



**FCC OET BULLETIN 65 SUPPLEMENT C 01-01
IEEE Std 1528-2003 and IEEE Std 1528a-2005**

(Class II Permissive Change)

SAR EVALUATION REPORT

For

**Multi-band Radio Module
(Tested inside of Panasonic Tablet PC FZ-G1)**

Model: WW13A

FCC ID: ACJ9TGWW13A

Report Number: 13J15184-1A

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A	7/228/13	Section 11.2 – Removed duplicated table. Section 13 – Corrected various note numbers Section 13.19 – Removed incorrect footnotes Section 14.38 – Corrected GSM 1900 SAR value in table.	Dave Weaver

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1. Attestation of Test Results

Applicant	Panasonic Corporation of North America	
DUT description	Multi-band Radio Module (Tested inside of Panasonic Tablet PC FZ-G1)	
Model	WW13A	
Test device is	An identical prototype	
Device category	Portable	
Exposure category	General Population/Uncontrolled Exposure	
Date tested	5/20/2013 – 6/4/2013	
	Applicable Standards	Test Results
	Published RF exposure KDB procedures, TCB workshop updates and OET Bulletin 65 Supplement C, IEEE Std 1528-2003 and IEEE Std 1528a-2005	Pass
<p>UL CCS tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.</p> <p>Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government (NIST Handbook 150, Annex A). This report is written to support regulatory compliance of the applicable standards stated above.</p>		
Approved & Released For UL CCS By:		Tested By:
		
Dave Weaver Program Manager UL VERIFICATION SERVICES, INC		Jose Abadilla SAR Engineer UL VERIFICATION SERVICES, INC

1.1. Highest Reported SAR

Worst Case SAR data for each Frequency Band

RF Exposure Rule	Freq. Range	Highest Reported SAR	Limit
22 (LTE Band 5)	824-849 MHz	Body & Tablet: 1.346 W/kg (Edge 1)	1.6 W/kg
24 (LTE band II)	1850-1910 MHz	Body & Tablet: 1.341 W/kg (Edge 1)	
27 (LTE Band 17)	704 – 716 MHz	Body & Tablet: 0.708 W/kg (Edge 1)	
27 (W-CDMA Band 4)	1710–1755 MHz	Body & Tablet: 1.176 W/kg (Edge 1)	
Simultaneous transmission condition		1.583 W/kg (highest SAR across exposure conditions)	

LEGEND:

- Rear = Back
- Edge 1 = Top Edge
- Edge 2 = Right Edge
- Edge 3 = Bottom Edge
- Edge 4 = Left Edge

2. Test Methodology

The tests documented in this report were performed in accordance with FCC OET Bulletin 65 Supplement C Edition 01-01, IEEE STD 1528-2003, IEEE Std 1528a-2005 and the following published RF exposure KDB procedures:

- 941225 D01 SAR test for 3G devices v02
- 941225 D03 SAR Test Reduction GSM GPRS EDGE v01
- 941225 D02 HSPA and 1x Advanced v02r02
- 941225 D05 SAR for LTE Devices v02r02
- 941225 D06 Hot Spot SAR v01
- 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r01
- 865664 D02 SAR Reporting v01r01
- 447498 D01 General RF Exposure Guidance v05r01
- 248227 D01 SAR Meas for 802 11abg v01r02
- 616217 D04 SAR for laptop and tablets v02

3. Facilities and Accreditation

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

4. Calibration and Uncertainty

4.1. Measuring Instrument Calibration

The measuring equipment used to perform the tests documented in this report has been calibrated in accordance with the manufacturers' recommendations, and is traceable to recognized national standards.

