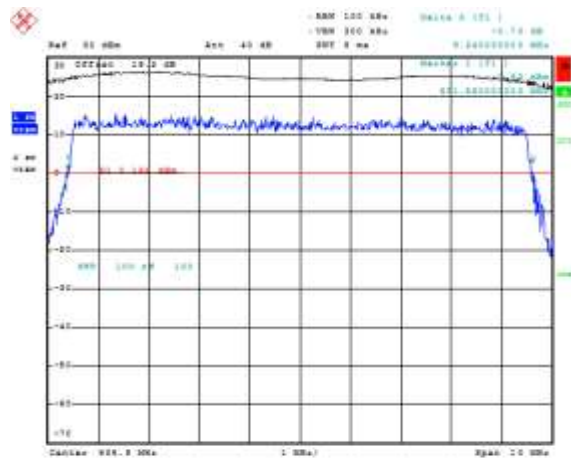
## LTE Band 5 Conducted RF Emission Test Data cont'd

**Figure 4-28a: -26 dBc Bandwidth, Band 5 Low Channel, 10MHz BW, RB=50**



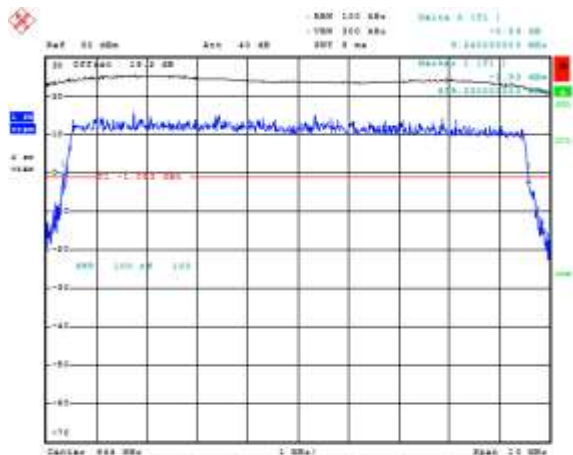
Date: 24.JUL.2015 15:46:40

**Figure 4-29a: -26 dBc Bandwidth, Band 5 Middle Channel, 10MHz BW, RB=50**



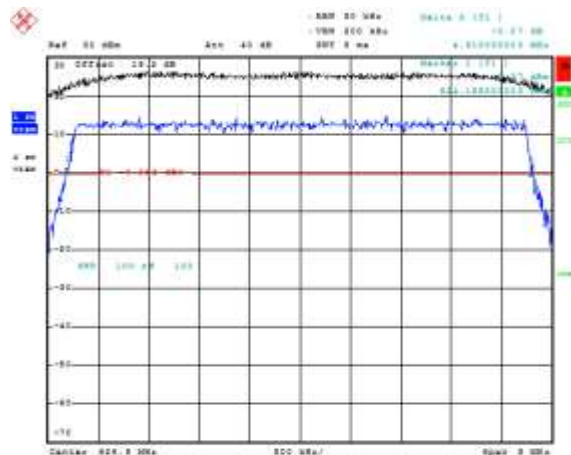
Date: 24.JUL.2015 15:47:01

**Figure 4-30a: -26 dBc Bandwidth, Band 5 High Channel, 10MHz BW, RB=50**



Date: 24.JUL.2015 15:47:17

**Figure 4-31a: -26 dBc Bandwidth, Band 5 Low Channel, 5MHz BW, RB=25**

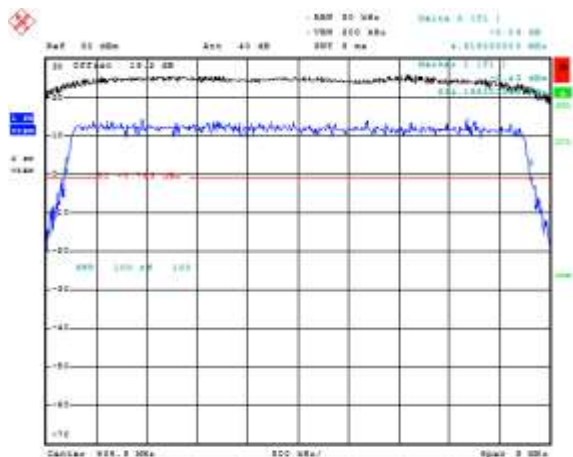


Date: 24.JUL.2015 15:47:40

|                                                                                   |                                                                                                                                            |                                                                                   |
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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

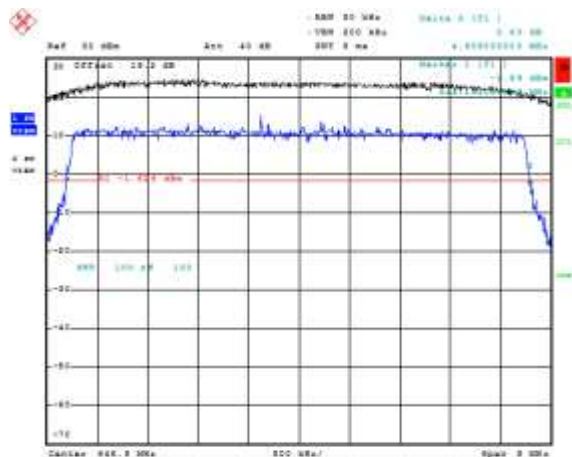
## LTE Band 5 Conducted RF Emission Test Data cont'd

**Figure 4-32a: -26 dBc Bandwidth, Band 5 Middle Channel, 5MHz BW, RB=25**



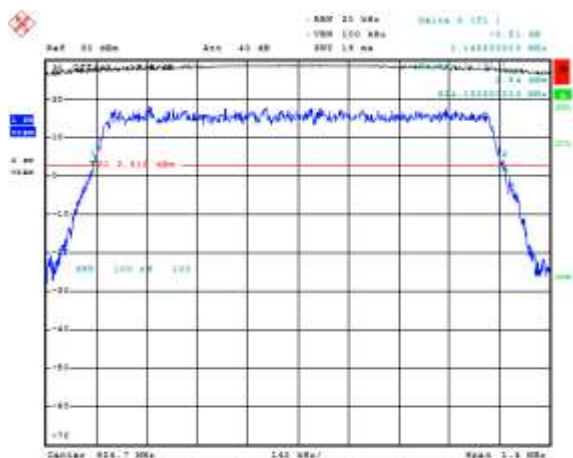
Date: 24-Jul-2015 15:47:06

**Figure 4-33a: -26 dBc Bandwidth, Band 5 High Channel, 5MHz BW, RB=25**



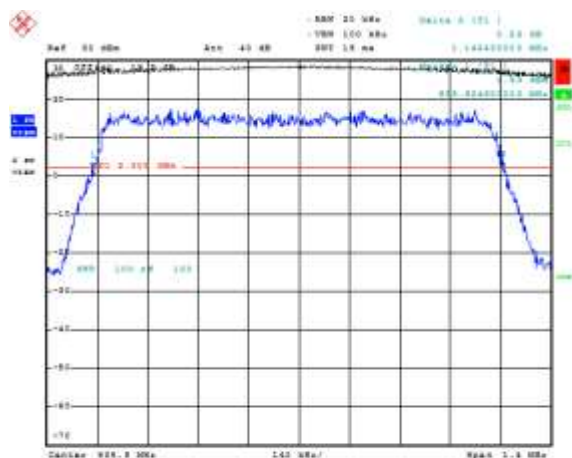
Date: 24-Jul-2015 15:48:10

**Figure 4-34a: -26 dBc Bandwidth, Band 5 Low Channel, 1.4MHz BW, RB=6**



Date: 24-Jul-2015 15:48:44

**Figure 4-35a: -26 dBc Bandwidth, Band 5 Middle Channel, 1.4MHz BW, RB=6**

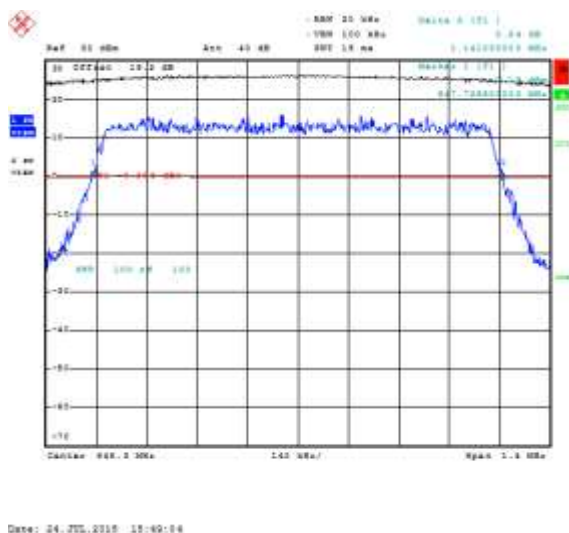


Date: 24-Jul-2015 15:48:49

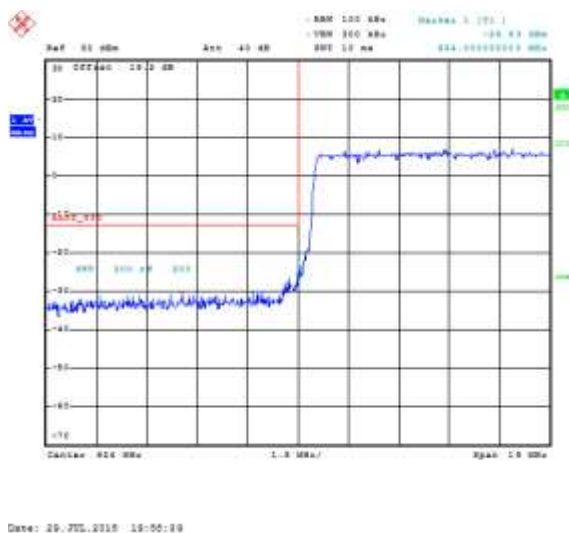
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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## LTE Band 5 Conducted RF Emission Test Data cont'd

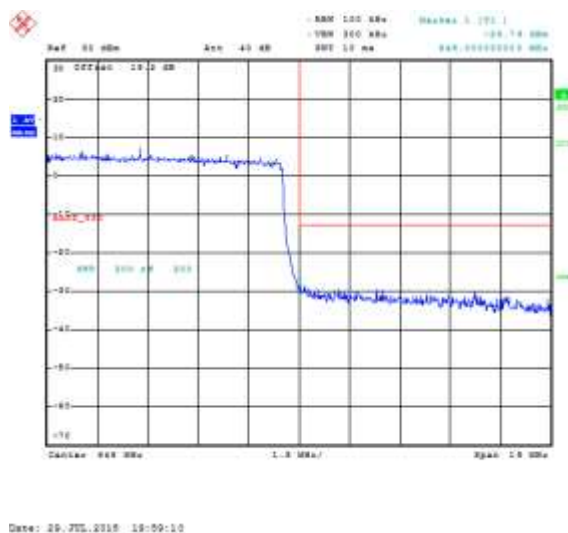
**Figure 4-36a: -26 dBc Bandwidth, Band 5 High Channel, 1.4MHz BW, RB=6**



