

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)		Page 1(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW

SAR Compliance Test Report

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Statement of Compliance: BlackBerry RTS declares under its sole responsibility that the product to which this declaration relates, is in conformity with the appropriate RF exposure standards, recommendations and guidelines. It also declares that the product was tested in accordance with the appropriate measurement standards, guidelines and recommended practices.

Device Category: This BlackBerry® Smartphone is a portable device, designed to be used in direct contact with the user's head, hand and to be carried in approved accessories when carried on the user's body.

RF Exposure Environment: This device has been shown to be in compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in, FCC 47 CFR Part 2.1093, FCC 96-326, IEEE Std. C95.1-1992, Health Canada's Safety Code 6, as reproduced in RSS-102 issue 5-2015 and has been tested in accordance with the measurement procedures specified in latest FCC OET KDB Procedures, ANSI/IEEE Std. C95.3-2002, IEEE 1528-2013, and RSS 102-issue5-2015.

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according to
EN ISO/IEC 17025 by:



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Note 1: According to the hardware similarity document, BlackBerry model: RHL211LW and RHK211LW have the identical PCB, antenna, conducted power, antenna match, and circuitry for the 1800 MHz – 6000 MHz frequency bands. Therefore, model: RHK211LW was used for testing conducted power and SAR compliance on GSM 1900, UMTS bands II/IV, LTE bands 2/4/7/30, Bluetooth, and 802.11a/b/g/n. All other modes/bands were tested using model: RHL211LW

Revision History		
Rev. Number	Date	Changes
Initial	Sept 23, 2015	Initial
Rev 2	October 09, 2015	Corrected SAR values on page 216 for the Slider Open: 10mm Back: U-NNI-1
Rev 3	October 15, 2015	Added Table 1.3-4: Highest 1g avg. reported SAR values
Rev 4	November 12, 2015	Corrected highest 1g avg. reported SAR values in the table 1.3-4 and added BT antenna/SAR values to the simultaneous SAR summation table: 11.3-1, 11.3-2, 11.3-3

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1.0 OPERATING CONFIGURATIONS, TEST CONDITIONS AND HIGHEST SAR VALUES

1.1 Picture of Device

Please refer to Appendix E.

Figure 1.1-1 BlackBerry Smartphone

1.2 Antenna description

Type	Internal fixed antenna
Location	Please refer to Figure 1.9-1
Configuration	Internal fixed antenna

Table 1.2-1 Antenna description

1.3 Device description and Highest SAR values

1.3.1 Device description

Device Model		RHL211LW (STV100-3)			
FCC ID		L6ARHL210LW			
IC ID		2503A-RHL210LW			
Serial Number	Radiated	Rev3-x06-01/02: 1161465407, 1161463186 Rev4-x06-01: 1161507290, 1161507352			
	Conducted	Rev2-x06-00/01: 1161344168			
Hardware Rev		CER-62542-001- Rev2-x06-00/01, Rev3-x06-01/02, Rev4-x06-01			
Software		AAC056, AAC251, AAC273			
Prototype or Production Unit		Production			
Mode(s) of Operation		1-slot GSM 850 GSM 1900	2-slots EDGE/GPRS 850/1900	3-slots EDGE/GPRS 850/1900	4-slots EDGE/GPRS 850/1900
Target nominal maximum conducted RF output power (dBm)		32.5 29.5	30.5 28.5	29.0 26.0	27.5 25.5
Tolerance in power setting on centre channel (dB)		+2.0/-1.5	+2.0/-1.5	+2.0/-1.5	+2.0/-1.5
Duty cycle		1:8	2:8	3:8	4:8
Transmitting frequency range (MHz)		824.2 – 848.8 1850.2 – 1909.8	824.2 – 848.8 1850.2 – 1909.8	824.2 – 848.8 1850.2 – 1909.8	824.2 – 848.8 1850.2 – 1909.8
Mode(s) of Operation		802.11b	802.11g	802.11n	Bluetooth
Target nominal maximum conducted RF output power (dBm)		17.0	16.0	16.0	8.0
Tolerance in power setting on centre channel (dB)		±1.5	±1.5	±1.5	±1.0
Duty cycle		1:1	1:1	1:1	N/A
Transmitting frequency range (MHz)		2412-2462	2412-2462	2412-2462	2402-2483
Mode(s) of Operation		802.11 a/n/ac (U-NII-1)	802.11 a/n/ac (U-NII-2A)	802.11 a/n/ac (U-NII-2C)	802.11 a/n/ac (U-NII-3)
Target nominal maximum conducted RF output power (dBm)		15.5	15.5	15.5	15.5
Tolerance in power setting on centre channel (dB)		±1.5	±1.5	±1.5	±1.5

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Duty cycle	1:1	1:1	1:1	1:1
Transmitting frequency range (MHz)	5180-5240	5260-5320	5520-5700	5745-5825
Mode(s) of Operation	HSPA ⁺ / WCDMA / UMTS FDD V (850)	HSPA ⁺ / WCDMA / UMTS FDD IV (1800)	HSPA ⁺ / WCDMA / UMTS FDD II (1900)	NFC
Target nominal maximum conducted RF output power (dBm)	24.0	24.0	24.0	-----
Tolerance in power setting on centre channel (dB)	±1.0	±1.0	±1.0	N/A
Duty cycle	1:1	1:1	1:1	N/A
Transmitting frequency range (MHz)	826.4 – 846.6	1712.4 – 1752.6	1852.4 – 1907.6	13.56

Table 1.3-1 Test device characterization for U.S. wireless operating modes/bands

Note 1: SAR measurements on NFC haven't been conducted, since it is very low power and frequency magnetic field transceiver. SAR probes measure higher frequency/power electric field.

Note 2: Dynamic Antenna Tuning Technology has been implemented for LTE bands 12/17/28, and GSM 850. Please refer to the associated separate report "Single Point SAR Screening for Antenna Tuning States" for the results of the additional testing done to address this functionality. All other frequency bands use fixed match/ open loop antenna tuning which is equivalent to the static tuning configurations used in traditional handsets that do not have any specific antenna tuning flexibility or additional hardware.

Note 3: Closed Loop Control is active for the applicable full SAR measurement configurations, which represent the highest SAR configuration as demonstrated by the single point SAR screening results.

Note 4: The BlackBerry model: RHL211LW also supports GSM/GPRS/EDGE 900/1800 MHz, and UMTS/HSPA⁺ Bands I/VIII, and LTE bands 1/3/8/20/38/40 that are operational outside North America only, therefore no data is presented in this report for those bands.

Device Model		RHL211LW (STV100-3)				
FCC ID		L6ARHL210LW				
IC ID		2503A-RHL210LW				
Serial Number	Radiated	Rev3-x06-01/02: 1161465407, 1161463186 Rev4-x06-01: 1161507290, 1161507352				
	Conducted	Rev2-x06-00/01: 1161344168				
Hardware Rev		CER-62542-001- Rev2-x06-00/01, Rev3-x06-01/02, Rev4-x06-01				
Software		AAC056, AAC251, AAC273				
Prototype or Production Unit		Production				
Transmission channel bandwidth		Band 2: 1.4 MHz , 3 MHz , 5 MHz, 10 MHz, 15 MHz, 20 MHz Band 4: 1.4 MHz , 3 MHz , 5 MHz, 10 MHz, 15 MHz, 20 MHz Band 5: 1.4 MHz , 3 MHz , 5 MHz, 10 MHz Band 7: 5 MHz, 10 MHz, 15 MHz, 20 MHz Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz Band 13: 5 MHz, 10 MHz Band 17: 5 MHz, 10 MHz Band 25: 1.4 MHz , 3 MHz , 5 MHz, 10 MHz, 15 MHz, 20 MHz Band 28: 3 MHz , 5 MHz, 10 MHz, 15 MHz, 20 MHz Band 29: 3 MHz , 5 MHz, 10 MHz Band 30: 5 MHz, 10 MHz Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Transmission channel number and frequencies at highest bandwidth						
	LTE band 2		LTE band 4		LTE band 5	
	f (MHz)	Chan.	f (MHz)	Chan.	f (MHz)	Chan.
L	1860.0	18700	1720.0	20050	829.0	20450

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M	1880.0	18900	1732.5	20175	836.5	20525
H	1900.0	19100	1745.0	20300	844.0	20600
	LTE band 7		LTE band 12		LTE band 13	
	f (MHz)	Chan.	f (MHz)	Chan.	f (MHz)	Chan.
L	2510.0	20850	704.0	23060		
M	2535.0	21100	707.5	23095	782.0	23230
H	2560.0	21350	711.0	23130		
	LTE band 17		LTE band 25		LTE band 28	
	f (MHz)	Chan.	f (MHz)	Chan.	f (MHz)	Chan.
L	709.0	23780	1860.0	26140	713.0	27310
M	710.0	23790	1882.5	26365	725.5	27435
H	711.0	23800	1905.0	26590	738.0	27560
	LTE band 29		LTE band 30			
	f (MHz)	Chan.	f (MHz)	Chan.		
L	722.0	9710				
M	722.5	9715	2310.0	27710		
H	723.0	9720				
	LTE band 41					
	f (MHz)	Chan.				
L	2506.0	39750				
M _(Low)	2549.5	40185				
M	2593.0	40620				
M _(High)	2636.5	41055				
H	2680.0	41490				
UE Category		Category 3, Category 6 (LTE CA)				
Modulation supported in uplink		QPSK, 16QAM				
Description of LTE antenna		1 Tx/Rx Ant sharing with GSM/UMTS, and 1 Rx ant				
LTE voice available/supported		Yes				
Hotspot with LTE+Wi-Fi		Yes				
Hotspot with LTE+Wi-Fi active with GSM/UMTS voice		No				
LTE MPR permanently built-in by design		Yes				
LTE A-MPR		Disabled during testing , by setting NV value to NV_01 on the CMW500				
Target nominal maximum conducted RF Output Power (dBm) +/- Tolerance in Power Setting on centre channel (dB)		Band 2: 23.0 ± 1.0				
		Band 4: 23.0 ± 1.0				
		Band 5: 23.0 ± 1.0				
		Band 7: 23.0 ± 1.0				
		Band 12: 23.0 ± 1.0				
		Band 13: 23.0 ± 1.0				
		Band 17: 23.0 ± 1.0				
		Band 25: 23.0 ± 1.0				
		Band 28: 23.0 ± 1.0				
		Band 29: 23.0 ± 1.0				
Other non-LTE U.S. wireless operating modes/bands		GSM//WCDMA/HSPA ⁺			GSM 850 MHz	
					GSM 1900 MHz	
		802.11 a/b/g/n/ac			UMTS/WCDMA 850 MHz	
UMTS/WCDMA 1800 MHz						
					UMTS/WCDMA 1900 MHz	
					2.45 GHz Wi-Fi	
					2.45 GHz BT	
					5.0 GHz Wi-Fi	

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Table 1.3-2 Test device characterization for all North American wireless operating modes/bands

Note 1: As per 3GPP TS 36.521-1 V10.0.0 (2011-12):

“The channel numbers that designate carrier frequencies so close to the operating band edges that the carrier extends beyond the operating band edge shall not be used. This implies that the first 7, 15, 25, 50, 75 and 100 channel numbers at the lower operating band edge and the last 6, 14, 24, 49, 74 and 99 channel numbers at the upper operating band edge shall not be used for channel bandwidths of 1.4, 3, 5, 10, 15 and 20 MHz respectively.”...5.4.4

Note 2: Dynamic Antenna Tuning Technology has been implemented for LTE bands 12/17/28, and GSM 850. Please refer to the associated separate report “Single Point SAR Screening for Antenna Tuning States” for the results of the additional testing done to address this functionality. All other frequency bands use fixed match/ open loop antenna tuning which is equivalent to the static tuning configurations used in traditional handsets that do not have any specific antenna tuning flexibility or additional hardware.

Note 3: Closed Loop Control is active for the applicable full SAR measurement configurations, which represent the highest SAR configuration as demonstrated by the single point SAR screening results.

Note 4: LTE band 7 is not operational in the United States; however it is operational in Canada and remains in this report for filing to Industry Canada.

Note 5: LTE band 29 is downlink only and as such no SAR testing was completed on this band.

Device Model		RHK211LW (STV100-1)
FCC ID		L6ARHK210LW
IC ID		2503A-RHK210LW
Serial Number	Radiated	Rev3-x06-01/02: 1161463503, 1161462755 Rev4-x06-01: 1161504665, 1161507560
	Conducted	Rev2-x06-00/01/02: 1161340110
Hardware Rev		CER-62541-001- Rev2-x06-00/01/02, Rev3-x06-01/02, Rev4-x06-01
Software Build Number		AAC056, AAC251, AAC273
Prototype or Production Unit		Production

Table 1.3-3 Test device characterization for GSM 1900, UMTS bands II/IV, LTE bands 2/4/7/30, Bluetooth, and 802.11a/b/g/n testing on model RHK211LW

Note: Model RHK211LW was used to test conducted power and SAR compliance on GSM 1900, UMTS bands II/IV, LTE bands 2/4/7/30, Bluetooth, and 802.11a/b/g/n

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1.3.2 Highest reported 1 g avg. SAR values (W/Kg)

Equipment Class	Band & Mode	Reported 1 g avg. SAR value (W/kg)		
		Head	Body-Worn	Hotspot
PCE	GSM/GPRS/EDGE/DTM 850	0.54	0.52	0.78
PCE	WCDMA/UMTS band V 850	0.38	0.38	0.64
PCE	WCDMA/UMTS band IV (1800)	1.05	0.79	0.97
PCE	GSM/GPRS/EDGE/DTM 1900	0.73	0.76	1.16
PCE	WCDMA/UMTS band II (1900)	0.89	1.15	1.08
PCE	LTE band 12 (700)	0.24	0.32	0.39
PCE	LTE band 13 (700)	0.18	0.27	0.40
PCE	LTE band 17 (700)	0.22	0.31	0.40
PCE	LTE band 28 (700)	0.26	0.33	0.38
PCE	LTE band 5 (850)	0.29	0.26	0.51
PCE	LTE band 4 (1800)	0.81	0.68	0.89
PCE	LTE band 2 (1900)	0.65	0.72	0.84
PCE	LTE band 25 (1900)	0.68	0.63	0.73
PCE	LTE band 30 (2300)	0.19	0.66	0.65
PCE	LTE band 7 (2600)	0.31	0.55	1.11
PCE	LTE band 41 (2600)	0.18	0.27	1.19
DTS	2.4 GHz WLAN	0.24	0.11	0.053
NII	U-NII 5.0 GHz WLAN	0.17	0.38	0.18
DSS	Bluetooth	0.015	0.009	0.025
Worst case simultaneous transmission SAR summation across all configurations		1.54		

Table 1.3-4 Highest reported 1 g avg. SAR values (W/Kg)

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1.4 Body worn accessories (holsters)

The device has been tested with the holster listed below and/or a 15mm manufacturer recommended separation distance. The holster has been designed with the intended device orientation being with the LCD facing the belt clip only. Proper positioning is vital for protection of the LCD display, and to help maximize the battery life of the device. The device can also be placed in the holster with the backside facing the belt clip. Body SAR measurements were carried out with the worst-case configuration front LCD side and backside towards the belt clip.

Number	Holster Type	Part Number	Separation distance (mm)
1	Body-worn Holster	HDW-61539-001	20

Table 1.4.1. Body worn holster

1.5 Headset

The device was tested with and without the following headset model numbers.

- 1)HDW-49299-00x
- 2)HDW-61938-00x

1.6 Battery

The device was tested with the following Lithium Ion Battery pack.

- 1)BAT-60122-003

1.7 Procedure used to establish test signal

- The device was put into test mode for SAR measurements by placing a call from a Rohde & Schwarz CMU 200 or CMW 500 Communications Test Instrument. The power control level was set to command the device to transmit at full power at the specified frequency. Other parameters include: Channel type = full rate, discontinuous transmission off, frequency hopping off. For LTE specific bandwidths, number of resource blocks, and resource block offsets were set. In addition, LTE A-MPR was disabled.
- Software Tool was used to set Wi-Fi to transmit at maximum power and duty cycle for each band, channel, and modulation.
- A Rohde & Schwarz CBT Bluetooth Tester was used to establish a connection with the DUT's Bluetooth radio.

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1.8 Highlights of the KDB/FCC OET SAR Measurement Requirements

1.8.1 SAR Measurements 100 MHz to 6 GHz as per KDB 865664 D01 v01r03

- Repeat measurements when the measured SAR is ≥ 0.80 W/kg. If the measured SAR values are < 1.45 W/kg with $\leq 20\%$ variation, only one repeated measurement was performed to reaffirm that the results are not expected to have substantial variations. An additional repeated measurement is required only if the measured results are within 10% of the SAR limit and vary by more than 20%, which are often related to device and measurement setup difficulties. Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .
- Maintained dielectric parameter uncertainty to $\pm 5.0\%$ of the target values, (although it is very challenging to control/maintain both permittivity and conductivity for 5-6 GHz for all test channels within $\pm 5.0\%$ of the target values, some conductivity values were measured slightly higher which resulted in more conservative SAR values.
- Liquid depth from SAM ERP or flat phantom was kept at 15 cm.
- Probe Requirement: Used SPEAG probe model ET3DV6/ES3DV3 for 2.45 GHz SAR testing specs are outlined below:

ET3DV6/ES3DV3	
Probe tip to sensor center	2.7 mm / 2.0 mm
Probe tip diameter is	6.8 mm / 4.0 mm
Probe calibration uncertainty	$< 15\%$ for $f = 2.45$ GHz
Probe calibration range	± 100 MHz
EX3DV4	
Probe tip to sensor center	1.0 mm
Probe tip diameter is	2.5 mm
Probe calibration uncertainty	$< 15\%$ for $f = 2.45$ to < 6.0 GHz
Probe calibration range	± 100 MHz

Table 1.8.1-1 Probe specification requirements

- Area scan resolution was maintained at 12mm (2-3 GHz), and 15mm (≤ 2 GHz)
- System accuracy validation was conducted within ± 100 MHz of device mid-band frequency and results were within $\pm 10\%$ of the manufacturers target value for each band.
- Zoom scan: The following settings were used for the validation and measurement.

ET3DV6/ES3DV3	
Closest Measurement Point to Phantom	4.0 mm / 3.0 mm
Zoom Scan (x,y) Resolution	7.5 mm (≤ 2 GHz) or 5 mm (2-3 GHz)
Zoom Scan (z) Resolution	5.0 mm
Zoom Scan Volume	Minimum 30 x 30 x 30 mm ¹
EX3DV4	
Closest Measurement Point to Phantom	2.0 mm
Zoom Scan (x,y) Resolution	4.0 mm (5-6 GHz)
Zoom Scan (z) Resolution	2.0 mm (5-6 GHz)
Zoom Scan Volume	Minimum 24 x 24 x 22 mm ¹

Table 1.8.1-2 Zoom Scan requirement

Note: “Auto-extend zoom scan when maxima on boundary” is enabled, which can result in the zoom scan dimensions varying between 30x30x30 to 60x60x30 mm and 24x24x22 to 48x48x22 mm

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1.8.2 802.11b/g/n SAR Measurement Procedures as per KDB 248227 D01 v02r01

Duty cycle

- Must scale reported SAR results up to 100% duty cycle.

Typical steps to consider for SAR testing

Note: for 802.11b DSSS testing just use step 2, 3, and 5

1. Identify the maximum output power specified at each antenna port of production units for the applicable OFDM configurations
 - a. An initial test configuration is selected for each antenna port based on the highest declared output power and according to channel bandwidth, modulation and data rate combinations in each frequency band or aggregated band.
 - i. See section “Choosing an OFDM transmission mode and test channel” for more info.
2. Apply the “default power measurement procedures” to measure maximum output power for each standalone and aggregated frequency band.
 - a. When band gap channels between U-NII-2C band and U-NII-3 band or §15.247 5.8 GHz band are used, apply the following to determine high, middle and low channels for power measurement and SAR test reduction.
 - i. channels in U-NII-2C band below 5.65 GHz are considered as one band
 - ii. channels above 5.65 GHz, together with channels in U-NII-3 band or §15.247 5.8 GHz band, are considered as a separate band
 - b. The maximum output power of band gap channels is limited to the lowest maximum output power certified for the adjacent bands.
 - c. The measured maximum output power results are used to reduce the number of channels that need testing.
3. Apply initial test configuration procedures to each frequency band or aggregated band.
 - a. For next to the ear, UMPC mini-tablet or hotspot mode exposure configurations with multiple test positions, the initial test position procedure is applied using the initial test configuration to reduce the number of test positions.
 - b. Apply the 2.45 GHz and 5.0 GHz test reduction as necessary
4. Subsequent test configuration procedures are applied to determine if the remaining OFDM transmission mode configurations may need testing.
 - a. All channels in a smaller channel bandwidth configuration that overlap with a larger channel bandwidth in the initial test configuration need consideration.
 - b. Additional test reduction may be applied according to the highest reported SAR of the initial test configuration or previous subsequent test configuration(s).
5. Apply simultaneous transmission SAR test exclusion and, when required, perform SAR measurement.
 - a. If SAR testing has not been done on a particular position due to initial test position reductions then for simultaneous transmission exemption you apply the highest reported SAR value for that configuration (Head, body, HS).

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Default power measurement procedures

- OFDM (a/g/n/ac): Identify the highest declared power (target + tolerance) on 802.11a/g/n/ac for each frequency band and channel bandwidth applicable.
 - For each frequency band power is measured using the transmission mode configuration (802.11 mode, channel bandwidth, modulation, and data rate) yielding the highest declared power (target + tolerance).
 - When the same declared power applies to multiple transmission modes then measure power on the highest channel bandwidth configuration with the lowest order modulation and data rate.
 - When the same declared power applies to multiple 802.11 modes with the same channel bandwidth and modulation then measure power on all these configurations.
- DSSS (b): Test on channels 1, 6, 11 using the highest bandwidth and lowest order modulation and data rate.
- You want to test on the low, mid, and high channels of a frequency band.
 - If there is not an absolute middle channel due to an even number of channels in the band, you must test on two mid channels.
 - Data rates are not expected to affect conducted power in any major way.

Initial Test Configuration

- An initial test configuration is determined according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each frequency band and aggregated band for SAR measurement using the highest measured maximum output power channel.
 - Use the criteria found in “*choosing an OFDM transmission mode and test channel*”
 - Reported SAR > 0.8 W/kg – Test the channel with the 2nd/3rd/4th etc. highest measured output power until the reported SAR ≤ 1.2 W/kg or all channels are tested

Choosing a OFDM transmission mode and test channel

- You want to test on the 802.11 OFDM configuration with the highest declared power (Target + Tune-up Tolerance) for that frequency band
 - When the same declared power is specified for multiple transmission modes within a frequency band then test with the highest channel bandwidth, lowest order modulation and lowest data rate.
 - When the same declared power applies to multiple 802.11 modes the use the same channel bandwidth, modulation, and data rate then test using the lowest order 802.11 mode.
 - The order goes 802.11a, g, n, ac
- Test on the channel with the highest measured output power.
 - If multiple channels have the same measured power then select the channel closest to the mid-band frequency.

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- If multiple channels have the same measured power and are the same distance from the mid-band frequency (i.e. two mid channels or high and low channels) the higher frequency channel is tested.

Initial Test Position

- You find the initial test position for Head and MHS by using Area scans on all the test positions.
 - The test position with the highest SAR becomes the initial test position for that configuration.
 - You will have one for Head and one for MHS and you must do it for 2.4GHz and 5.0GHz.
 - Rank all the positions from highest SAR to lowest. When additional test positions are required to be tested you test the next worst case.
- **Additional test positions required?** Check the reported SAR of the initial test position
 - Reported SAR ≤ 0.4 W/kg – No further SAR testing required
 - Reported SAR > 0.4 W/kg – Test the test position that resulted in the 2nd/3rd/4th etc. highest SAR (from the Area scans) until the reported SAR ≤ 0.8 W/kg or all the test positions are tested.
- **Additional channels required?** Check the reported SAR of each test position
 - Reported SAR > 0.8 W/kg – Test the channel with the 2nd/3rd/4th etc. highest measured output power until the reported SAR ≤ 1.2 W/kg or all channels are tested.

Subsequent Test Configuration

- SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each frequency band, in each exposure condition, according to the declared power.
- Not tested if the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration declared power and the adjusted SAR ≤ 1.2 W/kg.
 - Initial mode SAR_{reported} x (Subsequent mode Declared power, mW / Initial mode Declared power, mW) ≤ 1.2 W/kg
 - This is checked with each 802.11 mode separately.
 - If some of the other 802.11 modes have the same power apply the same criteria used to find the initial test configuration.
- When the subsequent test configuration is found, test like we did before
 - Test using the highest measured output channel
 - Test using the initial test position
 - Reported SAR > 1.2 W/kg – Test the channel with the 2nd/3rd/4th etc. highest measured output power until the reported SAR ≤ 1.2 W/kg or all channels are tested.
 - Slightly different then the rules for the initial test configuration

2.4 GHz test reduction

- Split into 802.11b DSSS and 802.11g/n OFDM
- 802.11b DSSS SAR Testing
 - Tested on the highest measured maximum output power channel
 - Reported SAR > 0.8 W/kg, the 2nd highest conducted power channel is tested

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- If any reported SAR > 1.2 W/kg, then all channels must be tested
- 802.11g/n OFDM SAR Testing
 - Not tested if the highest reported SAR for 802.11b DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR ≤ 1.2 W/kg
 - $\text{SAR}_{\text{reported}} \times (\text{OFDM}_{\text{Declared power, mW}} / \text{DSSS}_{\text{Declared power, mW}}) \leq 1.2 \text{ W/kg}$

5.0 GHz test reduction

- U-NII-1 (low band) and U-NII-2A (mid band) have additional SAR reduction when both are used on the same transmitter
 - When the same maximum output power is specified for both bands
 - Test on U-NII-2A and if the highest reported SAR ≤ 1.2 W/kg, U-NII-1 isn't required for that exposure condition.
 - When different maximum output power is specified for the bands
 - Test on the band with the higher specified power.
 - If the highest reported SAR (of an exposure condition) is adjusted by the ratio of lower to higher specified power and the adjusted SAR ≤ 1.2 W/kg, testing on the lower power band isn't required for that exposure condition.
 - $\text{SAR}_{\text{reported}} \times (\text{Lower P Band}_{\text{declared power, mW}} / \text{Higher P Band}_{\text{declared power, mW}})$

Mode		GHz	Channel
802.11a UNII	U-NII-1	5.18	36
		5.20	40
		5.22	44
		5.24	48
	U-NII-2A	5.26	52
		5.28	56
		5.30	60
		5.32	64
	U-NII-2C	5.500	100
		5.520	104
		5.540	108
		5.560	112
		5.580	116
		5.600	120
		5.620	124
		5.640	128
		5.660	132
		5.680	136
		5.700	140
	U-NII-3	5.745	149
		5.765	153
		5.785	157
		5.805	161
		5.825	165

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1.8.3 3G SAR Measurement Procedures as per KDB 941225 D01 v03r00

In the following procedures, the mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as “otherwise” in the applicable procedures; SAR measurement is required for the secondary mode.

For example, when the *reported* SAR of a primary mode is 1.4 W/kg and the maximum output power specified for the primary and secondary modes are 250 mW and 200 mW, the scaled SAR would be $1.4 \times (200/250) = 1.12$ W/kg; therefore, SAR is not required for the secondary mode.

1.8.3.1 GSM, GPRS, EDGE and DTM

The following procedures may be considered for each frequency band to determine SAR test reduction for devices operating in GSM/GPRS/EDGE modes to demonstrate RF exposure compliance. GSM voice mode transmits with 1 time slot. GPRS and EDGE may transmit up to 4 time slots in the 8 time-slot frame according to the multi slot class implemented in a device. For Class A devices with Dual Transfer Mode (DTM) capability that support simultaneously transmission using both circuit switched (CS) and packet switched (PS) connections, the aggregate time slots must be considered in the applicable exposure conditions to determine SAR compliance. Unless it is clearly explained in the SAR report that DTM is not feasible or does not apply to a device, DTM SAR results are expected for Class A GSM/(E)GPRS devices to demonstrate SAR compliance. When enhanced EDGE mode with additional time slots or higher order modulations (QAM) applies, until procedures are available, a KDB inquiry is necessary to determine the configurations required for SAR testing. The SAR test reduction procedures for GSM/(E)GPRS devices may be considered in conjunction with the applicable SAR test reduction provisions in KDB Publication 447498. Regardless of whether DTM applies to a GSM/(E)GPRS device, operating parameters such as device Class, (E)GPRS multi slot class, DTM multi slot class and the maximum time-slot burst averaged conducted output power must be clearly identified in the SAR report to support the test configurations and measurement results. A summary of the specific procedures and test configurations applied to the SAR measurements must be clearly described in the SAR report to support the test results.

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Dual Transfer Mode (DTM)

Class A GSM/(E)GPRS devices operate in DTM can transmit simultaneously using both circuit switched (CS) and packet switched (PS) connections defined by the DTM multi slot classes (see 3GPP TS 43.055 and TS 45.001). Mobile stations operating in DTM configurations are required to have one allocated CS time-slot for voice and additional PS slots for packet data. The total number of downlink and uplink time slots is defined by the DTM multi slot class. DTM devices may operate according to earlier GSM requirements using two transceivers or the more recent 3GPP requirements using a single transceiver to transmit CS and PS data in consecutive time-slots within the same GSM frame. Furthermore, additional DTM multi slot classes and enhanced DTM configurations have also been considered in recent and on-going revisions of the 3GPP/GSM requirements, which may require further considerations for SAR testing.

For Class A devices, the SAR evaluation must take into account the maximum CS and PS time slots defined by the DTM multi slot class for the device, with respect to head body-worn accessory and other near body operating configurations and exposure conditions. SAR may be evaluated for DTM with the device operating in DTM using one CS plus the number of PS time-slots that result in the highest source-based time-averaged maximum output or by summing the single time-slot CS and highest maximum output multi slot PS SAR. A communication test set with DTM support is necessary to configure the test device for SAR measurement in DTM mode. Alternatively, the single slot CS GSM/GMSK voice mode SAR for each applicable exposure condition can be added respectively to the PS (E)GPRS multi slot data-mode SAR to demonstrate SAR compliance for DTM.

General Reporting Requirements

The following information is required in the SAR report to identify the required test configurations for supporting the results.

- 1) Device class - A, B or C
- 2) Identify the GPRS/EDGE multi slot class, including the maximum number of downlink, uplink and total time slots per frame
- 3) For Class A devices with DTM capability, identify the DTM multi slot class and include the maximum number of downlink, uplink and total time slots per frame for DTM operations; i.e. CS and PS time-slots
- 4) The maximum output power specified for production units, including tune-up tolerance, within the time-slot burst for each operating mode – GMSK/8-PSK in CS/GSM and PS/(E)GPRS configurations
- 5) Descriptions of the test device and communication test set configurations used in the DTM SAR measurements or procedures applied to sum DTM SAR for the required operating configurations and exposure conditions, with respect to maximum measured time-slot burst averaged conducted output power and maximum number of time slots defined by the DTM multi slot class for the device.

SAR Test Reduction

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. GSM voice and GPRS data use GMSK, which is a constant amplitude modulation with minimal peak to average power difference within the time-slot burst. For EDGE, GMSK is used for MCS 1 – MCS 4 and 8-PSK is used for MCS 5 – MCS 9; where 8-PSK has an inherently higher peak-to-average power ratio. The GMSK and 8-PSK EDGE configurations are considered separately for SAR compliance. The GMSK EDGE configurations are grouped with GPRS and considered with respect to time-averaged maximum output power to determine compliance. The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode.

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Additional Information

- The device supports EGPRS/GPRS Multi-slot Class 12, DTM/GPRS Multi-slot Class11 and DTM/EGPRS Multi-slot Class10.
- CMU200 base station simulator with DTM software option CMU-K44 was used to set device in DTM (CS+PD) mode for testing. However, device could not be connected in DTM 4-slots uplink.
- For each slot addition in multi-slot modes (DTM, GPRS, EDGE), there is software power reduction of $\approx 3/1/2$ dB per slot respectively for GSM 850 and $2/2.5/0.5$ dB per slot respectively for GSM 1900.
- For head configurations, 1 slot CS, 2/3-slots (PD) and DTM (CS+PD) were evaluated.
- For body SAR configurations, 1 slot CS, 2/3/4-slots GPRS (PD) mode were tested.
- In EDGE/GPRS mode, GMSK Modulation was used using CS1-CS4 or MCS1-MCS4.
- 8-PSK modulation or MCS5-MCS9 code scheme were avoided since maximum burst avg . power was measured lower on those modulation schemes.
- As per IEEE 1528 -2013 “both GSM and GPRS use GMSK, which is a constant amplitude modulation; therefore, the maximum time-averaged output power with respect to the maximum number of time slots used in each mode can be used to determine the most conservative mode for SAR testing. Similarly, EGPRS (which uses GMSK and 8PSK) can be included with GSM and GPRS in this determination of the most conservative mode for SAR testing due to its innate similarities to GSM and GPRS.”

1.8.3.2 UMTS/WCDMA, HSPA, HSPA+, and DC-HSDPA

WCDMA Handsets

The following procedures are applicable to 3GPP Release 99, Release 5 and Release 6 UMTS/WCDMA handsets. The default test configuration is to measure SAR with an established radio link between the handset and a communication test set using a 12.2 kbps RMC (reference measurement channel) configured in Test Loop Mode 1. SAR is selectively confirmed for other physical channel configurations (DPCCH & DPDCHn), HSDPA and HSPA (HSUPA/HSDPA) modes according to output power, exposure conditions and device operating capabilities. Uplink and downlink are both configured with the same RMC and required AMR. SAR for Release 5 HSDPA and Release 6 HSPA are measured respectively using the applicable FRC (fixed reference channel) and E-DCH reference channel configurations. Maximum output power is verified by applying the applicable versions of 3GPP TS 34.121. SAR must be measured according to these maximum output conditions and requirements in KDB Publication 447498. When Maximum Power Reduction (MPR) applies, the implementations must be clearly identified in the SAR report to support test results according to Cubic Metric (CM) and, as appropriate, Enhanced MPR (E-MPR) requirements.

Output Power Verification

Maximum output power is verified on the high, middle and low channels according to procedures described in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all “1’s” for WCDMA/HSDPA or by applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HSDPA, HSPA) are required in the SAR report. All configurations that are not supported by the handset or cannot be measured due to technical or equipment limitations must be clearly identified

Head SAR Measurements

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest *reported* SAR configuration in 12.2 kbps RMC for head exposure.

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Body SAR Measurements

SAR for body-worn accessory configurations is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the handset with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding spreading code or DPDCHn, for the highest *reported* body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When more than 2 DPDCHn are supported by the handset, it may be necessary to configure additional DPDCHn using FTM (Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384 kbps and 768 kbps RMC.

Handsets with Release 5 HSDPA

The 3G SAR test reduction procedure is applied to HSDPA body-worn accessory configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSDPA using the *HSDPA body SAR* procedures in the “Release 5 HSDPA Data Devices” section of this document, for the highest *reported* SAR body-worn accessory exposure configuration in 12.2 kbps RMC. Handsets with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

Handsets with Release 6 HSPA (HSDPA/HSUPA)

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body-worn accessory configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the *HSPA body SAR* procedures in the “Release 6 HSPA Data Devices” section of this document, for the highest *reported* body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When VOIP is applicable for next to the ear head exposure in HSPA, the 3G SAR test reduction procedure is applied to HSPA with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body-worn accessory measurements is tested for next to the ear head exposure.

Release 5 HSDPA Data Devices

The following procedures are applicable to HSDPA data devices operating under 3GPP Release 5. SAR is required for devices in body-worn accessory and other body exposure conditions, including handsets and data modems operating in various electronic devices. HSDPA operates in conjunction with WCDMA and requires an active DPCCCH. The default test configuration is to measure SAR in WCDMA with HSDPA remain inactive, to establish a radio link between the test device and a communication test set using a 12.2 kbps RMC configured in Test Loop Mode 1. SAR for HSDPA is selectively measured using the highest *reported* SAR configuration in WCDMA, with an FRC in H-set 1 and a 12.2 kbps RMC. SAR is selectively confirmed for other physical channel configurations (DPCCCH & DPDCHn) according to exposure conditions, device operating capabilities and maximum output power specified for production units, including tune-up tolerance by applying the 3G SAR test reduction procedures. Maximum output power is verified according to the applicable versions of 3GPP TS 34.121. SAR must be measured based on these maximum output conditions and requirements in KDB Publication 447498, with respect to the UE Categories, and explained in the SAR report. When Maximum Power Reduction (MPR) applies, the implementations must be clearly identified in the SAR report to support test results according to Cubic Metric (CM) and, as appropriate, Enhanced MPR (E-MPR) requirements.

Output Power Verification

Maximum output power is verified on the high, middle and low channels according to Release 5 procedures described in section 5.2 of 3GPP TS 34.121, using an FRC with H-set 1 and a 12.2 kbps RMC with TPC set to all “1’s”. When HSDPA is active, output power is measured according to requirements for HS-DPCCCH Sub-test 1 - 4. Results for all applicable physical channel configurations (DPCCCH, DPDCHn and spreading codes, HS-DPCCCH etc.), with and without HSDPA active, are required in the SAR report. All configurations that are not supported by the test device or cannot be measured due to technical or equipment limitations must be clearly identified.

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SAR Measurement

When voice transmission in next to the ear head exposure conditions is applicable to a WCDMA/HSDPA data device, head SAR is measured according to the ‘Head SAR’ procedures in the ‘WCDMA Handsets’ section of this document. SAR for body exposure configurations is measured according to the ‘Body-Worn Accessory SAR’ procedures in the ‘WCDMA Handsets’ section. The 3G SAR test reduction procedure is applied to *HSDPA body SAR* with 12.2 kbps RMC as the primary mode. Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, for the highest *reported* SAR configuration in 12.2 kbps RMC without HSDPA.

HSDPA is configured according to the applicable UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms and a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors (β_c , β_d), and HS-DPCCH power offset parameters (Δ_{ACK} , Δ_{NACK} , Δ_{CQI}) are set according to values indicated in Table 1. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	$\beta_{hs}^{(2)}$	CM (dB) ⁽²⁾
1	2/15	15/15	64	2/15	4/15	0.0
2	12/15 ⁽³⁾	15/15 ⁽³⁾	64	12/15 ⁽³⁾	24/15	1.0
3	15/15	8/15	64	15/8	30/15	1.5
4	15/15	4/15	64	15/4	30/15	1.5
Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$ Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$.						

Table 1.8.2.2-1: Sub-test settings for HSDPA

Release 6 HSPA Data Devices

The following procedures are applicable to HSPA (HSUPA/HSDPA) data devices operating under 3GPP Release 6.29 SAR is required for devices in body-worn accessory and other body exposure conditions, including handsets and data modems operating in various electronic devices. HSUPA operates in conjunction with WCDMA and HSDPA. SAR is initially measured in WCDMA test configurations with HSPA remain inactive. The default test configuration is to establish a radio link between the test device and a communication test set to configure a 12.2 kbps RMC in Test Loop Mode 1. SAR for HSPA is selectively measured with HS-DPCCH, E-DPCCH and E-DPDCH, all enabled, along with a 12.2 kbps RMC using the highest *reported* SAR configuration in WCDMA with 12.2 kbps RMC only. An FRC is configured according to HS-DPCCH Sub-test 1 using H-set 1 and QPSK.³¹ HSPA is configured according to E-DCH Sub-test 5 requirements. SAR for other HSPA sub-test configurations is confirmed selectively according to exposure conditions, E-DCH UE Category and maximum output power of production units, including tune-up tolerance by applying the 3G SAR test reduction procedure. Maximum output power is verified according to procedures in applicable versions of 3GPP TS 34.121. SAR must be measured based on these maximum output conditions and requirements in KDB Publication 447498, with respect to the UE Categories for HS-DPCCH and HSPA, and explained in the SAR report. When Maximum Power Reduction (MPR) applies, the implementations must be clearly identified in the SAR report to support test results according to Cubic Metric (CM) and, as appropriate, Enhanced MPR (E-MPR) requirements.

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Output Power Verification

Maximum output power is verified on the high, middle and low channels according to Release 6 procedures in section 5.2 of 3GPP TS 34.121, using the appropriate RMC, FRC and E-DCH configurations. When E-DCH is not active, TPC is set to all “1’s”; otherwise, inner loop power control with power control algorithm 2 is required to maintain E-TFCI requirements. When HSPA is active output power for the applicable HSPA modes should be measured for E-DCH Sub-test 1 - 5. Results for all applicable physical channel configurations (DPCCH, DPDCH and spreading codes, HS-DPCCH, E-DPCCH, E-DPDCH) are required in the SAR report. All configurations that are not supported by the test device or cannot be measured due to technical or equipment limitations must be clearly identified.

SAR Measurement

When voice transmission in next to the ear head exposure conditions is applicable to a WCDMA/HSPA data device, head SAR is measured according to the ‘Head SAR Measurements’ procedures in the ‘WCDMA Handsets’ section of this document. SAR for body exposure configurations is measured according to the ‘Body-Worn Accessory SAR’ procedures in the ‘WCDMA Handsets’ section. The 3G SAR test reduction procedure is applied to *HSPA body SAR* with 12.2 kbps RMC as the primary mode. Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control algorithm 2, according to the highest *reported* body SAR configuration in 12.2 kbps RMC without HSPA. When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing.

Due to inner loop power control requirements in HSPA, a communication test set is required for output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA are configured according to the β values indicated in Table 2 and other applicable procedures described in the ‘WCDMA Handset’ and ‘Release 5 HSDPA Data Devices’ sections of this document.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	$\beta_{hs}^{(1)}$	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (codes)	CM ⁽²⁾ (dB)	MPR (dB)	AG ⁽⁴⁾ Index	E-TFCI
1	11/15 ⁽³⁾	15/15 ⁽³⁾	64	11/15 ⁽³⁾	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed1}: 47/15$ $\beta_{ed2}: 47/15$	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 ⁽⁴⁾	15/15 ⁽⁴⁾	64	15/15 ⁽⁴⁾	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$.

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$.

Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$.

Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g.

Note 6: β_{ed} cannot be set directly; it is set by Absolute Grant Value.

Table 1.8.2.2-2: Sub-test for HUSPA

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HSPA, HSPA+ and DC-HSDPA SAR Guidance

SAR test exclusion may apply to 3GPP Rel. 6 HSPA, Rel. 7 HSPA+ and Rel. 8 DC-HSDPA. When SAR measurement is required for HSPA, HSPA+ or DC-HSDPA, a KDB inquiry is required to confirm that the wireless mode configurations in the test setup have remained stable throughout the SAR measurements. Without prior KDB confirmation to determine the SAR results are acceptable, a PBA is required for TCB approval.

SAR test exclusion for HSPA, HSPA+ and DC-HSDPA is determined according to the following:

1. The HSPA procedures are applied to configure 3GPP Rel. 6 HSPA devices in the required sub-test mode(s) to determine SAR test exclusion.
2. SAR is required for Rel. 7 HSPA+ when SAR is required for Rel. 6 HSPA; otherwise, the 3G SAR test reduction procedure is applied to (uplink) HSPA+ with 12.2 kbps RMC as the primary mode. Power is measured for HSPA+ that supports uplink 16 QAM according to configurations in Table C.11.1.4 of 3GPP TS 34.121-1 to determine SAR test reduction.
3. SAR is required for Rel. 8 DC-HSDPA when SAR is required for Rel. 5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.
4. Regardless of whether a PBA is required, the following information must be verified and included in the SAR report for devices supporting HSPA, HSPA+ or DC-HSDPA:
 - a. The output power measurement results and applicable release version(s) of 3GPP TS 34.121
 - i. Power measurement difficulties due to test equipment setup or availability must be resolved between the grantee and its test lab.
 - b. The power measurement results are in agreement with the individual device implementation and specifications. When Enhanced MPR (E-MPR) applies, the normal MPR targets may be modified according to the Cubic Metric (CM) measured by the device, which must be taken into consideration.
 - c. The UE category, operating parameters, such as the β and Δ values used to configure the device for testing, power setback procedures described in 3GPP TS 34.121 for the power measurements, and HSPA/HSPA+ channel conditions (active and stable) for the entire duration of the measurement according to the required E-TFCI and AG index values.
5. When SAR measurement is required, the test configurations, procedures and power measurement results must be clearly described to confirm that the required test parameters are used, including E-TFCI and AG index stability and output power conditions.

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1.8.4 LTE SAR Evaluation Procedures as per KDB 941225 D05 v02r03

Largest channel bandwidth standalone SAR test requirements

QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and *required test channel* combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each *required test channel*. When the *reported SAR* is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and *required test channels* is not required for 1 RB allocation; otherwise, SAR is required for the remaining *required test channels* and only for the RB offset configuration with the highest output power for that channel.⁸ When the *reported SAR* of a *required test channel* is > 1.45 W/kg, SAR is required for all three RB offset configurations for that *required test channel*.

QPSK with 50% RB allocation

The same procedures required for 1 RB allocation are applied to measure the SAR for QPSK with 50% RB allocation

QPSK with 100% RB allocation

For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100% RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest *reported SAR* for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the *reported SAR* is > 1.45 W/kg, the remaining *required test channels* must also be tested.

Higher order modulations

For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply all the above the QPSK to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is $> \frac{1}{2}$ dB higher than the same configuration in QPSK or when the *reported SAR* for the QPSK configuration is > 1.45 W/kg.

Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section 1.0 to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is $> \frac{1}{2}$ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the *reported SAR* of a configuration for the largest channel bandwidth is > 1.45 W/kg. The equivalent channel configuration for the RB allocation, RB offset and modulation etc. is determined for the smaller channel bandwidth according to the same number of RB allocated in the largest channel bandwidth. For example, 50 RB in 10 MHz channel bandwidth does not apply to 5 MHz channel bandwidth; therefore, this cannot be tested in the smaller channel bandwidth. However, 50% RB allocation in 10 MHz channel bandwidth is equivalent to 100% RB allocation in 5 MHz channel bandwidth; therefore, these are the equivalent configurations to be compared to determine the specific channel and configuration in the smaller channel bandwidth that need SAR testing.

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Additional information

- MPR has been implemented permanently by the manufacturer as per 3GPP TS36.101
- A-MPR was disabled for all SAR measurements.
- LTE Head SAR was evaluated to cover third-party VoIP applications at full power.
- According to “3GPP TS 36.521-1 V10.0.0 (2011-12)”:
 - “The channel numbers that designate carrier frequencies so close to the operating band edges that the carrier extends beyond the operating band edge shall not be used. This implies that the first 7, 15, 25, 50, 75 and 100 channel numbers at the lower operating band edge and the last 6, 14, 24, 49, 74 and 99 channel numbers at the upper operating band edge shall not be used for channel bandwidths of 1.4, 3, 5, 10, 15 and 20 MHz respectively.”...

1.8.5 SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities as per KDB 941225 D06 v02r00

Standalone personal wireless routers and handsets with hotspot mode capabilities must address hand-held and other near-body exposure conditions to show SAR compliance. The following procedures are applicable when the overall device length and width are ≥ 9 cm x 5 cm respectively. A test separation of 10 mm is required. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25 mm from that surface or edge, for the data modes, wireless technologies and frequency bands supporting hotspot mode. The standalone SAR results in each device test orientation must be analyzed for the applicable hotspot mode simultaneous transmission configurations to determine SAR test exclusion and volume scan requirements.

1.8.6 Procedure for Fast SAR Scan as per KDB 447498 D01 v05r02

Fast SAR or area scan based 1-g SAR estimation can be used instead of full SAR measurements as long as the following conditions are fulfilled:

- For dipole validation the 1g SAR for the area and zoom scan must be with $\pm 3\%$
- 1g Measured SAR ≤ 1.2 W/kg
- The difference between the zoom and area scan 1g SAR ≤ 0.1 W/kg
- A zoom scan is required on the worst case for each configuration of a frequency band.
 - For head configuration: A zoom scan is required for **each** position with 1g SAR ≥ 0.8 and 1 additional zoom scan to cover all the remaining positions. The scan is done on the worst case for the position(s)
- Polynomial fit algorithm is utilized. Set in DASY by double clicking the area scan procedure
- Area scan is measure at a distance ≤ 4 mm from the phantom surface
- A zoom scan is not required for any other purpose
 - For simultaneous transmission the coordinates for the maxima can be found using the area scan
- DASY must not show any error, warning, or alert messages during the scan.
 - Example: noise in measurement, peak to close to the scan boundary. Peaks are too sharp, etc.
- The frequency band being tested is ≤ 3 GHz

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1.8.7 Procedure for Fast SAR Testing as per IEEE 1528 - 2013

Overview of the steps from the Spreadsheet/wizard provided by Industry Canada

STEP A: **FAST SAR** scans done on all necessary configurations and positions.

STEP B: **FULL SAR** scan done on the maximum SAR for each band. (1 Full Scan per band).

STEP C-1: Select the band with the overall highest **FULL SAR**.

STEP C-2: Perform additional **FULL SAR** measurements on all **FAST SAR** scans $\geq$ **Threshold 1**.

$$\text{Threshold 1} = SAR_{\text{maxFAST for a band}} \times 0.76557 (< 3\text{GHz}), SAR_{\text{maxFAST for a band}} \times 0.71921 (> 5\text{GHz})$$

Note 1: This threshold changes with each band as it is dependent on the highest **FAST SAR** for THAT band. Use the equation based on the frequency of the band being examined.

Note 2: these values are based on the uncertainty found in the uncertainty budget and will change if they do. Refer below to the derivation of this equation.

STEP D: Just reports the highest **FULL SAR** measurement of each band.

STEP E: Perform STEP C-2 on any band whose maximum **FULL SAR** measurement $\geq$ **Threshold 2**.

$$\text{Threshold 2} = SAR_{\text{highest overall FULL SAR for all bands}} \times 0.68388 (< 3\text{GHz})$$

$$\text{Threshold 2} = SAR_{\text{highest overall FULL SAR for all bands}} \times 0.63880 (> 5\text{GHz})$$

Note 1: This threshold is the SAME for ALL BANDS as it is dependent on the overall highest **FULL SAR** out of all the bands. Therefore, you will use (< 3 GHz) or (>5 GHz) depending on where the overall highest **FULL SAR** is located.

Note2: these values are based on the uncertainty found in the uncertainty budget and will change if they do. Refer below to the derivation of this equation.

STEP F: Do any omitted FAST SAR scans from STEP A. Basically wants you to fill in any blanks you left in STEP A.

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Threshold 1 (SAR_{i,j,fast} equation) derived for our lab:

$$SAR_{i,j,fast} \geq SAR_{i,max,fast} \times \left[B_{i,fast} - \sqrt{(B_{i,fast})^2 - 1} \right]$$

SAR_{i,j,fast} = Any **FAST SAR** scan done on the band being examined

SAR_{i,max,fast} = The maximum **FAST SAR** of the band being examined

$$B_{i,fast} = \frac{1}{1 - [1.64(U_{i,fast})]^2}$$

U_{i,fast} = **11.35 %** for < 3 GHz, U_{i,fast} = **13.9 %** for > 5 GHz

Note: Uncertainty found in the uncertainty budget ÷ 2 (U_{i,fast} is in K=1, budget is in k=2). So, 22.7%/2, and 27.8%/2 = 11.35 and 13.9. Input them in decimal form, so 0.1135 and 0.1390.

$$B_{i,fast} = 1.03589 (< 3 \text{ GHz}), \quad B_{i,fast} = 1.05481 (> 5 \text{ GHz})$$

$$\left[B_{i,fast} - \sqrt{(B_{i,fast})^2 - 1} \right] = 0.76557 (< 3 \text{ GHz}),$$

$$\left[B_{i,fast} - \sqrt{(B_{i,fast})^2 - 1} \right] = 0.71921 (> 5 \text{ GHz})$$

$$SAR_{i,j,fast} \geq SAR_{i,max,fast} \times 0.76557 (< 3 \text{ GHz}), \quad SAR_{i,j,fast} \geq SAR_{i,max,fast} \times 0.71921 (> 5 \text{ GHz})$$

In words: Threshold 1 is the maximum **FAST SAR** measurement for that band multiplied by 0.76557 or 0.71921. Any **FAST SAR** measurement in the same band equal or above this threshold must have a **FULL SAR** measurement done.

Note: This threshold changes with each band as it is dependent on the highest **FAST SAR** for THAT band.

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Threshold 2 (SAR_{i,j,full} equation) derived for our lab:

$$SAR_{i,max,full} \geq SAR_{highest,full} \times \left[B_i - \sqrt{(B_i)^2 - 1} \right]$$

SAR_{i,max,full} = The maximum **FULL SAR** of the band being examined

SAR_{highest,full} = The overall highest **FULL SAR** out of all the bands

$$B_i = \frac{1}{1 - \left[1.64 \times \sqrt{(U_{i,fast})^2 + (U_{i,full})^2} \right]^2}$$

	U _{i,fast}	U _{i,full}
< 3 GHz	11.35 %	11.15 %
> 5 GHz	13.90 %	12.30 %

Note: Uncertainty found in the uncertainty budget ÷ 2 (U_{i,fast} is in K=1, budget is in k=2). So, 22.7%/2, and 22.3%/2 = 11.35 and 11.15. Input them in decimal form, so 0.1135 and 0.1115

$$B_i = 1.07306(< 3 \text{ GHz}), \quad B_i = 1.10212(> 5 \text{ GHz})$$

$$\left[B_i - \sqrt{(B_i)^2 - 1} \right] = 0.68388(< 3 \text{ GHz}), \quad \left[B_i - \sqrt{(B_i)^2 - 1} \right] = 0.63880(> 5 \text{ GHz})$$

$$SAR_{i,max,full} \geq SAR_{highest,full} \times 0.68388(< 3 \text{ GHz})$$

$$SAR_{i,max,full} \geq SAR_{highest,full} \times 0.63880(> 5 \text{ GHz})$$

In words: **Threshold 2** is the overall highest **FULL SAR** out of all bands multiplied by 0.68388 or 0.63880. When the maximum **FULL SAR** of a band is equal or above **Threshold 2** then you must apply **Threshold 1** to the band and perform the additional FULL SAR scans.

Note: This threshold is the SAME for ALL BANDS as it is dependent on the overall highest **FULL SAR** out of all the bands. Therefore, you will use (< 3 GHz) or (> 5 GHz) depending on where the overall highest **FULL SAR** is located.

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Glossary

N = a frequency band + Modulations. I.e. GSM 850, UMTS V, CDMA 850

i = all the N bands/all supported frequency bands. ith band refers to a specific supported band.

j = all test configurations performed on a band. Refers to all the **FAST SAR** or **FULL SAR** scans performed on a band.

$U_{i, fast}$ = Uncertainty of **FAST SAR** when k
= 1. (In the uncertainty budget k = 2 so you + 2).

$U_{i, full}$ = Uncertainty of **FULL SAR** when k
= 1. (In the uncertainty budget k = 2 so you + 2).

$$B_{i, fast} = \frac{1}{1 - [1.64(U_{i, fast})]^2}$$

$$B_i = \frac{1}{1 - \left[1.64 \times \sqrt{(U_{i, fast})^2 + (U_{i, full})^2} \right]^2}$$

$SAR_{i, max, fast}$ = The max **FAST SAR** for each band

$SAR_{i, j, fast}$ = Each individual **FAST SAR** scan performed

$SAR_{i, max, full}$ = The max **FULL SAR** for each band

$SAR_{max, full}$
= **Max($SAR_{i, max, full}$)** the overall highest **FULL SAR** from the max **FULL SAR** of each band

$SAR_{i, j, full}$ = Each individual **FULL SAR** scan performed

$SAR_{highest, full}$
= **Max($SAR_{i, j, full}$)** the overall highest **FULL SAR** from ALL the **FULL SAR** scans done.

$$SAR_{i, j, fast} \geq SAR_{i, max, fast} \times \left[B_{i, fast} - \sqrt{(B_{i, fast})^2 - 1} \right] \text{ (Determines THE additional FULL}$$

SAR scans to be done)

$$SAR_{i, max, full} \geq SAR_{highest, full} \times \left[B_i - \sqrt{(B_i)^2 - 1} \right] \text{ (Determines IF additional FULL SAR scans}$$

need to be done)

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1.8.8 LTE TDD as per KDB 941225 D05 v02r03

SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations. SAR is tested using **Uplink-downlink configuration 0** with **special subframe configuration 7**

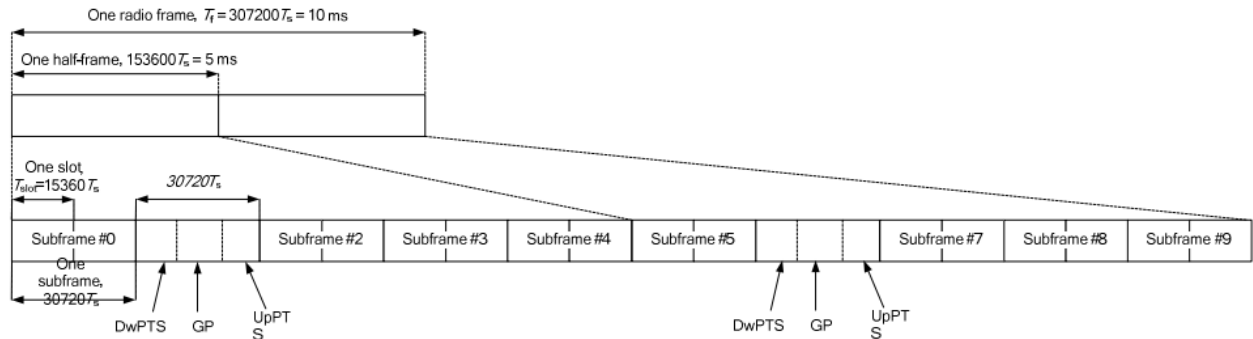


Figure 1: Frame structure type 2 (for 5ms switch-point periodicity)

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

Table 1: Uplink-downlink configurations

Note: ‘U’ denotes subframes reserved for uplink, ‘D’ denotes subframes reserved for downlink, and ‘S’ denotes special subframes made up of the three fields of DwPTS, GP, and UpPTS. The lengths of DwPTS, GP, and UpPTS are identified in Table 2.

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$			$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			-	-	-
8	$24144 \cdot T_s$			-	-	-

Table 2: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

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Up-Down Config.	# of S	# of U	Duty Cycle	
			4384-Ts	5120-Ts
0	2	6	62.85%	63.33%
1	2	4	42.85%	43.33%
2	2	2	22.85%	23.33%
3	1	3	31.43%	31.67%
4	1	2	21.43%	21.67%
5	1	1	11.43%	11.67%
6	2	5	52.85%	53.33%

Table 3: Calculating duty cycle for each uplink-downlink configuration.

$$Duty\ Cycle = \frac{[CPU \times (\# of S)] + (\# of U)}{One\ Radio\ Frame} \times 100\% = \frac{[5120Ts \times (\# of S)] + (\# of U)}{10} \times 100\%$$

Note 1: CPU = cyclic prefix in uplink

Note 2: $Ts = \frac{10}{307200}$

1.8.9 LTE Rel. 10 carrier aggregation as per KDB 941225 D05A v01r01

When carrier aggregation is limited to downlink only; i.e., there is no uplink carrier aggregation, uplink maximum output power (single carrier) is measured for the supported combinations of downlink carrier aggregation:

- I) According to the frequency bands and channel bandwidths allowed for the uplink and downlink configuration combinations.
- II) Uplink maximum output power is measured with downlink carrier aggregation active, using the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.²
- III) When the uplink maximum output power conditions in ii) are not satisfied, a KDB inquiry is required to determine if SAR evaluation for the uplink with downlink carrier aggregation active may be necessary.

Please refer to section 11.4 of the report for the conducted power data.

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1.9 General SAR Test Reduction and Exclusion procedure as per KDB 447498 D01 V05r02 and SAR Handsets Multi transmitters and Ant procedure as per KDB 648474 D04 v01r02

Standalone SAR test exclusion guidance:

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances*

$$\left(\frac{\text{max. power of channel, including tune - up tolerance (mW)}}{\text{min. test separation distance (mm)}} \times \sqrt{f \text{ (GHz)}} \right) \leq 3.0, \text{ For 1g SAR}$$

Where:

- $f_{\text{(GHz)}}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation¹⁷
- If *distance* is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion
- The result is rounded to one decimal place for comparison

SAR test reduction considerations:

Testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g for the mid-band or highest output power is:

- $\leq 0.8 \text{ W/kg}$ or 2.0 W/kg , for 1-g or 10-g respectively, when the transmission band is $\leq 100 \text{ MHz}$

Note: Highest output channel is only tested if the maximum output power variation across the required test channels is $> \frac{1}{2} \text{ dB}$

Simultaneous Transmission SAR Test exclusion considerations:

When the sum of 1-g of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit, SAR test exclusion applies to that simultaneous transmission configuration. When the sum is greater than the SAR limit, the SAR to peak location separation ratio procedures described below may be applied to determine if simultaneous transmission SAR test exclusion applies. The ratio is determined by:

$$\left([SAR1 + SAR2]^{\frac{1.2}{R_i}} \right) \leq 0.04$$

Where:

- R_i = the separation distance between the peak SAR locations for the antenna pair (mm)

Simultaneous Transmission SAR required:

Antenna pairs with SAR to antenna separation ratio > 0.04 ; test is only required for the configuration that results in the highest SAR in standalone configuration for each wireless mode and exposure condition.

1.10 Wi-Fi and Hotspot Mode Power Reductions

Static/fixed power reduction scheme on the following modes/bands have been implemented when Hotspot Mode is enabled or active to comply with body SAR with 10 mm test separation from flat phantom on standalone transmitter and multi-band simultaneous transmission conditions:

- GSM850 3-slot ≈ 2.0 dB
- GSM1900 3-slot ≈ 1.0 dB
- WCDMA FDD IV ≈ 3.5 dB
- LTE band 7 ≈ 3.5 dB
- WLAN 5 GHz ≈ 6.0 dB
- GSM850 4-slot ≈ 2.0 dB
- GSM1900 4-slot ≈ 2.0 dB
- LTE band 2 ≈ 3.0 dB
- LTE band 30 ≈ 3.0 dB
- GSM1900 2-slot ≈ 1.5 dB
- WCDMA FDD II ≈ 3.0 dB
- LTE band 4 ≈ 3.0 dB
- WLAN 2.4 GHz ≈ 7.0 dB

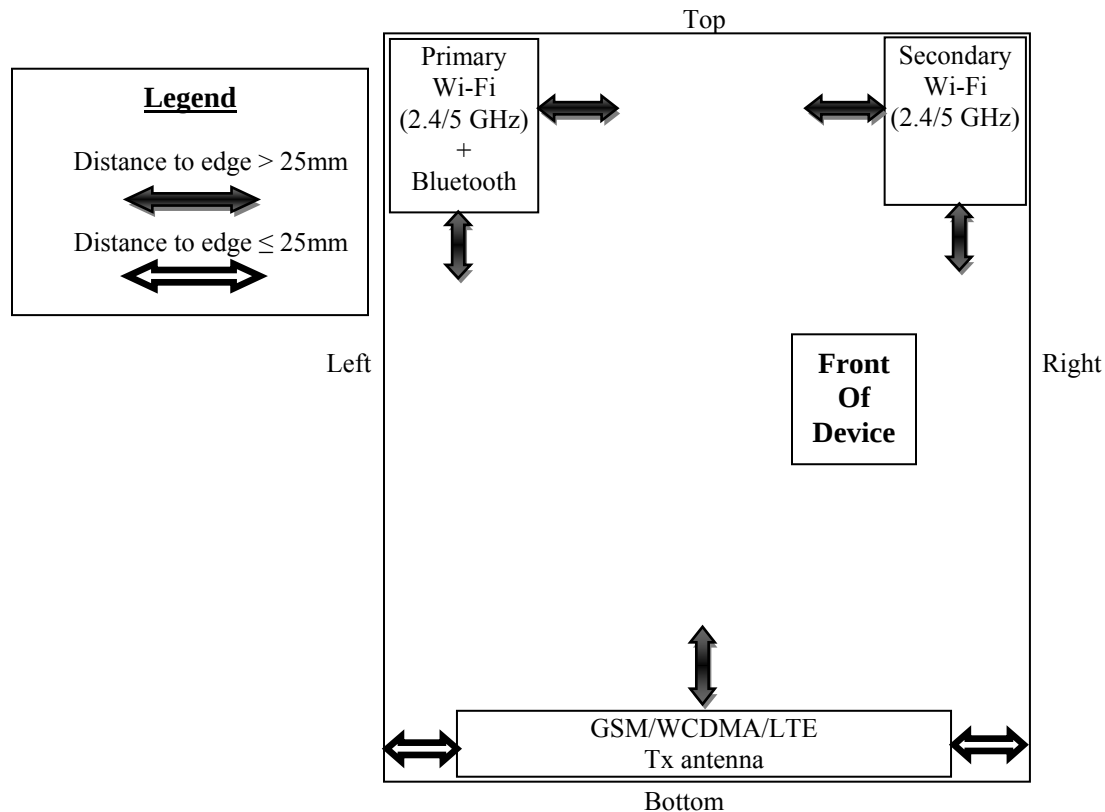


Figure 1.8.4-1 Identification of all sides for SAR Testing

Note: According to FCC guidance, Hotspot SAR testing is not required on any edge that is more than 2.5cm from the transmitting antenna.