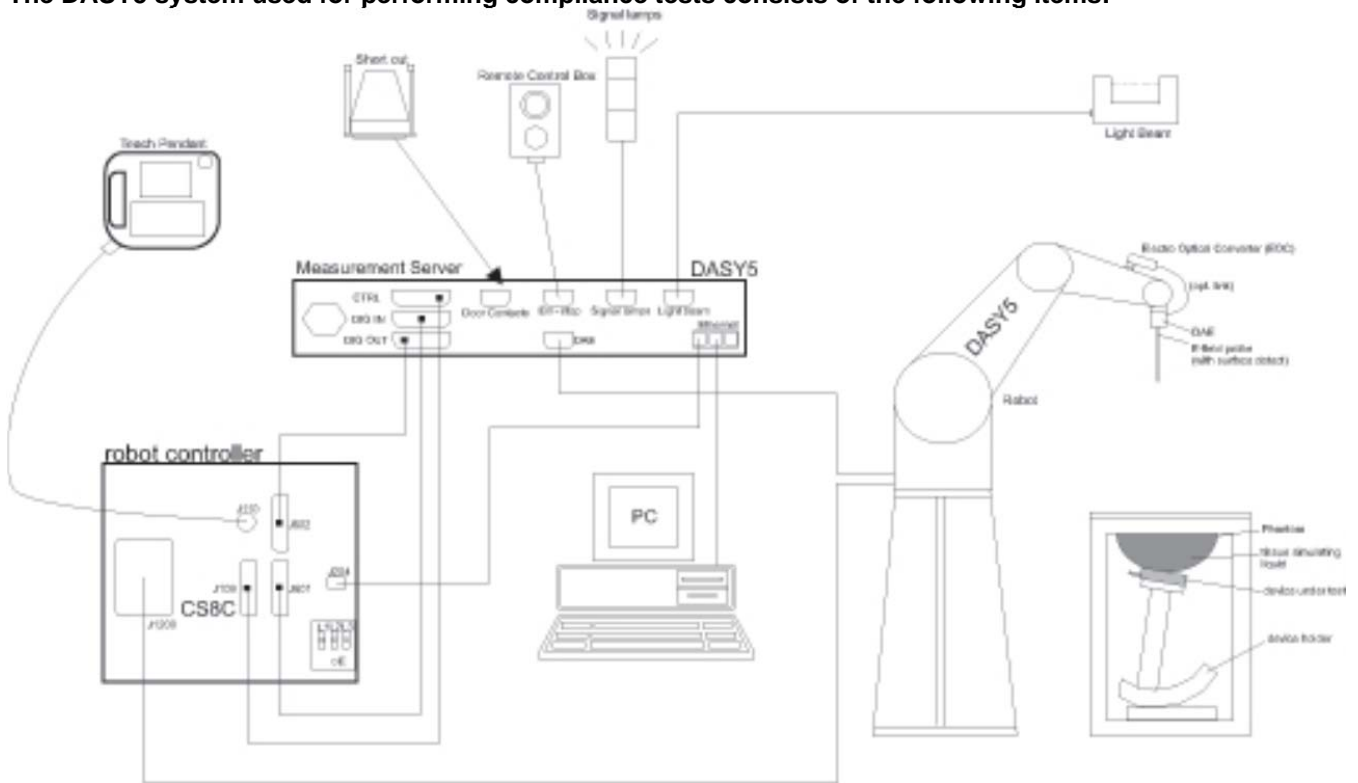
Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due date		
				MM	DD	Year
S-Parameter Network Analyzer	Agilent	8753ES	MY40001647	6	27	2013
Dielectronic Probe kit	SPEAG	SM DAK 040 CA	1082	9	18	2013
ENA Series Network Analyzer	Agilent	E5071B	MY42100131	2	21	2014
Dielectronic Probe kit	HP	85070E	594	N/A		
Synthesized Signal Generator	HP	8665B	3744A01084	5	7	2014
Power Meter	HP	438A	3513U04320	9	17	2013
Power Sensor A	HP	8481A	2237A31744	8	17	2013
Power Sensor B	HP	8481A	3318A95392	8	17	2013
Amplifier	MITEQ	4D00400600-50-30P	1622052	N/A		
Directional coupler	Werlatone	C8060-102	2149	N/A		
Synthesized Signal Generator	HP	8665B	3744A01084	3	26	2014
Power Meter	HP	438A	2822A05684	10	7	2013
Power Sensor A	HP	8481A	2702A66876	8	1	2013
Power Sensor B	HP	8482A	2349A08568	9	26	2013
Amplifier	MITEQ	4D00400600-50-30P	1620606	N/A		
Directional coupler	Werlatone	C8060-102	2141	N/A		
Base Station Simulator	R & S	CMU200	106291	8	8	2013
Base Station Simulator	Agilent	8960	GB46160222	11	10	2013
Thermometer	TRACEABLE	4242	122529162	9	19	2013
E-Field Probe	SPEAG	EX3DV4	3902	2	13	2014
E-Field Probe	SPEAG	EX3DV4	3773	4	26	2014
Data Acquisition Electronics	SPEAG	DAE4	1359	2	14	2014
System Validation Dipole	SPEAG	D750V3	1019	3	5	2014
System Validation Dipole	SPEAG	D835V2	4d002	10	4	2013
System Validation Dipole	SPEAG	D835V2	4d142	10	4	2013
System Validation Dipole	SPEAG	D1750V2	1053	8	15	2013
System Validation Dipole	SPEAG	D1750V2	1077	10	3	2013
System Validation Dipole	SPEAG	D1900V2	5d043	11	6	2013
Power Meter	Agilent	N1912A	MY52310061	7	5	2013
Power Sensor Ch A	Agilent	N1921A	MY52260009	7	5	2013
Power Sensor Ch B	Agilent	N1921A	MY52270022	7	21	2013