**Figure 4-37a: Band 5 Low Channel Mask, 10MHz BW, RB=50**



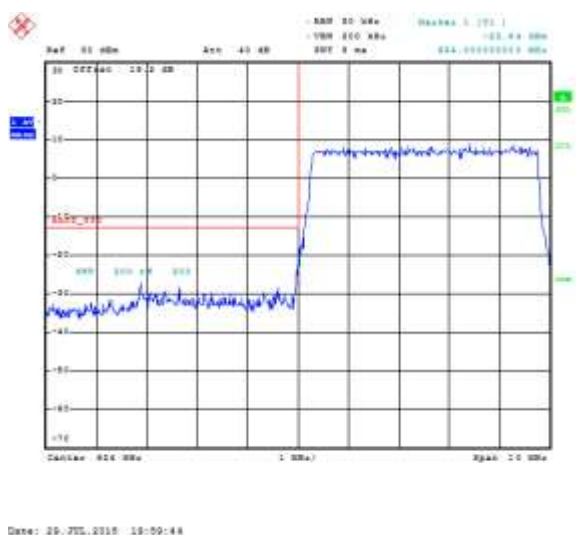
**Figure 4-38a: Band 5 High Channel Mask, 10MHz BW, RB=50**



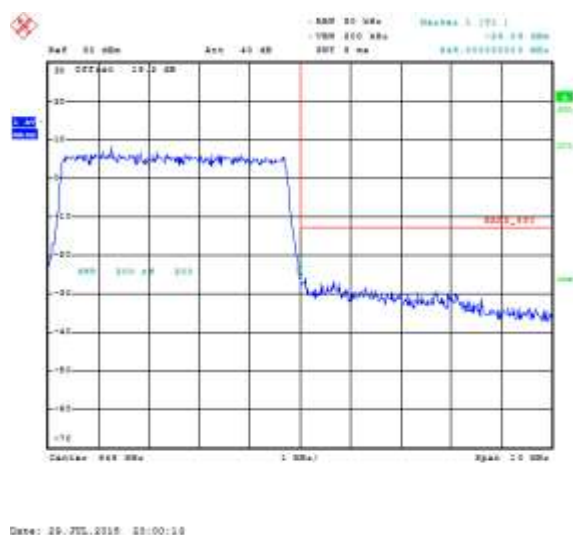
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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## LTE Band 5 Conducted RF Emission Test Data cont'd

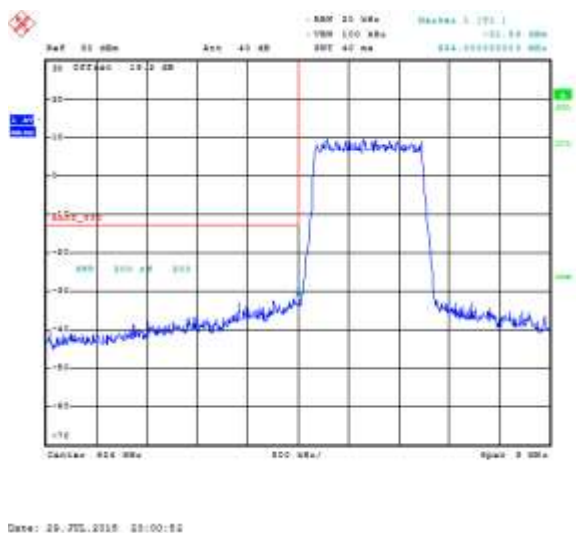
**Figure 4-39a: Band 5 Low Channel Mask, 5MHz BW, RB=25**



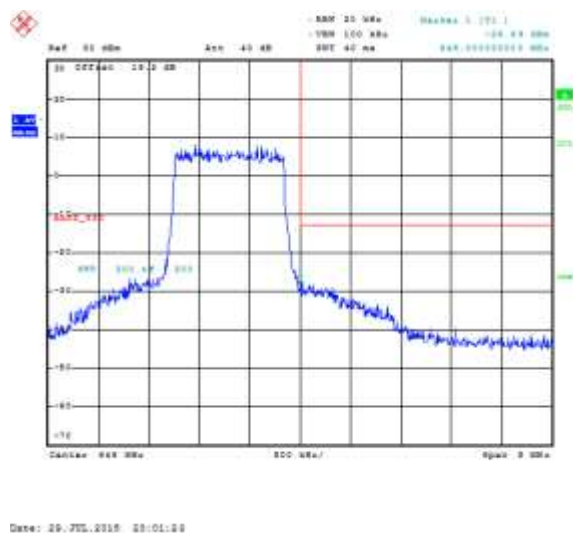
**Figure 4-40a: Band 5 High Channel Mask, 5MHz BW, RB=25**



**Figure 4-41a: Band 5 Low Channel Mask, 1.4MHz BW, RB=6**



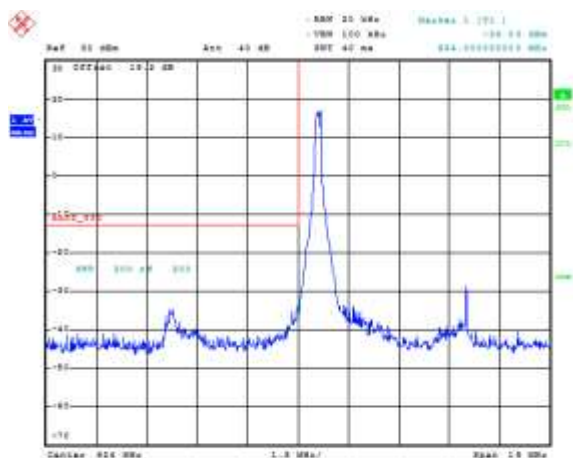
**Figure 4-42a: Band 5 High Channel Mask, 1.4MHz BW, RB=6**



|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

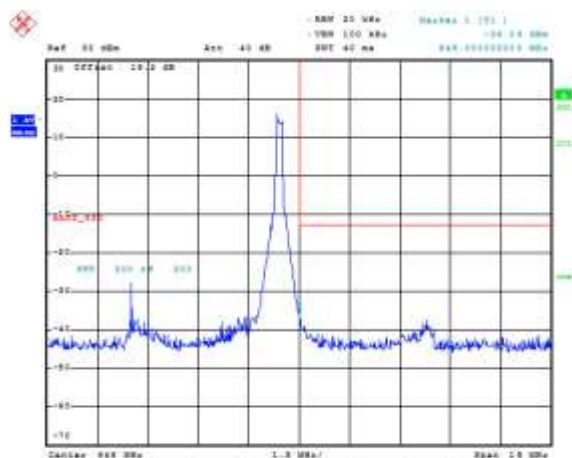
## LTE Band 5 Conducted RF Emission Test Data cont'd

**Figure 4-43d: Band 5 Low Channel Mask, 10MHz BW, RB=1**



Date: 20-Jul-2015 18:50:55

**Figure 4-44a: Band 5 High Channel Mask, 10MHz BW, RB=1**

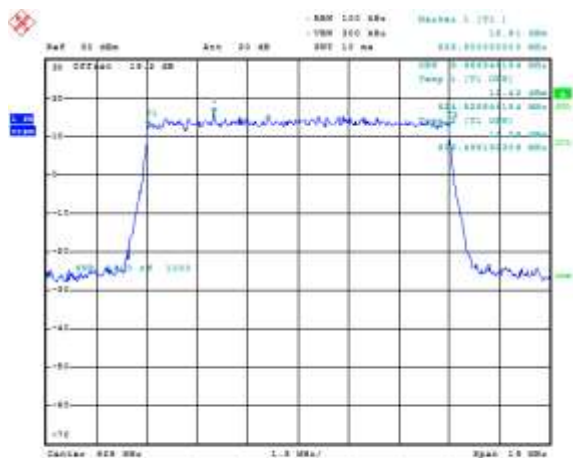


Date: 20-Jul-2015 18:50:57

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

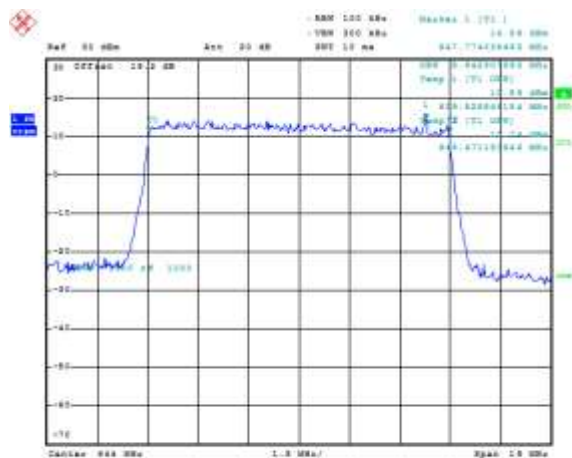
## LTE Band 5 Conducted RF Emission Test Data cont'd

**Figure 3-45a: Occupied Bandwidth, Band 5 Low Channel, 10MHz BW (RB= 50) 16-QAM**



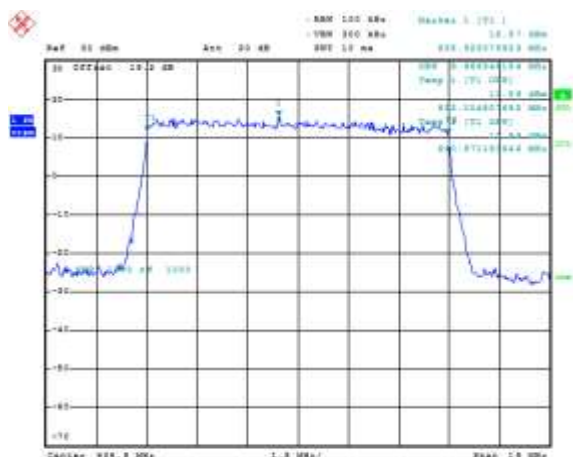
Date: 24.JUL.2015 15:50:31

**Figure 3-46a: Occupied Bandwidth, Band 5 Mid Channel, 20MHz BW (RB= 50) 16-QAM**



Date: 24.JUL.2015 16:00:49

**Figure 3-47a: Occupied Bandwidth, Band 5 High Channel, 10MHz BW (RB= 50) 16-QAM**

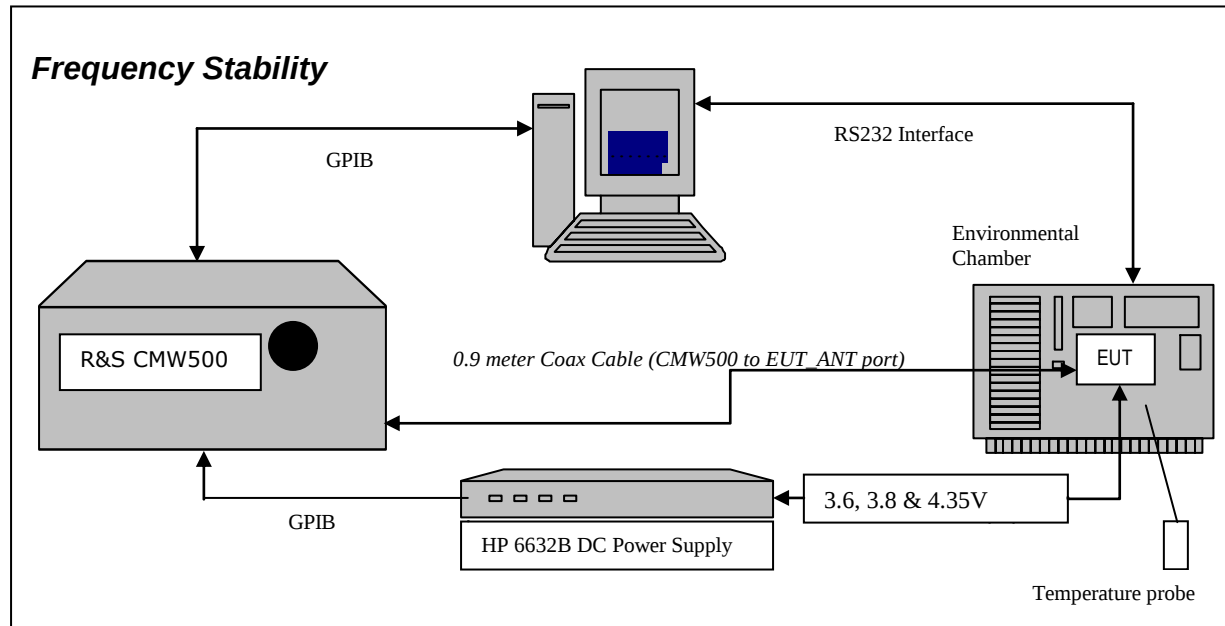


Date: 24.JUL.2015 15:59:47

## APPENDIX 4B – LTE Band 5 FREQUENCY STABILITY TEST DATA

|                                              |                                                                                                                                         |                                                                                   |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>BlackBerry</b>                            | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### LTE Band 5 Frequency Stability Test Data



The following measurements were performed by Sijia Li.

