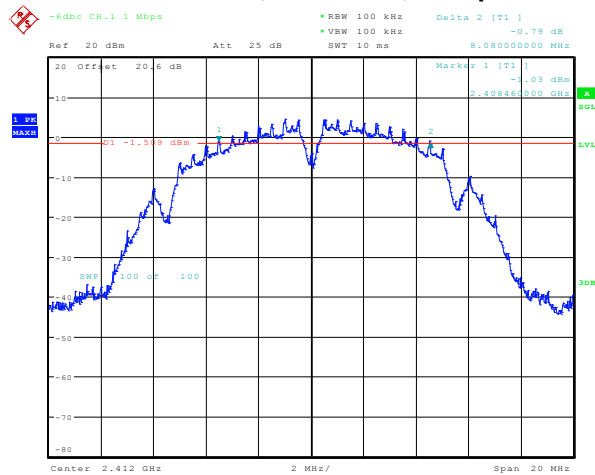


802.11b/g/n RF Conducted Emission Test Results cont'd

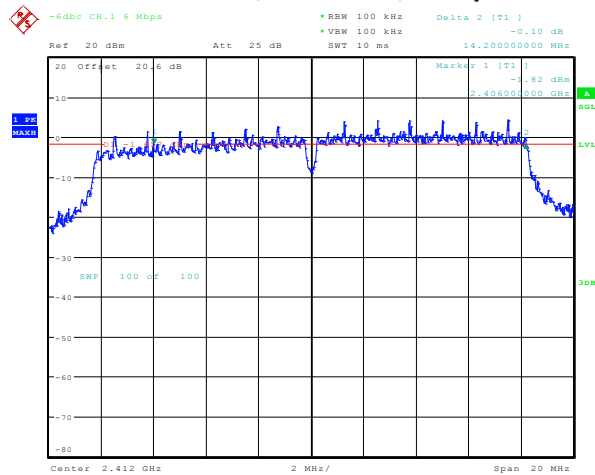
See figures 6-1 to 6-9 for the plots of the 6 dB bandwidth measurements for Channels 1, 6, and 11, at 1 Mbps each for 802.11b mode, 6 Mbps each for 802.11g mode, and MCS 0 each for 802.11n mode.

**Figure 6-1: 6 dB Bandwidth
802.11b, Channel 1, 1 Mbps**



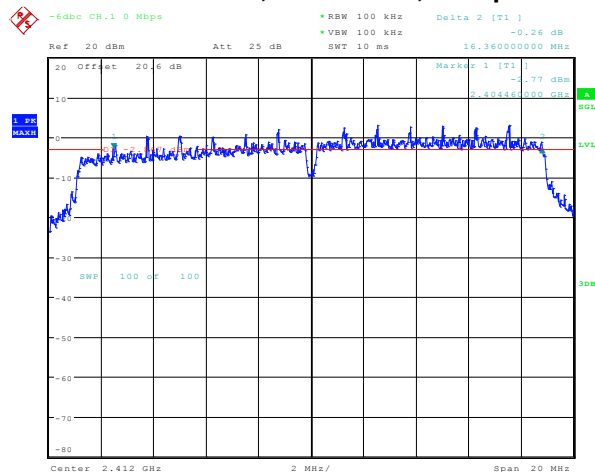
Date: 12.MAY.2015 11:36:24

**Figure 6-2: 6 dB Bandwidth
802.11b, Channel 6, 1 Mbps**



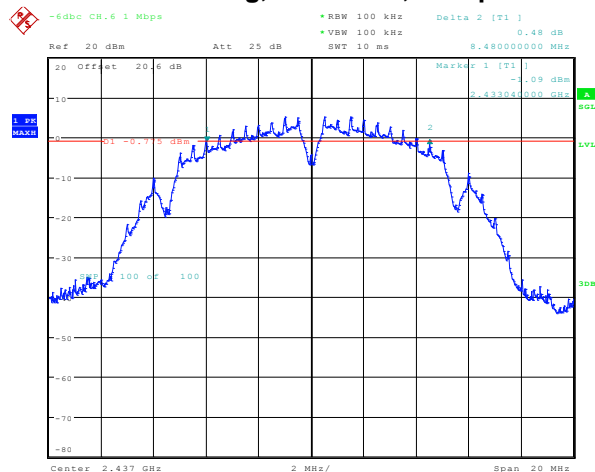
Date: 12.MAY.2015 11:37:19

Figure 6-3: 6 dB Bandwidth
802.11b, Channel 11, 1 Mbps




Date: 12.MAY.2015 11:38:14

Figure 6-4: 6 dB Bandwidth
802.11g, Channel 1, 6 Mbps

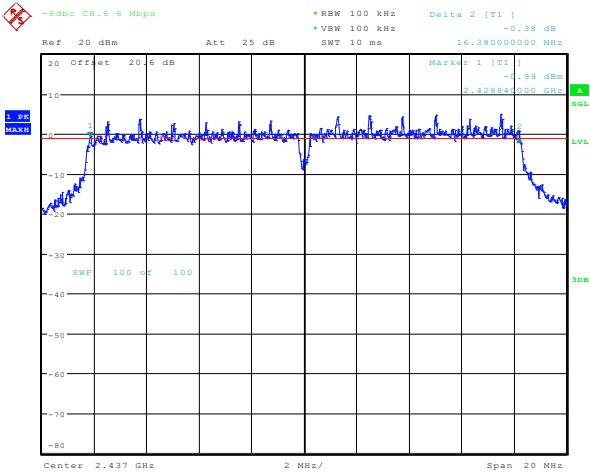


Date: 12.MAY.2015 11:39:07

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 6	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

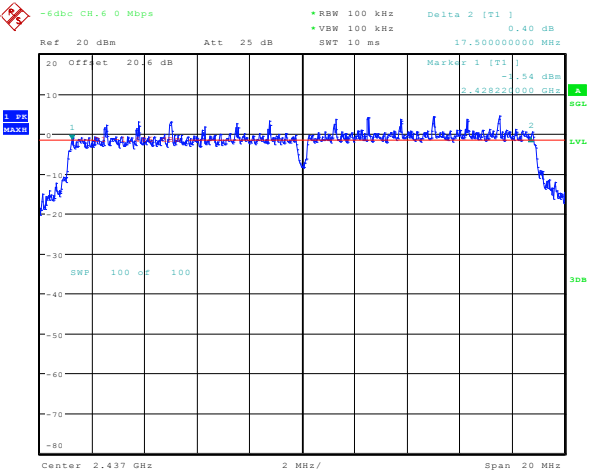
802.11b/g/n RF Conducted Emission Test Results cont'd

Figure 6-5: 6 dB Bandwidth
802.11g, Channel 6, 6 Mbps



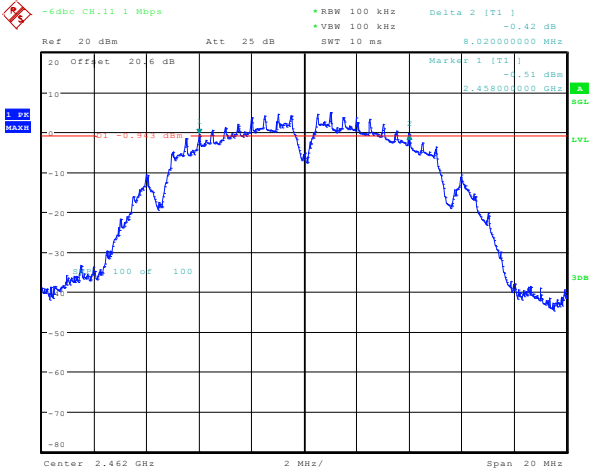
Date: 12.MAY.2015 11:39:58

Figure 6-6: 6 dB Bandwidth
802.11g, Channel 11, 6 Mbps



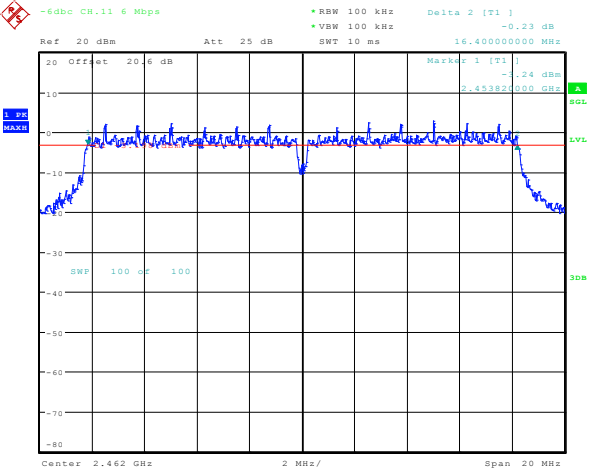
Date: 12.MAY.2015 11:40:47

Figure 6-7: 6 dB Bandwidth
802.11n, Channel 1, MCS 0




Date: 12.MAY.2015 11:41:39

Figure 6-8: 6 dB Bandwidth
802.11n, Channel 6, MCS 0



Date: 12.MAY.2015 11:42:35


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 6	
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802.11b/g/n RF Conducted Emission Test Results cont'd

Maximum Conducted Output Power


The EUT met the requirements of the maximum conducted output power of class 2 as per 47 CFR 15.247(b)(3) and RSS-210. Channels 1, 6 and 11 were measured at 1 Mbps, 5.5 Mbps, and 11 Mbps each for 802.11b mode, 6 Mbps, 24 Mbps, and 54 Mbps each for 802.11g mode, and MCS 0, 4 and 7 for 802.11n mode using an Agilent power meter, model N1911A with model N1921A power sensor. A reference offset of 18.4 dB was applied to the power meter reference level for the coaxial cable loss and attenuators in the test circuit.

Channel	Data Rate	Class 2 Limit (W)	Measured Level (dBm)	Measured Level (W)
1	1 Mbps	< 1.00	13.96	.0249
	5.5 Mbps	< 1.00	14.59	.0287
	11 Mbps	< 1.00	14.61	.0288
	6 Mbps	< 1.00	16.07	.0405
	24 Mbps	< 1.00	15.23	.0333
	54 Mbps	< 1.00	14.33	.0271
	MCS 0	< 1.00	15.14	.0326
	MCS 4	< 1.00	14.32	.027
	MCS 7	< 1.00	12.84	.020
6	1 Mbps	< 1.00	14.77	.030
	5.5 Mbps	< 1.00	14.97	.0313
	11 Mbps	< 1.00	14.89	.0385
	6 Mbps	< 1.00	16.78	.0476
	24 Mbps	< 1.00	13.32	.0214
	54 Mbps	< 1.00	14.05	.0253
	MCS 0	< 1.00	16.92	.0491
	MCS 4	< 1.00	14.64	.0291
	MCS 7	< 1.00	14.08	.0256

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 6	
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802.11b/g/n RF Conducted Emission Test Results cont'd

Channel	Data Rate	Class 2 Limit (W)	Measured Level (dBm)	Measured Level (mW)
11	1 Mbps	< 1.00	14.42	27.70
	5.5 Mbps	< 1.00	14.43	27.73
	11 Mbps	< 1.00	14.67	29.28
	6 Mbps	< 1.00	15.57	36.05
	24 Mbps	< 1.00	15.51	35.53
	54 Mbps	< 1.00	15.54	35.82
	MCS 0	< 1.00	15.40	34.65
	MCS 4	< 1.00	12.59	18.16
	MCS 7	< 1.00	13.25	21.13

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 6	
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802.11b/g/n RF Conducted Emission Test Results cont'd

Band Edge Compliance

The EUT met the requirements of the band edge compliance as per 47 CFR 15.247(c) and RSS-210. Channels 1 and 11 were measured at 1 Mbps, 5.5 Mbps, and 11 Mbps each for 802.11b mode, 6 Mbps, 24 Mbps, and 54 Mbps each for 802.11g mode, and MCS 0, 4 and 7 for 802.11n mode.

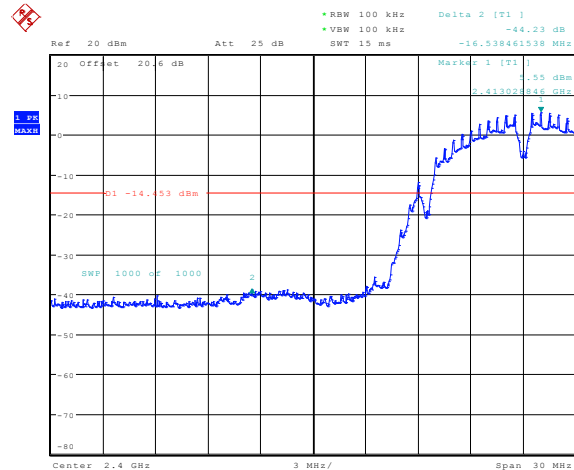
Channel	Data Rate	Limit (dBc)	Measured Level (dBc)	Margin (dBc)
1	1 Mbps	< -20	-44.23	-24.23
	5.5 Mbps	< -20	-43.96	-23.96
	11 Mbps	< -20	-44.67	-24.67
	6 Mbps	< -20	-39.35	-19.35
	24 Mbps	< -20	-38.65	-18.65
	54 Mbps	< -20	-38.93	-18.93
	MCS 0	< -20	-38.62	-18.62
	MCS 4	< -20	-36.53	-16.53
	MCS 7	< -20	-38.70	-18.70
11	1 Mbps	< -20	-42.73	-22.73
	5.5 Mbps	< -20	-43.37	-23.37
	11 Mbps	< -20	-44.28	-24.28
	6 Mbps	< -20	-36.84	-16.84
	24 Mbps	< -20	-36.00	-16.00
	54 Mbps	< -20	-36.36	-16.36
	MCS 0	< -20	-38.68	-18.68
	MCS 4	< -20	-36.23	-16.23
	MCS 7	< -20	-37.31	-17.31

See figures 6-10 to 6-15 for the plots of the band edge compliance measurements for Channels 1 and 11, at 1 Mbps each for 802.11b mode, 6 Mbps each for 802.11g mode, and MCS 0 each for 802.11n mode.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 6	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

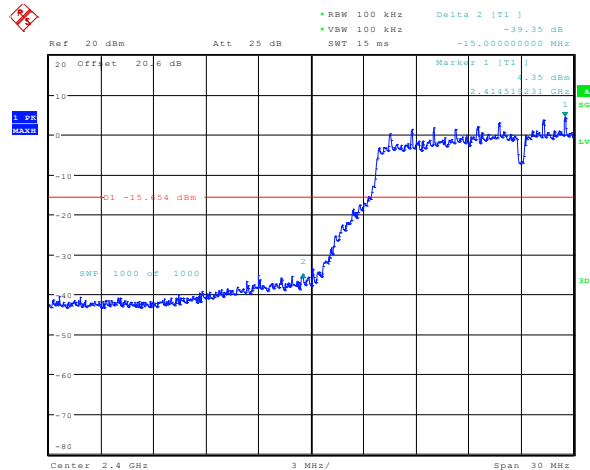
802.11b/g/n RF Conducted Emission Test Results cont'd

Figure 6-10: Band Edge Compliance
802.11b, Channel 1, 1 Mbps



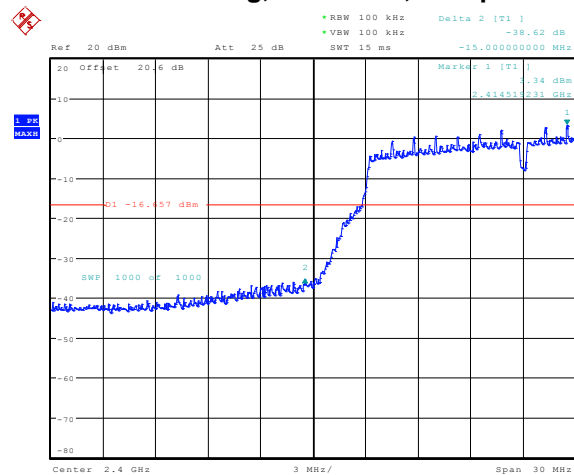
Date: 12.MAY.2015 12:02:12

Figure 6-11: Band Edge Compliance
802.11b, Channel 11, 1 Mbps



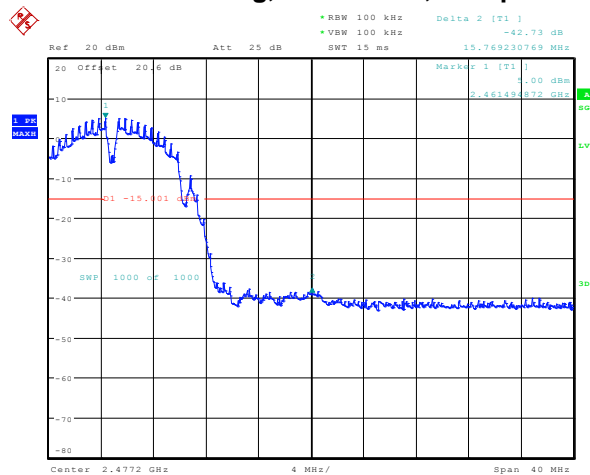
Date: 12.MAY.2015 12:05:53

Figure 6-12: Band Edge Compliance
802.11g, Channel 1, 6 Mbps




Date: 12.MAY.2015 12:09:34

Figure 6-13: Band Edge Compliance
802.11g, Channel 11, 6 Mbps

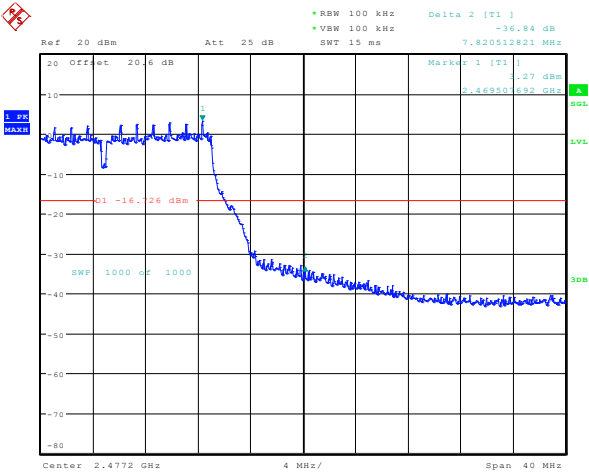


Date: 12.MAY.2015 12:14:07

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Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

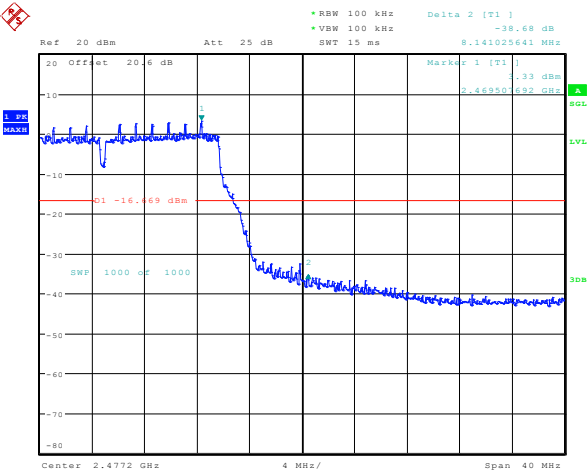
802.11b/g/n RF Conducted Emission Test Results cont'd

Figure 6-14: Band Edge Compliance
802.11n, Channel 1, MCS 0




Date: 12.MAY.2015 12:17:56

Figure 6-15: Band Edge Compliance
802.11n, Channel 11, MCS 0



Date: 12.MAY.2015 12:21:45


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802.11b/g/n RF Conducted Emission Test Results cont'd

Peak Power Spectral Density

The EUT met the requirements of the peak power spectral density as per 47 CFR 15.247(d) and RSS-210. Channels 1, 6 and 11 were measured at 1 Mbps, 5.5 Mbps, and 11 Mbps each for 802.11b mode, 6 Mbps, 24 Mbps, and 54 Mbps each for 802.11g mode, and MCS 0, 4, and 7 for 802.11n mode.

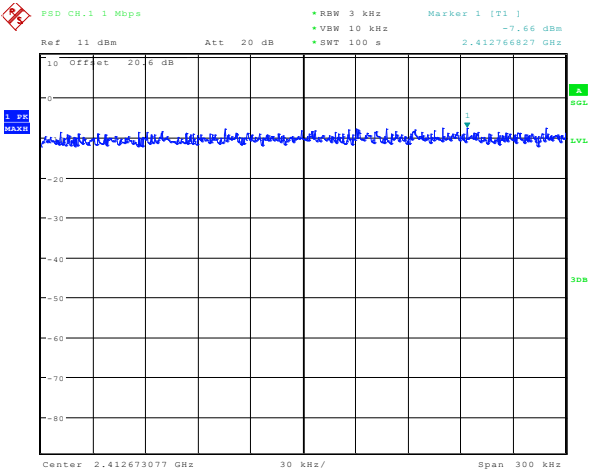
Channel	Data Rate	Limit (dBm)	Measured Level (dBm)	Margin (dBm)
1	1 Mbps	< 8.00	-7.66	-15.66
	5.5 Mbps	< 8.00	-9.19	-17.19
	11 Mbps	< 8.00	-8.61	-16.61
	6 Mbps	< 8.00	-9.65	-17.65
	24 Mbps	< 8.00	-9.69	-17.69
	54 Mbps	< 8.00	-12.26	-20.26
	MCS 0	< 8.00	-8.01	-16.01
	MCS 4	< 8.00	-10.85	-18.85
	MCS 7	< 8.00	-11.44	-19.44
6	1 Mbps	< 8.00	-7.34	-15.34
	5.5 Mbps	< 8.00	-8.37	-16.37
	11 Mbps	< 8.00	-7.47	-15.47
	6 Mbps	< 8.00	-9.15	-17.15
	24 Mbps	< 8.00	-9.88	-17.88
	54 Mbps	< 8.00	-12.05	-20.05
	MCS 0	< 8.00	-7.10	-15.10
	MCS 4	< 8.00	-10.52	-18.52
	MCS 7	< 8.00	-11.61	-19.61
11	1 Mbps	< 8.00	-7.92	-15.92
	5.5 Mbps	< 8.00	-8.84	-16.84
	11 Mbps	< 8.00	-9.46	-17.46
	6 Mbps	< 8.00	-10.51	-18.51
	24 Mbps	< 8.00	-10.38	-18.38
	54 Mbps	< 8.00	-12.30	-20.30
	MCS 0	< 8.00	-8.52	-16.52
	MCS 4	< 8.00	-10.18	-18.18
	MCS 7	< 8.00	-12.12	-20.12

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802.11b/g/n RF Conducted Emission Test Results cont'd

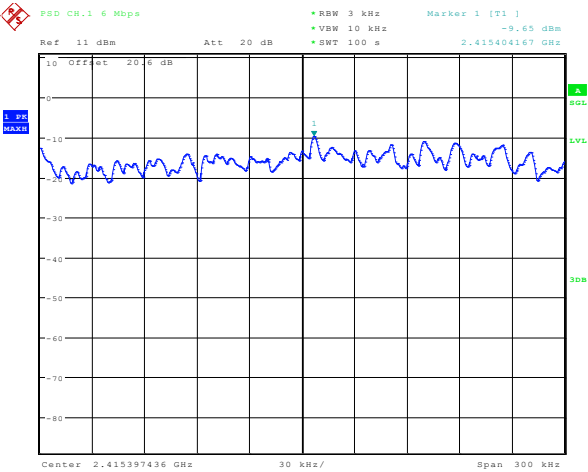
See figures 6-16 to 6-24 for the plots of the peak power spectral density for Channels 1, 6 and 11, at 1 Mbps each for 802.11b mode, 6 Mbps each for 802.11g mode, and MCS 0 for 802.11n mode.

Figure 6-16: Peak Power Spectral Density
802.11b, Channel 1, 1 Mbps



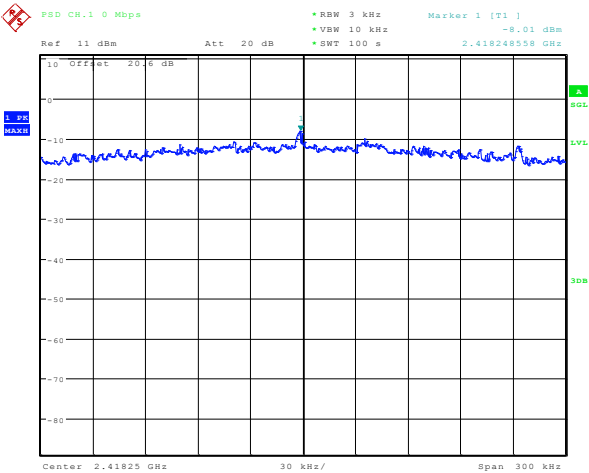
Date: 12.MAY.2015 10:23:59

Figure 6-17: Peak Power Spectral Density
802.11b, Channel 6, 1 Mbps




Date: 12.MAY.2015 10:30:34

Figure 6-18: Peak Power Spectral Density
802.11b, Channel 11, 1 Mbps

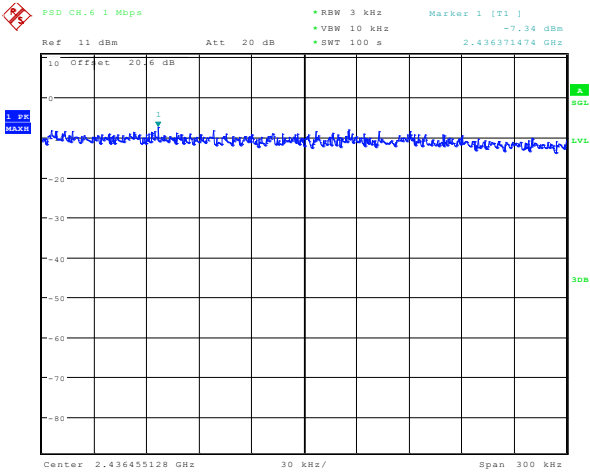


Date: 12.MAY.2015 10:37:09

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 6	
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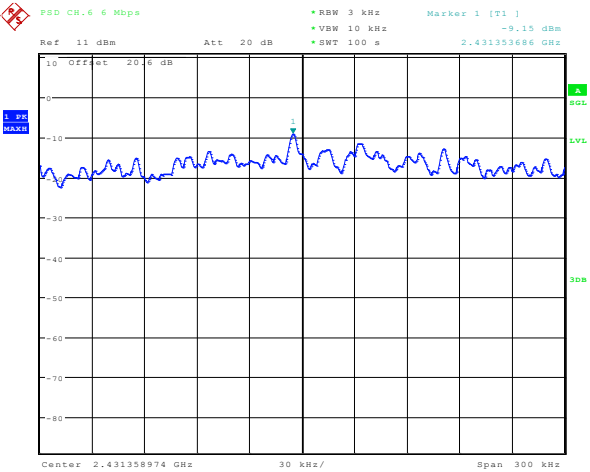
802.11b/g/n RF Conducted Emission Test Results cont'd

Figure 6-19: Peak Power Spectral Density
802.11g, Channel 1, 6 Mbps



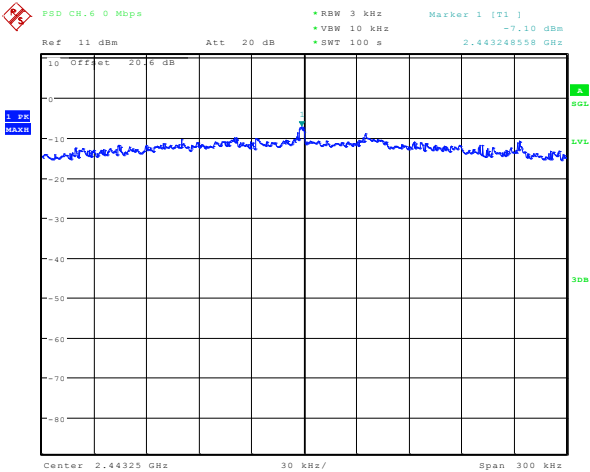
Date: 12.MAY.2015 10:43:43

Figure 6-20: Peak Power Spectral Density
802.11g, Channel 6, 6 Mbps




Date: 12.MAY.2015 10:50:21

Figure 6-21: Peak Power Spectral Density
802.11g, Channel 11, 6 Mbps

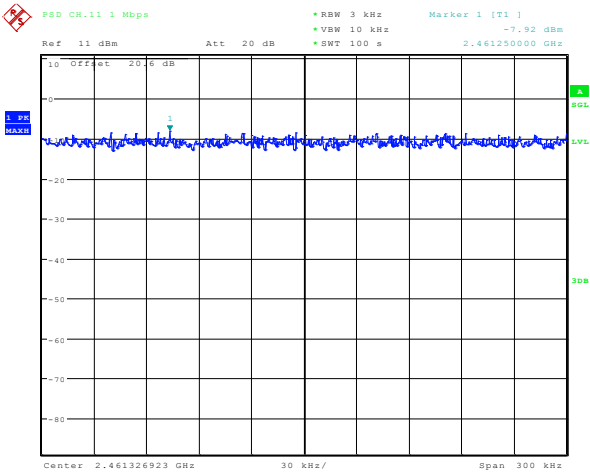


Date: 12.MAY.2015 10:57:01

		EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 6	
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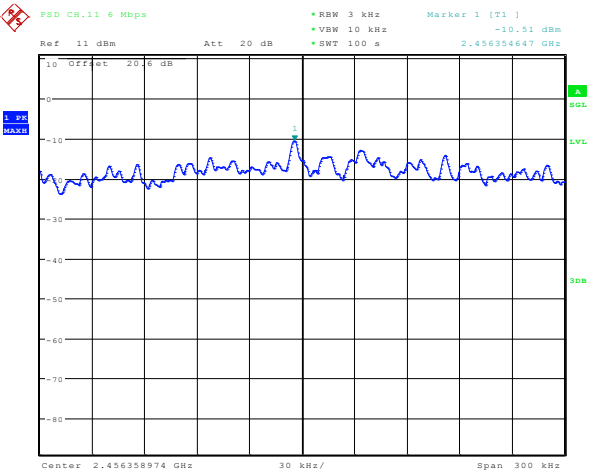
802.11b/g/n RF Conducted Emission Test Results cont'd

Figure 6-22: Peak Power Spectral Density
802.11n, Channel 1, MCS 0



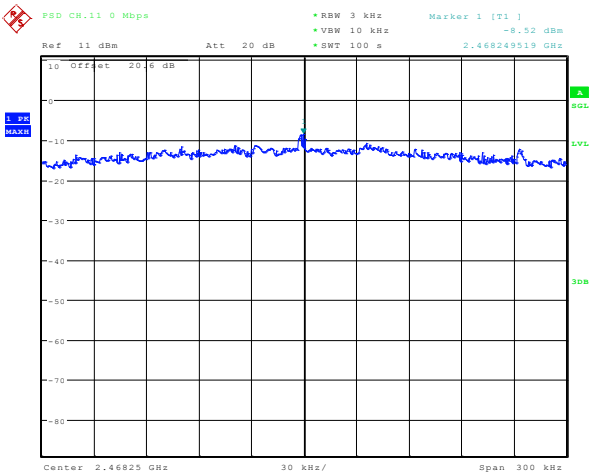
Date: 12.MAY.2015 11:03:38

Figure 6-23: Peak Power Spectral Density
802.11n, Channel 6, MCS 0




Date: 12.MAY.2015 11:10:11

Figure 6-24: Peak Power Spectral Density
802.11n, Channel 11, MCS 0



Date: 12.MAY.2015 11:16:48


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802.11b/g/n RF Conducted Emission Test Results cont'd

Spurious RF Conducted Emissions

The EUT met the requirements of the spurious RF conducted emissions as per 47 CFR 15.247(c) and RSS-210. Channels 1, 6 and 11 were measured at 1 Mbps, 5.5 Mbps, and 11 Mbps each for 802.11b mode, 6 Mbps, 24 Mbps, and 54 Mbps each for 802.11g mode, and MCS 0, 4, and 7 for 802.11n mode. Peak power was measured using an Agilent power meter, model N1911A with model N1921A power sensor. A reference offset of 18.4 dB was applied to the power meter reference level for the coaxial cable loss and attenuators in the test circuit.

Channel	Data Rate	Power (dBm)	Max. Measured Level (dBm)	Max. Measured Level from Carrier (dBc)	Limit (dBc)
1	1 Mbps	13.96	-26.10	-40.87	-20
	5.5 Mbps	14.59	-34.03	-48.62	-20
	11 Mbps	14.61	-26.17	-40.78	-20
	6 Mbps	16.07	-24.55	-40.62	-20
	24 Mbps	15.23	-35.96	-51.20	-20
	54 Mbps	14.33	-36.91	-51.24	-20
	MCS 0	15.14	-36.68	-51.83	-20
	MCS 4	14.32	-35.52	-49.84	-20
	MCS 7	12.84	-32.24	-45.08	-20
6	1 Mbps	14.77	-26.01	-40.78	-20
	5.5 Mbps	14.97	-30.81	-45.78	-20
	11 Mbps	14.89	-30.24	-45.13	-20
	6 Mbps	16.78	-36.62	-53.40	-20
	24 Mbps	13.32	-35.90	-49.22	-20
	54 Mbps	14.05	-36.86	-50.91	-20
	MCS 0	16.92	-36.51	-53.43	-20
	MCS 4	14.64	-35.86	-50.50	-20
	MCS 7	14.08	-19.98	-34.07	-20


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802.11b/g/n RF Conducted Emission Test Results cont'd

Channel	Data Rate	Power (dBm)	Max. Measured Level (dBm)	Max. Measured Level from Carrier (dBc)	Limit (dBc)
11	1 Mbps	14.42	-24.46	-38.89	-20
	5.5 Mbps	14.43	-24.40	-38.83	-20
	11 Mbps	14.67	-34.20	-48.86	-20
	6 Mbps	15.57	-18.41	-33.98	-20
	24 Mbps	15.51	-36.61	-52.12	-20
	54 Mbps	15.54	-36.57	-52.11	-20
	MCS 0	15.40	-36.31	-51.70	-20
	MCS 4	12.59	-36.19	-48.78	-20
	MCS 7	13.25	-36.12	-49.37	-20

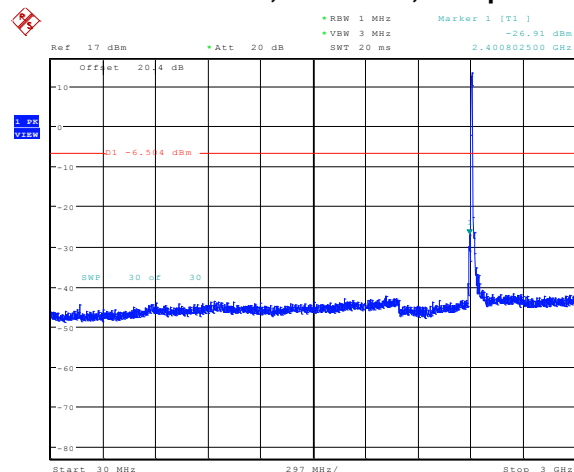
The emissions were in the NF.

See figures 6-25 to 6-33 for the plots of the spurious RF conducted emissions for Channels 1, 6 and 11, at 1 Mbps each for 802.11b mode, 6 Mbps each for 802.11g mode, and MCS 0 each for 802.11n mode.