4.2. Measurement Uncertainty

Per KDB 865664, when no measured SAR values exceed 1.5 W/kg, measurement uncertainty analysis does not need to be provided in the test report.

5. Measurement System Description and Setup

The DASY5 system used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-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 EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

6. SAR Measurement Procedure

6.1. Normal SAR Measurement Procedure

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 2.1 mm. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2: Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE Standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan). If only one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of Zoom Scans has to be increased accordingly.

Area Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area} , Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

Step 3: Zoom Scan

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The Zoom Scan measures points (refer to table below) within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the Zoom Scan evaluates the averaged SAR for 1 g and 10 g and displays these values next to the job's label.

Zoom Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01 (Draft)

		≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom} , Δy_{Zoom}		≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$	≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm 3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5 · $\Delta z_{Zoom}(n-1)$
Minimum zoom scan volume	x, y, z	≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details. * When zoom scan is required and the <i>reported</i> SAR from the area scan based <i>1-g SAR estimation</i> procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.			

Step 4: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

Step 5: Z-Scan (FCC only)

The Z Scan measures points along a vertical straight line. The line runs along the Z-axis of a one-dimensional grid. In order to get a reasonable extrapolation the extrapolated distance should not be larger than the step size in Z-direction.

6.2. Volume Scan Procedures

Step 1: Repeat Step 1-4 in Section 6.1

Step 2: Volume Scan

Volume Scans are used to assess peak SAR and averaged SAR measurements in largely extended 3-dimensional volumes within any phantom. This measurement does not need any previous area scan. The grid can be anchored to a user specific point or to the current probe location.

Step 3: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

8. Device Under Test

Multi-band Radio Module (Tested inside of Panasonic Tablet PC FZ-G1) Model: WW13A	
Operating Configuration(s)	<ul style="list-style-type: none"> Tablet Mode
Exposure Condition(s)	<ul style="list-style-type: none"> The device is used in close proximity to the body. Specific details of the required test positions are provided in Section 8 "Summary of Test Configurations"
Accessory	None

8.1. Wireless Technologies

Wireless Mode and Frequency Bands	<ul style="list-style-type: none"> GSM850: 824 - 849 MHz GSM1900: 1850 - 1910 MHz W-CDMA Band V: 824 - 849 MHz W-CDMA Band IV: 1710 - 1755 MHz W-CDMA Band II: 1850 - 1910 MHz CDMA BC 0: 824 - 849 MHz CDMA BC 1: 1850 - 1910 MHz CDMA BC 10: 816 - 823.975 MHz LTE Band 2: 1850 - 1910 MHz LTE Band 4: 1710 - 1755 MHz LTE Band 5: 824 - 849 MHz LTE Band 13: 777 - 787 MHz* LTE Band 17: 704 - 716 MHz* LTE Band 25: 1850 - 1915 MHz 802.11ab/g/n: 2412 - 2462 MHz, b / g / HT20 / HT40 5150 - 5250 MHz, a / HT20 / HT40 5250 - 5350 MHz, a / HT20 / HT40 5500 - 5700 MHz, a / HT20 / HT40 5725 - 5850 MHz, a / HT20 / HT40 Bluetooth: 2402 - 2480 MHz
GPRS Multi-Slot Class:	<ul style="list-style-type: none"> GPRS: 10 EGPRS: 12
GPRS Class:	B
Duty Cycle	<ul style="list-style-type: none"> GPRS 2 Slots: 25% W-CDMA: 100% CDMA: 100% LTE: 100%