Hotspot Sides for SAR Testing						
Mode	Front	Back	Top	Bottom	Left	Right
GPRS 850/1900, WCDMA/HSPA II/IV/V, LTE band 2/4/5/7/12/17/30	Yes	Yes	No	Yes	Yes	Yes
Bluetooth 2.4GHz, Primary 802.11 b/g/n & 802.11a/n/ac	Yes	Yes	Yes	No	Yes	No
Secondary 802.11 b/g/n & 802.11a/n/ac	Yes	Yes	Yes	No	No	Yes

Table 1.8.4-1 Identification of all sides for SAR Testing

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2.0 DESCRIPTION OF THE TEST EQUIPMENT

2.1 SAR measurement system

SAR measurements were performed using a Dosimetric Assessment System (DASY52), an automated SAR measurement system manufactured by Schmid & Partner Engineering AG (SPEAG), of Zurich, Switzerland.

The DASY 52 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Stäubli RX family) with controller and software.
- An arm extension for accommodating the data acquisition electronics (DAE).
- A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- A DAE module that performs the signal amplification, signal multiplexing, A/D conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the Electro-optical coupler (EOC).
- A unit to operate the optical surface detector that is connected to the EOC.
- The EOC performs the conversion from an optical signal into the digital electric signal of the DAE. The EOC is connected to the PC plug-in card.
- The functions of the PC plug-in card based on a DSP are to perform the time critical tasks such as signal filtering, surveillance of the robot operation fast movement interrupts.
- A computer operating Windows.
- DASY52 software version 52.8.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM Twin Phantom enabling testing left-hand and right-hand usage.
- The device holder for mobile phones.
- Tissue simulating liquid mixed according to the given recipes (see section 6.1).
- System validation dipoles allowing for the validation of proper functioning of the system.

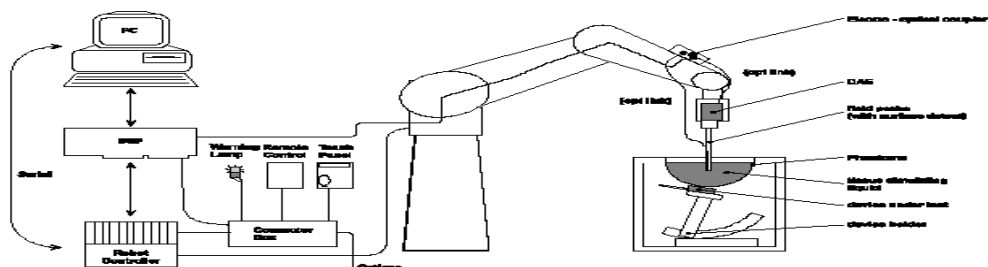


Figure 2.1-1 System Description

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2.1.1 Equipment List

Manufacturer	Test Equipment	Model Number	Serial Number	Cal. Due Date (MM/DD/YY)
SCHMID & Partner Engineering AG	E-field probe	EX3DV4	3592	11/10/2015
SCHMID & Partner Engineering AG	E-field probe	ET3DV6	1643	3/13/2016
SCHMID & Partner Engineering AG	E-field probe	ES3DV3	3225	2/25/2016
SCHMID & Partner Engineering AG	Data Acquisition Electronics (DAE4)	DAE4	881	01/13/2016
SCHMID & Partner Engineering AG	Dipole Validation Kit	D750V3	1021	03/11/2017
SCHMID & Partner Engineering AG	Dipole Validation Kit	D835V2	446	03/11/2017
SCHMID & Partner Engineering AG	Dipole Validation Kit	D1800V2	2d020	03/12/2017
SCHMID & Partner Engineering AG	Dipole Validation Kit	D1900V2	545	03/12/2017
SCHMID & Partner Engineering AG	Dipole Validation Kit	D2450V2	791	09/10/2015*
SCHMID & Partner Engineering AG	Dipole Validation Kit	D2450V2	747	11/14/2015
SCHMID & Partner Engineering AG	Dipole Validation Kit	D2600V2	1033	03/13/2017
SCHMID & Partner Engineering AG	Dipole Validation Kit	D5000V2	1033	11/08/2015
Agilent Technologies	Signal generator	8648C	4037U03155	09/25/2015
Agilent Technologies	Power meter	E4419B	GB40202821	09/25/2015
Agilent Technologies	Power sensor	8481A	MY41095233	10/06/2015
Agilent Technologies	Power sensor	8481A	MY41095417	10/06/2015
Amplifier Research	Amplifier	5S1G4M3	300986	CNR
Amplifier Research	Coupler	DC7144	300993	CNR
Agilent Technologies	Network analyzer	8753ES	US39174857	10/24/2015
Agilent Technologies	Power meter	N1911A	MY45100905	06/09/2017
Agilent Technologies	Power sensor	N1921A	SG45240281	02/04/2016
Rohde & Schwarz	Signal generator	SMA 100	102106	11/28/2015
CPI Wireless Solutions	Amplifier	VZC-6961K4	SK4310E5	CNR
Rohde & Schwarz	Wideband Base Station Simulator	CMW 500	136298	11/29/2016
Rohde & Schwarz	Wideband Base Station Simulator	CMW 500	115595	11/19/2016
Rohde & Schwarz	Base Station Simulator	CMU 200	102106	11/28/2015
Rohde & Schwarz	Bluetooth Tester	CBT	100370	11/25/2015
Weinschel Corp	20dB Attenuator	33-20-34	BMO697	CNR

Table 2.1.1-1 Equipment list

Note: “*” equipment was sent for calibration before due date

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2.2 Description of the test setup

Before SAR measurements are conducted, the device and the DASY equipment are setup as follows:

2.2.1 Device and base station simulator setup

- Power up the device.
- Turn on the base station simulator and set the radio channel and power to the appropriate values.
- Connect an antenna to the RF IN/OUT of the communication test set and place it close to the device.

2.2.2 DASY setup

- Turn the computer on and log on to Windows.
- Start the DASY software by clicking on the icon located on the Windows desktop.
- Mount the DAE unit and the probe. Turn on the DAE unit.
- Turn the Robot Controller on by turning the main power switch to the horizontal position
- Align the probe by clicking the ‘Align probe in light beam’ button.
- Open a file and configure the proper parameters - probe, medium, communications system etc.
- Establish a connection between the Device and the communications test instrument. Place the Device on the stand and adjust it under the phantom.
- Start SAR measurements.

3.0 ELECTRIC FIELD PROBE CALIBRATION

3.1 Probe Specifications

SAR measurements were conducted using the dosimetric probes ES3DV3/ET3DV6 and EX3DV4, designed by Schmid & Partner Engineering AG for the measurement of SAR. The probe is constructed using the thin film technique, with printed resistive lines on ceramic substrates. It has a symmetrical design with triangular core, built-in optical fibre for the surface detection system and built-in shielding against static discharge. The probe is sensitive to E-fields and thus incorporates three small dipoles arranged so that the overall response is close to isotropic. The table below summarizes the technical data for the probe.

Property	Data
Frequency range	30 MHz – 3 GHz
Linearity	±0.1 dB
Directivity (rotation around probe axis)	≤ ±0.2 dB
Directivity (rotation normal to probe axis)	±0.4 dB
Dynamic Range	5 mW/kg – 100 W/kg
Probe positioning repeatability	±0.2 mm
Spatial resolution	< 0.125 mm ³
Probe model EX3DV4 for 2.4 – 6 GHz	
Probe tip to sensor center	1.0 mm
Probe tip diameter is	2.5 mm
Probe calibration uncertainty	< 15 % for f = 2.45 to < 6.0 GHz
Probe calibration range	± 100 MHz

Table 3.1-1 Probe specifications

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3.2 Probe calibration and measurement uncertainty

The probe had been calibrated with accuracy better than $\pm 12\%$ (<2600 MHz) and 13.1% (5000 MHz). The sensitivity parameters (NormX, NormY, and NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe were tested. The probe calibration parameters are shown on Appendix D and below:

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unct. (k=2)
750	41.9	0.89	6.69	6.69	6.69	0.32	3.00	$\pm 12.0\%$
900	41.5	0.97	6.09	6.09	6.09	0.33	3.00	$\pm 12.0\%$
1810	40.0	1.40	5.18	5.18	5.18	0.80	2.02	$\pm 12.0\%$
1950	40.0	1.40	4.93	4.93	4.93	0.80	2.06	$\pm 12.0\%$
2450	39.2	1.80	4.58	4.58	4.58	0.80	1.62	$\pm 12.0\%$

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unct. (k=2)
750	55.5	0.96	6.29	6.29	6.29	0.36	2.49	$\pm 12.0\%$
900	55.0	1.05	6.00	6.00	6.00	0.33	3.00	$\pm 12.0\%$
1810	53.3	1.52	4.50	4.50	4.50	0.80	2.60	$\pm 12.0\%$
1950	53.3	1.52	4.56	4.56	4.56	0.80	2.23	$\pm 12.0\%$
2450	52.7	1.95	3.93	3.93	3.93	0.70	1.60	$\pm 12.0\%$

Table 3.2-1 Probe ET3DV6 SN: 1643 (Cal issued: 03/13/2015)

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to $\pm 10\%$ if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to $\pm 5\%$. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

^G Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than $\pm 1\%$ for frequencies below 3 GHz and below $\pm 2\%$ for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unct. (k=2)
750	41.9	0.89	6.50	6.50	6.50	0.61	1.31	± 12.0 %
900	41.5	0.97	6.22	6.22	6.22	0.30	1.84	± 12.0 %
1810	40.0	1.40	5.26	5.26	5.26	0.50	1.46	± 12.0 %
1950	40.0	1.40	5.01	5.01	5.01	0.80	1.11	± 12.0 %
2300	39.5	1.67	4.77	4.77	4.77	0.75	1.25	± 12.0 %
2450	39.2	1.80	4.60	4.60	4.60	0.57	1.49	± 12.0 %
2600	39.0	1.96	4.40	4.40	4.40	0.72	1.30	± 12.0 %

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unct. (k=2)
750	55.5	0.96	6.19	6.19	6.19	0.80	1.23	± 12.0 %
900	55.0	1.05	6.07	6.07	6.07	0.53	1.41	± 12.0 %
1810	53.3	1.52	4.89	4.89	4.89	0.63	1.46	± 12.0 %
1950	53.3	1.52	4.86	4.86	4.86	0.44	1.86	± 12.0 %
2300	52.9	1.81	4.48	4.48	4.48	0.80	1.29	± 12.0 %
2450	52.7	1.95	4.34	4.34	4.34	0.72	1.14	± 12.0 %
2600	52.5	2.16	4.06	4.06	4.06	0.80	1.08	± 12.0 %

Table 3.2-2 Probe ES3DV3 SN: 3225 (Cal issued: 02/25/2015)

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

^G Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unct. (k=2)
2600	39.0	1.96	6.80	6.80	6.80	0.36	0.93	± 12.0 %
5250	35.9	4.71	4.63	4.63	4.63	0.35	1.80	± 13.1 %
5600	35.5	5.07	4.20	4.20	4.20	0.40	1.80	± 13.1 %
5750	35.4	5.22	4.34	4.34	4.34	0.40	1.80	± 13.1 %

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unct. (k=2)
2600	52.5	2.16	6.84	6.84	6.84	0.78	0.62	± 12.0 %
5250	48.9	5.36	4.06	4.06	4.06	0.45	1.90	± 13.1 %
5600	48.5	5.77	3.78	3.78	3.78	0.45	1.90	± 13.1 %
5750	48.3	5.94	3.81	3.81	3.81	0.50	1.90	± 13.1 %

Table 3.2-3 Probe EX3DV4 SN: 3592 (Cal issued: 11/10/2014)

^C Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

^G Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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4.0 SAR MEASUREMENT SYSTEM VERIFICATION

Prior to conducting SAR measurements, the system was validated using the dipole validation kit and the flat section of the SAM phantom. A power level of 1.0W was applied to the dipole antenna. The verification results are in the table below with a comparison to reference values. Printouts are shown in Appendix A. All the measured parameters are within the allowed tolerances.

At above 1.5 – 2 GHz, dipoles maintain good return loss of -15 dB to -20 dB, therefore SAR measurements are limited to approximately +/- 100 MHz of the probe/dipole calibration frequency.

4.1 System accuracy verification for head adjacent use

Dipole Validation											
			Measured			Area & Zoom Dev. (%)	Target		Deviation (%)		Date Measured
Freq. (MHz)	Dipole Serial	Probe Serial	Scan Type	SAR 1g	SAR 10g		Zoom Scan		1g	10g	MM/DD/YY
							1g	10g			
750	1021	1643	Area	8.00	5.36	1.01					08/25/15
			Zoom	7.92	5.21		8.28	5.42	-4.35	-3.87	
750	1021	1643	Area	8.13	5.45	1.12					08/28/15
			Zoom	8.04	5.33		8.28	5.42	-2.90	-1.66	
835	446	1643	Area	9.01	5.96	0.45					08/12/15
			Zoom	8.97	5.96		9.28	6.06	-3.34	-1.65	
835	446	1643	Area	9.31	6.16	1.42					08/17/15
			Zoom	9.18	6.12		9.28	6.06	-1.08	0.99	
835	446	1643	Area	9.16	6.06	0.99					08/20/15
			Zoom	9.07	6.04		9.28	6.06	-2.26	-0.33	
835	446	1643	Area	9.05	5.98	0.56					09/16/15
			Zoom	9.00	5.98		9.28	6.06	-3.02	-1.32	
1800	2d020	1643	Area	35.7	19.2	2.29					07/27/15
			Zoom	34.9	18.6		38.5	20.2	-9.35	-7.92	
1800	2d020	1643	Area	36.8	19.9	2.51					08/31/15
			Zoom	35.9	19.2		38.5	20.2	-6.75	-4.95	
1900	545	1643	Area	38.0	20.1	1.88					07/22/15
			Zoom	37.3	20.1		39.6	20.8	-5.81	-3.37	
1900	545	1643	Area	37.0	19.5	1.93					07/27/15
			Zoom	36.3	19.5		39.6	20.8	-8.33	-6.25	
1900	545	1643	Area	37.8	19.9	2.44					09/01/15
			Zoom	36.9	19.9		39.6	20.8	-6.82	-4.33	
2300	791	3225	Area	48.8	23.1	1.24					08/07/15
			Zoom	48.2	22.9		48.7	23.3	-1.03	-1.72	
2300	791	3225	Area	49.7	23.6	1.84					08/10/15
			Zoom	48.8	23.4		48.7	23.3	0.21	0.43	
2450	747	3225	Area	55.1	25.9	1.47					09/04/15
			Zoom	54.3	25.6		52.8	24.6	2.84	4.07	
2450	747	3225	Area	55.9	26.0	2.01					09/15/15
			Zoom	54.8	25.8		52.8	24.6	3.79	4.88	
2600	1033	3225	Area	58.5	26.1	0.69					07/29/15
			Zoom	58.1	26.1		56.1	25.0	3.57	4.40	
2600	1033	3225	Area	60.2	26.9	2.56					08/04/15
			Zoom	58.7	26.4		56.1	25.0	4.63	5.60	

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5200	1033	3592	Area	81.6	22.8	-4.56					09/09/15
			Zoom	85.5	24.7		79.4	22.6	7.68	9.29	
5200	1033	3592	Area	78.4	22.0	-6.56					09/14/15
			Zoom	83.9	24.3		79.4	22.6	5.67	7.52	
5500	1033	3592	Area	85.8	23.7	-5.19					09/09/15
			Zoom	90.5	25.9		84.4	23.9	7.23	8.37	
5500	1033	3592	Area	85.6	23.9	-4.89					09/14/15
			Zoom	90.0	26.1		84.4	23.9	6.64	9.21	
5800	1033	3592	Area	82.7	23.0	-3.61					09/09/15
			Zoom	85.8	24.6		79.4	22.6	8.06	8.85	
5800	1033	3592	Area	83.0	22.8	-1.31					09/14/15
			Zoom	84.1	24.2		79.4	22.6	5.92	7.08	

Table 4.1-1 System accuracy (validation for head adjacent use)

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5.0 PHANTOM DESCRIPTION

The SAM Twin Phantom, manufactured by SPEAG, was used during the SAR measurements. The phantom is made of a fibreglass shell integrated with a wooden table.

The SAM Twin Phantom is a fibreglass shell phantom with 2 mm shell thickness. It has three measurement areas:

- Left side head
- Right side head
- Flat phantom

The phantom table dimensions are: 100x50x85 cm (LxWxH). The table is intended for use with freestanding robots.

The bottom shelf contains three pair of bolts for locking the device holder in place. The device holder positions are adjusted to the standard measurement positions in the three sections. Only one device holder is necessary if two phantoms are used (e.g., for different solutions).

A white cover is provided to top the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. Free space scans of devices on the cover are possible; however the optical surface detector does not work properly at the cover surface. Place a sheet of white paper on the cover when using optical surface detection.

Liquid depth of ≥ 15 cm is maintained in the phantom for all the measurements.



Figure 5.0-1 SAM Twin Phantom

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6.0 TISSUE DIELECTRIC PROPERTIES

6.1 Composition of tissue simulant

The composition of the brain and muscle simulating liquids are shown in the table below.

INGREDIENT	MIXTURE 800–900MHz		MIXTURE 1800–1900MHz		MIXTURE 2450 MHz		MIXTURE 5 – 6 GHz	
	Brain %	Muscle %	Brain %	Muscle %	Brain %	Muscle %	Brain %	Muscle %
Water	40.29	65.45	55.24	69.91	55.0	68.75	64	64-78
Sugar	57.90	34.31	0	0	0	0	0	0
Salt	1.38	0.62	0.31	0.13	0	0	0	0
HEC	0.24	0	0	0	0	0	0	0
Bactericide	0.18	0.10	0	0	0	0	0	0
DGBE	0	0	44.45	29.96	40.0	31.25	0	0
Triton X-100	0	0	0	0	5.0	0	0	0
Additives and Salt	0	0	0	0	0	0	3	2-3
Emulsifiers	0	0	0	0	0	0	15	9-15
Mineral Oil	0	0	0	0	0	0	18	11-18

Table 6.1-1 Tissue simulant recipe

6.1.1 Equipment

Manufacturer	Test Equipment	Model Number	Serial Number	Cal. Due Date (MM/DD/YY)
Pyrex, England	Graduated Cylinder	N/A	N/A	N/A
Pyrex, USA	Beaker	N/A	N/A	N/A
Acculab	Weight Scale	V1-1200	018WB2003	N/A
IKA Works Inc.	Hot Plate	RC Basic	3.107433	N/A
Dell	PC using GPIB card	GX110	347	N/A
Agilent Technologies	Dielectric probe kit	HP 85070C	US9936135	CNR
Agilent Technologies	Network Analyzer	8753ES	US39174857	10/24/2015
Control Company	Digital Thermometer	23609-234	21352860	09/22/2015

Table 6.1.1-1 Tissue simulant preparation equipment

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6.1.2 Preparation procedure

800-900 MHz liquids

- Fill the container with **water**. Begin heating and stirring.
- Add the **Cellulose**, the **preservative substance** and the **salt**. After several hours, the liquid will become more transparent again. The container must be covered to prevent evaporation.
- Add **Sugar**. Stir it well until the sugar is sufficiently dissolved.
- Keep the liquid hot but below the boiling point for at least an hour. The container must be covered to prevent evaporation.
- Remove the container from, and turn the hotplate off and allow the liquid to cool off to room temperature prior to performing dielectric measurements.

1800-2450 MHz liquid

- Fill the container with water and place it on hotplate. Begin heating and stirring.
- Add the salt, Glycol/Triton X-100. The container must be covered to prevent evaporation.
- Keep the liquid hot enough to dissolve sugar for at least an hour. The container must be covered to prevent evaporation.
- Remove the container from, and turn the hotplate off and allow the liquid to cool off to room temperature prior to performing dielectric measurements.

6.2 Electrical parameters of the tissue simulating liquid

The tissue dielectric parameters shall be measured before a batch can be used for SAR measurements to ensure that the simulated tissue was properly made and will simulate the desired human characteristic. Limits and measured electrical parameters are shown in the table below.

Recommended limits are adopted from IEEE P1528-2003:

“Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”, DASY manual and from FCC Tissue Dielectric Properties web page at <http://www.fcc.gov/fcc-bin/dielec.sh>

Dielectric Parameters For Head Liquid									
Liquid HSL	Freq. (MHz)	Measured HSL			Target HSL		Deviation (%)		Date Measured MM/DD/YY
		ϵ'_r	ϵ''_r	σ (S/m)	ϵ'_r	σ (S/m)	ϵ'_r	σ (S/m)	
750	685	43.09	22.36	0.85	42.3	0.89	1.87	-4.26	8/25/2015
	700	42.88	22.24	0.87	42.1	0.89	1.85	-2.69	
	715	42.69	22.09	0.88	42.1	0.89	1.40	-1.27	
	750	42.13	21.76	0.91	41.9	0.89	0.55	2.01	
	790	41.58	21.50	0.94	41.7	0.90	-0.29	4.99	
750	685	42.65	22.45	0.86	42.3	0.89	0.83	-3.88	8/28/2015
	700	42.40	22.35	0.87	42.1	0.89	0.71	-2.21	
	715	42.20	22.21	0.88	42.1	0.89	0.24	-0.74	
	750	41.61	21.86	0.91	41.9	0.89	-0.69	2.48	
	790	41.10	21.59	0.95	41.7	0.90	-1.44	5.43	
835	815	41.75	18.86	0.86	41.6	0.90	0.36	-4.99	8/12/2015
	820	41.73	18.86	0.86	41.6	0.90	0.31	-4.41	
	835	41.55	18.83	0.87	41.5	0.90	0.12	-2.81	
	850	41.36	18.77	0.89	41.5	0.92	-0.34	-3.52	
	865	41.17	18.71	0.90	41.5	0.93	-0.80	-3.19	
835	815	41.54	18.97	0.86	41.6	0.90	-0.14	-4.43	8/17/2015

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	820	41.48	18.97	0.87	41.6	0.90	-0.29	-3.85	
	835	41.25	18.93	0.88	41.5	0.90	-0.60	-2.30	
	850	41.09	18.84	0.89	41.5	0.92	-0.99	-3.17	
	865	40.91	18.81	0.91	41.5	0.93	-1.42	-2.67	
835	815	40.75	18.85	0.85	41.6	0.90	-2.04	-5.04	8/20/2015
	820	40.69	18.83	0.86	41.6	0.90	-2.19	-4.56	
	835	40.53	18.82	0.87	41.5	0.90	-2.34	-2.86	
	850	40.33	18.79	0.89	41.5	0.92	-2.82	-3.42	
	865	40.07	18.72	0.90	41.5	0.93	-3.45	-3.14	
835	815	41.37	18.87	0.86	41.6	0.90	-0.56	-4.95	9/16/2015
	820	41.32	18.89	0.86	41.6	0.90	-0.68	-4.27	
	835	41.08	18.86	0.88	41.5	0.90	-1.02	-2.67	
	850	40.88	18.81	0.89	41.5	0.92	-1.49	-3.33	
	865	40.69	18.79	0.90	41.5	0.93	-1.96	-2.77	
1800	1710	38.68	14.12	1.34	40.1	1.35	-3.54	-0.50	7/27/2015
	1730	38.64	14.15	1.36	40.1	1.36	-3.64	0.13	
	1750	38.55	14.15	1.38	40.1	1.37	-3.87	0.55	
	1785	38.44	14.23	1.41	40.0	1.39	-3.90	1.66	
	1800	38.35	14.26	1.43	40.0	1.40	-4.13	2.00	
1800	1710	38.65	14.03	1.33	40.1	1.35	-3.62	-1.14	8/30/2015
	1730	38.58	14.08	1.36	40.1	1.36	-3.79	-0.36	
	1750	38.49	14.12	1.37	40.1	1.37	-4.01	0.34	
	1785	38.34	14.21	1.41	40.0	1.39	-4.15	1.52	
	1800	38.27	14.24	1.43	40.0	1.40	-4.32	1.85	
1900	1850	38.65	13.01	1.34	40.0	1.40	-3.38	-4.36	7/22/2015
	1900	38.46	13.19	1.39	40.0	1.40	-3.85	-0.42	
	1915	38.38	13.25	1.41	40.0	1.40	-4.05	0.83	
	1950	38.22	13.34	1.45	40.0	1.40	-4.45	3.37	
	1980	38.10	13.40	1.48	40.0	1.40	-4.75	5.43	
1900	1850	39.27	12.94	1.33	40.0	1.40	-1.82	-4.87	7/27/2015
	1900	39.09	13.05	1.38	40.0	1.40	-2.27	-1.47	
	1915	39.01	13.08	1.39	40.0	1.40	-2.48	-0.47	
	1950	38.88	13.13	1.42	40.0	1.40	-2.80	1.74	
	1980	38.84	13.17	1.45	40.0	1.40	-2.90	3.62	
1900	1850	39.09	12.94	1.33	40.0	1.40	-2.27	-4.87	9/1/2015
	1900	38.86	13.01	1.38	40.0	1.40	-2.85	-1.77	
	1915	38.81	13.05	1.39	40.0	1.40	-2.97	-0.70	
	1950	38.68	13.14	1.43	40.0	1.40	-3.30	1.82	
	1980	38.61	13.23	1.46	40.0	1.40	-3.48	4.09	
2300	2300	37.78	13.22	1.69	39.5	1.67	-4.35	1.29	8/7/2015
	2315	37.72	13.25	1.71	39.4	1.68	-4.26	1.57	
	2350	37.61	13.33	1.74	39.4	1.71	-4.54	1.91	
	2400	37.42	13.44	1.79	39.3	1.76	-4.78	1.96	
2300	2300	37.82	13.37	1.71	39.5	1.67	-4.25	2.44	8/10/2015
	2315	37.76	13.43	1.73	39.4	1.68	-4.16	2.95	
	2350	37.64	13.47	1.76	39.4	1.71	-4.47	2.98	
	2400	37.42	13.59	1.81	39.3	1.76	-4.78	3.09	
2450	2400	37.61	13.28	1.77	39.3	1.76	-4.30	0.74	9/4/2015
	2425	37.53	13.34	1.80	39.2	1.78	-4.26	1.10	
	2450	37.43	13.41	1.83	39.2	1.80	-4.52	1.54	
	2480	37.31	13.49	1.86	39.2	1.83	-4.82	1.70	
2450	2400	38.06	13.23	1.77	39.3	1.76	-3.16	0.38	9/15/2015

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	2425	37.94	13.29	1.79	39.2	1.78	-3.22	0.72	
	2450	37.92	13.37	1.82	39.2	1.80	-3.28	1.20	
	2480	37.77	13.42	1.85	39.2	1.83	-3.65	1.21	
2600	2495	38.25	13.11	1.82	39.1	1.85	-2.17	-1.64	7/29/2015
	2545	38.06	13.21	1.87	39.1	1.90	-2.66	-1.56	
	2600	37.89	13.34	1.93	39.0	1.96	-2.85	-1.56	
	2620	37.82	13.38	1.95	39.0	1.99	-3.03	-2.00	
	2690	37.59	13.56	2.03	38.9	2.06	-3.37	-1.49	
2600	2495	37.71	13.57	1.88	39.1	1.85	-3.55	1.81	8/4/2015
	2545	37.52	13.69	1.94	39.1	1.90	-4.04	2.01	
	2600	37.34	13.80	2.00	39.0	1.96	-4.26	1.84	
	2620	37.27	13.84	2.02	39.0	1.99	-4.44	1.37	
	2690	37.02	14.00	2.10	38.9	2.06	-4.83	1.70	
5200	5180	34.39	16.29	4.70	36.0	4.63	-4.47	1.41	9/9/2015
	5200	34.35	16.30	4.71	36.0	4.66	-4.59	1.17	
	5240	34.25	16.35	4.77	35.9	4.70	-4.61	1.39	
	5280	34.18	16.36	4.81	35.9	4.74	-4.79	1.41	
	5320	34.11	16.40	4.85	35.8	4.78	-4.73	1.54	
5200	5180	34.77	16.33	4.71	36.0	4.63	-3.42	1.64	9/14/2015
	5200	34.71	16.35	4.73	36.0	4.66	-3.58	1.50	
	5240	34.65	16.39	4.78	35.9	4.70	-3.48	1.66	
	5280	34.56	16.43	4.83	35.9	4.74	-3.73	1.82	
	5320	34.50	16.47	4.87	35.8	4.78	-3.63	1.98	
5500	5500	34.14	16.64	5.09	35.6	4.96	-4.10	2.65	9/9/2015
	5580	33.92	16.67	5.17	35.6	5.04	-4.72	2.67	
	5640	33.87	16.74	5.25	35.5	5.11	-4.59	2.79	
	5720	33.64	16.76	5.33	35.4	5.19	-4.97	2.76	
5500	5500	34.21	16.62	5.09	35.6	4.96	-3.90	2.53	9/14/2015
	5580	34.06	16.69	5.18	35.6	5.04	-4.33	2.80	
	5640	33.98	16.72	5.25	35.5	5.11	-4.28	2.66	
	5720	33.82	16.81	5.35	35.4	5.19	-4.46	3.07	
5800	5745	33.85	16.91	5.40	35.4	5.21	-4.38	3.73	9/9/2015
	5775	33.79	16.94	5.44	35.3	5.24	-4.28	3.86	
	5800	33.72	16.94	5.47	35.3	5.27	-4.48	3.72	
	5825	33.65	16.97	5.50	35.3	5.30	-4.67	3.76	
5800	5745	33.76	16.80	5.37	35.4	5.21	-4.63	3.06	9/14/2015
	5775	33.70	16.84	5.41	35.3	5.24	-4.53	3.25	
	5800	33.66	16.87	5.44	35.3	5.27	-4.65	3.29	
	5825	33.63	16.88	5.47	35.3	5.30	-4.73	3.21	

Table 6.2-1 Electrical parameters of head tissue simulating liquid

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Dielectric Parameters For Muscle Liquid									
Liquid MSL	Freq. (MHz)	Measured MSL			Target MSL		Deviation (%)		Date Measured MM/DD/YY
		ϵ'_r	ϵ''_r	σ (S/m)	ϵ'_r	σ (S/m)	ϵ'_r	σ (S/m)	
750	685	56.50	23.96	0.91	55.8	0.96	1.25	-4.89	8/25/2015
	700	56.36	23.76	0.93	55.7	0.96	1.18	-3.62	
	715	56.22	23.58	0.94	55.7	0.96	0.93	-2.30	
	750	55.82	23.21	0.97	55.5	0.96	0.58	0.88	
	790	55.35	22.91	1.01	55.4	0.97	-0.09	3.80	
750	685	54.29	23.68	0.90	55.8	0.96	-2.71	-6.00	8/28/2015
	700	54.11	23.53	0.92	55.7	0.96	-2.85	-4.55	
	715	54.91	23.39	0.93	55.7	0.96	-1.42	-3.09	
	750	53.42	23.03	0.96	55.5	0.96	-3.75	0.09	
	790	52.97	22.75	1.00	55.4	0.97	-4.39	3.08	
835	815	52.84	20.60	0.93	55.3	0.97	-4.45	-3.71	8/12/2015
	820	52.81	20.63	0.94	55.3	0.97	-4.50	-2.98	
	835	52.65	20.60	0.96	55.2	0.97	-4.62	-1.35	
	850	52.53	20.51	0.97	55.2	0.99	-4.84	-2.04	
	865								
835	815	53.29	20.61	0.93	55.3	0.97	-3.63	-3.67	8/17/2015
	820	53.24	20.60	0.94	55.3	0.97	-3.73	-3.12	
	835	53.04	20.62	0.96	55.2	0.97	-3.91	-1.25	
	850	52.91	20.44	0.97	55.2	0.99	-4.15	-2.37	
	865			0.00	55.1	1.01	-100.00	-100.00	
835	815	54.48	20.97	0.95	55.3	0.97	-1.48	-1.98	8/20/2015
	820	54.46	20.98	0.96	55.3	0.97	-1.52	-1.33	
	835	54.33	20.95	0.97	55.2	0.97	-1.58	0.33	
	850	54.13	20.87	0.99	55.2	0.99	-1.94	-0.32	
	865								
835	815	53.24	21.00	0.95	55.3	0.97	-3.72	-1.83	9/16/2015
	820	53.19	21.01	0.96	55.3	0.97	-3.81	-1.17	
	835	52.99	20.99	0.97	55.2	0.97	-4.01	0.50	
	850	52.87	20.93	0.99	55.2	0.99	-4.23	-0.01	
	865			0.00	55.1	1.01	-100.00	-100.00	
1800	1710	51.57	15.58	1.48	53.3	1.46	-3.25	1.51	7/27/2015
	1730	51.55	15.63	1.50	53.3	1.48	-3.28	1.64	
	1750	51.47	15.65	1.52	53.2	1.49	-3.25	2.26	
	1785								
	1800	51.31	15.74	1.58	53.3	1.52	-3.73	3.69	
1800	1710	51.30	15.62	1.49	53.3	1.46	-3.75	1.78	8/30/2015
	1730	51.24	15.67	1.51	53.3	1.48	-3.86	1.90	
	1750	51.18	15.74	1.53	53.2	1.49	-3.80	2.84	
	1785								
	1800	50.98	15.88	1.59	53.3	1.52	-4.35	4.62	
1900	1850	51.71	14.54	1.50	53.3	1.52	-2.98	-1.55	7/22/2015
	1900	51.53	14.71	1.55	53.3	1.52	-3.32	2.29	
	1915	51.46	14.79	1.58	53.3	1.52	-3.45	3.66	
	1950								
	1980								

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1900	1850	51.52	14.59	1.50	53.3	1.52	-3.34	-1.21	9/1/2015
	1900	51.34	14.67	1.55	53.3	1.52	-3.68	2.01	
	1915	51.26	14.72	1.57	53.3	1.52	-3.83	3.17	
	1950								
	1980								
2300	2300	50.90	14.59	1.87	52.9	1.81	-3.78	3.14	8/7/2015
	2315	50.84	14.65	1.89	52.9	1.82	-3.89	3.67	
	2350								
	2400								
2300	2300	50.78	14.54	1.86	52.9	1.81	-4.01	2.79	8/10/2015
	2315	50.72	14.62	1.88	52.9	1.82	-4.12	3.45	
	2350								
	2400								
2450	2400	50.77	14.61	1.95	52.8	1.90	-3.84	2.67	9/4/2015
	2425	50.67	14.71	1.98	52.7	1.93	-3.85	2.82	
	2450	50.59	14.82	2.02	52.7	1.95	-4.00	3.59	
	2480	50.47	14.92	2.06	52.7	1.99	-4.23	3.44	
2450	2400	50.52	14.66	1.96	52.8	1.90	-4.33	3.05	9/15/2015
	2425	50.40	14.70	1.98	52.7	1.93	-4.36	2.76	
	2450	50.40	14.81	2.02	52.7	1.95	-4.37	3.50	
	2480	50.24	14.88	2.05	52.7	1.99	-4.66	3.16	
2600	2495	50.99	14.64	2.03	52.6	2.01	-3.06	1.10	7/29/2015
	2545	50.83	14.81	2.10	52.6	2.08	-3.37	0.81	
	2600	50.67	14.98	2.17	52.5	2.16	-3.49	0.31	
	2620	50.57	15.05	2.19	52.5	2.19	-3.68	0.16	
	2690	50.35	15.26	2.28	52.4	2.29	-3.91	-0.28	
2600	2495	51.00	14.92	2.07	52.6	2.01	-3.04	3.03	8/4/2015
	2545	50.82	15.08	2.14	52.6	2.08	-3.38	2.65	
	2600	50.67	15.28	2.21	52.5	2.16	-3.49	2.32	
	2620	50.60	15.35	2.24	52.5	2.19	-3.62	2.16	
	2690	50.36	15.57	2.33	52.4	2.29	-3.89	1.75	
5200	5180	46.86	19.21	5.54	49.0	5.28	-4.37	4.84	9/9/2015
	5200	46.81	19.22	5.56	49.0	5.30	-4.47	4.91	
	5240	46.72	19.23	5.61	49.0	5.35	-4.65	4.78	
	5280	46.62	19.26	5.66	48.9	5.39	-4.66	4.96	
	5320	46.52	19.30	5.71	48.9	5.44	-4.87	4.99	
5500	5500	46.68	19.15	5.86	48.6	5.65	-3.95	3.71	9/9/2015
	5580	46.65	19.25	5.98	48.5	5.74	-3.81	4.11	
	5640	46.60	19.31	6.06	48.4	5.81	-3.72	4.28	
	5720	46.42	19.36	6.16	48.3	5.91	-3.89	4.24	
5800	5745	46.41	19.39	6.20	48.3	5.94	-3.91	4.33	9/9/2015
	5775	46.38	19.43	6.24	48.2	5.97	-3.78	4.56	
	5800	46.32	19.43	6.27	48.2	6.00	-3.90	4.49	
	5825	46.24	19.45	6.30	48.2	6.03	-4.07	4.52	

Table 6.2-2 Electrical parameters of muscle tissue simulating liquid

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6.2.2 Test Configuration

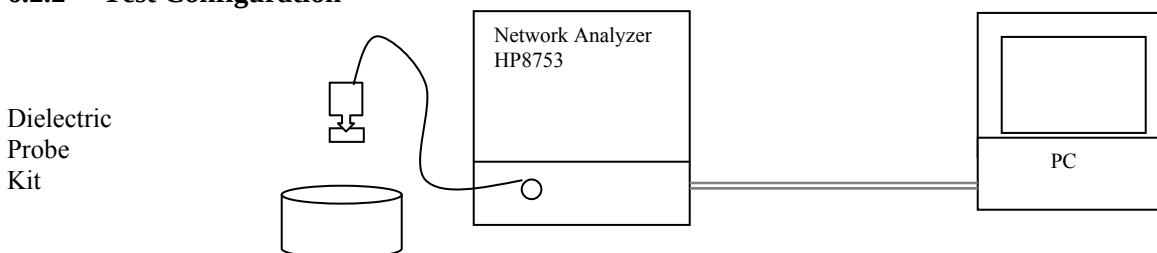


Figure 6.2.2-1 Test configuration

6.2.3 Procedure

1. Turn NWA on and allow at least 30 minutes for warm up.
2. Mount dielectric probe kit so that interconnecting cable to NWA will not be moved during measurements or calibration.
3. Pour de-ionized water and measure water temperature ($\pm 1^\circ$).
4. Set water temperature in HP-Software (Calibration Setup).
5. Perform calibration.
6. Relative permittivity $\epsilon_r = \epsilon'$ and conductivity can be calculated from ϵ'' ($\sigma = \omega \epsilon_0 \epsilon''$)
7. Measure liquid shortly after calibration.
8. Stir the liquid to be measured. Take a sample (~50ml) with a syringe from the center of the liquid container.
9. Pour the liquid into a small glass flask. Hold the syringe at the bottom of the flask to avoid air bubbles.
10. Put the dielectric probe in the glass flask. Check that there are no air bubbles in front of the opening in the dielectric probe kit.
11. Perform measurements.
12. Adjust medium parameters in DASY software for the frequencies necessary for the measurements ('Setup Config', select medium (e.g. Head 835 MHz) and press 'Option'-button.
13. Select the current medium for the frequency of the validation (e.g. Setup Medium Brain 835 MHz).

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7.0 SAR SAFETY LIMITS

Standards/Guideline	Localized SAR Limit (W/kg) General public (uncontrolled)	Localized SAR Limits (W/kg) Workers (controlled)
ICNIRP Standard	2.0 (10g)	10.0 (10g)
IEEE C95.1 Standard	1.6 (1g)	8.0 (1g)

Table 7.0-1 SAR safety limits for Controlled / Uncontrolled environment

Human Exposure	Localized SAR Limits (W/kg) 10g, ICNIRP Standard	Localized SAR Limits (W/kg) 1g, IEEE C95.1 Standard
Spatial Average (averaged over the whole body)	0.08	0.08
Spatial Peak (averaged over any X g of tissue)	2.00	1.60
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)	4.00	4.00 (10g)

Table 7.0-2 SAR safety limits

Uncontrolled Environments are defined as locations where there is exposure of individuals who have no knowledge or control of their exposure.

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation).

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8.0 DEVICE POSITIONING

8.1 Device holder for SAM Twin Phantom

The Device was positioned for all test configurations using the DASY5 holder. The device holder facilitates the rotation of the mounted transmitter in spherical coordinates whereby the rotation point is the ear opening. The devices can be easily, accurately and with repeatability positioned according to FCC and CENELEC specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).

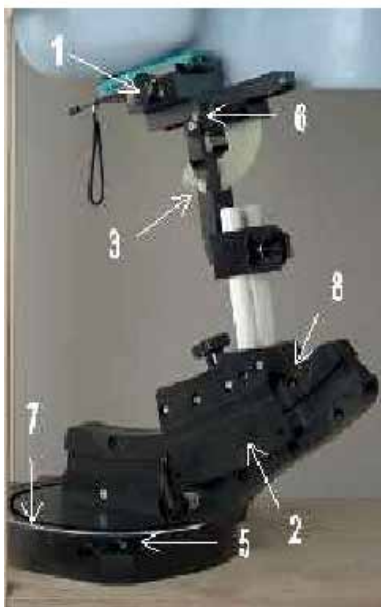


Figure 8.1-1 Device Holder

1. Put the phone in the clamp mechanism (1) and hold it straight while tightening. (Curved phones or phones with asymmetrical ear pieces should be positioned so that the earpiece is in the symmetry plane of the clamp).
2. Adjust the sliding carriage (2) to 90°. Then adjust the phone holder angle (3) until the reference line of the phone is horizontal (parallel to the flat phantom bottom). The phone reference line is defined as the front tangential line between the earpiece and the center of the device bottom (or the center of the flip hinge). For devices with parallel front and backsides, the phone holder angle (3) is 0°.
3. Place the device holder at the desired phantom section and move it securely against the positioning pins (4). The screw in front of the turning plate can be applied for correct positioning (5). (Do not tighten it too strongly).
4. Shift the phone clamp (6) so that the earpiece is exactly below the ear marking of the phantom. The phone is now correctly positioned in the holder for all standard phantom measurements, even after changing the phantom or phantom section.
5. Adjust the device position angles to the desired measurement position.
6. After fixing the device angles, move the phone fixture up until the phone touches the ear marking. (The point of contact depends on the design of the device and the positioning angle).

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8.2 Description of the test positioning

8.2.1 Test Positions of Device Relative to Head

The handset was tested in two test positions against the head phantom, the “cheek” position and the “tilted” position, on both left and right sides of the phantom.

The handset was tested in the above positions according to IEEE 1528- 2003 “Recommended Practice for Determining the Spatial-Peak Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques”.

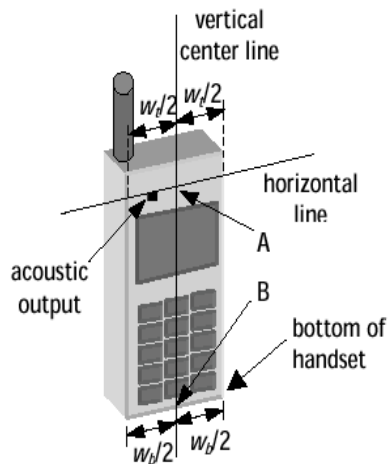


Figure 8.2.1-1 Handset vertical and horizontal reference lines – fixed case

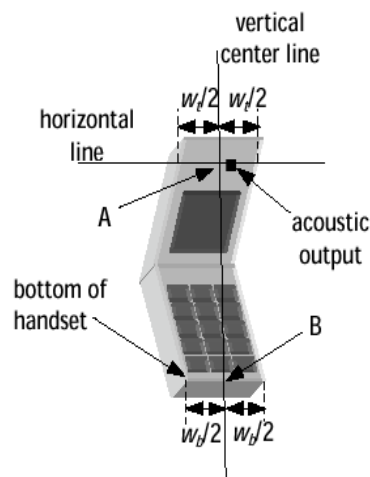


Figure 8.2.1-2 Handset vertical and horizontal reference lines – “clam-shell”

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Definition of the “cheek” position

- 1) Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece, open the cover.
- 2) Define two imaginary lines on the handset: the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset: the midpoint of the width w_t of the handset at the level of the acoustic output (point A on Figures 8.2.1-1 and 8.2.1-2), and the midpoint of the width w_b of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 8.2.1-1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output. However, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 8.2.1-2), especially for clamshell handsets, handsets with flip pieces, and other irregularly shaped handsets.
- 3) Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 8.2.1-3), such that the plane defined by the vertical center line and the horizontal center line is in a plane approximately parallel to the sagittal plane of the phantom.
- 4) Translate the handset towards the phantom along the line passing through RE and LE until the handset touches the ear.
- 5) While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is the plane normal to MB (“mouth-back”) - NF (“neck-front”) including the line MB (reference plane).
- 6) Rotate the phone around the vertical centerline until the phone (horizontal line) is symmetrical with respect to the line NF.
- 7) While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE, and maintaining the phone contact with the ear, rotate the handset about the line NF until any point on the handset is in contact with a phantom point below the ear (cheek).

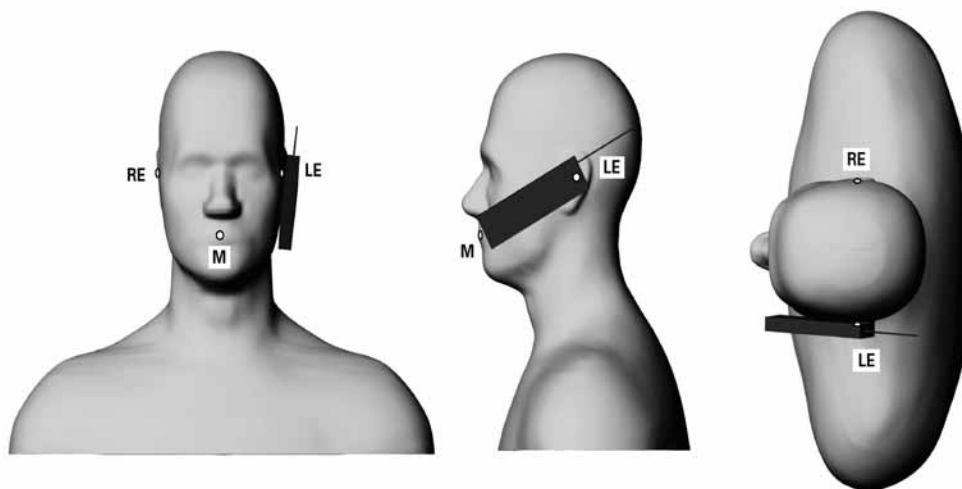


Figure 8.2.1-3 Phone position 1, “cheek” or “touch” position. The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning, are indicated. The shoulders are shown for illustration purposes only.

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Definition of the “Tilted” Position

- 1) Repeat steps 1 to 7 from above.
- 2) While maintaining the device in the reference plane (described above) and pivoting against the ear, move the device outward away from the mouth by an angle of 15 degrees, or until the antenna touches the phantom.

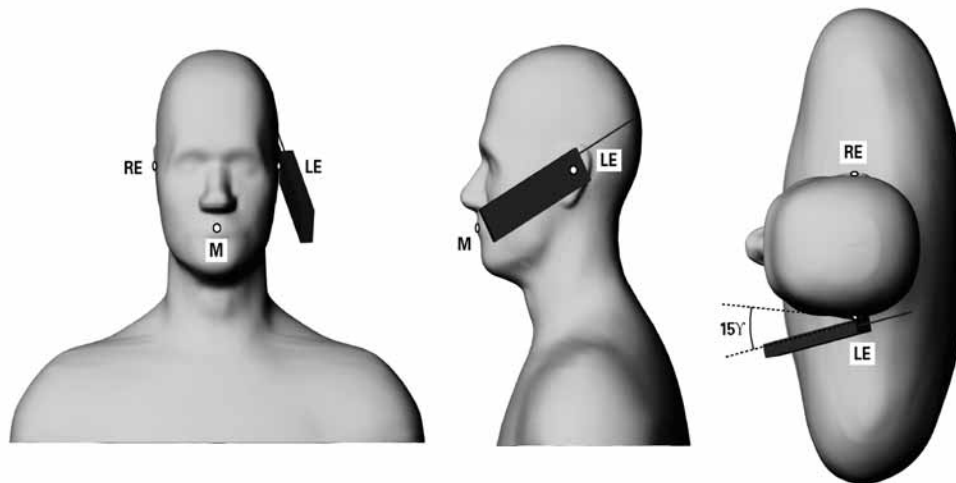


Figure 8.2.1-4 Phone position 2, “tilted position.” The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning, are indicated. The shoulders are shown for illustration purposes only.

8.2.2 Body-worn Configuration

Body-worn configurations, as shown in appendix E, have been tested with the device for RF exposure compliance. The device was tested with a holster and/or a minimum separation distance. The device was tested with 15 mm BLACKBERRY recommended separation distance to allow typical after-market holster to be used. For holster testing the holster case and the belt clip was placed against the flat section of the phantom. A headset was then connected to the device to simulate hands-free operation in a body worn holster configuration. BLACKBERRY body-worn holsters with belt-clip have been designed to maintain ~ 19-20 mm separation distance from body.

8.2.3 Limb/Hand Configuration

BlackBerry device is not a limb-worn device and hasn't been tested for such a configuration.

As per Clause 6.1.4.9 in the IEC/EN 62209-2 standard:

"Additional studies remain needed for devising a representative method for evaluating SAR in the hand of hand-held devices. Future versions of this standard are intended to contain a test method based on scientific data and rationale. Annex J presents the currently available test procedure."

Clause J.2 of the IEC/EN 62209-2 states that testing for compliance for the exposure of the hand is not applicable for devices that are intended to being hand-held to enable use at the ear (see EN 62209-1) or worn on the body when transmitting.

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In addition, BlackBerry device is not intended to be held in hand at a distance of larger than 200 mm from the head and body during normal use.

9.0 HIGH LEVEL EVALUATION

9.1 Maximum search

The maximum search is automatically performed after each coarse scan measurement. It is based on splines in two or three dimensions. The procedure can find the maximum for most SAR distributions even with relatively large grid spacing. After the coarse scan measurement, the probe is automatically moved to a position at the interpolated maximum. The following scan can directly use this position for reference, e.g., for a finer resolution grid or the cube evaluations.

9.2 Extrapolation

The extrapolation can be used in z-axis scans with automatic surface detection. The SAR values can be extrapolated to the inner phantom surface. The extrapolation distance is the sum of the probe sensor offset, the surface detection distance and the grid offset. The extrapolation is based on fourth order polynomial functions. The extrapolation is only available for SAR values.

9.3 Boundary correction

The correction of the probe boundary effect in the vicinity of the phantom surface is done in the standard (worst case) evaluation; the boundary effect is reduced by different weights for the lowest measured points in the extrapolation routine. The result is a slight overestimation of the extrapolated SAR values (2% to 8%) depending on the SAR distribution and gradient. The advanced evaluation makes a full compensation of the boundary effect before doing the extrapolation. This is only possible for probes with specifications on the boundary effect.

9.4 Peak search for 1g and 10g cube averaged SAR

The 1g and 10g peak evaluations are done using a minimum predefined cube of 5x5x7 (≤ 2 GHz) / 7x7x7 (2-3 GHz) / 7x7x12 (5-6 GHz) scan. The cube's (x,y) parameters will extend if the maxima is found to be outside the zoom scan boundary to ensure the absolute peak value is recorded. The routines are verified and optimized for the grid dimensions used in these cube measurements. The measured volume of 30x30x30mm (< 3 GHz) / 24x24x22mm (5-6 GHz) with 7.5mm (≤ 2 GHz) / 5mm (2-3 GHz) / 4mm (5-6 GHz) resolution in (x,y) and 5mm (< 3 GHz) / 2mm (5-6 GHz) resolution in z axis amounts to 175 (≤ 2 GHz) / 343 (2-3 GHz) / 588 (5-6 GHz) measurement points. The first procedure is an extrapolation (incl. Boundary correction) to get the points between the lowest measured plane and the surface. The next step uses 3D interpolation to get all points within the measured volume in a 1mm grid. In the last step, a 1g cube is placed numerically into the volume and its averaged SAR is calculated. This cube is then moved around until the highest averaged SAR is found. This last procedure is repeated for a 10 g cube. If the highest SAR is found at the edge of the measured volume, the system will issue a warning: higher SAR values might be found outside of the measured volume. In that case the cube measurement can be repeated, using the new interpolated maximum as the center.

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10.0 MEASUREMENT UNCERTAINTY

DASY5 Uncertainty Budget (0.3 - 3 GHz range)								
Error Description	Uncert. value	Prob. Dist.	Div.	(c ₁) 1g	(c ₁) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(v ₁) v _{eff}
Measurement System								
Probe Calibration	±6.0 %	N	1	1	1	±6.0 %	±6.0 %	∞
Axial Isotropy	±4.7 %	R	√3	0.7	0.7	±1.9 %	±1.9 %	∞
Hemispherical Isotropy	±9.6 %	R	√3	0.7	0.7	±3.9 %	±3.9 %	∞
Boundary Effects	±1.0 %	R	√3	1	1	±0.6 %	±0.6 %	∞
Linearity	±4.7 %	R	√3	1	1	±2.7 %	±2.7 %	∞
System Detection Limits	±1.0 %	R	√3	1	1	±0.6 %	±0.6 %	∞
Modulation Response ^m	±2.4 %	R	√3	1	1	±1.4 %	±1.4 %	∞
Readout Electronics	±0.3 %	N	1	1	1	±0.3 %	±0.3 %	∞
Response Time	±0.8 %	R	√3	1	1	±0.5 %	±0.5 %	∞
Integration Time	±2.6 %	R	√3	1	1	±1.5 %	±1.5 %	∞
RF Ambient Noise	±3.0 %	R	√3	1	1	±1.7 %	±1.7 %	∞
RF Ambient Reflections	±3.0 %	R	√3	1	1	±1.7 %	±1.7 %	∞
Probe Positioner	±0.4 %	R	√3	1	1	±0.2 %	±0.2 %	∞
Probe Positioning	±2.9 %	R	√3	1	1	±1.7 %	±1.7 %	∞
Max. SAR Eval.	±2.0 %	R	√3	1	1	±1.2 %	±1.2 %	∞
Test Sample Related								
Device Positioning	±2.9 %	N	1	1	1	±2.9 %	±2.9 %	145
Device Holder	±3.6 %	N	1	1	1	±3.6 %	±3.6 %	5
Power Drift	±5.0 %	R	√3	1	1	±2.9 %	±2.9 %	∞
Power Scaling ^p	±0 %	R	√3	1	1	±0.0 %	±0.0 %	∞
Phantom and Setup								
Phantom Uncertainty	±6.1 %	R	√3	1	1	±3.5 %	±3.5 %	∞
SAR correction	±1.9 %	R	√3	1	0.84	±1.1 %	±0.9 %	∞
Liquid Conductivity (mea.) ^{DAK}	±2.5 %	R	√3	0.78	0.71	±1.1 %	±1.0 %	∞
Liquid Permittivity (mea.) ^{DAK}	±2.5 %	R	√3	0.26	0.26	±0.3 %	±0.4 %	∞
Temp. unc. - Conductivity ^{BB}	±3.4 %	R	√3	0.78	0.71	±1.5 %	±1.4 %	∞
Temp. unc. - Permittivity ^{BB}	±0.4 %	R	√3	0.23	0.26	±0.1 %	±0.1 %	∞
Combined Std. Uncertainty						±11.2 %	±11.1 %	361
Expanded STD Uncertainty						±22.3 %	±22.2 %	

**Table 10.0-1 Worst-Case uncertainty budget for DASY5 assessed according to IEEE P1528-2013.
Source: Schmid & Partner Engineering AG.**

[1] The budget is valid for the frequency range 300MHz - 3 GHz and represents a worst-case analysis. For specific tests and configurations, the uncertainty could be considerably smaller.

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Relative DASY5 Uncertainty Budget for Fast SAR Tests (0.3 - 3 GHz range)								
Error Description	Uncert. value	Prob. Dist.	Div.	(c_1) 1g	(c_1) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(v_1) v_{eff}
Measurement System								
Probe Calibration	±6.0 %	N	1	0	0			
Axial Isotropy	±4.7 %	R	$\sqrt{3}$	0.7	0.7	±1.9 %	±1.9 %	∞
Hemispherical Isotropy	±9.6 %	R	$\sqrt{3}$	0.7	0.7	±3.9 %	±3.9 %	∞
Boundary Effects	±1.0 %	R	$\sqrt{3}$	1	1	±0.6 %	±0.6 %	∞
Linearity	±4.7 %	R	$\sqrt{3}$	1	1	±2.7 %	±2.7 %	∞
System Detection Limits	±1.0 %	R	$\sqrt{3}$	1	1	±0.6 %	±0.6 %	∞
Modulation Response	±2.4 %	R	$\sqrt{3}$	1	1	±1.4 %	±1.4 %	∞
Readout Electronics	±0.3 %	N	1	0	0			
Response Time	±0.8 %	R	$\sqrt{3}$	0	0			
Integration Time	±2.6 %	R	$\sqrt{3}$	1	1	±1.5 %	±1.5 %	∞
RF Ambient Noise	±3.0 %	R	$\sqrt{3}$	1	1	±1.7 %	±1.7 %	∞
RF Ambient Reflections	±3.0 %	R	$\sqrt{3}$	0	0			
Probe Positioner	±0.4 %	R	$\sqrt{3}$	1	1	±0.2 %	±0.2 %	∞
Probe Positioning	±2.9 %	R	$\sqrt{3}$	1	1	±1.7 %	±1.7 %	∞
Spatial x-y-Resolution	±10.0 %	R	$\sqrt{3}$	1	1	±5.8 %	±5.8 %	∞
Fast SAR z-Approximation	±7.0 %	R	$\sqrt{3}$	1	1	±4.0 %	±4.0 %	∞
Test Sample Related								
Device Positioning	±2.9 %	N	1	1	1	±2.9 %	±2.9 %	145
Device Holder	±3.6 %	N	1	1	1	±3.6 %	±3.6 %	5
Power Drift	±5.0 %	R	$\sqrt{3}$	1	1	±2.9 %	±2.9 %	∞
Power Scaling	±0 %	R	$\sqrt{3}$	0	0			
Phantom and Setup								
Phantom Uncertainty	±6.1 %	R	$\sqrt{3}$	1	1	±3.5 %	±3.5 %	∞
SAR correction	±1.9 %	R	$\sqrt{3}$	0	0			
Liquid Conductivity (mea.)	±2.5 %	R	$\sqrt{3}$	0	0			
Liquid Permittivity (mea.)	±2.5 %	R	$\sqrt{3}$	0	0			
Temp. unc. - Conductivity	±3.4 %	R	$\sqrt{3}$	0	0			
Temp. unc. - Permittivity	±0.4 %	R	$\sqrt{3}$	0	0			
Combined Std. Uncertainty						±11.4 %	±11.4 %	748
Expanded STD Uncertainty						±22.7 %	±22.7 %	

Table 10.0-2 Worst-Case uncertainty budget for DASY5 assessed according to IEEE P1528-2013
Source: Schmid & Partner Engineering AG.

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DASY5 Uncertainty Budget (3 - 6 GHz range)								
Error Description	Uncert. value	Prob. Dist.	Div.	(c ₁) 1g	(c ₁) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(v ₁) v _{eff}
Measurement System								
Probe Calibration	±6.55 %	N	1	1	1	±6.55 %	±6.55 %	∞
Axial Isotropy	±4.7 %	R	√3	0.7	0.7	±1.9 %	±1.9 %	∞
Hemispherical Isotropy	±9.6 %	R	√3	0.7	0.7	±3.9 %	±3.9 %	∞
Boundary Effects	±2.0 %	R	√3	1	1	±1.2 %	±1.2 %	∞
Linearity	±4.7 %	R	√3	1	1	±2.7 %	±2.7 %	∞
System Detection Limits	±1.0 %	R	√3	1	1	±0.6 %	±0.6 %	∞
Modulation Response ^m	±2.4 %	R	√3	1	1	±1.4 %	±1.4 %	∞
Readout Electronics	±0.3 %	N	1	1	1	±0.3 %	±0.3 %	∞
Response Time	±0.8 %	R	√3	1	1	±0.5 %	±0.5 %	∞
Integration Time	±2.6 %	R	√3	1	1	±1.5 %	±1.5 %	∞
RF Ambient Noise	±3.0 %	R	√3	1	1	±1.7 %	±1.7 %	∞
RF Ambient Reflections	±3.0 %	R	√3	1	1	±1.7 %	±1.7 %	∞
Probe Positioner	±0.8 %	R	√3	1	1	±0.5 %	±0.5 %	∞
Probe Positioning	±6.7 %	R	√3	1	1	±3.9 %	±3.9 %	∞
Max. SAR Eval.	±4.0 %	R	√3	1	1	±2.3 %	±2.3 %	∞
Test Sample Related								
Device Positioning	±2.9 %	N	1	1	1	±2.9 %	±2.9 %	145
Device Holder	±3.6 %	N	1	1	1	±3.6 %	±3.6 %	5
Power Drift	±5.0 %	R	√3	1	1	±2.9 %	±2.9 %	∞
Power Scaling ^P	±0 %	R	√3	1	1	±0.0 %	±0.0 %	∞
Phantom and Setup								
Phantom Uncertainty	±6.6 %	R	√3	1	1	±3.8 %	±3.8 %	∞
SAR correction	±1.9 %	R	√3	1	0.84	±1.1 %	±0.9 %	∞
Liquid Conductivity (mea.) ^{DAK}	±2.5 %	R	√3	0.78	0.71	±1.1 %	±1.0 %	∞
Liquid Permittivity (mea.) ^{DAK}	±2.5 %	R	√3	0.26	0.26	±0.3 %	±0.4 %	∞
Temp. unc. - Conductivity ^{BB}	±3.4 %	R	√3	0.78	0.71	±1.5 %	±1.4 %	∞
Temp. unc. - Permittivity ^{BB}	±0.4 %	R	√3	0.23	0.26	±0.1 %	±0.1 %	∞
Combined Std. Uncertainty						±12.3 %	±12.2 %	748
Expanded STD Uncertainty						±24.6 %	±24.5 %	

Table 10.0-3 Worst-Case uncertainty budget for DASY52 assessed according to IEEE P1528-2013.
Source: Schmid & Partner Engineering AG.