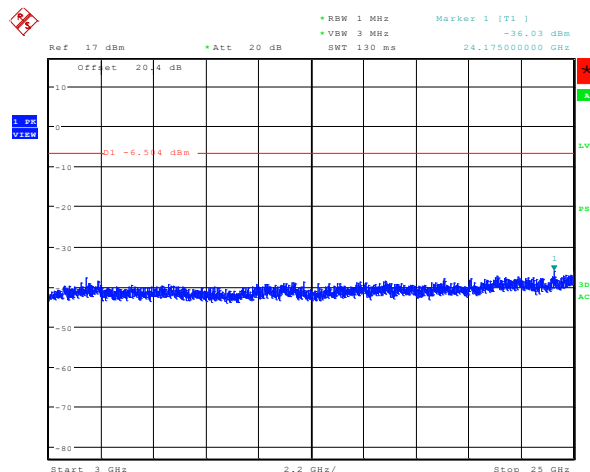
	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 6	
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802.11b/g/n RF Conducted Emission Test Results cont'd

**Figure 6-25: Spurious Conducted RF Emissions
802.11b, Channel 1, 1 Mbps**

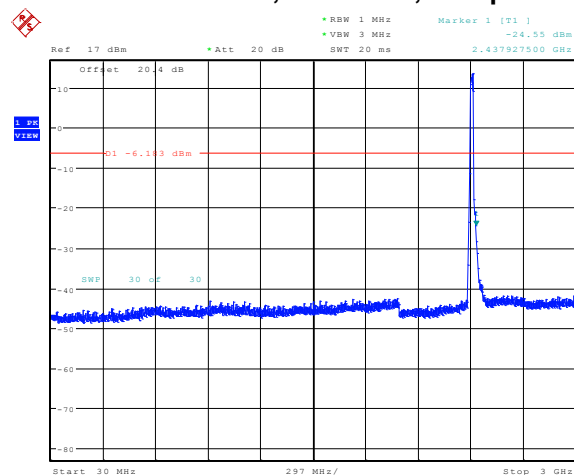


Date: 25.APR.2015 19:55:15

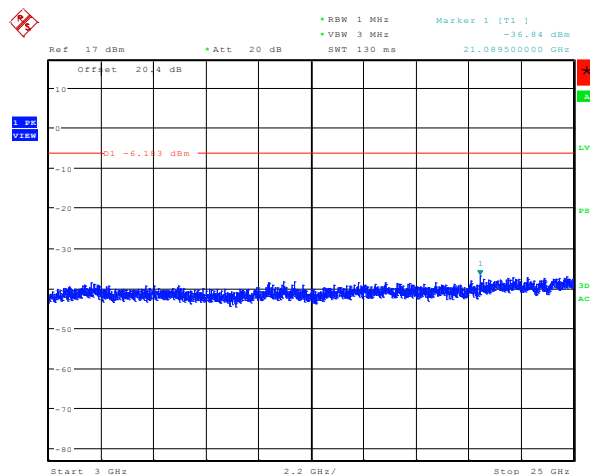


Date: 25.APR.2015 19:55:22

**Figure 6-26 : Spurious Conducted RF Emissions
802.11b, Channel 6, 1 Mbps**



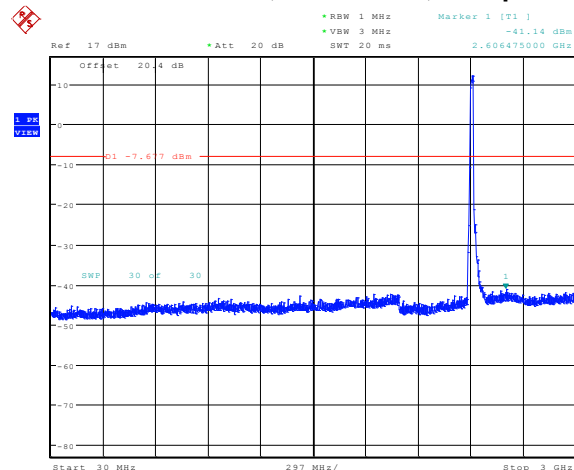
Date: 25.APR.2015 19:56:43



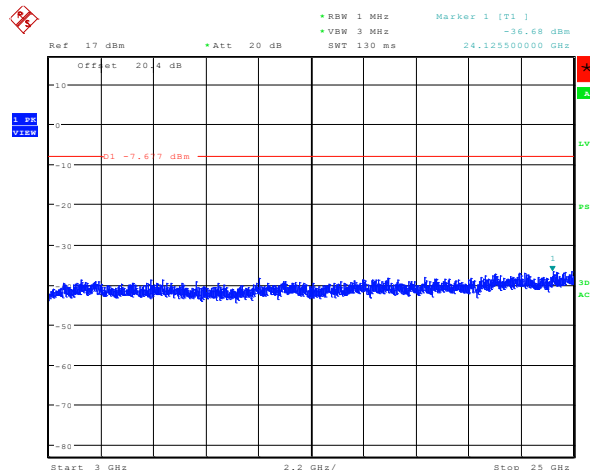
Date: 25.APR.2015 19:56:49

802.11b/g/n RF Conducted Emission Test Results cont'd

**Figure 6-27: Spurious Conducted RF Emissions
802.11b, Channel 11, 1 Mbps**

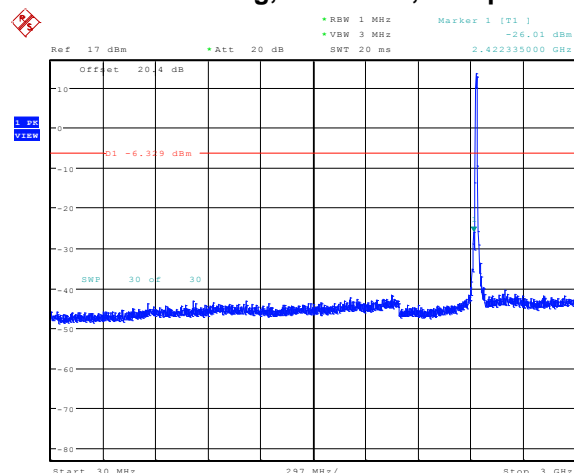


Date: 25.APR.2015 19:58:10

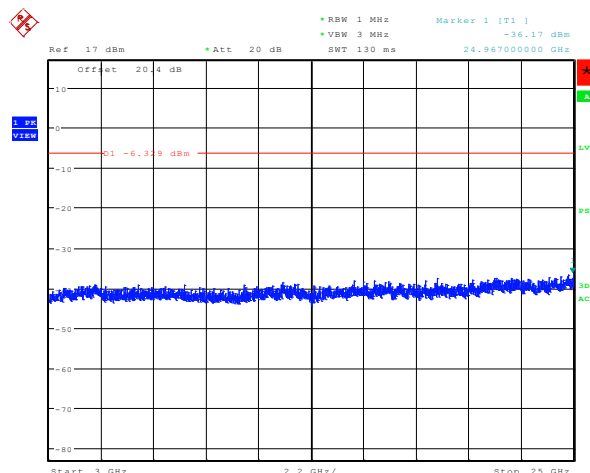


Date: 25.APR.2015 19:58:16


Figure 6-28: Spurious Conducted RF Emissions
802.11g, Channel 1, 6 Mbps



Date: 25.APR.2015 19:59:37

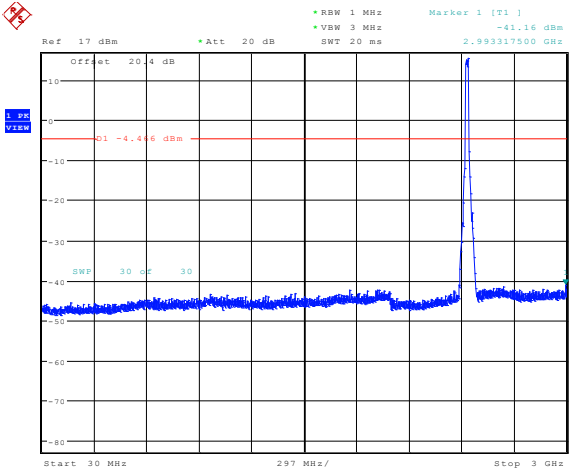


Date: 25.APR.2015 19:59:44

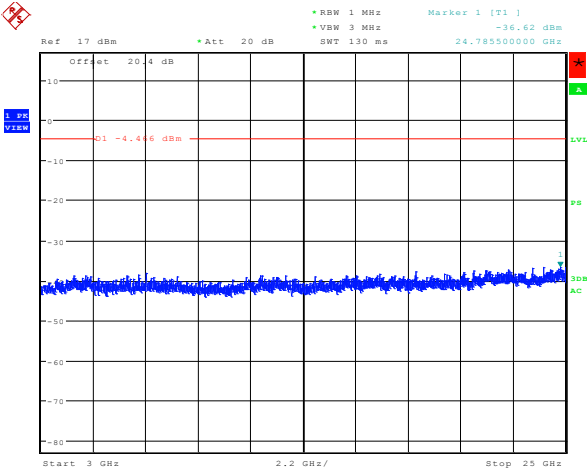
	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 6	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11b/g/n RF Conducted Emission Test Results cont'd

Figure 6-29: Spurious Conducted RF Emissions
802.11g, Channel 6, 6 Mbps

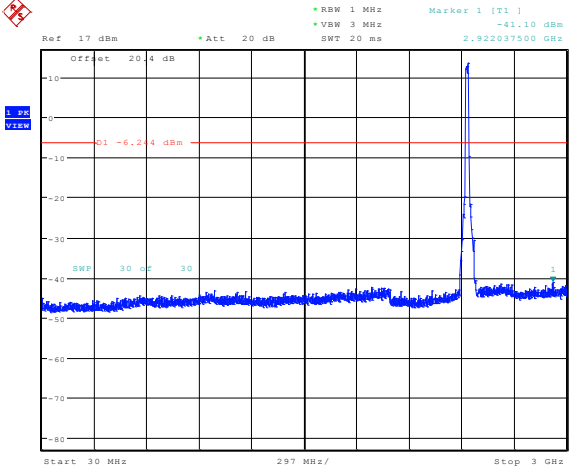


Date: 25.APR.2015 20:01:04

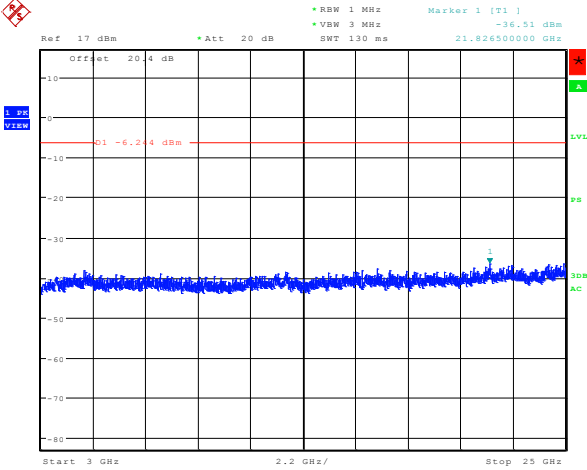


Date: 25.APR.2015 20:01:11


Figure 6-30: Spurious Conducted RF Emissions
802.11g, Channel 11, 6 Mbps



Date: 25.APR.2015 20:02:31

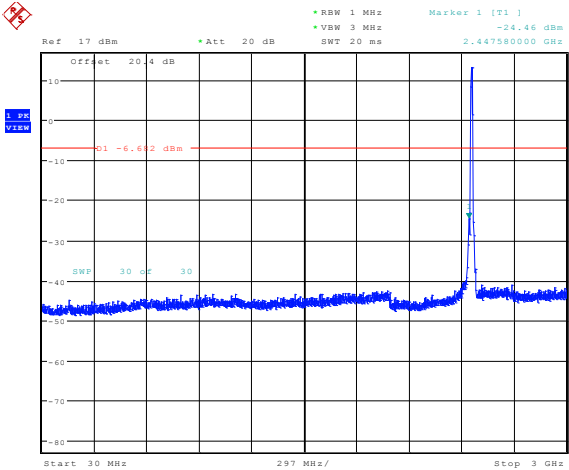


Date: 25.APR.2015 20:02:38

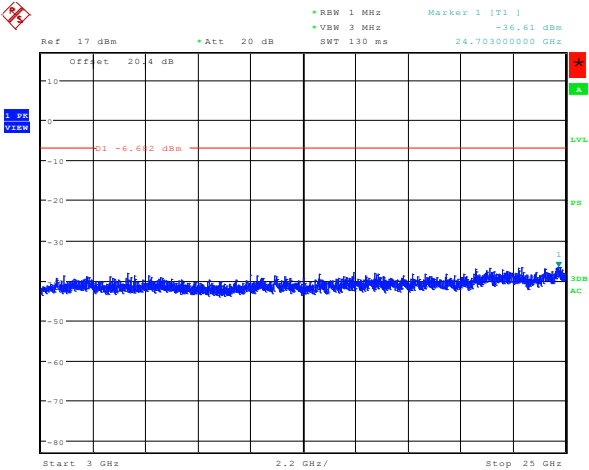
	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 6	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11b/g/n RF Conducted Emission Test Results cont'd

Figure 6-31: Spurious Conducted RF Emissions
802.11n, Channel 1, MCS 0

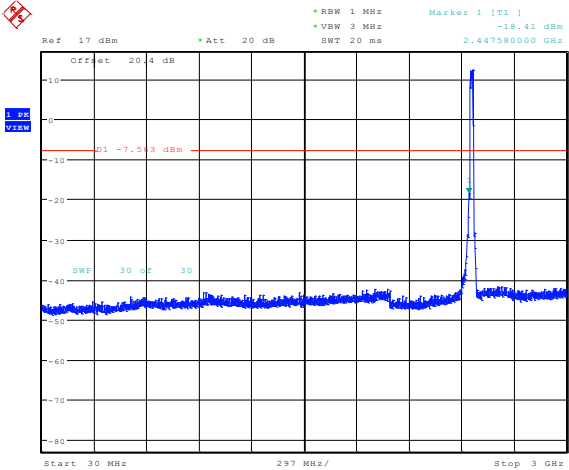


Date: 25.APR.2015 20:03:58

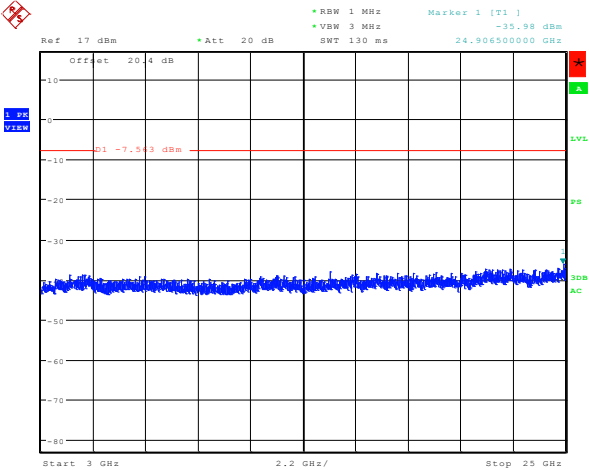


Date: 25.APR.2015 20:04:05


Figure 6-32: Spurious Conducted RF Emissions
802.11n, Channel 6, MCS 0



Date: 25.APR.2015 20:05:25

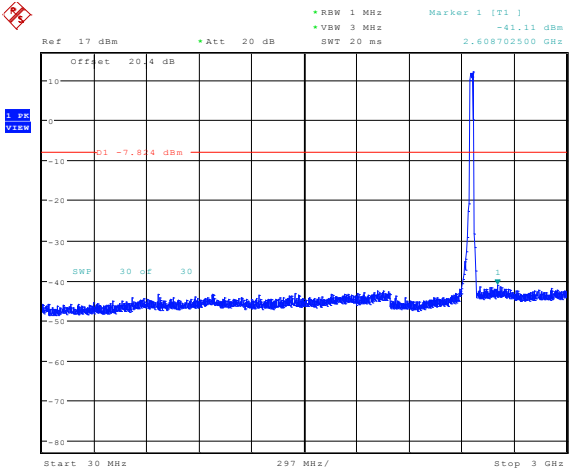


Date: 25.APR.2015 20:05:32

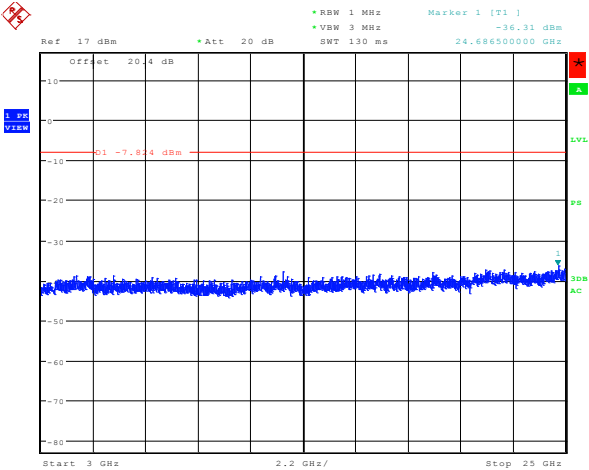
	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 6	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11b/g/n RF Conducted Emission Test Results cont'd


Figure 6-33: Spurious Conducted RF Emissions
802.11n, Channel 11, MCS 0




Date: 25.APR.2015 20:06:52



Date: 25.APR.2015 20:06:59

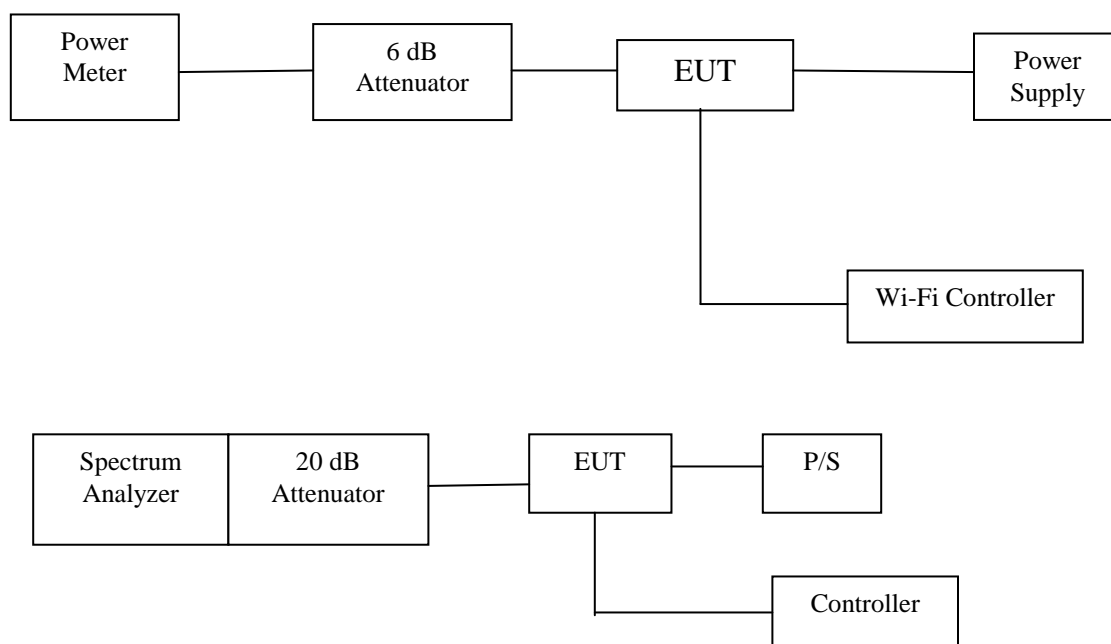
	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

APPENDIX 7 – 802.11a/n CONDUCTED EMISSIONS TEST DATA/PLOTS

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
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802.11a/n RF Conducted Emission Test Results

Test Setup Diagram




A reference offset of 8.9 dB was applied to the spectrum analyzer and 7.4 dB to the Power Meter reference level for the attenuators and coaxial cable loss in the test circuit.

Date of test: April 6, 2015

The measurements were performed by Sijia LI.

The environmental test conditions were: Temperature: 25.7°C
 Relative Humidity: 31.2 %

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
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802.11a RF Conducted Emission Test Results cont'd

6 dB Bandwidth

The EUT met the requirements of the 6 dB bandwidth as per 47 CFR 15.247(a) (2) and RSS-210. Channels 36, 48, 64, 100, 140, and 165 were measured at 6 Mbps, 24 Mbps, and 54 Mbps each for 802.11a mode.

Channel	Data Rate	Limit (kHz)	Measured Level (MHz)
36	6 Mbps	≥ 500	16.38
	24 Mbps	≥ 500	16.48
	54 Mbps	≥ 500	16.40
48	6 Mbps	≥ 500	16.36
	24 Mbps	≥ 500	16.30
	54 Mbps	≥ 500	16.42
64	6 Mbps	≥ 500	16.36
	24 Mbps	≥ 500	16.48
	54 Mbps	≥ 500	16.42
100	6 Mbps	≥ 500	16.36
	24 Mbps	≥ 500	16.30
	54 Mbps	≥ 500	16.46
140	6 Mbps	≥ 500	16.38
	24 Mbps	≥ 500	16.28
	54 Mbps	≥ 500	16.42
165	6 Mbps	≥ 500	16.16
	24 Mbps	≥ 500	16.28
	54 Mbps	≥ 500	16.42

See figures 7-1 to 7-6 for the plots of the 6 dB bandwidth measurements for Channel 36, 48, 64, 100, 140, and 165 at 6 Mbps each for 802.11a mode

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results

6 dB Bandwidth

The EUT met the requirements of the 6 dB bandwidth as per 47 CFR 15.247(a) (2) and RSS-210. Channels 36, 100 and 165 were measured at MCS 0, MCS 4 and MCS 7 each for 802.11n mode.


20 MHz Bandwidth

Channel	Data Rate	Limit (kHz)	Measured Level (MHz)
36	MCS0	≥ 500	17.52
	MCS4	≥ 500	17.48
	MCS7	≥ 500	17.50
100	MCS0	≥ 500	17.60
	MCS4	≥ 500	17.72
	MCS7	≥ 500	17.76
165	MCS0	≥ 500	17.52
	MCS4	≥ 500	17.76
	MCS7	≥ 500	17.76

40 MHz Bandwidth

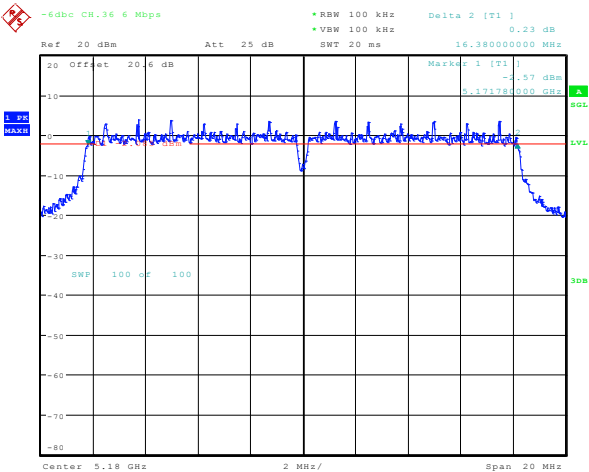
Channel	Data Rate	Limit (kHz)	Measured Level (MHz)
36	MCS0	≥ 500	36.00
	MCS4	≥ 500	36.48
	MCS7	≥ 500	36.52
100	MCS0	≥ 500	36.20
	MCS4	≥ 500	36.24
	MCS7	≥ 500	35.88
165	MCS0	≥ 500	36.16
	MCS4	≥ 500	36.24
	MCS7	≥ 500	36.24

See figures 7-7 to 7-12 for the plots of the 6 dB bandwidth measurements for Channel 36, 100 and 165 at MCS 0 each for 802.11n mode.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

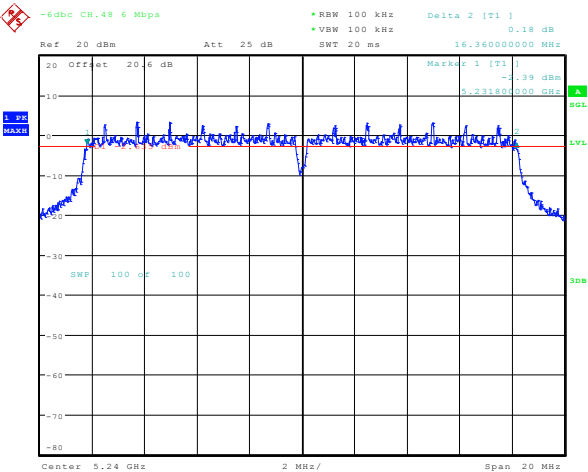
802.11a RF Conducted Emission Test Results cont'd

Figure 7-1: 6 dB Bandwidth
802.11a, Channel 36, 6 Mbps



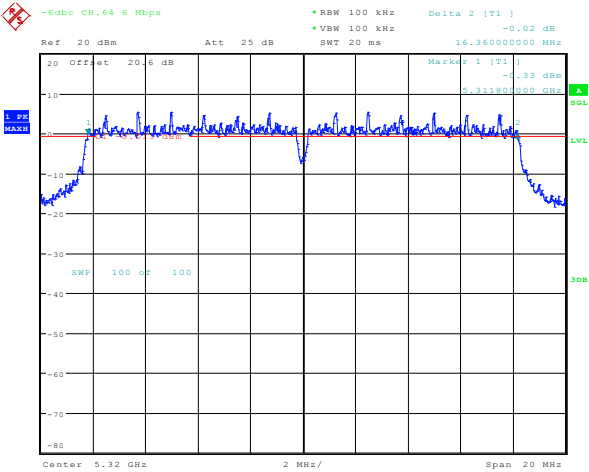
Date: 6.APR.2015 15:52:52

Figure 7-2: 6 dB Bandwidth
802.11a, Channel 48, 6 Mbps



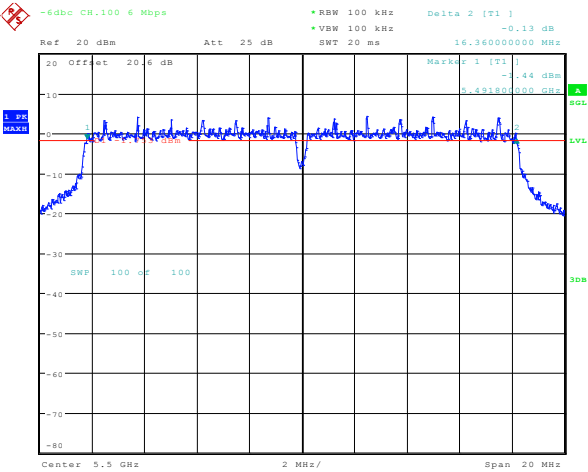
Date: 6.APR.2015 15:53:25

Figure 7-3: 6 dB Bandwidth
802.11a, Channel 64, 6 Mbps




Date: 6.APR.2015 15:53:59

Figure 7-4: 6 dB Bandwidth
802.11a, Channel 100, 6 Mbps

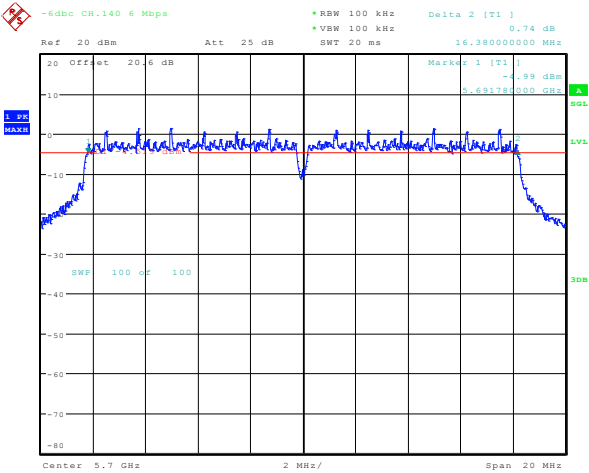


Date: 6.APR.2015 15:54:32

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
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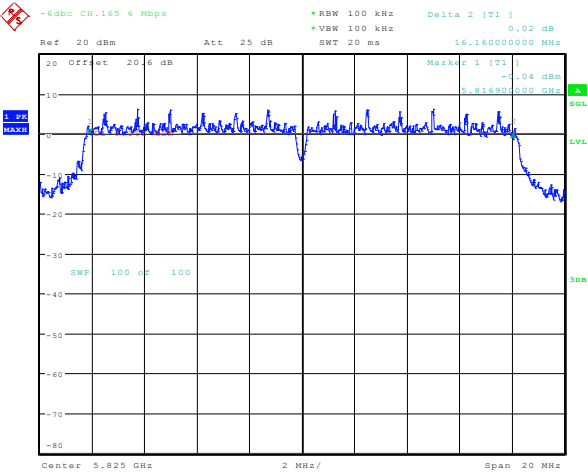
802.11a RF Conducted Emission Test Results cont'd

Figure 7-5: 6 dB Bandwidth
802.11a, Channel 140, 6 Mbps




Date: 6.APR.2015 15:55:06

Figure 7-6: 6 dB Bandwidth
802.11a, Channel 165, 6 Mbps



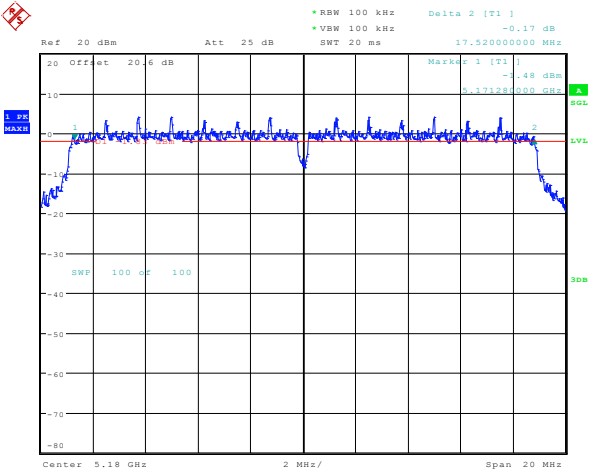
Date: 6.APR.2015 15:55:39

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results cont'd

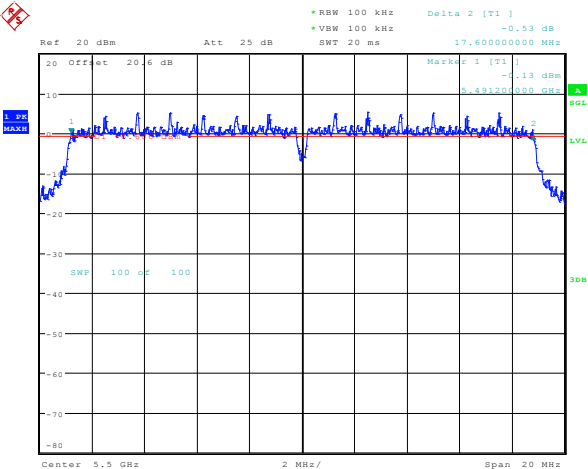
20 MHz Bandwidth

Figure 7-7: 6 dB Bandwidth
802.11n, Channel 36, MCS 0



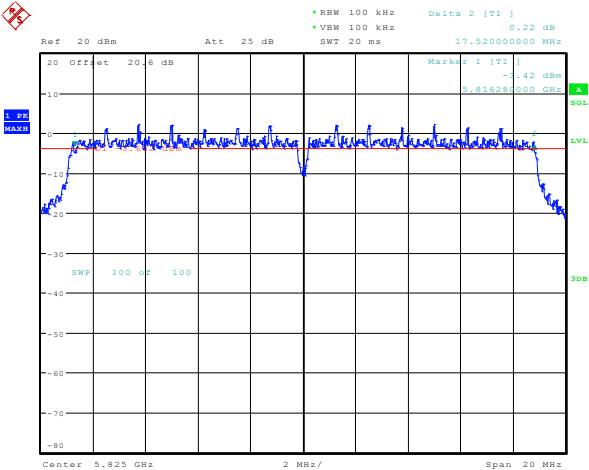
Date: 8.APR.2015 12:37:57

Figure 7-8: 6 dB Bandwidth
802.11n, Channel 100, MCS 0




Date: 8.APR.2015 12:38:34

Figure 7-9: 6 dB Bandwidth
802.11n, Channel 165, MCS 0

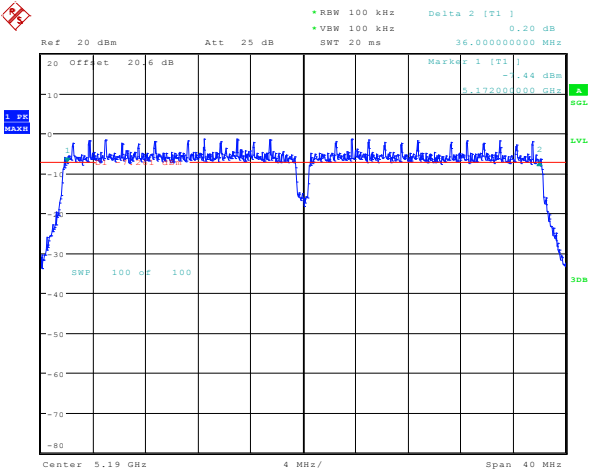


Date: 8.APR.2015 12:39:11

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

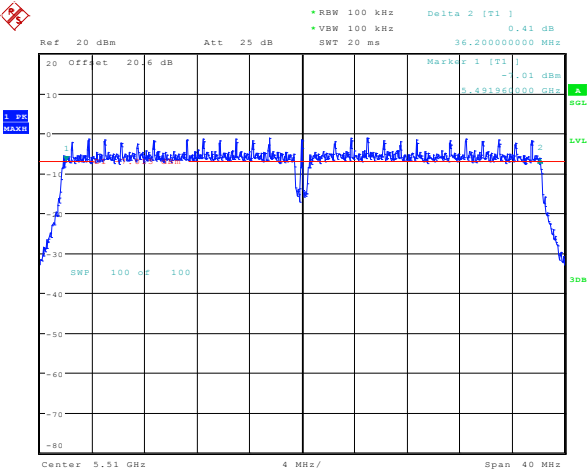
40 MHz Bandwidth

Figure 7-10: 6 dB Bandwidth
802.11n, Channel 36, MCS 0



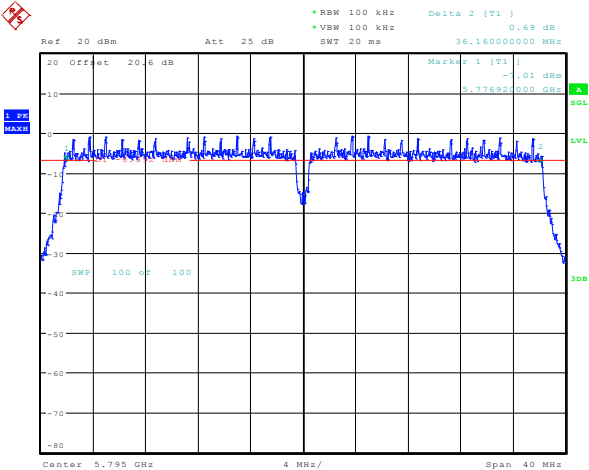
Date: 25.APR.2015 18:27:49

Figure 7-11: 6 dB Bandwidth
802.11n, Channel 100, MCS 0




Date: 25.APR.2015 18:28:21

Figure 7-12: 6 dB Bandwidth
802.11n, Channel 165, MCS 0



Date: 25.APR.2015 18:34:30


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
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802.11a RF Conducted Emission Test Results cont'd

Maximum Conducted Output Power

The EUT met the requirements of the maximum conducted output power of class 2 as per 47 CFR 15.407 and RSS-210. Channels 36, 48, 64, 100, 140 and 165 were measured for 802.11a mode using an Agilent power meter, model N1911A with model N1921A power sensor. A reference offset of 8.9 dB was applied to the power meter reference level for the coaxial cable loss and attenuators in the test circuit.

Channel	Data Rate	Power Limit (mW)	Measured Level (dBm)	Measured Level (W)
36	6 Mbps	< 50.0	15.49	0.0354
	24 Mbps	< 50.0	14.68	0.0293
	54 Mbps	< 50.0	13.91	0.0246
48	6 Mbps	< 50.0	17.04	0.0506
	24 Mbps	< 50.0	15.92	0.0391
	54 Mbps	< 50.0	13.58	0.0228
64	6 Mbps	< 250.0	16.02	0.0310
	24 Mbps	< 250.0	15.28	0.0337
	54 Mbps	< 250.0	14.28	0.0267
100	6 Mbps	< 250.0	13.12	0.0205
	24 Mbps	< 250.0	12.15	0.0164
	54 Mbps	< 250.0	11.29	0.0134
140	6 Mbps	< 250.0	15.25	0.0334
	24 Mbps	< 250.0	14.45	0.0278
	54 Mbps	< 250.0	13.71	0.0234
165	6 Mbps	< 1000	17.29	0.0535
	24 Mbps	< 1000	16.02	0.0310
	54 Mbps	< 1000	13.79	0.0240

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
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802.11n RF Conducted Emission Test Results

Maximum Conducted Output Power

The EUT met the requirements of the maximum conducted output power of class 2 as per 47 CFR 15.407 and RSS-210. Channels 36, 64, 100, 140 and 165 were measured for 802.11n mode using an Agilent power meter, model N1911A with model N1921A power sensor. A reference offset of 8.9 dB was applied to the power meter reference level for the coaxial cable loss and attenuators in the test circuit.