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 CMW 500 and the EUT antenna port.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## Test Setup:

The EUT was placed in the Temperature chamber and connected to CMW 500 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 CMW 500 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, 3.8 volts and to 4.35 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, 3.8 volts and 4.35 volts. The transmit frequency was varied in 3 steps consisting of 829.0 MHz, 836.5 MHz and 844.0 MHz each was measured under 10 MHz bandwidth with maximum (50) RBs. 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.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

Procedure:

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

15. Switch on the HP 6632B power supply; CMW 500 Communications test Set, and Environmental Chamber.
16. Start test program
17. Set the Temperature to –30°C and maintain a period of one- hour soak time, with the EUT supply voltage disabled.
18. Set power supply voltage to 3.6 volts.
19. Set up CMW 500 Radio Communication Tester.
20. Command the CMW 500 to switch to the low channel.
21. Enable the voltage to the EUT, and connect a link to the CMW 500 test set.
22. EUT is commanded to Transmit 100 Bursts.
23. Software logs the following data from the CMW 500, power supply and temperature chamber: Traffic Channel Number, Traffic Channel Frequency, Power Level, Chamber Temperature, Supply Voltage, Power and Frequency Error.
24. The CMW 500 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 3.8 Volts
26. Increase temperature by 10°C and soak for 1/2 hour.
27. Repeat steps 4 - 12 for temperatures –30°C to 60°C.
28. Repeat steps 5 to 10 changing the supply voltage to 4.35 volts

Procedure 5 to 10 was repeated at room temperature (20°C) with the power supply voltage set to 3.6, 3.8 and 4.35 volts

The following test configurations were measured on model RHK211LW (STV100-1):

The maximum frequency error in the LTE Band 5 measured was **0.0041 PPM**.

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

The following test configurations were measured on model RHK211LW (STV100-1):

LTE Band 5 results: channels 20400, 20525 and 20649 @ 20°C maximum transmitted power

| Traffic Channel Number | LTE Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|---------------------|-----------------|-----------------------|----------------------|---------|
| 20450                  | 829.0               | 3.6             | 20                    | 1.72                 | 0.0021  |
| 20525                  | 836.5               | 3.6             | 20                    | 2.17                 | 0.0026  |
| 20600                  | 844.0               | 3.6             | 20                    | -1.92                | -0.0023 |

| Traffic Channel Number | LTE Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM           |
|------------------------|---------------------|-----------------|-----------------------|----------------------|---------------|
| 20450                  | 829.0               | 3.8             | 20                    | 3.40                 | <b>0.0041</b> |
| 20525                  | 836.5               | 3.8             | 20                    | 1.89                 | 0.0023        |
| 20600                  | 844.0               | 3.8             | 20                    | <b>-2.98</b>         | -0.0035       |

| Traffic Channel Number | LTE Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|---------------------|-----------------|-----------------------|----------------------|---------|
| 20450                  | 829.0               | 4.35            | 20                    | 1.97                 | 0.0024  |
| 20525                  | 836.5               | 4.35            | 20                    | -2.39                | -0.0029 |
| 20600                  | 844.0               | 4.35            | 20                    | -2.35                | -0.0028 |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**LTE band 5 Results: channel 20400 @ maximum transmitted power**

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM            |
|------------------------|-----------------|-----------------|-----------------------|----------------------|----------------|
| 20450                  | 829.0           | 3.6             | -30                   | -3.33                | -0.0040        |
| 20450                  | 829.0           | 3.6             | -20                   | -3.91                | -0.0047        |
| 20450                  | 829.0           | 3.6             | -10                   | -2.05                | -0.0025        |
| 20450                  | 829.0           | 3.6             | 0                     | 3.36                 | 0.0041         |
| 20450                  | 829.0           | 3.6             | 10                    | 3.46                 | 0.0042         |
| 20450                  | 829.0           | 3.6             | 20                    | 1.72                 | 0.0021         |
| 20450                  | 829.0           | 3.6             | 30                    | -2.89                | -0.0035        |
| 20450                  | 829.0           | 3.6             | 40                    | -2.27                | -0.0027        |
| 20450                  | 829.0           | 3.6             | 50                    | -2.85                | -0.0034        |
| 20450                  | 829.0           | 3.6             | 60                    | -2.86                | -0.0035        |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM            |
| 20450                  | 829.0           | 3.8             | -30                   | -4.48                | <b>-0.0054</b> |
| 20450                  | 829.0           | 3.8             | -20                   | 3.92                 | 0.0047         |
| 20450                  | 829.0           | 3.8             | -10                   | -3.08                | -0.0037        |
| 20450                  | 829.0           | 3.8             | 0                     | 2.96                 | 0.0036         |
| 20450                  | 829.0           | 3.8             | 10                    | -1.16                | -0.0014        |
| 20450                  | 829.0           | 3.8             | 20                    | 3.40                 | 0.0041         |
| 20450                  | 829.0           | 3.8             | 30                    | -2.49                | -0.0030        |
| 20450                  | 829.0           | 3.8             | 40                    | -2.53                | -0.0031        |
| 20450                  | 829.0           | 3.8             | 50                    | -2.55                | -0.0031        |
| 20450                  | 829.0           | 3.8             | 60                    | -1.57                | -0.0019        |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM            |
| 20450                  | 829.0           | 4.35            | -30                   | -2.80                | -0.0034        |
| 20450                  | 829.0           | 4.35            | -20                   | -3.76                | -0.0045        |
| 20450                  | 829.0           | 4.35            | -10                   | 2.39                 | 0.0029         |
| 20450                  | 829.0           | 4.35            | 0                     | 3.58                 | 0.0043         |
| 20450                  | 829.0           | 4.35            | 10                    | 3.82                 | 0.0046         |
| 20450                  | 829.0           | 4.35            | 20                    | 1.97                 | 0.0024         |
| 20450                  | 829.0           | 4.35            | 30                    | -3.75                | -0.0045        |
| 20450                  | 829.0           | 4.35            | 40                    | -3.45                | -0.0042        |
| 20450                  | 829.0           | 4.35            | 50                    | 1.85                 | 0.0022         |
| 20450                  | 829.0           | 4.35            | 60                    | 3.45                 | 0.0042         |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**LTE band 5 Results: channel 20525 @ maximum transmitted power**

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM            |
|------------------------|-----------------|-----------------|-----------------------|----------------------|----------------|
| 20525                  | 836.5           | 3.6             | -30                   | 2.92                 | 0.0035         |
| 20525                  | 836.5           | 3.6             | -20                   | -3.26                | -0.0039        |
| 20525                  | 836.5           | 3.6             | -10                   | 2.52                 | 0.0030         |
| 20525                  | 836.5           | 3.6             | 0                     | 2.95                 | 0.0035         |
| 20525                  | 836.5           | 3.6             | 10                    | -1.85                | -0.0022        |
| 20525                  | 836.5           | 3.6             | 20                    | 2.17                 | 0.0026         |
| 20525                  | 836.5           | 3.6             | 30                    | -3.59                | -0.0043        |
| 20525                  | 836.5           | 3.6             | 40                    | 2.32                 | 0.0028         |
| 20525                  | 836.5           | 3.6             | 50                    | -4.06                | <b>-0.0049</b> |
| 20525                  | 836.5           | 3.6             | 60                    | -3.68                | -0.0044        |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM            |
| 20525                  | 836.5           | 3.8             | -30                   | -4.01                | -0.0048        |
| 20525                  | 836.5           | 3.8             | -20                   | -2.90                | -0.0035        |
| 20525                  | 836.5           | 3.8             | -10                   | 3.60                 | 0.0043         |
| 20525                  | 836.5           | 3.8             | 0                     | 1.92                 | 0.0023         |
| 20525                  | 836.5           | 3.8             | 10                    | 2.95                 | 0.0035         |
| 20525                  | 836.5           | 3.8             | 20                    | 1.89                 | 0.0023         |
| 20525                  | 836.5           | 3.8             | 30                    | 2.07                 | 0.0025         |
| 20525                  | 836.5           | 3.8             | 40                    | -3.12                | -0.0037        |
| 20525                  | 836.5           | 3.8             | 50                    | 2.92                 | 0.0035         |
| 20525                  | 836.5           | 3.8             | 60                    | -4.02                | -0.0048        |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM            |
| 20525                  | 836.5           | 4.35            | -30                   | -2.39                | -0.0029        |
| 20525                  | 836.5           | 4.35            | -20                   | -3.19                | -0.0038        |
| 20525                  | 836.5           | 4.35            | -10                   | 3.50                 | 0.0042         |
| 20525                  | 836.5           | 4.35            | 0                     | 3.25                 | 0.0039         |
| 20525                  | 836.5           | 4.35            | 10                    | 3.22                 | 0.0038         |
| 20525                  | 836.5           | 4.35            | 20                    | -2.39                | -0.0029        |
| 20525                  | 836.5           | 4.35            | 30                    | -3.72                | -0.0044        |
| 20525                  | 836.5           | 4.35            | 40                    | -1.97                | -0.0024        |
| 20525                  | 836.5           | 4.35            | 50                    | -2.16                | -0.0026        |
| 20525                  | 836.5           | 4.35            | 60                    | -2.27                | -0.0027        |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4B</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**LTE band 5 Results: channel 20649 @ maximum transmitted power**

| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
|------------------------|-----------------|-----------------|-----------------------|----------------------|---------|
| 20600                  | 844.0           | 3.6             | -30                   | -5.31                | -0.0063 |
| 20600                  | 844.0           | 3.6             | -20                   | -4.65                | -0.0055 |
| 20600                  | 844.0           | 3.6             | -10                   | -3.60                | -0.0043 |
| 20600                  | 844.0           | 3.6             | 0                     | -2.59                | -0.0031 |
| 20600                  | 844.0           | 3.6             | 10                    | 2.83                 | 0.0034  |
| 20600                  | 844.0           | 3.6             | 20                    | -1.92                | -0.0023 |
| 20600                  | 844.0           | 3.6             | 30                    | -2.60                | -0.0031 |
| 20600                  | 844.0           | 3.6             | 40                    | -2.89                | -0.0034 |
| 20600                  | 844.0           | 3.6             | 50                    | -3.68                | -0.0044 |
| 20600                  | 844.0           | 3.6             | 60                    | -3.83                | -0.0045 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 20600                  | 844.0           | 3.8             | -30                   | -5.09                | -0.0060 |
| 20600                  | 844.0           | 3.8             | -20                   | -4.16                | -0.0049 |
| 20600                  | 844.0           | 3.8             | -10                   | -2.57                | -0.0031 |
| 20600                  | 844.0           | 3.8             | 0                     | 1.96                 | 0.0023  |
| 20600                  | 844.0           | 3.8             | 10                    | 1.95                 | 0.0023  |
| 20600                  | 844.0           | 3.8             | 20                    | -2.98                | -0.0035 |
| 20600                  | 844.0           | 3.8             | 30                    | -3.92                | -0.0046 |
| 20600                  | 844.0           | 3.8             | 40                    | -2.90                | -0.0034 |
| 20600                  | 844.0           | 3.8             | 50                    | 2.15                 | 0.0025  |
| 20600                  | 844.0           | 3.8             | 60                    | -4.84                | -0.0057 |
| Traffic Channel Number | Frequency (MHz) | Voltage (Volts) | Temperature (Celsius) | Frequency Error (Hz) | PPM     |
| 20600                  | 844.0           | 4.35            | -30                   | -2.76                | -0.0033 |
| 20600                  | 844.0           | 4.35            | -20                   | -5.01                | -0.0059 |
| 20600                  | 844.0           | 4.35            | -10                   | -4.48                | -0.0053 |
| 20600                  | 844.0           | 4.35            | 0                     | -2.26                | -0.0027 |
| 20600                  | 844.0           | 4.35            | 10                    | 2.62                 | 0.0031  |
| 20600                  | 844.0           | 4.35            | 20                    | -2.35                | -0.0028 |
| 20600                  | 844.0           | 4.35            | 30                    | -3.50                | -0.0042 |
| 20600                  | 844.0           | 4.35            | 40                    | -4.22                | -0.0050 |
| 20600                  | 844.0           | 4.35            | 50                    | -4.08                | -0.0048 |
| 20600                  | 844.0           | 4.35            | 60                    | -3.76                | -0.0045 |

## APPENDIX 4C – LTE Band 5 RADIATED EMISSIONS TEST DATA

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 4C</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### Radiated Power Test Data Results

The following configurations were measured for model RHK211LW (STV100-1):

The following measurements were performed by Shiva Kumbham.

Date of Test: August 11, 2015

The environmental tests conditions were: Temperature: 26.0 °C  
Relative Humidity: 36.9 %

The BlackBerry® smartphone was standalone horizontal down and LCD Screen pointing to the RX antenna when the turntable is at 0 degree position.

Measurements were performed with QPSK and 16QAM modulations.

Test Distance was 3.0 meters with the RX antenna height scans between 1-4 meters height.

### LTE band 5, 5MHz BW, RB=1, QPSK modulation

|      |       |                 |      |            |      |                   |                 | Substitution Method |               |                   |      |             |                     |
|------|-------|-----------------|------|------------|------|-------------------|-----------------|---------------------|---------------|-------------------|------|-------------|---------------------|
| EUT  |       |                 |      | Rx Antenna |      | Spectrum Analyzer |                 | Tracking Generator  |               |                   |      |             |                     |
| Type | Ch    | Frequency (MHz) | Band | Type       | Pol. | Reading (dBm)     | Max (V,H) (dBm) | Pol. Tx-Rx          | Reading (dBm) | Corrected Reading |      | Limit (dBm) | Diff to Limit (dBm) |
| F0   | 20425 | 826.50          | 5    | Horn       | V    | -41.00            | -32.20          | V-V                 | 2.62          | <b>20.43</b>      | 0.11 | 38.50       | 18.07               |
| F0   | 20425 | 826.50          | 5    | Horn       | H    | -32.20            |                 | H-H                 | 1.18          |                   |      |             |                     |
| F0   | 20525 | 836.50          | 5    | Horn       | V    | -40.96            | -34.25          | V-V                 | 1.29          | 18.98             | 0.08 | 38.50       | 19.52               |
| F0   | 20525 | 836.50          | 5    | Horn       | H    | -34.25            |                 | H-H                 | 0.21          |                   |      |             |                     |
| F0   | 20624 | 846.40          | 5    | Horn       | V    | -41.79            | -34.38          | V-V                 | 1.80          | 19.55             | 0.09 | 38.50       | 18.95               |
| F0   | 20624 | 846.40          | 5    | Horn       | H    | -34.38            |                 | H-H                 | -0.21         |                   |      |             |                     |

### LTE band 5, 5MHz BW, RB=1, 16-QAM modulation

|      |       |                 |      |            |      |                   |                 | Substitution Method |               |                   |      |             |                     |
|------|-------|-----------------|------|------------|------|-------------------|-----------------|---------------------|---------------|-------------------|------|-------------|---------------------|
| EUT  |       |                 |      | Rx Antenna |      | Spectrum Analyzer |                 | Tracking Generator  |               |                   |      |             |                     |
| Type | Ch    | Frequency (MHz) | Band | Type       | Pol. | Reading (dBm)     | Max (V,H) (dBm) | Pol. Tx-Rx          | Reading (dBm) | Corrected Reading |      | Limit (dBm) | Diff to Limit (dBm) |
| F0   | 20425 | 826.50          | 5    | Horn       | V    | -42.06            | -33.05          | V-V                 | 1.67          | 19.48             | 0.09 | 38.50       | 19.02               |
| F0   | 20425 | 826.50          | 5    | Horn       | H    | -33.05            |                 | H-H                 | 0.31          |                   |      |             |                     |
| F0   | 20525 | 836.50          | 5    | Horn       | V    | -41.89            | -34.19          | V-V                 | 1.39          | 19.08             | 0.08 | 38.50       | 19.42               |
| F0   | 20525 | 836.50          | 5    | Horn       | H    | -34.19            |                 | H-H                 | 0.31          |                   |      |             |                     |
| F0   | 20624 | 846.40          | 5    | Horn       | V    | -42.74            | -34.22          | V-V                 | 1.97          | <b>19.72</b>      | 0.09 | 38.50       | 18.78               |
| F0   | 20624 | 846.40          | 5    | Horn       | H    | -34.22            |                 | H-H                 | -0.05         |                   |      |             |                     |

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|                                                                                   |                                                                                                                                          |                                                                                   |  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW (STV100-2)<br><b>APPENDIX 4C</b> |                                                                                   |  |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                     | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |  |

### Radiated Power Test Data Results

The following configurations were measured for model RHT181LW (STV100-2):

The following measurements were performed by Imran Kanji.

Date of Test: October 13, 2015

The environmental tests conditions were: Temperature: 26.0 °C  
Relative Humidity: 36.9 %

The BlackBerry® smartphone was standalone horizontal down and LCD Screen pointing to the RX antenna when the turntable is at 0 degree position.

Measurements were performed with QPSK and 16QAM modulations.

Test Distance was 3.0 meters with the RX antenna height scans between 1-4 meters height.

### LTE band 5, 3MHz BW, RB=1, QPSK modulation

|      |       |                 |      |            |      |                   |                 | Substitution Method |               |                   |      |             |                     |
|------|-------|-----------------|------|------------|------|-------------------|-----------------|---------------------|---------------|-------------------|------|-------------|---------------------|
| EUT  |       |                 |      | Rx Antenna |      | Spectrum Analyzer |                 | Tracking Generator  |               |                   |      |             |                     |
| Type | Ch    | Frequency (MHz) | Band | Type       | Pol. | Reading (dBm)     | Max (V,H) (dBm) | Pol. Tx-Rx          | Reading (dBm) | Corrected Reading |      | Limit (dBm) | Diff to Limit (dBm) |
|      |       |                 |      |            |      |                   |                 |                     |               | (dBm)             | (W)  |             |                     |
| F0   | 20415 | 825.50          | 5    | Horn       | V    | -40.47            | -32.44          | V-V                 | 2.19          | <b>20.00</b>      | 0.10 | 38.50       | 18.50               |
| F0   | 20415 | 825.50          | 5    | Horn       | H    | -32.44            |                 | H-H                 | 1.37          |                   |      |             |                     |
| F0   | 20525 | 836.50          | 5    | Horn       | V    | -39.90            | -32.73          | V-V                 | 1.86          | 19.55             | 0.09 | 38.50       | 18.95               |
| F0   | 20525 | 836.50          | 5    | Horn       | H    | -32.73            |                 | H-H                 | 0.79          |                   |      |             |                     |
| F0   | 20634 | 847.40          | 5    | Horn       | V    | -39.54            | -35.22          | V-V                 | -0.16         | 17.59             | 0.06 | 38.50       | 20.91               |
| F0   | 20634 | 847.40          | 5    | Horn       | H    | -35.22            |                 | H-H                 | -0.44         |                   |      |             |                     |

### LTE band 5, 5MHz BW, RB=1, 16-QAM modulation

|      |       |                 |      |            |      |                   |                 | Substitution Method |               |                   |      |             |                     |
|------|-------|-----------------|------|------------|------|-------------------|-----------------|---------------------|---------------|-------------------|------|-------------|---------------------|
| EUT  |       |                 |      | Rx Antenna |      | Spectrum Analyzer |                 | Tracking Generator  |               |                   |      |             |                     |
| Type | Ch    | Frequency (MHz) | Band | Type       | Pol. | Reading (dBm)     | Max (V,H) (dBm) | Pol. Tx-Rx          | Reading (dBm) | Corrected Reading |      | Limit (dBm) | Diff to Limit (dBm) |
|      |       |                 |      |            |      |                   |                 |                     |               | (dBm)             | (W)  |             |                     |
| F0   | 20425 | 826.50          | 5    | Horn       | V    | -41.29            | -33.36          | V-V                 | 1.30          | <b>19.11</b>      | 0.08 | 38.50       | 19.39               |
| F0   | 20425 | 826.50          | 5    | Horn       | H    | -33.36            |                 | H-H                 | 0.43          |                   |      |             |                     |
| F0   | 20525 | 836.50          | 5    | Horn       | V    | -40.63            | -33.35          | V-V                 | 1.26          | 18.95             | 0.08 | 38.50       | 19.55               |
| F0   | 20525 | 836.50          | 5    | Horn       | H    | -33.35            |                 | H-H                 | 0.14          |                   |      |             |                     |
| F0   | 20624 | 846.40          | 5    | Horn       | V    | -39.44            | -35.01          | V-V                 | 0.10          | 17.85             | 0.06 | 38.50       | 20.65               |
| F0   | 20624 | 846.40          | 5    | Horn       | H    | -35.01            |                 | H-H                 | -0.24         |                   |      |             |                     |