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11.0 TEST RESULTS

11.1 Conducted power results

GSM/EDGE/GPRS/DTM 850 For Normal Mode					
Mode	Ch.	Freq. (MHz)	Max burst avg. conducted power (dBm) (GMSK) CS1	Max burst avg. conducted power (dBm) (GMSK) MCS1	Max burst avg. conducted power (dBm) (8PSK) MCS5
1-slot GSM 850 MHz	128	824.2	33.1		
	190	836.8	33.2		
	251	848.8	33.3		
2-slots DTM 850 MHz	128	824.2	30.9	31.1	30.9
	190	836.8	31.0	31.1	30.9
	251	848.8	31.1	31.2	30.9
3-slots DTM 850 MHz	128	824.2	29.3	29.3	29.3
	190	836.8	29.4	29.4	29.5
	251	848.8	29.5	29.5	29.5
1-slot EDGE/GPRS 850 MHz	128	824.2	33.2	33.0	26.5
	190	836.8	33.3	33.1	26.6
	251	848.8	33.4	33.2	26.6
2-slots EDGE/GPRS 850 MHz	128	824.2	30.9	31.1	24.9
	190	836.8	31.0	31.1	25.0
	251	848.8	31.1	31.2	25.1
3-slots EDGE/GPRS 850 MHz	128	824.2	29.3	29.3	23.3
	190	836.8	29.4	29.5	23.4
	251	848.8	29.5	29.5	23.4
4-slots EDGE/GPRS 850 MHz	128	824.2	27.3	27.3	23.4
	190	836.8	27.5	27.5	23.5
	251	848.8	27.5	27.5	23.5

**Table 11.1-1a GSM/EDGE/GPRS/DTM 850 MHz conducted power measurements for normal mode
tested on device model: RHL211LW**

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GSM 850 MHz Calculation Of Time Based Average Power Per Slot For Normal Mode					
Mode	Ch.	Freq. (MHz)	Slot average power (measured) (dBm) CS1	# of slots	Time based average power (calculated) (dBm) CS1
1-slot GSM 850 MHz	128	824.2	33.1	1	24.1
	190	836.8	33.2	1	24.2
	251	848.8	33.3	1	24.3
2-slots DTM 850 MHz	128	824.2	30.9	2	24.9
	190	836.8	31	2	25.0
	251	848.8	31.1	2	25.1
3-slots DTM 850 MHz	128	824.2	29.3	3	25.0
	190	836.8	29.4	3	25.1
	251	848.8	29.5	3	25.2
1-slot EDGE/GPRS 850 MHz	128	824.2	33.2	1	24.2
	190	836.8	33.3	1	24.3
	251	848.8	33.4	1	24.4
2-slots EDGE/GPRS 850 MHz	128	824.2	30.9	2	24.9
	190	836.8	31	2	25.0
	251	848.8	31.1	2	25.1
3-slots EDGE/GPRS 850 MHz	128	824.2	29.3	3	25.0
	190	836.8	29.4	3	25.1
	251	848.8	29.5	3	25.2
4-slots EDGE/GPRS 850 MHz	128	824.2	27.3	4	24.3
	190	836.8	27.5	4	24.5
	251	848.8	27.5	4	24.5

11.1-1b GSM/EDGE/GPRS/DTM 850 calculation of time based average power per slot for normal mode tested on device model: RHL211LW

Note: As per IEEE 1528 -2013 “both GSM and GPRS use GMSK, which is a constant amplitude modulation; therefore, the maximum time-averaged output power with respect to the maximum number of time slots used in each mode can be used to determine the most conservative mode for SAR testing. Similarly, EGPRS (which uses GMSK and 8PSK) can be included with GSM and GPRS in this determination of the most conservative mode for SAR testing due to its innate similarities to GSM and GPRS.”

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GSM/EDGE/GPRS/DTM 1900 For Normal Mode					
Mode	Ch.	Freq. (MHz)	Max burst avg. conducted power (dBm) (GMSK) CS1	Max burst avg. conducted power (dBm) (GMSK) MCS1	Max burst avg. conducted power (dBm) (8PSK) MCS5
1-slot GSM 1900 MHz	512	1850.2	29.5		
	661	1880.0	29.6		
	810	1909.8	30.1		
2-slots DTM 1900 MHz	512	1850.2	28.7	28.6	28.6
	661	1880.0	28.7	28.6	28.6
	810	1909.8	29.1	29.1	28.5
3-slots DTM 1900 MHz	512	1850.2	26.3	26.4	26.4
	661	1880.0	26.5	26.5	26.4
	810	1909.8	26.5	26.5	26.5
1-slot EDGE/GPRS 1900 MHz	512	1850.2	29.5	29.5	25.1
	661	1880.0	29.6	29.6	25.2
	810	1909.8	30.1	30.1	25.4
2-slots EDGE/GPRS 1900 MHz	512	1850.2	28.7	28.7	23.5
	661	1880.0	28.7	28.7	23.7
	810	1909.8	29.1	29.2	23.8
3-slots EDGE/GPRS 1900 MHz	512	1850.2	26.4	26.3	22.5
	661	1880.0	26.6	26.5	22.8
	810	1909.8	26.5	26.7	23.0
4-slots EDGE/GPRS 1900 MHz	512	1850.2	25.9	25.9	21.8
	661	1880.0	26.0	26.0	22.0
	810	1909.8	26.2	26.2	22.2

Table 11.1-1c GSM/EDGE/GPRS/DTM 1900 MHz conducted power measurements for normal mode tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on GSM/EDGE/GPRS/DTM 1900 was measured using RHK211LW and reused for RHL211LW.

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Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW

GSM 1900 MHz Calculation Of Time Based Average Power Per Slot For Normal Mode					
Mode	Ch.	Freq. (MHz)	Slot average power (measured) (dBm) CS1	# of slots	Time based average power (calculated) (dBm) CS1
1-slot GSM 1900 MHz	512	1850.2	29.5	1	20.5
	661	1880.0	29.6	1	20.6
	810	1909.8	30.1	1	21.1
2-slots DTM 1900 MHz	512	1850.2	28.7	2	22.7
	661	1880.0	28.7	2	22.7
	810	1909.8	29.1	2	23.1
3-slots DTM 1900 MHz	512	1850.2	26.3	3	22.0
	661	1880.0	26.5	3	22.2
	810	1909.8	26.5	3	22.2
1-slot EDGE/GPRS 1900 MHz	512	1850.2	29.5	1	20.5
	661	1880.0	29.6	1	20.6
	810	1909.8	30.1	1	21.1
2-slots EDGE/GPRS 1900 MHz	512	1850.2	28.7	2	22.7
	661	1880.0	28.7	2	22.7
	810	1909.8	29.1	2	23.1
3-slots EDGE/GPRS 1900 MHz	512	1850.2	26.4	3	22.1
	661	1880.0	26.6	3	22.3
	810	1909.8	26.5	3	22.2
4-slots EDGE/GPRS 1900 MHz	512	1850.2	25.9	4	22.9
	661	1880.0	26.0	4	23.0
	810	1909.8	26.2	4	23.2

11.1-1d GSM/EDGE/GPRS/DTM 1900 calculation of time based average power per slot for normal mode tested on device model: RHK211LW

Note 1: IEEE 1528 -2013 “both GSM and GPRS use GMSK, which is a constant amplitude modulation; therefore, the maximum time-averaged output power with respect to the maximum number of time slots used in each mode can be used to determine the most conservative mode for SAR testing. Similarly, EGPRS (which uses GMSK and 8PSK) can be included with GSM and GPRS in this determination of the most conservative mode for SAR testing due to its innate similarities to GSM and GPRS.”

Note 2: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on GSM/EDGE/GPRS/DTM 1900 was measured using RHK211LW and reused for RHL211LW.

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GSM/EDGE/GPRS/DTM 850/1900 With Reduced Power For Hotspot Mode			
Mode	Ch.	Freq. (MHz)	Max burst avg. conducted power (dBm) (GMSK) CS1
3-slots EDGE/GPRS 850 MHz	128	824.2	27.5
	190	836.8	27.8
	251	848.8	27.6
4-slots EDGE/GPRS 850 MHz	128	824.2	25.8
	190	836.8	25.9
	251	848.8	26.0
2-slots EDGE/GPRS 1900 MHz	512	1850.2	27.4
	661	1880.0	27.4
	810	1909.8	27.4
3-slots EDGE/GPRS 1900 MHz	512	1850.2	25.2
	661	1880.0	25.3
	810	1909.8	25.5
4-slots EDGE/GPRS 1900 MHz	512	1850.2	23.5
	661	1880.0	23.6
	810	1909.8	23.6

**Table 11.1-1e GSM/EDGE/GPRS/DTM 850/1900 conducted power measurements for Hotspot mode
tested on device model: RHL211LW**

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW share the same conducted RF circuitry and power level for these bands in Hotspot mode. Due to this conducted power on GSM/EDGE/GPRS/DTM 850 and 1900 on Hotspot mode was measured using RHL211LW and reused for RHL211LW.

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GSM 850 MHz Calculation Of Time Based Average Power Per Slot For Hotspot Mode					
Mode	Ch.	Freq. (MHz)	Slot average power (measured) (dBm) CS1	# of slots	Time based average power (calculated) (dBm) CS1
1-slot EDGE/GPRS 850 MHz	128	824.2	33.2	1	24.2
	190	836.8	33.3	1	24.3
	251	848.8	33.4	1	24.4
2-slots EDGE/GPRS 850 MHz	128	824.2	30.9	2	24.9
	190	836.8	31.0	2	25.0
	251	848.8	31.1	2	25.1
3-slots EDGE/GPRS 850 MHz	128	824.2	27.5	3	23.2
	190	836.8	27.8	3	23.5
	251	848.8	27.6	3	23.3
4-slots EDGE/GPRS 850 MHz	128	824.2	25.8	4	22.8
	190	836.8	25.9	4	22.9
	251	848.8	26.0	4	23.0

Table 11.1-1f GSM/EDGE/GPRS/DTM 850 calculation of time based average power per slot for Hotspot mode tested on device model: RHL211LW

Note 1: As per IEEE 1528 -2013 “both GSM and GPRS use GMSK, which is a constant amplitude modulation; therefore, the maximum time-averaged output power with respect to the maximum number of time slots used in each mode can be used to determine the most conservative mode for SAR testing. Similarly, EGPRS (which uses GMSK and 8PSK) can be included with GSM and GPRS in this determination of the most conservative mode for SAR testing due to its innate similarities to GSM and GPRS.”

Note 2: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW share the same conducted RF circuitry and power level for these bands in Hotspot mode. Due to this conducted power on GSM/EDGE/GPRS/DTM 850 and 1900 on Hotspot mode was measured using RHL211LW and reused for RHL211LW.

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GSM 1900 MHz Calculation Of Time Based Average Power Per Slot For Hotspot Mode					
Mode	Ch.	Freq. (MHz)	Slot average power (measured) (dBm) CS1	# of slots	Time based average power (calculated) (dBm) CS1
1-slot EDGE/GPRS 1900 MHz	512	1850.2	29.5	1	20.5
	661	1880.0	29.6	1	20.6
	810	1909.8	30.1	1	21.1
2-slots EDGE/GPRS 1900 MHz	512	1850.2	27.4	2	21.4
	661	1880.0	27.4	2	21.4
	810	1909.8	27.4	2	21.4
3-slots EDGE/GPRS 1900 MHz	512	1850.2	25.2	3	20.9
	661	1880.0	25.3	3	21.0
	810	1909.8	25.5	3	21.2
4-slots EDGE/GPRS 1900 MHz	512	1850.2	23.5	4	20.5
	661	1880.0	23.6	4	20.6
	810	1909.8	23.6	4	20.6

Table11.1-1g GSM/EDGE/GPRS/DTM 1900 calculation of time based average power per slot for Hotspot mode tested on device model: RHK211LW

Note 1: As per IEEE 1528 -2013 “both GSM and GPRS use GMSK, which is a constant amplitude modulation; therefore, the maximum time-averaged output power with respect to the maximum number of time slots used in each mode can be used to determine the most conservative mode for SAR testing. Similarly, EGPRS (which uses GMSK and 8PSK) can be included with GSM and GPRS in this determination of the most conservative mode for SAR testing due to its innate similarities to GSM and GPRS.”

Note 2: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW share the same conducted RF circuitry and power level for these bands in Hotspot mode. Due to this conducted power on GSM/EDGE/GPRS/DTM 850 and 1900 on Hotspot mode was measured using RHK211LW and reused for RHL211LW.

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WCDMA For Normal Mode				
	Band	FDD V (850)		
	Channel	4132	4182	4233
	Frequency (MHz)	826.4	836.4	846.6
Band	Subtest	Max burst averaged conducted power (dBm)		
Rel99	12.2 kbps RMC	24.35	24.35	24.37
Rel99	12.2kbps, Voice, AMR, SRB 3.4 kbps	24.35	24.34	24.40
HSUPA	1	23.06	22.77	22.96
HSUPA	2	22.55	22.54	22.56
HSUPA	3	22.27	22.25	22.25
HSUPA	4	23.02	22.75	23.08
HSUPA	5	23.16	22.74	22.87
HSDPA+	1	23.61	23.58	23.65
HSDPA+	2	23.59	23.62	23.64
HSDPA+	3	23.08	23.06	23.11
HSDPA+	4	23.12	23.05	23.12
DC-HSDPA	1	22.92	23.13	23.85
DC-HSDPA	2	23.09	23.08	23.81
DC-HSDPA	3	22.45	22.59	23.31
DC-HSDPA	4	22.42	22.63	23.36

**Table 11.1-2a WCDMA (Rel99) / HSPA/HSPA+ conducted power measurements for normal mode
tested on device model: RHL211LW**

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WCDMA For Normal Mode				
	Band	FDD IV (1700)		
	Channel	1312	1413	1513
	Frequency (MHz)	1712.4	1732.6	1752.6
Band	Subtest	Max burst averaged conducted power (dBm)		
Rel99	12.2 kbps RMC	24.10	24.27	24.41
Rel99	12.2kbps, Voice, AMR, SRB 3.4 kbps	24.09	24.27	24.45
HSUPA	1	22.63	22.63	22.93
HSUPA	2	22.13	22.19	22.50
HSUPA	3	21.77	21.89	22.43
HSUPA	4	22.66	22.64	22.91
HSUPA	5	22.73	22.46	22.74
HSDPA+	1	23.10	23.12	23.42
HSDPA+	2	23.12	23.20	23.47
HSDPA+	3	22.60	22.70	22.99
HSDPA+	4	22.72	22.71	23.00
DC-HSDPA	1	22.30	22.69	22.82
DC-HSDPA	2	22.52	22.61	22.84
DC-HSDPA	3	21.80	22.05	22.31
DC-HSDPA	4	21.77	22.09	22.26
	Band	FDD II (1900)		
	Channel	9262	9400	9538
	Frequency (MHz)	1852.4	1880.0	1907.6
Band	Subtest	Max burst averaged conducted power (dBm)		
Rel99	12.2 kbps RMC	24.08	24.34	23.90
Rel99	12.2kbps, Voice, AMR, SRB 3.4 kbps	24.10	24.34	23.90
HSUPA	1	22.90	22.75	22.49
HSUPA	2	22.15	22.30	21.99
HSUPA	3	22.15	21.45	21.90
HSUPA	4	22.80	22.80	22.28
HSUPA	5	22.90	22.64	22.34
HSDPA+	1	23.23	23.42	22.98
HSDPA+	2	23.26	23.45	22.99
HSDPA+	3	22.76	22.91	22.35
HSDPA+	4	22.77	22.92	22.44
DC-HSDPA	1	22.45	22.54	22.55
DC-HSDPA	2	22.87	22.80	22.27
DC-HSDPA	3	22.41	22.27	22.02
DC-HSDPA	4	22.28	22.08	22.00

Table 11.1-2b WCDMA (Rel99) / HSPA/HSPA+ conducted power measurements for normal mode tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW share the same conducted RF circuitry and power level for these bands. Due to this conducted power on WCDMA FDD II/IV was measured using RHK211LW and reused for RHL211LW.

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WCDMA With Reduced Power For Hotspot Mode							
	Band	FDD IV (1700)			FDD II (1900)		
	Channel	1312	1413	1513	9262	9400	9538
	Frequency (MHz)	1712.4	1732.6	1752.6	1852.4	1880.0	1907.6
Band	Subtest	Max burst averaged conducted power (dBm)			Max burst averaged conducted power (dBm)		
Rel99	12.2 kbps RMC	21.19	21.20	21.49	21.46	21.48	21.31
Rel99	12.2kbps, Voice, AMR, SRB 3.4 kbps	21.18	21.19	21.46	21.48	21.52	21.22
HSUPA	1	19.54	19.76	19.77	18.74	19.94	19.53

**Table 11.1-2c WCDMA (Rel99) / HSPA/HSPA+ conducted power measurements for Hotspot mode
tested on device model: RHL211LW**

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW share the same conducted RF circuitry and power level for these bands. Due to this conducted power on WCDMA FDD II/IV was measured using RHL211LW and reused for RHL211LW.

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LTE Band 2 For Normal Mode						
LTE Band	BW (MHz)	Mod.	Channel	RB#	OFFSET	Max avg. conducted power (dBm)
2	20	QPSK	18700	1	LOW	23.27
2	20	QPSK	18700	1	MID	23.30
2	20	QPSK	18700	1	HIGH	23.43
2	20	QPSK	18700	50	LOW	22.07
2	20	QPSK	18700	50	HIGH	22.29
2	20	QPSK	18700	100	LOW	22.28
2	20	Q16	18700	1	LOW	22.66
2	20	Q16	18700	1	MID	22.50
2	20	Q16	18700	1	HIGH	22.58
2	20	Q16	18700	75	LOW	21.13
2	20	Q16	18700	75	HIGH	21.25
2	20	Q16	18700	100	LOW	21.29
2	20	QPSK	18900	1	LOW	23.30
2	20	QPSK	18900	1	MID	23.19
2	20	QPSK	18900	1	HIGH	23.22
2	20	QPSK	18900	50	LOW	22.17
2	20	QPSK	18900	50	HIGH	22.20
2	20	QPSK	18900	100	LOW	22.16
2	20	Q16	18900	1	LOW	22.78
2	20	Q16	18900	1	MID	22.66
2	20	Q16	18900	1	HIGH	22.69
2	20	Q16	18900	75	LOW	21.14
2	20	Q16	18900	75	HIGH	21.17
2	20	Q16	18900	100	LOW	21.16
2	20	QPSK	19100	1	LOW	23.09
2	20	QPSK	19100	1	MID	22.80
2	20	QPSK	19100	1	HIGH	23.08
2	20	QPSK	19100	50	LOW	21.86
2	20	QPSK	19100	50	HIGH	21.90
2	20	QPSK	19100	100	LOW	21.94
2	20	Q16	19100	1	LOW	22.19
2	20	Q16	19100	1	MID	22.28
2	20	Q16	19100	1	HIGH	22.24
2	20	Q16	19100	75	LOW	20.91
2	20	Q16	19100	75	HIGH	20.91
2	20	Q16	19100	100	LOW	20.96
2	15	QPSK	18675	1	LOW	23.10

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2	15	QPSK	18675	1	MID	23.07
2	15	QPSK	18675	1	HIGH	23.16
2	15	QPSK	18675	36	LOW	22.08
2	15	QPSK	18675	36	HIGH	22.16
2	15	QPSK	18675	75	LOW	22.11
2	15	Q16	18675	1	LOW	22.31
2	15	Q16	18675	1	MID	22.29
2	15	Q16	18675	1	HIGH	22.45
2	15	Q16	18675	16	LOW	22.04
2	15	Q16	18675	16	HIGH	22.08
2	15	Q16	18675	75	LOW	21.13
2	15	QPSK	18900	1	LOW	23.26
2	15	QPSK	18900	1	MID	23.26
2	15	QPSK	18900	1	HIGH	23.33
2	15	QPSK	18900	36	LOW	22.19
2	15	QPSK	18900	36	HIGH	22.16
2	15	QPSK	18900	75	LOW	22.18
2	15	Q16	18900	1	LOW	22.61
2	15	Q16	18900	1	MID	22.51
2	15	Q16	18900	1	HIGH	22.53
2	15	Q16	18900	16	LOW	22.23
2	15	Q16	18900	16	HIGH	22.27
2	15	Q16	18900	75	LOW	21.14
2	15	QPSK	19125	1	LOW	22.92
2	15	QPSK	19125	1	MID	22.77
2	15	QPSK	19125	1	HIGH	22.86
2	15	QPSK	19125	36	LOW	21.83
2	15	QPSK	19125	36	HIGH	21.91
2	15	QPSK	19125	75	LOW	21.92
2	15	Q16	19125	1	LOW	22.51
2	15	Q16	19125	1	MID	22.40
2	15	Q16	19125	1	HIGH	22.54
2	15	Q16	19125	16	LOW	21.88
2	15	Q16	19125	16	HIGH	22.15
2	15	Q16	19125	75	LOW	20.95
2	10	QPSK	18650	1	LOW	23.13
2	10	QPSK	18650	1	MID	23.00
2	10	QPSK	18650	1	HIGH	23.23
2	10	QPSK	18650	25	LOW	22.09
2	10	QPSK	18650	25	HIGH	22.15
2	10	QPSK	18650	50	LOW	22.06
2	10	Q16	18650	1	LOW	22.43
2	10	Q16	18650	1	MID	22.34

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2	10	Q16	18650	1	HIGH	22.78
2	10	Q16	18650	30	LOW	21.07
2	10	Q16	18650	30	HIGH	21.13
2	10	Q16	18650	50	LOW	21.10
2	10	QPSK	18900	1	LOW	23.33
2	10	QPSK	18900	1	MID	23.14
2	10	QPSK	18900	1	HIGH	23.37
2	10	QPSK	18900	25	LOW	22.09
2	10	QPSK	18900	25	HIGH	22.05
2	10	QPSK	18900	50	LOW	22.02
2	10	Q16	18900	1	LOW	22.13
2	10	Q16	18900	1	MID	22.06
2	10	Q16	18900	1	HIGH	22.03
2	10	Q16	18900	30	LOW	21.02
2	10	Q16	18900	30	HIGH	21.02
2	10	Q16	18900	50	LOW	20.97
2	10	QPSK	19150	1	LOW	22.86
2	10	QPSK	19150	1	MID	22.89
2	10	QPSK	19150	1	HIGH	22.79
2	10	QPSK	19150	25	LOW	21.78
2	10	QPSK	19150	25	HIGH	21.84
2	10	QPSK	19150	50	LOW	21.86
2	10	Q16	19150	1	LOW	22.74
2	10	Q16	19150	1	MID	22.57
2	10	Q16	19150	1	HIGH	22.56
2	10	Q16	19150	30	LOW	20.72
2	10	Q16	19150	30	HIGH	20.74
2	10	Q16	19150	50	LOW	20.81
2	5	QPSK	18625	1	LOW	23.21
2	5	QPSK	18625	1	MID	23.31
2	5	QPSK	18625	1	HIGH	23.27
2	5	QPSK	18625	10	LOW	21.99
2	5	QPSK	18625	10	HIGH	22.02
2	5	QPSK	18625	25	LOW	22.02
2	5	Q16	18625	1	LOW	22.63
2	5	Q16	18625	1	MID	22.60
2	5	Q16	18625	1	HIGH	22.61
2	5	Q16	18625	8	LOW	21.99
2	5	Q16	18625	8	HIGH	22.08
2	5	Q16	18625	25	LOW	21.11
2	5	QPSK	18900	1	LOW	23.33
2	5	QPSK	18900	1	MID	23.31
2	5	QPSK	18900	1	HIGH	23.25

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2	5	QPSK	18900	10	LOW	22.02
2	5	QPSK	18900	10	HIGH	22.03
2	5	QPSK	18900	25	LOW	21.92
2	5	Q16	18900	1	LOW	22.35
2	5	Q16	18900	1	MID	22.23
2	5	Q16	18900	1	HIGH	22.22
2	5	Q16	18900	8	LOW	21.95
2	5	Q16	18900	8	HIGH	21.94
2	5	Q16	18900	25	LOW	20.85
2	5	QPSK	19175	1	LOW	22.91
2	5	QPSK	19175	1	MID	23.06
2	5	QPSK	19175	1	HIGH	22.87
2	5	QPSK	19175	10	LOW	21.70
2	5	QPSK	19175	10	HIGH	21.76
2	5	QPSK	19175	25	LOW	21.79
2	5	Q16	19175	1	LOW	21.95
2	5	Q16	19175	1	MID	21.84
2	5	Q16	19175	1	HIGH	22.06
2	5	Q16	19175	8	LOW	21.91
2	5	Q16	19175	8	HIGH	21.96
2	5	Q16	19175	25	LOW	20.84
2	3	QPSK	18615	1	LOW	23.02
2	3	QPSK	18615	1	MID	23.01
2	3	QPSK	18615	1	HIGH	23.07
2	3	QPSK	18615	6	LOW	22.01
2	3	QPSK	18615	6	HIGH	22.04
2	3	QPSK	18615	15	LOW	22.02
2	3	Q16	18615	1	LOW	22.21
2	3	Q16	18615	1	MID	22.19
2	3	Q16	18615	1	HIGH	22.32
2	3	Q16	18615	4	LOW	22.15
2	3	Q16	18615	4	HIGH	22.20
2	3	Q16	18615	15	LOW	21.08
2	3	QPSK	18900	1	LOW	23.04
2	3	QPSK	18900	1	MID	23.36
2	3	QPSK	18900	1	HIGH	23.09
2	3	QPSK	18900	6	LOW	21.94
2	3	QPSK	18900	6	HIGH	22.06
2	3	QPSK	18900	15	LOW	21.99
2	3	Q16	18900	1	LOW	22.34
2	3	Q16	18900	1	MID	22.06
2	3	Q16	18900	1	HIGH	22.39
2	3	Q16	18900	4	LOW	22.19

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2	3	Q16	18900	4	HIGH	22.10
2	3	Q16	18900	15	LOW	20.97
2	3	QPSK	19185	1	LOW	22.80
2	3	QPSK	19185	1	MID	22.79
2	3	QPSK	19185	1	HIGH	22.79
2	3	QPSK	19185	6	LOW	21.74
2	3	QPSK	19185	6	HIGH	21.75
2	3	QPSK	19185	15	LOW	21.74
2	3	Q16	19185	1	LOW	22.36
2	3	Q16	19185	1	MID	22.44
2	3	Q16	19185	1	HIGH	22.44
2	3	Q16	19185	4	LOW	22.14
2	3	Q16	19185	4	HIGH	22.21
2	3	Q16	19185	15	LOW	20.83
2	1.4	QPSK	18670	1	LOW	23.01
2	1.4	QPSK	18670	1	MID	23.03
2	1.4	QPSK	18670	1	HIGH	23.17
2	1.4	QPSK	18670	3	LOW	23.12
2	1.4	QPSK	18670	3	HIGH	23.14
2	1.4	QPSK	18670	6	LOW	22.00
2	1.4	Q16	18670	1	LOW	22.17
2	1.4	Q16	18670	1	MID	22.40
2	1.4	Q16	18670	1	HIGH	22.24
2	1.4	Q16	18670	5	LOW	22.14
2	1.4	Q16	18670	5	HIGH	22.10
2	1.4	Q16	18670	6	LOW	21.02
2	1.4	QPSK	18900	1	LOW	23.09
2	1.4	QPSK	18900	1	MID	23.10
2	1.4	QPSK	18900	1	HIGH	22.95
2	1.4	QPSK	18900	3	LOW	22.89
2	1.4	QPSK	18900	3	HIGH	23.00
2	1.4	QPSK	18900	6	LOW	21.94
2	1.4	Q16	18900	1	LOW	22.02
2	1.4	Q16	18900	1	MID	22.30
2	1.4	Q16	18900	1	HIGH	21.99
2	1.4	Q16	18900	5	LOW	21.92
2	1.4	Q16	18900	5	HIGH	21.94
2	1.4	Q16	18900	6	LOW	20.80
2	1.4	QPSK	19130	1	LOW	22.87
2	1.4	QPSK	19130	1	MID	22.73
2	1.4	QPSK	19130	1	HIGH	22.88
2	1.4	QPSK	19130	3	LOW	22.62
2	1.4	QPSK	19130	3	HIGH	22.64

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2	1.4	QPSK	19130	6	LOW	21.65
2	1.4	Q16	19130	1	LOW	21.75
2	1.4	Q16	19130	1	MID	21.79
2	1.4	Q16	19130	1	HIGH	21.76
2	1.4	Q16	19130	5	LOW	21.65
2	1.4	Q16	19130	5	HIGH	21.65
2	1.4	Q16	19130	6	LOW	20.62

**Table 11.1-3a LTE band 2 conducted power measurements for normal mode tested on device model:
RHK211LW**

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on LTE band 2 was measured using RHK211LW and reused for RHL211LW.

LTE band 2 For Hotspot Mode						
LTE Band	BW (MHz)	Mod.	Channel	RB #	OFFSET	Max avg. conducted power (dBm)
2	20	QPSK	18700	1	LOW	20.33
2	20	QPSK	18700	1	MID	20.22
2	20	QPSK	18700	1	HIGH	20.41
2	20	QPSK	18700	50	LOW	20.11
2	20	QPSK	18700	50	HIGH	20.20
2	20	QPSK	18700	100	LOW	20.23
2	20	Q16	18700	1	LOW	20.50
2	20	Q16	18700	1	MID	20.54
2	20	Q16	18700	1	HIGH	20.64
2	20	Q16	18700	75	LOW	20.19
2	20	Q16	18700	75	HIGH	20.25
2	20	Q16	18700	100	LOW	20.26
2	20	QPSK	18900	1	LOW	20.23
2	20	QPSK	18900	1	MID	20.15
2	20	QPSK	18900	1	HIGH	20.14
2	20	QPSK	18900	50	LOW	20.10
2	20	QPSK	18900	50	HIGH	20.19
2	20	QPSK	18900	100	LOW	20.12
2	20	Q16	18900	1	LOW	20.49
2	20	Q16	18900	1	MID	20.41
2	20	Q16	18900	1	HIGH	20.57
2	20	Q16	18900	75	LOW	20.14
2	20	Q16	18900	75	HIGH	20.14
2	20	Q16	18900	100	LOW	20.13

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2	20	QPSK	19100	1	LOW	20.01
2	20	QPSK	19100	1	MID	19.71
2	20	QPSK	19100	1	HIGH	19.78
2	20	QPSK	19100	50	LOW	19.74
2	20	QPSK	19100	50	HIGH	19.82
2	20	QPSK	19100	100	LOW	19.87
2	20	Q16	19100	1	LOW	20.43
2	20	Q16	19100	1	MID	20.16
2	20	Q16	19100	1	HIGH	20.21
2	20	Q16	19100	75	LOW	19.79
2	20	Q16	19100	75	HIGH	19.76
2	20	Q16	19100	100	LOW	19.90
2	15	QPSK	18675	1	LOW	20.04
2	15	QPSK	18675	1	MID	20.02
2	15	QPSK	18675	1	HIGH	20.07
2	15	QPSK	18675	36	LOW	20.04
2	15	QPSK	18675	36	HIGH	20.12
2	15	QPSK	18675	75	LOW	19.99
2	15	Q16	18675	1	LOW	20.29
2	15	Q16	18675	1	MID	20.24
2	15	Q16	18675	1	HIGH	20.30
2	15	Q16	18675	16	LOW	20.08
2	15	Q16	18675	16	HIGH	20.01
2	15	Q16	18675	75	LOW	20.11
2	15	QPSK	18900	1	LOW	20.18
2	15	QPSK	18900	1	MID	20.09
2	15	QPSK	18900	1	HIGH	20.14
2	15	QPSK	18900	36	LOW	20.07
2	15	QPSK	18900	36	HIGH	20.09
2	15	QPSK	18900	75	LOW	20.07
2	15	Q16	18900	1	LOW	20.50
2	15	Q16	18900	1	MID	20.42
2	15	Q16	18900	1	HIGH	20.50
2	15	Q16	18900	16	LOW	20.14
2	15	Q16	18900	16	HIGH	20.19
2	15	Q16	18900	75	LOW	20.08
2	15	QPSK	19125	1	LOW	19.92
2	15	QPSK	19125	1	MID	19.94
2	15	QPSK	19125	1	HIGH	19.92
2	15	QPSK	19125	36	LOW	19.80
2	15	QPSK	19125	36	HIGH	19.89
2	15	QPSK	19125	75	LOW	19.90
2	15	Q16	19125	1	LOW	20.37

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2	15	Q16	19125	1	MID	20.39
2	15	Q16	19125	1	HIGH	20.35
2	15	Q16	19125	16	LOW	19.86
2	15	Q16	19125	16	HIGH	20.06
2	15	Q16	19125	75	LOW	19.93
2	10	QPSK	18650	1	LOW	20.06
2	10	QPSK	18650	1	MID	19.93
2	10	QPSK	18650	1	HIGH	20.19
2	10	QPSK	18650	25	LOW	20.02
2	10	QPSK	18650	25	HIGH	20.12
2	10	QPSK	18650	50	LOW	19.99
2	10	Q16	18650	1	LOW	20.35
2	10	Q16	18650	1	MID	20.17
2	10	Q16	18650	1	HIGH	20.66
2	10	Q16	18650	30	LOW	19.99
2	10	Q16	18650	30	HIGH	20.03
2	10	Q16	18650	50	LOW	20.04
2	10	QPSK	18900	1	LOW	20.29
2	10	QPSK	18900	1	MID	20.09
2	10	QPSK	18900	1	HIGH	20.09
2	10	QPSK	18900	25	LOW	20.06
2	10	QPSK	18900	25	HIGH	20.04
2	10	QPSK	18900	50	LOW	20.00
2	10	Q16	18900	1	LOW	20.12
2	10	Q16	18900	1	MID	20.00
2	10	Q16	18900	1	HIGH	19.98
2	10	Q16	18900	30	LOW	20.05
2	10	Q16	18900	30	HIGH	20.05
2	10	Q16	18900	50	LOW	20.03
2	10	QPSK	19150	1	LOW	20.01
2	10	QPSK	19150	1	MID	19.95
2	10	QPSK	19150	1	HIGH	19.93
2	10	QPSK	19150	25	LOW	19.74
2	10	QPSK	19150	25	HIGH	19.79
2	10	QPSK	19150	50	LOW	19.82
2	10	Q16	19150	1	LOW	20.36
2	10	Q16	19150	1	MID	20.36
2	10	Q16	19150	1	HIGH	20.37
2	10	Q16	19150	30	LOW	19.70
2	10	Q16	19150	30	HIGH	19.66
2	10	Q16	19150	50	LOW	19.82
2	5	QPSK	18625	1	LOW	20.44
2	5	QPSK	18625	1	MID	20.40

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2	5	QPSK	18625	1	HIGH	20.29
2	5	QPSK	18625	10	LOW	20.04
2	5	QPSK	18625	10	HIGH	20.04
2	5	QPSK	18625	25	LOW	20.04
2	5	Q16	18625	1	LOW	20.38
2	5	Q16	18625	1	MID	20.48
2	5	Q16	18625	1	HIGH	20.43
2	5	Q16	18625	8	LOW	20.03
2	5	Q16	18625	8	HIGH	20.09
2	5	Q16	18625	25	LOW	20.06
2	5	QPSK	18900	1	LOW	20.16
2	5	QPSK	18900	1	MID	20.07
2	5	QPSK	18900	1	HIGH	20.14
2	5	QPSK	18900	10	LOW	19.95
2	5	QPSK	18900	10	HIGH	19.94
2	5	QPSK	18900	25	LOW	19.88
2	5	Q16	18900	1	LOW	20.19
2	5	Q16	18900	1	MID	20.14
2	5	Q16	18900	1	HIGH	20.15
2	5	Q16	18900	8	LOW	19.97
2	5	Q16	18900	8	HIGH	19.93
2	5	Q16	18900	25	LOW	19.96
2	5	QPSK	19175	1	LOW	19.82
2	5	QPSK	19175	1	MID	19.86
2	5	QPSK	19175	1	HIGH	19.82
2	5	QPSK	19175	10	LOW	19.67
2	5	QPSK	19175	10	HIGH	19.74
2	5	QPSK	19175	25	LOW	19.67
2	5	Q16	19175	1	LOW	19.79
2	5	Q16	19175	1	MID	19.82
2	5	Q16	19175	1	HIGH	19.86
2	5	Q16	19175	8	LOW	19.85
2	5	Q16	19175	8	HIGH	19.92
2	5	Q16	19175	25	LOW	19.79
2	3	QPSK	18615	1	LOW	20.03
2	3	QPSK	18615	1	MID	19.97
2	3	QPSK	18615	1	HIGH	20.04
2	3	QPSK	18615	6	LOW	20.05
2	3	QPSK	18615	6	HIGH	20.05
2	3	QPSK	18615	15	LOW	20.04
2	3	Q16	18615	1	LOW	20.21
2	3	Q16	18615	1	MID	20.24
2	3	Q16	18615	1	HIGH	20.38

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2	3	Q16	18615	4	LOW	20.12
2	3	Q16	18615	4	HIGH	20.12
2	3	Q16	18615	15	LOW	20.01
2	3	QPSK	18900	1	LOW	20.11
2	3	QPSK	18900	1	MID	20.13
2	3	QPSK	18900	1	HIGH	20.16
2	3	QPSK	18900	6	LOW	19.88
2	3	QPSK	18900	6	HIGH	20.01
2	3	QPSK	18900	15	LOW	19.93
2	3	Q16	18900	1	LOW	20.37
2	3	Q16	18900	1	MID	20.08
2	3	Q16	18900	1	HIGH	20.43
2	3	Q16	18900	4	LOW	20.19
2	3	Q16	18900	4	HIGH	20.07
2	3	Q16	18900	15	LOW	20.00
2	3	QPSK	19185	1	LOW	19.89
2	3	QPSK	19185	1	MID	19.86
2	3	QPSK	19185	1	HIGH	19.89
2	3	QPSK	19185	6	LOW	19.71
2	3	QPSK	19185	6	HIGH	19.72
2	3	QPSK	19185	15	LOW	19.69
2	3	Q16	19185	1	LOW	20.27
2	3	Q16	19185	1	MID	20.35
2	3	Q16	19185	1	HIGH	20.37
2	3	Q16	19185	4	LOW	20.08
2	3	Q16	19185	4	HIGH	20.14
2	3	Q16	19185	15	LOW	19.84
2	1.4	QPSK	18670	1	LOW	19.99
2	1.4	QPSK	18670	1	MID	19.97
2	1.4	QPSK	18670	1	HIGH	20.13
2	1.4	QPSK	18670	3	LOW	20.14
2	1.4	QPSK	18670	3	HIGH	20.14
2	1.4	QPSK	18670	6	LOW	20.03
2	1.4	Q16	18670	1	LOW	20.23
2	1.4	Q16	18670	1	MID	20.34
2	1.4	Q16	18670	1	HIGH	20.35
2	1.4	Q16	18670	5	LOW	20.14
2	1.4	Q16	18670	5	HIGH	20.10
2	1.4	Q16	18670	6	LOW	20.09
2	1.4	QPSK	18900	1	LOW	20.01
2	1.4	QPSK	18900	1	MID	20.06
2	1.4	QPSK	18900	1	HIGH	19.85
2	1.4	QPSK	18900	3	LOW	19.78

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2	1.4	QPSK	18900	3	HIGH	19.96
2	1.4	QPSK	18900	6	LOW	19.88
2	1.4	Q16	18900	1	LOW	19.96
2	1.4	Q16	18900	1	MID	19.99
2	1.4	Q16	18900	1	HIGH	19.97
2	1.4	Q16	18900	5	LOW	19.92
2	1.4	Q16	18900	5	HIGH	20.01
2	1.4	Q16	18900	6	LOW	19.85
2	1.4	QPSK	19130	1	LOW	19.74
2	1.4	QPSK	19130	1	MID	19.65
2	1.4	QPSK	19130	1	HIGH	19.78
2	1.4	QPSK	19130	3	LOW	19.68
2	1.4	QPSK	19130	3	HIGH	19.72
2	1.4	QPSK	19130	6	LOW	19.61
2	1.4	Q16	19130	1	LOW	19.80
2	1.4	Q16	19130	1	MID	19.83
2	1.4	Q16	19130	1	HIGH	19.81
2	1.4	Q16	19130	5	LOW	19.68
2	1.4	Q16	19130	5	HIGH	19.74
2	1.4	Q16	19130	6	LOW	19.65

**Table 11.1-3b LTE band 2 conducted power measurements for Hotspot mode tested on device
model: RHL211LW**

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on LTE band 2 was measured using RHL211LW and reused for RHL211LW.

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LTE Band 4 For Normal Mode						
LTE Band	BW (MHz)	Mod.	Channel	RB #	OFFSET	Max avg. conducted power (dBm)
4	20	QPSK	20050	1	LOW	23.45
4	20	QPSK	20050	1	MID	23.43
4	20	QPSK	20050	1	HIGH	23.45
4	20	QPSK	20050	50	LOW	22.19
4	20	QPSK	20050	50	HIGH	22.29
4	20	QPSK	20050	100	LOW	22.30
4	20	Q16	20050	1	LOW	22.58
4	20	Q16	20050	1	MID	22.39
4	20	Q16	20050	1	HIGH	22.53
4	20	Q16	20050	75	LOW	21.24
4	20	Q16	20050	75	HIGH	21.25
4	20	Q16	20050	100	LOW	21.25
4	20	QPSK	20175	1	LOW	23.43
4	20	QPSK	20175	1	MID	23.29
4	20	QPSK	20175	1	HIGH	23.54
4	20	QPSK	20175	50	LOW	22.25
4	20	QPSK	20175	50	HIGH	22.24
4	20	QPSK	20175	100	LOW	22.32
4	20	Q16	20175	1	LOW	22.50
4	20	Q16	20175	1	MID	22.45
4	20	Q16	20175	1	HIGH	22.52
4	20	Q16	20175	75	LOW	21.26
4	20	Q16	20175	75	HIGH	21.28
4	20	Q16	20175	100	LOW	21.30
4	20	QPSK	20300	1	LOW	23.53
4	20	QPSK	20300	1	MID	23.73
4	20	QPSK	20300	1	HIGH	23.63
4	20	QPSK	20300	50	LOW	22.51
4	20	QPSK	20300	50	HIGH	22.61
4	20	QPSK	20300	100	LOW	22.60
4	20	Q16	20300	1	LOW	23.01
4	20	Q16	20300	1	MID	23.31
4	20	Q16	20300	1	HIGH	23.13
4	20	Q16	20300	75	LOW	21.56
4	20	Q16	20300	75	HIGH	21.56
4	20	Q16	20300	100	LOW	21.55

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4	15	QPSK	20025	1	LOW	23.16
4	15	QPSK	20025	1	MID	23.19
4	15	QPSK	20025	1	HIGH	23.31
4	15	QPSK	20025	36	LOW	22.20
4	15	QPSK	20025	36	HIGH	22.21
4	15	QPSK	20025	75	LOW	22.22
4	15	Q16	20025	1	LOW	22.43
4	15	Q16	20025	1	MID	22.38
4	15	Q16	20025	1	HIGH	22.55
4	15	Q16	20025	16	LOW	22.13
4	15	Q16	20025	16	HIGH	22.13
4	15	Q16	20025	75	LOW	21.21
4	15	QPSK	20175	1	LOW	23.53
4	15	QPSK	20175	1	MID	23.36
4	15	QPSK	20175	1	HIGH	23.62
4	15	QPSK	20175	36	LOW	22.21
4	15	QPSK	20175	36	HIGH	22.19
4	15	QPSK	20175	75	LOW	22.25
4	15	Q16	20175	1	LOW	22.73
4	15	Q16	20175	1	MID	22.45
4	15	Q16	20175	1	HIGH	22.63
4	15	Q16	20175	16	LOW	22.30
4	15	Q16	20175	16	HIGH	22.40
4	15	Q16	20175	75	LOW	21.29
4	15	QPSK	20325	1	LOW	23.63
4	15	QPSK	20325	1	MID	23.54
4	15	QPSK	20325	1	HIGH	23.50
4	15	QPSK	20325	36	LOW	22.60
4	15	QPSK	20325	36	HIGH	22.46
4	15	QPSK	20325	75	LOW	22.48
4	15	Q16	20325	1	LOW	23.08
4	15	Q16	20325	1	MID	23.01
4	15	Q16	20325	1	HIGH	23.08
4	15	Q16	20325	16	LOW	22.61
4	15	Q16	20325	16	HIGH	22.60
4	15	Q16	20325	75	LOW	21.48
4	10	QPSK	20000	1	LOW	23.36
4	10	QPSK	20000	1	MID	23.27
4	10	QPSK	20000	1	HIGH	23.30
4	10	QPSK	20000	25	LOW	22.12
4	10	QPSK	20000	25	HIGH	22.27
4	10	QPSK	20000	50	LOW	22.23
4	10	Q16	20000	1	LOW	22.83

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4	10	Q16	20000	1	MID	22.52
4	10	Q16	20000	1	HIGH	23.05
4	10	Q16	20000	30	LOW	21.17
4	10	Q16	20000	30	HIGH	21.22
4	10	Q16	20000	50	LOW	21.20
4	10	QPSK	20175	1	LOW	23.60
4	10	QPSK	20175	1	MID	23.40
4	10	QPSK	20175	1	HIGH	23.54
4	10	QPSK	20175	25	LOW	22.21
4	10	QPSK	20175	25	HIGH	22.15
4	10	QPSK	20175	50	LOW	22.26
4	10	Q16	20175	1	LOW	22.33
4	10	Q16	20175	1	MID	22.21
4	10	Q16	20175	1	HIGH	22.27
4	10	Q16	20175	30	LOW	21.29
4	10	Q16	20175	30	HIGH	21.37
4	10	Q16	20175	50	LOW	21.27
4	10	QPSK	20350	1	LOW	23.57
4	10	QPSK	20350	1	MID	23.53
4	10	QPSK	20350	1	HIGH	23.44
4	10	QPSK	20350	25	LOW	22.38
4	10	QPSK	20350	25	HIGH	22.38
4	10	QPSK	20350	50	LOW	22.40
4	10	Q16	20350	1	LOW	23.29
4	10	Q16	20350	1	MID	23.14
4	10	Q16	20350	1	HIGH	23.22
4	10	Q16	20350	30	LOW	21.39
4	10	Q16	20350	30	HIGH	21.37
4	10	Q16	20350	50	LOW	21.36
4	5	QPSK	19975	1	LOW	23.39
4	5	QPSK	19975	1	MID	23.50
4	5	QPSK	19975	1	HIGH	23.47
4	5	QPSK	19975	10	LOW	22.10
4	5	QPSK	19975	10	HIGH	22.12
4	5	QPSK	19975	25	LOW	22.13
4	5	Q16	19975	1	LOW	22.97
4	5	Q16	19975	1	MID	22.89
4	5	Q16	19975	1	HIGH	22.91
4	5	Q16	19975	8	LOW	22.13
4	5	Q16	19975	8	HIGH	22.16
4	5	Q16	19975	25	LOW	21.08
4	5	QPSK	20175	1	LOW	23.49
4	5	QPSK	20175	1	MID	23.48

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4	5	QPSK	20175	1	HIGH	23.48
4	5	QPSK	20175	10	LOW	22.14
4	5	QPSK	20175	10	HIGH	22.25
4	5	QPSK	20175	25	LOW	22.23
4	5	Q16	20175	1	LOW	22.49
4	5	Q16	20175	1	MID	22.38
4	5	Q16	20175	1	HIGH	22.42
4	5	Q16	20175	8	LOW	22.24
4	5	Q16	20175	8	HIGH	22.25
4	5	Q16	20175	25	LOW	21.20
4	5	QPSK	20375	1	LOW	23.69
4	5	QPSK	20375	1	MID	23.72
4	5	QPSK	20375	1	HIGH	23.63
4	5	QPSK	20375	10	LOW	22.37
4	5	QPSK	20375	10	HIGH	22.33
4	5	QPSK	20375	25	LOW	22.41
4	5	Q16	20375	1	LOW	22.59
4	5	Q16	20375	1	MID	22.49
4	5	Q16	20375	1	HIGH	22.67
4	5	Q16	20375	8	LOW	22.42
4	5	Q16	20375	8	HIGH	22.51
4	5	Q16	20375	25	LOW	21.50
4	3	QPSK	19965	1	LOW	23.20
4	3	QPSK	19965	1	MID	23.14
4	3	QPSK	19965	1	HIGH	23.24
4	3	QPSK	19965	6	LOW	22.20
4	3	QPSK	19965	6	HIGH	22.16
4	3	QPSK	19965	15	LOW	22.16
4	3	Q16	19965	1	LOW	22.43
4	3	Q16	19965	1	MID	22.46
4	3	Q16	19965	1	HIGH	22.47
4	3	Q16	19965	4	LOW	22.31
4	3	Q16	19965	4	HIGH	22.22
4	3	Q16	19965	15	LOW	21.07
4	3	QPSK	20175	1	LOW	23.33
4	3	QPSK	20175	1	MID	23.55
4	3	QPSK	20175	1	HIGH	23.35
4	3	QPSK	20175	6	LOW	22.19
4	3	QPSK	20175	6	HIGH	22.29
4	3	QPSK	20175	15	LOW	22.21
4	3	Q16	20175	1	LOW	22.61
4	3	Q16	20175	1	MID	22.27
4	3	Q16	20175	1	HIGH	22.71

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4	3	Q16	20175	4	LOW	22.43
4	3	Q16	20175	4	HIGH	22.38
4	3	Q16	20175	15	LOW	21.24
4	3	QPSK	20385	1	LOW	23.45
4	3	QPSK	20385	1	MID	23.27
4	3	QPSK	20385	1	HIGH	23.36
4	3	QPSK	20385	6	LOW	22.34
4	3	QPSK	20385	6	HIGH	22.29
4	3	QPSK	20385	15	LOW	22.28
4	3	Q16	20385	1	LOW	23.07
4	3	Q16	20385	1	MID	22.89
4	3	Q16	20385	1	HIGH	23.07
4	3	Q16	20385	4	LOW	22.56
4	3	Q16	20385	4	HIGH	22.58
4	3	Q16	20385	15	LOW	21.28
4	1.4	QPSK	20020	1	LOW	23.34
4	1.4	QPSK	20020	1	MID	23.38
4	1.4	QPSK	20020	1	HIGH	23.39
4	1.4	QPSK	20020	3	LOW	23.28
4	1.4	QPSK	20020	3	HIGH	23.31
4	1.4	QPSK	20020	6	LOW	22.25
4	1.4	Q16	20020	1	LOW	22.62
4	1.4	Q16	20020	1	MID	22.81
4	1.4	Q16	20020	1	HIGH	23.32
4	1.4	Q16	20020	5	LOW	22.34
4	1.4	Q16	20020	5	HIGH	22.33
4	1.4	Q16	20020	6	LOW	21.22
4	1.4	QPSK	20175	1	LOW	23.30
4	1.4	QPSK	20175	1	MID	23.30
4	1.4	QPSK	20175	1	HIGH	23.20
4	1.4	QPSK	20175	3	LOW	23.09
4	1.4	QPSK	20175	3	HIGH	23.13
4	1.4	QPSK	20175	6	LOW	22.12
4	1.4	Q16	20175	1	LOW	22.34
4	1.4	Q16	20175	1	MID	22.56
4	1.4	Q16	20175	1	HIGH	22.39
4	1.4	Q16	20175	5	LOW	22.27
4	1.4	Q16	20175	5	HIGH	22.28
4	1.4	Q16	20175	6	LOW	21.11
4	1.4	QPSK	20330	1	LOW	23.72
4	1.4	QPSK	20330	1	MID	23.58
4	1.4	QPSK	20330	1	HIGH	23.47
4	1.4	QPSK	20330	3	LOW	23.45

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4	1.4	QPSK	20330	3	HIGH	23.41
4	1.4	QPSK	20330	6	LOW	22.41
4	1.4	Q16	20330	1	LOW	22.55
4	1.4	Q16	20330	1	MID	22.64
4	1.4	Q16	20330	1	HIGH	22.46
4	1.4	Q16	20330	5	LOW	22.39
4	1.4	Q16	20330	5	HIGH	22.44
4	1.4	Q16	20330	6	LOW	21.40

**Table 11.1-4a LTE band 4 conducted power measurements for normal mode tested on device model:
RHK211LW**

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on LTE band 4 was measured using RHK211LW and reused for RHL211LW.

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LTE Band 4 For Hotspot Mode						
LTE Band	BW (MHz)	Mod.	Channel	RB #	OFFSET	Max avg. conducted power (dBm)
4	20	QPSK	20050	1	LOW	20.44
4	20	QPSK	20050	1	MID	20.44
4	20	QPSK	20050	1	HIGH	20.44
4	20	QPSK	20050	50	LOW	20.24
4	20	QPSK	20050	50	HIGH	20.37
4	20	QPSK	20050	100	LOW	20.30
4	20	Q16	20050	1	LOW	20.47
4	20	Q16	20050	1	MID	20.37
4	20	Q16	20050	1	HIGH	20.56
4	20	Q16	20050	75	LOW	20.34
4	20	Q16	20050	75	HIGH	20.35
4	20	Q16	20050	100	LOW	20.34
4	20	QPSK	20175	1	LOW	20.59
4	20	QPSK	20175	1	MID	20.27
4	20	QPSK	20175	1	HIGH	20.48
4	20	QPSK	20175	50	LOW	20.40
4	20	QPSK	20175	50	HIGH	20.34
4	20	QPSK	20175	100	LOW	20.43
4	20	Q16	20175	1	LOW	21.02
4	20	Q16	20175	1	MID	20.85
4	20	Q16	20175	1	HIGH	21.05
4	20	Q16	20175	75	LOW	20.44
4	20	Q16	20175	75	HIGH	20.44
4	20	Q16	20175	100	LOW	20.42
4	20	QPSK	20300	1	LOW	20.63
4	20	QPSK	20300	1	MID	20.71
4	20	QPSK	20300	1	HIGH	20.65
4	20	QPSK	20300	50	LOW	20.49
4	20	QPSK	20300	50	HIGH	20.57
4	20	QPSK	20300	100	LOW	20.56
4	20	Q16	20300	1	LOW	20.72
4	20	Q16	20300	1	MID	20.80
4	20	Q16	20300	1	HIGH	20.73
4	20	Q16	20300	75	LOW	20.64
4	20	Q16	20300	75	HIGH	20.61
4	20	Q16	20300	100	LOW	20.60
4	15	QPSK	20025	1	LOW	20.11

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4	15	QPSK	20025	1	MID	20.04
4	15	QPSK	20025	1	HIGH	20.21
4	15	QPSK	20025	36	LOW	20.17
4	15	QPSK	20025	36	HIGH	20.22
4	15	QPSK	20025	75	LOW	20.21
4	15	Q16	20025	1	LOW	20.42
4	15	Q16	20025	1	MID	20.35
4	15	Q16	20025	1	HIGH	20.56
4	15	Q16	20025	16	LOW	20.11
4	15	Q16	20025	16	HIGH	20.13
4	15	Q16	20025	75	LOW	20.26
4	15	QPSK	20175	1	LOW	20.66
4	15	QPSK	20175	1	MID	20.31
4	15	QPSK	20175	1	HIGH	20.55
4	15	QPSK	20175	36	LOW	20.21
4	15	QPSK	20175	36	HIGH	20.26
4	15	QPSK	20175	75	LOW	20.32
4	15	Q16	20175	1	LOW	20.79
4	15	Q16	20175	1	MID	20.51
4	15	Q16	20175	1	HIGH	20.68
4	15	Q16	20175	16	LOW	20.33
4	15	Q16	20175	16	HIGH	20.39
4	15	Q16	20175	75	LOW	20.31
4	15	QPSK	20325	1	LOW	20.73
4	15	QPSK	20325	1	MID	20.63
4	15	QPSK	20325	1	HIGH	20.54
4	15	QPSK	20325	36	LOW	20.59
4	15	QPSK	20325	36	HIGH	20.42
4	15	QPSK	20325	75	LOW	20.48
4	15	Q16	20325	1	LOW	21.00
4	15	Q16	20325	1	MID	20.90
4	15	Q16	20325	1	HIGH	20.92
4	15	Q16	20325	16	LOW	20.54
4	15	Q16	20325	16	HIGH	20.52
4	15	Q16	20325	75	LOW	20.53
4	10	QPSK	20000	1	LOW	20.41
4	10	QPSK	20000	1	MID	20.19
4	10	QPSK	20000	1	HIGH	20.21
4	10	QPSK	20000	25	LOW	20.08
4	10	QPSK	20000	25	HIGH	20.24
4	10	QPSK	20000	50	LOW	20.22
4	10	Q16	20000	1	LOW	20.70
4	10	Q16	20000	1	MID	20.44

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4	10	Q16	20000	1	HIGH	20.79
4	10	Q16	20000	30	LOW	20.19
4	10	Q16	20000	30	HIGH	20.24
4	10	Q16	20000	50	LOW	20.23
4	10	QPSK	20175	1	LOW	20.52
4	10	QPSK	20175	1	MID	20.41
4	10	QPSK	20175	1	HIGH	20.49
4	10	QPSK	20175	25	LOW	20.34
4	10	QPSK	20175	25	HIGH	20.27
4	10	QPSK	20175	50	LOW	20.25
4	10	Q16	20175	1	LOW	20.43
4	10	Q16	20175	1	MID	20.29
4	10	Q16	20175	1	HIGH	20.33
4	10	Q16	20175	30	LOW	20.33
4	10	Q16	20175	30	HIGH	20.38
4	10	Q16	20175	50	LOW	20.30
4	10	QPSK	20350	1	LOW	20.75
4	10	QPSK	20350	1	MID	20.56
4	10	QPSK	20350	1	HIGH	20.48
4	10	QPSK	20350	25	LOW	20.38
4	10	QPSK	20350	25	HIGH	20.36
4	10	QPSK	20350	50	LOW	20.44
4	10	Q16	20350	1	LOW	21.20
4	10	Q16	20350	1	MID	21.16
4	10	Q16	20350	1	HIGH	21.06
4	10	Q16	20350	30	LOW	20.42
4	10	Q16	20350	30	HIGH	20.38
4	10	Q16	20350	50	LOW	20.44
4	5	QPSK	19975	1	LOW	20.48
4	5	QPSK	19975	1	MID	20.59
4	5	QPSK	19975	1	HIGH	20.43
4	5	QPSK	19975	10	LOW	20.08
4	5	QPSK	19975	10	HIGH	20.10
4	5	QPSK	19975	25	LOW	20.11
4	5	Q16	19975	1	LOW	20.42
4	5	Q16	19975	1	MID	20.52
4	5	Q16	19975	1	HIGH	20.53
4	5	Q16	19975	8	LOW	20.06
4	5	Q16	19975	8	HIGH	20.09
4	5	Q16	19975	25	LOW	20.06
4	5	QPSK	20175	1	LOW	20.46
4	5	QPSK	20175	1	MID	20.40
4	5	QPSK	20175	1	HIGH	20.45

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4	5	QPSK	20175	10	LOW	20.22
4	5	QPSK	20175	10	HIGH	20.29
4	5	QPSK	20175	25	LOW	20.24
4	5	Q16	20175	1	LOW	20.52
4	5	Q16	20175	1	MID	20.44
4	5	Q16	20175	1	HIGH	20.50
4	5	Q16	20175	8	LOW	20.29
4	5	Q16	20175	8	HIGH	20.30
4	5	Q16	20175	25	LOW	20.31
4	5	QPSK	20375	1	LOW	20.56
4	5	QPSK	20375	1	MID	20.44
4	5	QPSK	20375	1	HIGH	20.40
4	5	QPSK	20375	10	LOW	20.45
4	5	QPSK	20375	10	HIGH	20.37
4	5	QPSK	20375	25	LOW	20.39
4	5	Q16	20375	1	LOW	20.46
4	5	Q16	20375	1	MID	20.33
4	5	Q16	20375	1	HIGH	20.36
4	5	Q16	20375	8	LOW	20.35
4	5	Q16	20375	8	HIGH	20.37
4	5	Q16	20375	25	LOW	20.47
4	3	QPSK	19965	1	LOW	20.20
4	3	QPSK	19965	1	MID	20.12
4	3	QPSK	19965	1	HIGH	20.21
4	3	QPSK	19965	6	LOW	20.19
4	3	QPSK	19965	6	HIGH	20.15
4	3	QPSK	19965	15	LOW	20.14
4	3	Q16	19965	1	LOW	20.48
4	3	Q16	19965	1	MID	20.47
4	3	Q16	19965	1	HIGH	20.41
4	3	Q16	19965	4	LOW	20.24
4	3	Q16	19965	4	HIGH	20.15
4	3	Q16	19965	15	LOW	20.08
4	3	QPSK	20175	1	LOW	20.49
4	3	QPSK	20175	1	MID	20.44
4	3	QPSK	20175	1	HIGH	20.52
4	3	QPSK	20175	6	LOW	20.22
4	3	QPSK	20175	6	HIGH	20.30
4	3	QPSK	20175	15	LOW	20.24
4	3	Q16	20175	1	LOW	20.53
4	3	Q16	20175	1	MID	20.34
4	3	Q16	20175	1	HIGH	20.56
4	3	Q16	20175	4	LOW	20.41

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4	3	Q16	20175	4	HIGH	20.40
4	3	Q16	20175	15	LOW	20.28
4	3	QPSK	20385	1	LOW	20.47
4	3	QPSK	20385	1	MID	20.35
4	3	QPSK	20385	1	HIGH	20.37
4	3	QPSK	20385	6	LOW	20.27
4	3	QPSK	20385	6	HIGH	20.25
4	3	QPSK	20385	15	LOW	20.26
4	3	Q16	20385	1	LOW	20.82
4	3	Q16	20385	1	MID	20.71
4	3	Q16	20385	1	HIGH	20.83
4	3	Q16	20385	4	LOW	20.51
4	3	Q16	20385	4	HIGH	20.56
4	3	Q16	20385	15	LOW	20.35
4	1.4	QPSK	20020	1	LOW	20.26
4	1.4	QPSK	20020	1	MID	20.28
4	1.4	QPSK	20020	1	HIGH	20.33
4	1.4	QPSK	20020	3	LOW	20.25
4	1.4	QPSK	20020	3	HIGH	20.16
4	1.4	QPSK	20020	6	LOW	20.19
4	1.4	Q16	20020	1	LOW	20.45
4	1.4	Q16	20020	1	MID	20.51
4	1.4	Q16	20020	1	HIGH	20.05
4	1.4	Q16	20020	5	LOW	20.17
4	1.4	Q16	20020	5	HIGH	20.16
4	1.4	Q16	20020	6	LOW	20.22
4	1.4	QPSK	20175	1	LOW	20.24
4	1.4	QPSK	20175	1	MID	20.21
4	1.4	QPSK	20175	1	HIGH	20.29
4	1.4	QPSK	20175	3	LOW	20.22
4	1.4	QPSK	20175	3	HIGH	20.19
4	1.4	QPSK	20175	6	LOW	20.20
4	1.4	Q16	20175	1	LOW	20.45
4	1.4	Q16	20175	1	MID	20.56
4	1.4	Q16	20175	1	HIGH	20.45
4	1.4	Q16	20175	5	LOW	20.26
4	1.4	Q16	20175	5	HIGH	20.27
4	1.4	Q16	20175	6	LOW	20.27
4	1.4	QPSK	20330	1	LOW	20.63
4	1.4	QPSK	20330	1	MID	20.77
4	1.4	QPSK	20330	1	HIGH	20.48
4	1.4	QPSK	20330	3	LOW	20.39
4	1.4	QPSK	20330	3	HIGH	20.38

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4	1.4	QPSK	20330	6	LOW	20.45
4	1.4	Q16	20330	1	LOW	20.60
4	1.4	Q16	20330	1	MID	20.84
4	1.4	Q16	20330	1	HIGH	20.48
4	1.4	Q16	20330	5	LOW	20.46
4	1.4	Q16	20330	5	HIGH	20.44
4	1.4	Q16	20330	6	LOW	20.40

**Table 11.1-4b LTE band 4 conducted power measurements for Hotspot mode tested on device
model: RHL211LW**

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on LTE band 4 was measured using RHL211LW and reused for RHL211LW.