20 MHz Bandwidth

Channel	Data Rate	Class 2 Limit (W)	Measured Level (dBm)	Measured Level (W)
36	5180	< 50.0	15.49	0.0354
	24 Mbps	< 50.0	14.37	0.0273
	54 Mbps	< 50.0	12.98	0.0200
64	5320	< 250.0	16.49	0.0445
	24 Mbps	< 250.0	15.10	0.0323
	54 Mbps	< 250.0	12.41	0.0174
100	5500	< 250.0	16.53	0.0450
	24 Mbps	< 250.0	15.48	0.0353
	54 Mbps	< 250.0	13.27	0.0212
140	5700	< 250.0	12.79	0.0200
	24 Mbps	< 250.0	11.61	0.0144
	54 Mbps	< 250.0	11.05	0.0127
165	5825	< 1000	13.69	0.0233
	24 Mbps	< 1000	12.57	0.0180
	54 Mbps	< 1000	12.11	0.0162

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
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40 MHz Bandwidth

Channel	Data Rate	Class 2 Limit (W)	Measured Level (dBm)	Measured Level (W)
36	5180	< 50.0	16.17	0.0414
	24 Mbps	< 50.0	14.55	0.0285
	54 Mbps	< 50.0	13.71	0.0234
64	5320	< 250.0	15.88	0.0387
	24 Mbps	< 250.0	14.39	0.0275
	54 Mbps	< 250.0	13.46	0.0221
100	5500	< 250.0	16.43	0.044
	24 Mbps	< 250.0	14.92	0.0310
	54 Mbps	< 250.0	14.18	0.0261
140	5700	< 250.0	18.88	0.0773
	24 Mbps	< 250.0	16.21	0.0418
	54 Mbps	< 250.0	14.75	0.0300
165	5825	< 1000	18.17	0.0655
	24 Mbps	< 1000	17.13	0.0517
	54 Mbps	< 1000	15.73	0.0373

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
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802.11a RF Conducted Emission Test Results cont'd

Band Edge Compliance

The EUT met the requirements of the band edge compliance as per 47 CFR 15.407 and RSS-210. Channels 36, 64, 100, 140, 149, and 165 were measured at 6 Mbps, 24 Mbps, and 54 Mbps each for 802.11a mode.

Channel	Data Rate	Limit (dBc)	Measured Level (dBc)	Margin (dBc)
36	6 Mbps	< -20	-45.76	-25.76
	24 Mbps	< -20	-45.57	-25.57
	54 Mbps	< -20	-45.45	-25.45
64	6 Mbps	< -20	-46.70	-26.70
	24 Mbps	< -20	-46.05	-26.05
	54 Mbps	< -20	-44.70	-24.70
100	6 Mbps	< -20	-45.05	-25.05
	24 Mbps	< -20	-46.30	-26.30
	54 Mbps	< -20	-45.75	-25.75
140	6 Mbps	< -20	-43.72	-23.72
	24 Mbps	< -20	-43.70	-23.70
	54 Mbps	< -20	-43.71	-23.71
149	6 Mbps	< -20	-38.48	-18.48
	24 Mbps	< -20	-41.33	-21.33
	54 Mbps	< -20	-42.35	-22.35
165	6 Mbps	< -20	-32.06	-12.06
	24 Mbps	< -20	-35.10	-15.10
	54 Mbps	< -20	-37.44	-17.44

See figures 7-13 to 7-18 for the plots of the band edge compliance measurements for Channel 36, 64, 100, 140, 149 and 165 at 6 Mbps each for 802.11a mode.

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802.11n RF Conducted Emission Test Results

Band Edge Compliance

The EUT met the requirements of the band edge compliance as per 47 CFR 15.407 and RSS-210. Channels 36, 64, 100, 140, 149 and 165 were measured at MCS 0, MCS 4 and MCS 7 each for 802.11n mode.

20 MHz bandwidth

Channel	Data Rate	Limit (dBc)	Measured Level (dBc)	Margin (dBc)
36	6 Mbps	< -20	-44.75	-24.75
	24 Mbps	< -20	-45.21	-25.21
	54 Mbps	< -20	-45.40	-25.40
64	6 Mbps	< -20	-43.75	-23.75
	24 Mbps	< -20	-44.61	-24.61
	54 Mbps	< -20	-45.37	-25.37
100	6 Mbps	< -20	-46.44	-26.44
	24 Mbps	< -20	-45.60	-25.60
	54 Mbps	< -20	-46.47	-26.47
140	6 Mbps	< -20	-43.09	-23.09
	24 Mbps	< -20	-43.06	-23.06
	54 Mbps	< -20	-43.87	-23.87
149	6 Mbps	< -20	-38.50	-18.50
	24 Mbps	< -20	-38.58	-18.58
	54 Mbps	< -20	-40.23	-20.23
165	6 Mbps	< -20	-31.49	-11.49
	24 Mbps	< -20	-31.97	-11.97
	54 Mbps	< -20	-38.82	-18.82


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802.11n RF Conducted Emission Test Results

40 MHz bandwidth

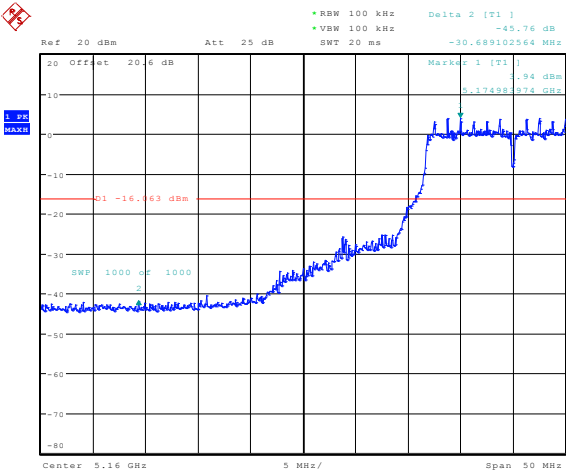
Channel	Data Rate	Limit (dBc)	Measured Level (dBc)	Margin (dBc)
36	6 Mbps	< -20	-38.35	-18.35
	24 Mbps	< -20	-38.70	-18.70
	54 Mbps	< -20	-38.56	-18.56
64	6 Mbps	< -20	-39.61	-19.61
	24 Mbps	< -20	-39.40	-19.40
	54 Mbps	< -20	-40.21	-20.21
100	6 Mbps	< -20	-39.21	-19.21
	24 Mbps	< -20	-38.96	-18.96
	54 Mbps	< -20	-40.23	-20.23
140	6 Mbps	< -20	-24.56	-4.56
	24 Mbps	< -20	-29.84	-9.84
	54 Mbps	< -20	-32.34	-12.34
149	6 Mbps	< -20	-27.51	-7.51
	24 Mbps	< -20	-30.01	-10.01
	54 Mbps	< -20	-31.53	-11.53
165	6 Mbps	< -20	-37.89	-17.89
	24 Mbps	< -20	-37.85	-17.85
	54 Mbps	< -20	-39.85	-19.85

See figures 7-19 to 7-30 for the plots of the band edge compliance measurements for Channel 36, 64, 100, 140, 149, and 165 at MCS 0 each for 802.11n mode.

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Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

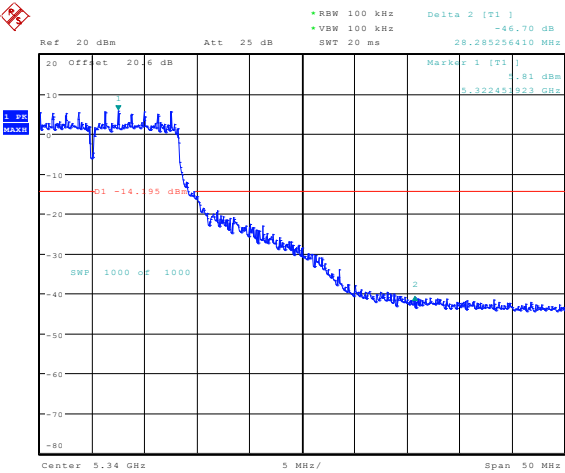
802.11a RF Conducted Emission Test Results cont'd

Figure 7-13: Band Edge Compliance
802.11a, Channel 36, 6 Mbps



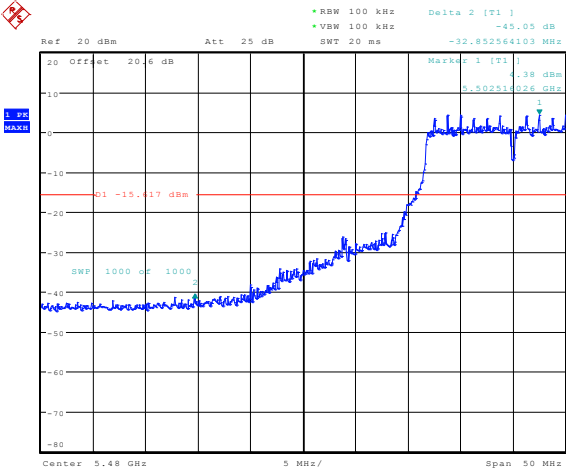
Date: 6.APR.2015 16:06:32

Figure 7-14: Band Edge Compliance
802.11a, Channel 64, 6 Mbps



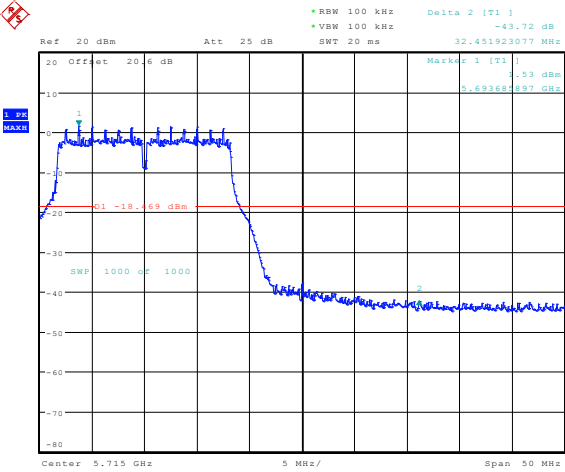
Date: 6.APR.2015 16:08:31

Figure 7-15: Band Edge Compliance
802.11a, Channel 100, 6 Mbps




Date: 6.APR.2015 16:19:46

Figure 7-16: Band Edge Compliance
802.11a, Channel 140, 6 Mbps

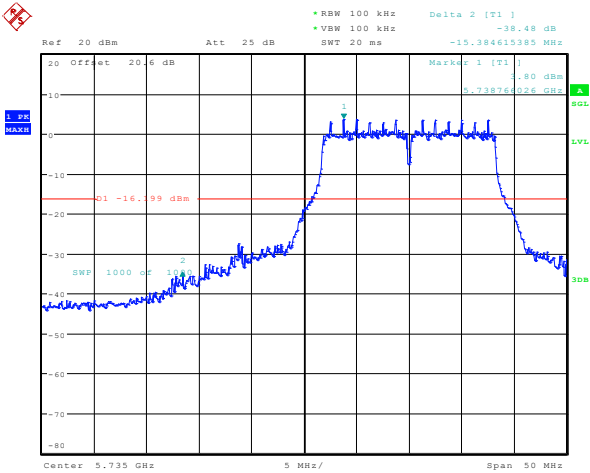


Date: 6.APR.2015 16:23:21

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

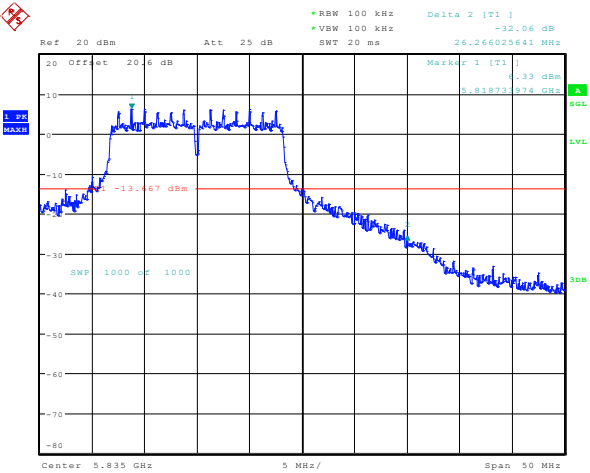
802.11a RF Conducted Emission Test Results cont'd

Figure 7-17: Band Edge Compliance
802.11a, Channel 149, 6 Mbps




Date: 6.APR.2015 16:10:35

Figure 7-18: Band Edge Compliance
802.11a, Channel 165, 6 Mbps



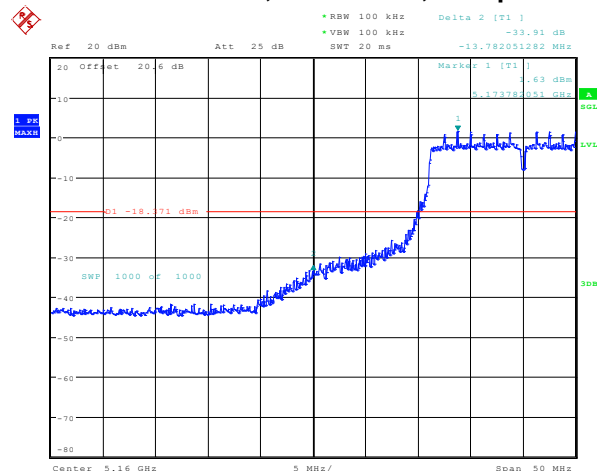
Date: 6.APR.2015 16:17:57

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results

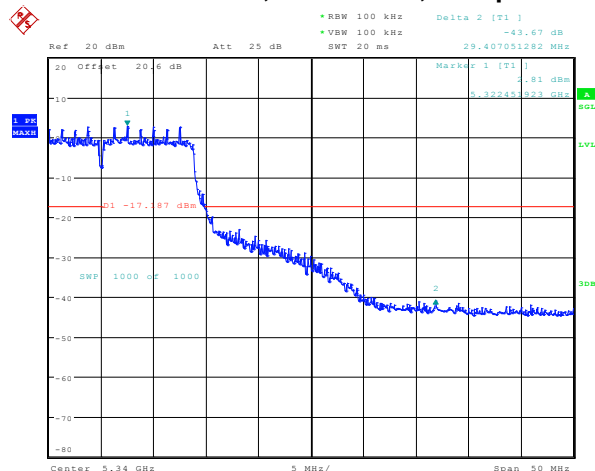
20 MHz Bandwidth

Figure 7-19: Band Edge Compliance
802.11n, Channel 36, 6 Mbps



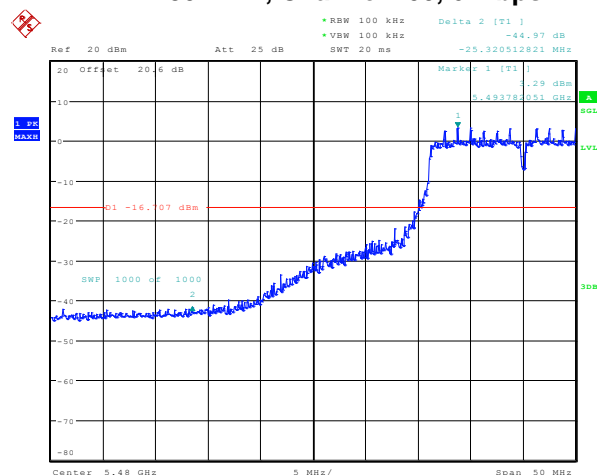
Date: 21.APR.2015 11:22:21

Figure 7-20: Band Edge Compliance
802.11n, Channel 64, 6 Mbps



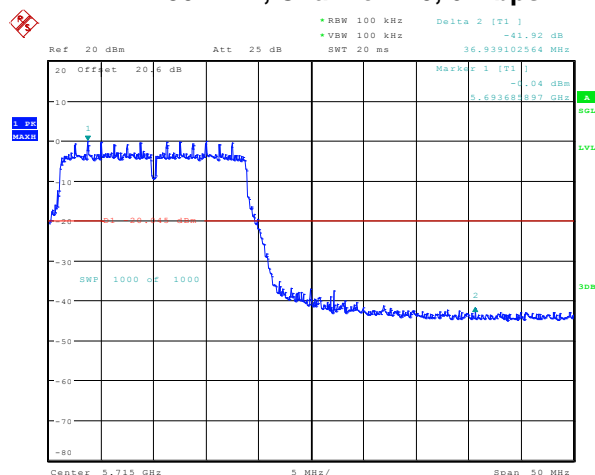
Date: 21.APR.2015 11:30:46

Figure 7-21: Band Edge Compliance
802.11n, Channel 100, 6 Mbps




Date: 21.APR.2015 11:40:06

Figure 7-22: Band Edge Compliance
802.11n, Channel 140, 6 Mbps

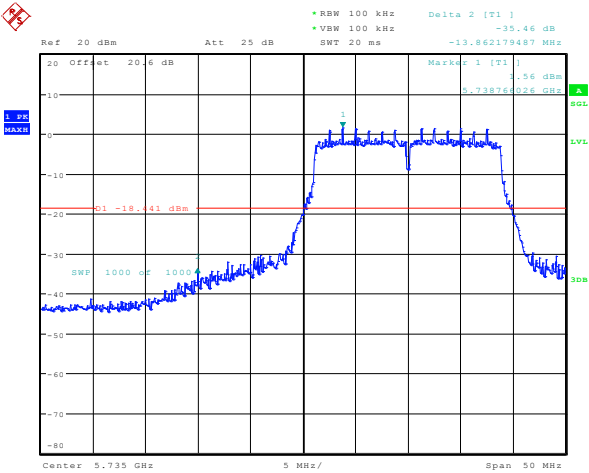


Date: 21.APR.2015 12:00:20

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

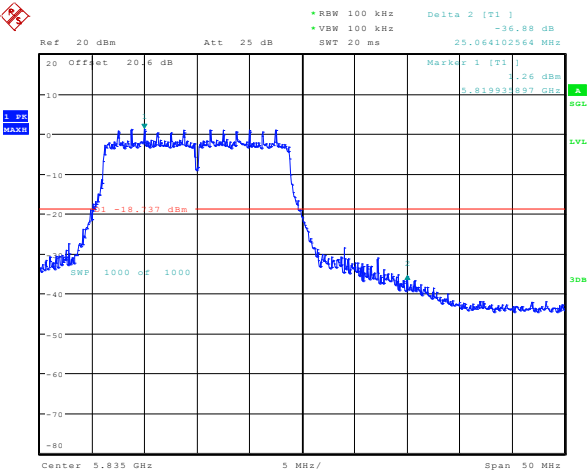
802.11n RF Conducted Emission Test Results cont'd

Figure 7-23: Band Edge Compliance
802.11n, Channel 149, 6 Mbps



Date: 21.APR.2015 11:57:52

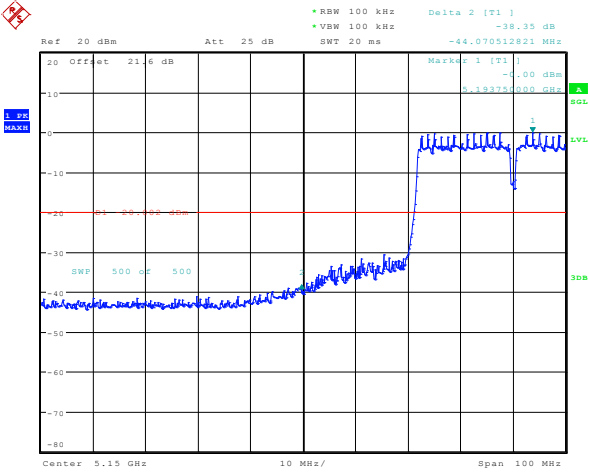
Figure 7-24: Band Edge Compliance
802.11n, Channel 165, 6 Mbps



Date: 21.APR.2015 11:57:01

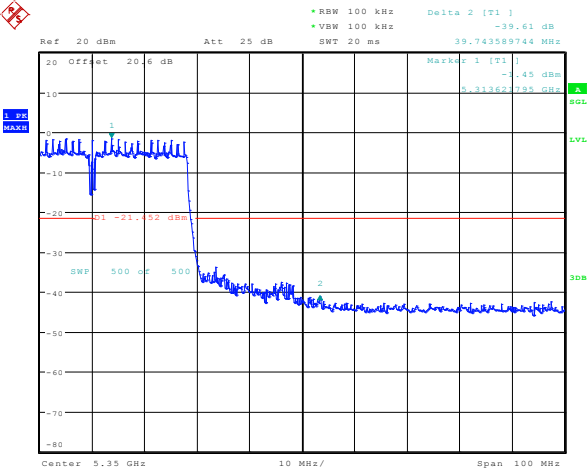
40 MHz Bandwidth

Figure 7-25: Band Edge Compliance
802.11n, Channel 36, 6 Mbps




Date: 25.APR.2015 17:58:06

Figure 7-26: Band Edge Compliance
802.11n, Channel 64, 6 Mbps

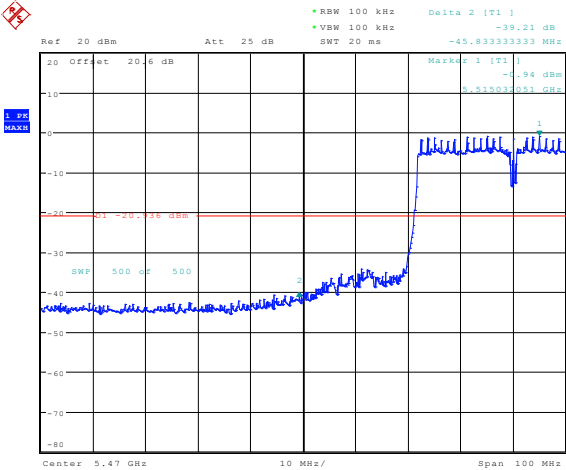


Date: 25.APR.2015 17:59:57

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

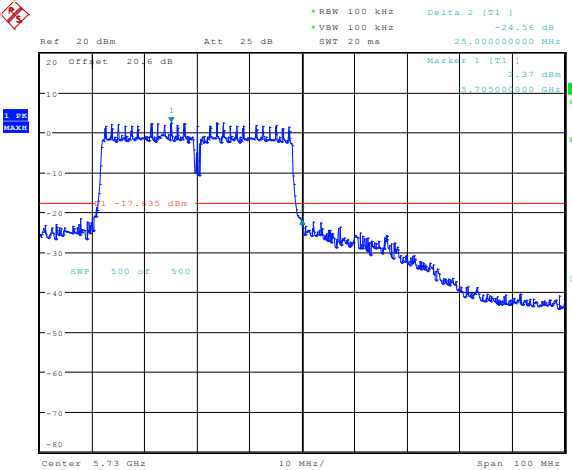
802.11n RF Conducted Emission Test Results cont'd

Figure 7-27: Band Edge Compliance
802.11n, Channel 100, 6 Mbps



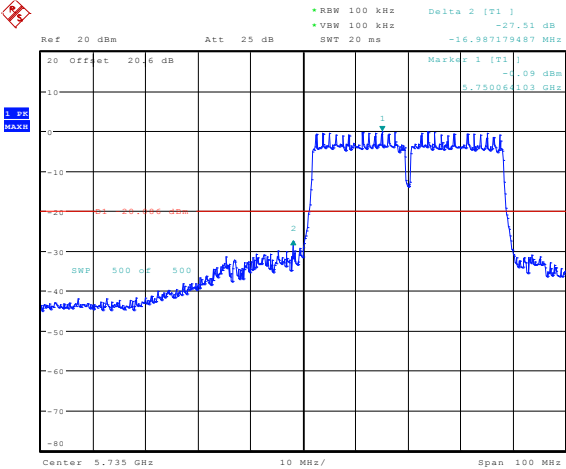
Date: 25.APR.2015 18:01:48

Figure 7-28: Band Edge Compliance
802.11n, Channel 140, 6 Mbps



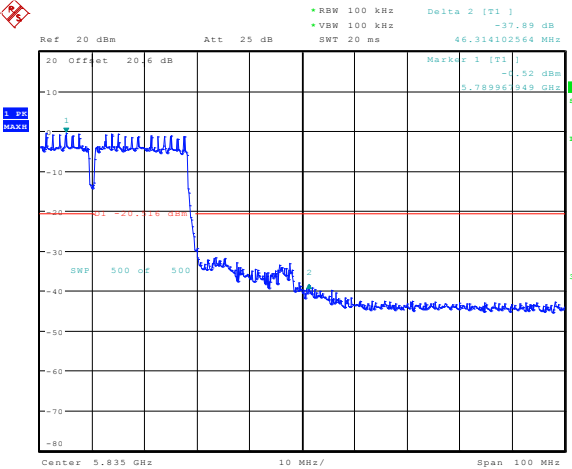
Date: 25.APR.2015 18:03:40

Figure 7-29: Band Edge Compliance
802.11n, Channel 149, 6 Mbps




Date: 25.APR.2015 18:05:33

Figure 7-30: Band Edge Compliance
802.11n, Channel 165, 6 Mbps



Date: 25.APR.2015 18:07:26

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW


802.11a RF Conducted Emission Test Results cont'd

Peak Power Spectral Density

The EUT met the requirements of the peak power spectral density as per 47 CFR 15.407 and RSS-210. Channels 36, 48, 64, 100, 140 and 165 were measured at 6 Mbps, 24 Mbps, and 54 Mbps each for 802.11a mode.

Channel	Data Rate	Limit (dBm)	Measured Level (dBm)	Margin (dBm)
36	6 Mbps	< 11.00	3.84	-7.16
	24 Mbps	< 11.00	3.04	-7.96
	54 Mbps	< 11.00	2.31	-8.69
48	6 Mbps	< 11.00	3.50	-7.50
	24 Mbps	< 11.00	3.37	-7.63
	54 Mbps	< 11.00	1.91	-9.09
64	6 Mbps	< 11.00	5.75	-5.25
	24 Mbps	< 11.00	4.16	-6.84
	54 Mbps	< 11.00	1.91	-9.09
100	6 Mbps	< 11.00	4.51	-6.49
	24 Mbps	< 11.00	3.70	-7.30
	54 Mbps	< 11.00	3.11	-7.89
140	6 Mbps	< 11.00	1.83	-9.17
	24 Mbps	< 11.00	0.99	-10.01
	54 Mbps	< 11.00	0.15	-10.85
165	6 Mbps	< 33.00	-16.49	-33.49
	24 Mbps	< 33.00	-17.08	-34.08
	54 Mbps	< 33.00	-18.71	-35.71

See figures 7-31 to 7-36 for the plots of the peak power spectral density for Channel 36, 48, 64, 100, 140, and 165 at 6 Mbps each for 802.11a mode.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results

Peak Power Spectral Density

The EUT met the requirements of the peak power spectral density as per 47 CFR 15.407 and RSS-210. Channels 36, 64 and 165 were measured at MCS 0, MCS 4 and MCS 7 each for 802.11n mode.


20 MHz Bandwidth

Channel	Data Rate	Limit (dBm)	Measured Level (dBm)	Margin (dBm)
36	6 Mbps	< 4.00	3.83	-0.17
	24 Mbps	< 4.00	2.91	-1.09
	54 Mbps	< 4.00	1.43	-2.57
100	6 Mbps	< 11.00	4.95	-6.05
	24 Mbps	< 11.00	4.13	-6.87
	54 Mbps	< 11.00	1.94	-9.06
165	6 Mbps	< 17.00	-20.03	-37.03
	24 Mbps	< 17.00	-21.03	-38.03
	54 Mbps	< 17.00	-19.66	-36.66

40 MHz Bandwidth

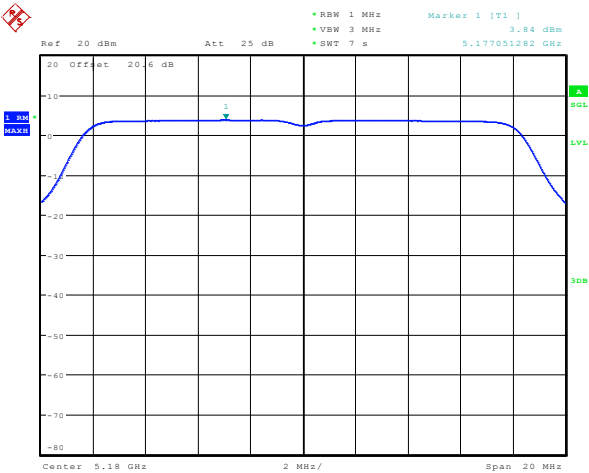
Channel	Data Rate	Limit (dBm)	Measured Level (dBm)	Margin (dBm)
36	6 Mbps	< 4.00	-1.72	-5.72
	24 Mbps	< 4.00	-3.13	-7.13
	54 Mbps	< 4.00	-5.79	-9.79
100	6 Mbps	< 11.00	-1.19	-12.19
	24 Mbps	< 11.00	-2.80	-13.80
	54 Mbps	< 11.00	-5.67	-16.67
161	6 Mbps	< 17.00	-23.32	-40.32
	24 Mbps	< 17.00	-24.36	-41.36
	54 Mbps	< 17.00	-26.74	-43.74

See figures 7-37 to 7-42 for the plots of the peak power spectral density for Channel 36, 64 and 165 at MCS 0 each for 802.11n mode.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

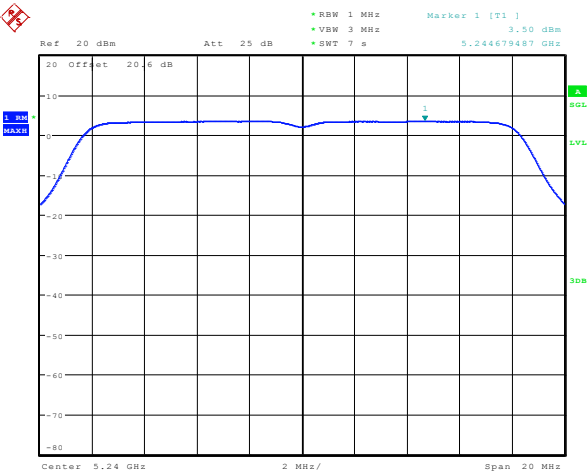
802.11a RF Conducted Emission Test Results cont'd

Figure 7-31: Peak Power Spectral Density
802.11a, Channel 36, 6 Mbps



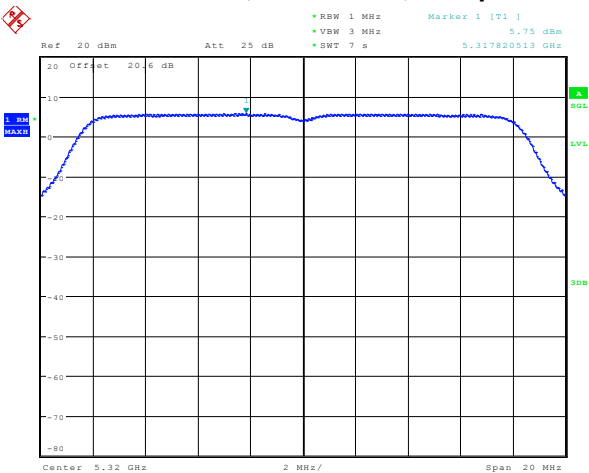
Date: 6.APR.2015 14:41:58

Figure 7-32: Peak Power Spectral Density
802.11a, Channel 48, 6 Mbps



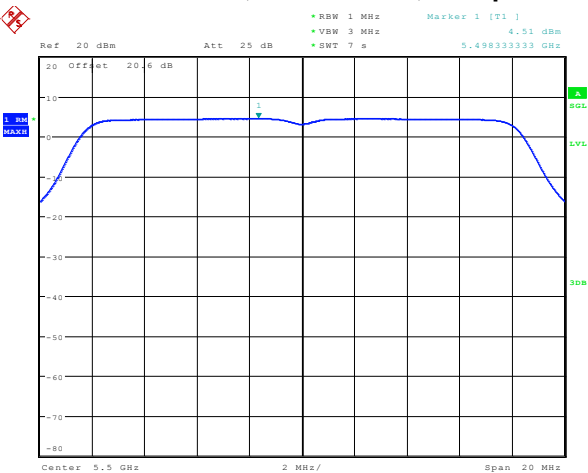
Date: 6.APR.2015 14:42:08

Figure 7-33: Peak Power Spectral Density
802.11a, Channel 64, 6 Mbps




Date: 6.APR.2015 14:42:18

Figure 7-34: Peak Power Spectral Density
802.11a, Channel 100, 6 Mbps

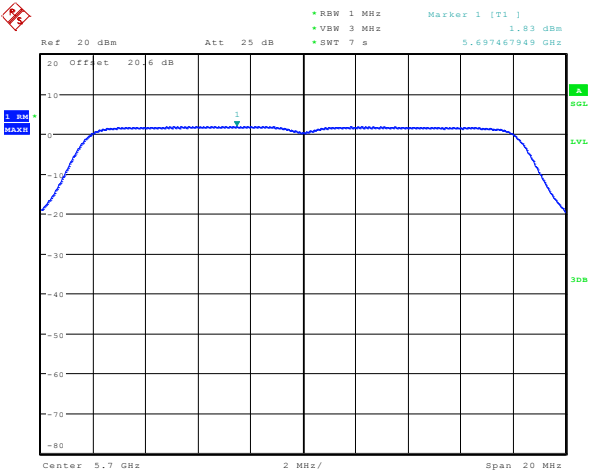


Date: 6.APR.2015 14:42:28

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

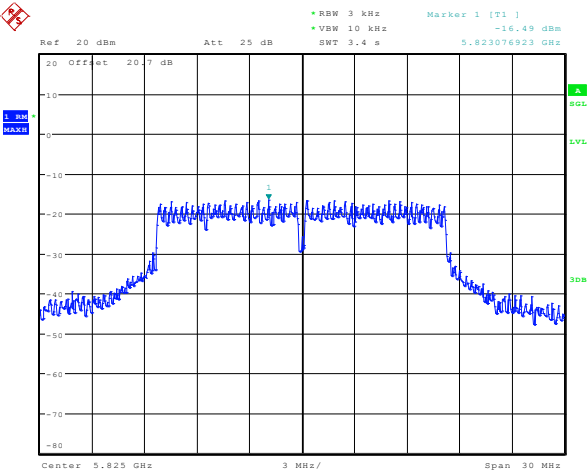
802.11a RF Conducted Emission Test Results cont'd

Figure 7-35: Peak Power Spectral Density
802.11a, Channel 140, 6 Mbps




Date: 6.APR.2015 14:42:38

Figure 7-36: Peak Power Spectral Density
802.11a, Channel 165, 6 Mbps



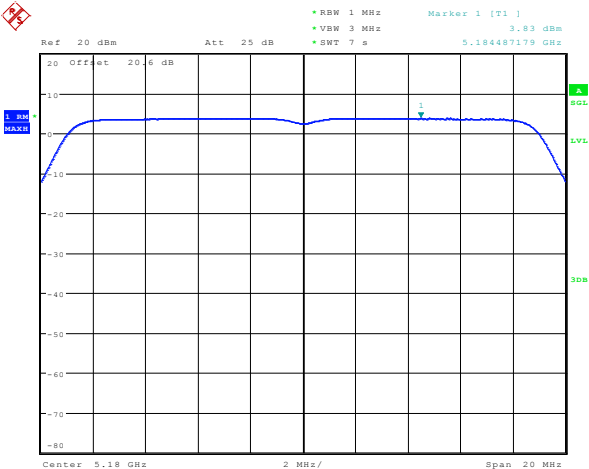
Date: 6.APR.2015 14:50:29

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results

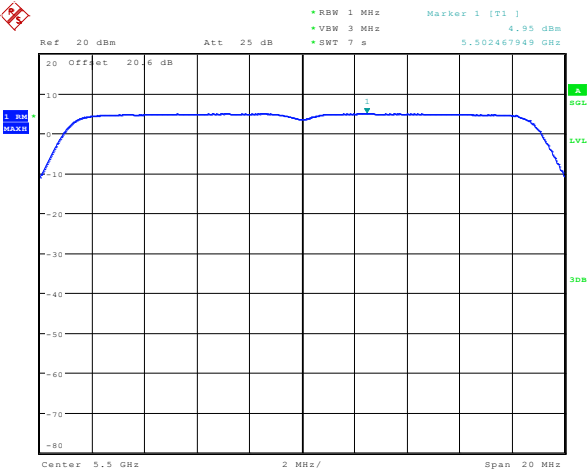
20 MHz bandwidth

Figure 7-37: Peak Power Spectral Density
802.11n, Channel 36, MCS 0



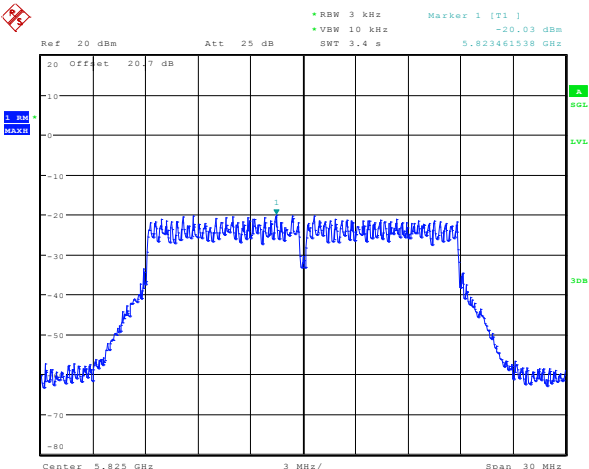
Date: 8.APR.2015 14:27:31

Figure 7-38: Peak Power Spectral Density
802.11n, Channel 64, MCS 0




Date: 8.APR.2015 14:28:04

Figure 7-39: Peak Power Spectral Density
802.11n, Channel 165, MCS 0

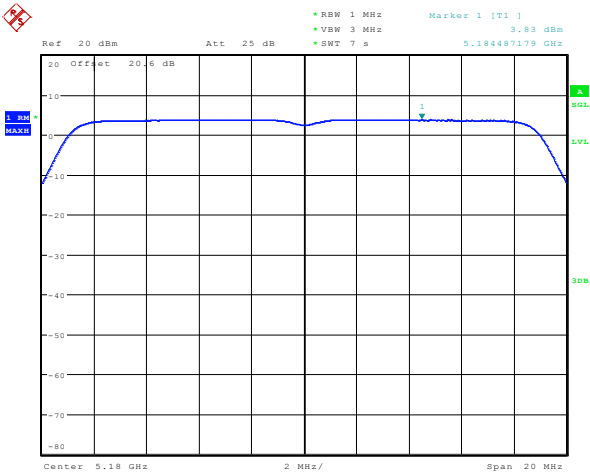


Date: 8.APR.2015 14:37:25

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

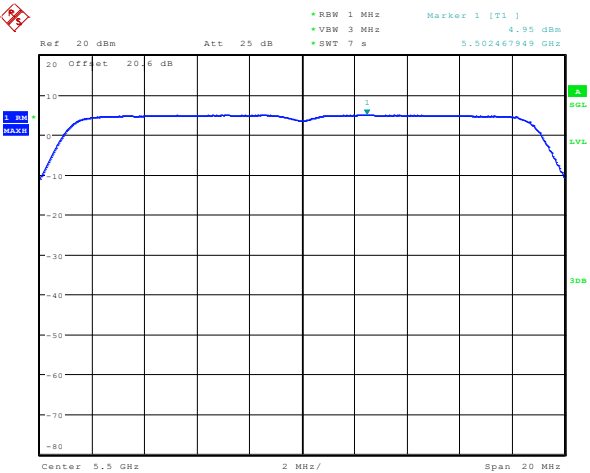
40 MHz bandwidth

**Figure 7-40: Peak Power Spectral Density
802.11n, Channel 36, MCS 0**



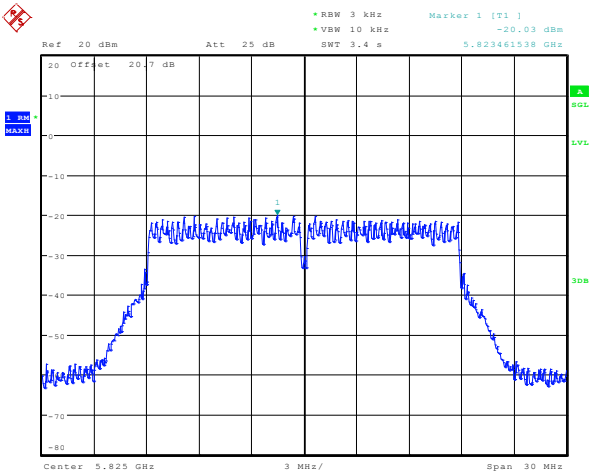
Date: 8.APR.2015 14:27:31

**Figure 7-41: Peak Power Spectral Density
802.11n, Channel 64, MCS 0**




Date: 8.APR.2015 14:28:04

**Figure 7-42: Peak Power Spectral Density
802.11n, Channel 165, MCS 0**



Date: 8.APR.2015 14:37:25

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW


802.11a RF Conducted Emission Test Results cont'd

Spurious RF Conducted Emissions

The EUT met the requirements of the spurious RF conducted emissions as per 47 CFR 15.407 and RSS-210. Channels 36, 64, 100 and 140 were measured at 6 Mbps, 24Mbps and 54 Mbps each for 802.11a mode. Peak power was measured using an Agilent power meter, model N1911A with model N1921A power sensor. A reference offset of 29.0 dB was applied to the spectrum analyzer reference level for the attenuators and coaxial cable loss in the test circuit.