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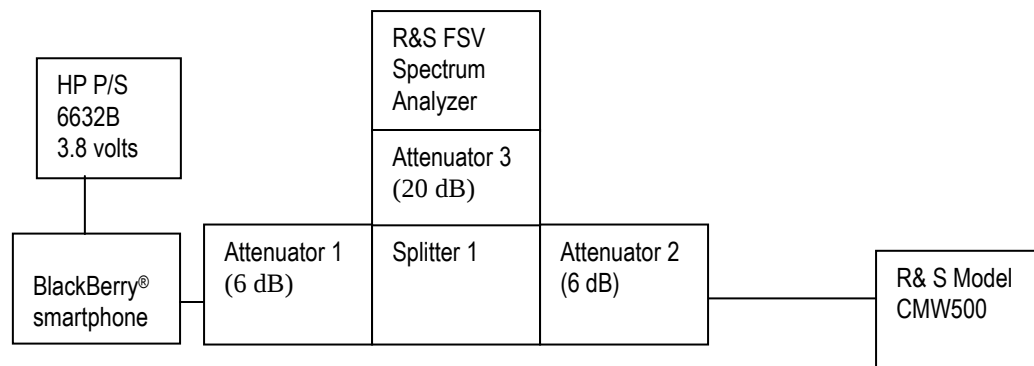
## APPENDIX 5A– LTE Band 4 CONDUCTED RF EMISSIONS TEST DATA/PLOTS

|                                              |                                                                                                                                          |                                                                                   |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>BlackBerry</b>                            | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW (STV100-2)<br><b>APPENDIX 5A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                     | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### LTE Band 4 Conducted RF Emission Test Data

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

### Test Setup Diagram



A reference offset of 31.4 dB was applied to the spectrum analyzer reference level for the attenuators and coaxial cable loss in the test circuit.

| <u>UNIT</u>  | <u>MANUFACTURER</u> | <u>MODEL</u>  | <u>SERIAL<br/>NUMBER</u> |
|--------------|---------------------|---------------|--------------------------|
| Attenuator 1 | Mini-Circuits       | BW-S6W2+      | 0647                     |
| Attenuator 2 | Mini-Circuits       | BW-S6W2+      | 0648                     |
| Attenuator 3 | Mini-Circuits       | BW-S20-2W263+ | 1234                     |
| Splitter 1   | Weinschel           | 1515          | MES 92                   |

The following configurations were measured for model RHK211LW (STV100-1):

Date of Test: July 22 – September 3, 2015

The environmental test conditions were:    Temperature:        26.3°C  
                                                                                  Relative Humidity:    38.6 %

The following measurements were performed by Sijia Li and Landon Martin.

|                                                                                   |                                                                                                                                          |                                                                                   |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW (STV100-2)<br><b>APPENDIX 5A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                     | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

## LTE Band 4 Conducted RF Emission Test Data cont'd

### Emission Designator Table

| Frequency Range (MHz) | Conducted Output Power (dBm) | Conducted Output Power (W) | Emission Designator | Band   | Bandwidth (MHz) | Modulation |
|-----------------------|------------------------------|----------------------------|---------------------|--------|-----------------|------------|
| 1710.7-1754.3         | 22.57                        | 0.18                       | 1M09G7D             | LTE B4 | 1.4             | QPSK       |
| 1710.7-1754.3         | 21.92                        | 0.16                       | 1M09D7W             | LTE B4 | 1.4             | 16QAM      |
| 1711.5-1753.5         | 22.95                        | 0.20                       | 2M69G7D             | LTE B4 | 3               | QPSK       |
| 1711.5-1753.5         | 22.17                        | 0.16                       | 2M69D7W             | LTE B4 | 3               | 16QAM      |
| 1712.5-1752.5         | 23.13                        | 0.21                       | 4M49G7D             | LTE B4 | 5               | QPSK       |
| 1712.5-1752.5         | 22.17                        | 0.16                       | 4M49D7W             | LTE B4 | 5               | 16QAM      |
| 1715-1750             | <b>23.14</b>                 | <b>0.21</b>                | 8M96G7D             | LTE B4 | 10              | QPSK       |
| 1715-1750             | 22.53                        | 0.18                       | 8M96D7W             | LTE B4 | 10              | 16QAM      |
| 1717.5-1747.5         | 22.92                        | 0.20                       | 13M4G7D             | LTE B4 | 15              | QPSK       |
| 1717.5-1747.5         | 22.17                        | 0.16                       | 13M4D7W             | LTE B4 | 15              | 16QAM      |
| 1720-1745             | 23.08                        | 0.20                       | 17M9G7D             | LTE B4 | 20              | QPSK       |
| 1720-1745             | 22.24                        | 0.17                       | 18M0D7W             | LTE B4 | 20              | 16QAM      |

**The conducted spurious emissions** – As per 47 CFR 2.1051, 27.53, RSS-139, 6.5 were measured from 30 MHz to 20 GHz.

### **–26 dBc Bandwidth and Occupied Bandwidth (99%)**

The modulation spectrum was measured by both methods of 99% power bandwidth and –26 dBc bandwidth. For each 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz and 20MHz with Resource Block allocations 100,75,50,25,6 and 3 for LTE band 4,.

QPSK and 16-QAM modulations were applied to each of the bandwidths. Only the worst case measurements are documented in this report.

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 LTE band 4 was measured to be 18.9 MHz. Results were derived in a 200 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.

|                                                                                   |                                                                                                                                          |                                                                                   |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW (STV100-2)<br><b>APPENDIX 5A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                     | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

**Test Data for LTE Band 4 selected Frequencies in 20MHz BW (RB = 100)**

| LTE Band 4<br>Frequency (MHz) | 26dBc Occupied Bandwidth<br>(MHz) | 99% Occupied Bandwidth<br>(MHz) |              |
|-------------------------------|-----------------------------------|---------------------------------|--------------|
|                               | QPSK                              | QPSK                            | 16-QAM       |
| 1720.0                        | 18.64                             | 17.93                           | 17.93        |
| 1732.5                        | 18.6                              | 17.88                           | 17.88        |
| 1745.0                        | <b>18.9</b>                       | 17.93                           | <b>17.98</b> |

**Test Data for LTE Band 4 selected Frequencies in 15MHz BW (RB = 75)**

| LTE Band 4<br>Frequency (MHz) | 99% Occupied Bandwidth<br>(MHz) |        |
|-------------------------------|---------------------------------|--------|
|                               | QPSK                            | 16-QAM |
| 1717.5                        | 13.41                           | 13.41  |
| 1732.5                        | 13.41                           | 13.45  |
| 1747.5                        | 13.45                           | 13.41  |

**Test Data for LTE Band 4 selected Frequencies in 10MHz BW (RB = 50)**

| LTE Band 4<br>Frequency (MHz) | 99% Occupied Bandwidth<br>(MHz) |        |
|-------------------------------|---------------------------------|--------|
|                               | QPSK                            | 16-QAM |
| 1715                          | 8.94                            | 8.94   |
| 1732.5                        | 8.97                            | 8.97   |
| 1750                          | 8.97                            | 8.94   |

**Test Data for LTE Band 4 selected Frequencies in 5MHz BW (RB = 25)**

| LTE Band 4<br>Frequency (MHz) | 99% Occupied Bandwidth<br>(MHz) |        |
|-------------------------------|---------------------------------|--------|
|                               | QPSK                            | 16-QAM |
| 1712.5                        | 4.48                            | 4.50   |
| 1732.5                        | 4.48                            | 4.47   |
| 1752.5                        | 4.50                            | 4.48   |

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 5A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

### **Test Data for LTE Band 4 selected Frequencies in 3MHz BW (RB = 15)**

| LTE Band 4<br>Frequency (MHz) | 99% Occupied Bandwidth<br>(MHz) |        |
|-------------------------------|---------------------------------|--------|
|                               | QPSK                            | 16-QAM |
| 1711.5                        | 2.70                            | 2.69   |
| 1732.5                        | 2.70                            | 2.69   |
| 1753.5                        | 2.70                            | 2.69   |

### **Test Data for LTE Band 4 selected Frequencies in 1.4MHz BW (RB = 6)**

| LTE Band 4<br>Frequency (MHz) | 99% Occupied Bandwidth<br>(MHz) |        |
|-------------------------------|---------------------------------|--------|
|                               | QPSK                            | 16-QAM |
| 1710.7                        | 1.09                            | 1.08   |
| 1732.5                        | 1.10                            | 1.09   |
| 1754.3                        | 1.09                            | 1.09   |

#### **Peak to Average Ratio (PAR)**

For each 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz and 20MHz with different number of RBs as per scalable bandwidths for LTE band 4, the peak to average ratio was measured on the low, middle and high channels with QPSK modulation.

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

The worst case measured was 10.16 dB in 20MHz bandwidth with 50 RBs.

#### **Measurement Plots for LTE Band 4**

See Figures 5-1a to 5-18a for the plots of the conducted spurious emissions.

See Figures 5-19a to 5-34a and 5-51a to 5-53a for the plots of 99% Occupied Bandwidth and -26 dBc Bandwidth.

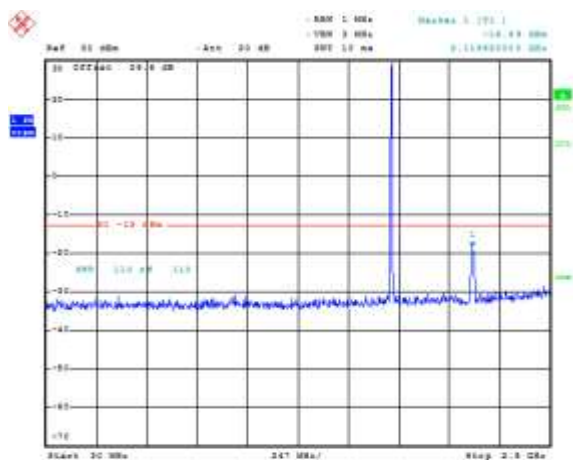
See Figures 5-35a to 5-44a for the plots of the Channel mask.

See Figures 5-45a to 5-50a for the plots of the Peak to Average Ratios.

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 5A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

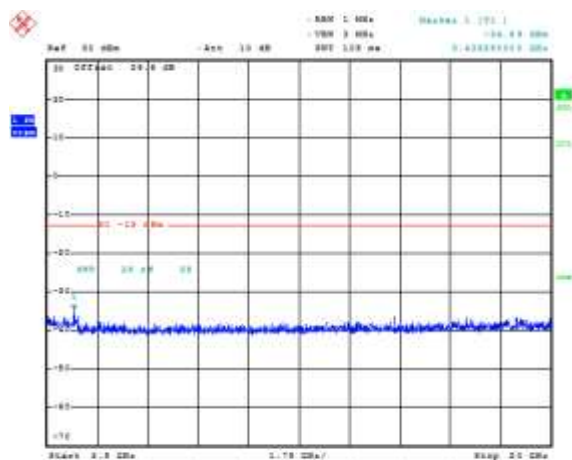
## LTE Band 4 Conducted RF Emission Test Data cont'd