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LTE Band 5						
LTE Band	BW (MHz)	Mod.	Channel	RB#	OFFSET	Max avg. Conducted power (dBm)
5	10	QPSK	20450	1	LOW	23.61
5	10	QPSK	20450	1	MID	23.71
5	10	QPSK	20450	1	HIGH	23.60
5	10	QPSK	20450	25	LOW	22.54
5	10	QPSK	20450	25	HIGH	22.45
5	10	QPSK	20450	50	LOW	22.51
5	10	Q16	20450	1	LOW	23.49
5	10	Q16	20450	1	MID	23.65
5	10	Q16	20450	1	HIGH	23.36
5	10	Q16	20450	30	LOW	21.52
5	10	Q16	20450	30	HIGH	21.47
5	10	Q16	20450	50	LOW	21.48
5	10	QPSK	20525	1	LOW	23.79
5	10	QPSK	20525	1	MID	23.48
5	10	QPSK	20525	1	HIGH	23.48
5	10	QPSK	20525	25	LOW	22.52
5	10	QPSK	20525	25	HIGH	22.47
5	10	QPSK	20525	50	LOW	22.45
5	10	Q16	20525	1	LOW	22.88
5	10	Q16	20525	1	MID	22.71
5	10	Q16	20525	1	HIGH	22.98
5	10	Q16	20525	30	LOW	21.55
5	10	Q16	20525	30	HIGH	21.50
5	10	Q16	20525	50	LOW	21.57
5	10	QPSK	20600	1	LOW	23.76
5	10	QPSK	20600	1	MID	23.72
5	10	QPSK	20600	1	HIGH	23.79
5	10	QPSK	20600	25	LOW	22.49
5	10	QPSK	20600	25	HIGH	22.59
5	10	QPSK	20600	50	LOW	22.54
5	10	Q16	20600	1	LOW	22.52
5	10	Q16	20600	1	MID	22.67

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Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

5	10	Q16	20600	1	HIGH	22.53
5	10	Q16	20600	30	LOW	21.52
5	10	Q16	20600	30	HIGH	21.55
5	10	Q16	20600	50	LOW	21.44
5	5	QPSK	20425	1	LOW	23.63
5	5	QPSK	20425	1	MID	23.70
5	5	QPSK	20425	1	HIGH	23.61
5	5	QPSK	20425	10	LOW	22.50
5	5	QPSK	20425	10	HIGH	22.51
5	5	QPSK	20425	25	LOW	22.42
5	5	Q16	20425	1	LOW	22.90
5	5	Q16	20425	1	MID	22.96
5	5	Q16	20425	1	HIGH	22.86
5	5	Q16	20425	8	LOW	22.55
5	5	Q16	20425	8	HIGH	22.43
5	5	Q16	20425	25	LOW	21.45
5	5	QPSK	20525	1	LOW	23.73
5	5	QPSK	20525	1	MID	23.95
5	5	QPSK	20525	1	HIGH	23.64
5	5	QPSK	20525	10	LOW	22.51
5	5	QPSK	20525	10	HIGH	22.53
5	5	QPSK	20525	25	LOW	22.52
5	5	Q16	20525	1	LOW	22.79
5	5	Q16	20525	1	MID	22.61
5	5	Q16	20525	1	HIGH	22.77
5	5	Q16	20525	8	LOW	22.64
5	5	Q16	20525	8	HIGH	22.72
5	5	Q16	20525	25	LOW	21.62
5	5	QPSK	20625	1	LOW	23.55
5	5	QPSK	20625	1	MID	23.74
5	5	QPSK	20625	1	HIGH	23.59
5	5	QPSK	20625	10	LOW	22.54
5	5	QPSK	20625	10	HIGH	22.52
5	5	QPSK	20625	25	LOW	22.51
5	5	Q16	20625	1	LOW	22.93
5	5	Q16	20625	1	MID	22.91
5	5	Q16	20625	1	HIGH	22.80
5	5	Q16	20625	8	LOW	22.59

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Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

5	5	Q16	20625	8	HIGH	22.57
5	5	Q16	20625	25	LOW	21.50
5	3	QPSK	20415	1	LOW	23.45
5	3	QPSK	20415	1	MID	23.51
5	3	QPSK	20415	1	HIGH	23.46
5	3	QPSK	20415	6	LOW	22.52
5	3	QPSK	20415	6	HIGH	22.46
5	3	QPSK	20415	15	LOW	22.56
5	3	Q16	20415	1	LOW	22.53
5	3	Q16	20415	1	MID	22.60
5	3	Q16	20415	1	HIGH	22.59
5	3	Q16	20415	4	LOW	22.70
5	3	Q16	20415	4	HIGH	22.58
5	3	Q16	20415	15	LOW	21.50
5	3	QPSK	20525	1	LOW	23.69
5	3	QPSK	20525	1	MID	23.78
5	3	QPSK	20525	1	HIGH	23.69
5	3	QPSK	20525	6	LOW	22.54
5	3	QPSK	20525	6	HIGH	22.51
5	3	QPSK	20525	15	LOW	22.56
5	3	Q16	20525	1	LOW	22.88
5	3	Q16	20525	1	MID	22.65
5	3	Q16	20525	1	HIGH	22.80
5	3	Q16	20525	4	LOW	22.73
5	3	Q16	20525	4	HIGH	22.64
5	3	Q16	20525	15	LOW	21.57
5	3	QPSK	20635	1	LOW	23.60
5	3	QPSK	20635	1	MID	23.59
5	3	QPSK	20635	1	HIGH	23.56
5	3	QPSK	20635	6	LOW	22.57
5	3	QPSK	20635	6	HIGH	22.57
5	3	QPSK	20635	15	LOW	22.55
5	3	Q16	20635	1	LOW	23.40
5	3	Q16	20635	1	MID	23.33
5	3	Q16	20635	1	HIGH	23.33
5	3	Q16	20635	4	LOW	22.97
5	3	Q16	20635	4	HIGH	23.02
5	3	Q16	20635	15	LOW	21.63

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5	1.4	QPSK	20470	1	LOW	23.58
5	1.4	QPSK	20470	1	MID	23.64
5	1.4	QPSK	20470	1	HIGH	23.55
5	1.4	QPSK	20470	3	LOW	23.64
5	1.4	QPSK	20470	3	HIGH	23.56
5	1.4	QPSK	20470	6	LOW	22.57
5	1.4	Q16	20470	1	LOW	22.68
5	1.4	Q16	20470	1	MID	22.85
5	1.4	Q16	20470	1	HIGH	22.62
5	1.4	Q16	20470	5	LOW	22.61
5	1.4	Q16	20470	5	HIGH	22.62
5	1.4	Q16	20470	6	LOW	21.56
5	1.4	QPSK	20525	1	LOW	23.72
5	1.4	QPSK	20525	1	MID	23.77
5	1.4	QPSK	20525	1	HIGH	23.61
5	1.4	QPSK	20525	3	LOW	23.57
5	1.4	QPSK	20525	3	HIGH	23.60
5	1.4	QPSK	20525	6	LOW	22.54
5	1.4	Q16	20525	1	LOW	22.58
5	1.4	Q16	20525	1	MID	22.77
5	1.4	Q16	20525	1	HIGH	22.47
5	1.4	Q16	20525	5	LOW	22.63
5	1.4	Q16	20525	5	HIGH	22.62
5	1.4	Q16	20525	6	LOW	21.42
5	1.4	QPSK	20580	1	LOW	23.69
5	1.4	QPSK	20580	1	MID	23.56
5	1.4	QPSK	20580	1	HIGH	23.65
5	1.4	QPSK	20580	3	LOW	23.44
5	1.4	QPSK	20580	3	HIGH	23.47
5	1.4	QPSK	20580	6	LOW	22.37
5	1.4	Q16	20580	1	LOW	22.60
5	1.4	Q16	20580	1	MID	22.69
5	1.4	Q16	20580	1	HIGH	22.43
5	1.4	Q16	20580	5	LOW	22.47
5	1.4	Q16	20580	5	HIGH	22.55
5	1.4	Q16	20580	6	LOW	21.29

Table 11.1-5 LTE band 5 conducted power measurements tested on device model: RHL211LW

Note: Does not support 20 and 15 MHz Bandwidth

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LTE Band 7 For Normal Mode						
LTE Band	BW (MHz)	Mod.	Channel	RB #	OFFSET	Max avg. conducted power (dBm)
7	20	QPSK	20850	1	LOW	23.14
7	20	QPSK	20850	1	MID	23.47
7	20	QPSK	20850	1	HIGH	23.09
7	20	QPSK	20850	50	LOW	22.18
7	20	QPSK	20850	50	HIGH	22.11
7	20	QPSK	20850	100	LOW	22.17
7	20	Q16	20850	1	LOW	22.36
7	20	Q16	20850	1	MID	22.44
7	20	Q16	20850	1	HIGH	22.29
7	20	Q16	20850	75	LOW	21.21
7	20	Q16	20850	75	HIGH	21.07
7	20	Q16	20850	100	LOW	21.15
7	20	QPSK	21100	1	LOW	22.95
7	20	QPSK	21100	1	MID	22.87
7	20	QPSK	21100	1	HIGH	22.81
7	20	QPSK	21100	50	LOW	21.80
7	20	QPSK	21100	50	HIGH	21.68
7	20	QPSK	21100	100	LOW	21.80
7	20	Q16	21100	1	LOW	22.50
7	20	Q16	21100	1	MID	22.39
7	20	Q16	21100	1	HIGH	22.31
7	20	Q16	21100	75	LOW	20.79
7	20	Q16	21100	75	HIGH	20.67
7	20	Q16	21100	100	LOW	20.77
7	20	QPSK	21350	1	LOW	22.81
7	20	QPSK	21350	1	MID	22.82
7	20	QPSK	21350	1	HIGH	22.42
7	20	QPSK	21350	50	LOW	21.54
7	20	QPSK	21350	50	HIGH	21.58
7	20	QPSK	21350	100	LOW	21.61
7	20	Q16	21350	1	LOW	21.80
7	20	Q16	21350	1	MID	21.75
7	20	Q16	21350	1	HIGH	21.69
7	20	Q16	21350	75	LOW	20.60
7	20	Q16	21350	75	HIGH	20.76
7	20	Q16	21350	100	LOW	20.63

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7	15	QPSK	20825	1	LOW	23.03
7	15	QPSK	20825	1	MID	23.16
7	15	QPSK	20825	1	HIGH	22.94
7	15	QPSK	20825	36	LOW	22.20
7	15	QPSK	20825	36	HIGH	22.12
7	15	QPSK	20825	75	LOW	22.15
7	15	Q16	20825	1	LOW	22.43
7	15	Q16	20825	1	MID	22.45
7	15	Q16	20825	1	HIGH	22.26
7	15	Q16	20825	16	LOW	22.05
7	15	Q16	20825	16	HIGH	22.03
7	15	Q16	20825	75	LOW	21.16
7	15	QPSK	21100	1	LOW	23.05
7	15	QPSK	21100	1	MID	22.91
7	15	QPSK	21100	1	HIGH	22.98
7	15	QPSK	21100	36	LOW	21.78
7	15	QPSK	21100	36	HIGH	21.64
7	15	QPSK	21100	75	LOW	21.65
7	15	Q16	21100	1	LOW	22.20
7	15	Q16	21100	1	MID	21.91
7	15	Q16	21100	1	HIGH	21.94
7	15	Q16	21100	16	LOW	21.80
7	15	Q16	21100	16	HIGH	21.71
7	15	Q16	21100	75	LOW	20.65
7	15	QPSK	21375	1	LOW	22.66
7	15	QPSK	21375	1	MID	22.75
7	15	QPSK	21375	1	HIGH	22.30
7	15	QPSK	21375	36	LOW	21.58
7	15	QPSK	21375	36	HIGH	21.58
7	15	QPSK	21375	75	LOW	21.62
7	15	Q16	21375	1	LOW	22.26
7	15	Q16	21375	1	MID	22.18
7	15	Q16	21375	1	HIGH	21.90
7	15	Q16	21375	16	LOW	21.68
7	15	Q16	21375	16	HIGH	21.61
7	15	Q16	21375	75	LOW	20.66
7	10	QPSK	20800	1	LOW	23.22
7	10	QPSK	20800	1	MID	23.25
7	10	QPSK	20800	1	HIGH	23.24
7	10	QPSK	20800	25	LOW	22.23
7	10	QPSK	20800	25	HIGH	22.30
7	10	QPSK	20800	50	LOW	22.23
7	10	Q16	20800	1	LOW	22.86

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7	10	Q16	20800	1	MID	22.50
7	10	Q16	20800	1	HIGH	22.92
7	10	Q16	20800	30	LOW	21.19
7	10	Q16	20800	30	HIGH	21.24
7	10	Q16	20800	50	LOW	21.22
7	10	QPSK	21100	1	LOW	22.96
7	10	QPSK	21100	1	MID	22.90
7	10	QPSK	21100	1	HIGH	22.94
7	10	QPSK	21100	25	LOW	21.83
7	10	QPSK	21100	25	HIGH	21.75
7	10	QPSK	21100	50	LOW	21.73
7	10	Q16	21100	1	LOW	21.76
7	10	Q16	21100	1	MID	21.75
7	10	Q16	21100	1	HIGH	21.75
7	10	Q16	21100	30	LOW	20.77
7	10	Q16	21100	30	HIGH	20.85
7	10	Q16	21100	50	LOW	20.69
7	10	QPSK	21400	1	LOW	22.78
7	10	QPSK	21400	1	MID	22.70
7	10	QPSK	21400	1	HIGH	22.03
7	10	QPSK	21400	25	LOW	21.58
7	10	QPSK	21400	25	HIGH	21.43
7	10	QPSK	21400	50	LOW	21.61
7	10	Q16	21400	1	LOW	22.30
7	10	Q16	21400	1	MID	22.20
7	10	Q16	21400	1	HIGH	21.60
7	10	Q16	21400	30	LOW	20.66
7	10	Q16	21400	30	HIGH	20.50
7	10	Q16	21400	50	LOW	20.62
7	5	QPSK	20775	1	LOW	23.25
7	5	QPSK	20775	1	MID	23.47
7	5	QPSK	20775	1	HIGH	23.47
7	5	QPSK	20775	10	LOW	22.17
7	5	QPSK	20775	10	HIGH	22.17
7	5	QPSK	20775	25	LOW	22.24
7	5	Q16	20775	1	LOW	23.01
7	5	Q16	20775	1	MID	22.89
7	5	Q16	20775	1	HIGH	22.86
7	5	Q16	20775	8	LOW	22.17
7	5	Q16	20775	8	HIGH	22.18
7	5	Q16	20775	25	LOW	21.21
7	5	QPSK	21100	1	LOW	23.02
7	5	QPSK	21100	1	MID	23.02

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7	5	QPSK	21100	1	HIGH	23.01
7	5	QPSK	21100	10	LOW	21.72
7	5	QPSK	21100	10	HIGH	21.71
7	5	QPSK	21100	25	LOW	21.69
7	5	Q16	21100	1	LOW	21.97
7	5	Q16	21100	1	MID	21.89
7	5	Q16	21100	1	HIGH	21.93
7	5	Q16	21100	8	LOW	21.63
7	5	Q16	21100	8	HIGH	21.62
7	5	Q16	21100	25	LOW	20.60
7	5	QPSK	21425	1	LOW	22.75
7	5	QPSK	21425	1	MID	22.60
7	5	QPSK	21425	1	HIGH	22.22
7	5	QPSK	21425	10	LOW	21.55
7	5	QPSK	21425	10	HIGH	21.34
7	5	QPSK	21425	25	LOW	21.49
7	5	Q16	21425	1	LOW	21.73
7	5	Q16	21425	1	MID	21.57
7	5	Q16	21425	1	HIGH	21.23
7	5	Q16	21425	8	LOW	21.70
7	5	Q16	21425	8	HIGH	21.42
7	5	Q16	21425	25	LOW	20.55

Table 11.1-6a LTE band 7 conducted power measurements for normal mode tested on device model: RHL211LW

Note 1: LTE band 7 is not supported in the United States; however it is supported in Canada and remains in this report for filing to Industry Canada

Note 2: Does not support 3 and 1.4 MHz Bandwidth

Note 3: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on LTE band 7 was measured using RHL211LW and reused for RHL211LW.

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LTE Band 7 For Hotspot Mode						
LTE Band	BW (MHz)	Mod.	Channel	RB #	OFFSET	Max avg. conducted power (dBm)
7	20	QPSK	20850	1	LOW	20.44
7	20	QPSK	20850	1	MID	20.39
7	20	QPSK	20850	1	HIGH	20.05
7	20	QPSK	20850	50	LOW	20.18
7	20	QPSK	20850	50	HIGH	20.05
7	20	QPSK	20850	100	LOW	20.12
7	20	Q16	20850	1	LOW	20.31
7	20	Q16	20850	1	MID	20.32
7	20	Q16	20850	1	HIGH	20.09
7	20	Q16	20850	75	LOW	20.17
7	20	Q16	20850	75	HIGH	20.03
7	20	Q16	20850	100	LOW	20.14
7	20	QPSK	21100	1	LOW	20.01
7	20	QPSK	21100	1	MID	19.93
7	20	QPSK	21100	1	HIGH	19.80
7	20	QPSK	21100	50	LOW	19.85
7	20	QPSK	21100	50	HIGH	19.69
7	20	QPSK	21100	100	LOW	19.82
7	20	Q16	21100	1	LOW	20.18
7	20	Q16	21100	1	MID	19.90
7	20	Q16	21100	1	HIGH	19.81
7	20	Q16	21100	75	LOW	19.86
7	20	Q16	21100	75	HIGH	19.76
7	20	Q16	21100	100	LOW	19.83
7	20	QPSK	21350	1	LOW	19.66
7	20	QPSK	21350	1	MID	19.78
7	20	QPSK	21350	1	HIGH	19.66
7	20	QPSK	21350	50	LOW	19.67
7	20	QPSK	21350	50	HIGH	19.66
7	20	QPSK	21350	100	LOW	19.72
7	20	Q16	21350	1	LOW	20.30
7	20	Q16	21350	1	MID	20.35
7	20	Q16	21350	1	HIGH	20.32
7	20	Q16	21350	75	LOW	19.71
7	20	Q16	21350	75	HIGH	19.74
7	20	Q16	21350	100	LOW	19.78
7	15	QPSK	20825	1	LOW	20.09

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7	15	QPSK	20825	1	MID	20.12
7	15	QPSK	20825	1	HIGH	19.89
7	15	QPSK	20825	36	LOW	20.13
7	15	QPSK	20825	36	HIGH	20.02
7	15	QPSK	20825	75	LOW	20.07
7	15	Q16	20825	1	LOW	20.33
7	15	Q16	20825	1	MID	20.35
7	15	Q16	20825	1	HIGH	20.18
7	15	Q16	20825	16	LOW	20.02
7	15	Q16	20825	16	HIGH	19.91
7	15	Q16	20825	75	LOW	20.10
7	15	QPSK	21100	1	LOW	20.03
7	15	QPSK	21100	1	MID	19.84
7	15	QPSK	21100	1	HIGH	19.76
7	15	QPSK	21100	36	LOW	19.84
7	15	QPSK	21100	36	HIGH	19.72
7	15	QPSK	21100	75	LOW	19.71
7	15	Q16	21100	1	LOW	20.37
7	15	Q16	21100	1	MID	20.06
7	15	Q16	21100	1	HIGH	20.00
7	15	Q16	21100	16	LOW	19.90
7	15	Q16	21100	16	HIGH	19.72
7	15	Q16	21100	75	LOW	19.76
7	15	QPSK	21375	1	LOW	19.74
7	15	QPSK	21375	1	MID	19.82
7	15	QPSK	21375	1	HIGH	19.71
7	15	QPSK	21375	36	LOW	19.70
7	15	QPSK	21375	36	HIGH	19.68
7	15	QPSK	21375	75	LOW	19.74
7	15	Q16	21375	1	LOW	20.18
7	15	Q16	21375	1	MID	20.27
7	15	Q16	21375	1	HIGH	20.11
7	15	Q16	21375	16	LOW	19.77
7	15	Q16	21375	16	HIGH	19.72
7	15	Q16	21375	75	LOW	19.78
7	10	QPSK	20800	1	LOW	20.40
7	10	QPSK	20800	1	MID	20.11
7	10	QPSK	20800	1	HIGH	20.14
7	10	QPSK	20800	25	LOW	20.14
7	10	QPSK	20800	25	HIGH	20.20
7	10	QPSK	20800	50	LOW	20.15
7	10	Q16	20800	1	LOW	20.54
7	10	Q16	20800	1	MID	20.37

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7	10	Q16	20800	1	HIGH	20.68
7	10	Q16	20800	30	LOW	20.17
7	10	Q16	20800	30	HIGH	20.16
7	10	Q16	20800	50	LOW	20.20
7	10	QPSK	21100	1	LOW	19.93
7	10	QPSK	21100	1	MID	19.82
7	10	QPSK	21100	1	HIGH	19.91
7	10	QPSK	21100	25	LOW	19.88
7	10	QPSK	21100	25	HIGH	19.76
7	10	QPSK	21100	50	LOW	19.78
7	10	Q16	21100	1	LOW	19.91
7	10	Q16	21100	1	MID	19.83
7	10	Q16	21100	1	HIGH	19.74
7	10	Q16	21100	30	LOW	19.85
7	10	Q16	21100	30	HIGH	19.89
7	10	Q16	21100	50	LOW	19.76
7	10	QPSK	21400	1	LOW	19.90
7	10	QPSK	21400	1	MID	19.82
7	10	QPSK	21400	1	HIGH	19.71
7	10	QPSK	21400	25	LOW	19.69
7	10	QPSK	21400	25	HIGH	19.63
7	10	QPSK	21400	50	LOW	19.65
7	10	Q16	21400	1	LOW	20.40
7	10	Q16	21400	1	MID	20.25
7	10	Q16	21400	1	HIGH	20.23
7	10	Q16	21400	30	LOW	19.70
7	10	Q16	21400	30	HIGH	19.72
7	10	Q16	21400	50	LOW	19.66
7	5	QPSK	20775	1	LOW	20.52
7	5	QPSK	20775	1	MID	20.53
7	5	QPSK	20775	1	HIGH	20.47
7	5	QPSK	20775	10	LOW	20.07
7	5	QPSK	20775	10	HIGH	20.08
7	5	QPSK	20775	25	LOW	20.11
7	5	Q16	20775	1	LOW	20.38
7	5	Q16	20775	1	MID	20.48
7	5	Q16	20775	1	HIGH	20.44
7	5	Q16	20775	8	LOW	20.10
7	5	Q16	20775	8	HIGH	20.14
7	5	Q16	20775	25	LOW	20.11
7	5	QPSK	21100	1	LOW	19.97
7	5	QPSK	21100	1	MID	19.89
7	5	QPSK	21100	1	HIGH	19.96

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7	5	QPSK	21100	10	LOW	19.73
7	5	QPSK	21100	10	HIGH	19.73
7	5	QPSK	21100	25	LOW	19.75
7	5	Q16	21100	1	LOW	20.01
7	5	Q16	21100	1	MID	19.99
7	5	Q16	21100	1	HIGH	19.91
7	5	Q16	21100	8	LOW	19.85
7	5	Q16	21100	8	HIGH	19.77
7	5	Q16	21100	25	LOW	19.78
7	5	QPSK	21425	1	LOW	19.71
7	5	QPSK	21425	1	MID	19.70
7	5	QPSK	21425	1	HIGH	19.68
7	5	QPSK	21425	10	LOW	19.63
7	5	QPSK	21425	10	HIGH	19.64
7	5	QPSK	21425	25	LOW	19.60
7	5	Q16	21425	1	LOW	19.48
7	5	Q16	21425	1	MID	19.44
7	5	Q16	21425	1	HIGH	19.58
7	5	Q16	21425	8	LOW	19.66
7	5	Q16	21425	8	HIGH	19.67
7	5	Q16	21425	25	LOW	19.67

Table 11.1-6b LTE band 7 conducted power measurements for Hotspot mode tested on device model: RHK211LW

Note 1: LTE band 7 is not supported in the United States; however it is supported in Canada and remains in this report for filing to Industry Canada

Note 2: Does not support 20 and 15 MHz Bandwidth

Note 3: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on LTE band 7 was measured using RHK211LW and reused for RHL211LW.

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LTE Band 12						
LTE Band	BW (MHz)	Mod.	Channel	RB#	OFFSET	Max avg. Conducted power (dBm)
12	10	QPSK	23060	1	LOW	23.40
12	10	QPSK	23060	1	MID	23.70
12	10	QPSK	23060	1	HIGH	23.40
12	10	QPSK	23060	25	LOW	22.30
12	10	QPSK	23060	25	HIGH	22.40
12	10	QPSK	23060	50	LOW	22.40
12	10	Q16	23060	1	LOW	23.10
12	10	Q16	23060	1	MID	23.20
12	10	Q16	23060	1	HIGH	23.00
12	10	Q16	23060	30	LOW	21.30
12	10	Q16	23060	30	HIGH	21.30
12	10	Q16	23060	50	LOW	21.40
12	10	QPSK	23095	1	LOW	23.70
12	10	QPSK	23095	1	MID	23.60
12	10	QPSK	23095	1	HIGH	23.60
12	10	QPSK	23095	25	LOW	22.60
12	10	QPSK	23095	25	HIGH	22.60
12	10	QPSK	23095	50	LOW	22.50
12	10	Q16	23095	1	LOW	23.10
12	10	Q16	23095	1	MID	22.90
12	10	Q16	23095	1	HIGH	23.20
12	10	Q16	23095	30	LOW	21.60
12	10	Q16	23095	30	HIGH	21.60
12	10	Q16	23095	50	LOW	21.50
12	10	QPSK	23130	1	LOW	23.80
12	10	QPSK	23130	1	MID	23.80
12	10	QPSK	23130	1	HIGH	23.80
12	10	QPSK	23130	25	LOW	22.50
12	10	QPSK	23130	25	HIGH	22.70
12	10	QPSK	23130	50	LOW	22.60
12	10	Q16	23130	1	LOW	22.50
12	10	Q16	23130	1	MID	22.60

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12	10	Q16	23130	1	HIGH	22.80
12	10	Q16	23130	30	LOW	21.60
12	10	Q16	23130	30	HIGH	21.70
12	10	Q16	23130	50	LOW	21.60
12	5	QPSK	23035	1	LOW	23.50
12	5	QPSK	23035	1	MID	23.70
12	5	QPSK	23035	1	HIGH	23.70
12	5	QPSK	23035	10	LOW	22.30
12	5	QPSK	23035	10	HIGH	22.30
12	5	QPSK	23035	25	LOW	22.30
12	5	Q16	23035	1	LOW	22.80
12	5	Q16	23035	1	MID	23.00
12	5	Q16	23035	1	HIGH	22.90
12	5	Q16	23035	8	LOW	22.30
12	5	Q16	23035	8	HIGH	22.30
12	5	Q16	23035	25	LOW	21.30
12	5	QPSK	23095	1	LOW	23.80
12	5	QPSK	23095	1	MID	23.70
12	5	QPSK	23095	1	HIGH	23.60
12	5	QPSK	23095	10	LOW	22.60
12	5	QPSK	23095	10	HIGH	22.50
12	5	QPSK	23095	25	LOW	22.50
12	5	Q16	23095	1	LOW	23.00
12	5	Q16	23095	1	MID	22.80
12	5	Q16	23095	1	HIGH	22.60
12	5	Q16	23095	8	LOW	22.60
12	5	Q16	23095	8	HIGH	22.50
12	5	Q16	23095	25	LOW	21.50
12	5	QPSK	23155	1	LOW	23.70
12	5	QPSK	23155	1	MID	23.90
12	5	QPSK	23155	1	HIGH	23.70
12	5	QPSK	23155	10	LOW	22.50
12	5	QPSK	23155	10	HIGH	22.70
12	5	QPSK	23155	25	LOW	22.70
12	5	Q16	23155	1	LOW	22.70
12	5	Q16	23155	1	MID	22.70
12	5	Q16	23155	1	HIGH	22.80
12	5	Q16	23155	8	LOW	22.70

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12	5	Q16	23155	8	HIGH	22.80
12	5	Q16	23155	25	LOW	21.70
12	3	QPSK	23025	1	LOW	23.30
12	3	QPSK	23025	1	MID	23.20
12	3	QPSK	23025	1	HIGH	23.40
12	3	QPSK	23025	6	LOW	22.40
12	3	QPSK	23025	6	HIGH	22.30
12	3	QPSK	23025	15	LOW	22.30
12	3	Q16	23025	1	LOW	22.50
12	3	Q16	23025	1	MID	22.50
12	3	Q16	23025	1	HIGH	22.60
12	3	Q16	23025	4	LOW	22.40
12	3	Q16	23025	4	HIGH	22.30
12	3	Q16	23025	15	LOW	21.30
12	3	QPSK	23095	1	LOW	23.70
12	3	QPSK	23095	1	MID	23.90
12	3	QPSK	23095	1	HIGH	23.70
12	3	QPSK	23095	6	LOW	22.50
12	3	QPSK	23095	6	HIGH	22.50
12	3	QPSK	23095	15	LOW	22.50
12	3	Q16	23095	1	LOW	22.80
12	3	Q16	23095	1	MID	22.60
12	3	Q16	23095	1	HIGH	22.80
12	3	Q16	23095	4	LOW	22.70
12	3	Q16	23095	4	HIGH	22.60
12	3	Q16	23095	15	LOW	21.50
12	3	QPSK	23165	1	LOW	23.70
12	3	QPSK	23165	1	MID	23.80
12	3	QPSK	23165	1	HIGH	23.60
12	3	QPSK	23165	6	LOW	22.70
12	3	QPSK	23165	6	HIGH	22.70
12	3	QPSK	23165	15	LOW	22.70
12	3	Q16	23165	1	LOW	23.30
12	3	Q16	23165	1	MID	23.30
12	3	Q16	23165	1	HIGH	23.20
12	3	Q16	23165	4	LOW	22.80
12	3	Q16	23165	4	HIGH	23.10
12	3	Q16	23165	15	LOW	21.80

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12	1.4	QPSK	23080	1	LOW	23.80
12	1.4	QPSK	23080	1	MID	23.60
12	1.4	QPSK	23080	1	HIGH	23.60
12	1.4	QPSK	23080	3	LOW	23.40
12	1.4	QPSK	23080	3	HIGH	23.40
12	1.4	QPSK	23080	6	LOW	22.30
12	1.4	Q16	23080	1	LOW	22.60
12	1.4	Q16	23080	1	MID	22.50
12	1.4	Q16	23080	1	HIGH	22.40
12	1.4	Q16	23080	5	LOW	22.50
12	1.4	Q16	23080	5	HIGH	22.40
12	1.4	Q16	23080	6	LOW	21.40
12	1.4	QPSK	23095	1	LOW	23.40
12	1.4	QPSK	23095	1	MID	23.50
12	1.4	QPSK	23095	1	HIGH	23.50
12	1.4	QPSK	23095	3	LOW	23.60
12	1.4	QPSK	23095	3	HIGH	23.50
12	1.4	QPSK	23095	6	LOW	22.40
12	1.4	Q16	23095	1	LOW	22.60
12	1.4	Q16	23095	1	MID	22.80
12	1.4	Q16	23095	1	HIGH	22.60
12	1.4	Q16	23095	5	LOW	22.50
12	1.4	Q16	23095	5	HIGH	22.60
12	1.4	Q16	23095	6	LOW	21.40
12	1.4	QPSK	23110	1	LOW	23.50
12	1.4	QPSK	23110	1	MID	23.60
12	1.4	QPSK	23110	1	HIGH	23.50
12	1.4	QPSK	23110	3	LOW	23.50
12	1.4	QPSK	23110	3	HIGH	23.40
12	1.4	QPSK	23110	6	LOW	22.40
12	1.4	Q16	23110	1	LOW	22.60
12	1.4	Q16	23110	1	MID	22.60
12	1.4	Q16	23110	1	HIGH	22.40
12	1.4	Q16	23110	5	LOW	22.40
12	1.4	Q16	23110	5	HIGH	22.40
12	1.4	Q16	23110	6	LOW	21.30

Table 11.1-7 LTE band 12 conducted power measurements tested on device model: RHL211LW

Note: Does not support 20 and 15 MHz Bandwidth

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LTE Band 13						
LTE Band	BW (MHz)	Mod.	Channel	RB#	OFFSET	Max avg. Conducted power (dBm)
13	10	QPSK	23230	1	LOW	23.15
13	10	QPSK	23230	1	MID	23.82
13	10	QPSK	23230	1	HIGH	23.54
13	10	QPSK	23230	25	LOW	22.65
13	10	QPSK	23230	25	HIGH	22.68
13	10	QPSK	23230	50	LOW	22.90
13	10	Q16	23230	1	LOW	22.73
13	10	Q16	23230	1	MID	23.47
13	10	Q16	23230	1	HIGH	23.08
13	10	Q16	23230	30	LOW	21.70
13	10	Q16	23230	30	HIGH	21.71
13	10	Q16	23230	50	LOW	21.84
13	10	QPSK	23230	1	LOW	23.13
13	10	QPSK	23230	1	MID	23.80
13	10	QPSK	23230	1	HIGH	23.49
13	10	QPSK	23230	25	LOW	22.67
13	10	QPSK	23230	25	HIGH	22.71
13	10	QPSK	23230	50	LOW	22.88
13	10	Q16	23230	1	LOW	22.69
13	10	Q16	23230	1	MID	23.46
13	10	Q16	23230	1	HIGH	23.05
13	10	Q16	23230	30	LOW	21.75
13	10	Q16	23230	30	HIGH	21.68
13	10	Q16	23230	50	LOW	21.77
13	10	QPSK	23230	1	LOW	23.10
13	10	QPSK	23230	1	MID	23.84
13	10	QPSK	23230	1	HIGH	23.53
13	10	QPSK	23230	25	LOW	22.69
13	10	QPSK	23230	25	HIGH	22.72
13	10	QPSK	23230	50	LOW	22.89
13	10	Q16	23230	1	LOW	22.72
13	10	Q16	23230	1	MID	23.48
13	10	Q16	23230	1	HIGH	23.01

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13	10	Q16	23230	30	LOW	21.76
13	10	Q16	23230	30	HIGH	21.69
13	10	Q16	23230	50	LOW	21.78
13	5	QPSK	23205	1	LOW	22.87
13	5	QPSK	23205	1	MID	23.80
13	5	QPSK	23205	1	HIGH	23.60
13	5	QPSK	23205	10	LOW	22.65
13	5	QPSK	23205	10	HIGH	22.53
13	5	QPSK	23205	25	LOW	22.56
13	5	Q16	23205	1	LOW	22.21
13	5	Q16	23205	1	MID	23.13
13	5	Q16	23205	1	HIGH	22.94
13	5	Q16	23205	8	LOW	22.67
13	5	Q16	23205	8	HIGH	22.47
13	5	Q16	23205	25	LOW	21.57
13	5	QPSK	23230	1	LOW	23.76
13	5	QPSK	23230	1	MID	23.78
13	5	QPSK	23230	1	HIGH	23.90
13	5	QPSK	23230	10	LOW	22.60
13	5	QPSK	23230	10	HIGH	22.68
13	5	QPSK	23230	25	LOW	22.72
13	5	Q16	23230	1	LOW	22.78
13	5	Q16	23230	1	MID	22.84
13	5	Q16	23230	1	HIGH	22.99
13	5	Q16	23230	8	LOW	22.57
13	5	Q16	23230	8	HIGH	22.65
13	5	Q16	23230	25	LOW	21.75
13	5	QPSK	23255	1	LOW	23.75
13	5	QPSK	23255	1	MID	24.09
13	5	QPSK	23255	1	HIGH	23.58
13	5	QPSK	23255	10	LOW	22.63
13	5	QPSK	23255	10	HIGH	22.69
13	5	QPSK	23255	25	LOW	22.73
13	5	Q16	23255	1	LOW	22.91
13	5	Q16	23255	1	MID	22.75
13	5	Q16	23255	1	HIGH	22.65
13	5	Q16	23255	8	LOW	22.77
13	5	Q16	23255	8	HIGH	22.88

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13	5	Q16	23255	25	LOW	21.77
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Table 11.1-8 LTE band 13 conducted power measurements tested on device model: RHL211LW

Note: Does not support 20, 15, 3, and 1.4 MHz Bandwidth

LTE Band 17						
LTE Band	BW (MHz)	Mod.	Channel	RB#	OFFSET	Max avg. Conducted power (dBm)
17	10	QPSK	23780	1	LOW	23.71
17	10	QPSK	23780	1	MID	23.60
17	10	QPSK	23780	1	HIGH	23.56
17	10	QPSK	23780	25	LOW	22.53
17	10	QPSK	23780	25	HIGH	22.58
17	10	QPSK	23780	50	LOW	22.59
17	10	Q16	23780	1	LOW	23.24
17	10	Q16	23780	1	MID	22.77
17	10	Q16	23780	1	HIGH	23.24
17	10	Q16	23780	30	LOW	21.64
17	10	Q16	23780	30	HIGH	21.58
17	10	Q16	23780	50	LOW	21.60
17	10	QPSK	23790	1	LOW	23.92
17	10	QPSK	23790	1	MID	23.67
17	10	QPSK	23790	1	HIGH	23.78
17	10	QPSK	23790	25	LOW	22.60
17	10	QPSK	23790	25	HIGH	22.54
17	10	QPSK	23790	50	LOW	22.53
17	10	Q16	23790	1	LOW	22.53
17	10	Q16	23790	1	MID	22.47
17	10	Q16	23790	1	HIGH	22.56
17	10	Q16	23790	30	LOW	21.52
17	10	Q16	23790	30	HIGH	21.63
17	10	Q16	23790	50	LOW	21.55
17	10	QPSK	23800	1	LOW	23.67
17	10	QPSK	23800	1	MID	23.65
17	10	QPSK	23800	1	HIGH	23.66
17	10	QPSK	23800	25	LOW	22.50

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17	10	QPSK	23800	25	HIGH	22.56
17	10	QPSK	23800	50	LOW	22.64
17	10	Q16	23800	1	LOW	23.30
17	10	Q16	23800	1	MID	23.20
17	10	Q16	23800	1	HIGH	23.33
17	10	Q16	23800	30	LOW	21.57
17	10	Q16	23800	30	HIGH	21.52
17	10	Q16	23800	50	LOW	21.61
17	5	QPSK	23755	1	LOW	23.83
17	5	QPSK	23755	1	MID	23.88
17	5	QPSK	23755	1	HIGH	23.73
17	5	QPSK	23755	10	LOW	22.60
17	5	QPSK	23755	10	HIGH	22.47
17	5	QPSK	23755	25	LOW	22.59
17	5	Q16	23755	1	LOW	23.07
17	5	Q16	23755	1	MID	23.14
17	5	Q16	23755	1	HIGH	22.97
17	5	Q16	23755	8	LOW	22.56
17	5	Q16	23755	8	HIGH	22.54
17	5	Q16	23755	25	LOW	21.59
17	5	QPSK	23790	1	LOW	23.57
17	5	QPSK	23790	1	MID	23.68
17	5	QPSK	23790	1	HIGH	23.73
17	5	QPSK	23790	10	LOW	22.47
17	5	QPSK	23790	10	HIGH	22.47
17	5	QPSK	23790	25	LOW	22.54
17	5	Q16	23790	1	LOW	22.71
17	5	Q16	23790	1	MID	22.79
17	5	Q16	23790	1	HIGH	22.75
17	5	Q16	23790	8	LOW	22.49
17	5	Q16	23790	8	HIGH	22.49
17	5	Q16	23790	25	LOW	21.53
17	5	QPSK	23825	1	LOW	23.60
17	5	QPSK	23825	1	MID	23.92
17	5	QPSK	23825	1	HIGH	23.74
17	5	QPSK	23825	10	LOW	22.53
17	5	QPSK	23825	10	HIGH	22.57
17	5	QPSK	23825	25	LOW	22.58

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17	5	Q16	23825	1	LOW	22.70
17	5	Q16	23825	1	MID	22.64
17	5	Q16	23825	1	HIGH	22.94
17	5	Q16	23825	8	LOW	22.55
17	5	Q16	23825	8	HIGH	22.67
17	5	Q16	23825	25	LOW	21.60

Table 11.1-9 LTE band 17 conducted power measurements tested on device model: RHL211LW

Note: Does not support 20, 15, 3, and 1.4 MHz Bandwidth

LTE Band 25 Normal Mode						
LTE Band	BW (MHz)	Mod.	Channel	RB#	OFFSET	Max avg. Conducted power (dBm)
25	20	QPSK	26140	1	LOW	23.40
25	20	QPSK	26140	1	MID	23.30
25	20	QPSK	26140	1	HIGH	23.30
25	20	QPSK	26140	50	LOW	22.20
25	20	QPSK	26140	50	HIGH	22.10
25	20	QPSK	26140	100	LOW	22.20
25	20	Q16	26140	1	LOW	22.40
25	20	Q16	26140	1	MID	22.40
25	20	Q16	26140	1	HIGH	22.40
25	20	Q16	26140	75	LOW	21.20
25	20	Q16	26140	75	HIGH	21.20
25	20	Q16	26140	100	LOW	21.20
25	20	QPSK	26365	1	LOW	23.30
25	20	QPSK	26365	1	MID	23.30
25	20	QPSK	26365	1	HIGH	23.20
25	20	QPSK	26365	50	LOW	22.10
25	20	QPSK	26365	50	HIGH	22.20
25	20	QPSK	26365	100	LOW	22.10
25	20	Q16	26365	1	LOW	22.50
25	20	Q16	26365	1	MID	22.30
25	20	Q16	26365	1	HIGH	22.40
25	20	Q16	26365	75	LOW	21.10
25	20	Q16	26365	75	HIGH	21.20

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25	20	Q16	26365	100	LOW	21.10
25	20	QPSK	26590	1	LOW	23.20
25	20	QPSK	26590	1	MID	23.00
25	20	QPSK	26590	1	HIGH	23.00
25	20	QPSK	26590	50	LOW	21.90
25	20	QPSK	26590	50	HIGH	22.00
25	20	QPSK	26590	100	LOW	21.90
25	20	Q16	26590	1	LOW	22.50
25	20	Q16	26590	1	MID	22.50
25	20	Q16	26590	1	HIGH	22.50
25	20	Q16	26590	75	LOW	21.00
25	20	Q16	26590	75	HIGH	20.90
25	20	Q16	26590	100	LOW	21.00
25	15	QPSK	26115	1	LOW	23.20
25	15	QPSK	26115	1	MID	23.10
25	15	QPSK	26115	1	HIGH	23.10
25	15	QPSK	26115	36	LOW	22.20
25	15	QPSK	26115	36	HIGH	22.10
25	15	QPSK	26115	75	LOW	22.20
25	15	Q16	26115	1	LOW	22.40
25	15	Q16	26115	1	MID	22.20
25	15	Q16	26115	1	HIGH	22.30
25	15	Q16	26115	16	LOW	22.10
25	15	Q16	26115	16	HIGH	22.10
25	15	Q16	26115	75	LOW	21.20
25	15	QPSK	26365	1	LOW	23.40
25	15	QPSK	26365	1	MID	23.20
25	15	QPSK	26365	1	HIGH	23.40
25	15	QPSK	26365	36	LOW	22.10
25	15	QPSK	26365	36	HIGH	22.20
25	15	QPSK	26365	75	LOW	22.10
25	15	Q16	26365	1	LOW	22.60
25	15	Q16	26365	1	MID	22.40
25	15	Q16	26365	1	HIGH	22.60
25	15	Q16	26365	16	LOW	22.10
25	15	Q16	26365	16	HIGH	22.30
25	15	Q16	26365	75	LOW	21.10
25	15	QPSK	26615	1	LOW	23.00

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25	15	QPSK	26615	1	MID	23.00
25	15	QPSK	26615	1	HIGH	22.90
25	15	QPSK	26615	36	LOW	21.80
25	15	QPSK	26615	36	HIGH	21.90
25	15	QPSK	26615	75	LOW	22.00
25	15	Q16	26615	1	LOW	22.60
25	15	Q16	26615	1	MID	22.40
25	15	Q16	26615	1	HIGH	22.50
25	15	Q16	26615	16	LOW	22.00
25	15	Q16	26615	16	HIGH	21.90
25	15	Q16	26615	75	LOW	21.00
25	10	QPSK	26090	1	LOW	23.00
25	10	QPSK	26090	1	MID	23.10
25	10	QPSK	26090	1	HIGH	23.20
25	10	QPSK	26090	25	LOW	22.00
25	10	QPSK	26090	25	HIGH	22.00
25	10	QPSK	26090	50	LOW	22.00
25	10	Q16	26090	1	LOW	22.30
25	10	Q16	26090	1	MID	22.30
25	10	Q16	26090	1	HIGH	22.80
25	10	Q16	26090	30	LOW	21.10
25	10	Q16	26090	30	HIGH	21.10
25	10	Q16	26090	50	LOW	21.00
25	10	QPSK	26365	1	LOW	23.30
25	10	QPSK	26365	1	MID	23.20
25	10	QPSK	26365	1	HIGH	23.20
25	10	QPSK	26365	25	LOW	21.90
25	10	QPSK	26365	25	HIGH	21.90
25	10	QPSK	26365	50	LOW	21.90
25	10	Q16	26365	1	LOW	22.00
25	10	Q16	26365	1	MID	21.90
25	10	Q16	26365	1	HIGH	22.00
25	10	Q16	26365	30	LOW	21.00
25	10	Q16	26365	30	HIGH	21.10
25	10	Q16	26365	50	LOW	21.00
25	10	QPSK	26640	1	LOW	23.00
25	10	QPSK	26640	1	MID	22.80
25	10	QPSK	26640	1	HIGH	22.80

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25	10	QPSK	26640	25	LOW	21.80
25	10	QPSK	26640	25	HIGH	21.60
25	10	QPSK	26640	50	LOW	21.80
25	10	Q16	26640	1	LOW	22.50
25	10	Q16	26640	1	MID	22.40
25	10	Q16	26640	1	HIGH	22.50
25	10	Q16	26640	30	LOW	20.70
25	10	Q16	26640	30	HIGH	20.80
25	10	Q16	26640	50	LOW	20.80
25	5	QPSK	26065	1	LOW	23.10
25	5	QPSK	26065	1	MID	23.20
25	5	QPSK	26065	1	HIGH	23.30
25	5	QPSK	26065	10	LOW	22.00
25	5	QPSK	26065	10	HIGH	22.10
25	5	QPSK	26065	25	LOW	22.00
25	5	Q16	26065	1	LOW	22.50
25	5	Q16	26065	1	MID	22.50
25	5	Q16	26065	1	HIGH	22.60
25	5	Q16	26065	8	LOW	22.00
25	5	Q16	26065	8	HIGH	22.00
25	5	Q16	26065	25	LOW	20.90
25	5	QPSK	26365	1	LOW	23.20
25	5	QPSK	26365	1	MID	23.20
25	5	QPSK	26365	1	HIGH	23.10
25	5	QPSK	26365	10	LOW	21.90
25	5	QPSK	26365	10	HIGH	22.00
25	5	QPSK	26365	25	LOW	22.00
25	5	Q16	26365	1	LOW	22.40
25	5	Q16	26365	1	MID	22.30
25	5	Q16	26365	1	HIGH	22.20
25	5	Q16	26365	8	LOW	22.00
25	5	Q16	26365	8	HIGH	22.00
25	5	Q16	26365	25	LOW	21.00
25	5	QPSK	26665	1	LOW	23.00
25	5	QPSK	26665	1	MID	23.00
25	5	QPSK	26665	1	HIGH	22.90
25	5	QPSK	26665	10	LOW	21.70
25	5	QPSK	26665	10	HIGH	21.70

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25	5	QPSK	26665	25	LOW	21.70
25	5	Q16	26665	1	LOW	21.90
25	5	Q16	26665	1	MID	21.70
25	5	Q16	26665	1	HIGH	21.90
25	5	Q16	26665	8	LOW	21.80
25	5	Q16	26665	8	HIGH	21.80
25	5	Q16	26665	25	LOW	20.80
25	3	QPSK	26055	1	LOW	23.10
25	3	QPSK	26055	1	MID	23.00
25	3	QPSK	26055	1	HIGH	23.10
25	3	QPSK	26055	6	LOW	22.10
25	3	QPSK	26055	6	HIGH	22.00
25	3	QPSK	26055	15	LOW	22.00
25	3	Q16	26055	1	LOW	22.30
25	3	Q16	26055	1	MID	22.40
25	3	Q16	26055	1	HIGH	22.30
25	3	Q16	26055	4	LOW	22.10
25	3	Q16	26055	4	HIGH	22.20
25	3	Q16	26055	15	LOW	21.00
25	3	QPSK	26365	1	LOW	23.10
25	3	QPSK	26365	1	MID	23.30
25	3	QPSK	26365	1	HIGH	23.00
25	3	QPSK	26365	6	LOW	22.00
25	3	QPSK	26365	6	HIGH	22.00
25	3	QPSK	26365	15	LOW	22.00
25	3	Q16	26365	1	LOW	22.30
25	3	Q16	26365	1	MID	22.10
25	3	Q16	26365	1	HIGH	22.20
25	3	Q16	26365	4	LOW	22.20
25	3	Q16	26365	4	HIGH	22.10
25	3	Q16	26365	15	LOW	21.00
25	3	QPSK	26675	1	LOW	22.80
25	3	QPSK	26675	1	MID	22.80
25	3	QPSK	26675	1	HIGH	22.80
25	3	QPSK	26675	6	LOW	21.70
25	3	QPSK	26675	6	HIGH	21.70
25	3	QPSK	26675	15	LOW	21.70
25	3	Q16	26675	1	LOW	22.40

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25	3	Q16	26675	1	MID	22.30
25	3	Q16	26675	1	HIGH	22.40
25	3	Q16	26675	4	LOW	21.90
25	3	Q16	26675	4	HIGH	22.00
25	3	Q16	26675	15	LOW	20.80
25	1.4	QPSK	26110	1	LOW	23.00
25	1.4	QPSK	26110	1	MID	23.10
25	1.4	QPSK	26110	1	HIGH	23.10
25	1.4	QPSK	26110	3	LOW	23.10
25	1.4	QPSK	26110	3	HIGH	23.10
25	1.4	QPSK	26110	6	LOW	22.00
25	1.4	Q16	26110	1	LOW	22.20
25	1.4	Q16	26110	1	MID	22.50
25	1.4	Q16	26110	1	HIGH	22.20
25	1.4	Q16	26110	5	LOW	22.00
25	1.4	Q16	26110	5	HIGH	22.10
25	1.4	Q16	26110	6	LOW	21.00
25	1.4	QPSK	26365	1	LOW	23.10
25	1.4	QPSK	26365	1	MID	23.10
25	1.4	QPSK	26365	1	HIGH	23.10
25	1.4	QPSK	26365	3	LOW	22.90
25	1.4	QPSK	26365	3	HIGH	23.00
25	1.4	QPSK	26365	6	LOW	21.90
25	1.4	Q16	26365	1	LOW	22.00
25	1.4	Q16	26365	1	MID	22.10
25	1.4	Q16	26365	1	HIGH	22.00
25	1.4	Q16	26365	5	LOW	21.90
25	1.4	Q16	26365	5	HIGH	21.90
25	1.4	Q16	26365	6	LOW	20.80
25	1.4	QPSK	26620	1	LOW	23.00
25	1.4	QPSK	26620	1	MID	22.90
25	1.4	QPSK	26620	1	HIGH	23.00
25	1.4	QPSK	26620	3	LOW	22.90
25	1.4	QPSK	26620	3	HIGH	22.80
25	1.4	QPSK	26620	6	LOW	21.80
25	1.4	Q16	26620	1	LOW	22.00
25	1.4	Q16	26620	1	MID	22.00
25	1.4	Q16	26620	1	HIGH	22.00

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25	1.4	Q16	26620	5	LOW	21.80
25	1.4	Q16	26620	5	HIGH	21.80
25	1.4	Q16	26620	6	LOW	20.80

**Table 11.1-10a LTE band 25 conducted power measurements for normal mode tested on device
model: RHL211LW**

LTE Band 25 For Hotspot						
LTE Band	BW (MHz)	Mod.	Channel	RB #	OFFSET	Max avg. conducted power (dBm)
25	20	QPSK	26140	1	LOW	20.21
25	20	QPSK	26140	1	MID	20.30
25	20	QPSK	26140	1	HIGH	20.13
25	20	QPSK	26140	50	LOW	20.18
25	20	QPSK	26140	50	HIGH	20.19
25	20	QPSK	26140	100	LOW	20.20
25	20	Q16	26140	1	LOW	20.40
25	20	Q16	26140	1	MID	20.36
25	20	Q16	26140	1	HIGH	20.33
25	20	Q16	26140	75	LOW	20.25
25	20	Q16	26140	75	HIGH	20.22
25	20	Q16	26140	100	LOW	20.24
25	20	QPSK	26365	1	LOW	20.35
25	20	QPSK	26365	1	MID	20.24
25	20	QPSK	26365	1	HIGH	20.28
25	20	QPSK	26365	50	LOW	20.12
25	20	QPSK	26365	50	HIGH	20.20
25	20	QPSK	26365	100	LOW	20.15
25	20	Q16	26365	1	LOW	20.12
25	20	Q16	26365	1	MID	20.00
25	20	Q16	26365	1	HIGH	20.10
25	20	Q16	26365	75	LOW	20.16
25	20	Q16	26365	75	HIGH	20.18
25	20	Q16	26365	100	LOW	20.18
25	20	QPSK	26590	1	LOW	20.16

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Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

25	20	QPSK	26590	1	MID	20.09
25	20	QPSK	26590	1	HIGH	19.98
25	20	QPSK	26590	50	LOW	19.93
25	20	QPSK	26590	50	HIGH	20.01
25	20	QPSK	26590	100	LOW	19.95
25	20	Q16	26590	1	LOW	20.30
25	20	Q16	26590	1	MID	20.32
25	20	Q16	26590	1	HIGH	20.14
25	20	Q16	26590	75	LOW	20.02
25	20	Q16	26590	75	HIGH	20.01
25	20	Q16	26590	100	LOW	19.95
25	15	QPSK	26115	1	LOW	20.23
25	15	QPSK	26115	1	MID	20.19
25	15	QPSK	26115	1	HIGH	20.18
25	15	QPSK	26115	36	LOW	20.17
25	15	QPSK	26115	36	HIGH	20.11
25	15	QPSK	26115	75	LOW	20.24
25	15	Q16	26115	1	LOW	20.04
25	15	Q16	26115	1	MID	20.00
25	15	Q16	26115	1	HIGH	20.00
25	15	Q16	26115	16	LOW	20.23
25	15	Q16	26115	16	HIGH	20.17
25	15	Q16	26115	75	LOW	20.24
25	15	QPSK	26365	1	LOW	20.30
25	15	QPSK	26365	1	MID	20.08
25	15	QPSK	26365	1	HIGH	20.21
25	15	QPSK	26365	36	LOW	20.08
25	15	QPSK	26365	36	HIGH	20.20
25	15	QPSK	26365	75	LOW	20.16
25	15	Q16	26365	1	LOW	20.46
25	15	Q16	26365	1	MID	20.44
25	15	Q16	26365	1	HIGH	20.58
25	15	Q16	26365	16	LOW	20.05
25	15	Q16	26365	16	HIGH	20.27
25	15	Q16	26365	75	LOW	20.19
25	15	QPSK	26615	1	LOW	20.15
25	15	QPSK	26615	1	MID	20.10
25	15	QPSK	26615	1	HIGH	19.94

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25	15	QPSK	26615	36	LOW	19.89
25	15	QPSK	26615	36	HIGH	19.93
25	15	QPSK	26615	75	LOW	20.03
25	15	Q16	26615	1	LOW	20.38
25	15	Q16	26615	1	MID	20.42
25	15	Q16	26615	1	HIGH	20.34
25	15	Q16	26615	16	LOW	19.93
25	15	Q16	26615	16	HIGH	19.88
25	15	Q16	26615	75	LOW	20.04
25	10	QPSK	26090	1	LOW	20.21
25	10	QPSK	26090	1	MID	20.18
25	10	QPSK	26090	1	HIGH	20.22
25	10	QPSK	26090	25	LOW	19.97
25	10	QPSK	26090	25	HIGH	20.01
25	10	QPSK	26090	50	LOW	20.04
25	10	Q16	26090	1	LOW	20.26
25	10	Q16	26090	1	MID	19.98
25	10	Q16	26090	1	HIGH	20.34
25	10	Q16	26090	30	LOW	20.11
25	10	Q16	26090	30	HIGH	20.16
25	10	Q16	26090	50	LOW	20.20
25	10	QPSK	26365	1	LOW	20.23
25	10	QPSK	26365	1	MID	20.15
25	10	QPSK	26365	1	HIGH	20.26
25	10	QPSK	26365	25	LOW	20.04
25	10	QPSK	26365	25	HIGH	19.97
25	10	QPSK	26365	50	LOW	20.04
25	10	Q16	26365	1	LOW	20.24
25	10	Q16	26365	1	MID	20.20
25	10	Q16	26365	1	HIGH	20.26
25	10	Q16	26365	30	LOW	19.93
25	10	Q16	26365	30	HIGH	20.05
25	10	Q16	26365	50	LOW	19.99
25	10	QPSK	26640	1	LOW	20.04
25	10	QPSK	26640	1	MID	19.97
25	10	QPSK	26640	1	HIGH	19.96
25	10	QPSK	26640	25	LOW	19.77
25	10	QPSK	26640	25	HIGH	19.67

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25	10	QPSK	26640	50	LOW	19.82
25	10	Q16	26640	1	LOW	20.33
25	10	Q16	26640	1	MID	20.54
25	10	Q16	26640	1	HIGH	20.30
25	10	Q16	26640	30	LOW	19.74
25	10	Q16	26640	30	HIGH	19.69
25	10	Q16	26640	50	LOW	19.77
25	5	QPSK	26065	1	LOW	20.19
25	5	QPSK	26065	1	MID	20.09
25	5	QPSK	26065	1	HIGH	20.13
25	5	QPSK	26065	10	LOW	19.98
25	5	QPSK	26065	10	HIGH	20.07
25	5	QPSK	26065	25	LOW	19.93
25	5	Q16	26065	1	LOW	20.30
25	5	Q16	26065	1	MID	20.18
25	5	Q16	26065	1	HIGH	20.25
25	5	Q16	26065	8	LOW	19.98
25	5	Q16	26065	8	HIGH	20.03
25	5	Q16	26065	25	LOW	19.94
25	5	QPSK	26365	1	LOW	20.23
25	5	QPSK	26365	1	MID	20.15
25	5	QPSK	26365	1	HIGH	20.22
25	5	QPSK	26365	10	LOW	19.96
25	5	QPSK	26365	10	HIGH	20.02
25	5	QPSK	26365	25	LOW	19.97
25	5	Q16	26365	1	LOW	20.22
25	5	Q16	26365	1	MID	20.15
25	5	Q16	26365	1	HIGH	20.14
25	5	Q16	26365	8	LOW	20.06
25	5	Q16	26365	8	HIGH	20.09
25	5	Q16	26365	25	LOW	19.96
25	5	QPSK	26665	1	LOW	19.86
25	5	QPSK	26665	1	MID	19.87
25	5	QPSK	26665	1	HIGH	19.88
25	5	QPSK	26665	10	LOW	19.71
25	5	QPSK	26665	10	HIGH	19.72
25	5	QPSK	26665	25	LOW	19.69
25	5	Q16	26665	1	LOW	20.04

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25	5	Q16	26665	1	MID	19.91
25	5	Q16	26665	1	HIGH	20.09
25	5	Q16	26665	8	LOW	19.76
25	5	Q16	26665	8	HIGH	19.76
25	5	Q16	26665	25	LOW	19.73
25	3	QPSK	26055	1	LOW	20.07
25	3	QPSK	26055	1	MID	20.15
25	3	QPSK	26055	1	HIGH	20.09
25	3	QPSK	26055	6	LOW	20.13
25	3	QPSK	26055	6	HIGH	20.04
25	3	QPSK	26055	15	LOW	20.01
25	3	Q16	26055	1	LOW	19.89
25	3	Q16	26055	1	MID	19.97
25	3	Q16	26055	1	HIGH	20.03
25	3	Q16	26055	4	LOW	20.07
25	3	Q16	26055	4	HIGH	20.16
25	3	Q16	26055	15	LOW	20.08
25	3	QPSK	26365	1	LOW	19.95
25	3	QPSK	26365	1	MID	20.28
25	3	QPSK	26365	1	HIGH	20.03
25	3	QPSK	26365	6	LOW	20.01
25	3	QPSK	26365	6	HIGH	19.97
25	3	QPSK	26365	15	LOW	19.95
25	3	Q16	26365	1	LOW	20.28
25	3	Q16	26365	1	MID	20.15
25	3	Q16	26365	1	HIGH	20.30
25	3	Q16	26365	4	LOW	20.21
25	3	Q16	26365	4	HIGH	20.07
25	3	Q16	26365	15	LOW	19.99
25	3	QPSK	26675	1	LOW	19.86
25	3	QPSK	26675	1	MID	19.96
25	3	QPSK	26675	1	HIGH	19.91
25	3	QPSK	26675	6	LOW	19.64
25	3	QPSK	26675	6	HIGH	19.70
25	3	QPSK	26675	15	LOW	19.79
25	3	Q16	26675	1	LOW	20.26
25	3	Q16	26675	1	MID	20.14
25	3	Q16	26675	1	HIGH	20.35

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25	3	Q16	26675	4	LOW	19.85
25	3	Q16	26675	4	HIGH	19.91
25	3	Q16	26675	15	LOW	19.76

Table 11.1-10b LTE band 25 conducted power measurements for Hotspot mode tested on device model: RHL211LW

LTE Band 28						
LTE Band	BW (MHz)	Mod.	Channel	RB#	OFFSET	Max avg. Conducted power (dBm)
28	20	QPSK	27310	1	LOW	23.56
28	20	QPSK	27310	1	MID	23.63
28	20	QPSK	27310	1	HIGH	23.62
28	20	QPSK	27310	50	LOW	22.63
28	20	QPSK	27310	50	HIGH	22.48
28	20	QPSK	27310	100	LOW	22.58
28	20	Q16	27310	1	LOW	22.93
28	20	Q16	27310	1	MID	22.75
28	20	Q16	27310	1	HIGH	22.85
28	20	Q16	27310	75	LOW	21.54
28	20	Q16	27310	75	HIGH	21.53
28	20	Q16	27310	100	LOW	21.58
28	20	QPSK	27435	1	LOW	23.29
28	20	QPSK	27435	1	MID	23.56
28	20	QPSK	27435	1	HIGH	23.54
28	20	QPSK	27435	50	LOW	22.66
28	20	QPSK	27435	50	HIGH	22.57
28	20	QPSK	27435	100	LOW	22.74
28	20	Q16	27435	1	LOW	22.91
28	20	Q16	27435	1	MID	23.07
28	20	Q16	27435	1	HIGH	23.06
28	20	Q16	27435	75	LOW	21.58
28	20	Q16	27435	75	HIGH	21.47
28	20	Q16	27435	100	LOW	21.64
28	20	QPSK	27560	1	LOW	23.66
28	20	QPSK	27560	1	MID	23.72

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28	20	QPSK	27560	1	HIGH	23.72
28	20	QPSK	27560	50	LOW	22.59
28	20	QPSK	27560	50	HIGH	22.57
28	20	QPSK	27560	100	LOW	22.62
28	20	Q16	27560	1	LOW	22.81
28	20	Q16	27560	1	MID	23.01
28	20	Q16	27560	1	HIGH	22.88
28	20	Q16	27560	75	LOW	21.55
28	20	Q16	27560	75	HIGH	21.69
28	20	Q16	27560	100	LOW	21.59
28	15	QPSK	27285	1	LOW	23.34
28	15	QPSK	27285	1	MID	23.48
28	15	QPSK	27285	1	HIGH	23.28
28	15	QPSK	27285	36	LOW	22.53
28	15	QPSK	27285	36	HIGH	22.39
28	15	QPSK	27285	75	LOW	22.46
28	15	Q16	27285	1	LOW	22.60
28	15	Q16	27285	1	MID	22.83
28	15	Q16	27285	1	HIGH	22.54
28	15	Q16	27285	16	LOW	22.48
28	15	Q16	27285	16	HIGH	22.34
28	15	Q16	27285	75	LOW	21.50
28	15	QPSK	27435	1	LOW	23.65
28	15	QPSK	27435	1	MID	23.57
28	15	QPSK	27435	1	HIGH	23.55
28	15	QPSK	27435	36	LOW	22.59
28	15	QPSK	27435	36	HIGH	22.46
28	15	QPSK	27435	75	LOW	22.48
28	15	Q16	27435	1	LOW	23.01
28	15	Q16	27435	1	MID	22.86
28	15	Q16	27435	1	HIGH	22.90
28	15	Q16	27435	16	LOW	22.70
28	15	Q16	27435	16	HIGH	22.52
28	15	Q16	27435	75	LOW	21.45
28	15	QPSK	27585	1	LOW	23.49
28	15	QPSK	27585	1	MID	23.55
28	15	QPSK	27585	1	HIGH	23.49
28	15	QPSK	27585	36	LOW	22.57