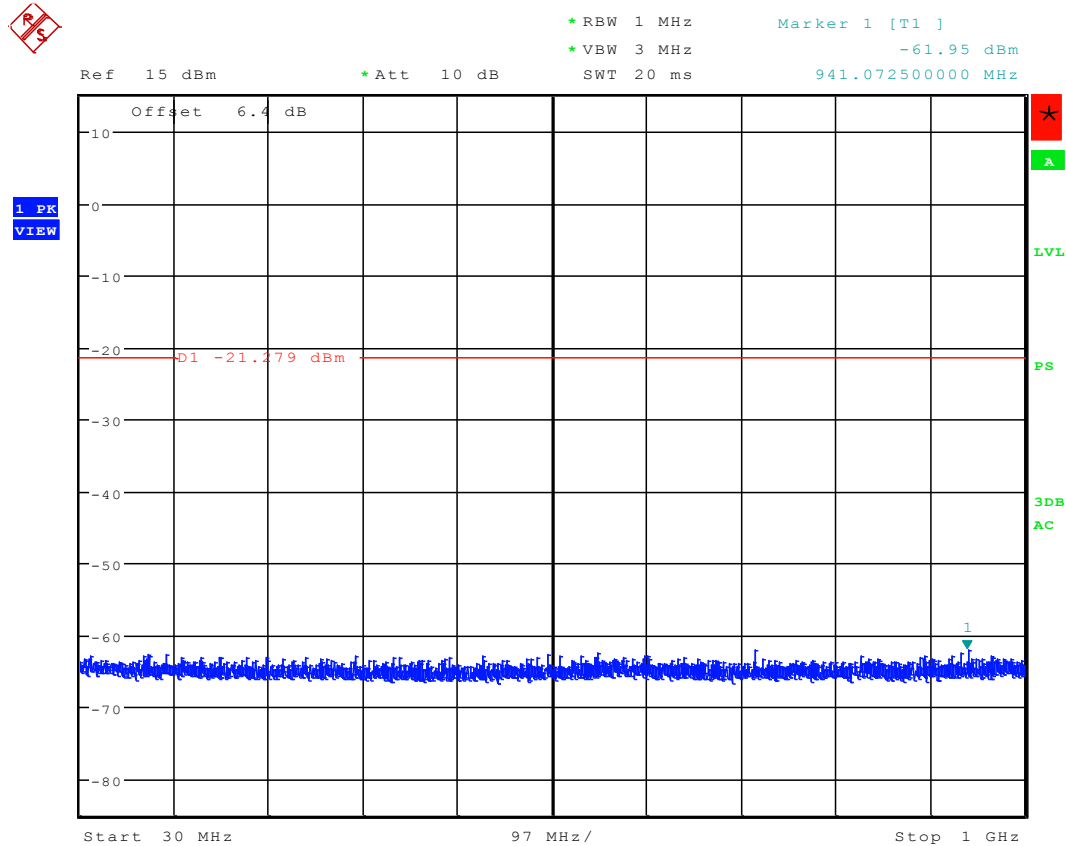
Channel	Data Rate	Power (dBm)	Max. Measured Level (dBm)	Max. Measured Level from Carrier (dBc)	Limit (dBc)
36	6 Mbps	15.49	-55.297	-70.79	-20
	24 Mbps	14.68	-55.350	-70.03	-20
	54 Mbps	13.91	-55.990	-69.90	-20
64	6 Mbps	16.02	-54.029	-70.05	-20
	24 Mbps	15.28	-56.616	-71.90	-20
	54 Mbps	14.28	-57.091	-71.37	-20
100	6 Mbps	13.12	-57.491	-70.61	-20
	24 Mbps	12.15	-56.515	-68.66	-20
	54 Mbps	11.29	-55.419	-66.71	-20
140	6 Mbps	15.25	-56.833	-72.08	-20
	24 Mbps	14.45	-56.560	-71.01	-20
	54 Mbps	13.71	-56.620	-70.33	-20

See figures 7-43 to 7-50 for the plots of the spurious RF conducted emissions for Channel 36, 64, 100 and 140 at 6 Mbps each for 802.11a mode.


		EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015		FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11a RF Conducted Emission Test Results cont'd

Figure 7-43: Spurious RF Conducted Emissions, 802.11a Channel 36, 6 Mbps

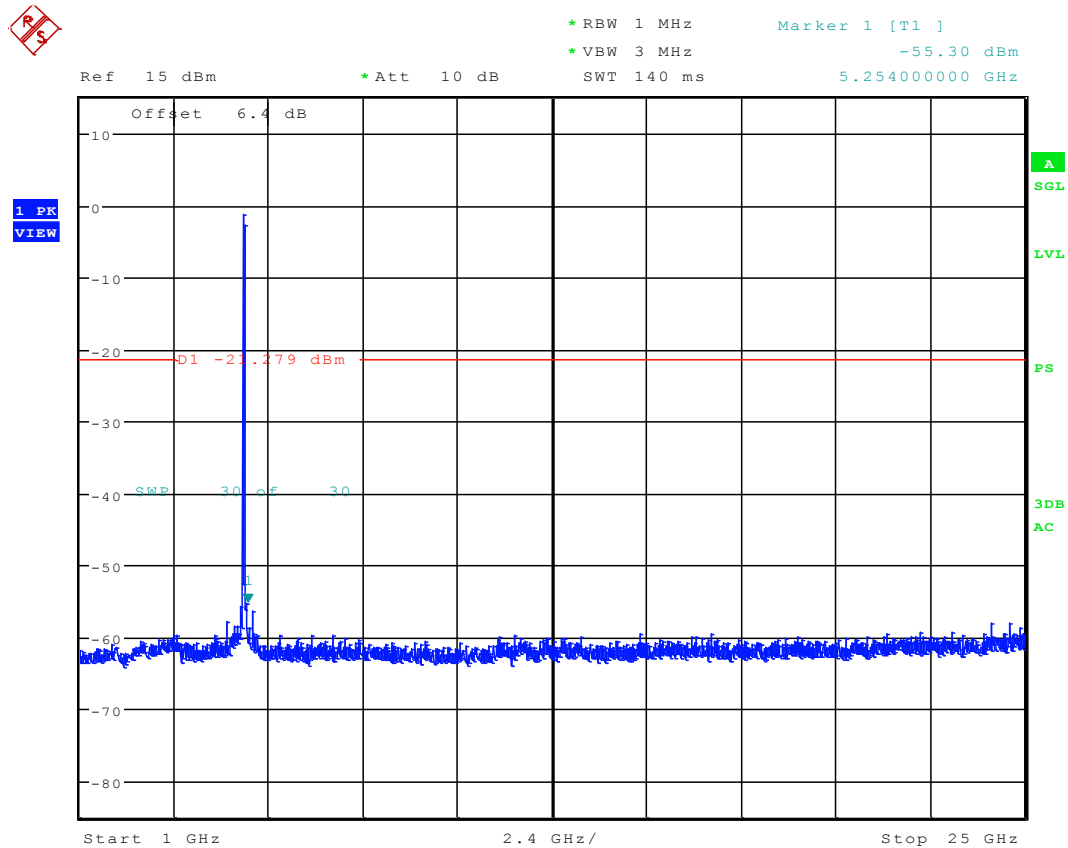


Date: 25.APR.2015 20:55:26


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11a RF Conducted Emission Test Results cont'd

Figure 7-44: Spurious RF Conducted Emissions, 802.11a Channel 36, 6 Mbps

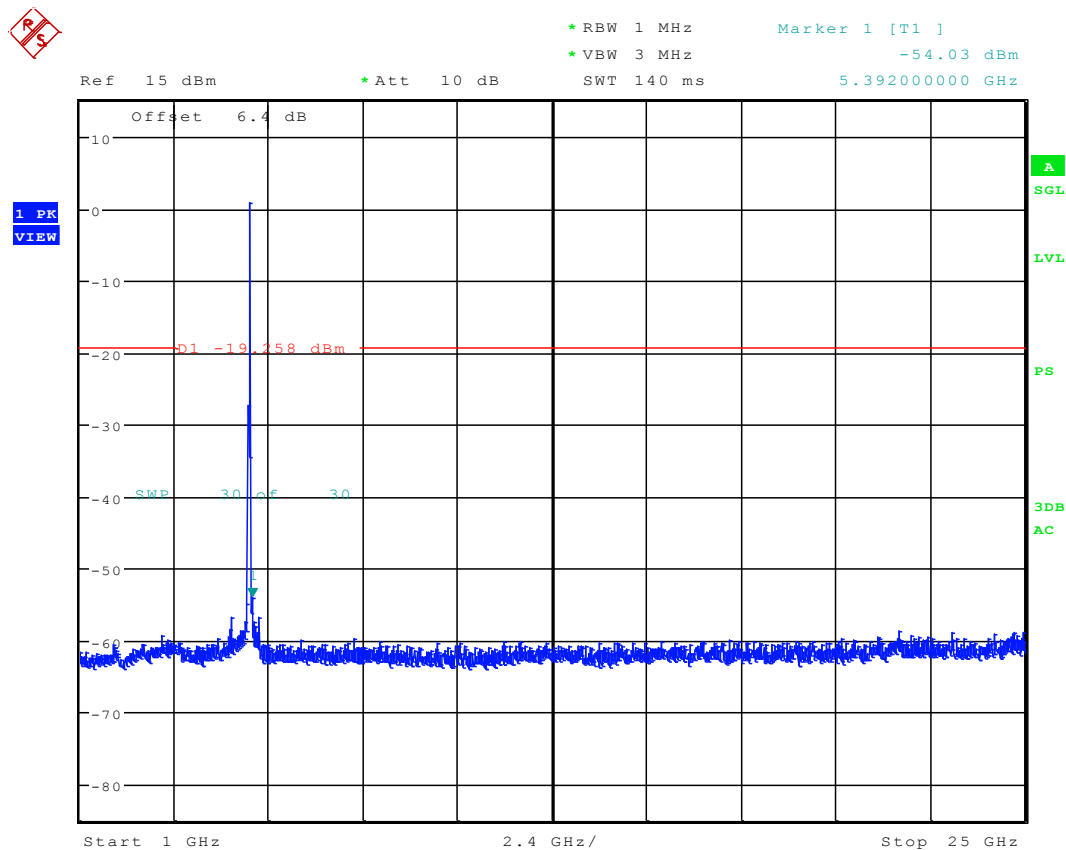


Date: 25.APR.2015 20:55:22


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11a RF Conducted Emission Test Results cont'd

Figure 7-46: Spurious RF Conducted Emissions, 802.11a Channel 64, 6 Mbps

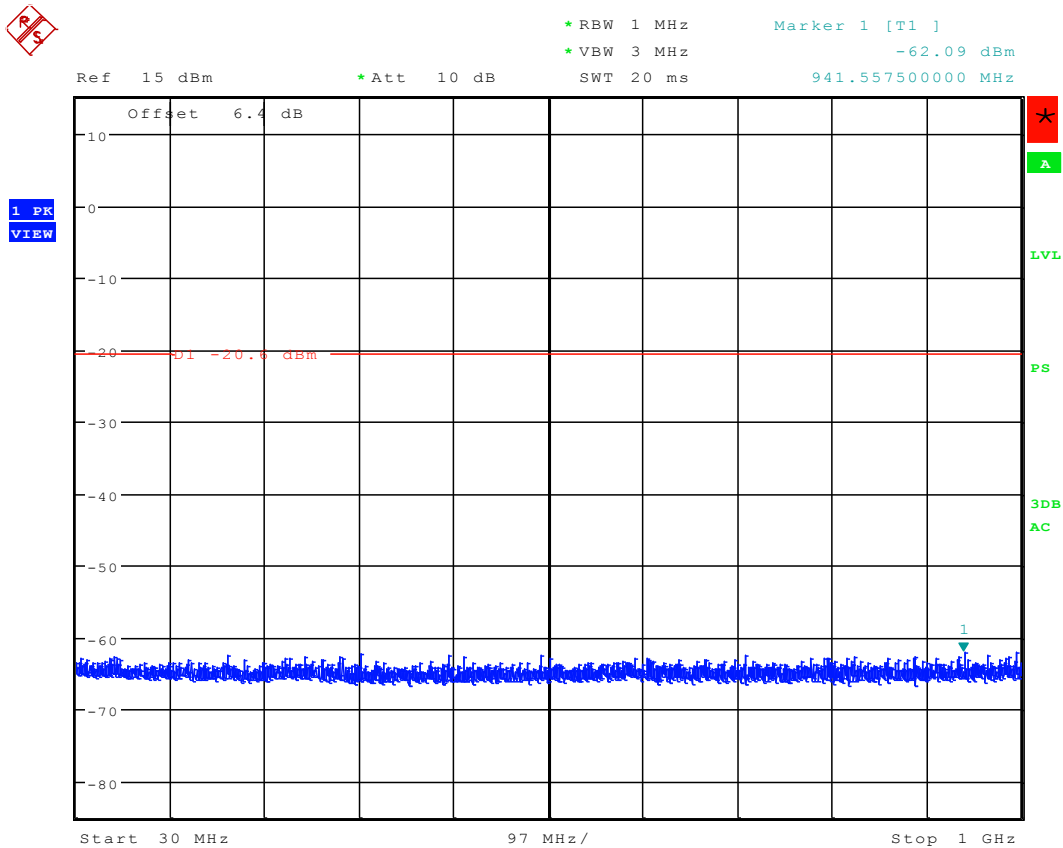


Date: 25.APR.2015 20:57:04


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11a RF Conducted Emission Test Results cont'd

Figure 7-47: Spurious RF Conducted Emissions, 802.11a Channel 100, 6 Mbps

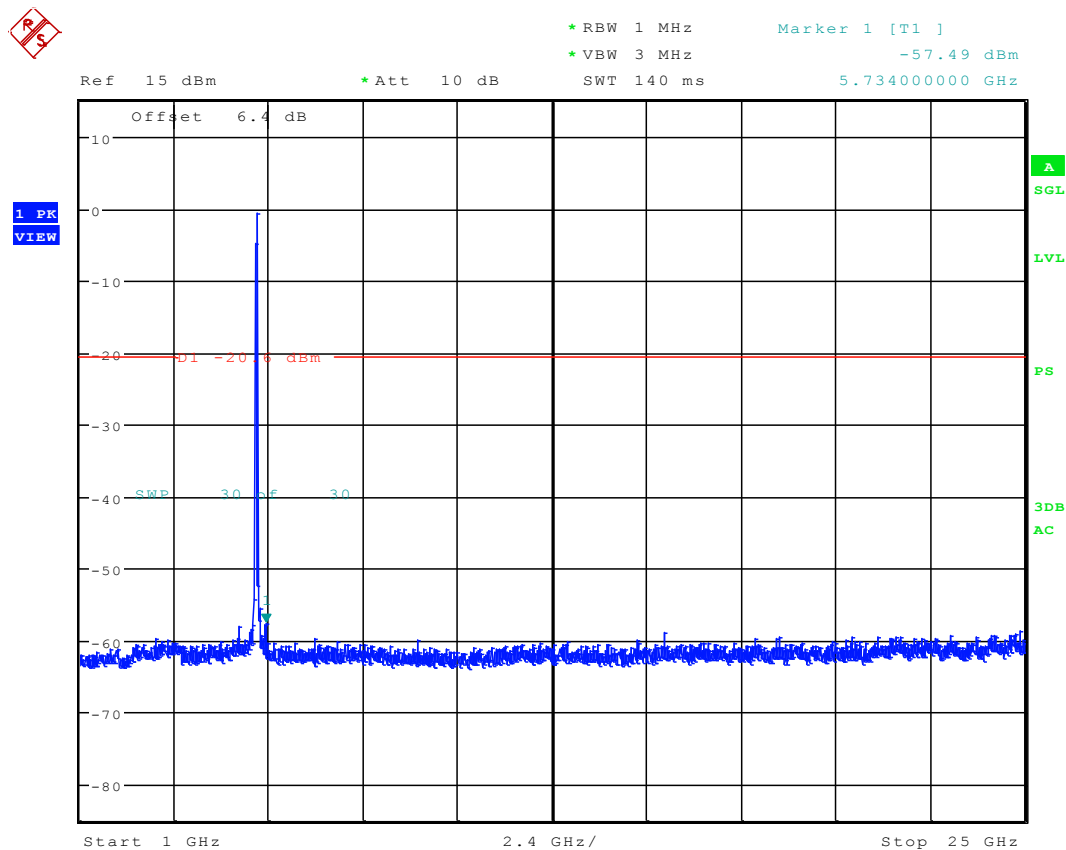


Date: 25.APR.2015 20:58:50


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11a RF Conducted Emission Test Results cont'd

Figure 7-48: Spurious RF Conducted Emissions, 802.11a Channel 100, 6 Mbps

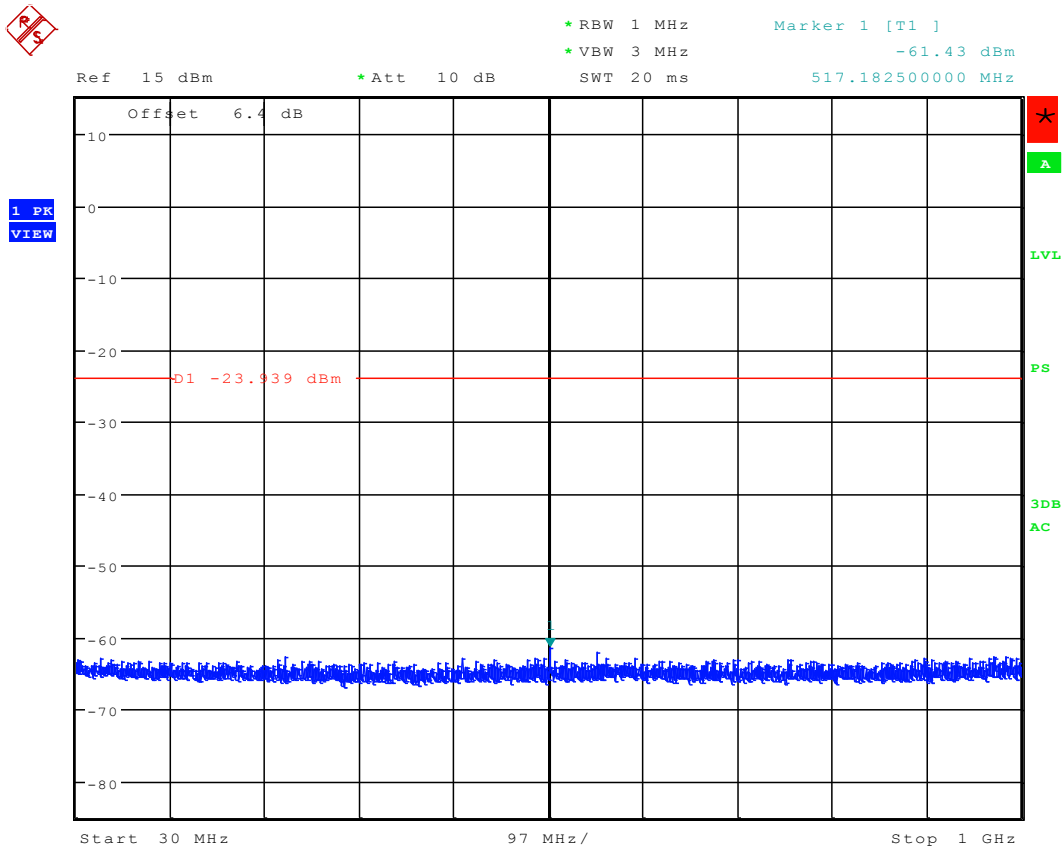


Date: 25.APR.2015 20:58:46


		EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015		FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11a RF Conducted Emission Test Results cont'd

Figure 7-49: Spurious RF Conducted Emissions, 802.11a Channel 140, 6 Mbps

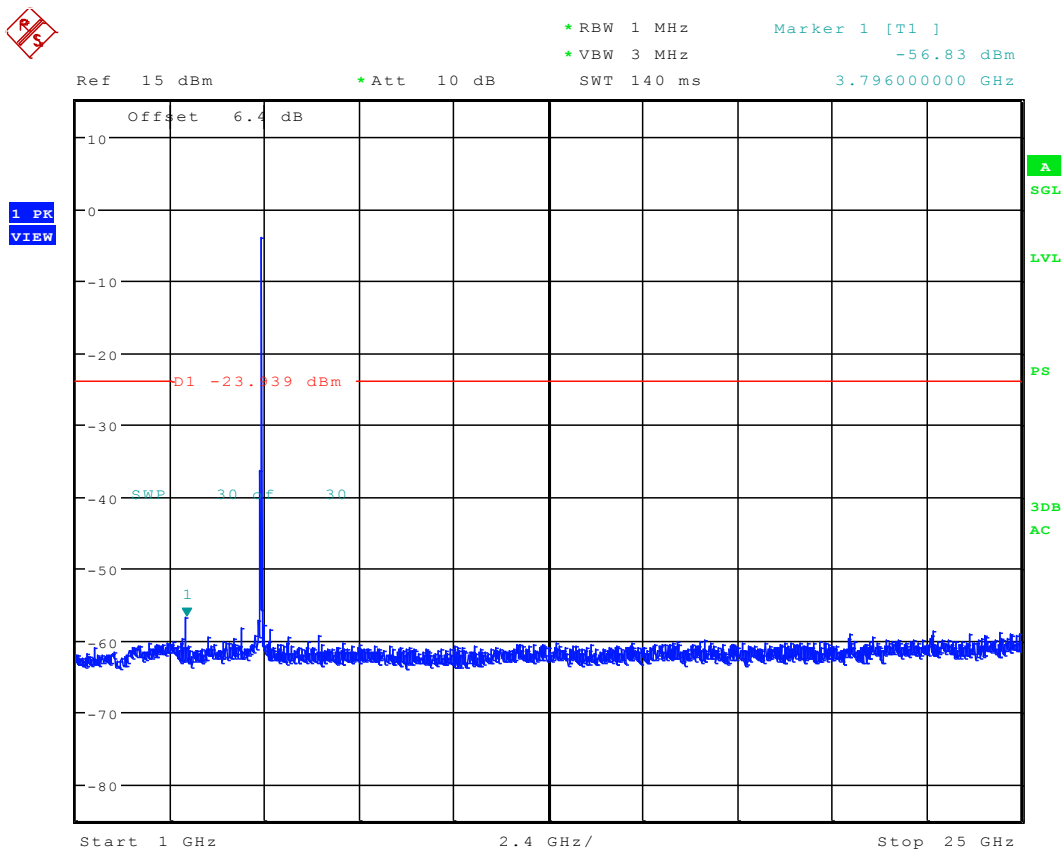


Date: 25.APR.2015 21:00:32


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11a RF Conducted Emission Test Results cont'd

Figure 7-50: Spurious RF Conducted Emissions, 802.11a Channel 140, 6 Mbps



Date: 25.APR.2015 21:00:28

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW


802.11n RF Conducted Emission Test Results cont'd

Spurious RF Conducted Emissions

The EUT met the requirements of the spurious RF conducted emissions as per 47 CFR 15.407 and RSS-210. Channels 36, 64, 100 and 140 were measured at MCS0 Mbps, MCS4 Mbps and MCS7 Mbps each for 802.11n mode. Peak power was measured using an Agilent power meter, model N1911A with model N1921A power sensor. A reference offset of 29.0 dB was applied to the spectrum analyzer reference level for the attenuators and coaxial cable loss in the test circuit.

20 MHZ Bandwidth


Channel	Data Rate	Power (dBm)	Max. Measured Level (dBm)	Max. Measured Level from Carrier (dBc)	Limit (dBc)
36	MCS0	15.49	-49.616	-65.11	-20
	MCS4	14.37	-49.082	-63.46	-20
	MCS7	12.98	-48.494	-61.47	-20
64	MCS0	16.49	-49.177	-65.66	-20
	MCS4	15.10	-50.012	-65.11	-20
	MCS7	12.41	-49.183	-61.59	-20
100	MCS0	16.53	-50.539	-67.07	-20
	MCS4	15.48	-52.184	-67.67	-20
	MCS7	13.27	-49.745	-63.02	-20
140	MCS0	12.79	-46.698	-59.49	-20
	MCS4	11.61	-46.623	-58.23	-20
	MCS7	11.05	-46.730	-57.78	-20

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
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40 MHZ Bandwidth

Channel	Data Rate	Power (dBm)	Max. Measured Level (dBm)	Max. Measured Level from Carrier (dBc)	Limit (dBc)
36	MCS0	16.17	-45.80	-61.98	-20
	MCS4	14.55	-46.75	-61.30	-20
	MCS7	13.71	-46.02	-59.73	-20
64	MCS0	15.88	-22.35	-38.24	-20
	MCS4	14.39	-45.94	-60.33	-20
	MCS7	13.46	-46.09	-59.55	-20
100	MCS0	16.43	-46.53	-62.95	-20
	MCS4	14.92	-46.11	-61.03	-20
	MCS7	14.18	-46.52	-60.70	-20
140	MCS0	18.88	-44.40	-63.28	-20
	MCS4	16.21	-43.87	-60.08	-20
	MCS7	14.75	-44.56	-59.31	-20

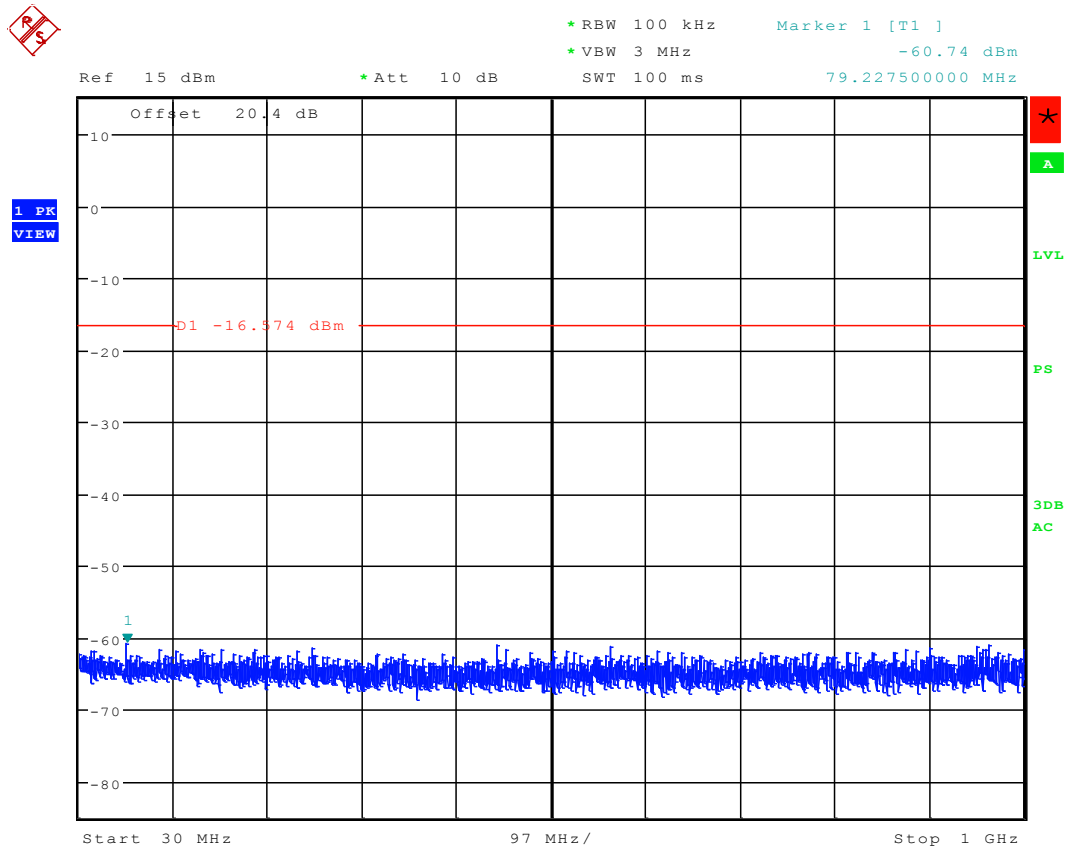
See figures 7-51 to 7-66 for the plots of the spurious RF conducted emissions for Channel 36, 64, 100 and 140 at MCS0 Mbps each for 802.11n mode.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW


802.11n RF Conducted Emission Test Results cont'd

20 MHz Bandwidth

Figure 7-51: Spurious RF Conducted Emissions, 802.11n Channel 36, MCS0 Mbps

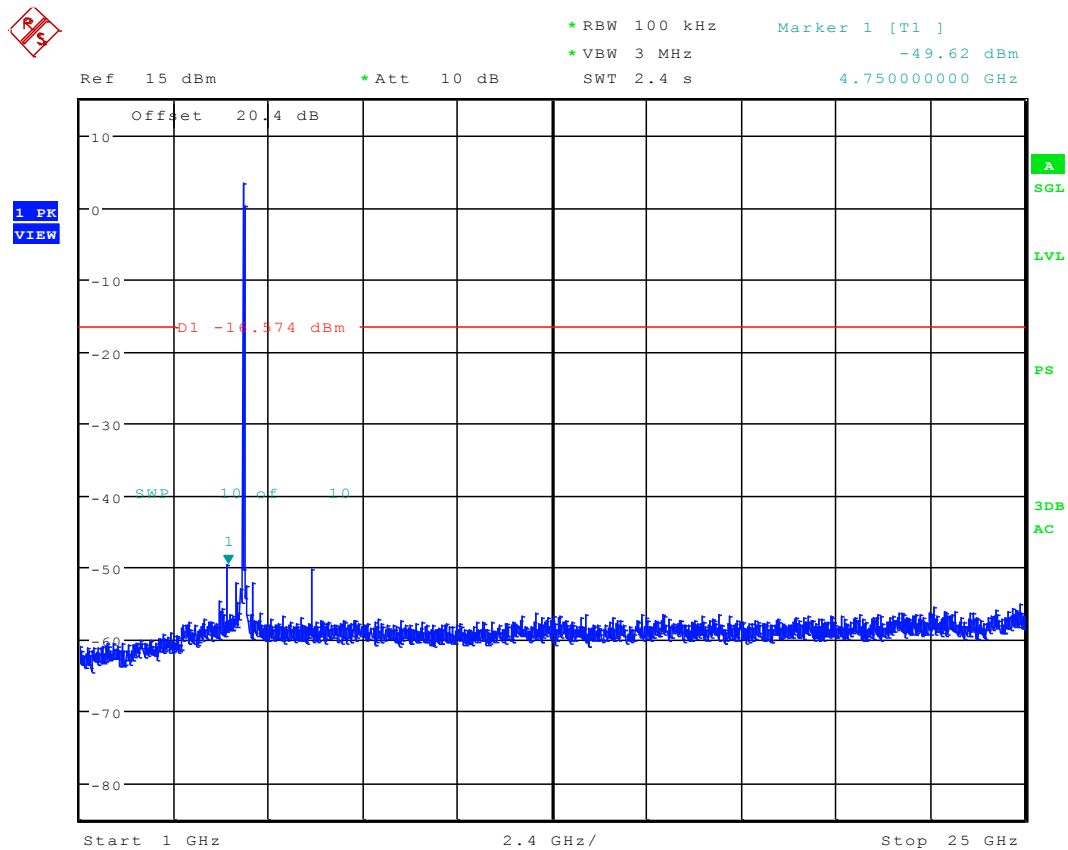


Date: 25.APR.2015 20:33:49


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results cont'd

Figure 7-52: Spurious RF Conducted Emissions, 802.11n Channel 36, MCS0 Mbps

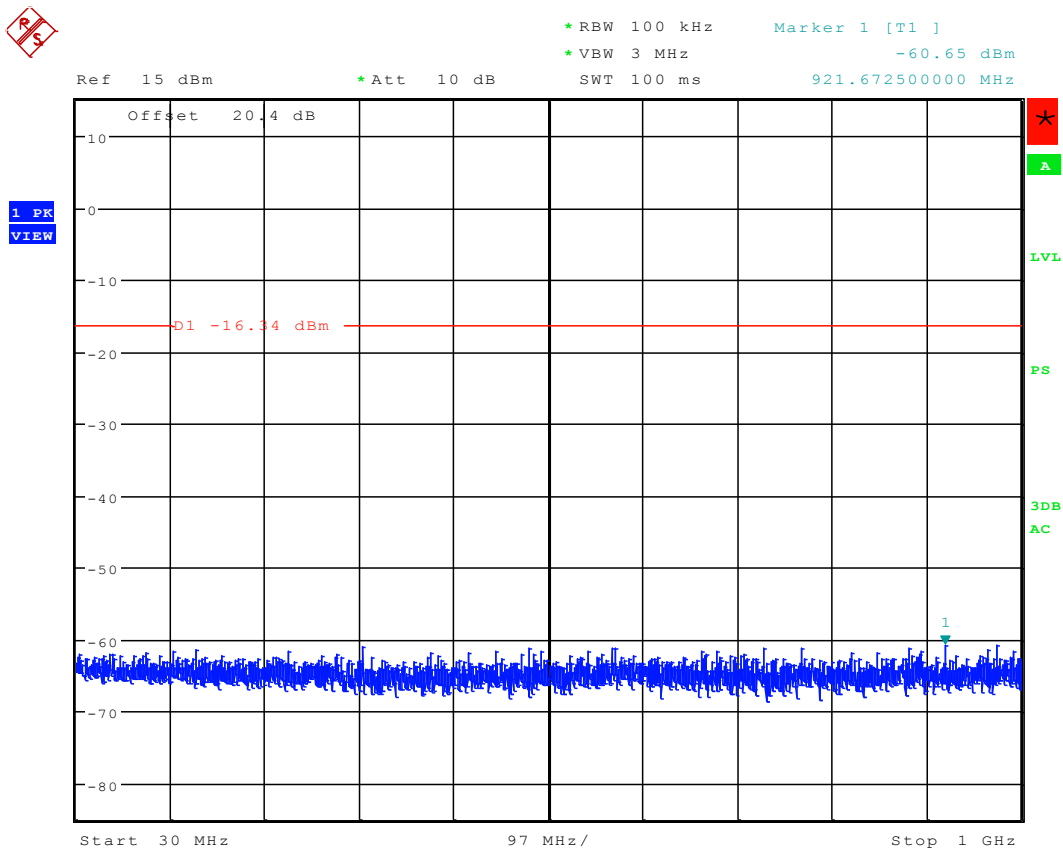


Date: 25.APR.2015 20:33:45


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results cont'd

Figure 7-53: Spurious RF Conducted Emissions, 802.11n Channel 64, MCS0 Mbps

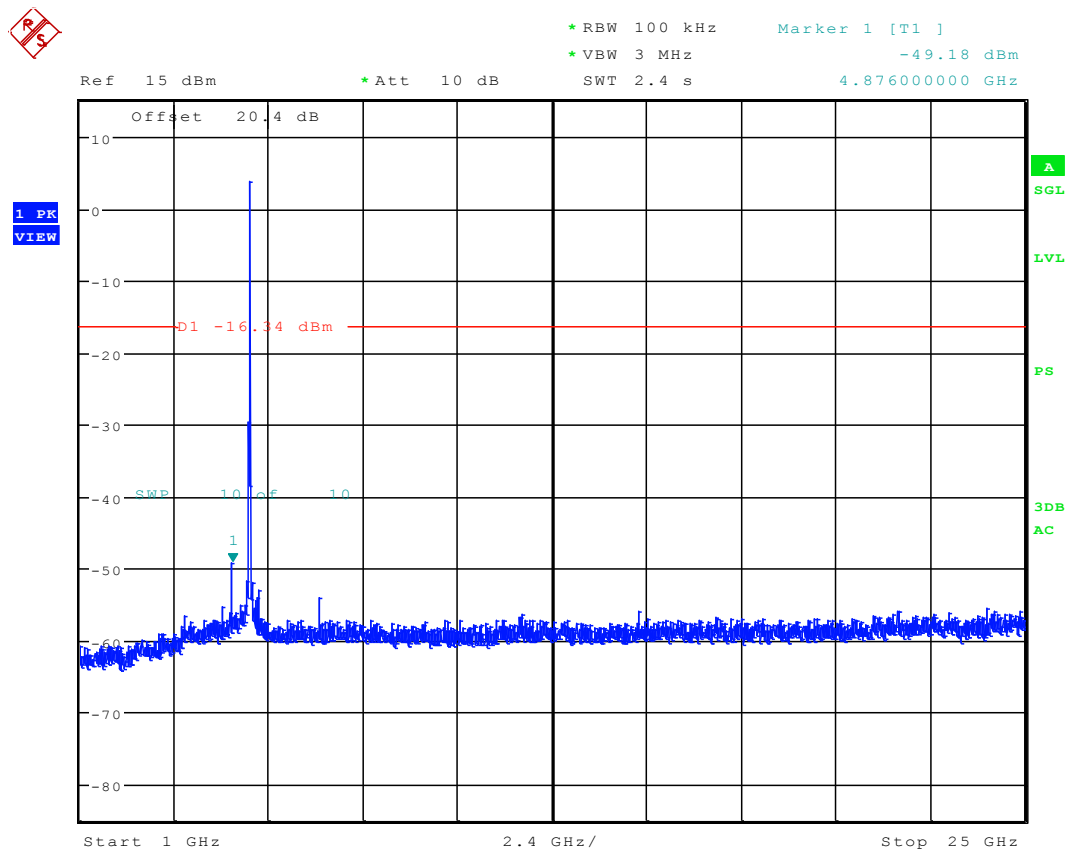


Date: 25.APR.2015 20:35:39


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results cont'd

Figure 7-54: Spurious RF Conducted Emissions, 802.11n Channel 64, MCS0 Mbps

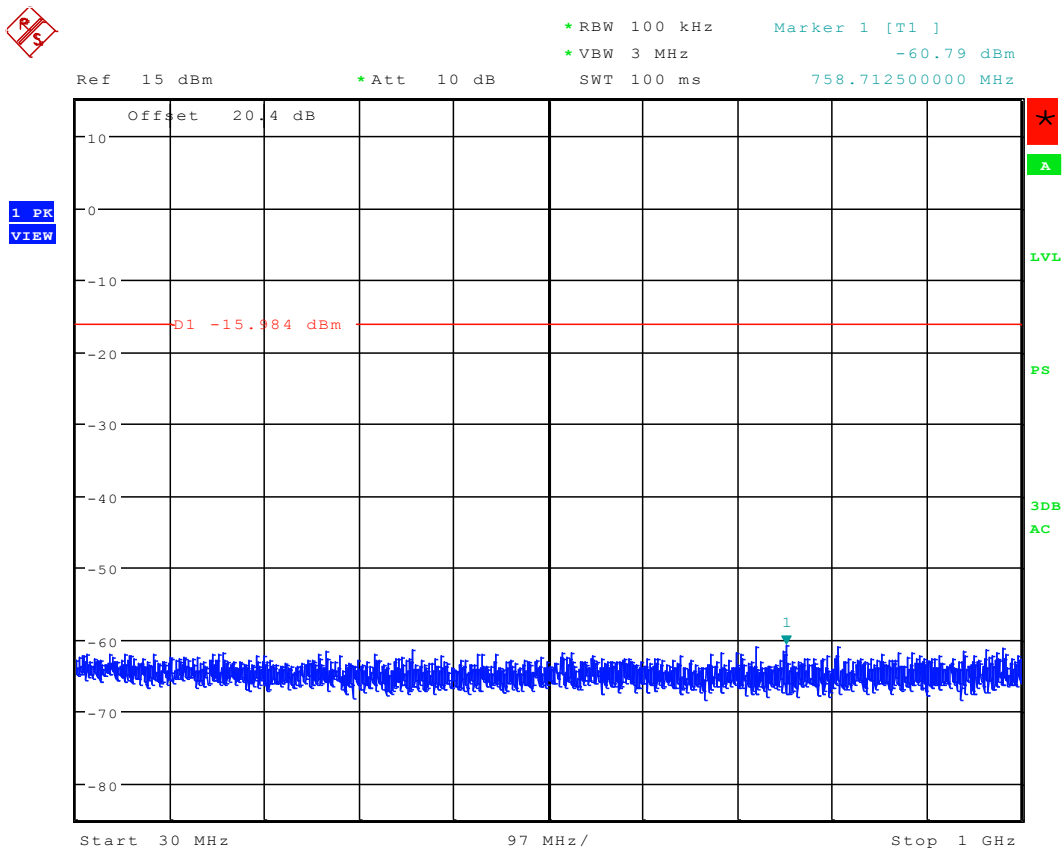


Date: 25.APR.2015 20:35:35


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results cont'd

Figure 7-55: Spurious RF Conducted Emissions, 802.11n Channel 100, MCS0 Mbps

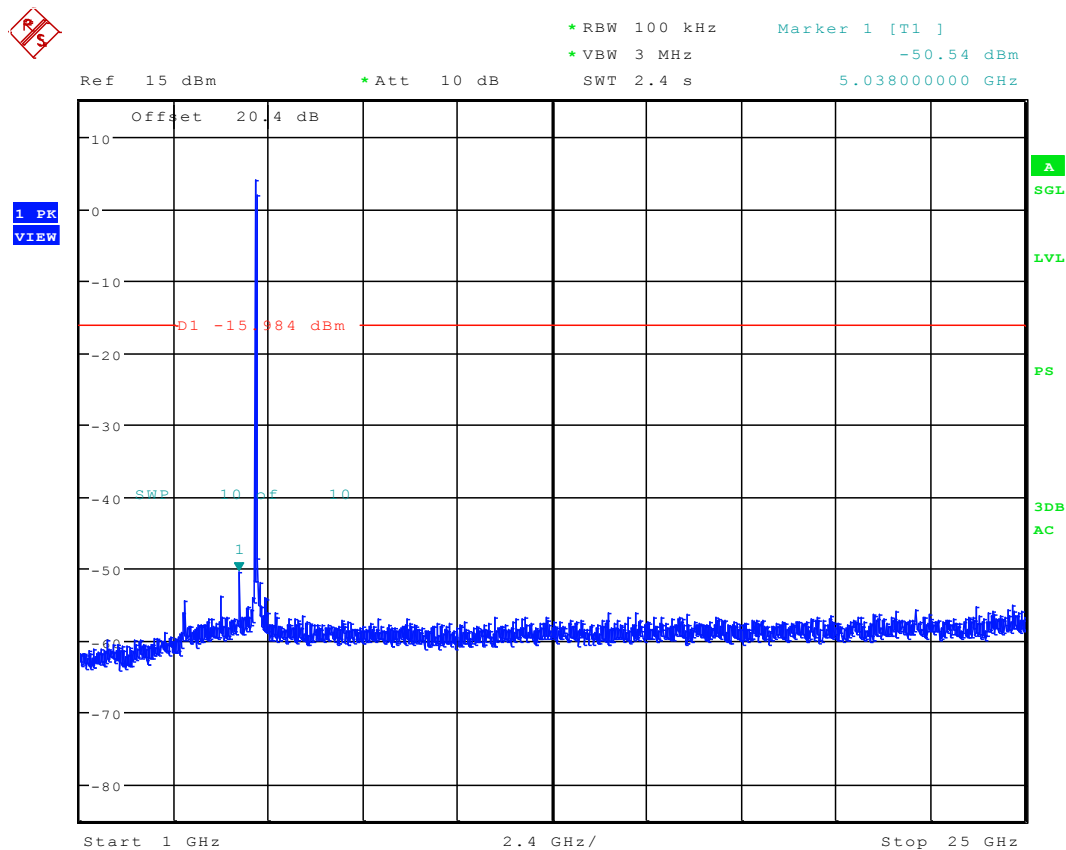


Date: 25.APR.2015 20:37:30


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results cont'd

Figure 7-56: Spurious RF Conducted Emissions, 802.11n Channel 100, MCS0 Mbps

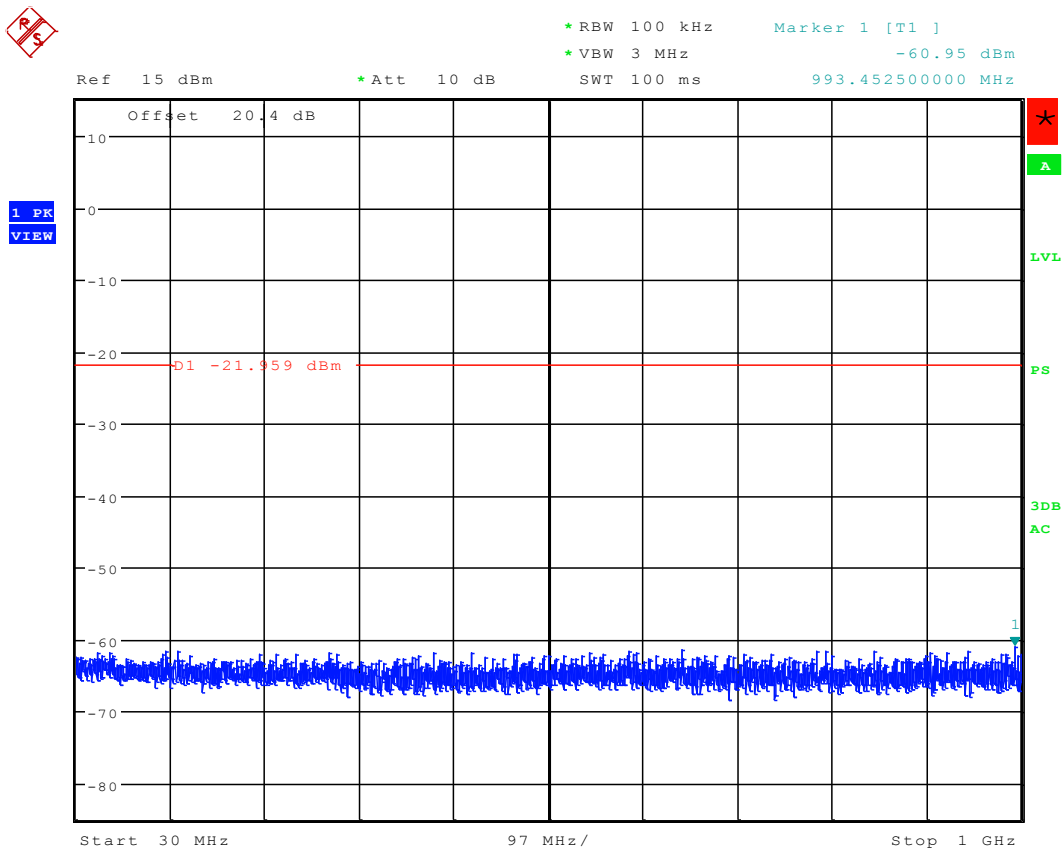


Date: 25.APR.2015 20:37:26


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results cont'd

Figure 7-57: Spurious RF Conducted Emissions, 802.11n Channel 140, MCS0 Mbps

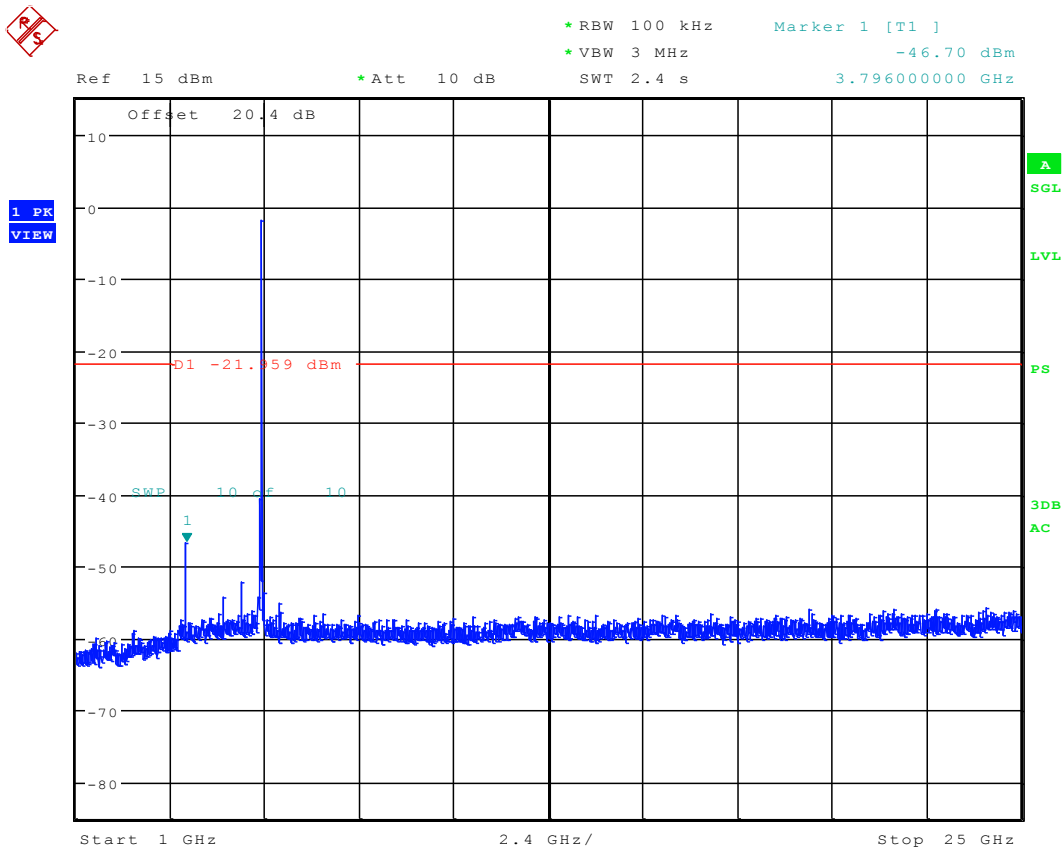


Date: 25.APR.2015 20:39:20


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results cont'd

Figure 7-58: Spurious RF Conducted Emissions, 802.11a Channel 140, MCS0 Mbps



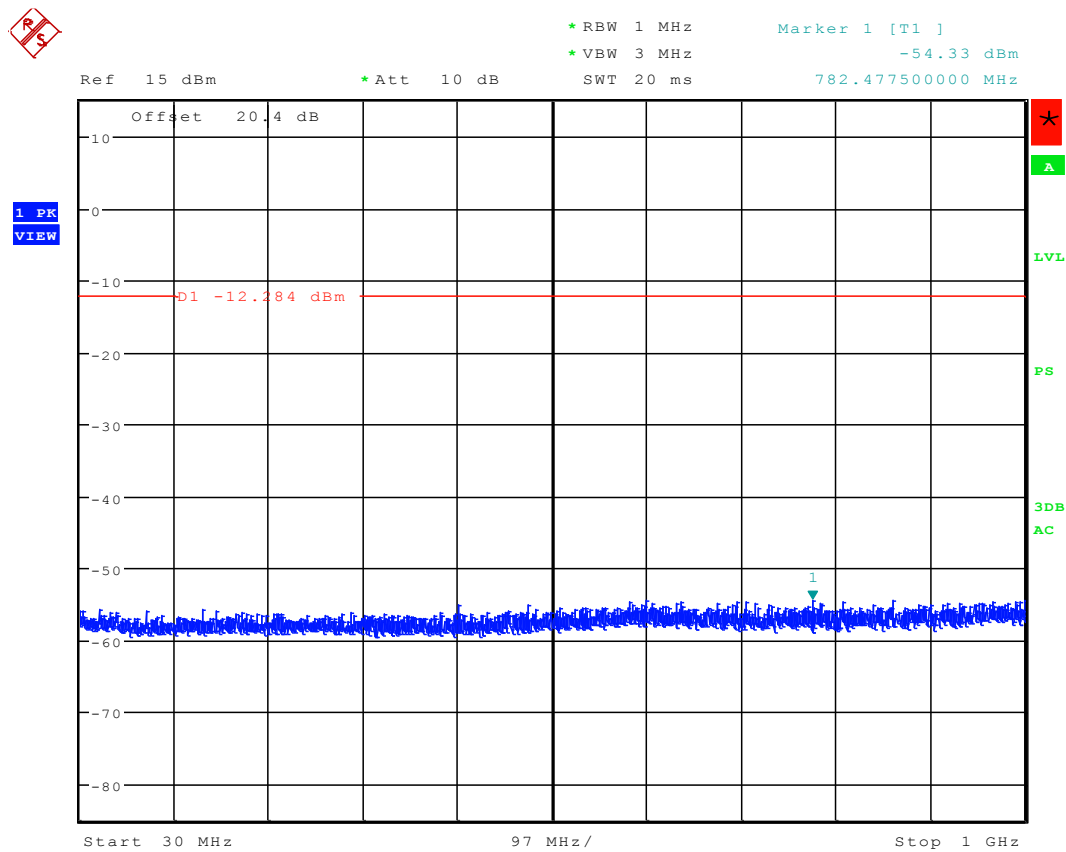
Date: 25.APR.2015 20:39:16

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
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802.11n RF Conducted Emission Test Results cont'd