**Figure 5-1a: Band 4, Spurious Conducted Emissions, Low channel, 20MHz BW (RB= 1)**



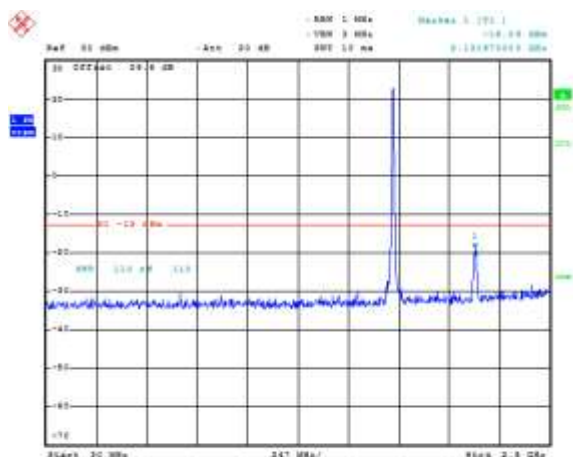
Date: 12-APR-2015 15:29:00

**Figure 5-2a: Band 4, Spurious Conducted Emissions, Low channel, 20MHz BW (RB= 1)**



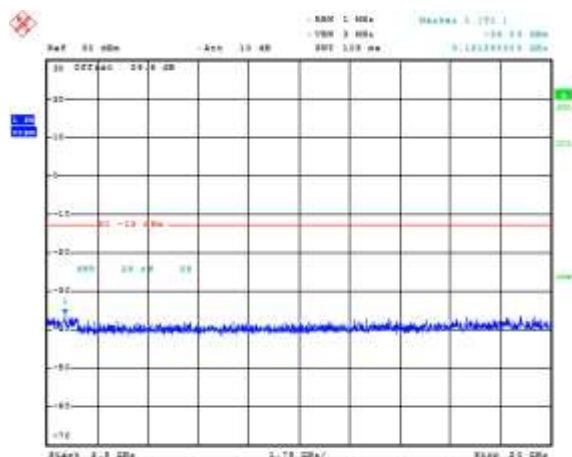
Date: 12-APR-2015 15:29:00

**Figure 5-3a: Band 4, Spurious Conducted Emissions, Middle channel, 20MHz BW (RB= 50)**



Date: 12-APR-2015 15:29:19

**Figure 5-4a: Band 4, Spurious Conducted Emissions, Middle channel, 20MHz BW (RB= 50)**

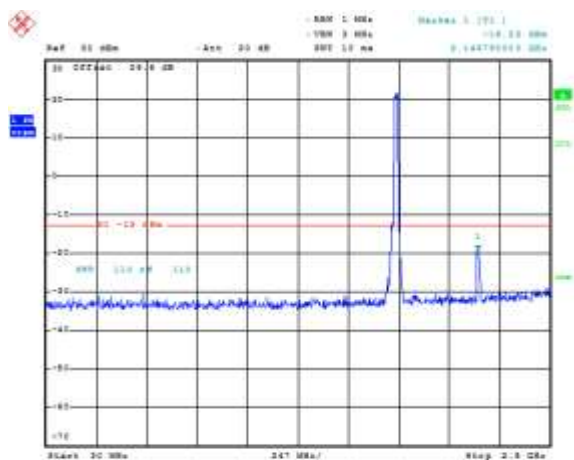


Date: 12-APR-2015 15:29:27

|                                                                                   |                                                                                                                                            |                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 5A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

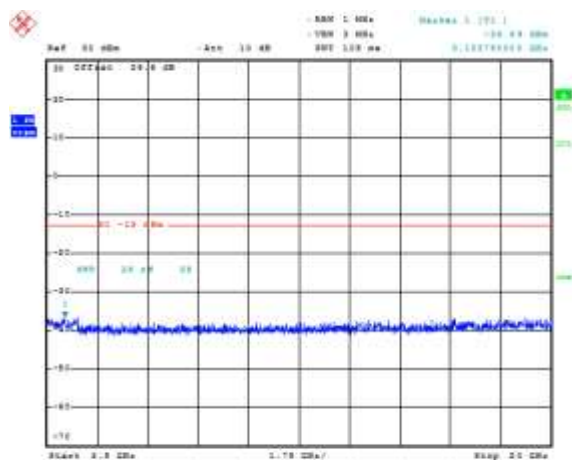
## LTE Band 4 Conducted RF Emission Test Data cont'd

**Figure 5-5a: Band 4, Spurious Conducted Emissions, High Channel, 20MHz BW (RB= 100)**



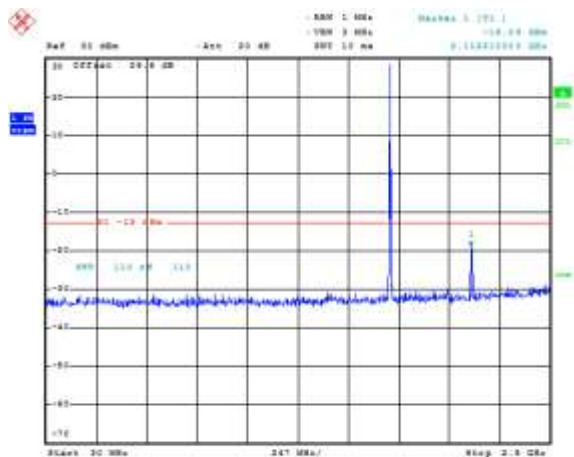
Date: 12-ATG-2015 15:20:19

**Figure 5-6a: Band 4, Spurious Conducted Emissions, High Channel, 20MHz BW (RB= 100)**



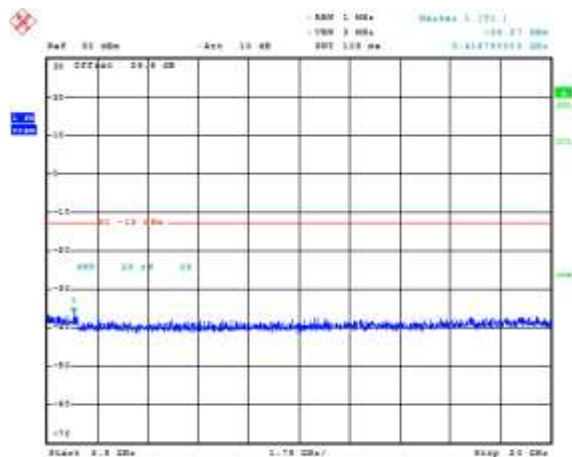
Date: 12-ATG-2015 15:20:47

**Figure 5-7a: Band 4, Spurious Conducted Emissions, Low channel, 10MHz BW (RB= 1)**



Date: 12-ATG-2015 15:20:00

**Figure 5-8a: Band 4, Spurious Conducted Emissions, Low channel, 10MHz BW (RB= 1)**

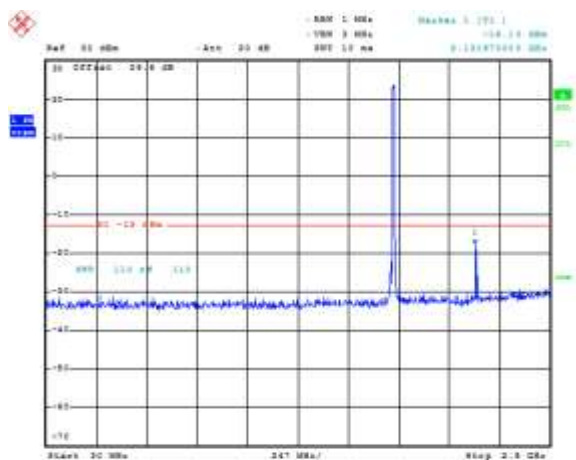


Date: 12-ATG-2015 15:20:14

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 5A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

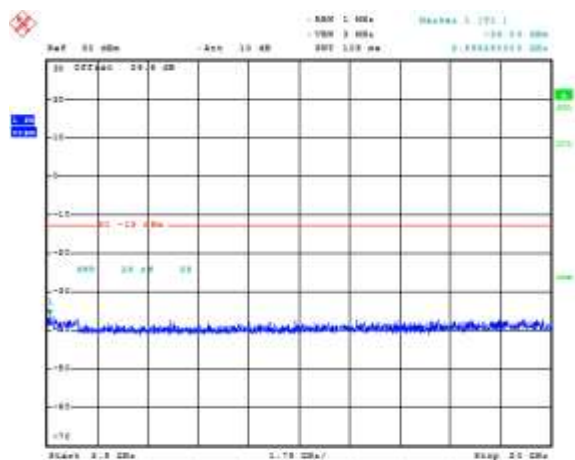
## LTE Band 4 Conducted RF Emission Test Data cont'd

**Figure 5-9a: Band 4, Spurious Conducted Emissions, Middle Channel, 10MHz BW (RB= 25)**



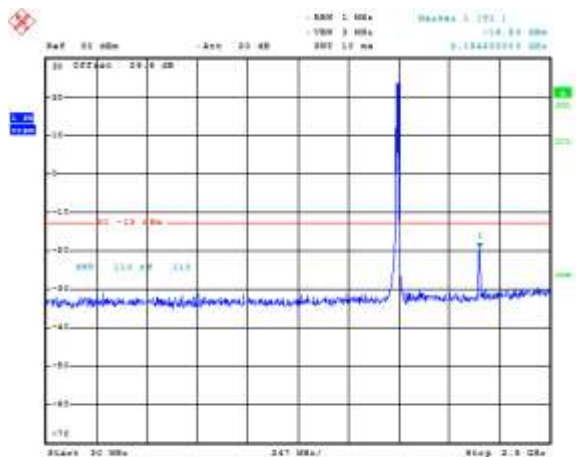
Date: 12-ATG-2015 13:29:18

**Figure 5-10a: Band 4, Spurious Conducted Emissions, Middle Channel, 10MHz BW (RB= 25)**



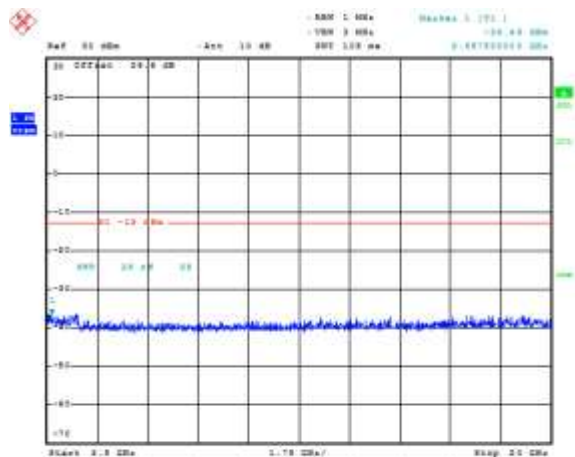
Date: 12-ATG-2015 13:29:18

**Figure 5-11a: Band 4, Spurious Conducted Emissions, High channel, 10MHz BW (RB= 50)**



Date: 12-ATG-2015 13:29:17

**Figure 5-12a: Band 4, Spurious Conducted Emissions, High channel, 10MHz BW (RB= 50)**

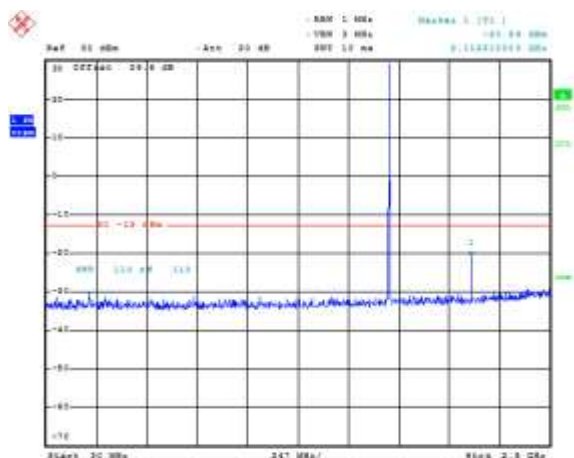


Date: 12-ATG-2015 13:29:18

|                                                                                   |                                                                                                                                         |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 5A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