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28	15	QPSK	27585	36	HIGH	22.57
28	15	QPSK	27585	75	LOW	22.52
28	15	Q16	27585	1	LOW	23.24
28	15	Q16	27585	1	MID	23.05
28	15	Q16	27585	1	HIGH	23.22
28	15	Q16	27585	16	LOW	22.66
28	15	Q16	27585	16	HIGH	22.70
28	15	Q16	27585	75	LOW	21.58
28	10	QPSK	27260	1	LOW	23.47
28	10	QPSK	27260	1	MID	23.45
28	10	QPSK	27260	1	HIGH	23.48
28	10	QPSK	27260	25	LOW	22.52
28	10	QPSK	27260	25	HIGH	22.44
28	10	QPSK	27260	50	LOW	22.49
28	10	Q16	27260	1	LOW	22.48
28	10	Q16	27260	1	MID	22.80
28	10	Q16	27260	1	HIGH	23.01
28	10	Q16	27260	30	LOW	21.47
28	10	Q16	27260	30	HIGH	21.51
28	10	Q16	27260	50	LOW	21.47
28	10	QPSK	27435	1	LOW	23.73
28	10	QPSK	27435	1	MID	23.64
28	10	QPSK	27435	1	HIGH	23.69
28	10	QPSK	27435	25	LOW	22.39
28	10	QPSK	27435	25	HIGH	22.35
28	10	QPSK	27435	50	LOW	22.42
28	10	Q16	27435	1	LOW	22.45
28	10	Q16	27435	1	MID	22.50
28	10	Q16	27435	1	HIGH	22.40
28	10	Q16	27435	30	LOW	21.42
28	10	Q16	27435	30	HIGH	21.42
28	10	Q16	27435	50	LOW	21.35
28	10	QPSK	27610	1	LOW	23.58
28	10	QPSK	27610	1	MID	23.66
28	10	QPSK	27610	1	HIGH	23.59
28	10	QPSK	27610	25	LOW	22.50
28	10	QPSK	27610	25	HIGH	22.43
28	10	QPSK	27610	50	LOW	22.54

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28	10	Q16	27610	1	LOW	23.23
28	10	Q16	27610	1	MID	23.33
28	10	Q16	27610	1	HIGH	23.40
28	10	Q16	27610	30	LOW	21.48
28	10	Q16	27610	30	HIGH	21.48
28	10	Q16	27610	50	LOW	21.53
28	5	QPSK	27235	1	LOW	23.56
28	5	QPSK	27235	1	MID	23.71
28	5	QPSK	27235	1	HIGH	23.55
28	5	QPSK	27235	10	LOW	22.48
28	5	QPSK	27235	10	HIGH	22.48
28	5	QPSK	27235	25	LOW	22.43
28	5	Q16	27235	1	LOW	22.94
28	5	Q16	27235	1	MID	23.12
28	5	Q16	27235	1	HIGH	23.03
28	5	Q16	27235	8	LOW	22.43
28	5	Q16	27235	8	HIGH	22.47
28	5	Q16	27235	25	LOW	21.45
28	5	QPSK	27435	1	LOW	23.44
28	5	QPSK	27435	1	MID	23.65
28	5	QPSK	27435	1	HIGH	23.50
28	5	QPSK	27435	10	LOW	22.40
28	5	QPSK	27435	10	HIGH	22.25
28	5	QPSK	27435	25	LOW	22.32
28	5	Q16	27435	1	LOW	22.61
28	5	Q16	27435	1	MID	22.61
28	5	Q16	27435	1	HIGH	22.50
28	5	Q16	27435	8	LOW	22.41
28	5	Q16	27435	8	HIGH	22.37
28	5	Q16	27435	25	LOW	21.25
28	5	QPSK	27635	1	LOW	23.57
28	5	QPSK	27635	1	MID	23.84
28	5	QPSK	27635	1	HIGH	23.62
28	5	QPSK	27635	10	LOW	22.47
28	5	QPSK	27635	10	HIGH	22.51
28	5	QPSK	27635	25	LOW	22.48
28	5	Q16	27635	1	LOW	22.67
28	5	Q16	27635	1	MID	22.55

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28	5	Q16	27635	1	HIGH	22.72
28	5	Q16	27635	8	LOW	22.53
28	5	Q16	27635	8	HIGH	22.62
28	5	Q16	27635	25	LOW	21.52
28	3	QPSK	27225	1	LOW	23.21
28	3	QPSK	27225	1	MID	23.52
28	3	QPSK	27225	1	HIGH	23.53
28	3	QPSK	27225	6	LOW	22.42
28	3	QPSK	27225	6	HIGH	22.48
28	3	QPSK	27225	15	LOW	22.58
28	3	Q16	27225	1	LOW	22.46
28	3	Q16	27225	1	MID	22.87
28	3	Q16	27225	1	HIGH	22.79
28	3	Q16	27225	4	LOW	22.40
28	3	Q16	27225	4	HIGH	22.65
28	3	Q16	27225	15	LOW	21.53
28	3	QPSK	27435	1	LOW	23.53
28	3	QPSK	27435	1	MID	23.56
28	3	QPSK	27435	1	HIGH	23.46
28	3	QPSK	27435	6	LOW	22.30
28	3	QPSK	27435	6	HIGH	22.35
28	3	QPSK	27435	15	LOW	22.33
28	3	Q16	27435	1	LOW	22.76
28	3	Q16	27435	1	MID	22.53
28	3	Q16	27435	1	HIGH	22.67
28	3	Q16	27435	4	LOW	22.49
28	3	Q16	27435	4	HIGH	22.48
28	3	Q16	27435	15	LOW	21.34
28	3	QPSK	27645	1	LOW	23.42
28	3	QPSK	27645	1	MID	23.51
28	3	QPSK	27645	1	HIGH	23.58
28	3	QPSK	27645	6	LOW	22.50
28	3	QPSK	27645	6	HIGH	22.57
28	3	QPSK	27645	15	LOW	22.52
28	3	Q16	27645	1	LOW	23.21
28	3	Q16	27645	1	MID	23.12
28	3	Q16	27645	1	HIGH	23.35
28	3	Q16	27645	4	LOW	22.89

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Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

28	3	Q16	27645	4	HIGH	22.89
28	3	Q16	27645	15	LOW	21.54

**Table 11.1-11 LTE band 28 conducted power measurements for Hotspot mode tested on device
model: RHL211LW**

Note: Does not support 1.4 MHz Bandwidth

LTE Band 30 For Normal Mode						
LTE Band	BW (MHz)	Mod.	Channel	RB #	OFFSET	Max avg. conducted power (dBm)
30	10	QPSK	27710	1	LOW	22.89
30	10	QPSK	27710	1	MID	23.03
30	10	QPSK	27710	1	HIGH	22.96
30	10	QPSK	27710	25	LOW	21.78
30	10	QPSK	27710	25	HIGH	21.88
30	10	QPSK	27710	50	LOW	21.90
30	10	Q16	27710	1	LOW	22.56
30	10	Q16	27710	1	MID	22.78
30	10	Q16	27710	1	HIGH	22.76
30	10	Q16	27710	30	LOW	20.77
30	10	Q16	27710	30	HIGH	20.99
30	10	Q16	27710	50	LOW	20.94
30	10	QPSK	27710	1	LOW	22.96
30	10	QPSK	27710	1	MID	22.99
30	10	QPSK	27710	1	HIGH	22.94
30	10	QPSK	27710	25	LOW	21.77
30	10	QPSK	27710	25	HIGH	21.89
30	10	QPSK	27710	50	LOW	21.89
30	10	Q16	27710	1	LOW	22.53
30	10	Q16	27710	1	MID	22.90
30	10	Q16	27710	1	HIGH	22.66
30	10	Q16	27710	30	LOW	20.78
30	10	Q16	27710	30	HIGH	20.90
30	10	Q16	27710	50	LOW	20.97
30	10	QPSK	27710	1	LOW	22.96

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30	10	QPSK	27710	1	MID	23.05
30	10	QPSK	27710	1	HIGH	22.94
30	10	QPSK	27710	25	LOW	21.79
30	10	QPSK	27710	25	HIGH	21.90
30	10	QPSK	27710	50	LOW	21.93
30	10	Q16	27710	1	LOW	22.63
30	10	Q16	27710	1	MID	22.86
30	10	Q16	27710	1	HIGH	22.67
30	10	Q16	27710	30	LOW	20.78
30	10	Q16	27710	30	HIGH	20.88
30	10	Q16	27710	50	LOW	20.97
30	5	QPSK	27685	1	LOW	23.02
30	5	QPSK	27685	1	MID	23.00
30	5	QPSK	27685	1	HIGH	22.98
30	5	QPSK	27685	10	LOW	21.73
30	5	QPSK	27685	10	HIGH	21.81
30	5	QPSK	27685	25	LOW	21.77
30	5	Q16	27685	1	LOW	22.33
30	5	Q16	27685	1	MID	22.28
30	5	Q16	27685	1	HIGH	22.23
30	5	Q16	27685	8	LOW	21.75
30	5	Q16	27685	8	HIGH	21.80
30	5	Q16	27685	25	LOW	20.81
30	5	QPSK	27710	1	LOW	22.92
30	5	QPSK	27710	1	MID	23.10
30	5	QPSK	27710	1	HIGH	23.02
30	5	QPSK	27710	10	LOW	21.80
30	5	QPSK	27710	10	HIGH	21.85
30	5	QPSK	27710	25	LOW	21.84
30	5	Q16	27710	1	LOW	22.08
30	5	Q16	27710	1	MID	22.14
30	5	Q16	27710	1	HIGH	22.00
30	5	Q16	27710	8	LOW	21.78
30	5	Q16	27710	8	HIGH	21.89
30	5	Q16	27710	25	LOW	20.85
30	5	QPSK	27735	1	LOW	22.98
30	5	QPSK	27735	1	MID	23.26
30	5	QPSK	27735	1	HIGH	23.01
30	5	QPSK	27735	10	LOW	21.84
30	5	QPSK	27735	10	HIGH	21.86
30	5	QPSK	27735	25	LOW	21.82
30	5	Q16	27735	1	LOW	22.09
30	5	Q16	27735	1	MID	21.98

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30	5	Q16	27735	1	HIGH	22.15
30	5	Q16	27735	8	LOW	21.93
30	5	Q16	27735	8	HIGH	21.99
30	5	Q16	27735	25	LOW	20.90

**Table 11.1-12a LTE band 30 conducted power measurements for normal mode tested on device
model: RHL211LW**

Note 1: Does not support 20, 15, 3, 1.4 MHz Bandwidth

Note 2: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on LTE band 30 was measured using RHL211LW and reused for RHL211LW.

LTE Band 30 For Hotspot						
LTE Band	BW (MHz)	Mod.	Channel	RB #	OFFSET	Max avg. conducted power (dBm)
30	10	QPSK	27710	1	LOW	19.84
30	10	QPSK	27710	1	MID	19.99
30	10	QPSK	27710	1	HIGH	19.93
30	10	QPSK	27710	25	LOW	19.78
30	10	QPSK	27710	25	HIGH	19.94
30	10	QPSK	27710	50	LOW	19.93
30	10	Q16	27710	1	LOW	20.59
30	10	Q16	27710	1	MID	20.64
30	10	Q16	27710	1	HIGH	20.64
30	10	Q16	27710	30	LOW	19.82
30	10	Q16	27710	30	HIGH	19.99
30	10	Q16	27710	50	LOW	19.95
30	10	QPSK	27710	1	LOW	19.89
30	10	QPSK	27710	1	MID	20.02
30	10	QPSK	27710	1	HIGH	19.95
30	10	QPSK	27710	25	LOW	19.81
30	10	QPSK	27710	25	HIGH	19.96
30	10	QPSK	27710	50	LOW	19.94
30	10	Q16	27710	1	LOW	20.62
30	10	Q16	27710	1	MID	20.76
30	10	Q16	27710	1	HIGH	20.69
30	10	Q16	27710	30	LOW	19.86
30	10	Q16	27710	30	HIGH	19.97
30	10	Q16	27710	50	LOW	19.98
30	10	QPSK	27710	1	LOW	19.92

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Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

30	10	QPSK	27710	1	MID	20.09
30	10	QPSK	27710	1	HIGH	20.00
30	10	QPSK	27710	25	LOW	19.82
30	10	QPSK	27710	25	HIGH	19.99
30	10	QPSK	27710	50	LOW	20.04
30	10	Q16	27710	1	LOW	20.68
30	10	Q16	27710	1	MID	20.70
30	10	Q16	27710	1	HIGH	20.57
30	10	Q16	27710	30	LOW	19.77
30	10	Q16	27710	30	HIGH	19.92
30	10	Q16	27710	50	LOW	19.89
30	5	QPSK	27685	1	LOW	19.99
30	5	QPSK	27685	1	MID	19.99
30	5	QPSK	27685	1	HIGH	19.95
30	5	QPSK	27685	10	LOW	19.78
30	5	QPSK	27685	10	HIGH	19.85
30	5	QPSK	27685	25	LOW	19.86
30	5	Q16	27685	1	LOW	20.40
30	5	Q16	27685	1	MID	20.34
30	5	Q16	27685	1	HIGH	20.29
30	5	Q16	27685	8	LOW	19.69
30	5	Q16	27685	8	HIGH	19.80
30	5	Q16	27685	25	LOW	19.81
30	5	QPSK	27710	1	LOW	19.99
30	5	QPSK	27710	1	MID	20.17
30	5	QPSK	27710	1	HIGH	20.09
30	5	QPSK	27710	10	LOW	19.86
30	5	QPSK	27710	10	HIGH	19.91
30	5	QPSK	27710	25	LOW	19.95
30	5	Q16	27710	1	LOW	20.16
30	5	Q16	27710	1	MID	20.14
30	5	Q16	27710	1	HIGH	20.01
30	5	Q16	27710	8	LOW	19.84
30	5	Q16	27710	8	HIGH	19.90
30	5	Q16	27710	25	LOW	19.89
30	5	QPSK	27735	1	LOW	19.93
30	5	QPSK	27735	1	MID	20.11
30	5	QPSK	27735	1	HIGH	20.00
30	5	QPSK	27735	10	LOW	19.76
30	5	QPSK	27735	10	HIGH	19.82
30	5	QPSK	27735	25	LOW	19.81
30	5	Q16	27735	1	LOW	19.97
30	5	Q16	27735	1	MID	19.96

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30	5	Q16	27735	1	HIGH	20.08
30	5	Q16	27735	8	LOW	19.82
30	5	Q16	27735	8	HIGH	19.97
30	5	Q16	27735	25	LOW	19.93

Table 11.1-12b LTE band 30 conducted power measurements for Hotspot mode tested on device model: RHL211LW

Note 1: Does not support 20, 15, 3, 1.4 MHz Bandwidth

Note 2: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on LTE band 30 was measured using RHL211LW and reused for RHL211LW.

LTE Band 41 for Normal Mode						
LTE Band	BW (MHz)	Mod.	Channel	RB #	OFFSET	Max avg. conducted power (dBm)
41	20	QPSK	39750	1	LOW	22.58
41	20	QPSK	39750	1	MID	22.61
41	20	QPSK	39750	1	HIGH	22.99
41	20	QPSK	39750	50	LOW	22.20
41	20	QPSK	39750	50	HIGH	22.06
41	20	QPSK	39750	100	LOW	21.90
41	20	Q16	39750	1	LOW	21.46
41	20	Q16	39750	1	MID	21.53
41	20	Q16	39750	1	HIGH	21.92
41	20	Q16	39750	75	LOW	20.59
41	20	Q16	39750	75	HIGH	20.59
41	20	Q16	39750	100	LOW	21.05
41	20	QPSK	40185	1	LOW	23.19
41	20	QPSK	40185	1	MID	22.50
41	20	QPSK	40185	1	HIGH	23.36
41	20	QPSK	40185	50	LOW	21.95
41	20	QPSK	40185	50	HIGH	22.00
41	20	QPSK	40185	100	LOW	21.96
41	20	Q16	40185	1	LOW	21.89
41	20	Q16	40185	1	MID	21.19
41	20	Q16	40185	1	HIGH	22.09

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41	20	Q16	40185	75	LOW	20.50
41	20	Q16	40185	75	HIGH	20.43
41	20	Q16	40185	100	LOW	20.97
41	20	QPSK	40620	1	LOW	23.69
41	20	QPSK	40620	1	MID	22.80
41	20	QPSK	40620	1	HIGH	23.54
41	20	QPSK	40620	50	LOW	22.36
41	20	QPSK	40620	50	HIGH	22.27
41	20	QPSK	40620	100	LOW	22.33
41	20	Q16	40620	1	LOW	22.81
41	20	Q16	40620	1	MID	21.93
41	20	Q16	40620	1	HIGH	22.71
41	20	Q16	40620	75	LOW	21.07
41	20	Q16	40620	75	HIGH	21.04
41	20	Q16	40620	100	LOW	21.46
41	20	QPSK	41055	1	LOW	23.39
41	20	QPSK	41055	1	MID	22.61
41	20	QPSK	41055	1	HIGH	22.90
41	20	QPSK	41055	50	LOW	22.16
41	20	QPSK	41055	50	HIGH	21.92
41	20	QPSK	41055	100	LOW	22.16
41	20	Q16	41055	1	LOW	22.32
41	20	Q16	41055	1	MID	21.58
41	20	Q16	41055	1	HIGH	21.87
41	20	Q16	41055	75	LOW	20.79
41	20	Q16	41055	75	HIGH	20.62
41	20	Q16	41055	100	LOW	21.09
41	20	QPSK	41490	1	LOW	22.63
41	20	QPSK	41490	1	MID	22.33
41	20	QPSK	41490	1	HIGH	21.70
41	20	QPSK	41490	50	LOW	21.66
41	20	QPSK	41490	50	HIGH	21.37
41	20	QPSK	41490	100	LOW	21.52
41	20	Q16	41490	1	LOW	21.33
41	20	Q16	41490	1	MID	21.05
41	20	Q16	41490	1	HIGH	20.42
41	20	Q16	41490	75	LOW	20.56
41	20	Q16	41490	75	HIGH	20.50

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41	20	Q16	41490	100	LOW	20.69
41	15	QPSK	39750	1	LOW	23.10
41	15	QPSK	39750	1	MID	22.72
41	15	QPSK	39750	1	HIGH	23.04
41	15	QPSK	39750	36	LOW	21.79
41	15	QPSK	39750	36	HIGH	21.71
41	15	QPSK	39750	75	LOW	21.70
41	15	Q16	39750	1	LOW	22.01
41	15	Q16	39750	1	MID	21.65
41	15	Q16	39750	1	HIGH	22.04
41	15	Q16	39750	16	LOW	22.45
41	15	Q16	39750	16	HIGH	22.09
41	15	Q16	39750	75	LOW	20.68
41	15	QPSK	40185	1	LOW	23.21
41	15	QPSK	40185	1	MID	22.48
41	15	QPSK	40185	1	HIGH	23.30
41	15	QPSK	40185	36	LOW	21.53
41	15	QPSK	40185	36	HIGH	21.60
41	15	QPSK	40185	75	LOW	21.48
41	15	Q16	40185	1	LOW	22.31
41	15	Q16	40185	1	MID	21.57
41	15	Q16	40185	1	HIGH	22.42
41	15	Q16	40185	16	LOW	22.13
41	15	Q16	40185	16	HIGH	22.50
41	15	Q16	40185	75	LOW	20.52
41	15	QPSK	40620	1	LOW	23.66
41	15	QPSK	40620	1	MID	22.75
41	15	QPSK	40620	1	HIGH	23.49
41	15	QPSK	40620	36	LOW	21.92
41	15	QPSK	40620	36	HIGH	21.90
41	15	QPSK	40620	75	LOW	21.85
41	15	Q16	40620	1	LOW	22.97
41	15	Q16	40620	1	MID	22.07
41	15	Q16	40620	1	HIGH	22.85
41	15	Q16	40620	16	LOW	22.87
41	15	Q16	40620	16	HIGH	22.76
41	15	Q16	40620	75	LOW	20.93
41	15	QPSK	41055	1	LOW	23.30

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41	15	QPSK	41055	1	MID	22.56
41	15	QPSK	41055	1	HIGH	22.78
41	15	QPSK	41055	36	LOW	21.85
41	15	QPSK	41055	36	HIGH	21.68
41	15	QPSK	41055	75	LOW	21.79
41	15	Q16	41055	1	LOW	22.30
41	15	Q16	41055	1	MID	21.57
41	15	Q16	41055	1	HIGH	21.81
41	15	Q16	41055	16	LOW	22.46
41	15	Q16	41055	16	HIGH	21.92
41	15	Q16	41055	75	LOW	20.86
41	15	QPSK	41490	1	LOW	22.73
41	15	QPSK	41490	1	MID	22.27
41	15	QPSK	41490	1	HIGH	22.08
41	15	QPSK	41490	36	LOW	21.48
41	15	QPSK	41490	36	HIGH	21.30
41	15	QPSK	41490	75	LOW	21.39
41	15	Q16	41490	1	LOW	21.87
41	15	Q16	41490	1	MID	21.43
41	15	Q16	41490	1	HIGH	21.14
41	15	Q16	41490	16	LOW	21.81
41	15	Q16	41490	16	HIGH	21.42
41	15	Q16	41490	75	LOW	20.38
41	10	QPSK	39750	1	LOW	22.66
41	10	QPSK	39750	1	MID	22.66
41	10	QPSK	39750	1	HIGH	22.45
41	10	QPSK	39750	25	LOW	21.70
41	10	QPSK	39750	25	HIGH	21.62
41	10	QPSK	39750	50	LOW	21.58
41	10	Q16	39750	1	LOW	21.61
41	10	Q16	39750	1	MID	21.61
41	10	Q16	39750	1	HIGH	21.44
41	10	Q16	39750	30	LOW	20.60
41	10	Q16	39750	30	HIGH	20.58
41	10	Q16	39750	50	LOW	20.49
41	10	QPSK	40185	1	LOW	22.30
41	10	QPSK	40185	1	MID	22.47
41	10	QPSK	40185	1	HIGH	22.09

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41	10	QPSK	40185	25	LOW	21.37
41	10	QPSK	40185	25	HIGH	21.32
41	10	QPSK	40185	50	LOW	21.40
41	10	Q16	40185	1	LOW	21.20
41	10	Q16	40185	1	MID	21.37
41	10	Q16	40185	1	HIGH	21.01
41	10	Q16	40185	30	LOW	20.53
41	10	Q16	40185	30	HIGH	20.46
41	10	Q16	40185	50	LOW	20.44
41	10	QPSK	40620	1	LOW	22.63
41	10	QPSK	40620	1	MID	22.72
41	10	QPSK	40620	1	HIGH	22.56
41	10	QPSK	40620	25	LOW	21.88
41	10	QPSK	40620	25	HIGH	21.79
41	10	QPSK	40620	50	LOW	21.78
41	10	Q16	40620	1	LOW	22.01
41	10	Q16	40620	1	MID	22.11
41	10	Q16	40620	1	HIGH	21.92
41	10	Q16	40620	30	LOW	20.86
41	10	Q16	40620	30	HIGH	20.89
41	10	Q16	40620	50	LOW	20.89
41	10	QPSK	41055	1	LOW	22.56
41	10	QPSK	41055	1	MID	22.62
41	10	QPSK	41055	1	HIGH	22.27
41	10	QPSK	41055	25	LOW	21.76
41	10	QPSK	41055	25	HIGH	21.54
41	10	QPSK	41055	50	LOW	21.48
41	10	Q16	41055	1	LOW	21.53
41	10	Q16	41055	1	MID	21.52
41	10	Q16	41055	1	HIGH	21.19
41	10	Q16	41055	30	LOW	20.75
41	10	Q16	41055	30	HIGH	20.60
41	10	Q16	41055	50	LOW	20.55
41	10	QPSK	41490	1	LOW	22.15
41	10	QPSK	41490	1	MID	22.32
41	10	QPSK	41490	1	HIGH	21.82
41	10	QPSK	41490	25	LOW	21.40
41	10	QPSK	41490	25	HIGH	21.22

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41	10	QPSK	41490	50	LOW	21.26
41	10	Q16	41490	1	LOW	21.06
41	10	Q16	41490	1	MID	21.27
41	10	Q16	41490	1	HIGH	20.72
41	10	Q16	41490	30	LOW	20.50
41	10	Q16	41490	30	HIGH	20.43
41	10	Q16	41490	50	LOW	20.37
41	5	QPSK	39750	1	LOW	22.51
41	5	QPSK	39750	1	MID	22.66
41	5	QPSK	39750	1	HIGH	22.53
41	5	QPSK	39750	10	LOW	21.55
41	5	QPSK	39750	10	HIGH	21.53
41	5	QPSK	39750	25	LOW	21.67
41	5	Q16	39750	1	LOW	21.46
41	5	Q16	39750	1	MID	21.64
41	5	Q16	39750	1	HIGH	21.51
41	5	Q16	39750	8	LOW	21.71
41	5	Q16	39750	8	HIGH	21.75
41	5	Q16	39750	25	LOW	20.67
41	5	QPSK	40185	1	LOW	22.41
41	5	QPSK	40185	1	MID	22.46
41	5	QPSK	40185	1	HIGH	22.21
41	5	QPSK	40185	10	LOW	21.43
41	5	QPSK	40185	10	HIGH	21.41
41	5	QPSK	40185	25	LOW	21.46
41	5	Q16	40185	1	LOW	21.45
41	5	Q16	40185	1	MID	21.49
41	5	Q16	40185	1	HIGH	21.28
41	5	Q16	40185	8	LOW	21.59
41	5	Q16	40185	8	HIGH	21.49
41	5	Q16	40185	25	LOW	20.49
41	5	QPSK	40620	1	LOW	22.78
41	5	QPSK	40620	1	MID	22.80
41	5	QPSK	40620	1	HIGH	22.72
41	5	QPSK	40620	10	LOW	21.78
41	5	QPSK	40620	10	HIGH	21.80
41	5	QPSK	40620	25	LOW	21.83
41	5	Q16	40620	1	LOW	21.67

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41	5	Q16	40620	1	MID	21.79
41	5	Q16	40620	1	HIGH	21.66
41	5	Q16	40620	8	LOW	21.93
41	5	Q16	40620	8	HIGH	21.94
41	5	Q16	40620	25	LOW	20.87
41	5	QPSK	41055	1	LOW	22.48
41	5	QPSK	41055	1	MID	22.63
41	5	QPSK	41055	1	HIGH	22.38
41	5	QPSK	41055	10	LOW	21.77
41	5	QPSK	41055	10	HIGH	21.50
41	5	QPSK	41055	25	LOW	21.64
41	5	Q16	41055	1	LOW	21.41
41	5	Q16	41055	1	MID	21.49
41	5	Q16	41055	1	HIGH	21.35
41	5	Q16	41055	8	LOW	21.66
41	5	Q16	41055	8	HIGH	21.56
41	5	Q16	41055	25	LOW	20.70
41	5	QPSK	41490	1	LOW	22.17
41	5	QPSK	41490	1	MID	22.30
41	5	QPSK	41490	1	HIGH	22.04
41	5	QPSK	41490	10	LOW	21.34
41	5	QPSK	41490	10	HIGH	21.31
41	5	QPSK	41490	25	LOW	21.45
41	5	Q16	41490	1	LOW	21.24
41	5	Q16	41490	1	MID	21.40
41	5	Q16	41490	1	HIGH	21.17
41	5	Q16	41490	8	LOW	21.46
41	5	Q16	41490	8	HIGH	21.35
41	5	Q16	41490	25	LOW	20.50

Table 11.1-13a LTE band 41 conducted power measurements for Normal mode tested on device model: RHL211LW

Note: Does not support 3, 1.4 MHz Bandwidth

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LTE Band 41 for Hotspot Mode						
LTE Band	BW (MHz)	Mod.	Channel	RB #	OFFSET	Max avg. conducted power (dBm)
41	20	QPSK	39750	1	LOW	19.63
41	20	QPSK	39750	1	MID	19.64
41	20	QPSK	39750	1	HIGH	19.67
41	20	QPSK	39750	50	LOW	19.57
41	20	QPSK	39750	50	HIGH	19.72
41	20	QPSK	39750	100	LOW	19.82
41	20	Q16	39750	1	LOW	19.98
41	20	Q16	39750	1	MID	19.89
41	20	Q16	39750	1	HIGH	19.89
41	20	Q16	39750	75	LOW	19.65
41	20	Q16	39750	75	HIGH	19.77
41	20	Q16	39750	100	LOW	19.79
41	20	QPSK	40185	1	LOW	19.93
41	20	QPSK	40185	1	MID	19.82
41	20	QPSK	40185	1	HIGH	19.93
41	20	QPSK	40185	50	LOW	19.76
41	20	QPSK	40185	50	HIGH	19.79
41	20	QPSK	40185	100	LOW	19.79
41	20	Q16	40185	1	LOW	19.72
41	20	Q16	40185	1	MID	19.97
41	20	Q16	40185	1	HIGH	19.66
41	20	Q16	40185	75	LOW	19.79
41	20	Q16	40185	75	HIGH	19.82
41	20	Q16	40185	100	LOW	19.79
41	20	QPSK	40620	1	LOW	20.40
41	20	QPSK	40620	1	MID	19.83
41	20	QPSK	40620	1	HIGH	20.16
41	20	QPSK	40620	50	LOW	20.13
41	20	QPSK	40620	50	HIGH	20.00
41	20	QPSK	40620	100	LOW	20.06
41	20	Q16	40620	1	LOW	20.24
41	20	Q16	40620	1	MID	19.57
41	20	Q16	40620	1	HIGH	19.94

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41	20	Q16	40620	75	LOW	20.03
41	20	Q16	40620	75	HIGH	19.88
41	20	Q16	40620	100	LOW	20.30
41	20	QPSK	41055	1	LOW	20.16
41	20	QPSK	41055	1	MID	19.51
41	20	QPSK	41055	1	HIGH	19.73
41	20	QPSK	41055	50	LOW	20.12
41	20	QPSK	41055	50	HIGH	19.85
41	20	QPSK	41055	100	LOW	20.00
41	20	Q16	41055	1	LOW	20.66
41	20	Q16	41055	1	MID	19.68
41	20	Q16	41055	1	HIGH	19.89
41	20	Q16	41055	75	LOW	20.00
41	20	Q16	41055	75	HIGH	19.70
41	20	Q16	41055	100	LOW	20.07
41	20	QPSK	41490	1	LOW	20.70
41	20	QPSK	41490	1	MID	20.50
41	20	QPSK	41490	1	HIGH	20.91
41	20	QPSK	41490	50	LOW	20.50
41	20	QPSK	41490	50	HIGH	20.40
41	20	QPSK	41490	100	LOW	20.40
41	20	Q16	41490	1	LOW	20.50
41	20	Q16	41490	1	MID	20.40
41	20	Q16	41490	1	HIGH	20.50
41	20	Q16	41490	75	LOW	20.60
41	20	Q16	41490	75	HIGH	20.40
41	20	Q16	41490	100	LOW	20.40
41	15	QPSK	39750	1	LOW	19.78
41	15	QPSK	39750	1	MID	19.78
41	15	QPSK	39750	1	HIGH	19.91
41	15	QPSK	39750	36	LOW	19.72
41	15	QPSK	39750	36	HIGH	19.78
41	15	QPSK	39750	75	LOW	19.83
41	15	Q16	39750	1	LOW	19.76
41	15	Q16	39750	1	MID	19.78
41	15	Q16	39750	1	HIGH	19.88
41	15	Q16	39750	16	LOW	19.68
41	15	Q16	39750	16	HIGH	19.74

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41	15	Q16	39750	75	LOW	19.83
41	15	QPSK	40185	1	LOW	19.87
41	15	QPSK	40185	1	MID	19.82
41	15	QPSK	40185	1	HIGH	19.78
41	15	QPSK	40185	36	LOW	19.71
41	15	QPSK	40185	36	HIGH	19.90
41	15	QPSK	40185	75	LOW	19.66
41	15	Q16	40185	1	LOW	19.98
41	15	Q16	40185	1	MID	19.92
41	15	Q16	40185	1	HIGH	19.89
41	15	Q16	40185	16	LOW	19.75
41	15	Q16	40185	16	HIGH	19.83
41	15	Q16	40185	75	LOW	19.70
41	15	QPSK	40620	1	LOW	20.36
41	15	QPSK	40620	1	MID	19.87
41	15	QPSK	40620	1	HIGH	20.24
41	15	QPSK	40620	36	LOW	19.98
41	15	QPSK	40620	36	HIGH	19.94
41	15	QPSK	40620	75	LOW	19.87
41	15	Q16	40620	1	LOW	20.83
41	15	Q16	40620	1	MID	20.19
41	15	Q16	40620	1	HIGH	20.65
41	15	Q16	40620	16	LOW	20.54
41	15	Q16	40620	16	HIGH	20.40
41	15	Q16	40620	75	LOW	19.99
41	15	QPSK	41055	1	LOW	20.16
41	15	QPSK	41055	1	MID	19.51
41	15	QPSK	41055	1	HIGH	19.66
41	15	QPSK	41055	36	LOW	19.83
41	15	QPSK	41055	36	HIGH	19.68
41	15	QPSK	41055	75	LOW	19.71
41	15	Q16	41055	1	LOW	20.38
41	15	Q16	41055	1	MID	19.48
41	15	Q16	41055	1	HIGH	19.65
41	15	Q16	41055	16	LOW	20.35
41	15	Q16	41055	16	HIGH	19.75
41	15	Q16	41055	75	LOW	19.76
41	15	QPSK	41490	1	LOW	19.89

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41	15	QPSK	41490	1	MID	19.38
41	15	QPSK	41490	1	HIGH	19.05
41	15	QPSK	41490	36	LOW	19.73
41	15	QPSK	41490	36	HIGH	19.38
41	15	QPSK	41490	75	LOW	19.41
41	15	Q16	41490	1	LOW	19.89
41	15	Q16	41490	1	MID	19.51
41	15	Q16	41490	1	HIGH	19.19
41	15	Q16	41490	16	LOW	19.81
41	15	Q16	41490	16	HIGH	19.46
41	15	Q16	41490	75	LOW	19.47
41	10	QPSK	39750	1	LOW	19.48
41	10	QPSK	39750	1	MID	19.55
41	10	QPSK	39750	1	HIGH	19.17
41	10	QPSK	39750	25	LOW	19.59
41	10	QPSK	39750	25	HIGH	19.48
41	10	QPSK	39750	50	LOW	19.45
41	10	Q16	39750	1	LOW	19.74
41	10	Q16	39750	1	MID	19.81
41	10	Q16	39750	1	HIGH	19.15
41	10	Q16	39750	30	LOW	19.78
41	10	Q16	39750	30	HIGH	19.64
41	10	Q16	39750	50	LOW	19.47
41	10	QPSK	40185	1	LOW	19.33
41	10	QPSK	40185	1	MID	19.32
41	10	QPSK	40185	1	HIGH	18.82
41	10	QPSK	40185	25	LOW	19.36
41	10	QPSK	40185	25	HIGH	19.25
41	10	QPSK	40185	50	LOW	19.37
41	10	Q16	40185	1	LOW	19.07
41	10	Q16	40185	1	MID	19.26
41	10	Q16	40185	1	HIGH	18.74
41	10	Q16	40185	30	LOW	19.50
41	10	Q16	40185	30	HIGH	19.42
41	10	Q16	40185	50	LOW	19.46
41	10	QPSK	40620	1	LOW	19.58
41	10	QPSK	40620	1	MID	19.77
41	10	QPSK	40620	1	HIGH	19.60

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41	10	QPSK	40620	25	LOW	19.74
41	10	QPSK	40620	25	HIGH	19.77
41	10	QPSK	40620	50	LOW	19.76
41	10	Q16	40620	1	LOW	20.00
41	10	Q16	40620	1	MID	20.20
41	10	Q16	40620	1	HIGH	20.02
41	10	Q16	40620	30	LOW	19.89
41	10	Q16	40620	30	HIGH	19.81
41	10	Q16	40620	50	LOW	19.80
41	10	QPSK	41055	1	LOW	19.48
41	10	QPSK	41055	1	MID	19.55
41	10	QPSK	41055	1	HIGH	19.17
41	10	QPSK	41055	25	LOW	19.59
41	10	QPSK	41055	25	HIGH	19.48
41	10	QPSK	41055	50	LOW	19.45
41	10	Q16	41055	1	LOW	19.74
41	10	Q16	41055	1	MID	19.81
41	10	Q16	41055	1	HIGH	19.15
41	10	Q16	41055	30	LOW	19.78
41	10	Q16	41055	30	HIGH	19.64
41	10	Q16	41055	50	LOW	19.47
41	10	QPSK	41490	1	LOW	19.33
41	10	QPSK	41490	1	MID	19.32
41	10	QPSK	41490	1	HIGH	18.82
41	10	QPSK	41490	25	LOW	19.36
41	10	QPSK	41490	25	HIGH	19.25
41	10	QPSK	41490	50	LOW	19.37
41	10	Q16	41490	1	LOW	19.07
41	10	Q16	41490	1	MID	19.26
41	10	Q16	41490	1	HIGH	18.74
41	10	Q16	41490	30	LOW	19.50
41	10	Q16	41490	30	HIGH	19.42
41	10	Q16	41490	50	LOW	19.46
41	5	QPSK	39750	1	LOW	19.45
41	5	QPSK	39750	1	MID	19.59
41	5	QPSK	39750	1	HIGH	19.32
41	5	QPSK	39750	10	LOW	19.68
41	5	QPSK	39750	10	HIGH	19.49

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41	5	QPSK	39750	25	LOW	19.58
41	5	Q16	39750	1	LOW	19.60
41	5	Q16	39750	1	MID	19.73
41	5	Q16	39750	1	HIGH	19.25
41	5	Q16	39750	8	LOW	19.72
41	5	Q16	39750	8	HIGH	19.53
41	5	Q16	39750	25	LOW	19.66
41	5	QPSK	40185	1	LOW	19.16
41	5	QPSK	40185	1	MID	19.26
41	5	QPSK	40185	1	HIGH	19.05
41	5	QPSK	40185	10	LOW	19.36
41	5	QPSK	40185	10	HIGH	19.30
41	5	QPSK	40185	25	LOW	19.41
41	5	Q16	40185	1	LOW	19.28
41	5	Q16	40185	1	MID	19.36
41	5	Q16	40185	1	HIGH	19.21
41	5	Q16	40185	8	LOW	19.41
41	5	Q16	40185	8	HIGH	19.30
41	5	Q16	40185	25	LOW	19.47
41	5	QPSK	40620	1	LOW	19.71
41	5	QPSK	40620	1	MID	19.81
41	5	QPSK	40620	1	HIGH	19.71
41	5	QPSK	40620	10	LOW	19.73
41	5	QPSK	40620	10	HIGH	19.75
41	5	QPSK	40620	25	LOW	19.80
41	5	Q16	40620	1	LOW	19.75
41	5	Q16	40620	1	MID	19.86
41	5	Q16	40620	1	HIGH	19.73
41	5	Q16	40620	8	LOW	20.00
41	5	Q16	40620	8	HIGH	19.96
41	5	Q16	40620	25	LOW	19.79
41	5	QPSK	41055	1	LOW	19.45
41	5	QPSK	41055	1	MID	19.59
41	5	QPSK	41055	1	HIGH	19.32
41	5	QPSK	41055	10	LOW	19.68
41	5	QPSK	41055	10	HIGH	19.49
41	5	QPSK	41055	25	LOW	19.58
41	5	Q16	41055	1	LOW	19.60

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41	5	Q16	41055	1	MID	19.73
41	5	Q16	41055	1	HIGH	19.25
41	5	Q16	41055	8	LOW	19.72
41	5	Q16	41055	8	HIGH	19.53
41	5	Q16	41055	25	LOW	19.66
41	5	QPSK	41490	1	LOW	19.16
41	5	QPSK	41490	1	MID	19.26
41	5	QPSK	41490	1	HIGH	19.05
41	5	QPSK	41490	10	LOW	19.36
41	5	QPSK	41490	10	HIGH	19.30
41	5	QPSK	41490	25	LOW	19.41
41	5	Q16	41490	1	LOW	19.28
41	5	Q16	41490	1	MID	19.36
41	5	Q16	41490	1	HIGH	19.21
41	5	Q16	41490	8	LOW	19.41
41	5	Q16	41490	8	HIGH	19.30
41	5	Q16	41490	25	LOW	19.47

Table 11.1-13b LTE band 41 conducted power measurements for Hotspot mode tested on device model: RHL211LW

Note: Does not support 3, 1.4 MHz Bandwidth

Channel	Freq. (MHz)	Mode	Conducted Avg. Transmit Power (dBm)
0	2402	DH5	5.5
39	2441		7.8
78	2480		5.4
0	2402	2-DH5	3.0
39	2441		4.4
78	2480		1.6
0	2402	3-DH5	3.1
39	2441		4.6
78	2480		1.6

Table 11.1-14 Bluetooth conducted power measurements tested on device model: RHL211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on Bluetooth was measured using RHL211LW and reused for RHL211LW.

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802.11 b/g/n For Normal Mode (Primary Antenna) SISO (Country Code: ALL)												
802.11b												
802.11	Ch.	F (MHz)	Maximum average conducted power (dBm)								Mbit/s Mod.	
			1	2	5.5	11						
			BPSK	DQPSK	CCK	CCK						
B	1	2412	16.8									
	6	2437	17.3									
	11	2462	17.9	18.1	18.0	18.0						
	13	2472	17.2									
802.11g												
802.11	Ch.	F (MHz)	Maximum average conducted power (dBm)									Mbit/s Mod.
			6	9	12	18	24	36	48	54		
			BPSK	BPSK	QPSK	QPSK	16-QAM	16-QAM	64-QAM	64-QAM		
G	1	2412	16.0									
	6	2437	16.2									
	11	2462	16.8	16.8	16.8	16.8		16.1		15.6		
	13	2472	16.2									
802.11n												
802.11	Ch.	F (MHz)	Maximum average conducted power (dBm)									
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
N	1	2412	15.7									
	6	2437	16.3									
	11	2462	16.8	16.7	16.6			15.7		14.3		
	13	2472	16.0									

Table 11.1-15a 802.11 b/g/n modulation type/data rate vs. conducted power on the primary Wi-Fi antenna tested on device model: RHL211LW

Note 1: Since Wi-Fi must be certified for FCC and R&TTE testing was done using the R&TTE conducted power levels. The only difference between the two modes is there is no band edge power reduction for R&TTE, so the SAR measurements done on low and high channel will actually be more conservative.

Note 2: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on 802.11b/g/n was measured using RHL211LW and reused for RHL211LW.

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802.11 b/g/n With Reduced Power For Hotspot/GO Mode (Primary Antenna) SISO (Country Code: ALL)												
802.11b												
802.11	Ch.	F (MHz)	Maximum average conducted power (dBm)									
			1	2	5.5	11	22	Mbit/s				
			BPSK	DQPSK	CCK	CCK	CCK	Mod.				
B	1	2412	10.1		10.2		10.2					
	6	2437	10.2		10.4		10.4					
	11	2462	10.8		10.9		11.0					
	13	2472	10.4		10.6		10.3					
802.11g												
802.11	Ch.	F (MHz)	Maximum average conducted power (dBm)									
			6	9	12	18	24	36	48	54	Mbit/s	
			BPSK	BPSK	QPSK	QPSK	16-QAM	16-QAM	64-QAM	64-QAM	Mod.	
G	1	2412	10.7				10.8			10.7		
	6	2437	11.0				11.0			11.2		
	11	2462	11.3				11.5			11.6		
	13	2472	10.7				11.0			10.9		
802.11n												
802.11	Ch.	F (MHz)	Maximum average conducted power (dBm)									
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
N	1	2412	10.5				10.8			10.5		
	6	2437	11.0				11.3			11.0		
	11	2462	11.2				11.2			11.3		
	13	2472	10.9				11.0			11.0		

Table 11.1-15b 802.11 b/g/n modulation type/data rate vs. conducted power on the primary Wi-Fi antenna for Hotspot mode tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on 802.11b/g/n was measured using RHK211LW and reused for RHL211LW.

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802.11 b/g/n For Normal Mode (Secondary Antenna) SISO (Country Code: ALL)												
802.11b												
802.11	Ch.	F (MHz)	Maximum average conducted power (dBm)									
			1	2	5.5	11		Mbit/s				
			BPSK	DQPSK	CCK	CCK		Mod.				
B	1	2412	17.5	17.5	17.5	17.5						
	6	2437	17.3									
	11	2462	17.3									
	13	2472	16.5									
802.11g												
802.11	Ch.	F (MHz)	Maximum average conducted power (dBm)									
			6	9	12	18	24	36	48	54	Mbit/s	
			BPSK	BPSK	QPSK	QPSK	16-QAM	16-QAM	64-QAM	64-QAM	Mod.	
G	1	2412	16.3									
	6	2437	16.4	16.4	16.4	16.4		15.5		15.0		
	11	2462	16.2									
	13	2472	15.6									
802.11n												
802.11	Ch.	F (MHz)	Maximum average conducted power (dBm)									
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
N	1	2412	16.3									
	6	2437	16.4	16.3	16.2			15.3		13.9		
	11	2462	16.2									
	13	2472	15.3									

Table 11.1-16a 802.11 b/g/n modulation type/data rate vs. conducted power on the secondary Wi-Fi antenna tested on device model: RHK211LW

Note 1: Since Wi-Fi must be certified for FCC and R&TTE testing was done using the R&TTE conducted power levels. The only difference between the two modes is there is no band edge power reduction for R&TTE, so the SAR measurements done on low and high channel will actually be more conservative.

Note 2: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on 802.11b/g/n was measured using RHK211LW and reused for RHL211LW.

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802.11 b/g/n With Reduced Power For Hotspot/GO Mode (Secondary Antenna) SISO (Country Code: ALL)												
802.11b												
802.11	Ch.	F (MHz)	Maximum average conducted power (dBm)									
			1	2	5.5	11	22	Mbit/s				
			BPSK	DQPSK	CCK	CCK	CCK	Mod.				
B	1	2412	10.4									
	6	2437	10.2									
	11	2462	10.5	10.6	10.5	10.6						
	13	2472	9.6									
802.11g												
802.11	Ch.	F (MHz)	Maximum average conducted power (dBm)									
			6	9	12	18	24	36	48	54	Mbit/s	
			BPSK	BPSK	QPSK	QPSK	16-QAM	16-QAM	64-QAM	64-QAM	Mod.	
G	1	2412	10.0	10.0		10.0		10.2		10.3		
	6	2437	10.0									
	11	2462	9.9									
	13	2472	9.2									
802.11n												
802.11	Ch.	F (MHz)	Maximum average conducted power (dBm)									
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
N	1	2412	9.9									
	6	2437	10.3	10.3		10.4		10.4		10.0		
	11	2462	10.2									
	13	2472	9.0									

Table 11.1-16b 802.11 b/g/n modulation type/data rate vs. conducted power on the secondary Wi-Fi antenna for Hotspot mode tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on 802.11b/g/n was measured using RHK211LW and reused for RHL211LW.

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802.11a For Normal Mode (Primary Antenna) SISO (Country Code: ALL)												
802.11a (20 MHz)												
U-NII-	Ch.	F (MHz)	Maximum average conducted power (dBm)									
			6	9	12	18	24	36	48	54	Mbit/s	
			BPSK	BPSK	QPSK	QPSK	16-QAM	16-QAM	64-QAM	64-QAM	Mod.	
1	36	5180	15.0									
	40	5200	15.1									
	44	5220	15.0									
	48	5240	15.3	15.3	15.2	15.2	14.0			14.0		
2	52	5260	15.1									
	56	5280	15.0									
	60	5300	15.0									
	64	5320	15.3	15.2	15.0	15.0	14.1			14.0		
2C	L	100	5500	14.9								
		104	5520	15.0								
		108	5540	15.1								
		112	5560	15.1								
		116	5580	15.2								
		120	5600	15.2								
		124	5620	15.2								
		128	5640	15.4	15.3	15.2	15.2	14.0		14.1		
3	U	132	5660	15.3								
		136	5680	15.3								
		140	5700	15.1								
		144	5720									
		149	5745	15.8								
		153	5765	15.9	15.7	15.7	15.7	14.4		14.3		
		157	5785	15.6								
		161	5805	15.4								
		165	5825	15.3								
802.11n (20 MHz)												
U-NII-	Ch.	F (MHz)	Maximum average conducted power (dBm)									
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
1	48	5240	15.1	15.0	15.1	14.1		13.9		13.3		
2	64	5320	15.0	14.9	14.9	14.1		14.0		13.0		
2C	128	5640	15.3	15.3	15.3	14.1		13.7		13.0		
3	153	5765	15.5	15.5	15.5	14.5		14.0		13.4		
802.11n (40 MHz)												
U-NII-	Ch.	F (MHz)	Maximum average conducted power (dBm)									
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
1	38	5190	15.4									
	46	5230	15.6	15.6	15.7	14.2		14.3		13.6		
2	54	5270	15.3									
	62	5310	15.8	15.7	15.7	14.5		14.4		13.3		
2C	L	102	5510	15.4								
		110	5550	15.4								
		118	5590	15.6								
		126	5630	16.0	15.9	16.0	14.4		14.3		13.4	
	U	134	5670	15.7								

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Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW		

✕	142	5710									
3	151	5755	16.2	16.2	16.4	15.0		14.7		13.9	
	159	5795	16.1								

Table 11.1-17a 802.11 a/n modulation type/data rate vs. conducted power on the primary Wi-Fi antenna tested on device model: RHK211LW

Note 1: Since Wi-Fi must be certified for FCC and R&TTE testing was done using the R&TTE conducted power levels. The only difference between the two modes is there is no band edge power reduction for R&TTE, so the SAR measurements done on low and high channel will actually be more conservative.

Note 2: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on 802.11a/n was measured using RHK211LW and reused for RHL211LW.

802.11a With Reduced Power For Hotspot/GO Mode (Primary Antenna) SISO (Country Code: ALL)											
802.11a (20 MHz)											
U-NII-	Channel	F (MHz)	Maximum average conducted power (dBm)								Mbit/s
			6	9	12	18	24	36	48	54	
			BPSK	BPSK	QPSK	QPSK	16-QAM	16-QAM	64-QAM	64-QAM	
1	36	5180	10.0				10.0			10.0	
	40	5200	10.3				10.3			9.9	
	44	5220	10.3				10.2			10.3	
	48	5240	10.4				10.3			10.4	
3	149	5745	10.7				10.7			10.7	
	153	5765	10.7				10.7			10.5	
	157	5785	10.6				10.6			10.6	
	161	5805	10.5				10.5			10.4	
	165	5825	10.3				10.3			10.3	
802.11n (20 MHz)											
U-NII-	Channel	F (MHz)	Maximum average conducted power (dBm)								
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
1	48	5240	10.5				10.5			10.2	
3	149	5745	10.6				10.6			10.8	
802.11n (40 MHz)											
U-NII-	Channel	F (MHz)	Maximum average conducted power (dBm)								
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
1	38	5190	10.4				10.3			10.4	
	46	5230	10.6				10.6			10.5	
3	151	5755	11.0				10.9			11.0	
	159	5795	10.8				10.8			10.8	

Table 11.1-17b 802.11 a/n modulation type/data rate vs. conducted power on the primary Wi-Fi antenna for Hotspot mode tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on 802.11a/n was measured using RHK211LW and reused for RHL211LW.

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802.11a For Normal Mode (Secondary Antenna) SISO (Country Code: ALL)													
802.11a (20 MHz)													
U-NII-	Channel	F (MHz)	Maximum average conducted power (dBm)										
			6	9	12	18	24	36	48	54	Mbit/s		
			BPSK	BPSK	QPSK	QPSK	16-QAM	16-QAM	64-QAM	64-QAM	Mod.		
1	36	5180	16.6	16.6	16.6	16.6	15.5			15.5			
	40	5200	16.5										
	44	5220	16.4										
	48	5240	16.3										
2	52	5260	15.4										
	56	5280	15.3										
	60	5300	15.4										
	64	5320	15.5	15.5	15.5	15.5	14.5			14.5			
2C	L	100	5500	15.8	15.8	15.8	15.8	14.7			14.7		
		104	5520	15.7									
		108	5540	15.7									
		112	5560	15.4									
		116	5580	15.5									
		120	5600	15.2									
		124	5620	15.1									
		128	5640	14.8									
3	U	132	5660	14.8									
		136	5680	14.5									
		140	5700	14.2									
		144	5720										
		149	5745	15.2	15.2	15.2	15.2	13.9			13.9		
		153	5765	15.0									
		157	5785	15.0									
		161	5805	15.0									
	165	5825	14.9										
802.11n (20 MHz)													
U-NII-	Channel	F (MHz)	Maximum average conducted power (dBm)										
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8		MCS9
1	36	5180	16.6	16.6	16.6	15.5		15.5		14.5			
2	64	5320	15.5	15.5	15.5	14.4		14.3		13.5			
2C	100	5500	15.8	15.8	15.8	14.8		14.8		13.5			
3	149	5745	15.2	15.2	15.2	14.1		14.1		13.0			
802.11n (40 MHz)													
U-NII-	Ch.	F (MHz)	Maximum average conducted power (dBm)										
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8		MCS9
1	38	5190	17.0	17.0	17.0	15.8		15.8		14.8			
	46	5230	17.0	17.0	17.0	15.5		15.7		14.6			
2	54	5270	16.1	16.1	16.1	15.0		15.0		13.8			
	62	5310	16.0										
2C	L	102	5510	16.5	16.5	16.5	15.0		15.0		13.9		
		110	5550	16.3									
		118	5590	16.0									
		126	5630	15.6	15.6	15.6	14.3		14.3		13.4		
3	U	134	5670	15.2									
		142	5710										

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Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4		FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

3	151	5755	15.8	15.8	15.7	14.3		14.3		13.3		
	159	5795	15.4									

Table 11.1-18a 802.11 a/n modulation type/data rate vs. conducted power on the secondary Wi-Fi antenna tested on device model: RHK211LW

Note 1: Since Wi-Fi must be certified for FCC and R&TTE testing was done using the R&TTE conducted power levels. The only difference between the two modes is there is no band edge power reduction for R&TTE, so the SAR measurements done on low and high channel will actually be more conservative.

Note 2: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on 802.11a/n was measured using RHK211LW and reused for RHL211LW.

802.11a With Reduced Power For Hotspot/GO Mode (Secondary Antenna) SISO (Country Code: ALL)											
802.11a (20 MHz)											
U-NII-	Channel	F (MHz)	Maximum average conducted power (dBm)								
			6	9	12	18	24	36	48	54	Mbit/s
			BPSK	BPSK	QPSK	QPSK	16-QAM	16-QAM	64-QAM	64-QAM	Mod.
1	36	5180	11.2				11.2			11.2	
	40	5200	11.1				11.1			11.1	
	44	5220	10.8				10.7			10.8	
	48	5240	10.7				10.6			10.7	
3	149	5745	9.8				9.8			9.6	
	153	5765	9.7				9.5			9.7	
	157	5785	9.5				9.5			9.4	
	161	5805	9.6				9.6			9.3	
	165	5825	9.4				9.3			9.4	
802.11n (20 MHz)											
U-NII-	Channel	F (MHz)	Maximum average conducted power (dBm)								
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
1	36	5180	11.3				11.3			11.1	
3	149	5745	9.9				9.9			9.6	
802.11n (40 MHz)											
U-NII-	Channel	F (MHz)	Maximum average conducted power (dBm)								
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
1	38	5190	11.3				11.0			11.2	
	46	5230	11.1				11.0			11.1	
3	151	5755	10.2				10.2			10.1	
	159	5795	10.0				9.9			9.6	

Table 11.1-18b 802.11 a/n modulation type/data rate vs. conducted power on the secondary Wi-Fi antenna for Hotspot mode tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on 802.11a/n was measured using RHK211LW and reused for RHL211LW.

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802.11ac For Normal Mode (Primary Antenna) SISO (Country Code: ALL)													
802.11ac (20 MHz)													
U-NII-	Ch.	F (MHz)	Maximum average conducted power (dBm)										Band Edge Cut back
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9	
1	36	5180	14.8										
	40	5200	15.0										
	44	5220	15.0										
	48	5240	15.1	15.1	15.1	14.1		13.9		13.3		6.4	
2	52	5260	14.8										
	56	5280	14.9										
	60	5300	14.9										
	64	5320	15.1	15.1	15.0	14.1		14.1		13.1		4.7	
2C	L	100	5500	14.7									
		104	5520	14.9									
		108	5540	15.0									
		112	5560	14.9									
		116	5580	15.0									
		120	5600	15.1									
		124	5620	15.2	15.2	15.2	14.0		13.9		13.1		4.9
		128	5640	15.2									
3	U	132	5660	15.2									
		136	5680	15.2									
		140	5700	15.1									
		144	5720										
		149	5745	15.8	15.8	15.8	14.8		14.5		13.5		5.4
		153	5765	15.8									
		157	5785	15.5									
		161	5805	15.3									
165	5825	15.2											
802.11ac (40 MHz)													
U-NII-	Ch.	F (MHz)	Maximum average conducted power (dBm)										
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9	
1	38	5190	15.4										
	46	5230	15.7	15.6	15.6	14.2		14.3		13.6			12.7
2	54	5270	15.5										
	62	5310	15.7	15.7	15.7	14.4		14.4		13.4			12.5
2C	L	102	5510	15.4									
		110	5550	15.5									
		118	5590	15.9	15.8	15.8	14.4		14.3		13.4		12.5
		126	5630	15.7									
3	U	134	5670	15.9									
		142	5710										
		151	5755	16.3	16.3	16.3	14.8		14.8		14.0		13.0
		159	5795	16.3									
802.11ac (80 MHz)													
U-NII-	Ch.	F (MHz)	Maximum average conducted power (dBm)										
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9	
1	42	5210	14.0	14.0	14.0	13.8		13.8		13.0			11.4
2	58	5290	14.0	14.0	13.9	13.7		13.7		12.8			10.9
2C	106	5530	13.8										

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	122	5610	14.1	14.0	14.0	13.7		13.7		12.8		10.4
	138	5690										
3	155	5775	14.5	14.5	14.5	14.1		14.1		13.3		10.9

Table 11.1-19 802.11 ac modulation type/data rate vs. conducted power on the primary Wi-Fi antenna tested on device model: RHL211LW

Note 1: Since Wi-Fi must be certified for FCC and R&TTE testing was done using the R&TTE conducted power levels. The only difference between the two modes is there is no band edge power reduction for R&TTE, so the SAR measurements done on low and high channel will actually be more conservative.

Note 2: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on 802.11ac was measured using RHL211LW and reused for RHL211LW.

802.11ac For Normal Mode (Secondary Antenna) SISO (Country Code: ALL)														
802.11ac (20 MHz)														
U-NII-	Ch.	F (MHz)	Maximum average conducted power (dBm)										Band Edge Cut back	
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9		
1	36	5180	16.6	16.5	16.5	15.5		15.5		14.6		7.9	13.9	
	40	5200	16.4										13.6	
	44	5220	16.2										13.3	
	48	5240	16.1										13.3	
2	52	5260	15.4										15.1	
	56	5280	15.4										15.2	
	60	5300	15.3										15.2	
	64	5320	15.5	15.5	15.5	14.5		14.5		13.5		5.3	14.4	
2C	L	100	5500	15.9	15.9	15.9	14.5		14.5		13.6		5.5	
		104	5520	15.6										
		108	5540	15.5										
		112	5560	15.3										
		116	5580	15.3										
		120	5600	15.1										
		124	5620	15.1										
		128	5640	14.6										
3	U	132	5660	14.7										
		136	5680	14.4										
		140	5700	14.3										14.0
		144	5720											
		149	5745	15.2	15.2	15.2	14.0		14.1		13.0		5.0	
		153	5765	15.0										
		157	5785	14.7										
		161	5805	14.6										
	165	5825	14.6											
802.11ac (40 MHz)														
U-NII-	Ch.	F (MHz)	Maximum average conducted power (dBm)											
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9		
1	38	5190	17.3	17.3	17.2	16.0		15.7		15.0			14.0	
	46	5230	17.0											
2	54	5270	16.0											
	62	5310	16.1	16.1	16.1	14.9		14.9		13.8			12.9	

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2C	L	102	5510	16.4	16.4	16.5	15.0		15.0		13.8		13.0
		110	5550	16.2									
		118	5590	15.8									
		126	5630	15.5									
	U	134	5670	15.1									
		142	5710										
3		151	5755	15.9	15.8	15.8	14.3		14.3		13.4		12.6
		159	5795	15.8									
802.11ac (80 MHz)													
U-NII-	Ch.	F (MHz)	Maximum average conducted power (dBm)										
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9	
1	42	5210	15.3	15.3	15.2	15.2	15.1	15.2	15.2	14.2	12.8	12.9	
2	58	5290	14.2	14.2		14.2		14.2		13.2	11.4	11.3	
2C	106	5530	14.6	14.6		14.2		14.3		13.2		10.9	
	122	5610	14.0										
	138	5690											
3	155	5775	14.0	13.9		13.7		13.7		12.7		10.6	

Table 11.1-20 802.11 ac modulation type/data rate vs. conducted power on the secondary Wi-Fi antenna tested on device model: RHL211LW

Note 1: Since Wi-Fi must be certified for FCC and R&TTE testing was done using the R&TTE conducted power levels. The only difference between the two modes is there is no band edge power reduction for R&TTE, so the SAR measurements done on low and high channel will actually be more conservative.

Note 2: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW share the same conducted RF circuitry and power level for this band. Due to this conducted power on 802.11ac was measured using RHL211LW and reused for RHL211LW.

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11.2 SAR measurement results at highest power for each exposure condition

Note 1: If the power drift is ≤ -0.200 dB, the extrapolated SAR is calculated using the formula:

$$\text{Extrapolated SAR} = (\text{Measured SAR}) * 10^{(|\text{Power Drift (dB)}| / 10)}$$

Note 2: Only Middle channel was tested when 1g reported SAR ≤ 0.8 W/Kg or 3dB lower than the limit. Low, Middle and High channels were tested on the worst case position regardless of the SAR level.

Note 3a: For KDB Fast SAR a zoom scan is required for each head position with 1g measured SAR ≥ 0.8 W/Kg and one additional zoom scan to cover all the remaining head positions. The scan is done on the worst case for the position(s)

Note 3b: For KDB Fast SAR the technique cannot be utilized when 1g measured SAR ≥ 1.2 W/Kg, an error message occurs, or difference between the zoom and area scan 1g SAR ≥ 0.1 W/kg for that configuration.

Note 4: A 2nd scan is required when 1g measured SAR ≥ 0.8 W/Kg. A 3rd scan is required when the 1g measured SAR ≥ 1.45 W/Kg or the 2nd scan SAR differs more than 20%. A 4th scan is required when the 1g measured SAR ≥ 1.50 W/Kg or the previous measurements differ more than 20%.

Note 5a: For LTE it is only required to test the configuration (channel and offset) yielding the highest conducted power for RB 1 and RB 50% when combined 1g avg. SAR < 0.8 W/Kg or 3dB lower than the limit for both cases. Also, when the highest conducted power for RB 1 and RB 50% are both greater than RB 100%, then SAR testing for RB 100% can be excluded.

Note 5b: For LTE if 1g avg. SAR > 0.8 W/Kg or not at least 3dB lower than the limit, then the remaining channels for that RB number must be tested and one additional scan must be done with RB 100%. For all additional scans the highest conducted power configuration (channel and offset) must be used.

Note 5c: For LTE if SAR ≤ 1.45 , then SAR tests for the smaller bandwidths are not required

Note 5d: For LTE the lower bandwidths are only tested on the cases where the conducted power is 0.5 dB greater than those found on the highest bandwidth or when the reported 1g SAR > 1.45 for the highest bandwidth.

Note 5e: For LTE 16 QAM is only tested on the cases where its conducted power is 0.5 dB greater than QPSK or when the reported 1g SAR > 1.45 for QPSK.

Note 6a: For IEEE 1528 Fast SAR requirements, additional zoom scans/Full SAR measurements are done for all Fast SAR scans that are above the “threshold 1” for that Band. Threshold 1 is determined for each band separately and is based off of the overall maximum Fast SAR value of that band.