8.2. Hotspot (Wireless Router) Exposure Condition

N/A

8.3. Simultaneous Transmission

WWAN + Wi-Fi 2.4 GHz SISO (1 Tx)

Usage Scenario	Modes	Mode of Operation	BAND	CDMA 1xRTT	CDMA 1xEV-DO	GPRS/EDGE	WCDMA	HSDPA	HSUPA	HSPA+	DC-HSPA	LTE	Wi-Fi 2.4GHz Main	Wi-Fi 2.4GHz Aux	Wi-Fi 5 GHz Bands Main	Wi-Fi 5 GHz Bands Aux	BT 2.4 GHz		
Body SAR	WWAN + 2.4 GHz WLAN	CDMA 1xRTT	BC0	YES	No	No	No	No	No	No	No	No	YES	No	No	No	No		
		CDMA 1xRTT	BC1	YES	No	No	No	No	No	No	No	No	YES	No	No	No	No	No	
		CDMA 1xRTT	BC10	YES	No	No	No	No	No	No	No	No	No	YES	No	No	No	No	
		CDMA 1xEVDO	BC0	No	YES	No	No	No	No	No	No	No	No	YES	No	No	No	No	
		CDMA 1xEVDO	BC1	No	YES	No	No	No	No	No	No	No	No	YES	No	No	No	No	
		CDMA 1xEVDO	BC10	No	YES	No	No	No	No	No	No	No	No	YES	No	No	No	No	
		EDGE	850	No	No	YES	No	No	No	No	No	No	No	YES	No	No	No	No	No
		EDGE	1900	No	No	YES	No	No	No	No	No	No	No	YES	No	No	No	No	No
		W-CDMA	850	No	No	No	YES	No	No	No	No	No	No	YES	No	No	No	No	No
		W-CDMA	1700	No	No	No	YES	No	No	No	No	No	No	YES	No	No	No	No	No
		W-CDMA	1900	No	No	No	YES	No	No	No	No	No	No	YES	No	No	No	No	No
		HSDPA	850	No	No	No	No	YES	No	No	No	No	No	YES	No	No	No	No	No
		HSDPA	1700	No	No	No	No	YES	No	No	No	No	No	YES	No	No	No	No	No
		HSDPA	1900	No	No	No	No	YES	No	No	No	No	No	YES	No	No	No	No	No
		HSUPA	850	No	No	No	No	No	YES	No	No	No	No	YES	No	No	No	No	No
		HSUPA	1700	No	No	No	No	No	YES	No	No	No	No	YES	No	No	No	No	No
		HSUPA	1900	No	No	No	No	No	YES	No	No	No	No	YES	No	No	No	No	No
		HSPA+	850	No	No	No	No	No	No	YES	No	No	No	YES	No	No	No	No	No
		HSPA+	1700	No	No	No	No	No	No	YES	No	No	No	YES	No	No	No	No	No
		HSPA+	1900	No	No	No	No	No	No	YES	No	No	No	YES	No	No	No	No	No
		DC-HSDPA	850	No	No	No	No	No	No	No	YES	No	YES	No	YES	No	No	No	No
		DC-HSDPA	1700	No	No	No	No	No	No	No	YES	No	YES	No	YES	No	No	No	No
		DC-HSDPA	1900	No	No	No	No	No	No	No	YES	No	YES	No	YES	No	No	No	No
		LTE	2	No	No	No	No	No	No	No	No	No	No	YES	YES	No	No	No	No
		LTE	4	No	No	No	No	No	No	No	No	No	No	YES	YES	No	No	No	No
		LTE	5	No	No	No	No	No	No	No	No	No	No	YES	YES	No	No	No	No