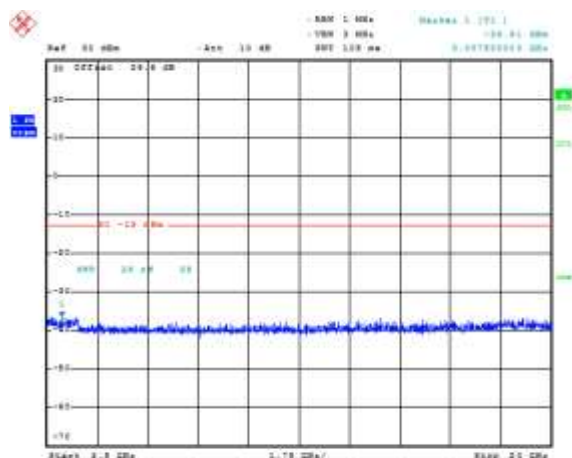
## LTE Band 4 Conducted RF Emission Test Data cont'd

**Figure 5-13a: Band 4, Spurious Conducted Emissions, Low Channel, 1.4MHz BW (RB= 1)**



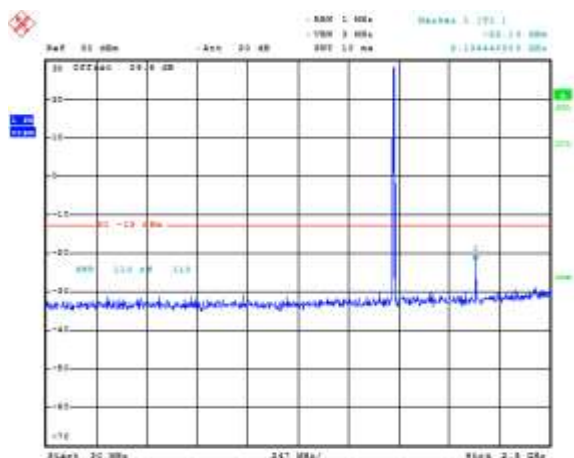
Date: 12-ATG-2015 15:30:14

**Figure 5-14a: Band 4, Spurious Conducted Emissions, Low Channel, 1.4MHz BW (RB= 1)**



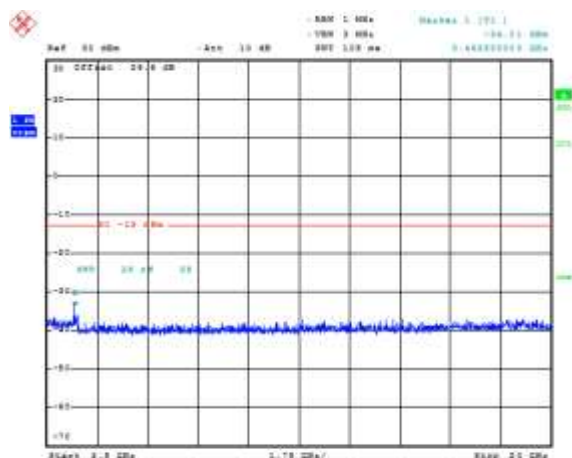
Date: 12-ATG-2015 15:30:24

**Figure 5-15a: Band 4, Spurious Conducted Emissions, Middle channel, 1.4MHz BW (RB= 3)**



Date: 12-ATG-2015 15:30:36

**Figure 5-16a: Band 4, Spurious Conducted Emissions, Middle channel, 1.4MHz BW (RB= 3)**

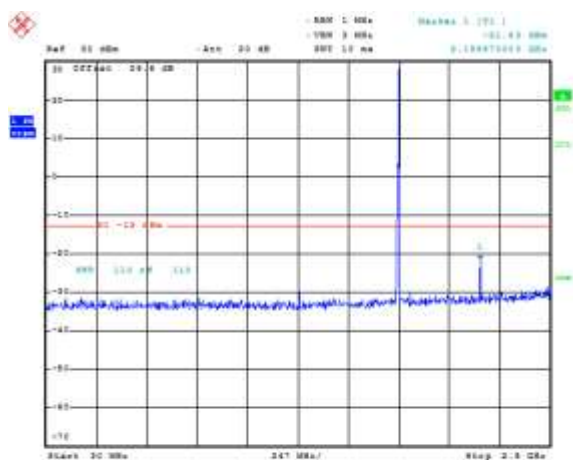


Date: 12-ATG-2015 15:30:40

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|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW (STV100-2)<br><b>APPENDIX 5A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                     | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

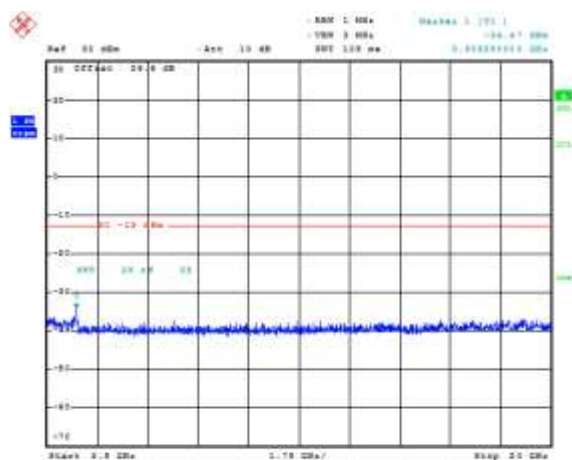
## LTE Band 4 Conducted RF Emission Test Data cont'd

**Figure 5-17a: Band 4, Spurious Conducted Emissions, High channel, 1.4MHz BW (RB= 6)**



Date: 12.AUG.2015 16:30:55

**Figure 5-18a: Band 4, Spurious Conducted Emissions, High channel, 1.4MHz BW (RB= 6)**

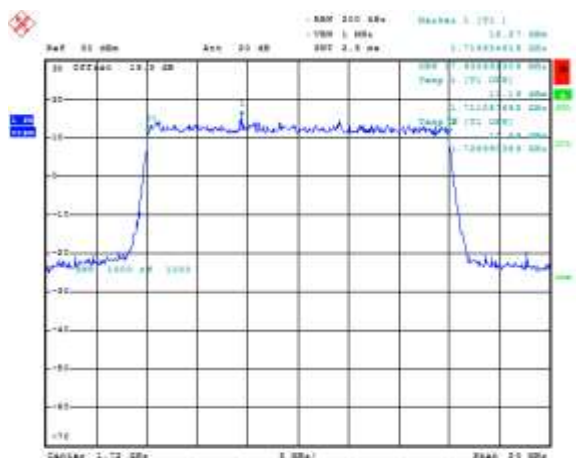


Date: 12.AUG.2015 16:31:58

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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 5A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

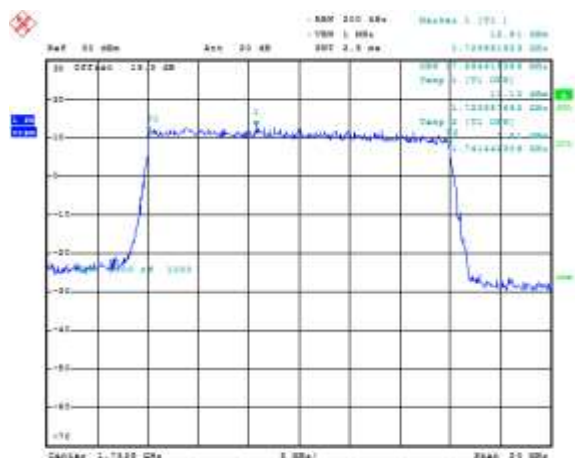
## LTE Band 4 Conducted RF Emission Test Data cont'd

**Figure 5-19a: Occupied Bandwidth, Band 4 Low Channel, 20MHz BW, RB=100**



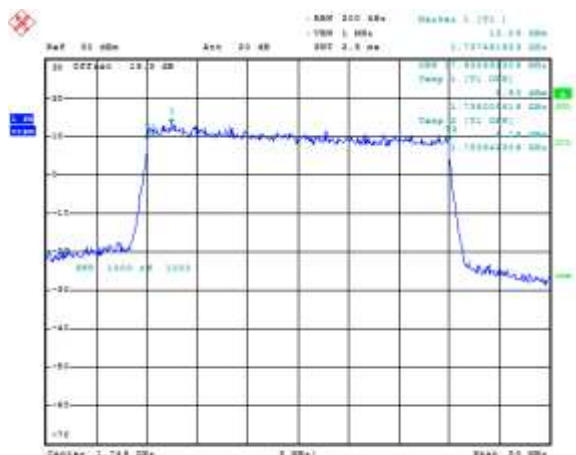
Date: 27-JUL-2015 11:42:00

**Figure 5-20a: Occupied Bandwidth, Band 4 Middle Channel, 20MHz BW, RB=100**



Date: 27-JUL-2015 11:42:00

**Figure 5-21a: Occupied Bandwidth, Band 4 High Channel, 20MHz BW, RB=100**

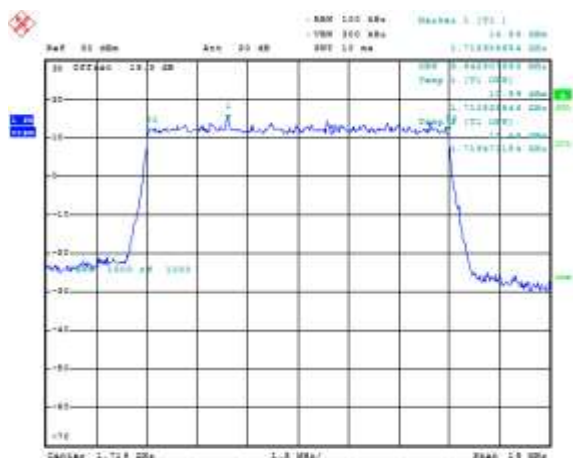


Date: 27-JUL-2015 11:42:01

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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 5A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

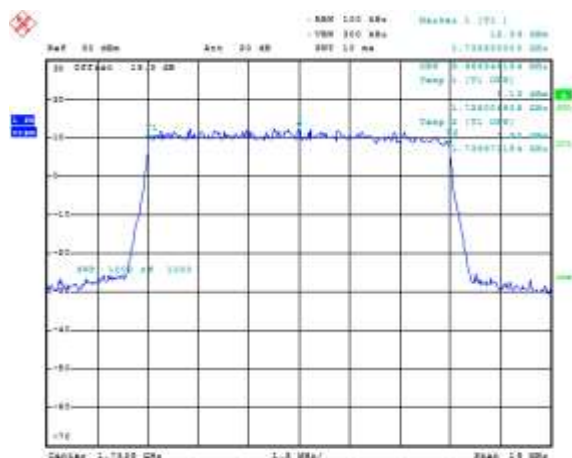
## LTE Band 4 Conducted RF Emission Test Data cont'd