Note 6b: For IEEE 1528 Fast SAR requirements, if the overall maximum Full SAR value of a band is below “threshold 2” then no additional zoom scans/Full SAR measurements need to be done on that band. Threshold 2 is based off of the overall maximum Full SAR value of the entire device and does not change like “threshold 1.”

Note 6c: Both thresholds are calculated using the measured SAR to avoid the thresholds changing should target power be changed throughout the testing period.

Note 7: Device was tested with 15 mm BLACKBERRY recommended separation distance to allow typical after-market holster to be used. RIM body-worn holsters with belt-clip have been designed to maintain ~ 20 mm separation distance from body.

Note 8: For Hot Spot mode any side of the phone that is further than 2.5 cm away from the transmitting antenna can be exempted from testing.

Note 9: All LTE TDD SAR measurements were performed with the highest duty cycle and **uplink-downlink configuration 0** with special sub frame configuration 7.

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Measured/Extrapolated SAR Values - Head - LTE Band 12 700 MHz (BW 10 MHz)														
Positio n	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
							Declare d	Measured		Extrapolated		Reported		
										FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
Right Cheek	QPSK	10.0	1	23060	704.0	25	24.0	23.7	0.08	0.202		0.216		
				23095	707.5	0	24.0	23.7	0.01	0.213	0.221	0.228	0.237	
				23130	711.0	0	24.0	23.8	0.02	0.211		0.221		
			25	23060	704.0									
				23095	707.5									
				23130	711.0	25	23.0	22.7	0.09	0.167		0.179		
			50											
Right 15° Tilt	QPSK	10.0	1	23060	704.0									
				23095	707.5									
				23130	711.0	0	24.0	23.8	-0.11	0.147		0.154		
Left Cheek	QPSK	10.0	1	23060	704.0									
				23095	707.5									
				23130	711.0	0	24.0	23.8	0.15	0.186		0.195		
			25	23060	704.0									
				23095	707.5									
				23130	711.0									
			50											
Left 15° Tilt	QPSK	10.0	1	23060	704.0									
				23095	707.5									
				23130	711.0	0	24.0	23.8	-0.03	0.126		0.132		
Slider Open														
Right Cheek	QPSK	10.0	1	23060	704.0									
				23095	707.5									
				23130	711.0	0	24.0	23.8	-0.16	0.125		0.131		
Right 15° Tilt	QPSK	10.0	1	23060	704.0									
				23095	707.5									
				23130	711.0	0	24.0	23.8	0.09	0.066		0.069		
Left Cheek	QPSK	10.0	1	23060	704.0									
				23095	707.5									
				23130	711.0	0	24.0	23.8	0.04	0.120		0.126		
Left 15° Tilt	QPSK	10.0	1	23060	704.0									
				23095	707.5									
				23130	711.0	0	24.0	23.8	0.09	0.062		0.065		

Table 11.2-1a SAR testing results for LTE Band 12 (10MHz BW) head configuration tested on device model: RHL211LW

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Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - LTE Band 12 700 MHz (BW 10 MHz)														
Positio n	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
							Declare d	Measured		Extrapolated		Reported		
										FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
10mm Back	QPSK	10.0	1	23060	704.0	25	24.0	23.7	0.01	0.311		0.333		
				23095	707.5	0	24.0	23.7	-0.01	0.321		0.344		
				23130	711.0	0	24.0	23.8	0.00	0.335	0.334	0.351	0.350	
			25	23060	704.0									
				23095	707.5									
				23130	711.0	25	23.0	22.7	0.04	0.242		0.259		
			50											
10mm Front	QPSK	10.0	1	23060	704.0									
				23095	707.5									
				23130	711.0	0	24.0	23.8	-0.04	0.280		0.293		
10mm Left	QPSK	10.0	1	23060	704.0									
				23095	707.5									
				23130	711.0	0	24.0	23.8	-0.08	0.213		0.223		
10mm Right	QPSK	10.0	1	23060	704.0	25	24.0	23.7	-0.08	0.330		0.354		
				23095	707.5	0	24.0	23.7	-0.09	0.322		0.345		
				23130	711.0	0	24.0	23.8	0.07	0.367	0.368	0.384	0.385	
10mm Bottom	QPSK	10.0	1	23060	704.0									
				23095	707.5									
				23130	711.0	0	24.0	23.8	-0.02	0.244		0.255		
10mm + Headset	QPSK	10.0	1	23060	704.0									
				23095	707.5									
				23130	711.0									
Slider Open														
10mm Back	QPSK	10.0	1	23060	704.0									
				23095	707.5									
				23130	711.0	0	24.0	23.8	-0.10	0.223		0.234		
10mm Front	QPSK	10.0	1	23060	704.0									
				23095	707.5									
				23130	711.0	0	24.0	23.8	0.11	0.212		0.222		

Table 11.2-1b SAR testing results for LTE Band 12 (10MHz BW) hotspot configuration tested on device model: RHL211LW

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Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - LTE Band 12 700 MHz (BW 10 MHz)													
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
							Declared	Measured		Extrapolated		Reported	
										FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed													
15mm Back	QPSK	10.0	1	23060	704.0	25	24.0	23.7	-0.08	0.281		0.301	
				23095	707.5	0	24.0	23.7	0.04	0.289		0.310	
				23130	711.0	0	24.0	23.8	-0.12	0.303	0.302	0.317	0.316
			25	23060	704.0								
				23095	707.5								
				23130	711.0	25	23.0	22.7	0.00	0.223		0.239	
50													
15mm Front	QPSK	10.0	1	23060	704.0								
				23095	707.5								
				23130	711.0	0	24.0	23.8	0.02	0.265		0.277	
Holster Back	QPSK	10.0	1	23060	704.0								
				23095	707.5								
				23130	711.0	0	24.0	23.8	-0.07	0.266		0.279	

Table 11.2-1c SAR testing results for LTE Band 12 (10MHz BW) body-worn configuration tested on device model: RHL211LW

Threshold 1 For This Band: 0.281
 Max FAST SAR For Band: 0.367
 Threshold 2 For All Bands: 0.657
 Max FULL SAR For Band: 0.368
 Additional Full SAR Required: NO

Table 11.2-1d Fast SAR testing thresholds for LTE Band 12

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Measured/Extrapolated SAR Values - Head - LTE Band 17 700 MHz (BW 10 MHz)														
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
							Declared	Measured		Extrapolated		Reported		
										FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
Right Cheek	QPSK	10.0	1	23780	709.0	0	24.0	23.7	0.07	0.209		0.223		
				23790	710.0	0	24.0	23.9	0.03	0.219	0.219	0.223	0.223	
				23800	711.0	0	24.0	23.7	-0.04	0.204		0.220		
			25	23780	709.0									
				23790	710.0	0	23.0	22.6	0.05	0.159		0.174		
				23800	711.0									
			50	23800	711.0	0	23.0	22.6	-0.07	0.156		0.171		
Right 15° Tilt	QPSK	10.0	1	23780	709.0									
				23790	710.0	0	24.0	23.9	-0.01	0.135		0.138		
				23800	711.0									
Left Cheek	QPSK	10.0	1	23780	709.0									
				23790	710.0	0	24.0	23.9	0.00	0.185		0.188		
				23800	711.0									
			25	23780	709.0									
				23790	710.0									
				23800	711.0									
			50											
Left 15° Tilt	QPSK	10.0	1	23780	709.0									
				23790	710.0	0	23.0	22.6	-0.01	0.129		0.141		
				23800	711.0									
Slider Open														
Right Cheek	QPSK	10.0	1	23780	709.0									
				23790	710.0	0	23.0	22.6	0.04	0.131		0.144		
				23800	711.0									
Right 15° Tilt	QPSK	10.0	1	23780	709.0									
				23790	710.0	0	23.0	22.6	0.11	0.074		0.081		
				23800	711.0									
Left Cheek	QPSK	10.0	1	23780	709.0									
				23790	710.0	0	23.0	22.6	0.14	0.132		0.145		
				23800	711.0									
Left 15° Tilt	QPSK	10.0	1	23780	709.0									
				23790	710.0	0	23.0	22.6	0.01	0.068		0.075		
				23800	711.0									

Table 11.2-2a SAR testing results for LTE Band 17 (10MHz BW) head configuration tested on device model: RHL211LW

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Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - LTE Band 17 700 MHz (BW 10 MHz)													
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
							Declared	Measured		Extrapolated		Reported	
										FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed													
10mm Back	QPSK	10.0	1	23780	709.0	0	24.0	23.7	-0.03	0.309		0.330	
				23790	710.0	0	24.0	23.9	-0.11	0.307		0.313	
				23800	711.0	0	24.0	23.7	0.01	0.314	0.317	0.339	0.342
			25	23780	709.0								
				23790	710.0	0	23.0	22.6	0.04	0.223		0.245	
				23800	711.0								
			50	23800	711.0	0	23.0	22.6	-0.02	0.215		0.236	
10mm Front	QPSK	10.0	1	23780	709.0								
				23790	710.0	0	24.0	23.9	0.08	0.285		0.290	
				23800	711.0								
10mm Left	QPSK	10.0	1	23780	709.0	0	24.0	23.7	0.07	0.318		0.340	
				23790	710.0	0	24.0	23.9	0.11	0.344		0.350	
				23800	711.0	0	24.0	23.7	0.08	0.363	0.366	0.392	0.395
10mm Right	QPSK	10.0	1	23780	709.0								
				23790	710.0	0	24.0	23.9	0.05	0.202		0.206	
				23800	711.0								
10mm Bottom	QPSK	10.0	1	23780	709.0								
				23790	710.0	0	24.0	23.9	-0.02	0.231		0.235	
				23800	711.0								
10mm + Headset	QPSK	10.0	1	23780	709.0								
				23790	710.0								
				23800	711.0								
Slider Open													
10mm Back	QPSK	10.0	1	23780	709.0								
				23790	710.0	0	24.0	23.9	-0.10	0.195		0.199	
				23800	711.0								
10mm Front	QPSK	10.0	1	23780	709.0								
				23790	710.0	0	24.0	23.9	0.02	0.197		0.201	
				23800	711.0								

Table 11.2-2b SAR testing results for LTE Band 17 (10MHz BW) hotspot configuration tested on device model: RHL211LW

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Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - LTE Band 17 700 MHz (BW 10 MHz)													
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
							Declared	Measured		Extrapolated		Reported	
										FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed													
15mm Back	QPSK	10.0	1	23780	709.0	0	24.0	23.7	0.00	0.286	0.289	0.306	0.309
				23790	710.0	0	24.0	23.9	-0.04	0.284		0.289	
				23800	711.0	0	24.0	23.7	0.02	0.285		0.307	
			25	23780	709.0								
				23790	710.0	0	23.0	22.6	0.05	0.213		0.234	
				23800	711.0								
			50	23800	711.0	0	23.0	22.6	-0.02	0.200		0.219	
15mm Front	QPSK	10.0	1	23780	709.0								
				23790	710.0	0	24.0	23.9	-0.03	0.235		0.239	
				23800	711.0								
Holster Back	QPSK	10.0	1	23780	709.0								
				23790	710.0	0	24.0	23.9	-0.02	0.234		0.238	
				23800	711.0								

Table 11.2-2c SAR testing results for LTE Band 17 (10MHz BW) body-worn configuration tested on device model: RHL211LW

Threshold 1 For This Band: 0.278
 Max FAST SAR For Band: 0.363
 Threshold 2 For All Bands: 0.657
 Max FULL SAR For Band: 0.366
 Additional Full SAR Required: NO

Table 11.2-2d Fast SAR testing thresholds for LTE Band 17

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 163(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Head - LTE Band 28 700 MHz (BW 20 MHz)														
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
										Extrapolated		Reported		
							Declared	Measured		FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
Right Cheek	QPSK	20.0	1	27310	713.0	50	24.0	23.6	0.04	0.233	0.237	0.254	0.258	
				27435	725.5	50	24.0	23.6	-0.13	0.206		0.228		
				27560	738.0	50	24.0	23.7	0.16	0.182		0.194		
			50	27310	713.0									
				27435	725.5	0	23.0	22.7	0.02	0.178		0.192		
				27560	738.0									
			100	27435	725.5	0	23.0	22.7	0.01	0.167		0.177		
Right 15° Tilt	QPSK	20.0	1	27310	713.0									
				27435	725.5									
				27560	738.0	50	24.0	23.7	0.02	0.144		0.154		
Left Cheek	QPSK	20.0	1	27310	713.0									
				27435	725.5									
				27560	738.0	50	24.0	23.7	0.10	0.171		0.182		
			50	27310	713.0									
				27435	725.5									
				27560	738.0									
			100											
Left 15° Tilt	QPSK	20.0	1	27310	713.0									
				27435	725.5									
				27560	738.0	50	24.0	23.7	-0.08	0.101		0.108		
Slider Open														
Right Cheek	QPSK	20.0	1	27310	713.0									
				27435	725.5									
				27560	738.0	50	24.0	23.7	-0.02	0.130		0.139		
Right 15° Tilt	QPSK	20.0	1	27310	713.0									
				27435	725.5									
				27560	738.0	50	24.0	23.7	-0.12	0.076		0.081		
Left Cheek	QPSK	20.0	1	27310	713.0									
				27435	725.5									
				27560	738.0	50	24.0	23.7	-0.11	0.116		0.124		
Left 15° Tilt	QPSK	20.0	1	27310	713.0									
				27435	725.5									
				27560	738.0	50	24.0	23.7	0.00	0.065		0.069		

Table 11.2-3a SAR testing results for LTE Band 28 (20MHz BW) head configuration tested on device model: RHL211LW

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 164(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - LTE Band 28 700 MHz (BW 20 MHz)														
Positio n	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
							Declare d	Measured		Extrapolated		Reported		
										FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
10mm Back	QPSK	20.0	1	27310	713.0	50	24.0	23.6	0.09	0.317	0.321	0.345	0.350	
				27435	725.5	50	24.0	23.6	0.00	0.303		0.335		
				27560	738.0	50	24.0	23.7	-0.01	0.274		0.292		
			50	27310	713.0									
				27435	725.5	0	23.0	22.7	0.05	0.238		0.257		
				27560	738.0									
100	27435	725.5	0	23.0	22.7	-0.01	0.244		0.259					
	10mm Front	QPSK	20.0	1	27310	713.0								
					27435	725.5								
27560					738.0	50	24.0	23.7	-0.01	0.256		0.273		
10mm Left	QPSK	20.0	1	27310	713.0	50	24.0	23.6	0.10	0.339		0.369		
				27435	725.5	50	24.0	23.6	0.11	0.347	0.347	0.384	0.384	
				27560	738.0	50	24.0	23.7	0.06	0.331		0.353		
10mm Right	QPSK	20.0	1	27310	713.0									
				27435	725.5									
				27560	738.0	50	24.0	23.7	0.08	0.191		0.204		
10mm Bottom	QPSK	20.0	1	27310	713.0									
				27435	725.5									
				27560	738.0	50	24.0	23.7	0.02	0.227		0.242		
10mm + Headset	QPSK	20.0	1	27310	713.0									
				27435	725.5									
				27560	738.0									
Slider Open														
10mm Back	QPSK	20.0	1	27310	713.0									
				27435	725.5									
				27560	738.0	50	24.0	23.7	-0.18	0.242		0.258		
10mm Front	QPSK	20.0	1	27310	713.0									
				27435	725.5									
				27560	738.0	50	24.0	23.7	0.04	0.186		0.198		

Table 11.2-3b SAR testing results for LTE Band 28 (20MHz BW) hotspot configuration tested on device model: RHL211LW

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 165(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - LTE Band 28 700 MHz (BW 20 MHz)													
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
										Extrapolated		Reported	
							Declared	Measured		FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed													
15mm Back	QPSK	20.0	1	27310	713.0	50	24.0	23.6	0.12	0.288		0.314	
				27435	725.5	50	24.0	23.6	-0.03	0.291	0.294	0.322	0.325
				27560	738.0	50	24.0	23.7	-0.01	0.274		0.292	
			50	27310	713.0								
				27435	725.5	0	23.0	22.7	0.00	0.223		0.241	
				27560	738.0								
			100	27435	725.5	0	23.0	22.7	0.01	0.231		0.245	
15mm Front	QPSK	20.0	1	27310	713.0								
				27435	725.5								
				27560	738.0	50	24.0	23.7	0.01	0.259		0.276	
Holster Back	QPSK	20.0	1	27310	713.0								
				27435	725.5								
				27560	738.0	50	24.0	23.7	0.00	0.180		0.192	
Holster Front	QPSK	20.0	1	27310	713.0								
				27435	725.5								
				27560	738.0								
15mm + Headset	QPSK	20.0	1	27310	713.0								
				27435	725.5								
				27560	738.0								

Table 11.2-3c SAR testing results for LTE Band 28 (20MHz BW) body-worn configuration tested on device model: RHL211LW

Threshold 1 For This Band: 0.266
Max FAST SAR For Band: 0.347
Threshold 2 For All Bands: 0.657
Max FULL SAR For Band: 0.347
Additional Full SAR Required: NO

Table 11.2-3d Fast SAR testing thresholds for LTE Band 28

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)				Page 166(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW		

Measured/Extrapolated SAR Values - Head - LTE Band 13 700 MHz (BW 10 MHz)													
Positio n	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
							Declare d	Measured		Extrapolated		Reported	
										FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed													
Right Cheek	QPSK	10.0	1	23230	782.0	25	\$24.0	\$23.8	-0.14	0.173	0.171	0.179	0.177
			25	23230	782.0	25	\$23.0	\$22.7	0.05	0.152		0.162	
			50	23230	782.0	0	\$23.0	\$22.9	0.07	0.147		0.150	
Right 15° Tilt	QPSK	10.0	1	23230	782.0	25	\$24.0	\$23.8	-0.13	0.121		0.126	
Left Cheek	QPSK	10.0	1	23230	782.0	25	\$24.0	\$23.8	-0.01	0.138		0.143	
			25	23230	782.0	25							
			50										
Left 15° Tilt	QPSK	10.0	1	23230	782.0	25	\$24.0	\$23.8	-0.10	0.094		0.098	
Slider Open													
Right Cheek	QPSK	10.0	1										
				23230	782.0	25	\$24.0	\$23.8	-0.07	0.126		0.132	
Right 15° Tilt	QPSK	10.0	1										
				23230	782.0	25	\$24.0	\$23.8	0.00	0.075		0.078	
Left Cheek	QPSK	10.0	1										
				23230	782.0	25	\$24.0	\$23.8	-0.09	0.101		0.106	
Left 15° Tilt	QPSK	10.0	1										
				23230	782.0	25	\$24.0	\$23.8	0.08	0.062		0.064	

Table 11.2-4a SAR testing results for LTE Band 13 (10MHz BW) head configuration tested on device model: RHL211LW

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 167(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - LTE Band 13 700 MHz (BW 10 MHz)														
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
							Declared	Measured		Extrapolated		Reported		
										FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
10mm Back	QPSK	10.0	1											
				23230	782.0	25	\$24.0	\$23.8	-0.03	0.258	0.259	0.268	0.269	
			25	23230	782.0	25	\$23.0	\$22.7	-0.02	0.215		0.229		
				50	23230	782.0	0	\$23.0	\$22.9	0.03	0.202		0.207	
10mm Front	QPSK	10.0	1											
				23230	782.0	25	\$24.0	\$23.8	-0.02	0.248		0.257		
10mm Left	QPSK	10.0	1											
				23230	782.0	25	\$24.0	\$23.8	-0.01	0.214		0.222		
10mm Right	QPSK	10.0	1											
				23230	782.0	25	\$24.0	\$23.8	-0.01	0.389	0.388	0.404	0.403	
10mm Bottom	QPSK	10.0	1											
				23230	782.0	25	\$24.0	\$23.8	-0.08	0.241		0.250		
10mm + Headset	QPSK	10.0	1											
				23230	782.0									
Slider Open														
10mm Back	QPSK	10.0	1											
				23230	782.0	25	\$24.0	\$23.8	-0.01	0.224		0.235		
10mm Front	QPSK	10.0	1											
				23230	782.0	25	\$24.0	\$23.8	-0.01	0.153		0.160		
10mm Left	QPSK	10.0	1											
				23230	782.0									
10mm Right	QPSK	10.0	1											
				23230	782.0	25	\$24.0	\$23.8	0.02	0.194		0.203		

Table 11.2-4b SAR testing results for LTE Band 13 (10MHz BW) hotspot configuration tested on device model: RHL211LW

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)				Page 168(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW		

Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - LTE Band 13 700 MHz (BW 10 MHz)													
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
										Extrapolated		Reported	
							Declared	Measured		FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed													
15mm Back	QPSK	10.0	1										
				23230	782.0	25	\$24.0	\$23.8	-0.02	0.260	0.261	0.270	0.271
			25										
				23230	782.0	25	\$23.0	\$22.7	0.06	0.203		0.217	
50	23230	782.0	0	\$23.0	\$22.9	0.02	0.201		0.206				
15mm Front	QPSK	10.0	1										
				23230	782.0	25	\$24.0	\$23.8	0.00	0.248		0.257	
Holster Back	QPSK	10.0	1										
				23230	782.0	25	\$24.0	\$23.8	-0.02	0.246		0.255	

Table 11.2-4c SAR testing results for LTE Band 13 (10MHz BW) body-worn configuration tested on device model: RHL211LW

Threshold 1 For This Band: 0.298
 Max FAST SAR For Band: 0.389
 Threshold 2 For All Bands: 0.657
 Max FULL SAR For Band: 0.388
 Additional Full SAR Required: NO

Table 11.2-4d Fast SAR testing thresholds for LTE Band 13

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 169(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Head - LTE Band 5 850 MHz (BW 10 MHz)													
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
							Declared	Measured		Extrapolated		Reported	
										FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed													
Right Cheek	QPSK	10.0	1	20450	829.0	0	24.0	23.7	0.15	0.246		0.263	
				20525	836.5	0	24.0	23.8	-0.17	0.261		0.274	
				20600	844.0	25	24.0	23.8	-0.02	0.271	0.273	0.284	0.287
			25	20450	829.0								
				20525	836.5								
				20600	844.0	25	23.0	22.6	-0.18	0.191		0.210	
50	20600	844.0	0	23.0	22.6	-0.08	0.207		0.228				
Right 15° Tilt	QPSK	10.0	1	20450	829.0								
				20525	836.5	0	24.0	23.8	-0.16	0.144		0.151	
				20600	844.0								
Left Cheek	QPSK	10.0	1	20450	829.0								
				20525	836.5	0	24.0	23.8	-0.09	0.213		0.224	
				20600	844.0								
			25	20450	829.0								
				20525	836.5								
				20600	844.0								
50													
Left 15° Tilt	QPSK	10.0	1	20450	829.0								
				20525	836.5	0	24.0	23.8	-0.07	0.125		0.131	
				20600	844.0								
Slider Open													
Right Cheek	QPSK	10.0	1	20450	829.0								
				20525	836.5	0	24.0	23.8	0.12	0.150		0.157	
				20600	844.0								
Right 15° Tilt	QPSK	10.0	1	20450	829.0								
				20525	836.5	0	24.0	23.8	0.01	0.084		0.089	
				20600	844.0								
Left Cheek	QPSK	10.0	1	20450	829.0								
				20525	836.5	0	24.0	23.8	0.17	0.125		0.131	
				20600	844.0								
Left 15° Tilt	QPSK	10.0	1	20450	829.0								
				20525	836.5	0	24.0	23.8	0.00	0.086		0.090	
				20600	844.0								

Table 11.2-5a SAR testing results for LTE Band 5 (10MHz BW) head configuration tested on device model: RHL211LW

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 170(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - LTE Band 5 850 MHz (BW 10 MHz)													
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
							Declared	Measured		Extrapolated		Reported	
										FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed													
10mm Back	QPSK	10.0	1	20450	829.0								
				20525	836.5	0	24.0	23.8	0.01	0.319		0.335	
				20600	844.0								
			25	20450	829.0								
				20525	836.5								
				20600	844.0								
50	20600	844.0											
	10mm Front	QPSK	10.0	1	20450	829.0							
					20525	836.5	0	24.0	23.8	-0.01	0.261		0.274
20600					844.0								
10mm Left	QPSK	10.0	1	20450	829.0								
				20525	836.5	0	24.0	23.8	0.01	0.174		0.183	
				20600	844.0								
10mm Right	QPSK	10.0	1	20450	829.0								
				20525	836.5	0	24.0	23.8	0.00	0.276		0.290	
				20600	844.0								
10mm Bottom	QPSK	10.0	1	20450	829.0								
				20525	836.5	0	24.0	23.8	-0.02	0.363		0.381	
				20600	844.0								
Slider Open													
10mm Back	QPSK	10.0	1	20450	829.0	0	24.0	23.7	-0.02	0.338		0.361	
				20525	836.5	0	24.0	23.8	0.00	0.350		0.367	
				20600	844.0	25	24.0	23.8	-0.03	0.441	0.481	0.463	0.505
			25	20450	829.0								
				20525	836.5								
				20600	844.0	25	23.0	22.6	0.02	0.348		0.382	
50	20600	844.0	0	23.0	22.6	-0.02	0.335		0.369				
	10mm Front	QPSK	10.0	1	20450	829.0							
					20525	836.5	0	24.0	23.8	-0.01	0.264		0.277
20600					844.0								
10mm Left	QPSK	10.0	1	20450	829.0								
				20525	836.5	0	24.0	23.8	-0.01	0.079		0.083	
				20600	844.0								
10mm Right	QPSK	10.0	1	20450	829.0								
				20525	836.5	0	24.0	23.8	-0.04	0.180		0.189	
				20600	844.0								
10mm Bottom	QPSK	10.0	1	20450	829.0	0	24.0	23.7	0.03	0.342		0.366	
				20525	836.5	0	24.0	23.8	-0.03	0.376		0.395	
				20600	844.0	25	24.0	23.8	0.04	0.441	0.450	0.463	0.472

Table 11.2-5b SAR testing results for LTE Band 5 (10MHz BW) hotspot configuration tested on device model: RHL211LW

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 171(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - LTE Band 5 850 MHz (BW 10 MHz)													
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
							Declared	Measured		Extrapolated		Reported	
										FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed													
15mm Back	QPSK	10.0	1	20450	829.0	0	24.0	23.7	0.04	0.207	0.202	0.221	0.216
				20525	836.5	0	24.0	23.8	-0.01	0.206		0.216	
				20600	844.0	25	24.0	23.8	-0.03	0.200		0.210	
			25	20450	829.0								
				20525	836.5								
				20600	844.0	25	23.0	22.6	-0.03	0.149		0.164	
			50	20600	844.0	0	23.0	22.6	-0.03	0.151		0.166	
15mm Front	QPSK	10.0	1	20450	829.0	0	24.0	23.7	-0.15	0.229		0.245	
				20525	836.5	0	24.0	23.8	0.00	0.234	0.243	0.246	0.255
				20600	844.0	25	24.0	23.8	-0.07	0.230		0.241	
Holster Back	QPSK	10.0	1	20450	829.0								
				20525	836.5								
				20600	844.0								
Holster Front	QPSK	10.0	1	20450	829.0								
				20525	836.5	0	24.0	23.8	-0.07	0.213		0.224	
				20600	844.0								

**Table 11.2-5c SAR testing results for LTE Band 5 (10MHz BW) body-worn configuration tested on
device model: RHL211LW**

Threshold 1 For This Band: 0.338
 Max FAST SAR For Band: 0.441
 Threshold 2 For All Bands: 0.657
 Max FULL SAR For Band: 0.481
 Additional Full SAR Required: NO

Table 11.2-5d Fast SAR testing thresholds for LTE Band 5

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 172(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Head - GSM/EDGE/DTM 850 MHz										
Position	Time Slot	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
				Declare d	Measured		Extrapolated		Reported	
							FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed										
Right Cheek	3	128	824.2	31.0	29.3	-0.10	0.236		0.349	
		190	836.6	31.0	29.4	0.04	0.309		0.447	
		251	848.8	31.0	29.5	-0.07	0.388	0.384	0.548	0.542
Right 15° Tilt	3	128	824.2							
		190	836.6	31.0	29.4	-0.18	0.167		0.241	
		251	848.8							
Left Cheek	3	128	824.2							
		190	836.6	31.0	29.4	0.07	0.267		0.386	
		251	848.8							
Left 15° Tilt	3	128	824.2							
		190	836.6	31.0	29.4	-0.04	0.176		0.254	
		251	848.8							
Slider Open										
Right Cheek	3	128	824.2							
		190	836.6	31.0	29.4	0.12	0.203		0.293	
		251	848.8							
Right 15° Tilt	3	128	824.2							
		190	836.6	31.0	29.4	0.03	0.119		0.172	
		251	848.8							
Left Cheek	3	128	824.2							
		190	836.6	31.0	29.4	0.02	0.183		0.265	
		251	848.8							
Left 15° Tilt	3	128	824.2							
		190	836.6	31.0	29.4	-0.15	0.099		0.143	
		251	848.8							

Table 11.2-6a SAR testing results for GSM/EDGE/DTM 850 head configuration tested on device model: RHL211LW

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 173(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - GSM/EDGE/DTM 850 MHz										
Position	Time Slot	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
				Declared	Measured		Extrapolated		Reported	
							FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed										
10mm Back	2	128	824.2							
		190	836.6	32.5	31.0	-0.06	0.384		0.542	
		251	848.8							
10mm Front	2	128	824.2							
		190	836.6	32.5	31.0	-0.02	0.393		0.555	
		251	848.8							
10mm Left	2	128	824.2							
		190	836.6	32.5	31.0	0.08	0.255		0.360	
		251	848.8							
10mm Right	2	128	824.2							
		190	836.6	32.5	31.0	0.02	0.363		0.513	
		251	848.8							
10mm Bottom	2	128	824.2							
		190	836.6	32.5	31.0	-0.08	0.372		0.525	
		251	848.8							
10mm + Headset	2	128	824.2							
		190	836.6							
		251	848.8							
Slider Open										
10mm Back	2	128	824.2	32.5	30.9	-0.19	0.319		0.461	
		190	836.6	32.5	31.0	-0.08	0.438		0.619	
		251	848.8	32.5	31.1	-0.02	0.530	0.563	0.732	0.777
10mm Front	2	128	824.2							
		190	836.6	32.5	31.0	0.09	0.243		0.343	
		251	848.8							
10mm Left	2	128	824.2							
		190	836.6	32.5	31.0	-0.08	0.273		0.386	
		251	848.8							
10mm Right	2	128	824.2							
		190	836.6	32.5	31.0	0.13	0.334		0.472	
		251	848.8							
10mm Bottom	2	128	824.2							
		190	836.6	32.5	31.0	-0.03	0.456		0.644	
		251	848.8							

**Table 11.2-6b SAR testing results GSM /GPRS/DTM 850 hotspot configuration tested on device
model: RHL211LW**

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 174(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - GSM/EDGE/DTM 850 MHz										
Position	Time Slot	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
				Declared	Measured		Extrapolated		Reported	
							FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed										
15mm Back	3	128	824.2							
		190	836.6	31.0	29.4	-0.08	0.252		0.364	
		251	848.8							
15mm Front	3	128	824.2	31.0	29.3	0.02	0.267		0.395	
		190	836.6	31.0	29.4	-0.08	0.295		0.426	
		251	848.8	31.0	29.5	0.12	0.359	0.366	0.507	0.517
Holster Back		128	824.2							
		190	836.6							
		251	848.8							
Holster Front	3	128	824.2							
		190	836.6	31.0	29.4	-0.08	0.305		0.441	
		251	848.8							

Table 11.2-6c SAR testing results for GSM/GPRS/DTM 850 body-worn configuration tested on device model: RHL211LW

Threshold 1 For This Band: 0.406
 Max FAST SAR For Band: 0.530
 Threshold 2 For All Bands: 0.657
 Max FULL SAR For Band: 0.563
 Additional Full SAR Required: NO

Table 11.2-6d Fast SAR testing thresholds for GSM/GPRS/DTM 850

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 175(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Head - WCDMA FDD V 850 MHz									
Position	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
			Declared	Measured		Extrapolated		Reported	
						FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed									
Right Cheek	4132	826.4	25.0	24.4	-0.05	0.295		0.343	
	4182	836.4	25.0	24.4	0.09	0.310		0.360	
	4233	846.6	25.0	24.4	-0.13	0.332	0.330	0.384	0.382
Right 15° Tilt	4132	826.4							
	4182	836.4	25.0	24.4	0.03	0.185		0.215	
	4233	846.6							
Left Cheek	4132	826.4							
	4182	836.4	25.0	24.4	-0.12	0.238		0.276	
	4233	846.6							
Left 15° Tilt	4132	826.4							
	4182	836.4	25.0	24.4	-0.03	0.166		0.193	
	4233	846.6							
Slider Open									
Right Cheek	4132	826.4							
	4182	836.4	25.0	24.4	-0.07	0.200		0.232	
	4233	846.6							
Right 15° Tilt	4132	826.4							
	4182	836.4	25.0	24.4	0.07	0.111		0.129	
	4233	846.6							
Left Cheek	4132	826.4							
	4182	836.4	25.0	24.4	-0.10	0.177		0.206	
	4233	846.6							
Left 15° Tilt	4132	826.4							
	4182	836.4	25.0	24.4	-0.01	0.105		0.122	
	4233	846.6							

Table 11.2-7a SAR testing results for UMTS band V head configuration tested on device model: RHL211LW

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 176(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - WCDMA FDD V 850 MHz									
Position	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
			Declared	Measured		Extrapolated		Reported	
						FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed									
10mm Back	4132	826.4							
	4182	836.4	25.0	24.4	-0.01	0.352		0.409	
	4233	846.6							
10mm Front	4132	826.4							
	4182	836.4	25.0	24.4	-0.02	0.342		0.397	
	4233	846.6							
10mm Left	4132	826.4							
	4182	836.4	25.0	24.4	0.00	0.236		0.274	
	4233	846.6							
10mm Right	4132	826.4							
	4182	836.4	25.0	24.4	-0.03	0.359		0.417	
	4233	846.6							
10mm Bottom	4132	826.4							
	4182	836.4	25.0	24.4	-0.05	0.369		0.429	
	4233	846.6							
10mm + Headset	4132	826.4							
	4182	836.4							
	4233	846.6							
Slider Open									
10mm Back	4132	826.4	25.0	24.4	-0.03	0.459		0.533	
	4182	836.4	25.0	24.4	-0.03	0.452		0.525	
	4233	846.6	25.0	24.4	-0.02	0.536	0.555	0.620	0.642
10mm Front	4132	826.4							
	4182	836.4	25.0	24.4	-0.01	0.286		0.332	
	4233	846.6							
10mm Left	4132	826.4							
	4182	836.4	25.0	24.4	-0.02	0.110		0.128	
	4233	846.6							
10mm Right	4132	826.4							
	4182	836.4	25.0	24.4	0.00	0.236		0.274	
	4233	846.6							
10mm Bottom	4132	826.4							
	4182	836.4	25.0	24.4	0.00	0.343		0.398	
	4233	846.6							

Table 11.2-7b SAR testing results UMTS band V hotspot configuration tested on device model: RHL211LW

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 177(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - WCDMA FDD V 850 MHz									
Position	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
			Declared	Measured		Extrapolated		Reported	
						FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed									
15mm Back	4132	826.4	25.0	24.4	0.03	0.285		0.331	
	4182	836.4	25.0	24.4	-0.05	0.283	0.284	0.329	0.330
	4233	846.6	25.0	24.4	-0.03	0.267		0.309	
15mm Front	4132	826.4	25.0	24.4	-0.04	0.316		0.367	
	4182	836.4	25.0	24.4	-0.01	0.324	0.330	0.376	0.383
	4233	846.6	25.0	24.4	-0.02	0.321		0.373	
Holster Back	4132	826.4							
	4182	836.4	25.0	24.4	-0.05	0.117		0.136	
	4233	846.6							
Holster Front	4132	826.4							
	4182	836.4	25.0	24.4	0.11	0.317		0.368	
	4233	846.6							

Table 11.2-7c SAR testing results for UMTS band V body-worn configuration tested on device model: RHL211LW

Threshold 1 For This Band: 0.410
 Max FAST SAR For Band: 0.536
 Threshold 2 For All Bands: 0.657
 Max FULL SAR For Band: 0.555
 Additional Full SAR Required: NO

Table 11.2-7d Fast SAR testing thresholds for UMTS band V

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 178(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Head - LTE Band 4 1700 MHz (BW 20 MHz)													
Positio n	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
							Declare d	Measured		Extrapolated		Reported	
										FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed													
Right Cheek	QPSK	20.0	1	20050	1720.0								
				20175	1732.5								
				20300	1745.0	50	24.0	23.7	-0.01	0.255	0.258	0.271	0.275
			50	20050	1720.0								
				20175	1732.5								
				20300	1745.0								
100													
	Right 15° Tilt	QPSK	20.0	1	20050	1720.0							
					20175	1732.5							
20300					1745.0	50	24.0	23.7	0.05	0.198	0.217	0.212	0.233
Left Cheek	QPSK	20.0	1	20050	1720.0	0	24.0	23.5	0.25	0.682	0.714	0.774	0.810
				20175	1732.5	99	24.0	23.5	-0.04	0.504		0.560	
				20300	1745.0	50	24.0	23.7	-0.15	0.557	0.546	0.597	0.585
			50	20050	1720.0								
				20175	1732.5								
				20300	1745.0	50	23.0	22.6	0.04	0.387		0.424	
100	20300	1745.0	0	23.0	22.6	-0.12	0.398		0.436				
	Left 15° Tilt	QPSK	20.0	1	20050	1720.0							
					20175	1732.5							
20300					1745.0	50	24.0	23.7	-0.07	0.220		0.236	
Slider Open													
Right Cheek	QPSK	20.0	1	20050	1720.0								
				20175	1732.5								
				20300	1745.0	50	24.0	23.7	0.20	0.240		0.255	
Right 15° Tilt	QPSK	20.0	1	20050	1720.0								
				20175	1732.5								
				20300	1745.0	50	24.0	23.7	0.26	0.267		0.284	
Left Cheek	QPSK	20.0	1	20050	1720.0	0	24.0	23.5	0.01	0.487		0.553	
				20175	1732.5	99	24.0	23.5	0.05	0.493		0.548	
				20300	1745.0	50	24.0	23.7	-0.08	0.572	0.567	0.613	0.608
Left 15° Tilt	QPSK	20.0	1	20050	1720.0								
				20175	1732.5								
				20300	1745.0	50	24.0	23.7	0.14	0.352		0.375	

Table 11.2-8a SAR testing results for LTE Band 4 (20MHz BW) head configuration tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on LTE band 4 was measured using RHK211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 179(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - LTE Band 4 1700 MHz (BW 20 MHz)														
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
							Declare d	Measured		Extrapolated		Reported		
										FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
10mm Back	QPSK	20.0	1	20050	1720.0									
				20175	1732.5									
				20300	1745.0	50	21.0	20.7	0.03	0.464		0.496		
			50	20050	1720.0									
				20175	1732.5									
				20300	1745.0									
			100											
10mm Front	QPSK	20.0	1	20050	1720.0									
				20175	1732.5									
				20300	1745.0	50	21.0	20.7	0.06	0.428		0.458		
10mm Left	QPSK	20.0	1	20050	1720.0									
				20175	1732.5									
				20300	1745.0	50	21.0	20.7	-0.14	0.070		0.075		
10mm Right	QPSK	20.0	1	20050	1720.0									
				20175	1732.5									
				20300	1745.0	50	21.0	20.7	0.07	0.456		0.487		
10mm Bottom	QPSK	20.0	1	20050	1720.0									
				20175	1732.5									
				20300	1745.0	50	21.0	20.7	-0.01	0.105		0.112		
Slider Open														
10mm Back	QPSK	20.0	1	20050	1720.0	99	21.0	20.4	0.00	0.805	0.758	0.916	0.862	
				20175	1732.5	0	21.0	20.6	-0.03	0.804	0.748	0.884	0.822	
				20300	1745.0	50	21.0	20.7	0.09	0.806	0.746	0.862	0.798	
			50	20050	1720.0	50	21.0	20.4	0.01	0.828	0.766	0.957	0.886	
				20175	1732.5	0	21.0	20.4	-0.01	0.813	0.747	0.933	0.858	
				20300	1745.0	50	21.0	20.6	-0.01	0.746	0.697	0.824	0.770	
			100	20300	1745.0	0	21.0	20.6	0.06	0.739	0.730	0.818	0.808	
10mm Front	QPSK	20.0	1	20050	1720.0									
				20175	1732.5									
				20300	1745.0	50	21.0	20.7	0.02	0.423		0.452		
10mm Left	QPSK	20.0	1	20050	1720.0									
				20175	1732.5									
				20300	1745.0	50	21.0	20.7	0.08	0.053		0.057		
10mm Right	QPSK	20.0	1	20050	1720.0									
				20175	1732.5									
				20300	1745.0	50	21.0	20.7	-0.05	0.286		0.306		
10mm Bottom	QPSK	20.0	1	20050	1720.0									
				20175	1732.5									
				20300	1745.0	50	21.0	20.7	-0.07	0.173		0.185		
Repeat Scans – 10mm Back (Slider Open)														
2nd Scan	QPSK	20.0	50	20050	1720.0	50	21.0	20.4	0.05	0.777	0.747	0.898	0.864	

Table 11.2-8b SAR testing results LTE Band 4 (20MHz BW) hotspot configuration tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on LTE band 4 was measured using RHK211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 180(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - LTE Band 4 1700 MHz (BW 20 MHz)														
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
							Declared	Measured		Extrapolated		Reported		
										FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
15mm Back	QPSK	20.0	1	20050	1720.0	0	24.0	23.5	0.04	0.592	0.595	0.672	0.675	
				20175	1732.5	99	24.0	23.5	-0.01	0.481		0.535		
				20300	1745.0	50	24.0	23.7	-0.04	0.479		0.513		
			50	20050	1720.0									
				20175	1732.5									
				20300	1745.0	50	23.0	22.6	0.11	0.368		0.404		
			100											
15mm Front	QPSK	20.0	1	20050	1720.0									
				20175	1732.5									
				20300	1745.0	50	24.0	23.7	0.01	0.336		0.358		
Holster Back	QPSK	20.0	1	20050	1720.0									
				20175	1732.5									
				20300	1745.0	50	24.0	23.7	-0.04	0.230		0.245		
Holster Front	QPSK	20.0	1	20050	1720.0									
				20175	1732.5									
				20300	1745.0									
15mm + Headset	QPSK	20.0	1	20050	1720.0									
				20175	1732.5									
				20300	1745.0									

Table 11.2-8c SAR testing results for LTE Band 4 (20MHz BW) body-worn configuration tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on LTE band 4 was measured using RHK211LW and reused for RHL211LW.

Threshold 1 For This Band: 0.634
Max FAST SAR For Band: 0.828
Threshold 2 For All Bands: 0.657
Max FULL SAR For Band: 0.766
Additional Full SAR Required: YES

Table 11.2-8d Fast SAR testing thresholds for LTE Band 4

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 181(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Head - WCDMA FDD IV 1700 MHz									
Position	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
			Declare d	Measured		Extrapolated		Reported	
FAST SAR	FULL SAR	FAST SAR			FULL SAR				
Slider Closed									
Right Cheek	1312	1712.4							
	1413	1732.6	25.0	24.3	0.03	0.358		0.424	
	1513	1752.6							
Right 15° Tilt	1312	1712.4							
	1413	1732.6	25.0	24.3	0.01	0.396		0.468	
	1513	1752.6							
Left Cheek	1312	1712.4	25.0	24.1	0.04	0.752	0.764	0.925	0.940
	1413	1732.6	25.0	24.3	-0.10	0.820	0.823	0.970	0.974
	1513	1752.6	25.0	24.4	0.13	0.880	0.888	1.008	1.017
Left 15° Tilt	1312	1712.4							
	1413	1732.6	25.0	24.3	-0.06	0.440		0.521	
	1513	1752.6							
Slider Open									
Right Cheek	1312	1712.4							
	1413	1732.6	25.0	24.3	-0.18	0.293	0.286	0.347	0.338
	1513	1752.6							
Right 15° Tilt	1312	1712.4							
	1413	1732.6	25.0	24.3	-0.03	0.337		0.399	
	1513	1752.6							
Left Cheek	1312	1712.4							
	1413	1732.6	25.0	24.3	-0.11	0.537	0.538	0.635	0.636
	1513	1752.6							
Left 15° Tilt	1312	1712.4							
	1413	1732.6	25.0	24.3	-0.12	0.428		0.506	
	1513	1752.6							
Repeat Scans - Left Cheek (Slider Closed)									
2nd Scan	1513	1752.6	25.0	24.4	0.04	0.899	0.912	1.030	1.045

Table 11.2-9a SAR testing results for UMTS band IV head configuration tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on UMTS band IV was measured using RHK211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 182(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - WCDMA FDD IV 1700 MHz									
Position	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
			Declared	Measured		Extrapolated		Reported	
						FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed									
10mm Back	1312	1712.4							
	1413	1732.6	21.5	21.2	0.00	0.689		0.738	
	1513	1752.6							
10mm Front	1312	1712.4							
	1413	1732.6	21.5	21.2	0.00	0.476		0.510	
	1513	1752.6							
10mm Left	1312	1712.4							
	1413	1732.6	21.5	21.2	0.03	0.300		0.321	
	1513	1752.6							
10mm Right	1312	1712.4							
	1413	1732.6	21.5	21.2	0.07	0.121		0.130	
	1513	1752.6							
10mm Bottom	1312	1712.4							
	1413	1732.6	21.5	21.2	-0.03	0.325		0.348	
	1513	1752.6							
10mm + Headset	1312	1712.4							
	1413	1732.6							
	1513	1752.6							
Slider Open									
10mm Back	1312	1712.4	21.5	21.2	0.02	0.907	0.905	0.974	0.972
	1413	1732.6	21.5	21.2	-0.07	0.909	0.905	0.974	0.970
	1513	1752.6	21.5	21.5	0.02	0.844	0.836	0.846	0.838
10mm Front	1312	1712.4							
	1413	1732.6	21.5	21.2	-0.02	0.504		0.540	
	1513	1752.6							
10mm Left	1312	1712.4							
	1413	1732.6	21.5	21.2	-0.01	0.331		0.355	
	1513	1752.6							
10mm Right	1312	1712.4							
	1413	1732.6	21.5	21.2	0.01	0.113		0.121	
	1513	1752.6							
10mm Bottom	1312	1712.4							
	1413	1732.6	21.5	21.2	-0.02	0.296		0.317	
	1513	1752.6							
Repeat Scans - 10mm Back (Slider Open)									
2nd Scan	1413	1732.6	21.5	21.2	0.00	0.932	0.893	0.999	0.957

Table 11.2-9b SAR testing results UMTS band IV hotspot configuration tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on UMTS band IV was measured using RHK211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 183(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - WCDMA FDD IV 1700 MHz									
Position	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
			Declared	Measured		Extrapolated		Reported	
						FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed									
15mm Back	1312	1712.4	25.0	24.1	-0.02	0.544		0.669	
	1413	1732.6	25.0	24.3	0.04	0.663	0.669	0.784	0.791
	1513	1752.6	25.0	24.4	0.00	0.648		0.742	
15mm Front	1312	1712.4							
	1413	1732.6	25.0	24.3	-0.03	0.592		0.700	
	1513	1752.6							
Holster Back	1312	1712.4							
	1413	1732.6	25.0	24.3	0.04	0.156		0.185	
	1513	1752.6							

Table 11.2-9c SAR testing results for UMTS band IV body-worn configuration tested on device model: RHL211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW are identical for this band. Due to this SAR on UMTS band IV was measured using RHL211LW and reused for RHL211LW.

Threshold 1 For This Band: 0.714
Max FAST SAR For Band: 0.932
Threshold 2 For All Bands: 0.657
Max FULL SAR For Band: 0.912
Additional Full SAR Required: YES

Table 11.2-9d Fast SAR testing thresholds for UMTS band IV

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 184(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Head - LTE Band 2 1900 MHz (BW 20 MHz)														
Positio n	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
							Declare d	Measured		Extrapolated		Reported		
										FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
Right Cheek	QPSK	20.0	1	18700	1860.0	99	24.0	23.4	-0.04	0.295		0.336		
				18900	1880.0									
				19100	1900.0									
			50	18700	1860.0									
				18900	1880.0									
				19100	1900.0									
100														
	Right 15° Tilt	QPSK	20.0	1	18700	1860.0	99	24.0	23.4	-0.02	0.285		0.325	
					18900	1880.0								
19100					1900.0									
Left Cheek	QPSK	20.0	1	18700	1860.0	99	24.0	23.4	0.06	0.578	0.573	0.659	0.653	
				18900	1880.0	0	24.0	23.3	0.02	0.460		0.540		
				19100	1900.0	0	24.0	23.1	0.00	0.444		0.546		
			50	18700	1860.0	50	23.0	22.3	-0.07	0.470		0.552		
				18900	1880.0									
				19100	1900.0									
100														
	Left 15° Tilt	QPSK	20.0	1	18700	1860.0	99	24.0	23.4	-0.17	0.307		0.350	
					18900	1880.0								
19100					1900.0									
Slider Open														
Right Cheek	QPSK	20.0	1	18700	1860.0	99	24.0	23.4	0.00	0.275		0.314		
				18900	1880.0									
				19100	1900.0									
Right 15° Tilt	QPSK	20.0	1	18700	1860.0	99	24.0	23.4	0.15	0.287		0.327		
				18900	1880.0									
				19100	1900.0									
Left Cheek	QPSK	20.0	1	18700	1860.0	99	24.0	23.4	-0.10	0.508		0.579		
				18900	1880.0									
				19100	1900.0									
Left 15° Tilt	QPSK	20.0	1	18700	1860.0	99	24.0	23.4	0.06	0.338		0.385		
				18900	1880.0									
				19100	1900.0									

Table 11.2-10a SAR testing results for LTE Band 2 (20MHz BW) head configuration tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on LTE band 2 was measured using RHK211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 185(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - LTE Band 2 1900 MHz (BW 20 MHz)														
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
							Declared	Measured		Extrapolated		Reported		
										FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
10mm Back	QPSK	20.0	1	18700	1860.0	99	21.0	20.4	-0.09	0.521	0.525	0.597	0.601	
				18900	1880.0									
				19100	1900.0									
			50	18700	1860.0									
				18900	1880.0									
				19100	1900.0									
			100											
10mm Front	QPSK	20.0	1	18700	1860.0	99	21.0	20.4	0.08	0.165		0.189		
				18900	1880.0									
				19100	1900.0									
10mm Left	QPSK	20.0	1	18700	1860.0	99	21.0	20.4	0.03	0.295		0.338		
				18900	1880.0									
				19100	1900.0									
10mm Right	QPSK	20.0	1	18700	1860.0	99	21.0	20.4	0.25	0.071		0.081		
				18900	1880.0									
				19100	1900.0									
10mm Bottom	QPSK	20.0	1	18700	1860.0	99	21.0	20.4	-0.08	0.114		0.131		
				18900	1880.0									
				19100	1900.0									
Slider Open														
10mm Back	QPSK	20.0	1	18700	1860.0	99	21.0	20.4	-0.08	0.653	0.696	0.748	0.797	
				18900	1880.0	0	21.0	20.2	0.07	0.688	0.669	0.821	0.799	
				19100	1900.0	0	21.0	20.1	0.05	0.648	0.633	0.797	0.779	
			50	18700	1860.0	50	21.0	20.2	-0.05	0.633	0.689	0.761	0.828	
				18900	1880.0	50	21.0	20.2	-0.02	0.640	0.637	0.771	0.768	
				19100	1900.0	50	21.0	19.8	-0.11	0.569	0.566	0.747	0.743	
			100	18700	1860.0	0	21.0	20.2	0.08	0.648	0.700	0.774	0.836	
10mm Front	QPSK	20.0	1	18700	1860.0	99	21.0	20.4	-0.02	0.369		0.423		
				18900	1880.0									
				19100	1900.0									
10mm Left	QPSK	20.0	1	18700	1860.0	99	21.0	20.4	-0.06	0.254		0.291		
				18900	1880.0									
				19100	1900.0									
10mm Right	QPSK	20.0	1	18700	1860.0	99	21.0	20.4	-0.04	0.083		0.095		
				18900	1880.0									
				19100	1900.0									
10mm Bottom	QPSK	20.0	1	18700	1860.0	99	21.0	20.4	-0.02	0.131		0.150		
				18900	1880.0									
				19100	1900.0									

Table 11.2-10b SAR testing results LTE Band 2 (20MHz BW) hotspot configuration tested on device model: RHL211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on LTE band 2 was measured using RHK211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 186(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - LTE Band 2 1900 MHz (BW 20 MHz)													
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
										Extrapolated		Reported	
							Declared	Measured		FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed													
15mm Back	QPSK	20.0	1	18700	1860.0	99	24.0	23.4	-0.18	0.510		0.582	
				18900	1880.0	0	24.0	23.3	-0.16	0.513		0.603	
				19100	1900.0	0	24.0	23.1	0.00	0.573	0.586	0.705	0.721
			50	18700	1860.0	50	23.0	22.3	-0.17	0.374		0.440	
				18900	1880.0								
				19100	1900.0								
			100										
15mm Front	QPSK	20.0	1	18700	1860.0	99	24.0	23.4	0.02	0.243		0.277	
				18900	1880.0								
				19100	1900.0								
Holster Back	QPSK	20.0	1	18700	1860.0	99	24.0	23.4	0.12	0.251		0.286	
				18900	1880.0								
				19100	1900.0								

Table 11.2-10c SAR testing results for LTE Band 2 (20MHz BW) body-worn configuration tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on LTE band 2 was measured using RHK211LW and reused for RHL211LW.

Threshold 1 For This Band: 0.527
Max FAST SAR For Band: 0.688
Threshold 2 For All Bands: 0.657
Max FULL SAR For Band: 0.700
Additional Full SAR Required: YES

Table 11.2-10d Fast SAR testing thresholds for LTE Band 2

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 187(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Head - LTE Band 25 1900 MHz (BW 20 MHz)														
Positio n	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
							Declare d	Measured		Extrapolated		Reported		
										FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
Right Cheek	QPSK	20.0	1	26140	1860.0	0	24.0	23.4	-0.01	0.301	0.297	0.346	0.341	
				26365	1882.5									
				26590	1905.0									
			50	26140	1860.0									
				26365	1882.5									
				26590	1905.0									
100	26140	1860.0												
	Right 15° Tilt	QPSK	20.0	1	26140	1860.0	0	24.0	23.4	0.10	0.255		0.293	
					26365	1882.5								
26590					1905.0									
Left Cheek	QPSK	20.0	1	26140	1860.0	0	24.0	23.4	-0.04	0.592	0.590	0.680	0.677	
				26365	1882.5	0	24.0	23.3	-0.15	0.473		0.556		
				26590	1905.0	0	24.0	23.2	-0.01	0.408		0.491		
			50	26140	1860.0	0	23.0	22.2	-0.16	0.276		0.332		
				26365	1882.5									
				26590	1905.0									
100	26140	1860.0	0	23.0	22.2	0.10	0.297		0.357					
	Left 15° Tilt	QPSK	20.0	1	26140	1860.0	0	24.0	23.4	-0.06	0.249		0.286	
					26365	1882.5								
26590					1905.0									
Slider Open														
Right Cheek	QPSK	20.0	1	26140	1860.0	0	24.0	23.4	-0.10	0.274	0.289	0.315	0.332	
				26365	1882.5									
				26590	1905.0									
Right 15° Tilt	QPSK	20.0	1	26140	1860.0	0	24.0	23.4	0.12	0.276		0.317		
				26365	1882.5									
				26590	1905.0									
Left Cheek	QPSK	20.0	1	26140	1860.0	0	24.0	23.4	-0.09	0.591	0.591	0.679	0.679	
				26365	1882.5									
				26590	1905.0									
Left 15° Tilt	QPSK	20.0	1	26140	1860.0	0	24.0	23.4	-0.14	0.311		0.357		
				26365	1882.5									
				26590	1905.0									

Table 11.2-11a SAR testing results LTE Band 25 (20MHz BW) head configuration tested on device model: RHL211LW

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 188(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - LTE Band 25 1900 MHz (BW 20 MHz)														
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
										Extrapolated		Reported		
							Declared	Measured		FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
10mm Back	QPSK	20.0	1	26140	1860.0									
				26365	1882.5	0	21.0	20.4	-0.04	0.49		0.569		
				26590	1905.0									
			50	26140	1860.0									
				26365	1882.5									
				26590	1905.0									
			100	26140	1860.0									
10mm Front	QPSK	20.0	1	26140	1860.0									
				26365	1882.5	0	21.0	20.4	0.13	0.128		0.149		
				26590	1905.0									
10mm Left	QPSK	20.0	1	26140	1860.0									
				26365	1882.5	0	21.0	20.4	0.12	0.287		0.333		
				26590	1905.0									
10mm Right	QPSK	20.0	1	26140	1860.0									
				26365	1882.5	0	21.0	20.4	-0.12	0.053		0.062		
				26590	1905.0									
10mm Bottom	QPSK	20.0	1	26140	1860.0									
				26365	1882.5	0	21.0	20.4	-0.03	0.082		0.095		
				26590	1905.0									
Slider Open														
10mm Back	QPSK	20.0	1	26140	1860.0	50	21.0	20.3	0.15	0.607	0.618	0.713	0.726	
				26365	1882.5	0	21.0	20.4	-0.02	0.587		0.682		
				26590	1905.0	0	21.0	20.2	0.04	0.548		0.665		
			50	26140	1860.0									
				26365	1882.5	50	21.0	20.2	-0.02	0.578		0.695		
				26590	1905.0									
			100	26140	1860.0	0	21.0	20.2	-0.03	0.589		0.708		
10mm Front	QPSK	20.0	1	26140	1860.0									
				26365	1882.5	0	21.0	20.4	-0.02	0.366		0.425		
				26590	1905.0									
10mm Left	QPSK	20.0	1	26140	1860.0									
				26365	1882.5	0	21.0	20.4	0.04	0.235		0.273		
				26590	1905.0									
10mm Right	QPSK	20.0	1	26140	1860.0									
				26365	1882.5	0	21.0	20.4	-0.04	0.082		0.095		
				26590	1905.0									
10mm Bottom	QPSK	20.0	1	26140	1860.0									
				26365	1882.5	0	21.0	20.4	0.01	0.131		0.152		
				26590	1905.0									

Table 11.2-11b SAR testing results LTE Band 25 (20MHz BW) hotspot configuration tested on device model: RHL211LW

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 189(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - LTE Band 25 1900 MHz (BW 20 MHz)													
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
										Extrapolated		Reported	
							Declared	Measured		FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed													
15mm Back	QPSK	20.0	1	26140	1860.0	0	24.0	23.4	-0.10	0.468		0.537	
				26365	1882.5	0	24.0	23.3	-0.03	0.524		0.616	
				26590	1905.0	0	24.0	23.2	-0.02	0.532	0.521	0.640	0.626
			50	26140	1860.0	0	23.0	22.2	0.01	0.367		0.441	
				26365	1882.5								
				26590	1905.0								
			100	26140	1860.0	0	23.0	22.2	0.00	0.381		0.458	
15mm Front	QPSK	20.0	1	26140	1860.0	0	24.0	23.4	0.08	0.240		0.276	
				26365	1882.5								
				26590	1905.0								
Holster Back	QPSK	20.0	1	26140	1860.0	0	24.0	23.4	-0.05	0.237		0.272	
				26365	1882.5								
				26590	1905.0								

Table 11.2-11c SAR testing results for LTE Band 25 (20MHz BW) body-worn configuration tested on device model: RHL211LW

Threshold 1 For This Band: 0.465
 Max FAST SAR For Band: 0.607
 Threshold 2 For All Bands: 0.657
 Max FULL SAR For Band: 0.618
 Additional Full SAR Required: NO

Table 11.2-11d Fast SAR testing thresholds for LTE Band 25

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 190(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Head - GSM/EDGE/DTM 1900 MHz										
Position	Time Slot	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
				Declared	Measured		Extrapolated		Reported	
							FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed										
Right Cheek	2	512	1850.2							
		661	1880.0	30.5	28.7	-0.06	0.230		0.348	
		810	1909.8							
Right 15° Tilt	2	512	1850.2							
		661	1880.0	30.5	28.7	0.00	0.251		0.380	
		810	1909.8							
Left Cheek	2	512	1850.2							
		661	1880.0	30.5	28.7	-0.19	0.410		0.621	
		810	1909.8							
Left 15° Tilt	2	512	1850.2							
		661	1880.0	30.5	28.7	-0.11	0.295		0.447	
		810	1909.8							
Slider Open										
Right Cheek	2	512	1850.2							
		661	1880.0	30.5	28.7	-0.05	0.239		0.362	
		810	1909.8							
Right 15° Tilt	2	512	1850.2							
		661	1880.0	30.5	28.7	0.01	0.248		0.375	
		810	1909.8							
Left Cheek	2	512	1850.2	30.5	28.7	0.09	0.474	0.483	0.717	0.731
		661	1880.0	30.5	28.7	-0.02	0.423		0.640	
		810	1909.8	30.5	29.1	-0.15	0.393		0.542	
Left 15° Tilt	2	512	1850.2							
		661	1880.0	30.5	28.7	-0.15	0.322		0.487	
		810	1909.8							

Table 11.2-12a SAR testing results for GSM/EDGE/DTM 1900 head configuration tested on device model: RHL211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW are identical for this band. Due to this SAR on GSM 1900 was measured using RHL211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 191(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - GSM/EDGE/DTM 1900 MHz										
Position	Time Slot	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
				Declared	Measured		Extrapolated		Reported	
							FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed										
10mm Back	2	512	1850.2	29.0	27.4	0.00	0.726	0.752	1.049	1.087
		661	1880.0	29.0	27.4	-0.03	0.756	0.771	1.093	1.114
		810	1909.8	29.0	27.4	0.00	0.584		0.844	
10mm Front	2	512	1850.2							
		661	1880.0	29.0	27.4	0.04	0.226		0.327	
		810	1909.8							
10mm Left	2	512	1850.2							
		661	1880.0	29.0	27.4	0.27	0.373		0.539	
		810	1909.8							
10mm Right	2	512	1850.2							
		661	1880.0	29.0	27.4	-0.01	0.068		0.098	
		810	1909.8							
10mm Bottom	2	512	1850.2							
		661	1880.0	29.0	27.4	-0.08	0.157		0.227	
		810	1909.8							
10mm + Headset	2	512	1850.2							
		661	1880.0							
		810	1909.8							
Slider Open										
10mm Back	2	512	1850.2	29.0	27.4	-0.06	0.817	0.804	1.181	1.162
		661	1880.0	29.0	27.4	0.01	0.774	0.789	1.119	1.140
		810	1909.8	29.0	27.4	0.04	0.733	0.730	1.060	1.055
10mm Front	2	512	1850.2							
		661	1880.0	29.0	27.4	-0.03	0.457		0.661	
		810	1909.8							
10mm Left	2	512	1850.2							
		661	1880.0	29.0	27.4	-0.15	0.309		0.447	
		810	1909.8							
10mm Right	2	512	1850.2							
		661	1880.0	29.0	27.4	0.04	0.107		0.155	
		810	1909.8							
10mm Bottom	2	512	1850.2							
		661	1880.0	29.0	27.4	-0.05	0.149		0.215	
		810	1909.8							
10mm + Headset	2	512	1850.2							
		661	1880.0							
		810	1909.8							
Repeat Scans - 10mm Back (Slider Open)										
2nd Scan	2	512	1850.2	29.0	27.4	-0.10	0.823	0.803	1.190	1.161

Table 11.2-12b SAR testing results GSM/GPRS/DTM 1900 hotspot configuration tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on GSM 1900 was measured using RHK211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 192(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - GSM/EDGE/DTM 1900 MHz										
Position	Time Slot	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
				Declared	Measured		Extrapolated		Reported	
							FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed										
15mm Back	4	512	1850.2	27.5	25.9	-0.10	0.437		0.632	
		661	1880.0	27.5	26.0	-0.14	0.557	0.539	0.787	0.761
		810	1909.8	27.5	26.2	-0.03	0.394		0.531	
15mm Front	4	512	1850.2							
		661	1880.0	27.5	26.0	-0.19	0.133		0.188	
		810	1909.8							
Holster Back	4	512	1850.2							
		661	1880.0	27.5	26.0	-0.04	0.230		0.325	
		810	1909.8							

Table 11.2-12c SAR testing results for GSM/GPRS/DTM 1900 body-worn configuration tested on device model: RHL211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW are identical for this band. Due to this SAR on GSM 1900 was measured using RHL211LW and reused for RHL211LW.