		LTE	13	No	No	No	No	No	No	No	No	No	No	YES	YES	No	No	No	No
		LTE	17	No	No	No	No	No	No	No	No	No	No	YES	YES	No	No	No	No
		LTE	25	No	No	No	No	No	No	No	No	No	No	YES	YES	No	No	No	No
		CDMA 1xRTT	BC0	YES	No	No	No	No	No	No	No	No	No	No	YES	No	No	No	No
		CDMA 1xRTT	BC1	YES	No	No	No	No	No	No	No	No	No	No	YES	No	No	No	No
		CDMA 1xRTT	BC10	YES	No	No	No	No	No	No	No	No	No	No	YES	No	No	No	No
		CDMA 1xEVDO	BC0	No	YES	No	No	No	No	No	No	No	No	No	YES	No	No	No	No
		CDMA 1xEVDO	BC1	No	YES	No	No	No	No	No	No	No	No	No	YES	No	No	No	No
		CDMA 1xEVDO	BC10	No	YES	No	No	No	No	No	No	No	No	No	YES	No	No	No	No
		EDGE	850	No	No	YES	No	No	No	No	No	No	No	No	YES	No	No	No	No
		EDGE	1900	No	No	YES	No	No	No	No	No	No	No	No	YES	No	No	No	No
		W-CDMA	850	No	No	No	YES	No	No	No	No	No	No	No	YES	No	No	No	No
		W-CDMA	1700	No	No	No	YES	No	No	No	No	No	No	No	YES	No	No	No	No
		W-CDMA	1900	No	No	No	YES	No	No	No	No	No	No	No	YES	No	No	No	No
		HSDPA	850	No	No	No	No	YES	No	No	No	No	No	No	YES	No	No	No	No
		HSDPA	1700	No	No	No	No	YES	No	No	No	No	No	No	YES	No	No	No	No
		HSDPA	1900	No	No	No	No	YES	No	No	No	No	No	No	YES	No	No	No	No
		HSUPA	850	No	No	No	No	No	YES	No	No	No	No	No	YES	No	No	No	No
		HSUPA	1700	No	No	No	No	No	YES	No	No	No	No	No	YES	No	No	No	No
		HSUPA	1900	No	No	No	No	No	YES	No	No	No	No	No	YES	No	No	No	No
		HSPA+	850	No	No	No	No	No	No	YES	No	No	No	No	YES	No	No	No	No
		HSPA+	1700	No	No	No	No	No	No	YES	No	No	No	No	YES	No	No	No	No
		HSPA+	1900	No	No	No	No	No	No	YES	No	No	No	No	YES	No	No	No	No
		DC-HSDPA	850	No	No	No	No	No	No	No	YES	No	YES	No	YES	No	No	No	No
DC-HSDPA	1700	No	No	No	No	No	No	No	YES	No	YES	No	YES	No	No	No	No		
DC-HSDPA	1900	No	No	No	No	No	No	No	YES	No	YES	No	YES	No	No	No	No		
LTE	2	No	No	No	No	No	No	No	No	No	No	YES	No	YES	No	No	No		
LTE	4	No	No	No	No	No	No	No	No	No	No	YES	No	YES	No	No	No		
LTE	5	No	No	No	No	No	No	No	No	No	No	YES	No	YES	No	No	No		
LTE	13	No	No	No	No	No	No	No	No	No	No	YES	No	YES	No	No	No		
LTE	17	No	No	No	No	No	No	No	No	No	No	YES	No	YES	No	No	No		
LTE	25	No	No	No	No	No	No	No	No	No	No	YES	No	YES	No	No	No		