**Figure 5-22a: Occupied Bandwidth, Band 4 Low Channel, 10MHz BW, RB=50**



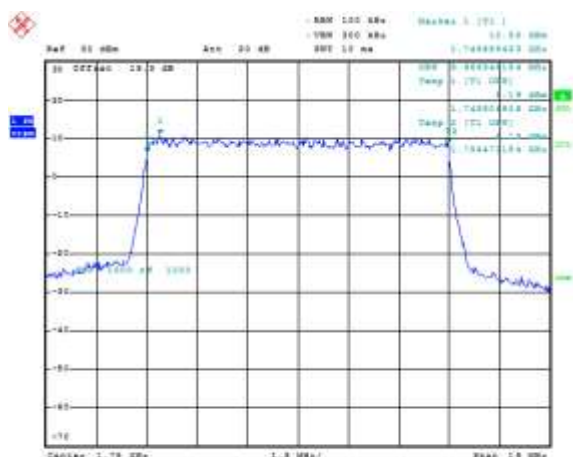
Date: 27-JUL-2015 11:50:44

**Figure 5-23a: Occupied Bandwidth, Band Middle Channel, 10MHz BW, RB=50**



Date: 27-JUL-2015 11:51:22

**Figure 5-24a: Occupied Bandwidth, Band 4 High Channel, 10MHz BW, RB=50**



Date: 27-JUL-2015 11:51:46

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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 5A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

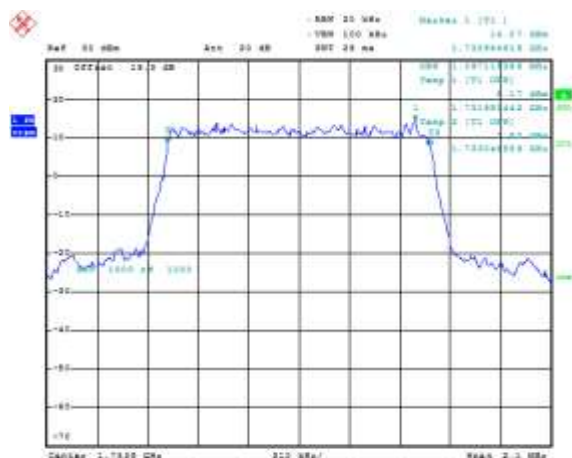
## LTE Band 4 Conducted RF Emission Test Data cont'd

**Figure 5-25a: Occupied Bandwidth, Band 4 Low Channel, 1.4MHz BW, RB=6**



Date: 27-JUL-2015 15:01:55

**Figure 5-26a: Occupied Bandwidth, Band 4 Middle Channel, 1.4MHz BW, RB=6**



Date: 27-JUL-2015 15:02:02

**Figure 5-27a: Occupied Bandwidth, Band 4 High Channel, 1.4MHz BW, RB=6**

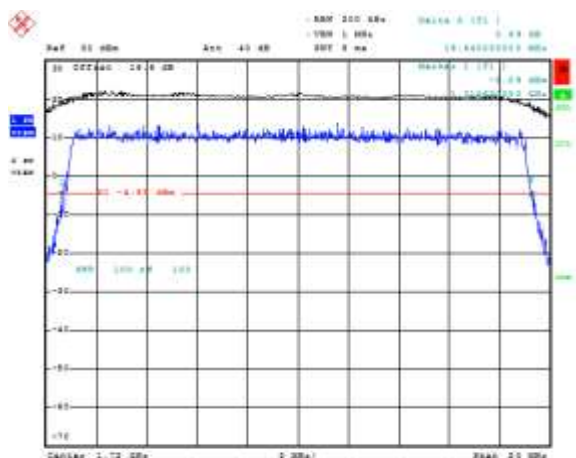


Date: 27-JUL-2015 15:02:09

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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1),<br>RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 5A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                       | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

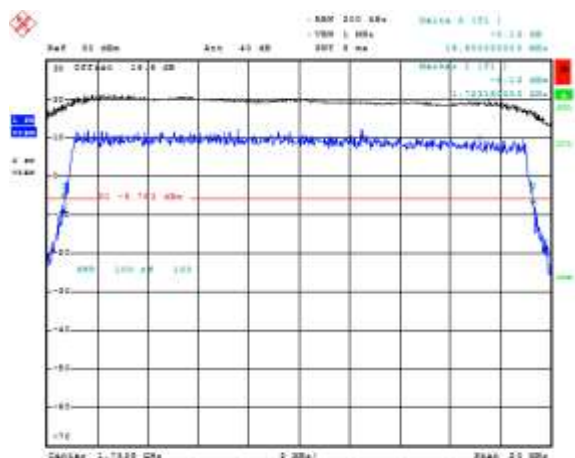
## LTE Band 4 Conducted RF Emission Test Data cont'd

**Figure 5-28a: -26 dBc Bandwidth, Band 4 Low Channel, 20MHz BW, RB=100**



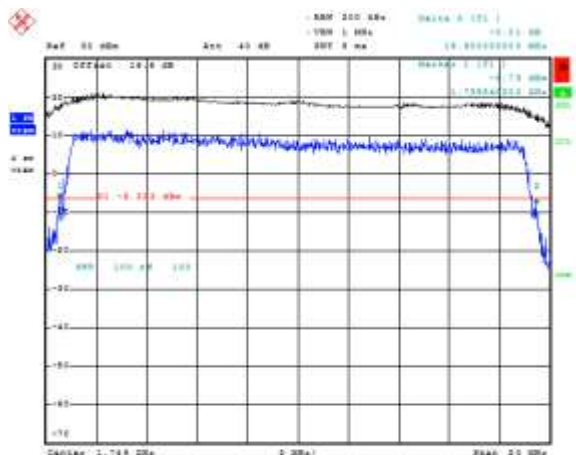
Date: 27-JUL-2015 11:02:48

**Figure 5-29a: -26 dBc Bandwidth, Band 4 Middle Channel, 20MHz BW, RB=100**



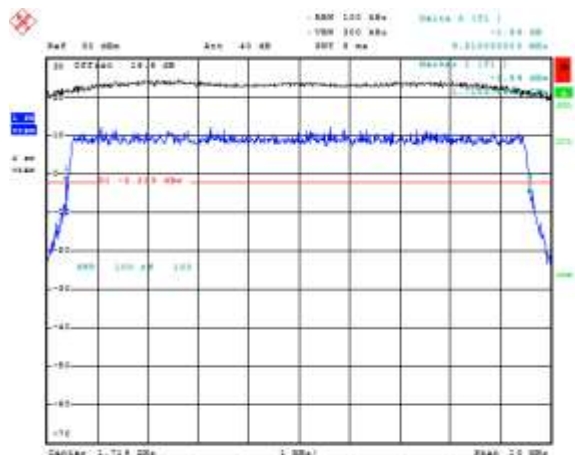
Date: 27-JUL-2015 11:02:57

**Figure 5-30a: -26 dBc Bandwidth, Band 4 High Channel, 20MHz BW, RB=100**



Date: 27-JUL-2015 11:02:52

**Figure 5-31a: -26 dBc Bandwidth, Band 4 Low Channel, 10MHz BW, RB=50**

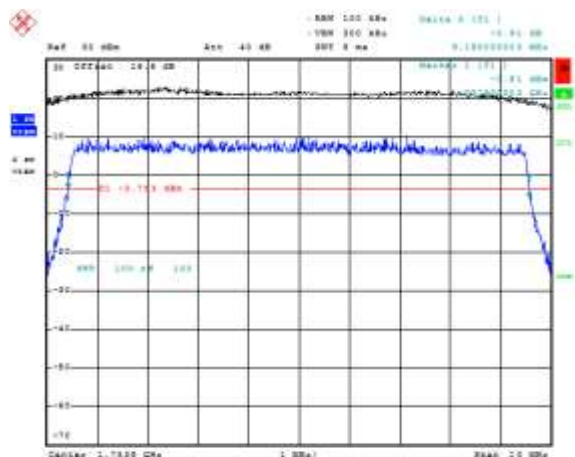


Date: 27-JUL-2015 11:02:58

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|  | EMC Test Report for the BlackBerry® smartphone Model RHK211LW (STV100-1), RHM181LW (STV100-4), RHT181LW(STV100-2)<br><b>APPENDIX 5A</b> |                                                                                   |
| <b>Test Report No.:</b><br>RTS-6066-1510-13C                                      | <b>Dates of Test:</b><br>July 21 to October 26, 2015                                                                                    | <b>FCC ID:</b> L6ARHK210LW, L6ARHM180LW, L6ARHT180LW<br><b>IC:</b> 2503A-RHK210LW |

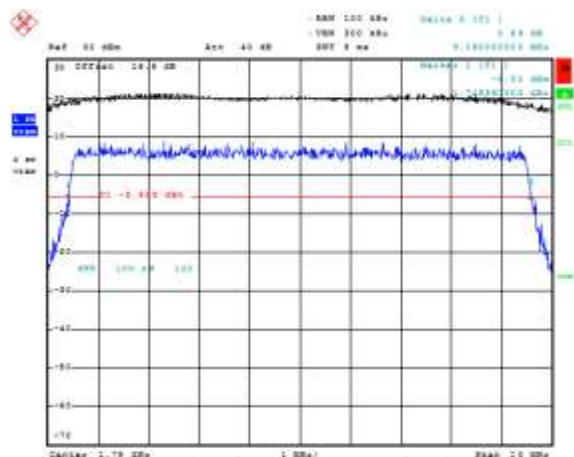
## LTE Band 4 Conducted RF Emission Test Data cont'd

**Figure 5-32a: -26 dBc Bandwidth, Band 4 Middle Channel, 10MHz BW, RB=50**



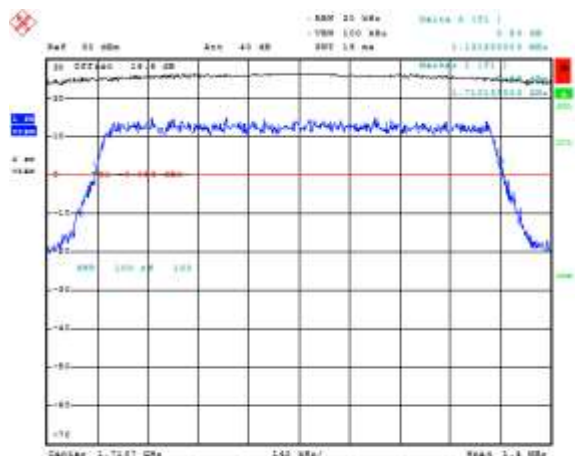
Date: 27.JUL.2015 11:09:49

**Figure 5-33a: -26 dBc Bandwidth, Band 4 High Channel, 10MHz BW, RB=50**



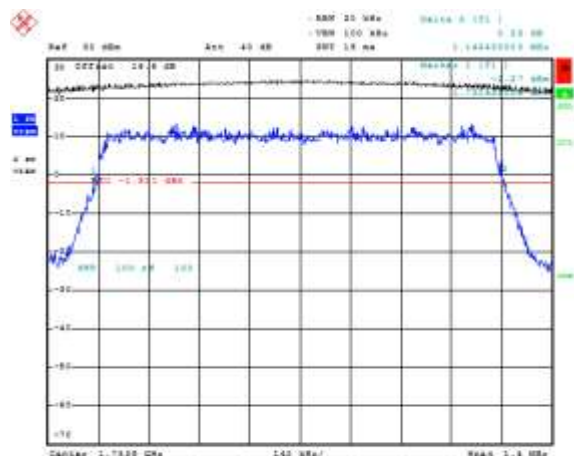
Date: 27.JUL.2015 11:09:51

**Figure 5-34a: -26 dBc Bandwidth, Band 4 Low Channel, 1.4MHz BW, RB=6**



Date: 27.JUL.2015 11:09:57

**Figure 5-35a: -26 dBc Bandwidth, Band 4 Middle Channel, 1.4MHz BW, RB=6**



Date: 27.JUL.2015 11:09:51