Threshold 1 For This Band: 0.630
Max FAST SAR For Band: 0.823
Threshold 2 For All Bands: 0.657
Max FULL SAR For Band: 0.804
Additional Full SAR Required: YES

Table 11.2-12d Fast SAR testing thresholds for GSM/EDGE/DTM 1900

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 193(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Head - WCDMA FDD II 1900 MHz									
Position	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
			Declared	Measured		Extrapolated		Reported	
						FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed									
Right Cheek	9262	1852.4							
	9400	1880.0	25.0	24.3	0.00	0.344		0.400	
	9538	1907.6							
Right 15° Tilt	9262	1852.4							
	9400	1880.0	25.0	24.3	-0.05	0.345		0.402	
	9538	1907.6							
Left Cheek	9262	1852.4	25.0	24.1	0.01	0.645	0.640	0.797	0.791
	9400	1880.0	25.0	24.3	0.02	0.593		0.690	
	9538	1907.6	25.0	23.9	-0.07	0.565		0.728	
Left 15° Tilt	9262	1852.4							
	9400	1880.0	25.0	24.3	-0.04	0.358		0.417	
	9538	1907.6							
Slider Open									
Right Cheek	9262	1852.4							
	9400	1880.0	25.0	24.3	-0.18	0.333		0.388	
	9538	1907.6							
Right 15° Tilt	9262	1852.4							
	9400	1880.0	25.0	24.3	0.01	0.389		0.453	
	9538	1907.6							
Left Cheek	9262	1852.4	25.0	24.1	-0.05	0.719		0.889	
	9400	1880.0	25.0	24.3	0.00	0.735	0.734	0.856	0.854
	9538	1907.6	25.0	23.9	0.05	0.667		0.859	
Left 15° Tilt	9262	1852.4							
	9400	1880.0	25.0	24.3	-0.14	0.504		0.587	
	9538	1907.6							

Table 11.2-13a SAR testing results for UMTS band II head configuration tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on UMTS band II was measured using RHK211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 194(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - WCDMA FDD II 1900 MHz									
Position	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
			Declare d	Measured		Extrapolated		Reported	
FAST SAR	FULL SAR	FAST SAR			FULL SAR				
Slider Closed									
10mm Back	9262	1852.4	22.0	21.5	0.02	0.850	0.841	0.963	0.952
	9400	1880.0	22.0	21.5	0.15	0.720		0.812	
	9538	1907.6	22.0	21.3	0.02	0.659		0.772	
10mm Front	9262	1852.4							
	9400	1880.0	22.0	21.5	0.03	0.233		0.263	
	9538	1907.6							
10mm Left	9262	1852.4							
	9400	1880.0	22.0	21.5	0.02	0.372		0.419	
	9538	1907.6							
10mm Right	9262	1852.4							
	9400	1880.0	22.0	21.5	-0.05	0.075		0.085	
	9538	1907.6							
10mm Bottom	9262	1852.4							
	9400	1880.0	22.0	21.5	0.02	0.153		0.172	
	9538	1907.6							
10mm + Headset	9262	1852.4							
	9400	1880.0	22.0	21.5					
	9538	1907.6							
Slider Open									
10mm Back	9262	1852.4	22.0	21.5	-0.04	0.952	0.934	1.078	1.058
	9400	1880.0	22.0	21.5	-0.08	0.844	0.870	0.951	0.981
	9538	1907.6	22.0	21.3	-0.09	0.808	0.830	0.947	0.973
10mm Front	9262	1852.4							
	9400	1880.0	22.0	21.5	0.05	0.540		0.609	
	9538	1907.6							
10mm Left	9262	1852.4							
	9400	1880.0	22.0	21.5	0.01	0.342		0.386	
	9538	1907.6							
10mm Right	9262	1852.4							
	9400	1880.0	22.0	21.5	0.00	0.116		0.131	
	9538	1907.6							
10mm Bottom	9262	1852.4							
	9400	1880.0	22.0	21.5	0.02	0.176		0.198	
	9538	1907.6							
Repeat Scans – 10mm Back (Slider Open)									
2nd Scan	9262	1852.4	22.0	21.5	-0.01	0.945	0.951	1.070	1.077

Table 11.2-13b SAR testing results UMTS band II hotspot configuration tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on UMTS band II was measured using RHK211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 195(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - WCDMA FDD II 1900 MHz									
Position	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
						Extrapolated		Reported	
			Declared	Measured		FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed									
15mm Back	9262	1852.4	25.0	24.1	0.09	0.881	0.906	1.089	1.120
	9400	1880.0	25.0	24.3	0.14	0.899	0.881	1.047	1.026
	9538	1907.6	25.0	23.9	0.06	0.635		0.818	
15mm Front	9262	1852.4							
	9400	1880.0	25.0	24.3	0.03	0.249		0.290	
	9538	1907.6							
Holster Back	9262	1852.4							
	9400	1880.0	25.0	24.3	0.02	0.346		0.403	
	9538	1907.6							
Holster Front	9262	1852.4							
	9400	1880.0							
	9538	1907.6							
15mm + Headset	9262	1852.4							
	9400	1880.0							
	9538	1907.6							
Repeat Scans - 15mm Back									
2nd Scan	9262	1852.4	25.0	24.1	0.04	0.929	0.929	1.148	1.148

Table 11.2-13c SAR testing results for UMTS band II body-worn configuration tested on device model: RHL211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW are identical for this band. Due to this SAR on UMTS band II was measured using RHL211LW and reused for RHL211LW.

Threshold 1 For This Band: 0.729
Max FAST SAR For Band: 0.952
Threshold 2 For All Bands: 0.657
Max FULL SAR For Band: 0.951
Additional Full SAR Required: YES

Table 11.2-13d Fast SAR testing thresholds for UMTS band II

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 196(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Head - LTE Band 30 2300 MHz (BW 10 MHz)														
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
							Declared	Measured		Extrapolated		Reported		
										FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
Right Cheek	QPSK	10.0	1											
				27710	2310.0	25	24.0	23.1	0.41	0.049		0.061		
			25											
				27710	2310.0									
50														
Right 15° Tilt	QPSK	10.0	1											
				27710	2310.0	25	24.0	23.1	0.39	0.049		0.060		
Left Cheek	QPSK	10.0	1											
				27710	2310.0	25	24.0	23.1	0.51	0.045		0.056		
			25											
				27710	2310.0									
50														
Left 15° Tilt	QPSK	10.0	1											
				27710	2310.0	25	24.0	23.1	0.16	0.016		0.020		
Slider Open														
Right Cheek	QPSK	10.0	1	27710	2310.0	25	24.0	23.1	-0.13	0.141	0.153	0.173	0.188	
			25	27710	2310.0	25	23.0	21.9	0.21	0.132		0.170		
			50	27710	2310.0	0	23.0	21.9	0.19	0.135		0.173		
Right 15° Tilt	QPSK	10.0	1											
				27710	2310.0	25	24.0	23.1	0.02	0.066		0.081		
Left Cheek	QPSK	10.0	1											
				27710	2310.0	25	24.0	23.1	0.06	0.068		0.083		
Left 15° Tilt	QPSK	10.0	1											
				27710	2310.0	25	24.0	23.1	-0.12	0.067		0.083		

Table 11.2-14a SAR testing results LTE Band 30 (10MHz BW) head configuration tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on LTE band 30 was measured using RHK211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)				Page 197(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW		

Measured/Extrapolated SAR Values - Hotspot - LTE Band 30 2300 MHz (BW 10 MHz)														
Pos.	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
							Declared	Measured		Extrapolated		Reported		
										FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
10mm Back	QPSK	10.0	1	27710	2310.0	25	21.0	20.1	0.19	0.520		0.640		
			25	27710	2310.0									
			50	27710	2310.0									
	16QAM	10.0	1	27710	2310.0	25	21.0	20.8	-0.06	0.590	0.605	0.624	0.639	
10mm Front	QPSK	10.0	1											
				27710	2310.0	25	21.0	20.1	-0.17	0.157		0.193		
10mm Left	QPSK	10.0	1											
				27710	2310.0	25	21.0	20.1	0.11	0.042		0.052		
10mm Right	QPSK	10.0	1											
				27710	2310.0	25	21.0	20.1	0.08	0.300		0.370		
10mm Bottom	QPSK	10.0	1											
				27710	2310.0	25	21.0	20.1	0.01	0.324		0.400		
10mm + Headset	QPSK	10.0	1											
				27710	2310.0									
Slider Open														
10mm Back	QPSK	10.0	1	27710	2310.0	25	21.0	20.1	0.09	0.519		0.639		
			25	27710	2310.0	25	21.0	20.0	0.20	0.471		0.593		
			50	27710	2310.0	0	21.0	20.0	0.13	0.512		0.645		
	16QAM	10.0	1	27710	2310.0	25	21.0	20.8	0.06	0.528	0.542	0.558	0.573	
10mm Front	QPSK	10.0	1											
				27710	2310.0	25	21.0	20.1	0.02	0.440		0.541		
10mm Left	QPSK	10.0	1											
				27710	2310.0	25	21.0	20.1	0.11	0.082		0.101		
10mm Right	QPSK	10.0	1											
				27710	2310.0	25	21.0	20.1	0.06	0.399		0.491		
10mm Bottom	QPSK	10.0	1											
				27710	2310.0	25	21.0	20.1	0.00	0.422		0.519		
10mm + Headset	QPSK	10.0	1											
				27710	2310.0									

Table 11.2-14b SAR testing results LTE Band 30 (10MHz BW) hotspot configuration tested on device model: RHL211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW are identical for this band. Due to this SAR on LTE band 30 was measured using RHL211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 198(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Body-Worn - LTE Band 30 2300 MHz (BW 10 MHz)													
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
										Extrapolated		Reported	
							Declared	Measured		FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed													
15mm Back	QPSK	10.0	1										
				27710	2310.0	25	24.0	23.1	-0.07	0.524	0.532	0.652	0.662
			25										
				27710	2310.0	25	23.0	21.9	0.06	0.377		0.486	
50	27710	2310.0	0	23.0	21.9	0.16	0.398		0.509				
15mm Front	QPSK	10.0	1										
				27710	2310.0	25	24.0	23.1	-0.09	0.143		0.178	
Holster Back	QPSK	10.0	1										
				27710	2310.0	25	24.0	23.1	0.12	0.235		0.292	

Table 11.2-14c SAR testing results for LTE Band 30 (10MHz BW) body-worn configuration tested on device model: RHL211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW are identical for this band. Due to this SAR on LTE band 30 was measured using RHL211LW and reused for RHL211LW.

Threshold 1 For This Band: 0.452
Max FAST SAR For Band: 0.590
Threshold 2 For All Bands: 0.657
Max FULL SAR For Band: 0.605
Additional Full SAR Required: NO

Table 11.2-14d Fast SAR testing thresholds for LTE Band 30

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 199(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Head - LTE Band 41 2500 MHz (BW 20 MHz)														
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
							Declared	Measured		Extrapolated		Reported		
										FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
Right Cheek	QPSK	20.0	1	39750	2506.0									
				40185	2549.5									
				40620	2593.0	0	24.0	23.7	0.18	0.105		0.113		
				41055	2636.5									
				41490	2680.0									
Right 15° Tilt	QPSK	20.0	1	39750	2506.0									
				40185	2549.5									
				40620	2593.0	0	24.0	23.7	0.14	0.046		0.050		
				41055	2636.5									
				41490	2680.0									
Left Cheek	QPSK	20.0	1	39750	2506.0									
				40185	2549.5									
				40620	2593.0	0	24.0	23.7	-0.10	0.053		0.057		
				41055	2636.5									
				41490	2680.0									
Left 15° Tilt	QPSK	20.0	1	39750	2506.0									
				40185	2549.5									
				40620	2593.0	0	24.0	23.7	0.15	0.070		0.075		
				41055	2636.5									
				41490	2680.0									
Slider Open														
Right Cheek	QPSK	20.0	1	39750	2506.0	99	24.0	23.0	0.23	0.062		0.078		
				40185	2549.5	99	24.0	23.4	0.04	0.141	0.139	0.163	0.161	
				40620	2593.0	0	24.0	23.7	-0.05	0.123		0.132		
				41055	2636.5	0	24.0	23.4	0.40	0.073		0.084		
				41490	2680.0	0	24.0	22.6	0.35	0.134		0.184		
			50	39750	2506.0									
				40185	2549.5									
				40620	2593.0	0	23.0	22.4	0.23	0.090		0.104		
				41055	2636.5									
				41490	2680.0									
Right 15° Tilt	QPSK	20.0	1	39750	2506.0									
				40185	2549.5									
				40620	2593.0	0	24.0	23.7	0.08	0.035		0.037		
				41055	2636.5									
				41490	2680.0									
Left Cheek	QPSK	20.0	1	39750	2506.0									
				40185	2549.5									
				40620	2593.0	0	24.0	23.7	0.20	0.070		0.075		
				41055	2636.5									
				41490	2680.0									
Left 15° Tilt	QPSK	20.0	1	39750	2506.0									
				40185	2549.5									
				40620	2593.0	0	24.0	23.7	0.19	0.058		0.062		
				41055	2636.5									
				41490	2680.0									

Table 11.2-15a SAR testing results LTE Band 41 (20MHz BW) head configuration tested on device model: RHL211LW

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)				Page 200(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW		

Measured/Extrapolated SAR Values - Hotspot - LTE Band 41 2500 MHz (BW 20 MHz)														
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
							Declared	Measured		Extrapolated		Reported		
										FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
10mm Back	QPSK	20.0	1	41490	2680.0	0	21.0	20.7	0.22	0.343		0.368		
10mm Front	QPSK	20.0	1	41490	2680.0	0	21.0	20.7	0.03	0.258		0.276		
10mm Left	QPSK	20.0	1	41490	2680.0	0	21.0	20.7	0.08	0.036		0.039		
10mm Right	QPSK	20.0	1	41490	2680.0	0	21.0	20.7	-0.06	0.287		0.308		
10mm Bottom	QPSK	20.0	1	41490	2680.0	0	21.0	20.7	-0.06	0.429		0.460		
Slider Open														
10mm Back	QPSK	20.0	1	39750	2506.0									
				40185	2549.5									
				40620	2593.0									
				41055	2636.5									
				41490	2680.0	0	21.0	20.7	0.09	0.208		0.223		
10mm Front	QPSK	20.0	1	39750	2506.0									
				40185	2549.5									
				40620	2593.0									
				41055	2636.5									
				41490	2680.0	0	21.0	20.7	0.22	0.235		0.252		
10mm Left	QPSK	20.0	1	39750	2506.0									
				40185	2549.5									
				40620	2593.0									
				41055	2636.5									
				41490	2680.0	0	21.0	20.7	0.14	0.038		0.041		
10mm Right	QPSK	20.0	1	39750	2506.0									
				40185	2549.5									
				40620	2593.0									
				41055	2636.5									
				41490	2680.0	0	21.0	20.7	0.09	0.256		0.274		
10mm Bottom	QPSK	20.0	1	39750	2506.0	99	21.0	19.7	-0.06	0.477		0.648		
				40185	2549.5	99	21.0	19.9	-0.11	0.902	0.929	1.154	1.189	
				40620	2593.0	0	21.0	20.4	0.01	0.706	0.723	0.811	0.830	
				41055	2636.5	0	21.0	20.2	0.12	0.365		0.443		
				41490	2680.0	0	21.0	20.7	-0.02	0.570	0.586	0.611	0.628	
			50	39750	2506.0									
				40185	2549.5									
				40620	2593.0									
				41055	2636.5									
				41490	2680.0	0	21.0	20.7	0.07	0.512		0.549		
			100	41490	2680.0	0	21.0	20.7	0.03	0.494		0.529		
Repeat Scans - 10mm Bottom (Slider Open)														
2nd Scan	QPSK	20.0	1	40185	2549.5	99	21.0	19.9	0.00	0.848	0.868	1.085	1.111	

Table 11.2-15b SAR testing results LTE Band 41 (20MHz BW) hotspot configuration tested on device model: RHL211LW

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)				Page 201(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW		

Measured/Extrapolated SAR Values - Body-Worn - LTE Band 41 2500 MHz (BW 20 MHz)														
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
							Declared	Measured		Extrapolated		Reported		
										FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
15mm Back	QPSK	20.0	1	39750	2506.0	99	24.0	23.0	0.06	0.086		0.109		
				40185	2549.5	99	24.0	23.4	-0.07	0.236	0.235	0.273	0.272	
				40620	2593.0	0	24.0	23.7	0.17	0.185		0.199		
				41055	2636.5	0	24.0	23.4	0.21	0.093		0.107		
				41490	2680.0	0	24.0	22.6	-0.11	0.164		0.225		
			50	39750	2506.0	0	23.0	22.2						
				40185	2549.5	50	23.0	22.0						
				40620	2593.0	0	23.0	22.4	-0.19	0.130		0.151		
				41055	2636.5	0	23.0	22.2						
				41490	2680.0	0	23.0	21.7						
			100	40620	2593.0	0	23.0	22.3						
15mm Front	QPSK	20.0	1	39750	2506.0									
				40185	2549.5									
				40620	2593.0	0	24.0	23.7	-0.06	0.146		0.157		
				41055	2636.5									
				41490	2680.0									
Holster Back	QPSK	20.0	1	39750	2506.0									
				40185	2549.5									
				40620	2593.0	0	24.0	23.7	0.33	0.097		0.104		
				41055	2636.5									
				41490	2680.0									

Table 11.2-15c SAR testing results for LTE Band 41 (20MHz BW) body-worn configuration

Threshold 1 For This Band: 0.691
 Max FAST SAR For Band: 0.902
 Threshold 2 For All Bands: 0.657
 Max FULL SAR For Band: 0.929
 Additional Full SAR Required: YES

Table 11.2-15d Fast SAR testing thresholds for LTE Band 41

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 202(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Head - LTE Band 7 2600 MHz (BW 20 MHz)														
Position	Mod.	BW (MHz)	RB #	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
							Declared	Measured		Extrapolated		Reported		
										FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
Right Cheek	QPSK	20.0	1	20850	2510.0	50	24.0	23.5	0.11	0.150	0.152	0.169	0.172	
				21100	2535.0									
				21350	2560.0									
			50	20850	2510.0									
				21100	2535.0									
				21350	2560.0									
100														
	Right 15° Tilt	QPSK	20.0	1	20850	2510.0	50	24.0	23.5	-0.07	0.088	0.084	0.099	0.095
					21100	2535.0								
21350					2560.0									
Left Cheek	QPSK	20.0	1	20850	2510.0	50	24.0	23.5	0.02	0.105	0.107	0.119	0.121	
				21100	2535.0									
				21350	2560.0									
			50	20850	2510.0									
				21100	2535.0									
				21350	2560.0									
100														
	Left 15° Tilt	QPSK	20.0	1	20850	2510.0	50	24.0	23.5	0.00	0.118	0.129	0.133	0.146
					21100	2535.0								
21350					2560.0									
Slider Open														
Right Cheek	QPSK	20.0	1	20850	2510.0	50	24.0	23.5	0.14	0.260	0.264	0.294	0.298	
				21100	2535.0	0	24.0	23.0	-0.07	0.235	0.244	0.299	0.311	
				21350	2560.0	50	24.0	22.8	0.17	0.209	0.212	0.274	0.278	
			50	20850	2510.0	0	23.0	22.2	-0.12	0.203	0.205	0.245	0.248	
				21100	2535.0									
				21350	2560.0									
100														
	Right 15° Tilt	QPSK	20.0	1	20850	2510.0	50	24.0	23.5	0.01	0.085	0.084	0.096	0.095
					21100	2535.0								
21350					2560.0									
Left Cheek	QPSK	20.0	1	20850	2510.0	50	24.0	23.5	0.00	0.152	0.154	0.172	0.174	
				21100	2535.0									
				21350	2560.0									
Left 15° Tilt	QPSK	20.0	1	20850	2510.0	50	24.0	23.5	0.04	0.139	0.143	0.157	0.162	
				21100	2535.0									
				21350	2560.0									

Table 11.2-16a SAR testing results for LTE Band 7 (20MHz BW) head configuration tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on LTE band 7 was measured using RHK211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 203(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Hotspot - LTE Band 7 2600 MHz (BW 20 MHz)														
Position	Mod.	BW (MHz)	RB#	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)				
							Declare d	Measured		Extrapolated		Reported		
										FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed														
10mm Back	QPSK	20.0	1	20850	2510.0	0	20.5	20.4	-0.12	0.446		0.452		
				21100	2535.0									
				21350	2560.0									
			50	20850	2510.0	0	20.5	20.2	0.02	0.419		0.451		
				21100	2535.0									
				21350	2560.0									
100														
	10mm Front	QPSK	20.0	1	20850	2510.0	0	20.5	20.4	-0.11	0.329		0.334	
					21100	2535.0								
21350					2560.0									
10mm Left	QPSK	20.0	1	20850	2510.0	0	20.5	20.4	-0.14	0.064		0.065		
				21100	2535.0									
				21350	2560.0									
10mm Right	QPSK	20.0	1	20850	2510.0	0	20.5	20.4	0.16	0.327		0.335		
				21100	2535.0									
				21350	2560.0									
10mm Bottom	QPSK	20.0	1	20850	2510.0	0	20.5	20.4	0.02	0.598		0.606		
				21100	2535.0									
				21350	2560.0									
Slider Open														
10mm Back	QPSK	20.0	1	20850	2510.0	0	20.5	20.4	-0.12	0.523		0.530		
10mm Front	QPSK	20.0	1	20850	2510.0	0	20.5	20.4	-0.05	0.461		0.467		
10mm Left	QPSK	20.0	1	20850	2510.0	0	20.5	20.4	-0.05	0.226		0.231		
10mm Right	QPSK	20.0	1	20850	2510.0	0	20.5	20.4	-0.05	0.328		0.336		
10mm Bottom	QPSK	20.0	1	20850	2510.0	0	20.5	20.4	-0.02	0.826	0.811	0.837	0.822	
				21100	2535.0	0	20.5	20.0	-0.07	0.894	0.911	1.001	1.020	
				21350	2560.0	50	20.5	19.8	-0.04	0.879	0.909	1.038	1.073	
			50	20850	2510.0	0	20.5	20.2	-0.04	0.820	0.819	0.879	0.878	
				21100	2535.0	0	20.5	19.9	-0.03	0.929	0.957	1.079	1.112	
				21350	2560.0	0	20.5	19.7	0.01	0.871	0.888	1.054	1.075	
			100	20850	2510.0	0	20.5	20.1	0.02	0.838	0.856	0.919	0.939	
	16QAM	20.0	1	21350	2560.0	50	20.5	20.4	-0.03	0.874	0.883	0.894	0.904	
Repeat Scans - 10mm Bottom (Slider Open)														
2nd Scan	QPSK	20.0	50	21100	2535.0	0	20.5	20.0	-0.01	0.937	0.960	1.049	1.075	

Table 11.2-16b SAR testing results LTE Band 7 (20MHz BW) hotspot configuration tested on device model: RHL211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW are identical for this band. Due to this SAR on LTE band 7 was measured using RHL211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 204(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Body-Worn - LTE Band 7 2600 MHz (BW 20 MHz)										MSL Liquid			
Position	Mod.	BW (MHz)	RB#	Ch.	Freq. (MHz)	RB OFF	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
							Declared	Measured		Extrapolated		Reported	
										FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed													
15mm Back	QPSK	20.0	1	20850	2510.0	50	24.0	23.5	0.31	0.407		0.460	
				21100	2535.0	0	24.0	23.0	-0.06	0.400		0.509	
				21350	2560.0	50	24.0	22.8	-0.18	0.416	0.418	0.546	0.548
			50	20850	2510.0	0	23.0	22.2	0.04	0.290		0.350	
				21100	2535.0								
				21350	2560.0								
15mm Front	QPSK	20.0	1	20850	2510.0	50	24.0	23.5	-0.13	0.331		0.374	
				21100	2535.0								
				21350	2560.0								
Holster Back	QPSK	20.0	1	20850	2510.0	50	24.0	23.5	-0.01	0.232		0.262	
				21100	2535.0								
				21350	2560.0								

Table 11.2-16c SAR testing results for LTE Band 7 (20MHz BW) body-worn configuration tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on LTE band 7 was measured using RHK211LW and reused for RHL211LW.

Threshold 1 For This Band: 0.717
Max FAST SAR For Band: 0.937
Threshold 2 For All Bands: 0.657
Max FULL SAR For Band: 0.960
Additional Full SAR Required: YES

Table 11.2-16d Fast SAR testing thresholds for LTE Band 7

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 205(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Head - Bluetooth 2450 MHz									
Position	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
			Declared	Measured		Extrapolated		Reported	
						FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed									
Right Cheek	0	2402.0							
	39	2441.0	9.0	7.8	0.03	0.012	0.011	0.015	0.015
	78	2480.0							
Right 15° Tilt	0	2402.0							
	39	2441.0	9.0	7.8	-0.10	0.004	0.004	0.005	0.005
	78	2480.0							
Left Cheek	0	2402.0							
	39	2441.0	9.0	7.8	0.09	0.005	0.004	0.006	0.006
	78	2480.0							
Left 15° Tilt	0	2402.0							
	39	2441.0							
	78	2480.0							
Slider Open									
Right Cheek	0	2402.0							
	39	2441.0	9.0	7.8	-0.06	0.009	0.009	0.011	0.012
	78	2480.0							

Table 11.2-17a SAR testing results for Bluetooth head configuration tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on Bluetooth was measured using RHK211LW and reused for RHL211LW.

Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - Bluetooth 2450 MHz									
Position	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
			Declared	Measured		Extrapolated		Reported	
		FAST SAR				FULL SAR	FAST SAR	FULL SAR	
Slider Closed									
10mm Back	0	2402.0							
	39	2441.0	9.0	7.8	-0.15	0.017		0.023	
	78	2480.0							
Slider Open									
10mm Back	0	2402.0							
	39	2441.0	9.0	7.8	0.23	0.017	0.019	0.023	0.025
	78	2480.0							

Table 11.2-17b SAR testing results Bluetooth hotspot configuration tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on Bluetooth was measured using RHK211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 206(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - Bluetooth 2450 MHz									
Position	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Power Drift (dB)	1g SAR (W/Kg)			
			Declared	Measured		Extrapolated		Reported	
						FAST SAR	FULL SAR	FAST SAR	FULL SAR
Slider Closed									
15mm Back	0	2402.0							
	39	2441.0	9.0	7.8	0.17	0.009	0.007	0.012	0.009
	78	2480.0							

Table 11.2-17c SAR testing results for Bluetooth body-worn configuration tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on Bluetooth was measured using RHK211LW and reused for RHL211LW.

Threshold 1 For This Band: 0.013
Max FAST SAR For Band: 0.017
Threshold 2 For All Bands: 0.657
Max FULL SAR For Band: 0.019
Additional Full SAR Required: NO

Table 11.2-17d Fast SAR testing thresholds for Bluetooth

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 207(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Head - 802.11b DSSS 2450 MHz (Primary Antenna)											
Position	Data Rate (Mbps)	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Duty Factor (%)	1g SAR (W/Kg)				
				Declared	Measured		Extrapolated		Reported		FULL SAR at 100% DF
							FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed											
Right Cheek	1	1	2412.0	18.5	16.8	95.0	0.083	0.080	0.122	0.118	0.124
		6	2437.0	18.5	17.3	95.0	0.108	0.114	0.142	0.150	0.158
		11	2462.0	18.5	17.9	95.0	0.184	0.199	0.211	0.228	0.240
Right 15° Tilt	1	1	2412.0								
		6	2437.0								
		11	2462.0	18.5	17.9	95.0	0.142	0.154	0.163	0.177	0.186
Left Cheek	1	1	2412.0								
		6	2437.0								
		11	2462.0	18.5	17.9	95.0	0.087	0.085	0.099	0.097	0.102
Left 15° Tilt	1	1	2412.0								
		6	2437.0								
		11	2462.0	18.5	17.9	95.0	0.072	0.071	0.082	0.082	0.086
Slider Open											
Right Cheek	1	1	2412.0								
		6	2437.0								
		11	2462.0	18.5	17.9	95.0	0.174	0.182	0.200	0.209	0.219
Right 15° Tilt	1	1	2412.0								
		6	2437.0								
		11	2462.0	18.5	17.9	95.0	0.062	0.066	0.071	0.076	0.080
Left Cheek	1	1	2412.0								
		6	2437.0								
		11	2462.0	18.5	17.9	95.0	0.178	0.172	0.204	0.197	0.207
Left 15° Tilt	1	1	2412.0								
		6	2437.0								
		11	2462.0	18.5	17.9	95.0	0.077	0.078	0.088	0.090	0.095

Table 11.2-18a SAR testing results for 802.11b DSSS head configuration for primary Wi-Fi antenna tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on 802.11b was measured using RHK211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 208(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - 802.11b DSSS 2450 MHz (Primary Antenna)											
Positio n	Data Rate (Mbps)	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Duty Factor (%)	1g SAR (W/Kg)				
				Declare d	Measured		Extrapolated		Reported		FULL SAR at 100% DF
							FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed											
10mm Back	1	1	2412.0								
		6	2437.0								
		11	2462.0	11.5	10.8	95.0	0.032	0.033	0.038	0.038	0.040
10mm Front	1	1	2412.0								
		6	2437.0								
		11	2462.0	11.5	10.8	95.0	0.007	0.007	0.008	0.008	0.009
10mm Left	1	1	2412.0								
		6	2437.0								
		11	2462.0	11.5	10.8	95.0	0.014	0.014	0.017	0.016	0.017
10mm Right	1	1	2412.0								
		6	2437.0								
		11	2462.0								
10mm Top	1	1	2412.0								
		6	2437.0								
		11	2462.0								
10mm + Headset	1	1	2412.0								
		6	2437.0								
		11	2462.0								
Slider Open											
10mm Back	1	1	2412.0	11.5	10.1	95.0	0.027	0.028	0.037	0.038	0.040
		6	2437.0	11.5	10.2	95.0	0.034	0.034	0.046	0.046	0.049
		11	2462.0	11.5	10.8	95.0	0.042	0.043	0.050	0.051	0.053
10mm Front	1	1	2412.0								
		6	2437.0								
		11	2462.0	11.5	10.8	95.0	0.009	0.009	0.011	0.011	0.011
10mm Left	1	1	2412.0								
		6	2437.0								
		11	2462.0	11.5	10.8	95.0	0.026		0.031		
10mm Right	1	1	2412.0								
		6	2437.0								
		11	2462.0	11.5	10.8	95.0	0.000		0.001		
10mm Top	1	1	2412.0								
		6	2437.0								
		11	2462.0	11.5	10.8	95.0	0.010		0.012		

Table 11.2-18b SAR testing results 802.11b DSSS hotspot configuration for primary Wi-Fi antenna tested on device model: RHL211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW are identical for this band. Due to this SAR on 802.11b was measured using RHL211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 209(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - 802.11b DSSS 2450 MHz (Primary Antenna)											
Position	Data Rate (Mbps)	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Duty Factor (%)	1g SAR (W/Kg)				
				Declared	Measured		Extrapolated		Reported		FULL SAR at 100% DF
							FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed											
15mm Back	1	1	2412.0	18.5	16.8	95.0	0.035	0.035	0.051	0.051	0.054
		6	2437.0	18.5	17.3	95.0	0.065	0.062	0.085	0.082	0.086
		11	2462.0	18.5	17.9	95.0	0.091	0.093	0.105	0.106	0.112
15mm Front	1	1	2412.0								
		6	2437.0								
		11	2462.0	18.5	17.9	95.0	0.021	0.022	0.024	0.025	0.026
Holster Back	1	1	2412.0								
		6	2437.0								
		11	2462.0	18.5	17.9	95.0	0.050	0.049	0.057	0.056	0.059

Table 11.2-18c SAR testing results for 802.11b DSSS body-worn configuration for primary Wi-Fi antenna tested on device model: RHL211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW are identical for this band. Due to this SAR on 802.11b was measured using RHL211LW and reused for RHL211LW.

Threshold 1 For This Band: 0.165
Max FAST SAR For Band: 0.216
Threshold 2 For All Bands: 0.657
Max FULL SAR For Band: 0.214
Additional Full SAR Required: NO

Table 11.2-18d Fast SAR testing thresholds for 802.11b DSSS for primary Wi-Fi antenna

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 210(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Head - 802.11b DSSS 2450 MHz (Secondary Antenna)											
Position	Data Rate (Mbps)	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Duty Factor (%)	1g SAR (W/Kg)				
				Declared	Measured		Extrapolated		Reported		FULL SAR at 100% DF
							FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed											
Right Cheek	1	1	2412.0	18.5	17.5	95.0	0.028	0.029	0.035	0.037	0.038
		6	2437.0								
		11	2462.0								
Right 15° Tilt	1	1	2412.0	18.5	17.5	95.0	0.035	0.035	0.044	0.044	0.046
		6	2437.0								
		11	2462.0								
Left Cheek	1	1	2412.0	18.5	17.5	95.0	0.046	0.055	0.058	0.069	0.073
		6	2437.0	18.5	17.3	95.0	0.068	0.074	0.089	0.097	0.102
		11	2462.0	18.5	17.3	95.0	0.063	0.070	0.082	0.092	0.096
Left 15° Tilt	1	1	2412.0	18.5	17.5	95.0	0.063	0.070	0.079	0.087	0.092
		6	2437.0	18.5	17.3	95.0	0.070	0.080	0.093	0.105	0.111
		11	2462.0	18.5	17.3	95.0	0.062	0.071	0.082	0.093	0.098
Slider Open											
Right Cheek	1	1	2412.0	18.5	17.5	95.0	0.022	0.022	0.028	0.028	0.029
		6	2437.0								
		11	2462.0								
Right 15° Tilt	1	1	2412.0	18.5	17.5	95.0	0.017	0.018	0.022	0.022	0.023
		6	2437.0								
		11	2462.0								
Left Cheek	1	1	2412.0	18.5	17.5	95.0	0.025	0.025	0.032	0.031	0.033
		6	2437.0								
		11	2462.0								
Left 15° Tilt	1	1	2412.0	18.5	17.5	95.0	0.015	0.016	0.019	0.020	0.021
		6	2437.0								
		11	2462.0								

Table 11.2-19a SAR testing results for 802.11b DSSS head configuration for secondary Wi-Fi antenna tested on device model: RHL211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW are identical for this band. Due to this SAR on 802.11b was measured using RHL211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 211(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - 802.11b DSSS 2450 MHz (Secondary Antenna)											
Position	Data Rate (Mbps)	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Duty Factor (%)	1g SAR (W/Kg)				
				Declared	Measured		Extrapolated		Reported		SAR at 100% DF
							FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed											
10mm Back	1	1	2412.0								
		6	2437.0								
		11	2462.0	11.5	10.5	95.0	0.020		0.025		0.026
10mm Front	1	1	2412.0								
		6	2437.0								
		11	2462.0	11.5	10.5	95.0	0.003		0.004		0.004
10mm Left	1	1	2412.0								
		6	2437.0								
		11	2462.0								
10mm Right	1	1	2412.0								
		6	2437.0								
		11	2462.0								
10mm Top	1	1	2412.0								
		6	2437.0								
		11	2462.0								
10mm + Headset	1	1	2412.0								
		6	2437.0								
		11	2462.0								
Slider Open											
10mm Back	1	1	2412.0	11.5	10.4	95.0	0.025		0.032		0.034
		6	2437.0	11.5	10.2	95.0	0.030		0.040		0.042
		11	2462.0	11.5	10.5	95.0	0.033	0.035	0.041	0.044	0.046
10mm Front	1	1	2412.0								
		6	2437.0								
		11	2462.0	11.5	10.5	95.0	0.003		0.004		0.004
10mm Left	1	1	2412.0								
		6	2437.0								
		11	2462.0	11.5	10.5	95.0	0.000		0.000		0.000
10mm Right	1	1	2412.0								
		6	2437.0								
		11	2462.0	11.5	10.5	95.0	0.009		0.011		0.012
10mm Top	1	1	2412.0								
		6	2437.0								
		11	2462.0	11.5	10.5	95.0	0.002		0.002		0.002

Table 11.2-19b SAR testing results 802.11b DSSS hotspot configuration for secondary Wi-Fi antenna tested on device model: RHL211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW are identical for this band. Due to this SAR on 802.11b was measured using RHL211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 212(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - 802.11b DSSS 2450 MHz (Secondary Antenna)											
Position	Data Rate (Mbps)	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Duty Factor (%)	1g SAR (W/Kg)				
				Declared	Measured		Extrapolated		Reported		FULL SAR at 100% DF
							FAST SAR	FULL SAR	FAST SAR	FULL SAR	
Slider Closed											
15mm Back	1	1	2412.0	18.5	17.5	95.0	0.033	0.035	0.042	0.044	0.046
		6	2437.0	18.5	17.3	95.0	0.038	0.036	0.050	0.048	0.050
		11	2462.0	18.5	17.3	95.0	0.040	0.038	0.053	0.051	0.053
15mm Front	1	1	2412.0	18.5	17.5	95.0	0.006	0.006	0.008	0.008	0.008
		6	2437.0								
		11	2462.0								
Holster Back	1	1	2412.0	18.5	17.5	95.0	0.018	0.017	0.023	0.022	0.023
		6	2437.0								
		11	2462.0								
Holster Front	1	1	2412.0								
		6	2437.0								
		11	2462.0								
15mm + Headset	1	1	2412.0								
		6	2437.0								
		11	2462.0								

Table 11.2-19c SAR testing results for 802.11b DSSS body-worn configuration for secondary Wi-Fi antenna tested on device model: RHL211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW are identical for this band. Due to this SAR on 802.11b was measured using RHL211LW and reused for RHL211LW.

Threshold 1 For This Band: 0.119
 Max FAST SAR For Band: 0.156
 Threshold 2 For All Bands: 0.657
 Max FULL SAR For Band: 0.157
 Additional Full SAR Required: NO

Table 11.2-19d Fast SAR testing thresholds for 802.11b DSSS for secondary Wi-Fi antenna

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)			Page 213(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW	

Measured/Extrapolated SAR Values - Head - 802.11 5000 MHz (Primary Antenna)												
Pos.	U-NII	802.11 Mode	Data Rate (Mbps)	BW (MHz)	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Duty Factor (%)	Extra. FULL 1g SAR	Repo. FULL 1g SAR	FULL 1g SAR at 100% DF
							Decl.	Meas.				
Slider Closed												
Right Cheek	1	N		40	38	5190						
					46	5230						
	2A	N	MCS0	40	54	5270	17.0	15.3	95.0	0.079	0.117	0.123
					62	5310	17.0	15.8	95.0	0.076	0.100	0.105
	2C	N	MCS0	40	102	5510						
					118	5590						
					134	5670	17.0	15.7	95.0	0.050	0.067	0.071
	3	N	MCS0	40	151	5755	17.0	16.2	95.0	0.065	0.078	0.082
159					5795							
Right 15° Tilt	1	N		40								
	2A	N	MCS0	40	54	5270	17.0	15.3	95.0	0.095	0.140	0.147
	2C	N	MCS0	40								
	3	N	MCS0	40								
Left Cheek	1	N		40	38	5190						
					46	5230						
	2A	N	MCS0	40	54	5270	17.0	15.3	95.0	0.087	0.129	0.136
					62	5310						
	2C	N	MCS0	40	102	5510						
					118	5590						
					134	5670	17.0	15.7	95.0	0.048	0.064	0.068
	3	N	MCS0	40	151	5755	17.0	16.2	95.0	0.073	0.088	0.092
159					5795							
Left 15° Tilt	1	N		40								
	2A	N	MCS0	40	54	5270	17.0	15.3	95.0	0.109	0.161	0.169
	2C	N	MCS0	40								
	3	N	MCS0	40								
Slider Open												
Right Cheek	1	N		40								
	2A	N	MCS0	40	54	5270	17.0	15.3	95.0	0.104	0.154	0.162
	2C	N	MCS0	40								
	3	N	MCS0	40								
Right 15° Tilt	1	N		40								
	2A	N	MCS0	40	54	5270	17.0	15.3	95.0	0.083	0.123	0.129
	2C	N	MCS0	40								
	3	N	MCS0	40								
Left Cheek	1	N		40								
	2A	N	MCS0	40	54	5270	17.0	15.3	95.0	0.032	0.047	0.049
	2C	N	MCS0	40								
	3	N	MCS0	40								
Left 15° Tilt	1	N		40								
	2A	N	MCS0	40	54	5270	17.0	15.3	95.0	0.053	0.079	0.082
	2C	N	MCS0	40								
	3	N	MCS0	40								

Table 11.2-20a SAR testing results for 802.11a/n/an OFDM head configuration for primary Wi-Fi antenna tested on device model: RHL211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW are identical for this band. Due to this SAR on 802.11a/n was measured using RHL211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)				Page 214(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015	Test Report No RTS-6066-1509-17 Rev 4	FCC ID: L6ARHL210LW	IC 2503A-RHL210LW		

Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - 802.11 5000 MHz (Primary Antenna)												
Pos.	U-NII	802.11 Mode	Data Rate (Mbps)	BW (MHz)	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Duty Factor (%)	Extra. FULL 1g SAR	Repo. FULL 1g SAR	FULL 1g SAR at 100% DF
							Decl.	Meas.				
Slider Closed												
10mm Back	1	N	MCS0	40	38	5190						
					46	5230	11.5	10.6	95.0	0.107	0.132	0.138
	2A	N	MCS0	40	54	5270						
					62	5310						
	2C	N	MCS0	40	102	5510						
					118	5590						
					134	5670						
	3	N	MCS0	40	151	5755	11.5	11.0	95.0	0.089	0.100	0.105
					159	5795						
Slider Open												
10mm Back	1	N	MCS0	40	38	5190	11.5	10.4	95.0	0.133	0.171	0.180
					46	5230	11.5	10.6	95.0	0.125	0.154	0.161
	2A	N	MCS0	40	54	5270						
					62	5310						
	2C	N	MCS0	40	102	5510						
					118	5590						
					134	5670						
	3	N	MCS0	40	151	5755	11.5	11.0	95.0	0.116	0.130	0.137
					159	5795						
10mm Front	1	N	MCS0	40	46	5230	11.5	10.6	95.0	0.011	0.013	0.014
	2A	N	MCS0									
	2C	N	MCS0									
	3	N	MCS0									
10mm Left	1	N	MCS0	40	46	5230	11.5	10.6	95.0	0.108	0.133	0.140
	2A	N	MCS0									
	2C	N	MCS0									
	3	N	MCS0									
10mm Top	1	N	MCS0	40	46	5230	11.5	10.6	95.0	0.016	0.020	0.021
	2A	N	MCS0									
	2C	N	MCS0									
	3	N	MCS0									

Table 11.2-20b SAR testing results 802.11a/n/ac OFDM hotspot configuration for primary Wi-Fi antenna tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on 802.11a/n was measured using RHK211LW and reused for RHL211LW.

		Document SAR Compliance Test Report for the BlackBerry® Smartphone Model RHL211LW (STV100-3)				Page 215(242)
Author Data Andrew Becker	Dates of Test July 22 – Sept 21, 2015		Test Report No RTS-6066-1509-17 Rev 4		FCC ID: L6ARHL210LW	IC 2503A-RHL210LW

Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - 802.11an 5000 MHz (Primary Antenna)												
Pos.	U-NII	802.11 Mode	Data Rate (Mbps)	BW (MHz)	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Duty Factor (%)	Extra. FULL 1g SAR	Repo. FULL 1g SAR	FULL 1g SAR at 100% DF
							Decl.	Meas.				
Slider Closed												
15mm Back	1	N	MCS0	40	38	5190						
					46	5230						
	2A	N	MCS0	40	54	5270	17.0	15.3	95.0	0.219	0.324	0.340
					62	5310	17.0	15.8	95.0	0.274	0.361	0.379
	2C	N	MCS0	40	102	5510						
					118	5590						
					134	5670	17.0	15.7	95.0	0.141	0.190	0.200
	3	N	MCS0	40	151	5755	17.0	16.2	95.0	0.232	0.279	0.293
					159	5795						
15mm Front	1	N	MCS0	40								
	2A	N	MCS0	40	62	5310	17.0	15.8	95.0	0.030	0.040	0.042
	2C	N	MCS0	40								
	3	N	MCS0	40								
Holster Back	1	N	MCS0	40								
	2A	N	MCS0	40	62	5310	17.0	15.8	95.0	0.264	0.348	0.365
	2C	N	MCS0	40								
	3	N	MCS0	40								

Table 11.2-20c SAR testing results for 802.11a/n/ac OFDM body-worn configuration for primary Wi-Fi antenna tested on device model: RHL211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW are identical for this band. Due to this SAR on 802.11a/n was measured using RHL211LW and reused for RHL211LW.

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Measured/Extrapolated SAR Values - Head - 802.11 5000 MHz (Secondary Antenna)													
Pos.	U-NII	802.11 Mode	Data Rate (Mbps)	BW (MHz)	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Duty Factor (%)	1g SAR (W/Kg)			
							Decl.	Meas.		Extra.	Repo.	FULL SAR at 100% DF	
Slider Closed													
Right Cheek	1	N	MCS 0	40	38	5190							
					46	5230							
	2A	N	MCS 0	40	54	5270	17.0	16.1	95.0	0.007	0.008	0.009	
	2C	N	MCS 0	40	102	5510	17.0	16.5	95.0	0.009	0.010	0.011	
	3	N	MCS 0	40	151	5755	17.0	15.8	95.0	0.018	0.024	0.025	
159					5795								
Right 15° Tilt	1	A	MCS 0	40									
	2A	N	MCS 0	40									
	2C	N	MCS 0	40									
	3	N	MCS 0	40	151	5755	17.0	15.8	95.0	0.018	0.024	0.025	
Left Cheek	1	N	MCS 0	40	38	5190							
					46	5230							
	2A	N	MCS 0	40	54	5270	17.0	16.1	95.0	0.015	0.018	0.019	
					62	5310							
	2C	N	MCS 0	40	102	5510	17.0	16.5	95.0	0.002	0.002	0.002	
					118	5590							
					134	5670							
	3	N	MCS 0	40	151	5755	17.0	15.8	95.0	0.029	0.038	0.040	
159					5795								
Left 15° Tilt	1	N	MCS 0	40									
	2A	N	MCS 0	40									
	2C	N	MCS 0	40									
	3	N	MCS 0	40	151	5755	17.0	15.8	95.0	0.026	0.034	0.036	
Slider Open													
Right Cheek	1	N	MCS 0	40									
	2A	N	MCS 0	40									
	2C	N	MCS 0	40									
	3	N	MCS 0	40	151	5755	17.0	15.8	95.0	0.028	0.037	0.039	
Right 15° Tilt	1	N	MCS 0	40									
	2A	N	MCS 0	40									
	2C	N	MCS 0	40									
Left Cheek	1	N	MCS 0	40									
	2A	N	MCS 0	40									
	2C	N	MCS 0	40									
	3	N	MCS 0	40	151	5755	17.0	15.8	95.0	0.003	0.004	0.004	
Left 15° Tilt	1	N	MCS 0	40									
	2A	N	MCS 0	40									
	2C	N	MCS 0	40									
	3	N	MCS 0	40	151	5755	17.0	15.8	95.0	0.010	0.013	0.014	

Table 11.2-21a SAR testing results for 802.11a/n/ac OFDM head configuration for secondary Wi-Fi antenna tested on device model: RHL211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHL211LW are identical for this band. Due to this SAR on 802.11a/n was measured using RHL211LW and reused for RHL211LW.

Measured/Extrapolated SAR Values - Hotspot (10mm Spacing) - 802.11 5000 MHz (Secondary Antenna)

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Pos.	U-NII	802.11 Mode	Data Rate (Mbps)	BW (MHz)	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Duty Factor (%)	1g SAR (W/Kg)		
							Decl.	Meas.		Extra.	Repo.	FULL SAR at 100% DF
										FULL SAR	FULL SAR	
Slider Closed												
10mm Back	1	N	MCS0	40	38	5190	11.5	11.3	95.0	0.047	0.050	0.052
					46	5230						
	2A	N	MCS0	40	54	5270						
					62	5310						
	2C	N	MCS0	40	102	5510						
					118	5590						
					134	5670						
	3	N	MCS0	40	151	5755	11.5	10.2	95.0	0.066	0.089	0.094
					159	5795						
Slider Open												
10mm Back	1	N	MCS0	40	38	5190	11.5	11.3	95.0	0.067	0.090	0.094
					46	5230						
	2A	N	MCS0	40	54	5270						
					62	5310						
	2C	N	MCS0	40	102	5510						
					118	5590						
					134	5670						
	3	N	MCS0	40	151	5755	11.5	10.2	95.0	0.065	0.088	0.092
					159	5795	11.5	10.0	95.0	0.075	0.106	0.112
10mm Front	1	N	MCS0	40								
	2A	N	MCS0	40								
	2C	N	MCS0	40								
	3	N	MCS0	40	159	5795	11.5	10.0	95.0	0.014	0.019	0.020
10mm Right	1	N	MCS0	40								
	2A	N	MCS0	40								
	2C	N	MCS0	40								
	3	N	MCS0	40	159	5795	11.5	10.0	95.0	0.032	0.044	0.047
10mm Top	1	N	MCS0	40								
	2A	N	MCS0	40								
	2C	N	MCS0	40								
	3	N	MCS0	40	159	5795	11.5	10.0	95.0	0.013	0.019	0.020

Table 11.2-21b SAR testing results 802.11a/n/ac OFDM hotspot configuration for secondary Wi-Fi antenna tested on device model: RHK211LW

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on 802.11a/n was measured using RHK211LW and reused for RHL211LW.

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Measured/Extrapolated SAR Values - Body-Worn (15mm Spacing) - 802.11an 5000 MHz (Secondary Antenna)												
Pos.	U-NII	802.11 Mode	Data Rate (Mbps)	BW (MHz)	Ch.	Freq. (MHz)	Cond. Output Power (dBm)		Duty Factor (%)	1g SAR (W/Kg)		
							Decl.	Meas.		Extra.	Repo.	FULL SAR at 100% DF
										FULL SAR	FULL SAR	
Slider Closed												
15mm Back	1	N	MCS0	40	38	5190						
					46	5230						
	2A	N	MCS0	40	54	5270	17.0	16.1	95.0	0.087	0.108	0.113
					62	5310	17.0	16.0	95.0	0.063	0.079	0.083
	2C	N	MCS0	40	102	5510	17.0	16.5	95.0	0.065	0.073	0.077
					118	5590						
					134	5670						
	3	N	MCS0	40	151	5755	17.0	15.8	95.0	0.028	0.037	0.039
					159	5795						
15mm Front	1	N	MCS0	40								
	2A	N	MCS0	40	54	5270	17.0	16.1	95.0	0.011	0.013	0.014
	2C	N	MCS0	40								
	3	N	MCS0	40								
Holster Back	1	N	MCS0	40								
	2A	N	MCS0	40	54	5270	17.0	16.1	95.0	0.076	0.094	0.098
	2C	N	MCS0	40								
	3	N	MCS0	40								

Table 11.2-21c SAR testing results for 802.11a/n/ac OFDM body-worn for secondary Wi-Fi antenna configuration

Note: According to the hardware similarity document BlackBerry models RHL211LW and RHK211LW are identical for this band. Due to this SAR on 802.11a/n was measured using RHK211LW and reused for RHL211LW.

11.3 Simultaneous transmission analysis for SAR measurement results

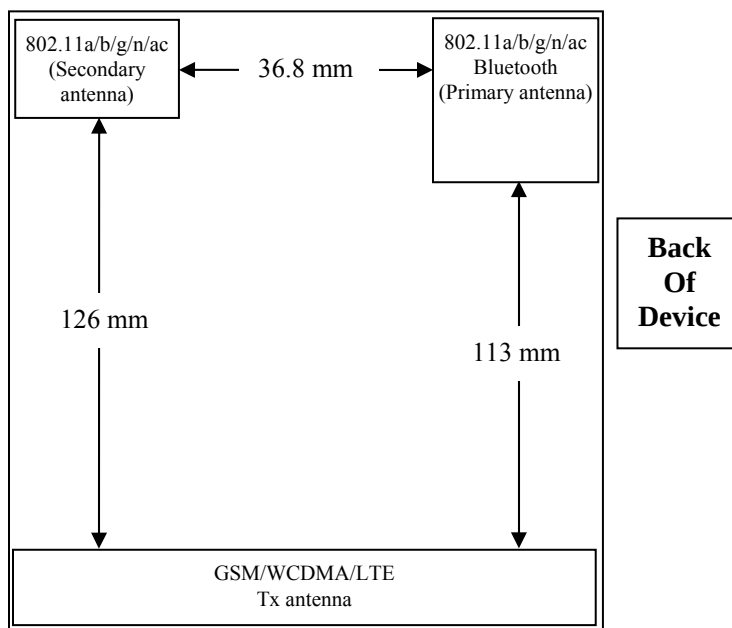


Figure 11.3-1 Back view of device showing closest distance between antenna pairs

Separate Transmitting Antenna	
Separate Antenna	Technologies Utilized By Each Antenna
Antenna 1	GSM, WCDMA, LTE
Antenna 2	Wi-Fi 2.4 GHz/5.0 GHz(Primary), Bluetooth
Antenna 3	Wi-Fi 2.4 GHz/5.0 GHz (Secondary)
Simultaneous Transmission Combinations	
Config	Simultaneous Transmission (by Technology)
Head	GSM/WCDMA/LTE + Wi-Fi(Prim.) + BT
	GSM/WCDMA/LTE + Wi-Fi (Sec.) + BT
	GSM/WCDMA/LTE + Wi-Fi (Prim.) + Wi-Fi (Sec.) + BT
Body-Worn	GSM/WCDMA/LTE + Wi-Fi(Prim.) + BT
	GSM/WCDMA/LTE + Wi-Fi (Sec.) + BT
	GSM/WCDMA/LTE + Wi-Fi (Prim.) + Wi-Fi (Sec.) + BT
Hotspot	GSM/WCDMA/LTE + Wi-Fi(Prim.) + BT
	GSM/WCDMA/LTE + Wi-Fi (Sec.) + BT
	GSM/WCDMA/LTE + Wi-Fi (Prim.) + Wi-Fi (Sec.) + BT

Table 11.3-1 Simultaneous Transmission Scenarios

Note 1: LTE and GSM/WCDMA cannot transmit simultaneously since it shares the same antenna.

Note 2: 2.4 GHz and 5.0 GHz Wi-Fi cannot transmit at the same time, both Wi-Fi antennas must be transmitting the same Wi-Fi frequency band.