Note(s):

- LTE Bands 13 and 17 are not supported in Canada and were therefore not included for SAR assessment.

WWAN + Wi-Fi 5 GHz Bands SISO (1 Tx)

Usage Scenario	Modes	Mode of Operation	BAND	CDMA 1xRTT	CDMA 1xEV-DO	GPRS/EDGE	WCDMA	HSDPA	HSUPA	HSPA+	DC-HSPA	LTE	Wi-Fi 2.4GHz Main	Wi-Fi 2.4GHz Aux	Wi-Fi 5 GHz Bands Main	Wi-Fi 5 GHz Bands Aux	BT 2.4 GHz	
Body SAR	WWAN + 5 GHz Bands WLAN	CDMA 1xRTT	BC0	YES	No	No	No	No	No	No	No	No	No	No	YES	No	No	
		CDMA 1xRTT	BC1	YES	No	No	No	No	No	No	No	No	No	No	No	YES	No	No
		CDMA 1xRTT	BC10	YES	No	No	No	No	No	No	No	No	No	No	No	YES	No	No
		CDMA 1xEVDO	BC0	No	YES	No	No	No	No	No	No	No	No	No	No	YES	No	No
		CDMA 1xEVDO	BC1	No	YES	No	No	No	No	No	No	No	No	No	No	YES	No	No
		CDMA 1xEVDO	BC10	No	YES	No	No	No	No	No	No	No	No	No	No	YES	No	No
		EDGE	850	No	No	YES	No	No	No	No	No	No	No	No	No	YES	No	No
		EDGE	1900	No	No	YES	No	No	No	No	No	No	No	No	No	YES	No	No
		W-CDMA	850	No	No	No	YES	No	No	No	No	No	No	No	No	YES	No	No
		W-CDMA	1700	No	No	No	YES	No	No	No	No	No	No	No	No	YES	No	No
		W-CDMA	1900	No	No	No	YES	No	No	No	No	No	No	No	No	YES	No	No
		HSDPA	850	No	No	No	No	YES	No	No	No	No	No	No	No	YES	No	No
		HSDPA	1700	No	No	No	No	YES	No	No	No	No	No	No	No	YES	No	No
		HSDPA	1900	No	No	No	No	YES	No	No	No	No	No	No	No	YES	No	No
		HSUPA	850	No	No	No	No	No	YES	No	No	No	No	No	No	YES	No	No
		HSUPA	1700	No	No	No	No	No	YES	No	No	No	No	No	No	YES	No	No
		HSUPA	1900	No	No	No	No	No	YES	No	No	No	No	No	No	YES	No	No
		HSPA+	850	No	No	No	No	No	No	YES	No	No	No	No	No	YES	No	No
		HSPA+	1700	No	No	No	No	No	No	YES	No	No	No	No	No	YES	No	No
		HSPA+	1900	No	No	No	No	No	No	YES	No	No	No	No	No	YES	No	No
		DC-HSDPA	850	No	No	No	No	No	No	No	YES	No	No	No	No	YES	No	No
		DC-HSDPA	1700	No	No	No	No	No	No	No	YES	No	No	No	No	YES	No	No
		DC-HSDPA	1900	No	No	No	No	No	No	No	YES	No	No	No	No	YES	No	No
		LTE	2	No	No	No	No	No	No	No	No	No	YES	No	No	YES	No	No
		LTE	4	No	No	No	No	No	No	No	No	No	YES	No	No	YES	No	No
		LTE	5	No	No	No	No	No	No	No	No	No	YES	No	No	YES	No	No
		LTE	13	No	No	No	No	No	No	No	No	No	YES	No	No	YES	No	No
		LTE	17	No	No	No	No	No	No	No	No	No	YES	No	No	YES	No	No
		LTE	25	No	No	No	No	No	No	No	No	No	YES	No	No	YES	No	No
		CDMA 1xRTT	BC0	YES	No	No	No	No	No	No	No	No	No	No	No	No	YES	No
		CDMA 1xRTT	BC1	YES	No	No	No	No	No	No	No	No	No	No	No	No	YES	No
		CDMA 1xRTT	BC10	YES	No	No	No	No	No	No	No	No	No	No	No	No	YES	No
		CDMA 1xEVDO	BC0	No	YES	No	No	No	No	No	No	No	No	No	No	No	YES	No
		CDMA 1xEVDO	BC1	No	YES	No	No	No	No	No	No	No	No	No	No	No	YES	No
		CDMA 1xEVDO	BC10	No	YES	No	No	No	No	No	No	No	No	No	No	No	YES	No
		EDGE	850	No	No	YES	No	No	No	No	No	No	No	No	No	No	YES	No
		EDGE	1900	No	No	YES	No	No	No	No	No	No	No	No	No	No	YES	No
		W-CDMA	850	No	No	No	YES	No	No	No	No	No	No	No	No	No	YES	No
		W-CDMA	1700	No	No	No	YES	No	No	No	No	No	No	No	No	No	YES	No
		W-CDMA	1900	No	No	No	YES	No	No	No	No	No	No	No	No	No	YES	No
		HSDPA	850	No	No	No	No	YES	No	No	No	No	No	No	No	No	YES	No
		HSDPA	1700	No	No	No	No	YES	No	No	No	No	No	No	No	No	YES	No
		HSDPA	1900	No	No	No	No	YES	No	No	No	No	No	No	No	No	YES	No
		HSUPA	850	No	No	No	No	No	YES	No	No	No	No	No	No	No	YES	No
		HSUPA	1700	No	No	No	No	No	YES	No	No	No	No	No	No	No	YES	No
		HSUPA	1900	No	No	No	No	No	YES	No	No	No	No	No	No	No	YES	No
		HSPA+	850	No	No	No	No	No	No	YES	No	No	No	No	No	No	YES	No
		HSPA+	1700	No	No	No	No	No	No	YES	No	No	No	No	No	No	YES	No
		HSPA+	1900	No	No	No	No	No	No	YES	No	No	No	No	No	No	YES	No
		DC-HSDPA	850	No	No	No	No	No	No	No	YES	No	No	No	No	No	YES	No
DC-HSDPA	1700	No	No	No	No	No	No	No	YES	No	No	No	No	No	YES	No		
DC-HSDPA	1900	No	No	No	No	No	No	No	YES	No	No	No	No	No	YES	No		
LTE	2	No	No	No	No	No	No	No	No	No	YES	No	No	No	YES	No		
LTE	4	No	No	No	No	No	No	No	No	No	YES	No	No	No	YES	No		
LTE	5	No	No	No	No	No	No	No	No	No	YES	No	No	No	YES	No		
LTE	13	No	No	No	No	No	No	No	No	No	YES	No	No	No	YES	No		
LTE	17	No	No	No	No	No	No	No	No	No	YES	No	No	No	YES	No		
LTE	25	No	No	No	No	No	No	No	No	No	YES	No	No	No	YES	No		