40 MHz Bandwidth

Figure 7-59: Spurious RF Conducted Emissions, 802.11n Channel 36, MCS0 Mbps

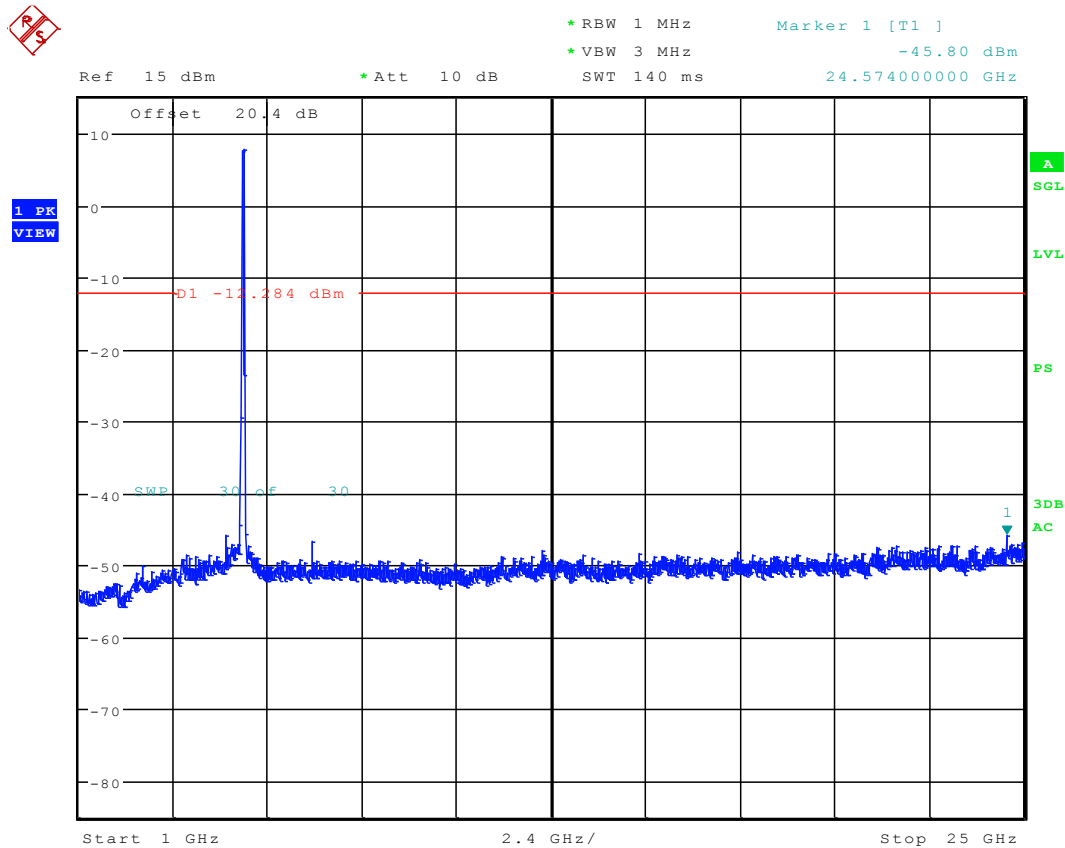


Date: 25.APR.2015 21:06:23


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results cont'd

Figure 7-60: Spurious RF Conducted Emissions, 802.11n Channel 36, MCS0 Mbps

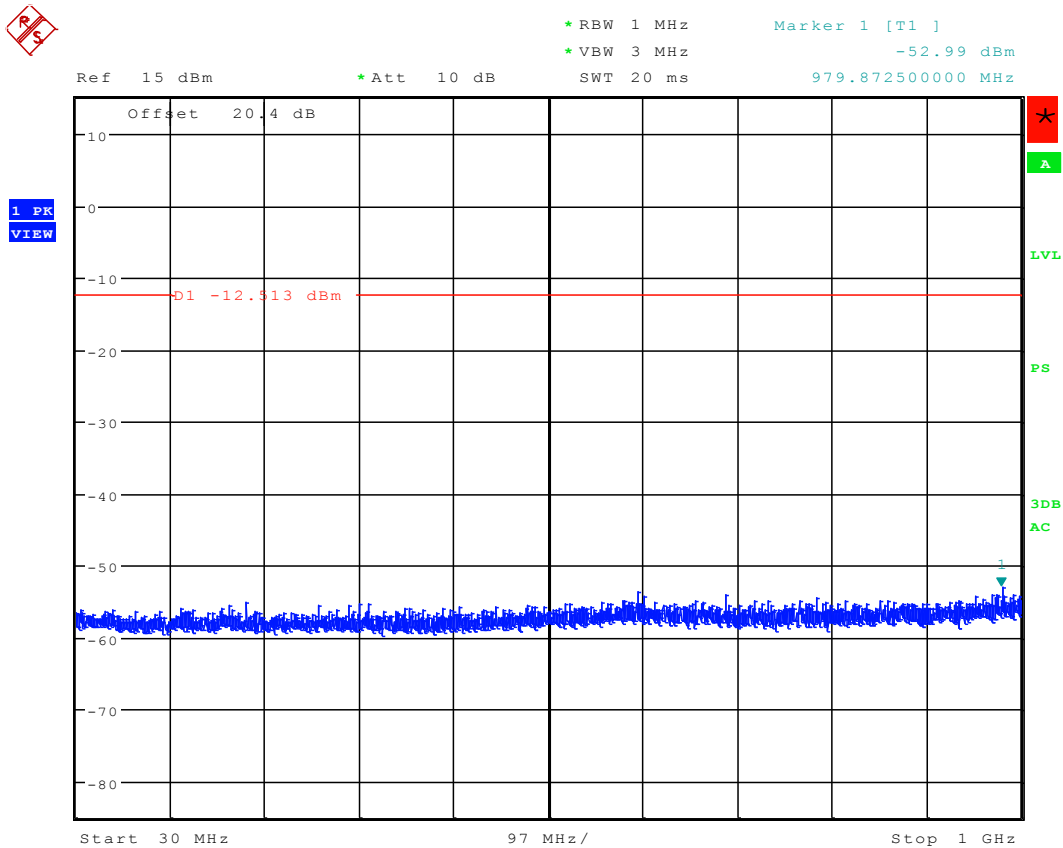


Date: 25.APR.2015 21:06:19


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results cont'd

Figure 7-61: Spurious RF Conducted Emissions, 802.11n Channel 64, MCS0 Mbps

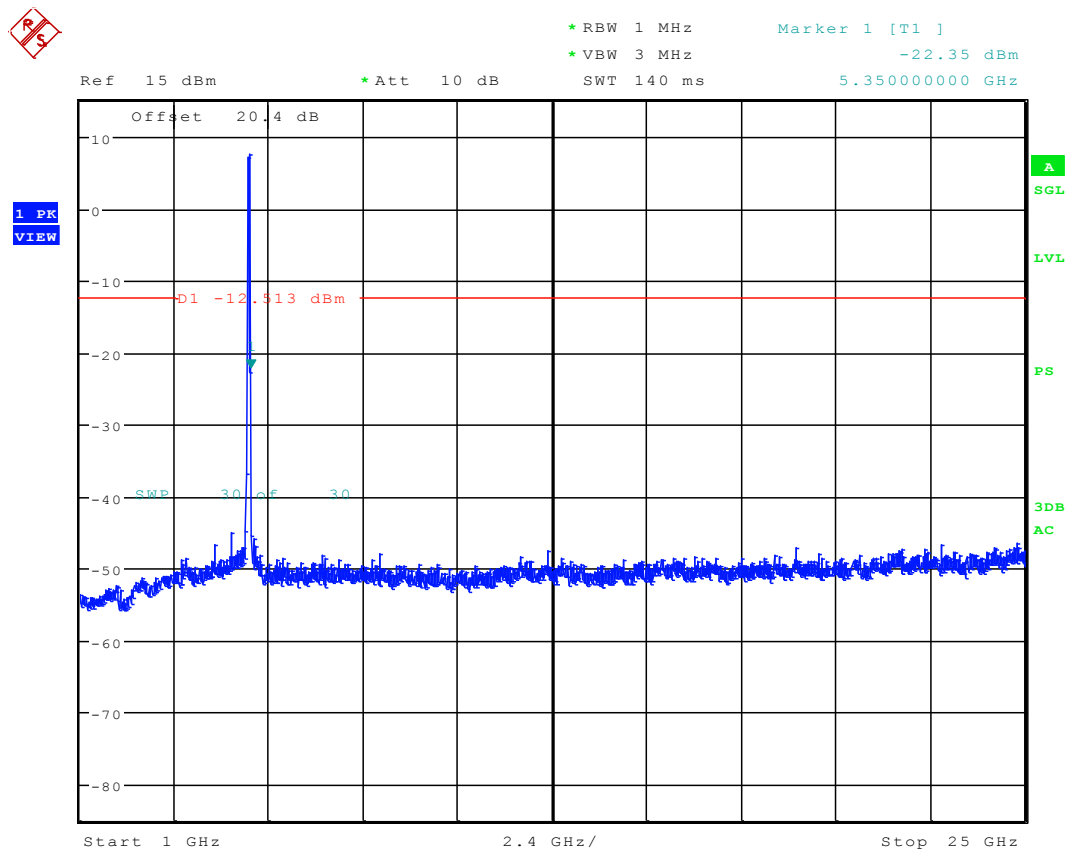


Date: 25.APR.2015 21:08:05


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results cont'd

Figure 7-62: Spurious RF Conducted Emissions, 802.11n Channel 64, MCS0 Mbps

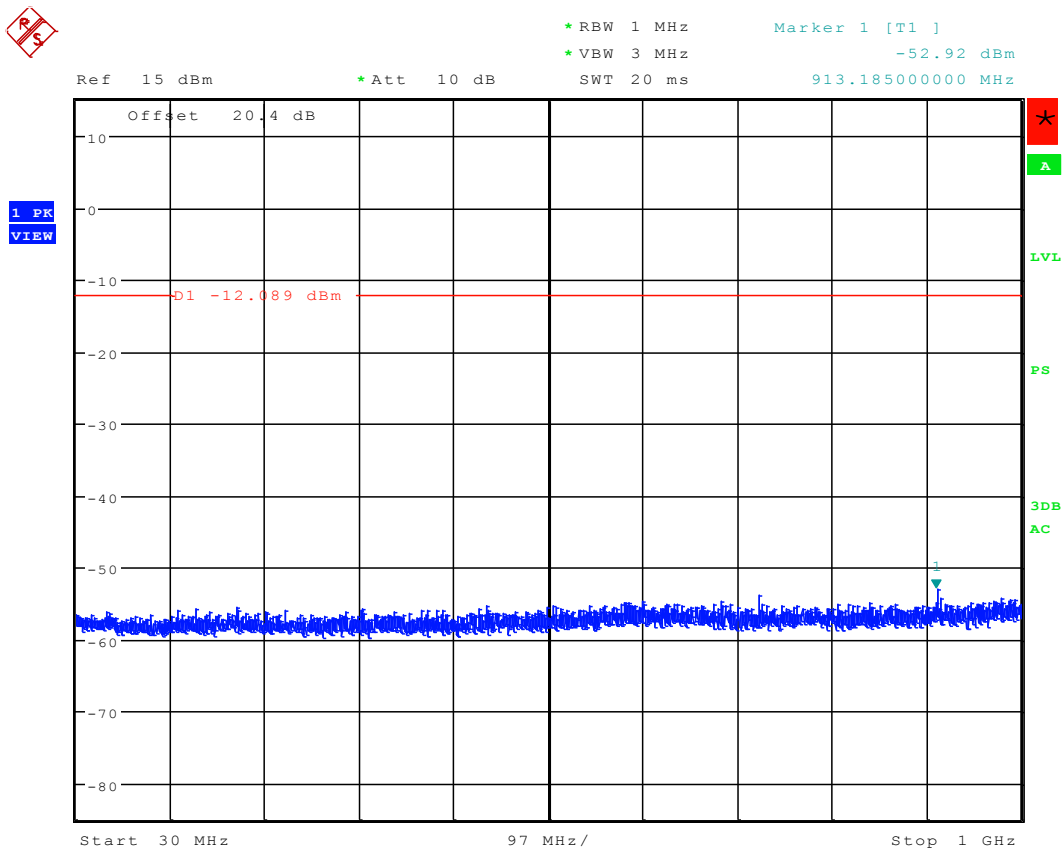


Date: 25.APR.2015 21:08:01


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results cont'd

Figure 7-63: Spurious RF Conducted Emissions, 802.11n Channel 100, MCS0 Mbps

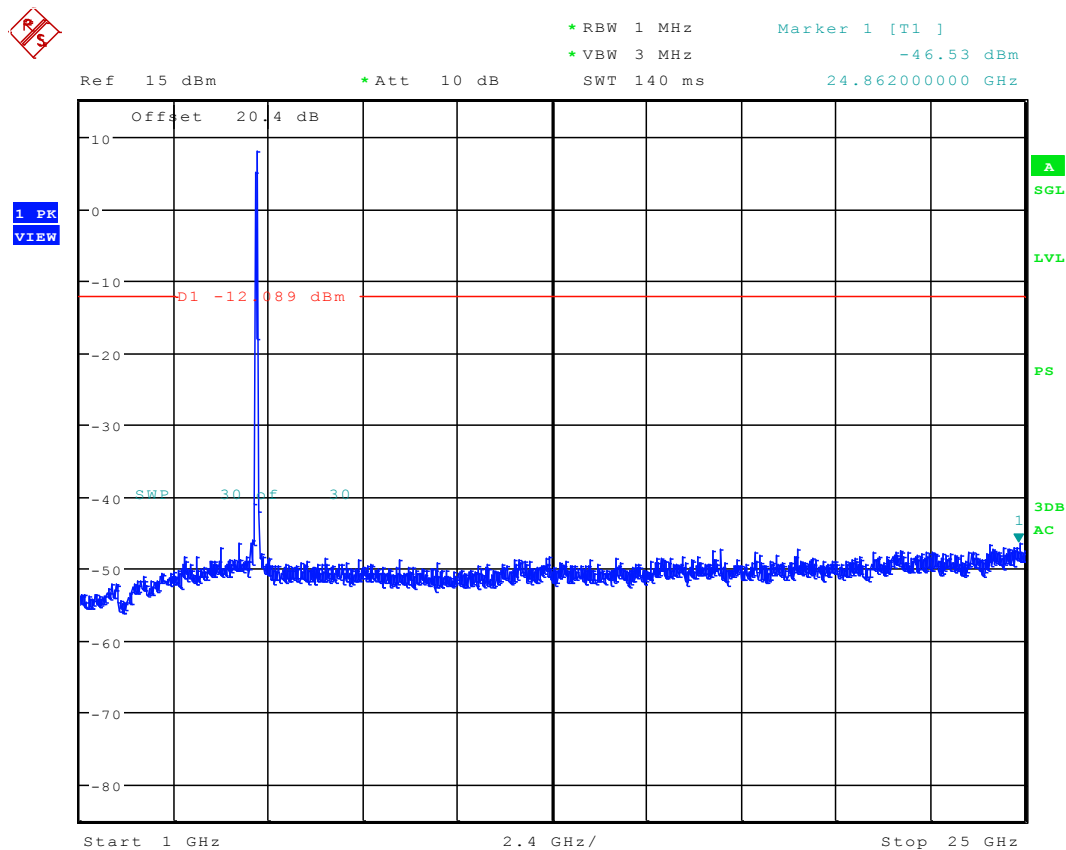


Date: 25.APR.2015 21:09:47


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results cont'd

Figure 7-64: Spurious RF Conducted Emissions, 802.11n Channel 100, MCS0 Mbps

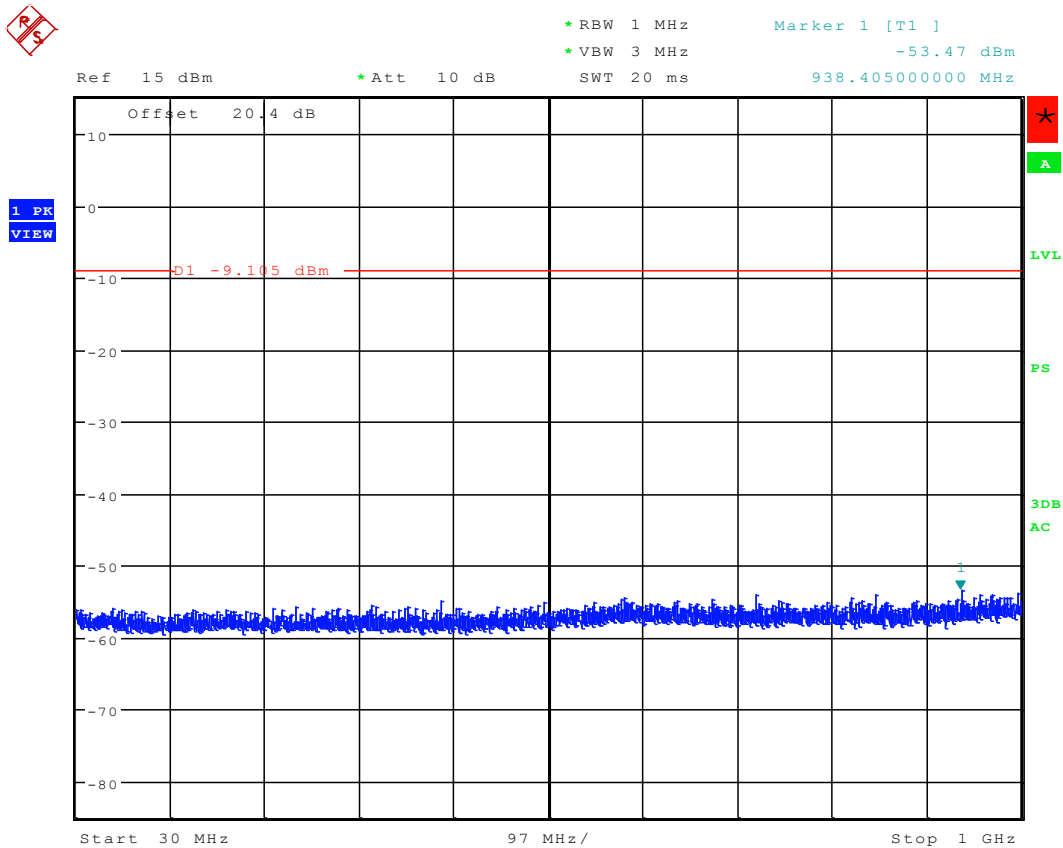


Date: 25.APR.2015 21:09:43


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results cont'd

Figure 7-65: Spurious RF Conducted Emissions, 802.11n Channel 140, MCS0 Mbps

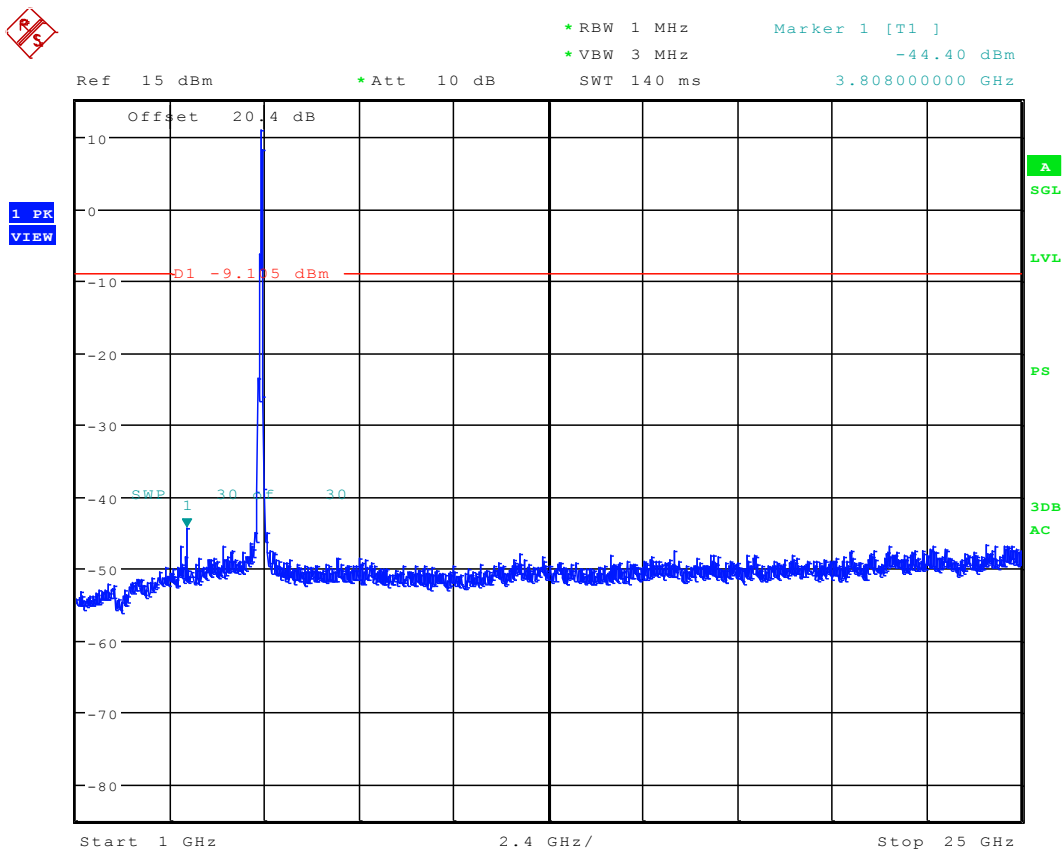


Date: 25.APR.2015 21:11:29


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 7	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11n RF Conducted Emission Test Results cont'd


Figure 7-66: Spurious RF Conducted Emissions, 802.11a Channel 140, MCS0 Mbps



Date: 25.APR.2015 21:11:25

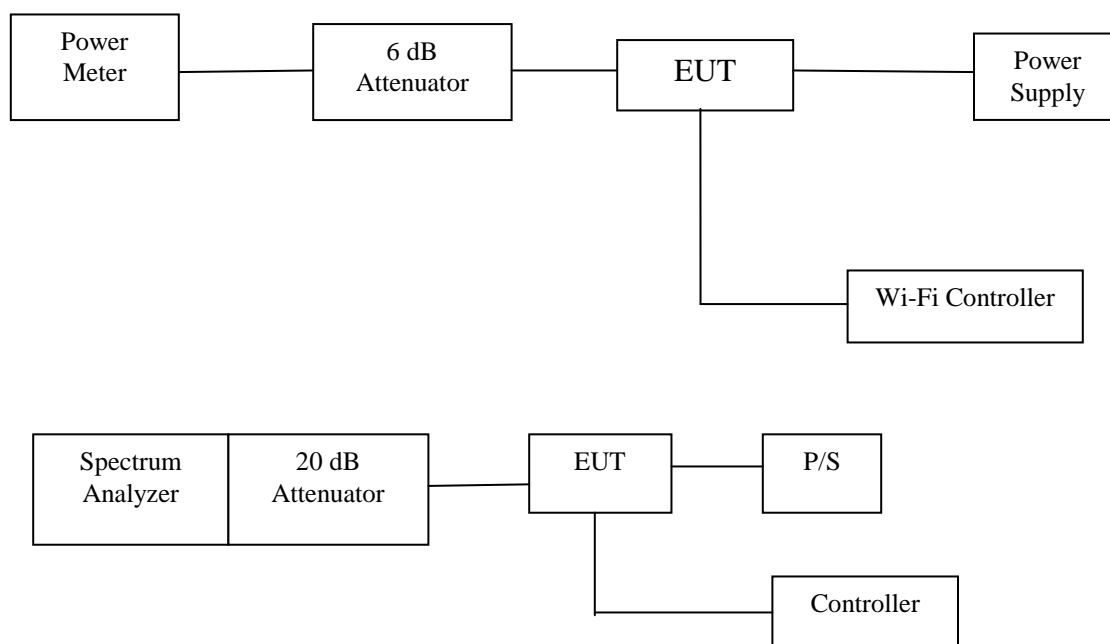
	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

APPENDIX 8 – 802.11ac CONDUCTED EMISSIONS TEST DATA/PLOTS

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
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802.11ac RF Conducted Emission Test Results

Test Setup Diagram




A reference offset of 8.9 dB was applied to the spectrum analyzer and 7.4 dB to the Power Meter reference level for the attenuators and coaxial cable loss in the test circuit.

Date of test: April 25, 2015

The measurements were performed by Sijia Li.

The environmental test conditions were: Temperature: 23.7 °C
 Relative Humidity: 40.5 %

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
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802.11ac RF Conducted Emission Test Results cont'd


6 dB Bandwidth

The EUT met the requirements of the 6 dB bandwidth as per 47 CFR 15.247(a) (2) and RSS-210. For bandwidth 20 MHz, channels 36, 64, 140 and 149 were measured at 0 Mbps, 4 Mbps, and 9 Mbps each; for bandwidth 40 MHz, channels 38, 62, 142 and 151 were measured at 0 Mbps, 4 Mbps, and 9 Mbps each; for bandwidth 80 MHz, channels 42, 58, 138 and 155 were measured at 0 Mbps, 4 Mbps, and 9 Mbps each

20MHz Bandwidth

Channel	Data Rate	Limit (kHz)	Measured Level (MHz)
36	MCS0	≥ 500	17.62
	MCS4	≥ 500	17.74
	MCS9	≥ 500	12.74
64	MCS0	≥ 500	6.78
	MCS4	≥ 500	11.10
	MCS9	≥ 500	15.24
140	MCS0	≥ 500	9.04
	MCS4	≥ 500	15.48
	MCS9	≥ 500	15.24
149	MCS0	≥ 500	13.92
	MCS4	≥ 500	13.58
	MCS9	≥ 500	15.24

See figures 8-1 to 8-4 for the plots of the 6 dB bandwidth measurements for Channel 36, 64, 140 and 149 at MCS0 Mbps each for 802.11ac mode

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802.11ac RF Conducted Emission Test Results cont'd


40MHz Bandwidth

Channel	Data Rate	Limit (kHz)	Measured Level (MHz)
38	MCS0	≥ 500	36.40
	MCS4	≥ 500	36.48
	MCS9	≥ 500	35.92
62	MCS0	≥ 500	36.00
	MCS4	≥ 500	35.96
	MCS9	≥ 500	36.28
142	MCS0	≥ 500	36.20
	MCS4	≥ 500	36.28
	MCS9	≥ 500	36.48
151	MCS0	≥ 500	36.40
	MCS4	≥ 500	35.76
	MCS9	≥ 500	35.92


See figures 8-5 to 8-8 for the plots of the 6 dB bandwidth measurements for Channel 38, 62, 142 and 151 at MCS 0 each for 802.11ac mode.

80MHz Bandwidth

Channel	Data Rate	Limit (kHz)	Measured Level (MHz)
42	MCS0	≥ 500	76.40
	MCS4	≥ 500	76.40
	MCS9	≥ 500	76.24
58	MCS0	≥ 500	76.40
	MCS4	≥ 500	76.48
	MCS9	≥ 500	75.84
138	MCS0	≥ 500	76.40
	MCS4	≥ 500	76.40
	MCS9	≥ 500	76.32
155	MCS0	≥ 500	76.40
	MCS4	≥ 500	76.40
	MCS9	≥ 500	76.40

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Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

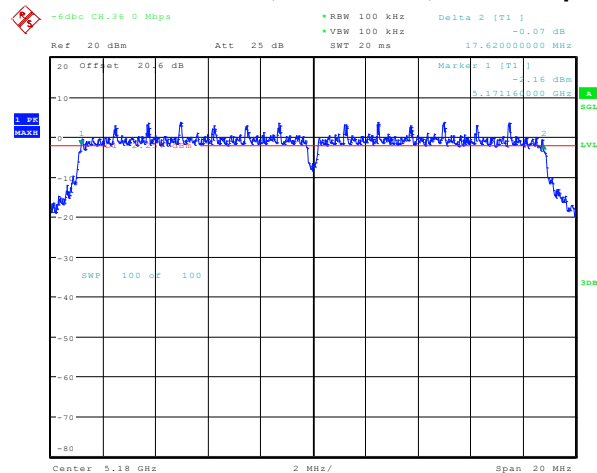
See figures 8-9 to 8-12 for the plots of the 6 dB bandwidth measurements for Channel 42, 58, 138 and 155 at MCS 0 each for 802.11n mode.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
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802.11a RF Conducted Emission Test Results cont'd

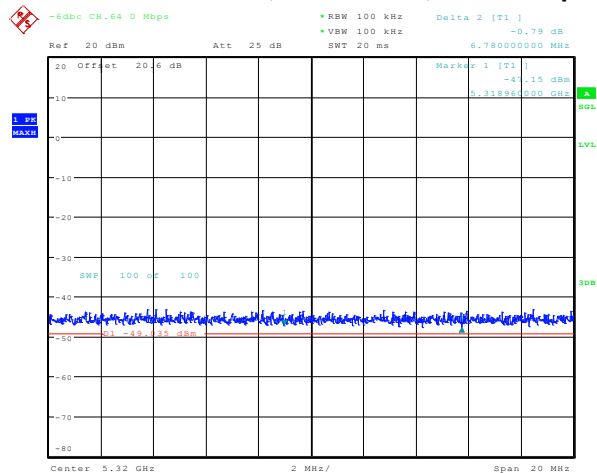
20 MHz Bandwidth

Figure 8-1: 6 dB Bandwidth
802.11ac, Channel 36, MCS0 Mbps



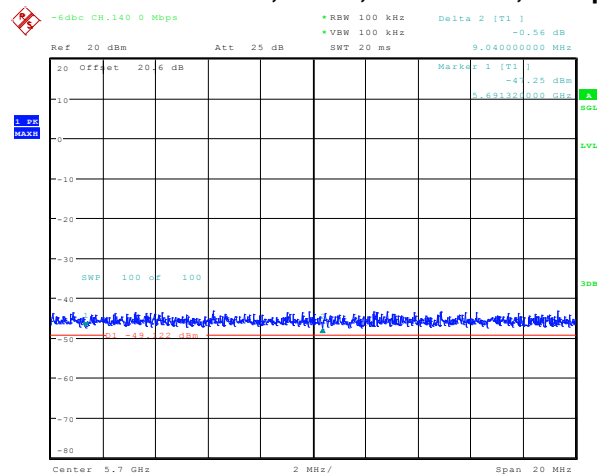
Date: 6.APR.2015 16:35:46

Figure 8-2: 6 dB Bandwidth
802.11ac, Channel 48, MCS0 Mbps



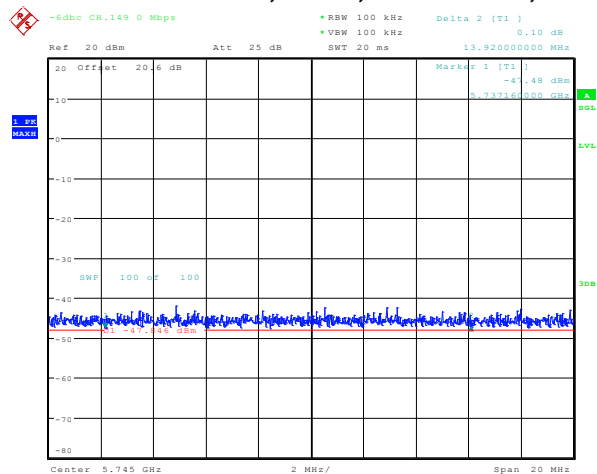
Date: 6.APR.2015 16:36:19

Figure 8-3: 6 dB Bandwidth
802.11ac, BW20, Channel 64, 6 Mbps




Date: 6.APR.2015 16:36:52

Figure 8-4: 6 dB Bandwidth
802.11ac, BW20, Channel 100, 6 Mbps



Date: 6.APR.2015 16:37:25

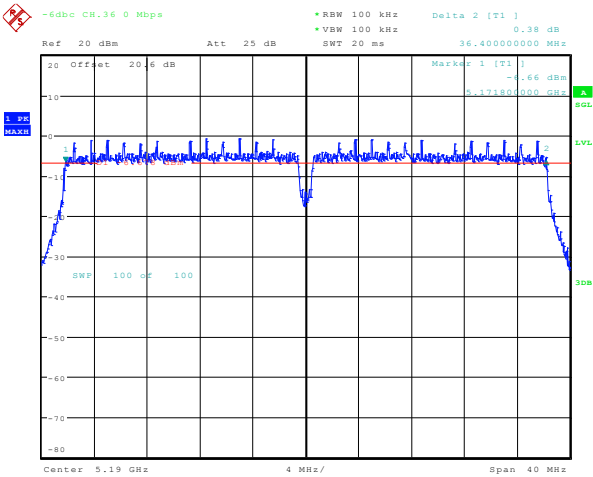
	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11ac RF Conducted Emission Test Results cont'd

Bandwidth 40 MHz

Figure 8-5: 6 dB Bandwidth

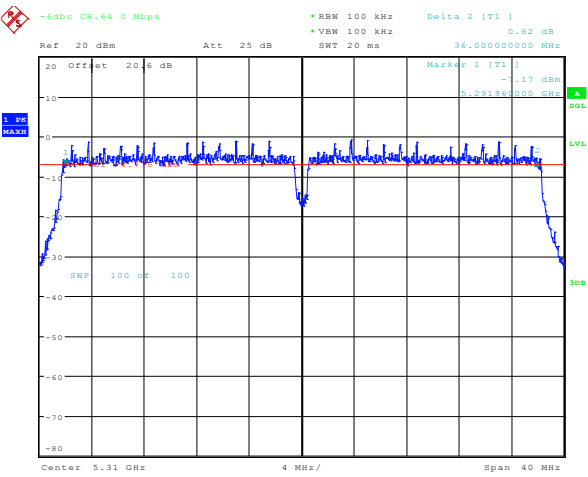
802.11ac, Channel 38, MCS0 Mbps



Date: 8.APR.2015 12:25:31

Figure 8-6: 6 dB Bandwidth

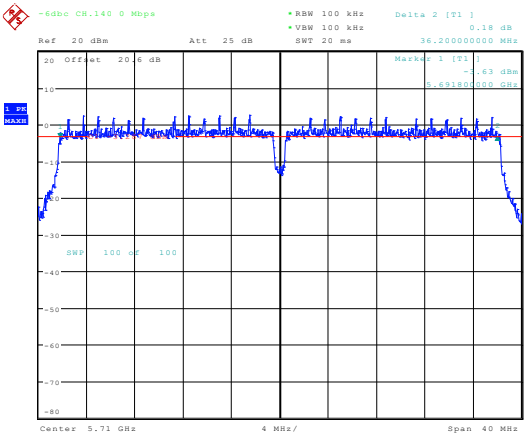
802.11ac, Channel 62, MCS0 Mbps



Date: 8.APR.2015 12:26:06

Figure 8-7: 6 dB Bandwidth

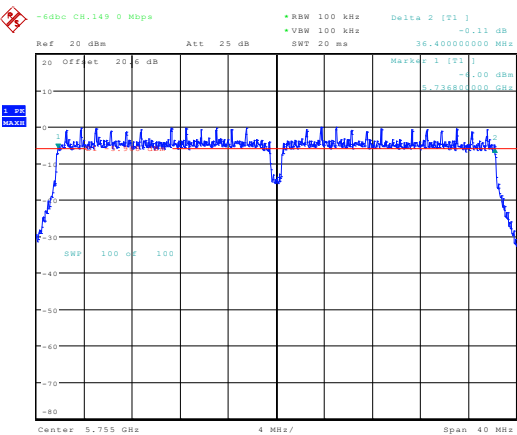
802.11ac, Channel 142, MCS0 Mbps




Date: 8.APR.2015 12:26:41

Figure 8-8: 6 dB Bandwidth

802.11ac, Channel 151, MCS0 Mbps



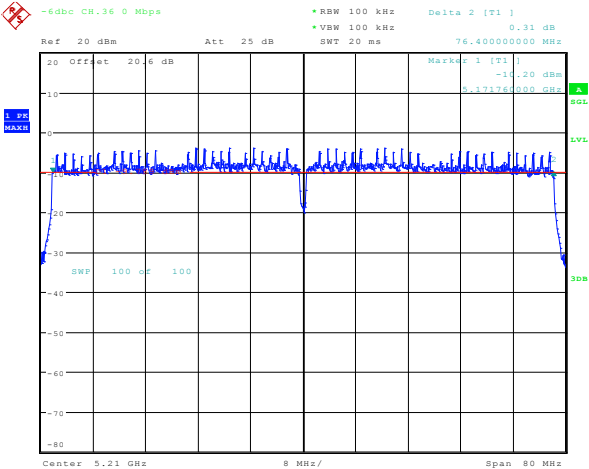
Date: 8.APR.2015 12:27:16

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11ac RF Conducted Emission Test Results cont'd

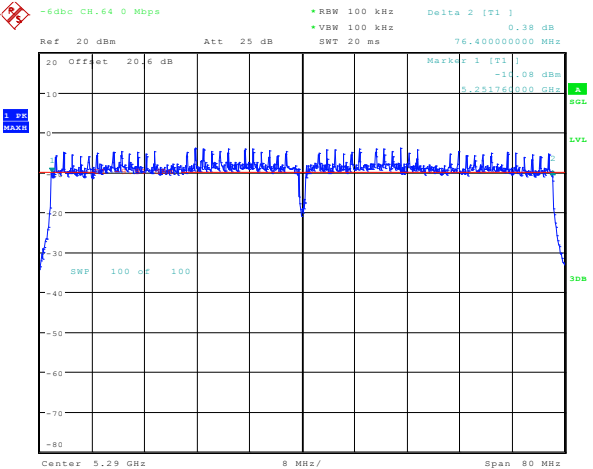
Bandwidth 80 MHz

Figure 8-9: 6 dB Bandwidth
802.11ac, Channel 42, MCS0 Mbps



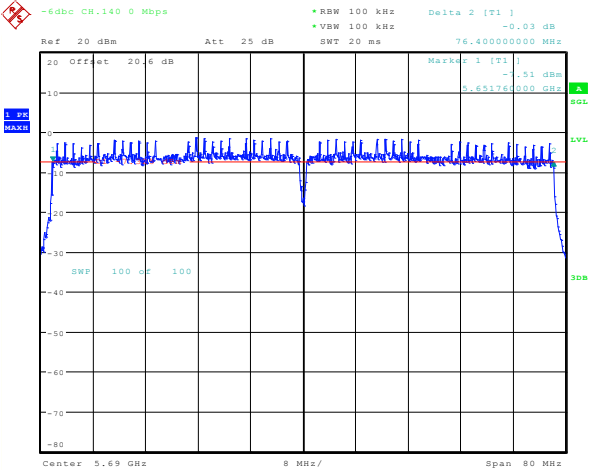
Date: 8.APR.2015 12:31:01

Figure 8-10: 6 dB Bandwidth
802.11ac, Channel 58, MCS0 Mbps



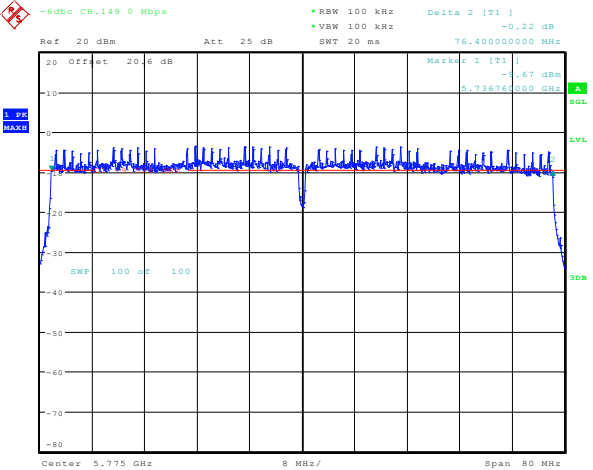
Date: 8.APR.2015 12:31:37

Figure 8-11: 6 dB Bandwidth
802.11ac, Channel 138, MCS0 Mbps




Date: 8.APR.2015 12:32:12

Figure 8-12: 6 dB Bandwidth
802.11ac, Channel 155, MCS0 Mbps



Date: 8.APR.2015 12:32:47

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW


802.11ac RF Conducted Emission Test Results cont'd

Maximum Conducted Output Power

The EUT met the requirements of the maximum conducted output power of class 2 as per 47 CFR 15.407 and RSS-210. Channels 36, 48, 64, 100, 140 and 165 were measured for 802.11ac mode, bandwidth 20MHz, using an Agilent power meter, model N1911A with model N1921A power sensor. A reference offset of 8.9 dB was applied to the power meter reference level for the coaxial cable loss and attenuators in the test circuit.

20 MHz Bandwidth

Channel	BW(MHz)	Data Rate	Power Limit (mW)	Measured Level (dBm)	Measured Level (W)
36	20	MCS0	< 50.0	15.46	0.0350
		MCS4	< 50.0	14.32	0.0270
		MCS9	< 50.0	10.88	0.0122
64	20	MCS0	< 250.0	16.45	0.0442
		MCS4	< 250.0	15.10	0.0323
		MCS9	< 250.0	10.61	0.0115
100	20	MCS0	< 250.0	16.61	0.0457
		MCS4	< 250.0	15.50	0.0355
		MCS9	< 250.0	11.32	0.0135
140	20	MCS0	< 250.0	12.73	0.0187
		MCS4	< 250.0	11.59	0.0144
		MCS9	< 250.0	10.74	0.0118
149	20	MCS0	< 1000	14.21	0.0263
		MCS4	< 1000	13.00	0.0200
		MCS9	< 1000	11.24	0.0133


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Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11ac RF Conducted Emission Test Results

Channels 38, 62, 102, 142 and 151 were measured for 802.11ac mode, bandwidth 40MHz, using an Agilent power meter, model N1911A with model N1921A power sensor. A reference offset of 8.9 dB was applied to the power meter reference level for the coaxial cable loss and attenuators in the test circuit.

40 MHz Bandwidth

Channel	BW(MHz)	Data Rate	Power Limit (mW)	Measured Level (dBm)	Measured Level (W)
38	40	MCS0	< 50.0	13.39	0.0218
		MCS4	< 50.0	11.82	0.0152
		MCS9	< 50.0	8.94	0.0783
62	40	MCS0	< 250.0	13.00	0.0200
		MCS4	< 250.0	11.33	0.0135
		MCS9	< 250.0	8.53	0.0713
102	40	MCS0	< 250.0	13.79	0.0239
		MCS4	< 250.0	12.10	0.0162
		MCS9	< 250.0	9.13	0.0819
142	40	MCS0	< 250.0	16.23	0.0420
		MCS4	< 250.0	13.49	0.0223
		MCS9	< 250.0	8.70	0.0741
151	40	MCS0	< 1000	13.73	0.0235
		MCS4	< 1000	12.07	0.0161
		MCS9	< 1000	9.17	0.0826


	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11ac RF Conducted Emission Test Results

Channels 42, 58, 105, 138 and 151 were measured for 802.11ac mode, bandwidth 80MHz, using an Agilent power meter; model N1911A with model N1921A power sensor. A reference offset of 8.9 dB was applied to the power meter reference level for the coaxial cable loss and attenuators in the test circuit.

80 MHz Bandwidth

Channel	BW(MHz)	Data Rate	Power Limit (mW)	Measured Level (dBm)	Measured Level (W)
42	80	MCS0	< 50.0	12.27	0.0168
		MCS4	< 50.0	10.14	0.0103
		MCS9	< 50.0	7.20	0.0525
58	80	MCS0	< 50.0	12.07	0.0161
		MCS4	< 50.0	9.98	0.0996
		MCS9	< 50.0	7.13	0.0516
105	80	MCS0	< 250.0	12.66	0.0184
		MCS4	< 250.0	10.55	0.0113
		MCS9	< 250.0	7.59	0.0574
138	80	MCS0	< 250.0	14.36	0.0272
		MCS4	< 250.0	11.61	0.0144
		MCS9	< 250.0	7.10	0.0512
151	80	MCS0	< 1000	12.38	0.0172
		MCS4	< 1000	10.21	0.0104
		MCS9	< 1000	7.31	0.0538

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11ac RF Conducted Emission Test Results cont'd


Band Edge Compliance

The EUT met the requirements of the band edge compliance as per 47 CFR 15.407 and RSS-210. Channels 36, 64, 100, 140, 149, and 165 were measured at MCS0 Mbps, MCS4 Mbps, and MCS9 Mbps each for bandwidth 20MHz, 802.11ac mode.

20MHz Bandwidth

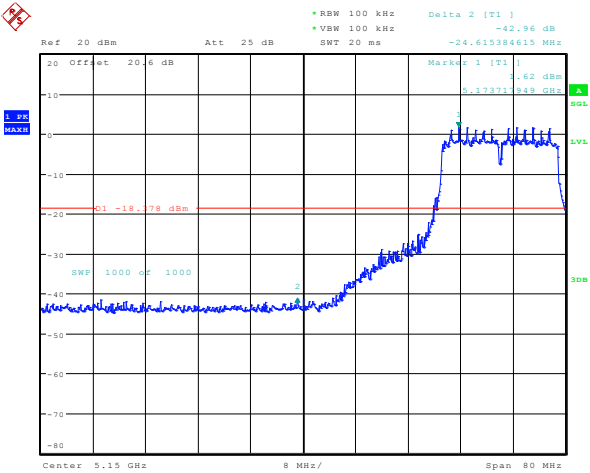
Channel	Bandwidth(MHz)	Data Rate	Limit (dBc)	Measured Level (dBc)	Margin (dBc)
36	20	MCS0	< -20	-42.96	-22.96
		MCS4	< -20	-43.16	-23.16
		MCS9	< -20	-40.71	-20.71
64	20	MCS0	< -20	-44.45	-24.45
		MCS4	< -20	-44.02	-24.02
		MCS9	< -20	-40.72	-20.72
100	20	MCS0	< -20	-44.58	-24.58
		MCS4	< -20	-43.88	-23.88
		MCS9	< -20	-41.80	-21.80
140	20	MCS0	< -20	-42.11	-22.11
		MCS4	< -20	-41.16	-21.16
		MCS9	< -20	-41.64	-21.64
149	20	MCS0	< -20	-37.35	-17.35
		MCS4	< -20	-39.77	-19.77
		MCS9	< -20	-41.19	-21.19
165	20	MCS0	< -20	-36.58	-16.58
		MCS4	< -20	-39.98	-19.98
		MCS9	< -20	-39.80	-19.80

See figures 8-13 to 8-18 for the plots of the band edge compliance measurements for Channel 36, 64, 100, 149 and 165 at MCS0 Mbps each for 802.11ac mode.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

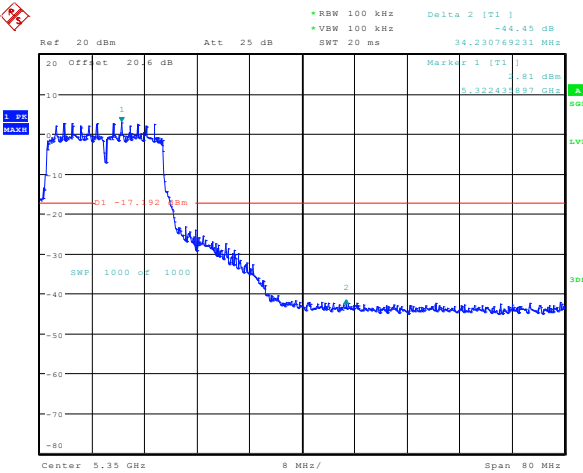
802.11ac RF Conducted Emission Test Results cont'd

Figure 8-13: Band Edge Compliance
802.11ac, Channel 36, MCS0 Mbps



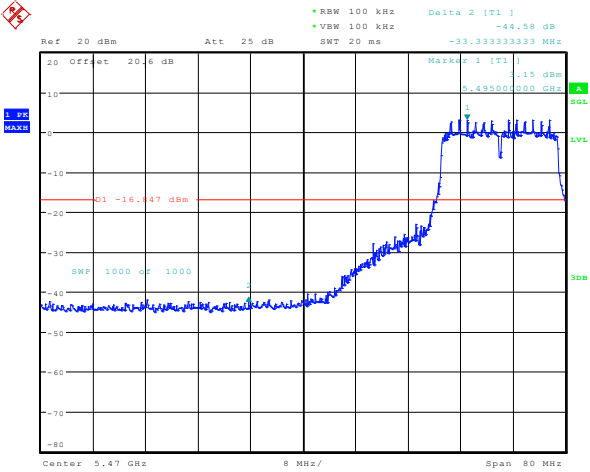
Date: 21.APR.2015 12:12:49

Figure 8-14: Band Edge Compliance
802.11ac, Channel 64, MCS0 Mbps



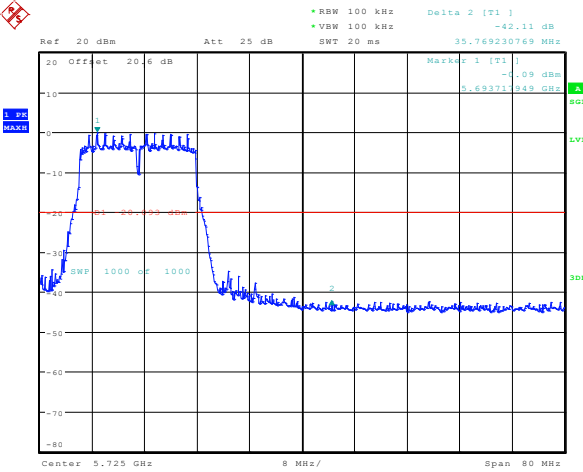
Date: 21.APR.2015 12:14:37

Figure 8-15: Band Edge Compliance
802.11ac, Channel 100, MCS0 Mbps




Date: 21.APR.2015 12:16:24

Figure 8-16: Band Edge Compliance
802.11ac, Channel 140, MCS0 Mbps

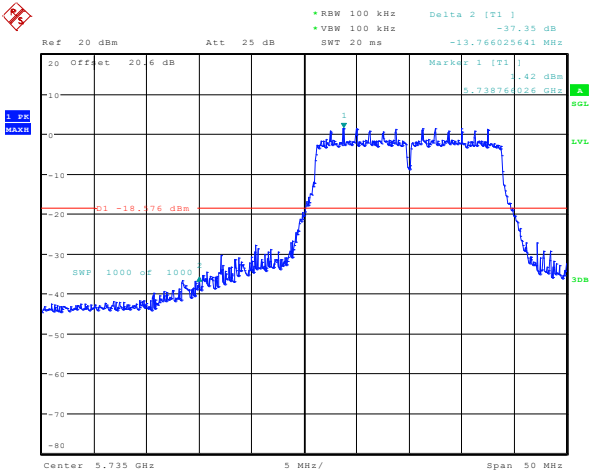


Date: 21.APR.2015 12:18:12

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4)	
	APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

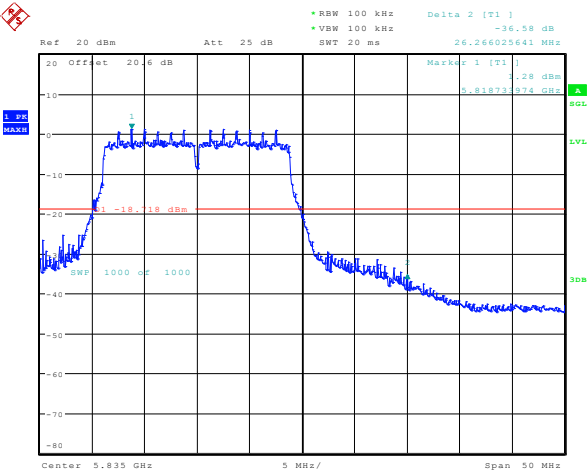
802.11a RF Conducted Emission Test Results cont'd

Figure 8-17: Band Edge Compliance
802.11ac, Channel 149, MCS0 Mbps




Date: 21.APR.2015 12:19:59

Figure 8-18: Band Edge Compliance
802.11ac, Channel 165, MCS0 Mbps



Date: 21.APR.2015 12:21:45

		EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW


802.11ac RF Conducted Emission Test Results cont'd

Channels 38, 62, 102, 142, 151, and 159 were measured at MCS0 Mbps, MCS4 Mbps, and MCS9 Mbps each for bandwidth 40MHz, 802.11ac mode.