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Standalone SAR Values Summation On The Same Test Position (Primary Wi-Fi Antenna)									
Band	Config.	Main Transmitter		Unlicensed Transmitters			Max Summation (W/Kg)		
		Position	1g SAR (W/Kg)	BT	2.4GHz Wi-Fi	5.0GHz Wi-Fi	Main + BT	Main + BT + 2.4GHz Wi-Fi	Main + BT + 5.0GHz Wi-Fi
				1g SAR	1g SAR	1g SAR			
LTE Band 12	Head	Right Cheek	0.237	0.015	0.240	0.162	0.252	0.492	0.414
		Right Tilt	0.154	0.005	0.186	0.147	0.159	0.345	0.306
		Left Cheek	0.195	0.006	0.207	0.136	0.201	0.408	0.337
		Left Tilt	0.132		0.095	0.169	0.132	0.227	0.301
	Hotspot (10mm)	Back	0.350	0.025	0.053	0.180	0.375	0.428	0.555
		Front	0.293		0.011	0.014	0.293	0.304	0.307
		Left	0.223		0.031	0.140	0.223	0.254	0.363
		Right	0.385		0.001		0.385	0.386	0.385
		Top			0.012	0.021		0.012	0.021
		Bottom	0.255				0.255	0.255	0.255
		15mm Back	0.316	0.009	0.112	0.379	0.325	0.437	0.704
	Body-worn	15mm Front	0.277		0.026	0.042	0.277	0.303	0.319
		Hol. Back	0.279		0.059	0.365	0.279	0.338	0.644
		Hol. Front							
LTE Band 17	Head	Right Cheek	0.223	0.015	0.240	0.162	0.238	0.478	0.400
		Right Tilt	0.138	0.005	0.186	0.147	0.143	0.329	0.290
		Left Cheek	0.188	0.006	0.207	0.136	0.194	0.401	0.330
		Left Tilt	0.141		0.095	0.169	0.141	0.236	0.310
	Hotspot (10mm)	Back	0.342	0.025	0.053	0.180	0.367	0.420	0.547
		Front	0.290		0.011	0.014	0.290	0.301	0.304
		Left	0.395		0.031	0.140	0.395	0.426	0.535
		Right	0.206		0.001		0.206	0.207	0.206
		Top			0.012	0.021		0.012	0.021
		Bottom	0.235				0.235	0.235	0.235
		15mm Back	0.309	0.009	0.112	0.379	0.318	0.430	0.697
	Body-worn	15mm Front	0.239		0.026	0.042	0.239	0.265	0.281
		Hol. Back	0.238		0.059	0.365	0.238	0.297	0.603
		Hol. Front							
LTE Band 28	Head	Right Cheek	0.258	0.015	0.240	0.162	0.273	0.513	0.435
		Right Tilt	0.154	0.005	0.186	0.147	0.159	0.345	0.306
		Left Cheek	0.182	0.006	0.207	0.136	0.188	0.395	0.324
		Left Tilt	0.108		0.095	0.169	0.108	0.203	0.277
	Hotspot (10mm)	Back	0.350	0.025	0.053	0.180	0.375	0.428	0.555
		Front	0.273		0.011	0.014	0.273	0.284	0.287
		Left	0.384		0.031	0.140	0.384	0.415	0.524
		Right	0.204		0.001		0.204	0.205	0.204
		Top			0.012	0.021		0.012	0.021
		Bottom	0.242				0.242	0.242	0.242
		15mm Back	0.325	0.009	0.112	0.379	0.334	0.446	0.713
	Body-worn	15mm Front	0.276		0.026	0.042	0.276	0.302	0.318
		Hol. Back	0.192		0.059	0.365	0.192	0.251	0.557

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		Hol. Front							
LTE Band 13	Head	Right Cheek	0.177	0.015	0.240	0.162	0.192	0.432	0.354
		Right Tilt	0.126	0.005	0.186	0.147	0.131	0.317	0.278
		Left Cheek	0.143	0.006	0.207	0.136	0.149	0.356	0.285
		Left Tilt	0.098		0.095	0.169	0.098	0.193	0.267
	Hotspot (10mm)	Back	0.269	0.025	0.053	0.180	0.294	0.347	0.474
		Front	0.257		0.011	0.014	0.257	0.268	0.271
		Left	0.222		0.031	0.140	0.222	0.253	0.362
		Right	0.403		0.001		0.403	0.404	0.403
		Top			0.012	0.021		0.012	0.021
		Bottom	0.250				0.250	0.250	0.250
	Body-worn	15mm Back	0.271	0.009	0.112	0.379	0.280	0.392	0.659
		15mm Front	0.257		0.026	0.042	0.257	0.283	0.299
		Hol. Back	0.255		0.059	0.365	0.255	0.314	0.620
		Hol. Front							
LTE Band 5	Head	Right Cheek	0.287	0.015	0.240	0.162	0.302	0.542	0.464
		Right Tilt	0.151	0.005	0.186	0.147	0.156	0.342	0.303
		Left Cheek	0.224	0.006	0.207	0.136	0.230	0.437	0.366
		Left Tilt	0.131		0.095	0.169	0.131	0.226	0.300
	Hotspot (10mm)	Back	0.505	0.025	0.053	0.180	0.530	0.583	0.710
		Front	0.277		0.011	0.014	0.277	0.288	0.291
		Left	0.183		0.031	0.140	0.183	0.214	0.323
		Right	0.290		0.001		0.290	0.291	0.290
		Top			0.012	0.021		0.012	0.021
		Bottom	0.472				0.472	0.472	0.472
	Body-worn	15mm Back	0.216	0.009	0.112	0.379	0.225	0.337	0.604
		15mm Front	0.255		0.026	0.042	0.255	0.281	0.297
		Hol. Back	0.224		0.059	0.365	0.224	0.283	0.589
		Hol. Front							
GSM/ DTM 850	Head	Right Cheek	0.542	0.015	0.240	0.162	0.557	0.797	0.719
		Right Tilt	0.241	0.005	0.186	0.147	0.246	0.432	0.393
		Left Cheek	0.386	0.006	0.207	0.136	0.392	0.599	0.528
		Left Tilt	0.254		0.095	0.169	0.254	0.349	0.423
	Hotspot (10mm)	Back	0.777	0.025	0.053	0.180	0.802	0.855	0.982
		Front	0.555		0.011	0.014	0.555	0.566	0.569
		Left	0.386		0.031	0.140	0.386	0.417	0.526
		Right	0.513		0.001		0.513	0.514	0.513
		Top			0.012	0.021		0.012	0.021
		Bottom	0.644				0.644	0.644	0.644
	Body-worn	15mm Back	0.364	0.009	0.112	0.379	0.373	0.485	0.752
		15mm Front	0.517		0.026	0.042	0.517	0.543	0.559
		Hol. Back			0.059	0.365		0.059	0.365
		Hol. Front	0.441				0.441	0.441	0.441
UMTS V	Head	Right Cheek	0.382	0.015	0.240	0.162	0.397	0.637	0.559
		Right Tilt	0.215	0.005	0.186	0.147	0.220	0.406	0.367
		Left Cheek	0.276	0.006	0.207	0.136	0.282	0.489	0.418

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	Hotspot (10mm)	Left Tilt	0.193		0.095	0.169	0.193	0.288	0.362
		Back	0.642	0.025	0.053	0.180	0.667	0.720	0.847
		Front	0.397		0.011	0.014	0.397	0.408	0.411
		Left	0.274		0.031	0.140	0.274	0.305	0.414
		Right	0.417		0.001		0.417	0.418	0.417
		Top			0.012	0.021		0.012	0.021
		Bottom	0.429				0.429	0.429	0.429
	Body-worn	15mm Back	0.331	0.009	0.112	0.379	0.340	0.452	0.719
		15mm Front	0.383		0.026	0.042	0.383	0.409	0.425
		Hol. Back	0.136		0.059	0.365	0.136	0.195	0.501
		Hol. Front	0.368				0.368	0.368	0.368
LTE Band 4	Head	Right Cheek	0.275	0.015	0.240	0.162	0.290	0.530	0.452
		Right Tilt	0.284	0.005	0.186	0.147	0.289	0.475	0.436
		Left Cheek	0.810	0.006	0.207	0.136	0.816	1.023	0.952
		Left Tilt	0.375		0.095	0.169	0.375	0.470	0.544
	Hotspot (10mm)	Back	0.886	0.025	0.053	0.180	0.911	0.964	1.091
		Front	0.458		0.011	0.014	0.458	0.469	0.472
		Left	0.075		0.031	0.140	0.075	0.106	0.215
		Right	0.487		0.001		0.487	0.488	0.487
		Top			0.012	0.021		0.012	0.021
		Bottom	0.185				0.185	0.185	0.185
	Body-worn	15mm Back	0.675	0.009	0.112	0.379	0.684	0.796	1.063
		15mm Front	0.358		0.026	0.042	0.358	0.384	0.400
		Hol. Back	0.245		0.059	0.365	0.245	0.304	0.610
		Hol. Front							
UMTS IV	Head	Right Cheek	0.424	0.015	0.240	0.162	0.439	0.679	0.601
		Right Tilt	0.468	0.005	0.186	0.147	0.473	0.659	0.620
		Left Cheek	1.045	0.006	0.207	0.136	1.051	1.258	1.187
		Left Tilt	0.521		0.095	0.169	0.521	0.616	0.690
	Hotspot (10mm)	Back	0.972	0.025	0.053	0.180	0.997	1.050	1.177
		Front	0.540		0.011	0.014	0.540	0.551	0.554
		Left	0.355		0.031	0.140	0.355	0.386	0.495
		Right	0.130		0.001		0.130	0.131	0.130
		Top			0.012	0.021		0.012	0.021
		Bottom	0.348				0.348	0.348	0.348
	Body-worn	15mm Back	0.791	0.009	0.112	0.379	0.800	0.912	1.179
		15mm Front	0.700		0.026	0.042	0.700	0.726	0.742
		Hol. Back	0.185		0.059	0.365	0.185	0.244	0.550
		Hol. Front							
LTE Band 2	Head	Right Cheek	0.336	0.015	0.240	0.162	0.351	0.591	0.513
		Right Tilt	0.327	0.005	0.186	0.147	0.332	0.518	0.479
		Left Cheek	0.653	0.006	0.207	0.136	0.659	0.866	0.795
		Left Tilt	0.385		0.095	0.169	0.385	0.480	0.554
	Hotspot (10mm)	Back	0.836	0.025	0.053	0.180	0.861	0.914	1.041
		Front	0.423		0.011	0.014	0.423	0.434	0.437
		Left	0.338		0.031	0.140	0.338	0.369	0.478
		Right	0.095		0.001		0.095	0.096	0.095

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		Top			0.012	0.021		0.012	0.021
		Bottom	0.150				0.150	0.150	0.150
	Body-worn	15mm Back	0.721	0.009	0.112	0.379	0.730	0.842	1.109
		15mm Front	0.277		0.026	0.042	0.277	0.303	0.319
		Hol. Back	0.286		0.059	0.365	0.286	0.345	0.651
		Hol. Front							
LTE Band 25	Head	Right Cheek	0.341	0.015	0.240	0.162	0.356	0.596	0.518
		Right Tilt	0.317	0.005	0.186	0.147	0.322	0.508	0.469
		Left Cheek	0.679	0.006	0.207	0.136	0.685	0.892	0.821
		Left Tilt	0.357		0.095	0.169	0.357	0.452	0.526
	Hotspot (10mm)	Back	0.726	0.025	0.053	0.180	0.751	0.804	0.931
		Front	0.425		0.011	0.014	0.425	0.436	0.439
		Left	0.333		0.031	0.140	0.333	0.364	0.473
		Right	0.095		0.001		0.095	0.096	0.095
		Top			0.012	0.021		0.012	0.021
		Bottom	0.152				0.152	0.152	0.152
	Body-worn	15mm Back	0.626	0.009	0.112	0.379	0.635	0.747	1.014
		15mm Front	0.276		0.026	0.042	0.276	0.302	0.318
		Hol. Back	0.272		0.059	0.365	0.272	0.331	0.637
		Hol. Front							
GSM/ DTM 1900	Head	Right Cheek	0.362	0.015	0.240	0.162	0.377	0.617	0.539
		Right Tilt	0.380	0.005	0.186	0.147	0.385	0.571	0.532
		Left Cheek	0.731	0.006	0.207	0.136	0.737	0.944	0.873
		Left Tilt	0.487		0.095	0.169	0.487	0.582	0.656
	Hotspot (10mm)	Back	1.162	0.025	0.053	0.180	1.187	1.240	1.367
		Front	0.661		0.011	0.014	0.661	0.672	0.675
		Left	0.539		0.031	0.140	0.539	0.570	0.679
		Right	0.155		0.001		0.155	0.156	0.155
		Top			0.012	0.021		0.012	0.021
		Bottom	0.227				0.227	0.227	0.227
	Body-worn	15mm Back	0.761	0.009	0.112	0.379	0.770	0.882	1.149
		15mm Front	0.188		0.026	0.042	0.188	0.214	0.230
		Hol. Back	0.325		0.059	0.365	0.325	0.384	0.690
		Hol. Front							
UMTS II	Head	Right Cheek	0.400	0.015	0.240	0.162	0.415	0.655	0.577
		Right Tilt	0.453	0.005	0.186	0.147	0.458	0.644	0.605
		Left Cheek	0.889	0.006	0.207	0.136	0.895	1.102	1.031
		Left Tilt	0.587		0.095	0.169	0.587	0.682	0.756
	Hotspot (10mm)	Back	1.077	0.025	0.053	0.180	1.102	1.155	1.282
		Front	0.609		0.011	0.014	0.609	0.620	0.623
		Left	0.419		0.031	0.140	0.419	0.450	0.559
		Right	0.131		0.001		0.131	0.132	0.131
		Top			0.012	0.021		0.012	0.021
		Bottom	0.198				0.198	0.198	0.198
	Body-worn	15mm Back	1.148	0.009	0.112	0.379	1.157	1.269	1.536
		15mm Front	0.290		0.026	0.042	0.290	0.316	0.332

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LTE Band 30		Hol. Back	0.403		0.059	0.365	0.403	0.462	0.768
		Hol. Front							
	Head	Right Cheek	0.188	0.015	0.240	0.162	0.203	0.443	0.365
		Right Tilt	0.081	0.005	0.186	0.147	0.086	0.272	0.233
		Left Cheek	0.083	0.006	0.207	0.136	0.089	0.296	0.225
		Left Tilt	0.083		0.095	0.169	0.083	0.178	0.252
	Hotspot (10mm)	Back	0.645	0.025	0.053	0.180	0.670	0.723	0.850
		Front	0.541		0.011	0.014	0.541	0.552	0.555
		Left	0.101		0.031	0.140	0.101	0.132	0.241
		Right	0.491		0.001		0.491	0.492	0.491
		Top			0.012	0.021		0.012	0.021
		Bottom	0.519				0.519	0.519	0.519
	Body-worn	15mm Back	0.662	0.009	0.112	0.379	0.671	0.783	1.050
		15mm Front	0.178		0.026	0.042	0.178	0.204	0.220
		Hol. Back	0.292		0.059	0.365	0.292	0.351	0.657
		Hol. Front							
LTE Band 41	Head	Right Cheek	0.184	0.015	0.240	0.162	0.199	0.439	0.361
		Right Tilt	0.050	0.005	0.186	0.147	0.055	0.241	0.202
		Left Cheek	0.075	0.006	0.207	0.136	0.081	0.288	0.217
		Left Tilt	0.075		0.095	0.169	0.075	0.170	0.244
	Hotspot (10mm)	Back	0.368	0.025	0.053	0.180	0.393	0.446	0.573
		Front	0.276		0.011	0.014	0.276	0.287	0.290
		Left	0.041		0.031	0.140	0.041	0.072	0.181
		Right	0.308		0.001		0.308	0.309	0.308
		Top			0.012	0.021		0.012	0.021
		Bottom	1.189				1.189	1.189	1.189
	Body-worn	15mm Back	0.272	0.009	0.112	0.379	0.281	0.393	0.660
		15mm Front	0.157		0.026	0.042	0.157	0.183	0.199
		Hol. Back	0.104		0.059	0.365	0.104	0.163	0.469
		Hol. Front							
LTE Band 7	Head	Right Cheek	0.311	0.015	0.240	0.162	0.326	0.566	0.488
		Right Tilt	0.095	0.005	0.186	0.147	0.100	0.286	0.247
		Left Cheek	0.174	0.006	0.207	0.136	0.180	0.387	0.316
		Left Tilt	0.162		0.095	0.169	0.162	0.257	0.331
	Hotspot (10mm)	Back	0.530	0.025	0.053	0.180	0.555	0.608	0.735
		Front	0.467		0.011	0.014	0.467	0.478	0.481
		Left	0.231		0.031	0.140	0.231	0.262	0.371
		Right	0.336		0.001		0.336	0.337	0.336
		Top			0.012	0.021		0.012	0.021
		Bottom	1.112				1.112	1.112	1.112
	Body-worn	15mm Back	0.548	0.009	0.112	0.379	0.557	0.669	0.936
		15mm Front	0.374		0.026	0.042	0.374	0.400	0.416
		Hol. Back	0.262		0.059	0.365	0.262	0.321	0.627
		Hol. Front							

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Standalone SAR Values Summation On The Same Test Position (Primary Wi-Fi Antenna)									
Band	Config.	Main Transmitter		Unlicensed Transmitters			Max Summation (W/Kg)		
		Position	1g SAR (W/Kg)	BT	2.4GHz Wi-Fi	5.0GHz Wi-Fi	Main + BT	Main + 2.4GHz Wi-Fi	Main + 5.0GHz Wi-Fi
				1g SAR	1g SAR	1g SAR			
LTE Band 12	Head	Right Cheek	0.237	0.015	0.240	0.162	0.252	0.477	0.399
		Right Tilt	0.154	0.005	0.186	0.147	0.159	0.340	0.301
		Left Cheek	0.195	0.006	0.207	0.136	0.201	0.402	0.331
		Left Tilt	0.132		0.095	0.169	0.132	0.227	0.301
	Hotspot (10mm)	Back	0.350	0.025	0.053	0.180	0.375	0.403	0.530
		Front	0.293		0.011	0.014	0.293	0.304	0.307
		Left	0.223		0.031	0.140	0.223	0.254	0.363
		Right	0.385		0.001		0.385	0.386	0.385
		Top			0.012	0.021		0.012	0.021
		Bottom	0.255				0.255	0.255	0.255
	Body-worn	15mm Back	0.316	0.009	0.112	0.379	0.325	0.428	0.695
		15mm Front	0.277		0.026	0.042	0.277	0.303	0.319
		Hol. Back	0.279		0.059	0.365	0.279	0.338	0.644
		Hol. Front							
LTE Band 17	Head	Right Cheek	0.223	0.015	0.240	0.162	0.238	0.463	0.385
		Right Tilt	0.138	0.005	0.186	0.147	0.143	0.324	0.285
		Left Cheek	0.188	0.006	0.207	0.136	0.194	0.395	0.324
		Left Tilt	0.141		0.095	0.169	0.141	0.236	0.310
	Hotspot (10mm)	Back	0.342	0.025	0.053	0.180	0.367	0.395	0.522
		Front	0.290		0.011	0.014	0.290	0.301	0.304
		Left	0.395		0.031	0.140	0.395	0.426	0.535
		Right	0.206		0.001		0.206	0.207	0.206
		Top			0.012	0.021		0.012	0.021
		Bottom	0.235				0.235	0.235	0.235
	Body-worn	15mm Back	0.309	0.009	0.112	0.379	0.318	0.421	0.688
		15mm Front	0.239		0.026	0.042	0.239	0.265	0.281
		Hol. Back	0.238		0.059	0.365	0.238	0.297	0.603
		Hol. Front							
LTE Band 28	Head	Right Cheek	0.258	0.015	0.240	0.162	0.273	0.498	0.420
		Right Tilt	0.154	0.005	0.186	0.147	0.159	0.340	0.301
		Left Cheek	0.182	0.006	0.207	0.136	0.188	0.389	0.318
		Left Tilt	0.108		0.095	0.169	0.108	0.203	0.277
	Hotspot (10mm)	Back	0.350	0.025	0.053	0.180	0.375	0.403	0.530
		Front	0.273		0.011	0.014	0.273	0.284	0.287
		Left	0.384		0.031	0.140	0.384	0.415	0.524
		Right	0.204		0.001		0.204	0.205	0.204
		Top			0.012	0.021		0.012	0.021
		Bottom	0.242				0.242	0.242	0.242
	Body-worn	15mm Back	0.325	0.009	0.112	0.379	0.334	0.437	0.704
		15mm Front	0.276		0.026	0.042	0.276	0.302	0.318
		Hol. Back	0.192		0.059	0.365	0.192	0.251	0.557
		Hol. Front							
LTE Band 13	Head	Right Cheek	0.177	0.015	0.240	0.162	0.192	0.417	0.339
		Right Tilt	0.126	0.005	0.186	0.147	0.131	0.312	0.273
		Left Cheek	0.143	0.006	0.207	0.136	0.149	0.350	0.279
		Left Tilt	0.098		0.095	0.169	0.098	0.193	0.267

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LTE Band 5	Hotspot (10mm)	Back	0.269	0.025	0.053	0.180	0.294	0.322	0.449
		Front	0.257		0.011	0.014	0.257	0.268	0.271
		Left	0.222		0.031	0.140	0.222	0.253	0.362
		Right	0.403		0.001		0.403	0.404	0.403
		Top			0.012	0.021		0.012	0.021
		Bottom	0.250				0.250	0.250	0.250
	Body-worn	15mm Back	0.271	0.009	0.112	0.379	0.280	0.383	0.650
		15mm Front	0.257		0.026	0.042	0.257	0.283	0.299
		Hol. Back	0.255		0.059	0.365	0.255	0.314	0.620
		Hol. Front							
	Head	Right Cheek	0.287	0.015	0.240	0.162	0.302	0.527	0.449
		Right Tilt	0.151	0.005	0.186	0.147	0.156	0.337	0.298
		Left Cheek	0.224	0.006	0.207	0.136	0.230	0.431	0.360
		Left Tilt	0.131		0.095	0.169	0.131	0.226	0.300
GSM/DTM 850	Hotspot (10mm)	Back	0.505	0.025	0.053	0.180	0.530	0.558	0.685
		Front	0.277		0.011	0.014	0.277	0.288	0.291
		Left	0.183		0.031	0.140	0.183	0.214	0.323
		Right	0.290		0.001		0.290	0.291	0.290
		Top			0.012	0.021		0.012	0.021
		Bottom	0.472				0.472	0.472	0.472
	Body-worn	15mm Back	0.216	0.009	0.112	0.379	0.225	0.328	0.595
		15mm Front	0.255		0.026	0.042	0.255	0.281	0.297
		Hol. Back	0.224		0.059	0.365	0.224	0.283	0.589
		Hol. Front							
	Head	Right Cheek	0.542	0.015	0.240	0.162	0.557	0.782	0.704
		Right Tilt	0.241	0.005	0.186	0.147	0.246	0.427	0.388
		Left Cheek	0.386	0.006	0.207	0.136	0.392	0.593	0.522
		Left Tilt	0.254		0.095	0.169	0.254	0.349	0.423
UMTS V	Hotspot (10mm)	Back	0.777	0.025	0.053	0.180	0.802	0.830	0.957
		Front	0.555		0.011	0.014	0.555	0.566	0.569
		Left	0.386		0.031	0.140	0.386	0.417	0.526
		Right	0.513		0.001		0.513	0.514	0.513
		Top			0.012	0.021		0.012	0.021
		Bottom	0.644				0.644	0.644	0.644
	Body-worn	15mm Back	0.364	0.009	0.112	0.379	0.373	0.476	0.743
		15mm Front	0.517		0.026	0.042	0.517	0.543	0.559
		Hol. Back			0.059	0.365		0.059	0.365
		Hol. Front	0.441				0.441	0.441	0.441
	Head	Right Cheek	0.382	0.015	0.240	0.162	0.397	0.622	0.544
		Right Tilt	0.215	0.005	0.186	0.147	0.220	0.401	0.362
		Left Cheek	0.276	0.006	0.207	0.136	0.282	0.483	0.412
		Left Tilt	0.193		0.095	0.169	0.193	0.288	0.362
	Hotspot (10mm)	Back	0.642	0.025	0.053	0.180	0.667	0.695	0.822
		Front	0.397		0.011	0.014	0.397	0.408	0.411
		Left	0.274		0.031	0.140	0.274	0.305	0.414
		Right	0.417		0.001		0.417	0.418	0.417
		Top			0.012	0.021		0.012	0.021
		Bottom	0.429				0.429	0.429	0.429
	Body-worn	15mm Back	0.331	0.009	0.112	0.379	0.340	0.443	0.710
		15mm Front	0.383		0.026	0.042	0.383	0.409	0.425
		Hol. Back	0.136		0.059	0.365	0.136	0.195	0.501

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		Hol. Front	0.368				0.368	0.368	0.368
LTE Band 4	Head	Right Cheek	0.275	0.015	0.240	0.162	0.290	0.515	0.437
		Right Tilt	0.284	0.005	0.186	0.147	0.289	0.470	0.431
		Left Cheek	0.810	0.006	0.207	0.136	0.816	1.017	0.946
		Left Tilt	0.375		0.095	0.169	0.375	0.470	0.544
	Hotspot (10mm)	Back	0.886	0.025	0.053	0.180	0.911	0.939	1.066
		Front	0.458		0.011	0.014	0.458	0.469	0.472
		Left	0.075		0.031	0.140	0.075	0.106	0.215
		Right	0.487		0.001		0.487	0.488	0.487
		Top			0.012	0.021		0.012	0.021
		Bottom	0.185				0.185	0.185	0.185
	Body-worn	15mm Back	0.675	0.009	0.112	0.379	0.684	0.787	1.054
		15mm Front	0.358		0.026	0.042	0.358	0.384	0.400
		Hol. Back	0.245		0.059	0.365	0.245	0.304	0.610
		Hol. Front							
UMTS IV	Head	Right Cheek	0.424	0.015	0.240	0.162	0.439	0.664	0.586
		Right Tilt	0.468	0.005	0.186	0.147	0.473	0.654	0.615
		Left Cheek	1.045	0.006	0.207	0.136	1.051	1.252	1.181
		Left Tilt	0.521		0.095	0.169	0.521	0.616	0.690
	Hotspot (10mm)	Back	0.972	0.025	0.053	0.180	0.997	1.025	1.152
		Front	0.540		0.011	0.014	0.540	0.551	0.554
		Left	0.355		0.031	0.140	0.355	0.386	0.495
		Right	0.130		0.001		0.130	0.131	0.130
		Top			0.012	0.021		0.012	0.021
		Bottom	0.348				0.348	0.348	0.348
	Body-worn	15mm Back	0.791	0.009	0.112	0.379	0.800	0.903	1.170
		15mm Front	0.700		0.026	0.042	0.700	0.726	0.742
		Hol. Back	0.185		0.059	0.365	0.185	0.244	0.550
		Hol. Front							
LTE Band 2	Head	Right Cheek	0.336	0.015	0.240	0.162	0.351	0.576	0.498
		Right Tilt	0.327	0.005	0.186	0.147	0.332	0.513	0.474
		Left Cheek	0.653	0.006	0.207	0.136	0.659	0.860	0.789
		Left Tilt	0.385		0.095	0.169	0.385	0.480	0.554
	Hotspot (10mm)	Back	0.836	0.025	0.053	0.180	0.861	0.889	1.016
		Front	0.423		0.011	0.014	0.423	0.434	0.437
		Left	0.338		0.031	0.140	0.338	0.369	0.478
		Right	0.095		0.001		0.095	0.096	0.095
		Top			0.012	0.021		0.012	0.021
		Bottom	0.150				0.150	0.150	0.150
	Body-worn	15mm Back	0.721	0.009	0.112	0.379	0.730	0.833	1.100
		15mm Front	0.277		0.026	0.042	0.277	0.303	0.319
		Hol. Back	0.286		0.059	0.365	0.286	0.345	0.651
		Hol. Front							
LTE Band 25	Head	Right Cheek	0.341	0.015	0.240	0.162	0.356	0.581	0.503
		Right Tilt	0.317	0.005	0.186	0.147	0.322	0.503	0.464
		Left Cheek	0.679	0.006	0.207	0.136	0.685	0.886	0.815
		Left Tilt	0.357		0.095	0.169	0.357	0.452	0.526
	Hotspot (10mm)	Back	0.726	0.025	0.053	0.180	0.751	0.779	0.906
		Front	0.425		0.011	0.014	0.425	0.436	0.439
		Left	0.333		0.031	0.140	0.333	0.364	0.473
		Right	0.095		0.001		0.095	0.096	0.095

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		Top			0.012	0.021		0.012	0.021
		Bottom	0.152				0.152	0.152	0.152
	Body-worn	15mm Back	0.626	0.009	0.112	0.379	0.635	0.738	1.005
		15mm Front	0.276		0.026	0.042	0.276	0.302	0.318
		Hol. Back	0.272		0.059	0.365	0.272	0.331	0.637
		Hol. Front							
GSM/ DTM 1900	Head	Right Cheek	0.362	0.015	0.240	0.162	0.377	0.602	0.524
		Right Tilt	0.380	0.005	0.186	0.147	0.385	0.566	0.527
		Left Cheek	0.731	0.006	0.207	0.136	0.737	0.938	0.867
		Left Tilt	0.487		0.095	0.169	0.487	0.582	0.656
	Hotspot (10mm)	Back	1.162	0.025	0.053	0.180	1.187	1.215	1.342
		Front	0.661		0.011	0.014	0.661	0.672	0.675
		Left	0.539		0.031	0.140	0.539	0.570	0.679
		Right	0.155		0.001		0.155	0.156	0.155
		Top			0.012	0.021		0.012	0.021
		Bottom	0.227				0.227	0.227	0.227
	Body-worn	15mm Back	0.761	0.009	0.112	0.379	0.770	0.873	1.140
		15mm Front	0.188		0.026	0.042	0.188	0.214	0.230
		Hol. Back	0.325		0.059	0.365	0.325	0.384	0.690
		Hol. Front							
UMTS II	Head	Right Cheek	0.400	0.015	0.240	0.162	0.415	0.640	0.562
		Right Tilt	0.453	0.005	0.186	0.147	0.458	0.639	0.600
		Left Cheek	0.889	0.006	0.207	0.136	0.895	1.096	1.025
		Left Tilt	0.587		0.095	0.169	0.587	0.682	0.756
	Hotspot (10mm)	Back	1.077	0.025	0.053	0.180	1.102	1.130	1.257
		Front	0.609		0.011	0.014	0.609	0.620	0.623
		Left	0.419		0.031	0.140	0.419	0.450	0.559
		Right	0.131		0.001		0.131	0.132	0.131
		Top			0.012	0.021		0.012	0.021
		Bottom	0.198				0.198	0.198	0.198
	Body-worn	15mm Back	1.148	0.009	0.112	0.379	1.157	1.260	1.527
		15mm Front	0.290		0.026	0.042	0.290	0.316	0.332
		Hol. Back	0.403		0.059	0.365	0.403	0.462	0.768
		Hol. Front							
LTE Band 30	Head	Right Cheek	0.188	0.015	0.240	0.162	0.203	0.428	0.350
		Right Tilt	0.081	0.005	0.186	0.147	0.086	0.267	0.228
		Left Cheek	0.083	0.006	0.207	0.136	0.089	0.290	0.219
		Left Tilt	0.083		0.095	0.169	0.083	0.178	0.252
	Hotspot (10mm)	Back	0.645	0.025	0.053	0.180	0.670	0.698	0.825
		Front	0.541		0.011	0.014	0.541	0.552	0.555
		Left	0.101		0.031	0.140	0.101	0.132	0.241
		Right	0.491		0.001		0.491	0.492	0.491
		Top			0.012	0.021		0.012	0.021
		Bottom	0.519				0.519	0.519	0.519
	Body-worn	15mm Back	0.662	0.009	0.112	0.379	0.671	0.774	1.041
		15mm Front	0.178		0.026	0.042	0.178	0.204	0.220
		Hol. Back	0.292		0.059	0.365	0.292	0.351	0.657
		Hol. Front							
LTE Band 41	Head	Right Cheek	0.184	0.015	0.240	0.162	0.199	0.424	0.346
		Right Tilt	0.050	0.005	0.186	0.147	0.055	0.236	0.197
		Left Cheek	0.075	0.006	0.207	0.136	0.081	0.282	0.211

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LTE Band 7	Hotspot (10mm)	Left Tilt	0.075		0.095	0.169	0.075	0.170	0.244
		Back	0.368	0.025	0.053	0.180	0.393	0.421	0.548
		Front	0.276		0.011	0.014	0.276	0.287	0.290
		Left	0.041		0.031	0.140	0.041	0.072	0.181
		Right	0.308		0.001		0.308	0.309	0.308
		Top			0.012	0.021		0.012	0.021
		Bottom	1.189				1.189	1.189	1.189
	Body-worn	15mm Back	0.272	0.009	0.112	0.379	0.281	0.384	0.651
		15mm Front	0.157		0.026	0.042	0.157	0.183	0.199
		Hol. Back	0.104		0.059	0.365	0.104	0.163	0.469
		Hol. Front							
	Head	Right Cheek	0.311	0.015	0.240	0.162	0.326	0.551	0.473
		Right Tilt	0.095	0.005	0.186	0.147	0.100	0.281	0.242
		Left Cheek	0.174	0.006	0.207	0.136	0.180	0.381	0.310
		Left Tilt	0.162		0.095	0.169	0.162	0.257	0.331
	Hotspot (10mm)	Back	0.530	0.025	0.053	0.180	0.555	0.583	0.710
		Front	0.467		0.011	0.014	0.467	0.478	0.481
		Left	0.231		0.031	0.140	0.231	0.262	0.371
		Right	0.336		0.001		0.336	0.337	0.336
		Top			0.012	0.021		0.012	0.021
		Bottom	1.112				1.112	1.112	1.112
	Body-worn	15mm Back	0.548	0.009	0.112	0.379	0.557	0.660	0.927
		15mm Front	0.374		0.026	0.042	0.374	0.400	0.416
		Hol. Back	0.262		0.059	0.365	0.262	0.321	0.627
		Hol. Front							

Table 11.3-2 Highest SAR values and summation on the same test position between the main transmitter + BT + primary Wi-Fi antenna

Note 1: If sum of 1 g SAR < 1.6 W/kg, Simultaneous SAR measurement is not required.

Note 2: If sum of 1 g SAR > 1.6 W/kg, ratio of SAR to peak separation distance for pair of transmitters calculated.

Note 3: The worst case between slider closed and open for applicable positions are used in this table

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Standalone SAR Values Summation On The Same Test Position (Secondary Wi-Fi Antenna)								
Band	Config.	Main Transmitter		Unlicensed Transmitters			Max Summation (W/Kg)	
		Position	1g SAR (W/Kg)	BT	2.4GHz Wi-Fi	5.0GHz Wi-Fi	Main + BT + 2.4GHz Wi-Fi	Main + BT + 5.0GHz Wi-Fi
				1g SAR	1g SAR	1g SAR		
LTE Band 12	Head	Right Cheek	0.237	0.015	0.038	0.039	0.290	0.291
		Right Tilt	0.154	0.005	0.046	0.025	0.205	0.184
		Left Cheek	0.195	0.006	0.102	0.040	0.303	0.241
		Left Tilt	0.132		0.111	0.036	0.243	0.168
	Hotspot (10mm)	Back	0.350	0.025	0.046	0.112	0.421	0.487
		Front	0.293		0.040	0.020	0.333	0.313
		Left	0.223		0.000	0.000	0.223	0.223
		Right	0.385		0.011	0.047	0.396	0.432
		Top			0.002	0.020	0.002	0.020
		Bottom	0.255			0.000	0.255	0.255
	Body-worn	15mm Back	0.316	0.009	0.053	0.113	0.378	0.438
		15mm Front	0.277		0.008	0.014	0.285	0.291
		Holster Back	0.279		0.023	0.098	0.302	0.377
		Holster Front						
LTE Band 17	Head	Right Cheek	0.223	0.015	0.038	0.039	0.276	0.277
		Right Tilt	0.138	0.005	0.046	0.025	0.189	0.168
		Left Cheek	0.188	0.006	0.102	0.040	0.296	0.234
		Left Tilt	0.141		0.111	0.036	0.252	0.177
	Hotspot (10mm)	Back	0.342	0.025	0.046	0.112	0.413	0.479
		Front	0.290		0.040	0.020	0.330	0.310
		Left	0.395		0.000	0.000	0.395	0.395
		Right	0.206		0.011	0.047	0.217	0.253
		Top			0.002	0.020	0.002	0.020
		Bottom	0.235			0.000	0.235	0.235
	Body-worn	15mm Back	0.309	0.009	0.053	0.113	0.371	0.431
		15mm Front	0.239		0.008	0.014	0.247	0.253
		Holster Back	0.238		0.023	0.098	0.261	0.336
		Holster Front						
LTE Band 28	Head	Right Cheek	0.258	0.015	0.038	0.039	0.311	0.312
		Right Tilt	0.154	0.005	0.046	0.025	0.205	0.184
		Left Cheek	0.182	0.006	0.102	0.040	0.290	0.228
		Left Tilt	0.108		0.111	0.036	0.219	0.144
	Hotspot (10mm)	Back	0.350	0.025	0.046	0.112	0.421	0.487
		Front	0.273		0.040	0.020	0.313	0.293
		Left	0.384		0.000	0.000	0.384	0.384
		Right	0.204		0.011	0.047	0.215	0.251
		Top			0.002	0.020	0.002	0.020
		Bottom	0.242			0.000	0.242	0.242
	Body-worn	15mm Back	0.325	0.009	0.053	0.113	0.387	0.447
		15mm Front	0.276		0.008	0.014	0.284	0.290
		Hol. Back	0.192		0.023	0.098	0.215	0.290
		Hol. Front						

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LTE Band 13	Head	Right Cheek	0.177	0.015	0.038	0.039	0.230	0.231
		Right Tilt	0.126	0.005	0.046	0.025	0.177	0.156
		Left Cheek	0.143	0.006	0.102	0.040	0.251	0.189
		Left Tilt	0.098		0.111	0.036	0.209	0.134
	Hotspot (10mm)	Back	0.269	0.025	0.046	0.112	0.340	0.406
		Front	0.257		0.040	0.020	0.297	0.277
		Left	0.222		0.000	0.000	0.222	0.222
		Right	0.403		0.011	0.047	0.414	0.450
		Top			0.002	0.020	0.002	0.020
		Bottom	0.250			0.000	0.250	0.250
	Body-worn	15mm Back	0.271	0.009	0.053	0.113	0.333	0.393
		15mm Front	0.257		0.008	0.014	0.265	0.271
		Holster Back	0.255		0.023	0.098	0.278	0.353
		Holster Front						
LTE Band 5	Head	Right Cheek	0.287	0.015	0.038	0.039	0.340	0.341
		Right Tilt	0.151	0.005	0.046	0.025	0.202	0.181
		Left Cheek	0.224	0.006	0.102	0.040	0.332	0.270
		Left Tilt	0.131		0.111	0.036	0.242	0.167
	Hotspot (10mm)	Back	0.505	0.025	0.046	0.112	0.576	0.642
		Front	0.277		0.040	0.020	0.317	0.297
		Left	0.183		0.000	0.000	0.183	0.183
		Right	0.290		0.011	0.047	0.301	0.337
		Top			0.002	0.020	0.002	0.020
		Bottom	0.472			0.000	0.472	0.472
	Body-worn	15mm Back	0.216	0.009	0.053	0.113	0.278	0.338
		15mm Front	0.255		0.008	0.014	0.263	0.269
		Holster Back	0.224		0.023	0.098	0.247	0.322
		Holster Front						
GSM/ DTM 850	Head	Right Cheek	0.542	0.015	0.038	0.039	0.595	0.596
		Right Tilt	0.241	0.005	0.046	0.025	0.292	0.271
		Left Cheek	0.386	0.006	0.102	0.040	0.494	0.432
		Left Tilt	0.254		0.111	0.036	0.365	0.290
	Hotspot (10mm)	Back	0.777	0.025	0.046	0.112	0.848	0.914
		Front	0.555		0.040	0.020	0.595	0.575
		Left	0.386		0.000	0.000	0.386	0.386
		Right	0.513		0.011	0.047	0.524	0.560
		Top			0.002	0.020	0.002	0.020
		Bottom	0.644			0.000	0.644	0.644
	Body-worn	15mm Back	0.364	0.009	0.053	0.113	0.426	0.486
		15mm Front	0.517		0.008	0.014	0.525	0.531
		Holster Back			0.023	0.098	0.023	0.098
		Holster Front	0.441				0.441	0.441
UMTS V	Head	Right Cheek	0.382	0.015	0.038	0.039	0.435	0.436
		Right Tilt	0.215	0.005	0.046	0.025	0.266	0.245
		Left Cheek	0.276	0.006	0.102	0.040	0.384	0.322
		Left Tilt	0.193		0.111	0.036	0.304	0.229
	Hotspot (10mm)	Back	0.642	0.025	0.046	0.112	0.713	0.779
		Front	0.397		0.040	0.020	0.437	0.417
		Left	0.274		0.000	0.000	0.274	0.274

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		Right	0.417		0.011	0.047	0.428	0.464
		Top			0.002	0.020	0.002	0.020
		Bottom	0.429			0.000	0.429	0.429
	Body-worn	15mm Back	0.331	0.009	0.053	0.113	0.393	0.453
		15mm Front	0.383		0.008	0.014	0.391	0.397
		Holster Back	0.136		0.023	0.098	0.159	0.234
		Holster Front	0.368				0.368	0.368
LTE Band 4	Head	Right Cheek	0.275	0.015	0.038	0.039	0.328	0.329
		Right Tilt	0.284	0.005	0.046	0.025	0.335	0.314
		Left Cheek	0.810	0.006	0.102	0.040	0.918	0.856
		Left Tilt	0.375		0.111	0.036	0.486	0.411
	Hotspot (10mm)	Back	0.886	0.025	0.046	0.112	0.957	1.023
		Front	0.458		0.040	0.020	0.498	0.478
		Left	0.075		0.000	0.000	0.075	0.075
		Right	0.487		0.011	0.047	0.498	0.534
		Top			0.002	0.020	0.002	0.020
		Bottom	0.185			0.000	0.185	0.185
		Body-worn	15mm Back	0.675	0.009	0.053	0.113	0.737
	15mm Front		0.358		0.008	0.014	0.366	0.372
	Holster Back		0.245		0.023	0.098	0.268	0.343
	Holster Front							
	UMTS IV	Head	Right Cheek	0.424	0.015	0.038	0.039	0.477
Right Tilt			0.468	0.005	0.046	0.025	0.519	0.498
Left Cheek			1.045	0.006	0.102	0.040	1.153	1.091
Left Tilt			0.521		0.111	0.036	0.632	0.557
Hotspot (10mm)		Back	0.972	0.025	0.046	0.112	1.043	1.109
		Front	0.540		0.040	0.020	0.580	0.560
		Left	0.355		0.000	0.000	0.355	0.355
		Right	0.130		0.011	0.047	0.141	0.177
		Top			0.002	0.020	0.002	0.020
		Bottom	0.348			0.000	0.348	0.348
Body-worn		15mm Back	0.791	0.009	0.053	0.113	0.853	0.913
		15mm Front	0.700		0.008	0.014	0.708	0.714
		Holster Back	0.185		0.023	0.098	0.208	0.283
		Holster Front						
LTE Band 2		Head	Right Cheek	0.336	0.015	0.038	0.039	0.389
	Right Tilt		0.327	0.005	0.046	0.025	0.378	0.357
	Left Cheek		0.653	0.006	0.102	0.040	0.761	0.699
	Left Tilt		0.385		0.111	0.036	0.496	0.421
	Hotspot (10mm)	Back	0.836	0.025	0.046	0.112	0.907	0.973
		Front	0.423		0.040	0.020	0.463	0.443
		Left	0.338		0.000	0.000	0.338	0.338
		Right	0.095		0.011	0.047	0.106	0.142
		Top			0.002	0.020	0.002	0.020
		Bottom	0.150			0.000	0.150	0.150
		Body-worn	15mm Back	0.721	0.009	0.053	0.113	0.783
	15mm Front		0.277		0.008	0.014	0.285	0.291
	Holster Back		0.286		0.023	0.098	0.309	0.384
	Holster							

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LTE Band 25	Head	Front						
		Right Cheek	0.341	0.015	0.038	0.039	0.394	0.395
		Right Tilt	0.317	0.005	0.046	0.025	0.368	0.347
		Left Cheek	0.679	0.006	0.102	0.040	0.787	0.725
	Hotspot (10mm)	Left Tilt	0.357		0.111	0.036	0.468	0.393
		Back	0.726	0.025	0.046	0.112	0.797	0.863
		Front	0.425		0.040	0.020	0.465	0.445
		Left	0.333		0.000	0.000	0.333	0.333
		Right	0.095		0.011	0.047	0.106	0.142
		Top			0.002	0.020	0.002	0.020
		Bottom	0.152			0.000	0.152	0.152
	Body-worn	15mm Back	0.626	0.009	0.053	0.113	0.688	0.748
		15mm Front	0.276		0.008	0.014	0.284	0.290
		Holster Back	0.272		0.023	0.098	0.295	0.370
		Holster Front						
GSM/ DTM 1900	Head	Right Cheek	0.362	0.015	0.038	0.039	0.415	0.416
		Right Tilt	0.380	0.005	0.046	0.025	0.431	0.410
		Left Cheek	0.731	0.006	0.102	0.040	0.839	0.777
		Left Tilt	0.487		0.111	0.036	0.598	0.523
	Hotspot (10mm)	Back	1.162	0.025	0.046	0.112	1.233	1.299
		Front	0.661		0.040	0.020	0.701	0.681
		Left	0.539		0.000	0.000	0.539	0.539
		Right	0.155		0.011	0.047	0.166	0.202
		Top			0.002	0.020	0.002	0.020
		Bottom	0.227			0.000	0.227	0.227
	Body-worn	15mm Back	0.761	0.009	0.053	0.113	0.823	0.883
		15mm Front	0.188		0.008	0.014	0.196	0.202
		Holster Back	0.325		0.023	0.098	0.348	0.423
		Holster Front						
UMTS II	Head	Right Cheek	0.400	0.015	0.038	0.039	0.453	0.454
		Right Tilt	0.453	0.005	0.046	0.025	0.504	0.483
		Left Cheek	0.889	0.006	0.102	0.040	0.997	0.935
		Left Tilt	0.587		0.111	0.036	0.698	0.623
	Hotspot (10mm)	Back	1.077	0.025	0.046	0.112	1.148	1.214
		Front	0.609		0.040	0.020	0.649	0.629
		Left	0.419		0.000	0.000	0.419	0.419
		Right	0.131		0.011	0.047	0.142	0.178
		Top			0.002	0.020	0.002	0.020
		Bottom	0.198			0.000	0.198	0.198
	Body-worn	15mm Back	1.148	0.009	0.053	0.113	1.210	1.270
		15mm Front	0.290		0.008	0.014	0.298	0.304
		Holster Back	0.403		0.023	0.098	0.426	0.501
		Holster Front						
LTE Band 30	Head	Right Cheek	0.188	0.015	0.038	0.039	0.241	0.242
		Right Tilt	0.081	0.005	0.046	0.025	0.132	0.111
		Left Cheek	0.083	0.006	0.102	0.040	0.191	0.129
		Left Tilt	0.083		0.111	0.036	0.194	0.119
	Hotspot (10mm)	Back	0.645	0.025	0.046	0.112	0.716	0.782
		Front	0.541		0.040	0.020	0.581	0.561

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LTE Band 41		Left	0.101		0.000	0.000	0.101	0.101
		Right	0.491		0.011	0.047	0.502	0.538
		Top			0.002	0.020	0.002	0.020
		Bottom	0.519			0.000	0.519	0.519
	Body-worn	15mm Back	0.662	0.009	0.053	0.113	0.724	0.784
		15mm Front	0.178		0.008	0.014	0.186	0.192
		Holster Back	0.292		0.023	0.098	0.315	0.390
		Holster Front						
	Head	Right Cheek	0.184	0.015	0.038	0.039	0.237	0.238
		Right Tilt	0.050	0.005	0.046	0.025	0.101	0.080
		Left Cheek	0.075	0.006	0.102	0.040	0.183	0.121
		Left Tilt	0.075		0.111	0.036	0.186	0.111
	Hotspot (10mm)	Back	0.368	0.025	0.046	0.112	0.439	0.505
		Front	0.276		0.040	0.020	0.316	0.296
		Left	0.041		0.000	0.000	0.041	0.041
		Right	0.308		0.011	0.047	0.319	0.355
	Body-worn	Top			0.002	0.020	0.002	0.020
		Bottom	1.189			0.000	1.189	1.189
		15mm Back	0.272	0.009	0.053	0.113	0.334	0.394
		15mm Front	0.157		0.008	0.014	0.165	0.171
LTE Band 7	Head	Holster Back	0.104		0.023	0.098	0.127	0.202
		Holster Front						
	Hotspot (10mm)	Right Cheek	0.311	0.015	0.038	0.039	0.364	0.365
		Right Tilt	0.095	0.005	0.046	0.025	0.146	0.125
		Left Cheek	0.174	0.006	0.102	0.040	0.282	0.220
		Left Tilt	0.162		0.111	0.036	0.273	0.198
	Body-worn	Back	0.530	0.025	0.046	0.112	0.601	0.667
		Front	0.467		0.040	0.020	0.507	0.487
		Left	0.231		0.000	0.000	0.231	0.231
		Right	0.336		0.011	0.047	0.347	0.383
	Hotspot (10mm)	Top			0.002	0.020	0.002	0.020
		Bottom	1.112			0.000	1.112	1.112
	Body-worn	15mm Back	0.548	0.009	0.053	0.113	0.610	0.670
		15mm Front	0.374		0.008	0.014	0.382	0.388
		Holster Back	0.262		0.023	0.098	0.285	0.360
		Holster Front						

Table 11.3-3 Highest SAR values and summation on the same test position between the main transmitter + BT + secondary Wi-Fi antenna

Note 1: If sum of 1 g SAR < 1.6 W/kg, Simultaneous SAR measurement is not required.

Note 2: If sum of 1 g SAR > 1.6 W/kg, ratio of SAR to peak separation distance for pair of transmitters calculated.

Note 3: The worst case between slider closed and open for applicable positions are used in this table

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MIMO SAR Values Summation On The Same Test Position										
Band	Config.	Main Transmitter		BT	MIMO Pair 1		MIMO Pair 2		Max Summation (W/Kg)	
		Position	1g SAR (W/Kg)		2.4GHz Wi-Fi	2.4GHz Wi-Fi	5.0GHz Wi-Fi	5.0GHz Wi-Fi	Main + BT+ MIMO 2.4GHz Wi-Fi	Main + BT+ MIMO 5.0GHz Wi-Fi
				1g SAR	1g SAR	1g SAR	1g SAR	1g SAR		
LTE Band 12	Head	Right Cheek	0.237	0.015	0.240	0.038	0.162	0.039	0.530	0.453
		Right Tilt	0.154	0.005	0.186	0.046	0.147	0.025	0.391	0.331
		Left Cheek	0.195	0.006	0.207	0.102	0.136	0.040	0.510	0.377
		Left Tilt	0.132		0.095	0.111	0.169	0.036	0.338	0.337
	Hotspot (10mm)	Back	0.350	0.025	0.053	0.046	0.180	0.112	0.474	0.667
		Front	0.293		0.011	0.040	0.014	0.020	0.344	0.327
		Left	0.223		0.031	0.000	0.140	0.000	0.254	0.363
		Right	0.385		0.001	0.011		0.047	0.397	0.432
		Top			0.012	0.002	0.021	0.020	0.014	0.041
		Bottom	0.255					0.000	0.255	0.255
	Body-worn	15mm Back	0.316	0.009	0.112	0.053	0.379	0.113	0.490	0.817
		15mm Front	0.277		0.026	0.008	0.042	0.014	0.311	0.333
		Holster Back	0.279		0.059	0.023	0.365	0.098	0.361	0.742
		Holster Front								
LTE Band 17	Head	Right Cheek	0.223	0.015	0.240	0.038	0.162	0.039	0.516	0.439
		Right Tilt	0.138	0.005	0.186	0.046	0.147	0.025	0.375	0.315
		Left Cheek	0.188	0.006	0.207	0.102	0.136	0.040	0.503	0.370
		Left Tilt	0.141		0.095	0.111	0.169	0.036	0.347	0.346
	Hotspot (10mm)	Back	0.342	0.025	0.053	0.046	0.180	0.112	0.466	0.659
		Front	0.290		0.011	0.040	0.014	0.020	0.341	0.324
		Left	0.395		0.031	0.000	0.140	0.000	0.426	0.535
		Right	0.206		0.001	0.011		0.047	0.218	0.253
		Top			0.012	0.002	0.021	0.020	0.014	0.041
		Bottom	0.235					0.000	0.235	0.235
	Body-worn	15mm Back	0.309	0.009	0.112	0.053	0.379	0.113	0.483	0.810
		15mm Front	0.239		0.026	0.008	0.042	0.014	0.273	0.295
		Holster Back	0.238		0.059	0.023	0.365	0.098	0.320	0.701
		Holster Front								
LTE Band 28	Head	Right Cheek	0.258	0.015	0.240	0.038	0.162	0.039	0.551	0.474
		Right Tilt	0.154	0.005	0.186	0.046	0.147	0.025	0.391	0.331
		Left Cheek	0.182	0.006	0.207	0.102	0.136	0.040	0.497	0.364
		Left Tilt	0.108		0.095	0.111	0.169	0.036	0.314	0.313
	Hotspot (10mm)	Back	0.350	0.025	0.053	0.046	0.180	0.112	0.474	0.667
		Front	0.273		0.011	0.040	0.014	0.020	0.324	0.307
		Left	0.384		0.031	0.000	0.140	0.000	0.415	0.524
		Right	0.204		0.001	0.011		0.047	0.216	0.251
		Top			0.012	0.002	0.021	0.020	0.014	0.041
		Bottom	0.242					0.000	0.242	0.242
	Body-worn	15mm Back	0.325	0.009	0.112	0.053	0.379	0.113	0.499	0.826
		15mm Front	0.276		0.026	0.008	0.042	0.014	0.310	0.332
		Hol. Back	0.192		0.059	0.023	0.365	0.098	0.274	0.655
		Hol. Front								
LTE	Head	Right Cheek	0.177	0.015	0.240	0.038	0.162	0.039	0.470	0.393

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Band 13		Right Tilt	0.126	0.005	0.186	0.046	0.147	0.025	0.363	0.303
		Left Cheek	0.143	0.006	0.207	0.102	0.136	0.040	0.458	0.325
		Left Tilt	0.098		0.095	0.111	0.169	0.036	0.304	0.303
	Hotspot (10mm)	Back	0.269	0.025	0.053	0.046	0.180	0.112	0.393	0.586
		Front	0.257		0.011	0.040	0.014	0.020	0.308	0.291
		Left	0.222		0.031	0.000	0.140	0.000	0.253	0.362
		Right	0.403		0.001	0.011		0.047	0.415	0.450
		Top			0.012	0.002	0.021	0.020	0.014	0.041
		Bottom	0.250					0.000	0.250	0.250
	Body-worn	15mm Back	0.271	0.009	0.112	0.053	0.379	0.113	0.445	0.772
		15mm Front	0.257		0.026	0.008	0.042	0.014	0.291	0.313
		Holster Back	0.255		0.059	0.023	0.365	0.098	0.337	0.718
		Holster Front								
LTE Band 5	Head	Right Cheek	0.287	0.015	0.240	0.038	0.162	0.039	0.580	0.503
		Right Tilt	0.151	0.005	0.186	0.046	0.147	0.025	0.388	0.328
		Left Cheek	0.224	0.006	0.207	0.102	0.136	0.040	0.539	0.406
		Left Tilt	0.131		0.095	0.111	0.169	0.036	0.337	0.336
	Hotspot (10mm)	Back	0.505	0.025	0.053	0.046	0.180	0.112	0.629	0.822
		Front	0.277		0.011	0.040	0.014	0.020	0.328	0.311
		Left	0.183		0.031	0.000	0.140	0.000	0.214	0.323
		Right	0.290		0.001	0.011		0.047	0.302	0.337
		Top			0.012	0.002	0.021	0.020	0.014	0.041
		Bottom	0.472					0.000	0.472	0.472
	Body-worn	15mm Back	0.216	0.009	0.112	0.053	0.379	0.113	0.390	0.717
		15mm Front	0.255		0.026	0.008	0.042	0.014	0.289	0.311
		Holster Back	0.224		0.059	0.023	0.365	0.098	0.306	0.687
		Holster Front								
GSM/DTM 850	Head	Right Cheek	0.542	0.015	0.240	0.038	0.162	0.039	0.835	0.758
		Right Tilt	0.241	0.005	0.186	0.046	0.147	0.025	0.478	0.418
		Left Cheek	0.386	0.006	0.207	0.102	0.136	0.040	0.701	0.568
		Left Tilt	0.254		0.095	0.111	0.169	0.036	0.460	0.459
	Hotspot (10mm)	Back	0.777	0.025	0.053	0.046	0.180	0.112	0.901	1.094
		Front	0.555		0.011	0.040	0.014	0.020	0.606	0.589
		Left	0.386		0.031	0.000	0.140	0.000	0.417	0.526
		Right	0.513		0.001	0.011		0.047	0.525	0.560
		Top			0.012	0.002	0.021	0.020	0.014	0.041
		Bottom	0.644					0.000	0.644	0.644
	Body-worn	15mm Back	0.364	0.009	0.112	0.053	0.379	0.113	0.538	0.865
		15mm Front	0.517		0.026	0.008	0.042	0.014	0.551	0.573
		Holster Back			0.059	0.023	0.365	0.098	0.082	0.463
		Holster Front	0.441						0.441	0.441
UMTS V	Head	Right Cheek	0.382	0.015	0.240	0.038	0.162	0.039	0.675	0.598
		Right Tilt	0.215	0.005	0.186	0.046	0.147	0.025	0.452	0.392
		Left Cheek	0.276	0.006	0.207	0.102	0.136	0.040	0.591	0.458
		Left Tilt	0.193		0.095	0.111	0.169	0.036	0.399	0.398
	Hotspot (10mm)	Back	0.642	0.025	0.053	0.046	0.180	0.112	0.766	0.959
		Front	0.397		0.011	0.040	0.014	0.020	0.448	0.431
		Left	0.274		0.031	0.000	0.140	0.000	0.305	0.414
		Right	0.417		0.001	0.011		0.047	0.429	0.464
		Top			0.012	0.002	0.021	0.020	0.014	0.041
		Bottom	0.429					0.000	0.429	0.429

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	Body-worn	15mm Back	0.331	0.009	0.112	0.053	0.379	0.113	0.505	0.832
		15mm Front	0.383		0.026	0.008	0.042	0.014	0.417	0.439
		Holster Back	0.136		0.059	0.023	0.365	0.098	0.218	0.599
		Holster Front	0.368						0.368	0.368
LTE Band 4	Head	Right Cheek	0.275	0.015	0.240	0.038	0.162	0.039	0.568	0.491
		Right Tilt	0.284	0.005	0.186	0.046	0.147	0.025	0.521	0.461
		Left Cheek	0.810	0.006	0.207	0.102	0.136	0.040	1.125	0.992
		Left Tilt	0.375		0.095	0.111	0.169	0.036	0.581	0.580
	Hotspot (10mm)	Back	0.886	0.025	0.053	0.046	0.180	0.112	1.010	1.203
		Front	0.458		0.011	0.040	0.014	0.020	0.509	0.492
		Left	0.075		0.031	0.000	0.140	0.000	0.106	0.215
		Right	0.487		0.001	0.011		0.047	0.499	0.534
		Top			0.012	0.002	0.021	0.020	0.014	0.041
		Bottom	0.185					0.000	0.185	0.185
	Body-worn	15mm Back	0.675	0.009	0.112	0.053	0.379	0.113	0.849	1.176
		15mm Front	0.358		0.026	0.008	0.042	0.014	0.392	0.414
		Holster Back	0.245		0.059	0.023	0.365	0.098	0.327	0.708
		Holster Front								
UMTS IV	Head	Right Cheek	0.424	0.015	0.240	0.038	0.162	0.039	0.717	0.640
		Right Tilt	0.468	0.005	0.186	0.046	0.147	0.025	0.705	0.645
		Left Cheek	1.045	0.006	0.207	0.102	0.136	0.040	1.360	1.227
		Left Tilt	0.521		0.095	0.111	0.169	0.036	0.727	0.726
	Hotspot (10mm)	Back	0.972	0.025	0.053	0.046	0.180	0.112	1.096	1.289
		Front	0.540		0.011	0.040	0.014	0.020	0.591	0.574
		Left	0.355		0.031	0.000	0.140	0.000	0.386	0.495
		Right	0.130		0.001	0.011		0.047	0.142	0.177
		Top			0.012	0.002	0.021	0.020	0.014	0.041
		Bottom	0.348					0.000	0.348	0.348
	Body-worn	15mm Back	0.791	0.009	0.112	0.053	0.379	0.113	0.965	1.292
		15mm Front	0.700		0.026	0.008	0.042	0.014	0.734	0.756
		Holster Back	0.185		0.059	0.023	0.365	0.098	0.267	0.648
		Holster Front								
LTE Band 2	Head	Right Cheek	0.336	0.015	0.240	0.038	0.162	0.039	0.629	0.552
		Right Tilt	0.327	0.005	0.186	0.046	0.147	0.025	0.564	0.504
		Left Cheek	0.653	0.006	0.207	0.102	0.136	0.040	0.968	0.835
		Left Tilt	0.385		0.095	0.111	0.169	0.036	0.591	0.590
	Hotspot (10mm)	Back	0.836	0.025	0.053	0.046	0.180	0.112	0.960	1.153
		Front	0.423		0.011	0.040	0.014	0.020	0.474	0.457
		Left	0.338		0.031	0.000	0.140	0.000	0.369	0.478
		Right	0.095		0.001	0.011		0.047	0.107	0.142
		Top			0.012	0.002	0.021	0.020	0.014	0.041
		Bottom	0.150					0.000	0.150	0.150
	Body-worn	15mm Back	0.721	0.009	0.112	0.053	0.379	0.113	0.895	1.222
		15mm Front	0.277		0.026	0.008	0.042	0.014	0.311	0.333
		Holster Back	0.286		0.059	0.023	0.365	0.098	0.368	0.749
		Holster Front								
LTE Band 25	Head	Right Cheek	0.341	0.015	0.240	0.038	0.162	0.039	0.634	0.557
		Right Tilt	0.317	0.005	0.186	0.046	0.147	0.025	0.554	0.494
		Left Cheek	0.679	0.006	0.207	0.102	0.136	0.040	0.994	0.861
		Left Tilt	0.357		0.095	0.111	0.169	0.036	0.563	0.562
	Hotspot	Back	0.726	0.025	0.053	0.046	0.180	0.112	0.850	1.043

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	(10mm)	Front	0.425		0.011	0.040	0.014	0.020	0.476	0.459	
		Left	0.333		0.031	0.000	0.140	0.000	0.364	0.473	
		Right	0.095		0.001	0.011		0.047	0.107	0.142	
		Top			0.012	0.002	0.021	0.020	0.014	0.041	
		Bottom	0.152					0.000	0.152	0.152	
	Body-worn	15mm Back	0.626	0.009	0.112	0.053	0.379	0.113	0.800	1.127	
		15mm Front	0.276		0.026	0.008	0.042	0.014	0.310	0.332	
		Holster Back	0.272		0.059	0.023	0.365	0.098	0.354	0.735	
Holster Front											
GSM/ DTM 1900	Head	Right Cheek	0.362	0.015	0.240	0.038	0.162	0.039	0.655	0.578	
		Right Tilt	0.380	0.005	0.186	0.046	0.147	0.025	0.617	0.557	
		Left Cheek	0.731	0.006	0.207	0.102	0.136	0.040	1.046	0.913	
		Left Tilt	0.487		0.095	0.111	0.169	0.036	0.693	0.692	
	Hotspot (10mm)	Back	1.162	0.025	0.053	0.046	0.180	0.112	1.286	1.479	
		Front	0.661		0.011	0.040	0.014	0.020	0.712	0.695	
		Left	0.539		0.031	0.000	0.140	0.000	0.570	0.679	
		Right	0.155		0.001	0.011		0.047	0.167	0.202	
		Top			0.012	0.002	0.021	0.020	0.014	0.041	
		Bottom	0.227					0.000	0.227	0.227	
	Body-worn	15mm Back	0.761	0.009	0.112	0.053	0.379	0.113	0.935	1.262	
		15mm Front	0.188		0.026	0.008	0.042	0.014	0.222	0.244	
		Holster Back	0.325		0.059	0.023	0.365	0.098	0.407	0.788	
		Holster Front									
	UMTS II	Head	Right Cheek	0.400	0.015	0.240	0.038	0.162	0.039	0.693	0.616
			Right Tilt	0.453	0.005	0.186	0.046	0.147	0.025	0.690	0.630
Left Cheek			0.889	0.006	0.207	0.102	0.136	0.040	1.204	1.071	
Left Tilt			0.587		0.095	0.111	0.169	0.036	0.793	0.792	
Hotspot (10mm)		Back	1.077	0.025	0.053	0.046	0.180	0.112	1.201	1.394	
		Front	0.609		0.011	0.040	0.014	0.020	0.660	0.643	
		Left	0.419		0.031	0.000	0.140	0.000	0.450	0.559	
		Right	0.131		0.001	0.011		0.047	0.143	0.178	
		Top			0.012	0.002	0.021	0.020	0.014	0.041	
		Bottom	0.198					0.000	0.198	0.198	
Body-worn		15mm Back	1.148	0.009	0.112	0.053	0.379	0.113	1.322	1.649	
		15mm Front	0.290		0.026	0.008	0.042	0.014	0.324	0.346	
		Holster Back	0.403		0.059	0.023	0.365	0.098	0.485	0.866	
		Holster Front									
LTE Band 30	Head	Right Cheek	0.188	0.015	0.240	0.038	0.162	0.039	0.481	0.404	
		Right Tilt	0.081	0.005	0.186	0.046	0.147	0.025	0.318	0.258	
		Left Cheek	0.083	0.006	0.207	0.102	0.136	0.040	0.398	0.265	
		Left Tilt	0.083		0.095	0.111	0.169	0.036	0.289	0.288	
	Hotspot (10mm)	Back	0.645	0.025	0.053	0.046	0.180	0.112	0.769	0.962	
		Front	0.541		0.011	0.040	0.014	0.020	0.592	0.575	
		Left	0.101		0.031	0.000	0.140	0.000	0.132	0.241	
		Right	0.491		0.001	0.011		0.047	0.503	0.538	
		Top			0.012	0.002	0.021	0.020	0.014	0.041	
		Bottom	0.519					0.000	0.519	0.519	
	Body-worn	15mm Back	0.662	0.009	0.112	0.053	0.379	0.113	0.836	1.163	
		15mm Front	0.178		0.026	0.008	0.042	0.014	0.212	0.234	
		Holster Back	0.292		0.059	0.023	0.365	0.098	0.374	0.755	
		Holster Front									

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LTE Band 41	Head	Right Cheek	0.184	0.015	0.240	0.038	0.162	0.039	0.477	0.400
		Right Tilt	0.050	0.005	0.186	0.046	0.147	0.025	0.287	0.227
		Left Cheek	0.075	0.006	0.207	0.102	0.136	0.040	0.390	0.257
		Left Tilt	0.075		0.095	0.111	0.169	0.036	0.281	0.280
	Hotspot (10mm)	Back	0.368	0.025	0.053	0.046	0.180	0.112	0.492	0.685
		Front	0.276		0.011	0.040	0.014	0.020	0.327	0.310
		Left	0.041		0.031	0.000	0.140	0.000	0.072	0.181
		Right	0.308		0.001	0.011		0.047	0.320	0.355
		Top			0.012	0.002	0.021	0.020	0.014	0.041
		Bottom	1.189					0.000	1.189	1.189
	Body- worn	15mm Back	0.272	0.009	0.112	0.053	0.379	0.113	0.446	0.773
		15mm Front	0.157		0.026	0.008	0.042	0.014	0.191	0.213
		Holster Back	0.104		0.059	0.023	0.365	0.098	0.186	0.567
		Holster Front								
LTE Band 7	Head	Right Cheek	0.311	0.015	0.240	0.038	0.162	0.039	0.604	0.527
		Right Tilt	0.095	0.005	0.186	0.046	0.147	0.025	0.332	0.272
		Left Cheek	0.174	0.006	0.207	0.102	0.136	0.040	0.489	0.356
		Left Tilt	0.162		0.095	0.111	0.169	0.036	0.368	0.367
	Hotspot (10mm)	Back	0.530	0.025	0.053	0.046	0.180	0.112	0.654	0.847
		Front	0.467		0.011	0.040	0.014	0.020	0.518	0.501
		Left	0.231		0.031	0.000	0.140	0.000	0.262	0.371
		Right	0.336		0.001	0.011		0.047	0.348	0.383
		Top			0.012	0.002	0.021	0.020	0.014	0.041
		Bottom	1.112					0.000	1.112	1.112
	Body- worn	15mm Back	0.548	0.009	0.112	0.053	0.379	0.113	0.722	1.049
		15mm Front	0.374		0.026	0.008	0.042	0.014	0.408	0.430
		Holster Back	0.262		0.059	0.023	0.365	0.098	0.344	0.725
		Holster Front								

Table 11.3-4a Highest SAR values and summation on the same test position between the main transmitter + BT + MIMO Wi-Fi antennas

Note 1: If sum of 1 g SAR < 1.6 W/kg, Simultaneous SAR measurement is not required.

Note 2: If sum of 1 g SAR > 1.6 W/kg, ratio of SAR to peak separation distance for pair of transmitters calculated.

Note 3: The worst case between slider closed and open for applicable positions are used in this table

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Antenna	Band	Position	1g SAR (W/Kg)	Coordinates (mm)		
				X	Y	Z
1	UMTS II	Body-worn 15mm back	1.148	-36.0	39.0	-211.1
2	802.11a/n SISO (Core 0)	Body-worn 15mm back	0.379	-54.0	-68.0	-208.0
SAR Sum		1.527	Coord. Delta (mm)	18.0	107.0	-3.1
SAR SUM^1.5		1.89	Closest Distance (mm):			108.56
		Ratio	0.02			

Antenna	Band	Position	1g SAR (W/Kg)	Coordinates (mm)		
				X	Y	Z
1	UMTS II	Body-worn 15mm back	1.148	-36.0	39.0	-211.1
3	802.11a/n SISO (Core 1)	Body-worn 15mm back	0.113	5.0	-56.0	-207.7
SAR Sum		1.261	Coord. Delta (mm)	-41.0	95.0	-3.4
SAR SUM^1.5		1.42	Closest Distance (mm):			103.55
		Ratio	0.01			

Antenna	Band	Position	1g SAR (W/Kg)	Coordinates (mm)		
				X	Y	Z
1	UMTS II	Body-worn 15mm back	1.148	-36.0	39.0	-211.1
2, 3	802.11a/n MIMO	Body-worn 15mm back	0.492	5.0	-56.0	-207.7
SAR Sum		1.64	Coord. Delta (mm)	-41.0	95.0	-3.4
SAR SUM^1.5		2.10	Closest Distance (mm):			103.53
		Ratio	0.02			

Table 11.3-4c Hotspot configuration ratio of SAR to peak separation distance for pair of transmitters

Note: If the ratio of SAR to peak separation distance is ≤ 0.04 , Simultaneous SAR measurement is not

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11.4 LTE Rel. 10 Carrier Aggregation Conducted Power Delta Measurements

The measurement was done with/without DL CA active to cover FCC KDB for LTE Rel. 10 requirements.

LTE In Normal Mode Vs Carrier Aggregation Activated					
	Band	LTE band 4 (1700)			
	Freq. (MHz)	1720.0	1732.5	1745.0	
	Channel	20050	20175	20300	
Mode	Configuration	Max burst averaged conducted power (dBm)			
LTE band 4 UL/Tx DL CA/SCC OFF	QPSK, RB1, Offset: Mid	23.50	23.60	23.70	
+ LTE band 7 DL CA active SCC ON	QPSK, RB1, Offset: Mid	23.45	23.58	23.69	
+ LTE band 12 DL CA active SCC ON	QPSK, RB1, Offset: Mid	23.48	23.60	23.70	
	Band	LTE band 5 (850)			
	Freq. (MHz)	829.0	836.5	844.0	
	Channel	20450	20525	20600	
Mode	Configuration	Max burst averaged conducted power (dBm)			
LTE band 5 UL/Tx DL CA/SCC OFF	QPSK, RB1, Offset: Mid	23.70	23.50	23.80	
+ LTE band 7 DL CA active SCC ON	QPSK, RB1, Offset: Mid	23.70	23.50	23.80	
	Band	LTE band 7 (2600)			
	Freq. (MHz)	2510	2535	2560	
	Channel	20850	21100	21350	
Mode	Configuration	Max burst averaged conducted power (dBm)			
LTE band 7 UL/Tx DL CA/SCC OFF	QPSK, RB1, Offset: Mid	23.55	23.00	22.90	
+ LTE band 7 DL CA active SCC ON	QPSK, RB1, Offset: Mid	23.50	23.02	22.86	
+ LTE band 28 DL CA active SCC ON	QPSK, RB1, Offset: Mid	23.54	23.00	22.85	

Table 11.4-1 Conducted power delta measurements between LTE in normal mode and when LTE Rel. 10 carrier aggregation is activated.

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