40MHz Bandwidth

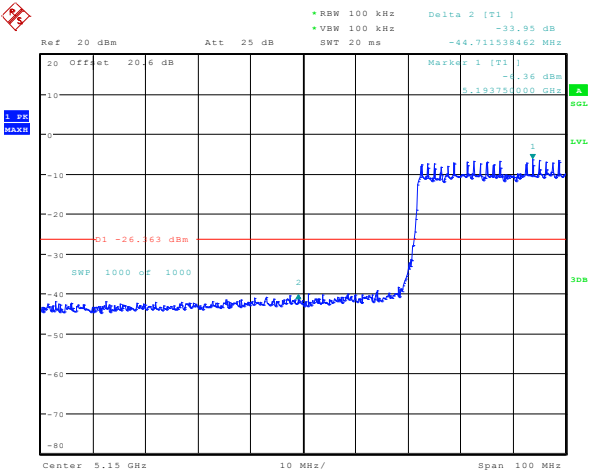
Channel	Bandwidth(MHz)	Data Rate	Limit (dBc)	Measured Level (dBc)	Margin (dBc)
38	40	MCS0	< -20	-33.95	-13.95
		MCS4	< -20	-34.16	-14.16
		MCS9	< -20	-32.72	-12.72
62	40	MCS0	< -20	-34.55	-14.55
		MCS4	< -20	-34.84	-14.84
		MCS9	< -20	-32.62	-12.62
102	40	MCS0	< -20	-34.85	-14.85
		MCS4	< -20	-34.80	-14.80
		MCS9	< -20	-33.93	-13.93
142	40	MCS0	< -20	-26.94	-6.94
		MCS4	< -20	-30.21	-10.21
		MCS9	< -20	-29.97	-9.97
151	40	MCS0	< -20	-34.78	-45.78
		MCS4	< -20	-35.63	-46.63
		MCS9	< -20	-34.27	-45.27
159	40	MCS0	< -20	-35.35	-46.35
		MCS4	< -20	-36.20	-47.20
		MCS9	< -20	-34.54	-45.54

See figures 8-19 to 8-24 for the plots of the band edge compliance measurements for Channel 38, 62, 102, 142, 151, and 159 at MCS0 Mbps each for 802.11ac mode.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

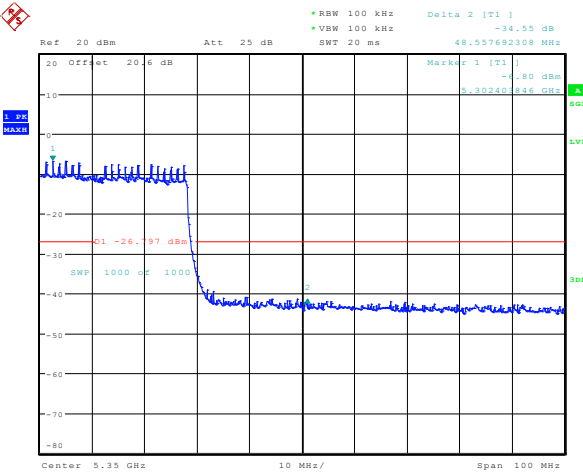
802.11ac RF Conducted Emission Test Results cont'd

Figure 8-19: Band Edge Compliance
802.11ac, Channel 38, MCS0 Mbps



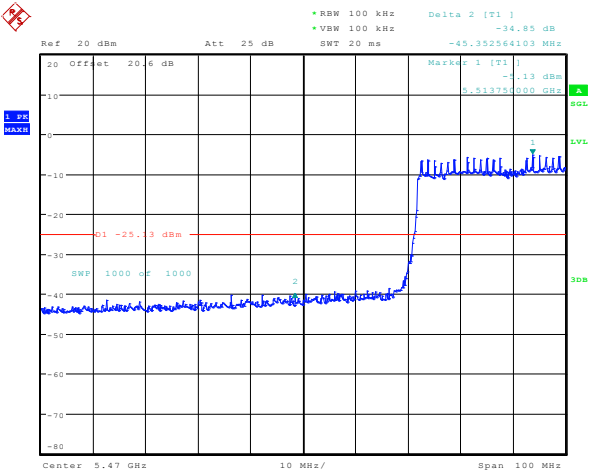
Date: 21.APR.2015 12:56:30

Figure 8-20: Band Edge Compliance
802.11ac, Channel 62, MCS0 Mbps



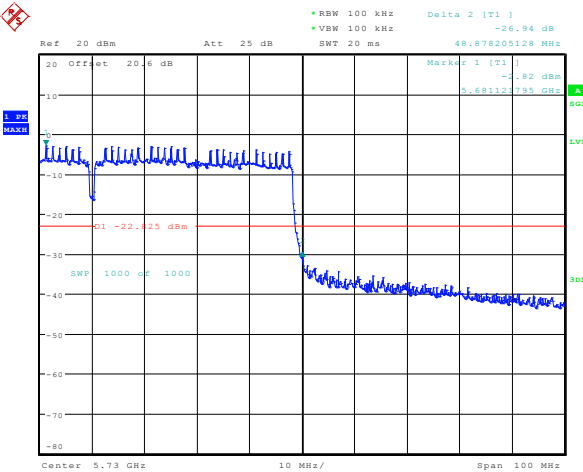
Date: 21.APR.2015 13:00:03

Figure 8-21: Band Edge Compliance
802.11ac, Channel 102, MCS0 Mbps




Date: 21.APR.2015 13:03:38

Figure 8-22: Band Edge Compliance
802.11ac, Channel 142, MCS0 Mbps

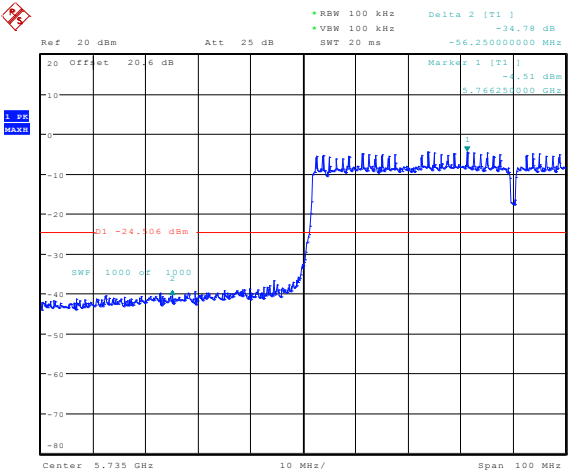


Date: 21.APR.2015 13:07:13

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

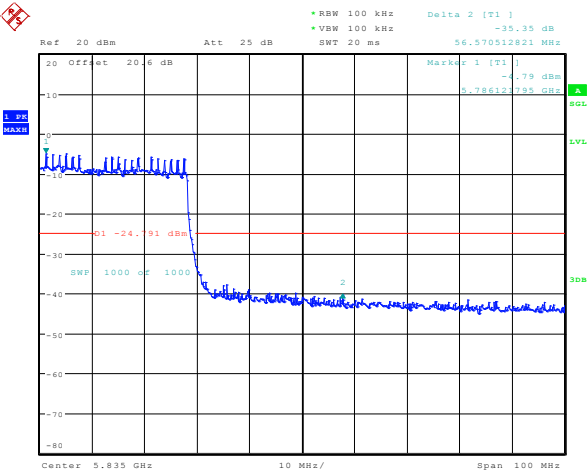
802.11a RF Conducted Emission Test Results cont'd

Figure 8-23: Band Edge Compliance
802.11ac, Channel 151, MCS0 Mbps




Date: 21.APR.2015 13:10:51

Figure 8-24: Band Edge Compliance
802.11ac, Channel 159, MCS0 Mbps



Date: 21.APR.2015 13:14:29

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW


802.11ac RF Conducted Emission Test Results cont'd

Channels 42, 58, 105, 138, 155, and 155 were measured at MCS0 Mbps, MCS4 Mbps, and MCS9 Mbps each for bandwidth 80MHz, 802.11ac mode.

80MHz Bandwidth

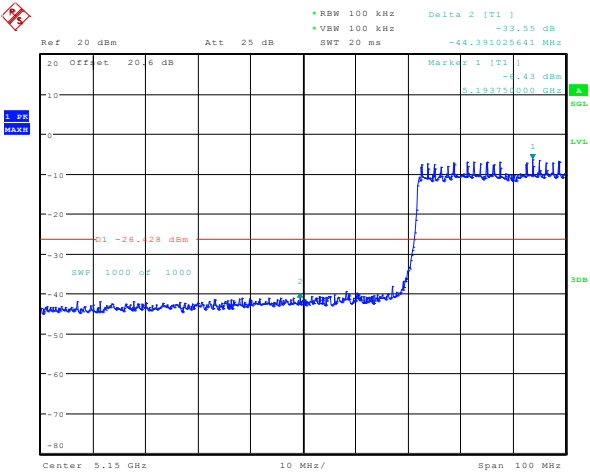
Channel	Bandwidth(MHz)	Data Rate	Limit (dBc)	Measured Level (dBc)	Margin (dBc)
42	80	MCS0	< -20	-33.55	-13.55
		MCS4	< -20	-34.72	-14.72
		MCS9	< -20	-32.76	-12.76
58	80	MCS0	< -20	-34.37	-14.37
		MCS4	< -20	-35.04	-15.04
		MCS9	< -20	-32.79	-12.79
105	80	MCS0	< -20	-34.95	-14.95
		MCS4	< -20	-34.94	-14.94
		MCS9	< -20	-34.54	-14.54
138	80	MCS0	< -20	-29.06	-9.06
		MCS4	< -20	-29.61	-9.61
		MCS9	< -20	-29.15	-9.15
155 (Low Edge)	80	MCS0	< -20	-33.90	-13.90
		MCS4	< -20	-34.22	-14.22
		MCS9	< -20	-33.92	-13.92
155 (High Edge)	80	MCS0	< -20	-35.77	-15.77
		MCS4	< -20	-35.72	-15.72
		MCS9	< -20	-34.19	-14.19

See figures 8-25 to 8-30 for the plots of the band edge compliance measurements for Channel 42, 58, 105, 138 and 155 at MCS0 Mbps each for 802.11ac mode.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

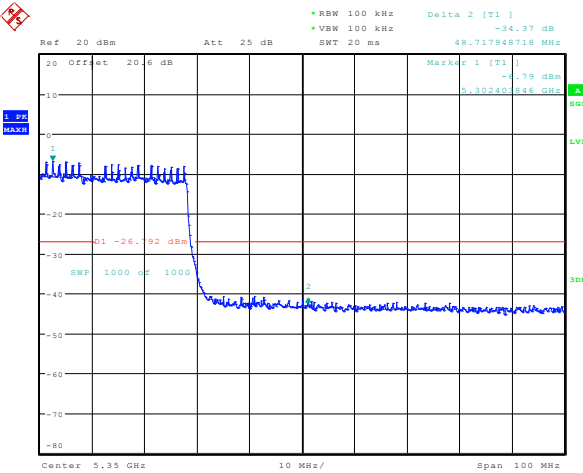
802.11ac RF Conducted Emission Test Results cont'd

Figure 8-25: Band Edge Compliance
802.11ac, Channel 38, MCS0 Mbps



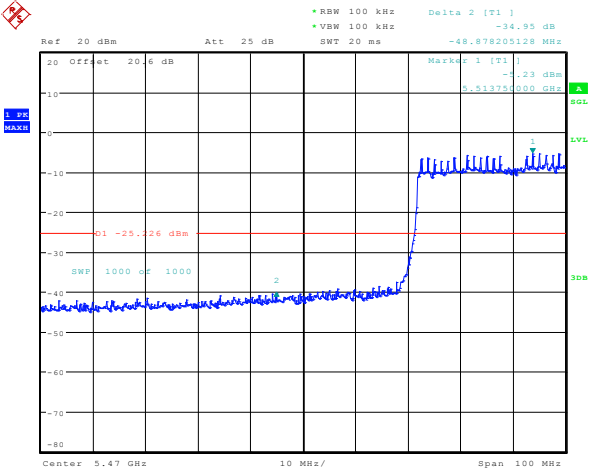
Date: 21.APR.2015 13:22:25

Figure 8-26: Band Edge Compliance
802.11ac, Channel 62, MCS0 Mbps



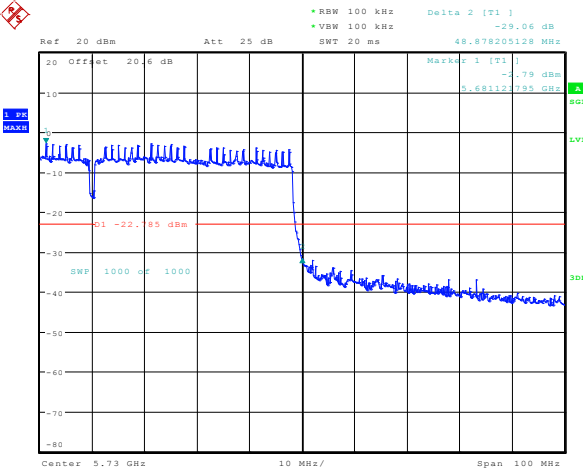
Date: 21.APR.2015 13:25:58

Figure 8-27: Band Edge Compliance
802.11ac, Channel 102, MCS0 Mbps




Date: 21.APR.2015 13:29:32

Figure 8-28: Band Edge Compliance
802.11ac, Channel 142, MCS0 Mbps

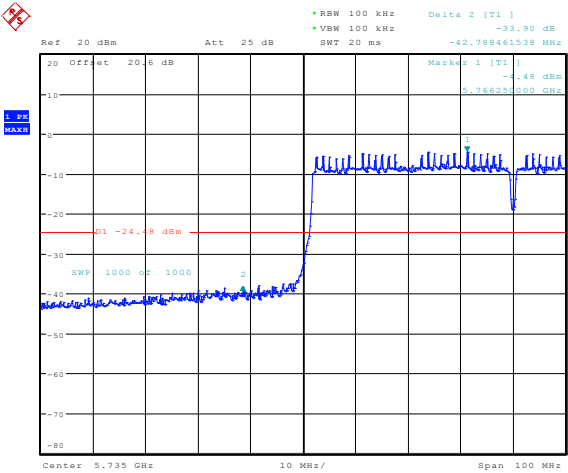


Date: 21.APR.2015 13:33:08

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

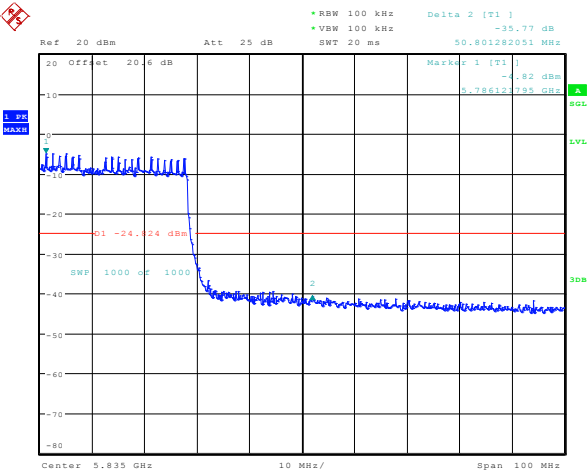
802.11ac RF Conducted Emission Test Results_cont'd

Figure 8-29: Band Edge Compliance
802.11ac, Channel 151, MCS0 Mbps




Date: 21.APR.2015 13:36:46

Figure 8-30: Band Edge Compliance
802.11ac, Channel 159, MCS0 Mbps



Date: 21.APR.2015 13:40:23

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11ac RF Conducted Emission Test Results cont'd


Peak Power Spectral Density

The EUT met the requirements of the peak power spectral density as per 47 CFR 15.407 and RSS-210. Channels 36, 64, 140 and 149 were measured at MCS0 Mbps, MCS4 Mbps, and MCS9 Mbps each for 802.11ac mode, bandwidth 20MHz.

Bandwidth 20MHz

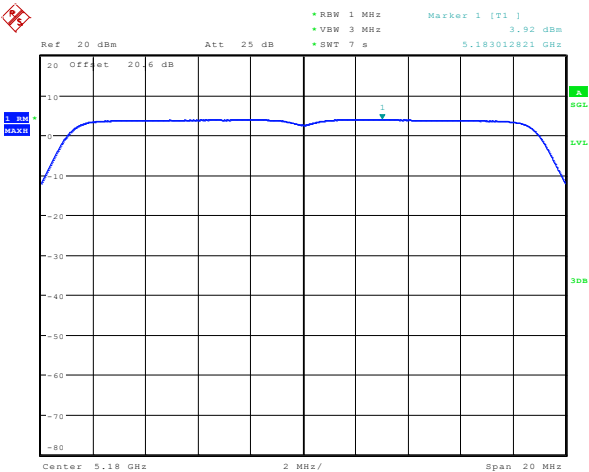
Channel	Data Rate	Limit (dBm)	Measured Level (dBm)	Margin (dBm)
36	MCS0	< 11.00	3.92	-7.08
	MCS4	< 11.00	2.95	-8.05
	MCS9	< 11.00	-0.37	-11.37
64	MCS0	< 11.00	4.90	-6.10
	MCS4	< 11.00	3.57	-7.43
	MCS9	< 11.00	-0.71	-11.71
140	MCS0	< 11.00	1.39	-9.61
	MCS4	< 11.00	0.35	-10.65
	MCS9	< 11.00	-0.43	-11.43
149	MCS0	< 11.00	-18.68	-29.68
	MCS4	< 11.00	-19.25	-30.25
	MCS9	< 11.00	-20.17	-31.17

See figures 8-31 to 8-34 for the plots of the peak power spectral density for Channel 36, 64, 140 and 149 at MCS0 Mbps each for 802.11ac mode, 20MHz bandwidth.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

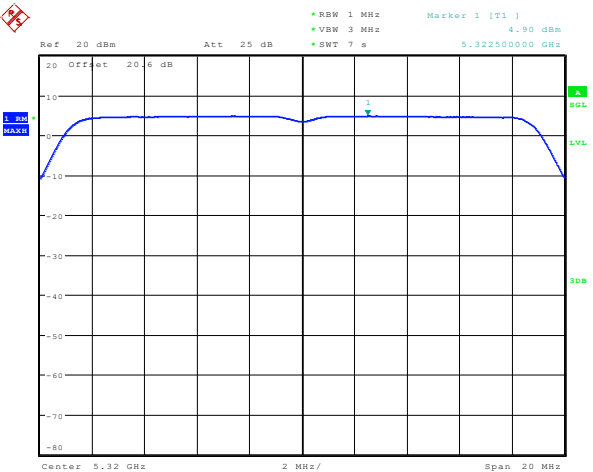
802.11ac RF Conducted Emission Test Results cont'd

Figure 8-31: Peak Power Spectral Density
802.11ac, Channel 36, MCS0 Mbps



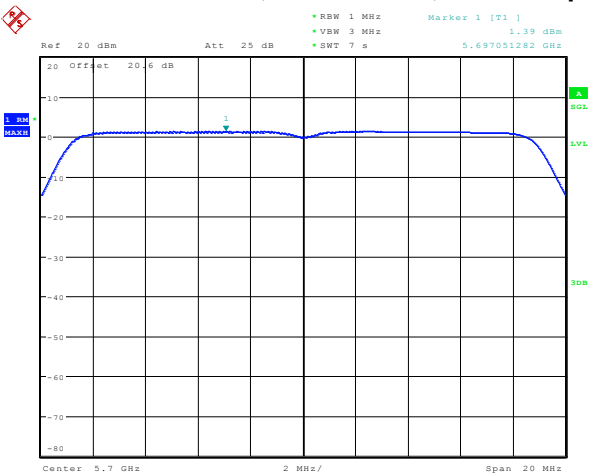
Date: 7.APR.2015 12:11:41

Figure 8-32: Peak Power Spectral Density
802.11ac, Channel 64, MCS0 Mbps



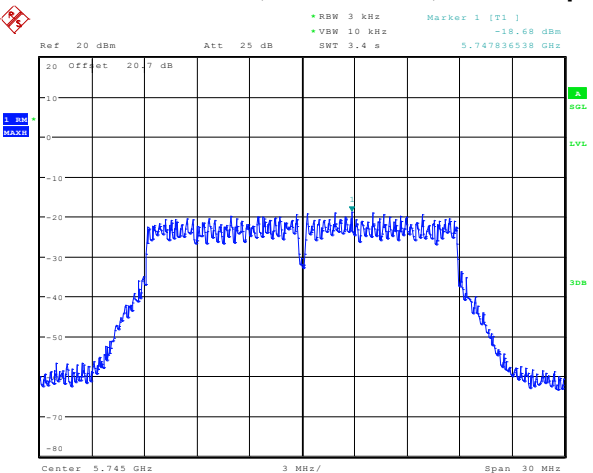
Date: 7.APR.2015 12:12:15

Figure 8-33: Peak Power Spectral Density
802.11ac, Channel 140, MCS0 Mbps




Date: 7.APR.2015 12:12:48

Figure 8-34: Peak Power Spectral Density
802.11ac, Channel 149, MCS0 Mbps



Date: 7.APR.2015 12:17:32

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW


802.11ac RF Conducted Emission Test Results cont'd

Channels 38, 62, 142 and 151 were measured at MCS0 Mbps, MCS4 Mbps, and MCS9 Mbps each for 802.11ac mode, bandwidth 40MHz.

Bandwidth 40MHz

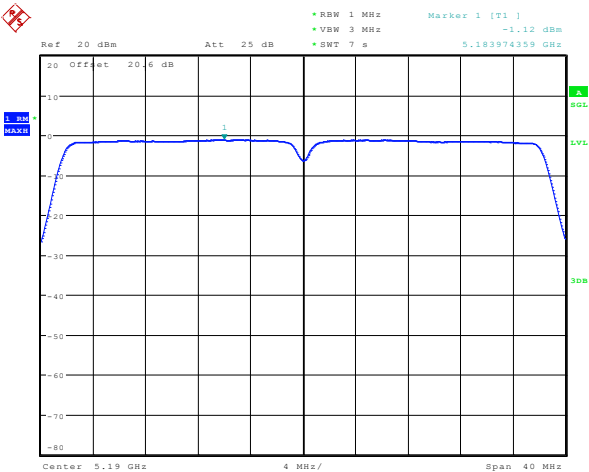
Channel	Data Rate	Limit (dBm)	Measured Level (dBm)	Margin (dBm)
38	MCS0	< 11.00	-1.12	-12.12
	MCS4	< 11.00	-2.75	-13.75
	MCS9	< 11.00	-5.07	-16.07
62	MCS0	< 11.00	-1.59	-12.59
	MCS4	< 11.00	-3.05	-14.05
	MCS9	< 11.00	-5.76	-16.76
142	MCS0	< 11.00	1.88	-9.12
	MCS4	< 11.00	-0.76	-11.76
	MCS9	< 11.00	-5.48	-16.48
151	MCS0	< 11.00	-23.11	-34.11
	MCS4	< 11.00	-23.58	-34.58
	MCS9	< 11.00	-25.26	-36.26

See figures 8-35 to 8-38 for the plots of the peak power spectral density for channel 38, 62, 142 and 151 at MCS0 Mbps each for 802.11ac mode, 40MHz bandwidth.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

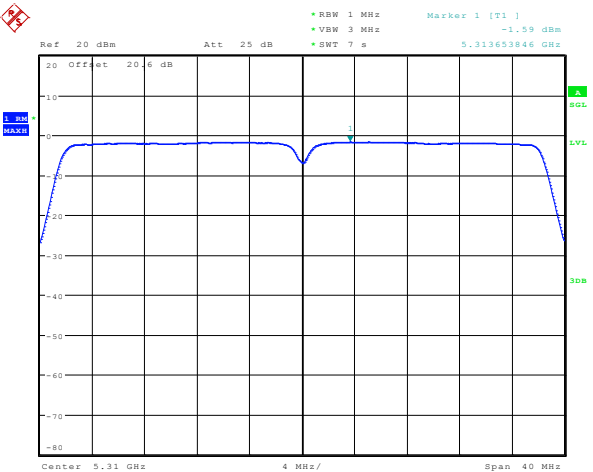
802.11ac RF Conducted Emission Test Results cont'd

Figure 8-35: Peak Power Spectral Density
802.11ac, Channel 38, MCS0 Mbps



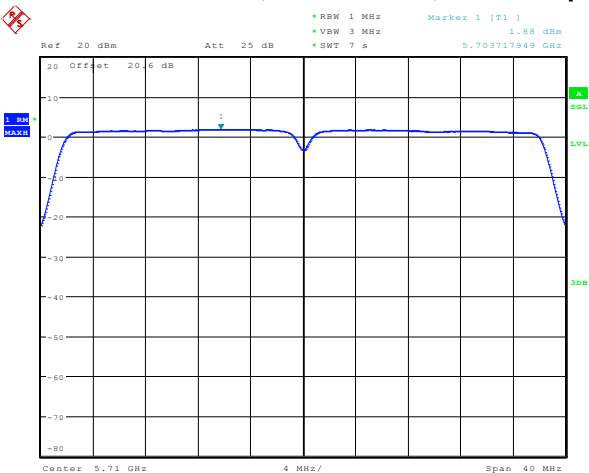
Date: 8.APR.2015 11:23:30

Figure 8-36: Peak Power Spectral Density
802.11ac, Channel 62, MCS0 Mbps



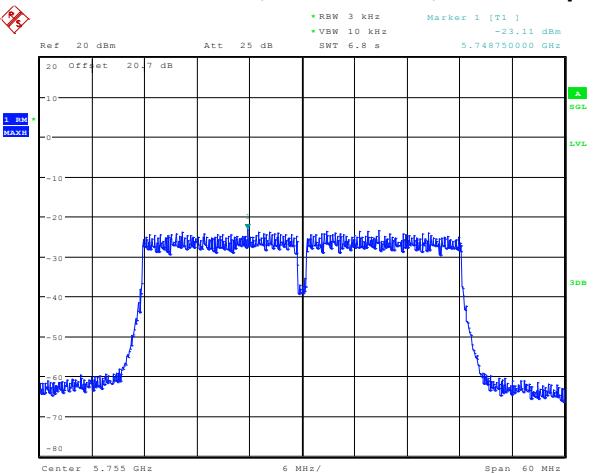
Date: 8.APR.2015 11:24:03

Figure 8-37: Peak Power Spectral Density
802.11ac, Channel 142, MCS0 Mbps




Date: 8.APR.2015 11:24:37

Figure 8-38: Peak Power Spectral Density
802.11ac, Channel 151, MCS0 Mbps



Date: 8.APR.2015 11:28:22

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW


802.11ac RF Conducted Emission Test Results cont'd

Channels 42, 58, 138 and 155 were measured at MCS0 Mbps, MCS4 Mbps, and MCS9 Mbps each for 802.11ac mode, bandwidth 80MHz.

Bandwidth 80MHz

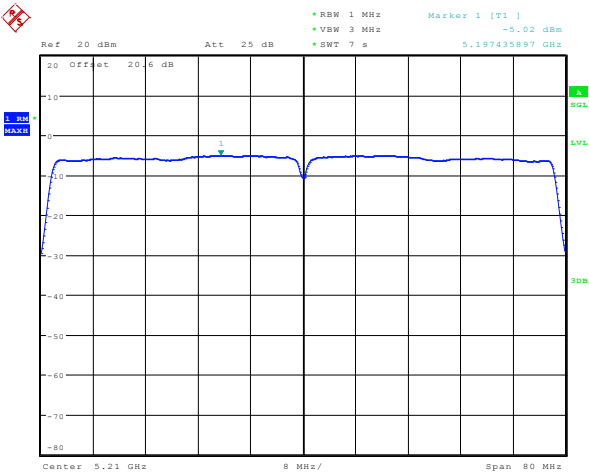
Channel	Data Rate	Limit (dBm)	Measured Level (dBm)	Margin (dBm)
42	MCS0	< 11.00	-5.02	-16.02
	MCS4	< 11.00	-6.65	-17.65
	MCS9	< 11.00	-9.57	-20.57
58	MCS0	< 11.00	-5.20	-16.20
	MCS4	< 11.00	-6.91	-17.91
	MCS9	< 11.00	-9.69	-20.69
138	MCS0	< 11.00	-2.59	-13.59
	MCS4	< 11.00	-5.03	-16.03
	MCS9	< 11.00	-9.27	-20.27
155	MCS0	< 11.00	-28.17	-39.17
	MCS4	< 11.00	-28.42	-39.42
	MCS9	< 11.00	-30.86	-41.86

See figures 8-39 to 8-42 for the plots of the peak power spectral density for channel 42, 58, 138 and 155 at MCS0 Mbps each for 802.11ac mode, 80MHz bandwidth.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

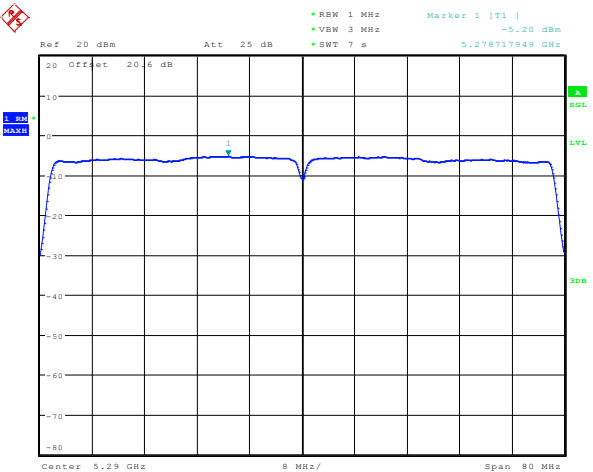
802.11ac RF Conducted Emission Test Results cont'd

Figure 8-39: Peak Power Spectral Density
802.11ac, Channel 42, MCS0 Mbps



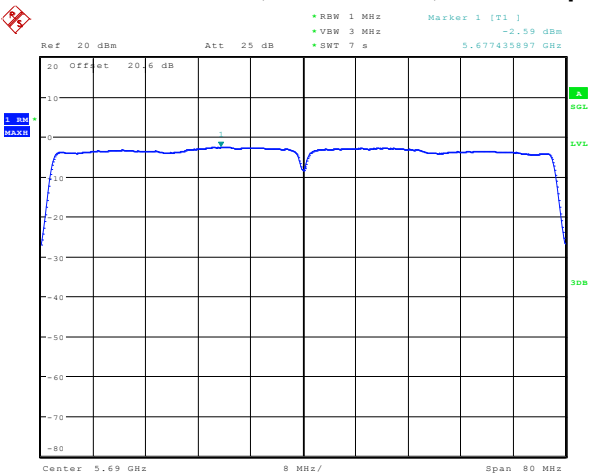
Date: 8.APR.2015 12:18:00

Figure 8-40: Peak Power Spectral Density
802.11ac, Channel 58, MCS0 Mbps



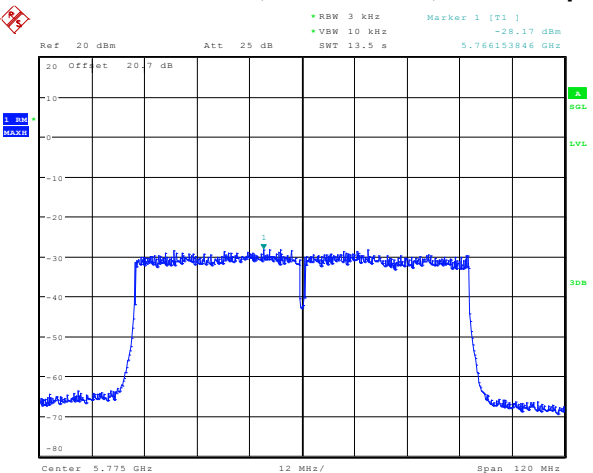
Date: 8.APR.2015 12:18:34

Figure 8-41: Peak Power Spectral Density
802.11ac, Channel 138, MCS0 Mbps




Date: 8.APR.2015 12:19:07

Figure 8-42: Peak Power Spectral Density
802.11ac, Channel 155, MCS0 Mbps



Date: 8.APR.2015 12:22:23

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11ac RF Conducted Emission Test Results cont'd


Spurious RF Conducted Emissions

The EUT met the requirements of the spurious RF conducted emissions as per 47 CFR 15.407 and RSS-210. Channels 36, 64, 140 and 149 were measured at MCS0 Mbps, MCS4 Mbps and MCS9 Mbps each for 802.11ac mode, 20MHz bandwidth. Peak power was measured using an Agilent power meter, model N1911A with model N1921A power sensor. A reference offset of 29.0 dB was applied to the spectrum analyzer reference level for the attenuators and coaxial cable loss in the test circuit.

20MHZ Bandwidth

Channel	Data Rate	Power (dBm)	Max. Measured Level (dBm)	Max. Measured Level from Carrier (dBc)	Limit (dBc)
36	MCS0	15.46	-45.92	-61.38	-20
	MCS4	14.32	-42.72	-57.04	-20
	MCS9	10.88	-46.67	-57.55	-20
64	MCS0	16.45	-43.73	-60.18	-20
	MCS4	15.10	-46.51	-61.61	-20
	MCS9	10.61	-46.42	-57.02	-20
140	MCS0	12.73	-44.20	-56.93	-20
	MCS4	11.59	-43.73	-55.31	-20
	MCS9	10.74	-44.44	-55.19	-20
149	MCS0	14.21	-43.54	-57.75	-20
	MCS4	13.00	-42.53	-55.53	-20
	MCS9	11.24	-43.43	-54.66	-20

See figures 8-43 to 8-46 for the plots of the spurious RF conducted emissions for Channel 36, 64, 140 and 149 at MCS0 Mbps each for 802.11ac mode.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
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802.11ac RF Conducted Emission Test Results cont'd

Figure 8-43a: Spurious RF Conducted Emissions, 802.11ac Channel 36, MCS0 Mbps

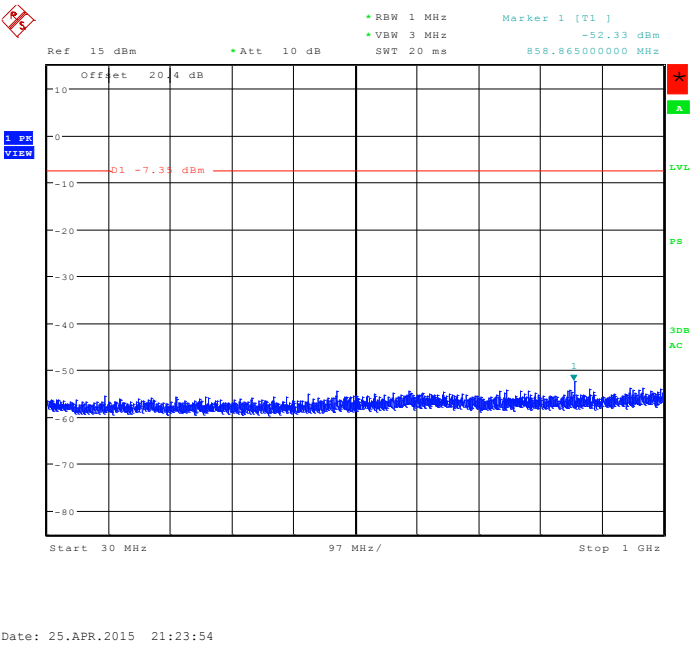
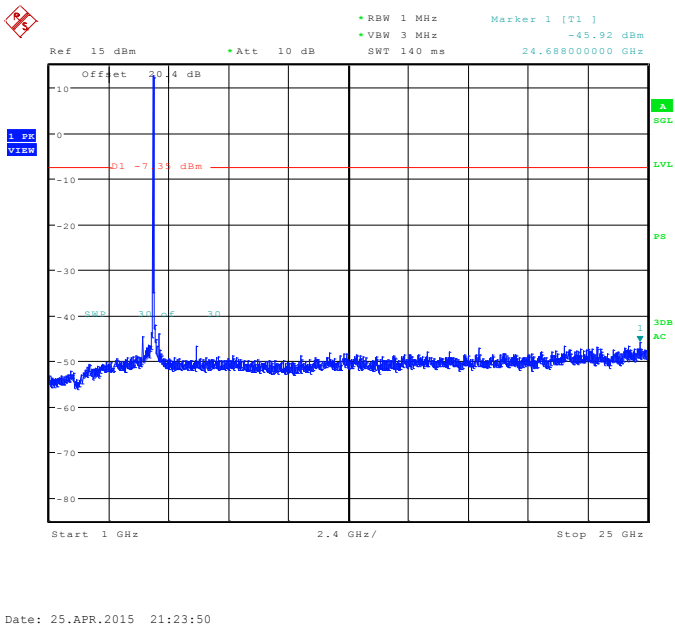



Figure 8-43b: Spurious RF Conducted Emissions, 802.11ac Channel 36, MCS0



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802.11ac RF Conducted Emission Test Results cont'd

Figure 8-44a: Spurious RF Conducted Emissions, 802.11ac Channel 64, MCS0

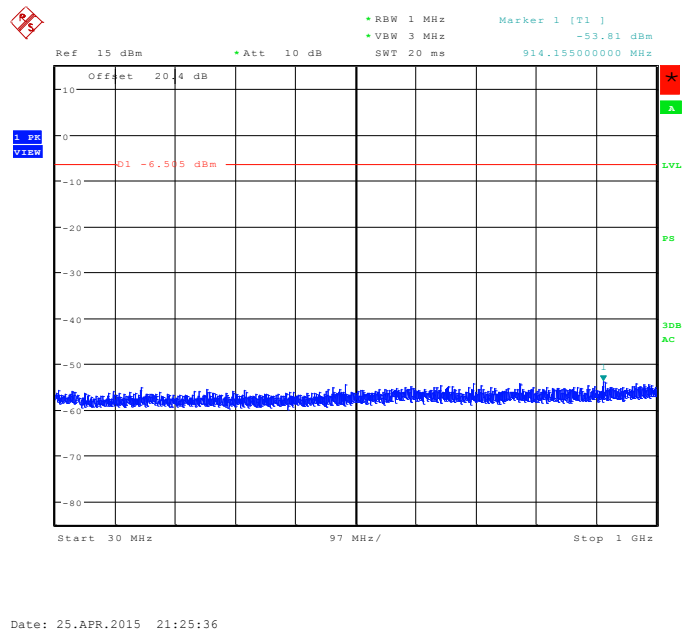
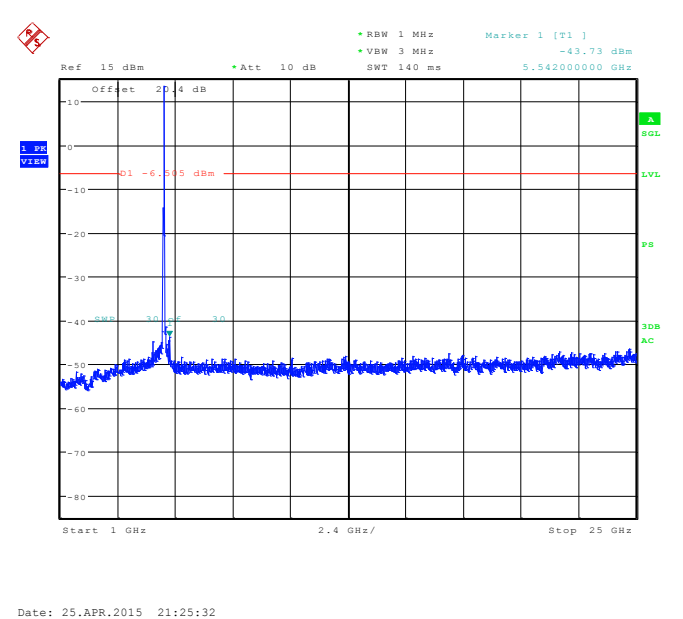



Figure 8-44b: Spurious RF Conducted Emissions, 802.11ac Channel 64, MCS0



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802.11ac RF Conducted Emission Test Results cont'd

Figure 8-45a: Spurious RF Conducted Emissions, 802.11ac Channel 140, MCS0

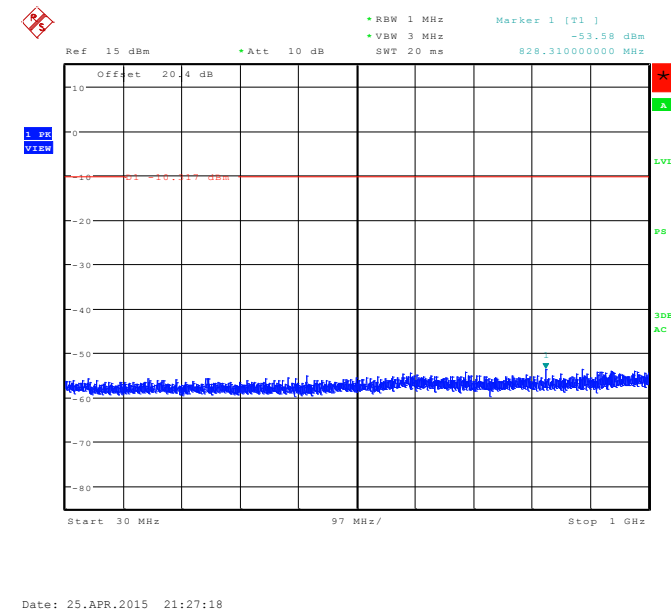
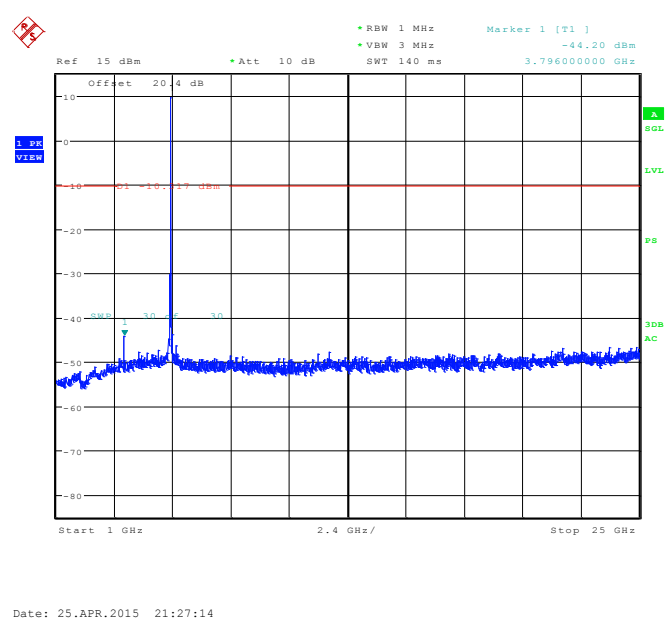



Figure 8-45b: Spurious RF Conducted Emissions, 802.11ac Channel 140, MCS0



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802.11ac RF Conducted Emission Test Results cont'd

Figure 8-46a: Spurious RF Conducted Emissions, 802.11ac Channel 149, MCS0

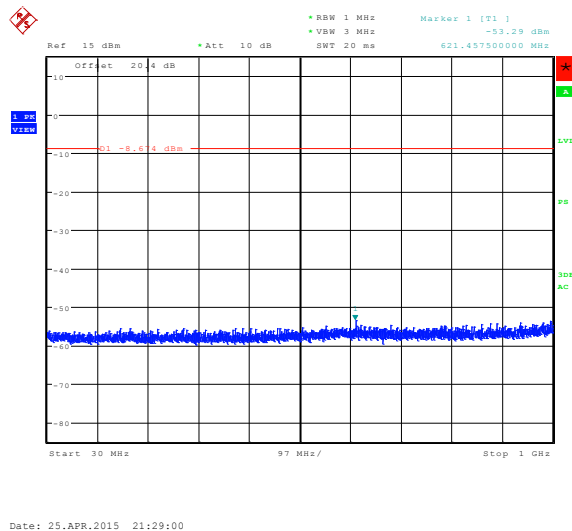
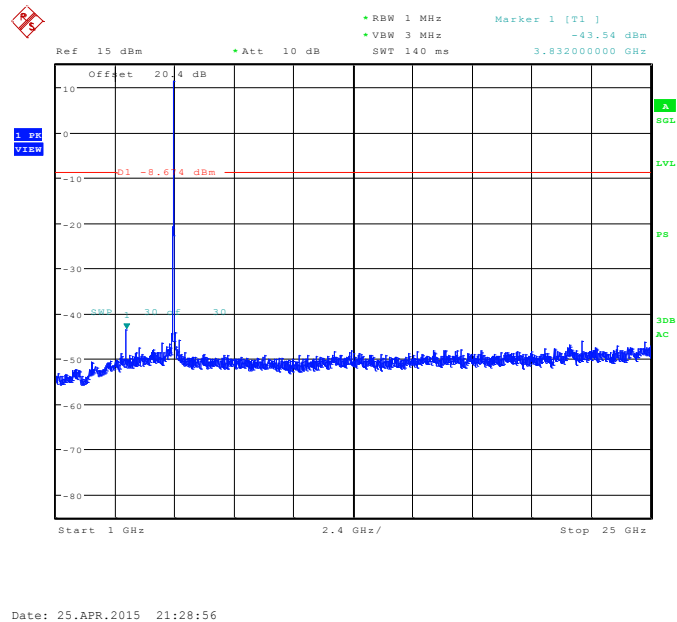



Figure 8-46b: Spurious RF Conducted Emissions, 802.11ac Channel 149, MCS0



	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW


802.11ac RF Conducted Emission Test Results cont'd

Channels 38, 62, 142 and 151 were measured at MCS0 Mbps, MCS4 Mbps and MCS9 Mbps each for 802.11ac mode, 40MHz bandwidth. Peak power was measured using an Agilent power meter, model N1911A with model N1921A power sensor. A reference offset of 29.0 dB was applied to the spectrum analyzer reference level for the attenuators and coaxial cable loss in the test circuit.

40MHZ Bandwidth

Channel	Data Rate	Power (dBm)	Max. Measured Level (dBm)	Max. Measured Level from Carrier (dBc)	Limit (dBc)
38	MCS0	13.39	-55.30	-68.69	-20
	MCS4	11.82	-55.35	-67.17	-20
	MCS9	8.94	-55.99	-64.93	-20
62	MCS0	13.00	-54.03	-67.03	-20
	MCS4	11.33	-56.62	-67.94	-20
	MCS9	8.53	-57.09	-65.62	-20
142	MCS0	16.23	-57.49	-73.72	-20
	MCS4	13.49	-56.52	-70.01	-20
	MCS9	8.70	-55.42	-64.11	-20
151	MCS0	13.73	-56.83	-70.56	-20
	MCS4	12.07	-56.56	-68.63	-20
	MCS9	9.17	-56.62	-65.79	-20

See figures 8-47 to 8-50 for the plots of the spurious RF conducted emissions for Channel 38, 62, 142 and 151 at MCS0 Mbps each for 802.11ac mode, bandwidth 40MHz.

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Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

802.11ac RF Conducted Emission Test Results cont'd

Figure 8-47a: Spurious RF Conducted Emissions, 802.11ac Channel 38, MCS0

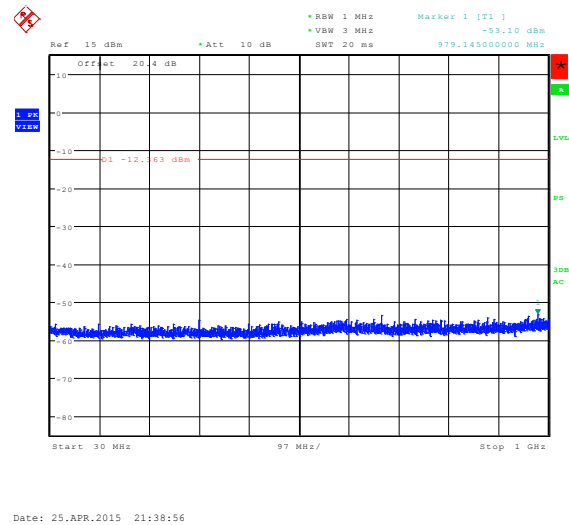
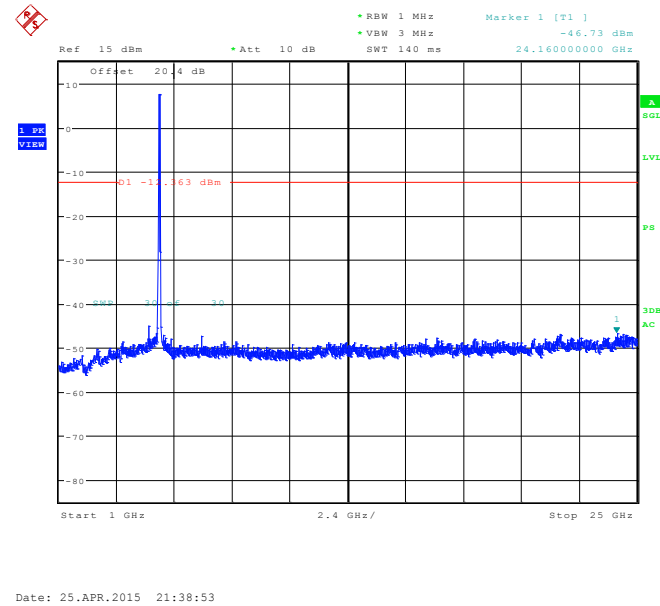


Figure 8-47b: Spurious RF Conducted Emissions, 802.11ac Channel 38, MCS0




	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
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Figure 8-48a: Spurious RF Conducted Emissions, 802.11ac Channel 62, MCS0

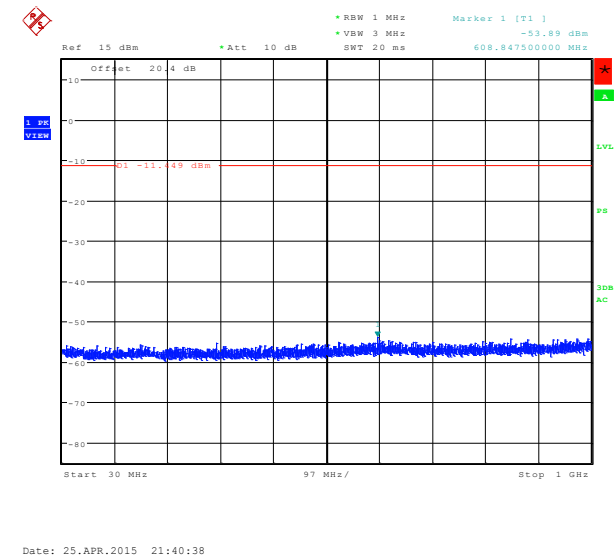
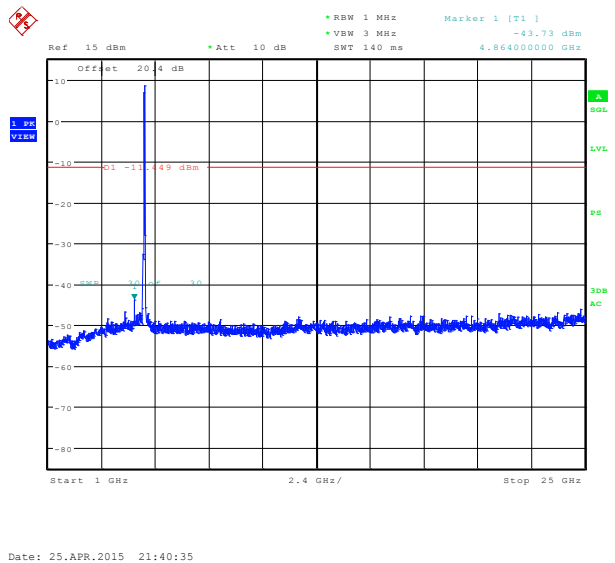



Figure 8-48b: Spurious RF Conducted Emissions, 802.11ac Channel 62, MCS0



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802.11ac RF Conducted Emission Test Results cont'd

Figure 8-49a: Spurious RF Conducted Emissions, 802.11ac Channel 142, MCS0

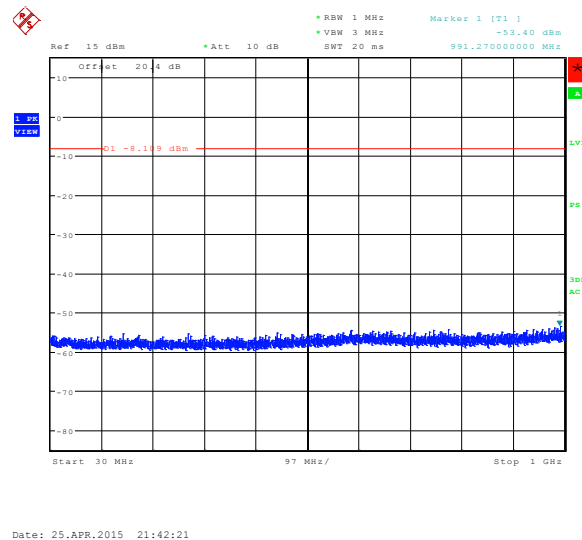
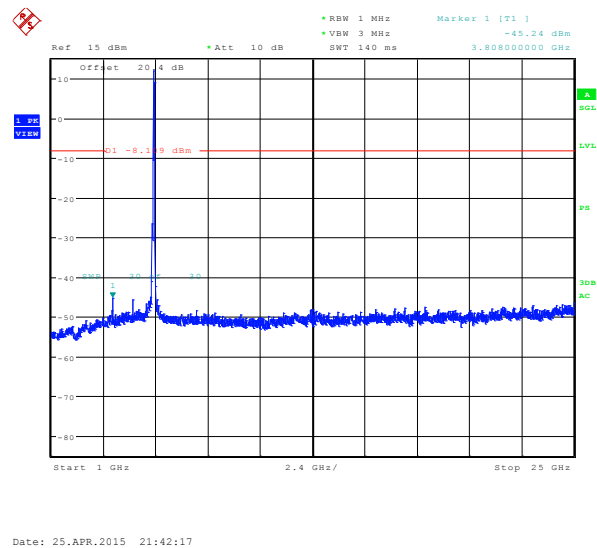



Figure 8-49b: Spurious RF Conducted Emissions, 802.11ac Channel 142, MCS0



	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
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802.11ac RF Conducted Emission Test Results cont'd

Figure 8-50a: Spurious RF Conducted Emissions, 802.11ac Channel 151, MCS0

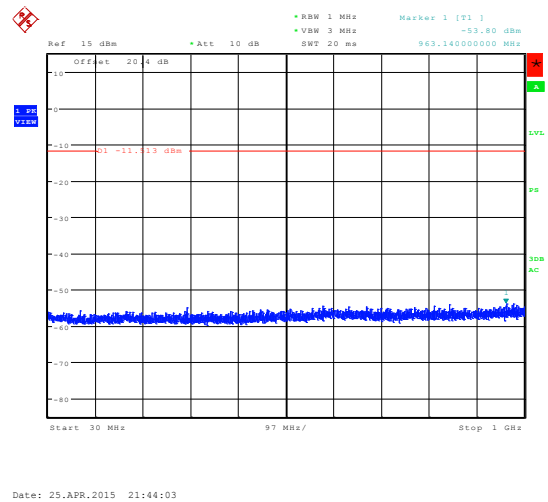
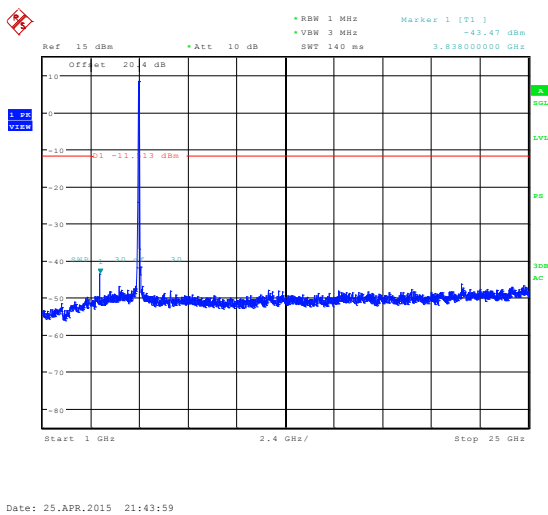



Figure 8-50b: Spurious RF Conducted Emissions, 802.11ac Channel 151, MCS0



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802.11ac RF Conducted Emission Test Results cont'd

Channels 42, 58, 138 and 155 were measured at MCS0 Mbps, MCS4 Mbps and MCS9 Mbps each for 802.11ac mode, 80MHz bandwidth. Peak power was measured using an Agilent power meter, model N1911A with model N1921A power sensor. A reference offset of 29.0 dB was applied to the spectrum analyzer reference level for the attenuators and coaxial cable loss in the test circuit.

80MHZ Bandwidth

Channel	Data Rate	Power (dBm)	Max. Measured Level (dBm)	Max. Measured Level from Carrier (dBc)	Limit (dBc)
42	MCS0	12.27	-43.715	-55.98	-20
	MCS4	10.14	-43.645	-53.79	-20
	MCS9	7.20	-44.225	-51.43	-20
58	MCS0	12.66	-44.415	-57.08	-20
	MCS4	10.55	-44.603	-55.15	-20
	MCS9	7.13	-43.802	-50.93	-20
138	MCS0	14.36	-43.751	-58.11	-20
	MCS4	11.61	-43.964	-55.57	-20
	MCS9	7.10	-44.675	-51.77	-20
155	MCS0	12.38	-45.298	-57.67	-20
	MCS4	10.21	-44.305	-54.51	-20
	MCS9	7.31	-42.920	-50.23	-20

See figures 8-51 to 8-54 for the plots of the spurious RF conducted emissions for Channel 42, 58, 138 and 155 at MCS0 Mbps each for 802.11ac mode, bandwidth 80MHz.

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802.11ac RF Conducted Emission Test Results cont'd

Figure 8-51a: Spurious RF Conducted Emissions, 802.11ac Channel 42, MCS0

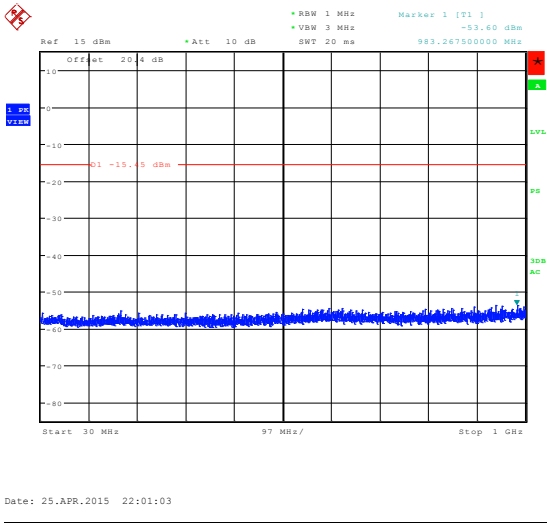
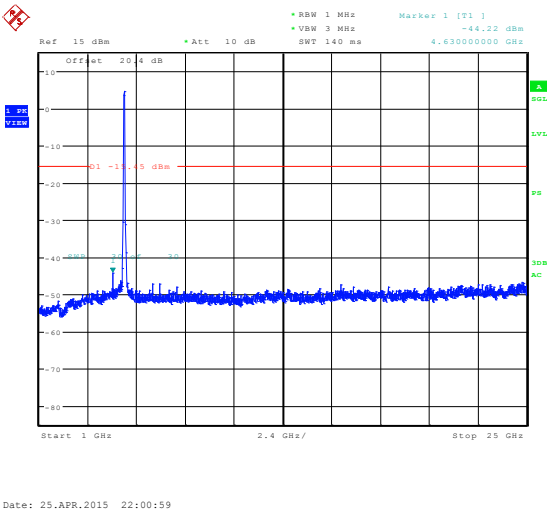



Figure 8-51b: Spurious RF Conducted Emissions, 802.11ac Channel 42, MCS0



	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14 2015	Test Report No.: RTS-6067-1505-16

802.11ac RF Conducted Emission Test Results cont'd

Figure 8-52a: Spurious RF Conducted Emissions, 802.11ac Channel 58, MCS0

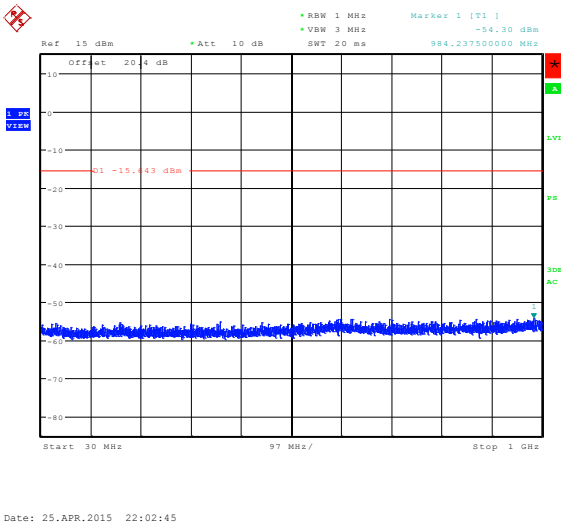
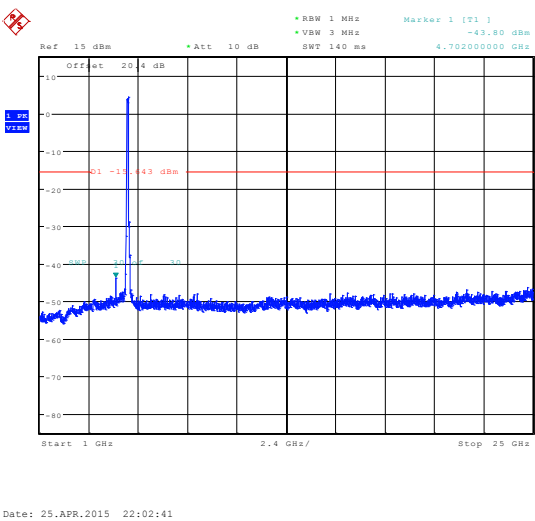



Figure 8-52b: Spurious RF Conducted Emissions, 802.11ac Channel 58, MCS0



	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14 2015	Test Report No.: RTS-6067-1505-16

802.11ac RF Conducted Emission Test Results cont'd

Figure 8-53a: Spurious RF Conducted Emissions, 802.11ac Channel 138, MCS0

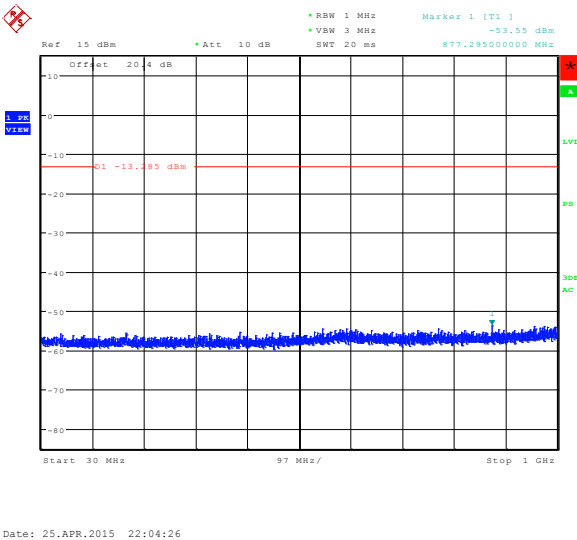
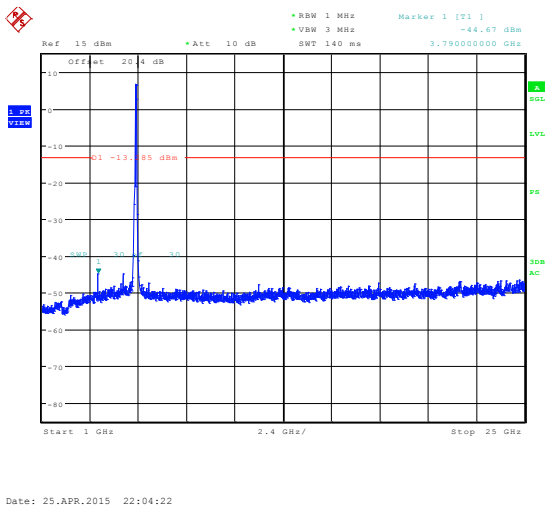



Figure 8-53b: Spurious RF Conducted Emissions, 802.11ac Channel 138, MCS0



	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 8	
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802.11ac RF Conducted Emission Test Results cont'd

Figure 8-54a: Spurious RF Conducted Emissions, 802.11ac Channel 155, MCS0

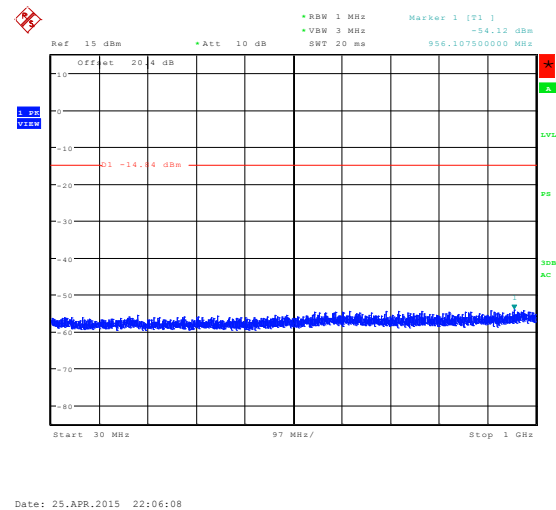
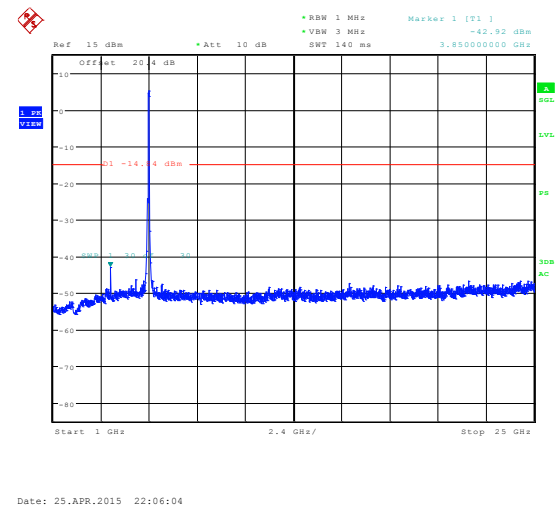



Figure 8-54b: Spurious RF Conducted Emissions, 802.11ac Channel 155, MCS0



APPENDIX 9 – NEAR FIELD COMMUNICATIONS TEST DATA/PLOTS

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 9	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

Near Field Communications (NFC) Test Results

Radiated Emissions

Date of Test: May 12, 2015

Measurements were performed by Savtej Sandhu.

The environmental test conditions were: Temperature: 25.3 °C
Relative Humidity: 28.7 %


The test distance was 3.0 meters with a EUT height of 1.5 meters, and sweep frequency of 9 kHz to 1 GHz.

The BlackBerry® smartphone was in vertical position.

The frequency sweep measurements were performed in Near Field Communications Tx mode at 13.56 MHz

Frequency (MHz)	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV/m)	Limit (dBµV/m)	Test Margin (dB)
13.57	50.91	16.67	50.91	124.00	-73.09

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

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 9	
Test Report No.: RTS-6067-1505-16	Dates of Test: April 02 – May 14, 2015	FCC ID: L6ARHR190LW IC: 2503A-RHR190LW

Near Field Communications (NFC) Test Results

Occupied Bandwidth

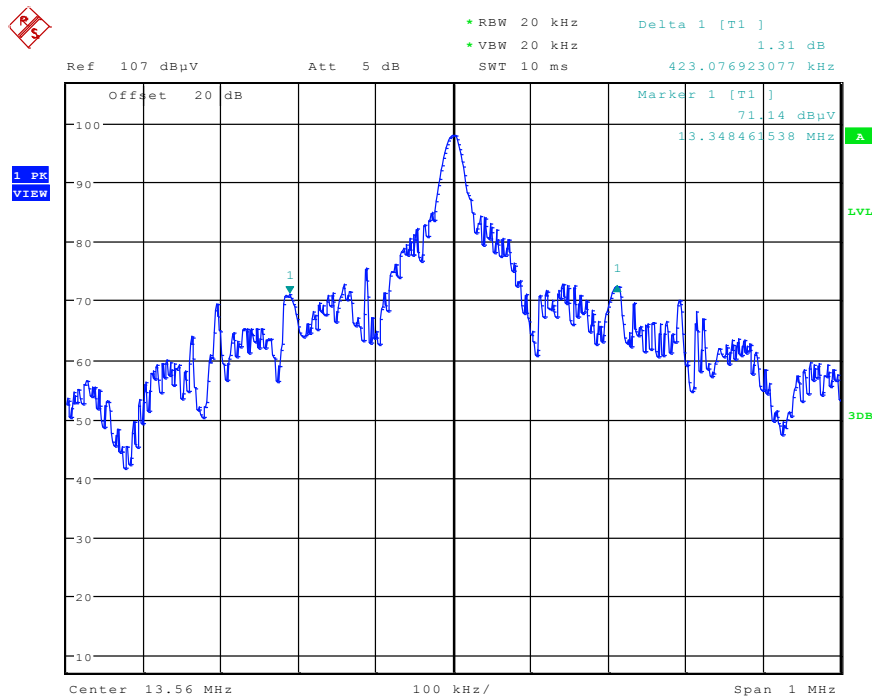
Date of test: May 13, 2015

The measurements were performed by Siji Li.


The environmental test conditions were: Temperature: 25.2 °C
 Relative Humidity: 41.5 %

Operation mode (TX ON)	Occupied Bandwidth (kHz)
NFC, modulated	491.99

Figure 9-1: Occupied Bandwidth, NFC TX Frequency = 13.56 MHz



Date: 13.MAY.2015 12:21:02

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) APPENDIX 9	
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Near Field Communications (NFC) Test Results cont'd

Frequency Stability

The measurements were performed by Sijia Li.

The environmental test conditions were: Temperature: 25.2 °C
Relative Humidity: 41.5 %

Test Temperature (Celsius)	Nominal Freq. (MHz)	Measured Freq. (MHz)	Input Voltage (Volts)	Max Freq Error (Hz)	% Deviation (Limit .01%)	PPM
-20	13.56	13.560018	3.6	18	0.00013	1.3000
-20	13.56	13.560021	3.8	21	0.00015	1.5364
-20	13.56	13.560018	4.35	18	0.00013	1.3000
-10	13.56	13.560061	3.6	61	0.00045	4.4910
-10	13.56	13.560058	3.8	58	0.00043	4.2546
-10	13.56	13.560063	4.35	63	0.00046	4.6091
0	13.56	13.560066	3.6	66	0.00048	4.8455
0	13.56	13.560066	3.8	66	0.00048	4.8455
0	13.56	13.560066	4.35	66	0.00048	4.8455
10	13.56	13.560046	3.6	46	0.00034	3.4273
10	13.56	13.560053	3.8	53	0.00039	3.9000
10	13.56	13.560054	4.35	54	0.00040	4.0182
20	13.56	13.560019	3.6	19	0.00014	1.4182
20	13.56	13.560027	3.8	27	0.00020	2.0091
20	13.56	13.560022	4.35	22	0.00017	1.6546

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Near Field Communications (NFC) Test Results cont'd

Frequency Stability cont'd

Test Temperature (Celsius)	Nominal Freq. (MHz)	Measured Freq. (MHz)	Input Voltage (Volts)	Max Freq Error (Hz)	% Deviation (Limit .01%)	PPM
30	13.56	13.559989	3.6	-11	-0.00008	-0.8273
30	13.56	13.559992	3.8	-8	-0.00006	-0.5909
30	13.56	13.559989	4.35	-11	-0.00008	-0.8273
40	13.56	13.559955	3.6	-45	-0.00033	-3.3091
40	13.56	13.559955	3.8	-45	-0.00033	-3.3091
40	13.56	13.559960	4.35	-40	-0.00030	-2.9546
50	13.56	13.559926	3.6	-74	-0.00054	-5.4364
50	13.56	13.559925	3.8	-75	-0.00056	-5.5546
50	13.56	13.559925	4.35	-75	-0.00056	-5.5546
60	13.56	13.559912	3.6	-88	-0.00065	-6.5001
60	13.56	13.559912	3.8	-88	-0.00065	-6.5001
60	13.56	13.559910	4.35	-90	-0.00066	-6.6183