Note(s):

- LTE Bands 13 and 17 are not supported in Canada and were therefore not included for SAR assessment.

WWAN + Bluetooth

Usage Scenario	Modes	Mode of Operation	BAND	CDMA 1xRTT	CDMA 1xEV-DO	GPRS/EDGE	WCDMA	HSDPA	HSUPA	HSPA+	DC-HSPA	LTE	Wi-Fi 2.4GHz Main	Wi-Fi 2.4GHz Aux	Wi-Fi 5 Ghz Bands Main	Wi-Fi 5 Ghz Bands Aux	BT 2.4 GHz	
Body SAR	WWAN + BT	CDMA 1xRTT	BC0	YES	No	No	No	No	No	No	No	No	No	No	No	No	YES	
		CDMA 1xRTT	BC1	YES	No	No	No	No	No	No	No	No	No	No	No	No	No	YES
		CDMA 1xRTT	BC10	YES	No	No	No	No	No	No	No	No	No	No	No	No	No	YES
		CDMA 1xEVDO	BC0	No	YES	No	No	No	No	No	No	No	No	No	No	No	No	YES
		CDMA 1xEVDO	BC1	No	YES	No	No	No	No	No	No	No	No	No	No	No	No	YES
		CDMA 1xEVDO	BC10	No	YES	No	No	No	No	No	No	No	No	No	No	No	No	YES
		EDGE	850	No	No	YES	No	No	No	No	No	No	No	No	No	No	No	YES
		EDGE	1900	No	No	YES	No	No	No	No	No	No	No	No	No	No	No	YES
		W-CDMA	850	No	No	No	YES	No	No	No	No	No	No	No	No	No	No	YES
		W-CDMA	1700	No	No	No	YES	No	No	No	No	No	No	No	No	No	No	YES
		W-CDMA	1900	No	No	No	YES	No	No	No	No	No	No	No	No	No	No	YES
		HSDPA	850	No	No	No	No	YES	No	No	No	No	No	No	No	No	No	YES
		HSDPA	1700	No	No	No	No	YES	No	No	No	No	No	No	No	No	No	YES
		HSDPA	1900	No	No	No	No	YES	No	No	No	No	No	No	No	No	No	YES
		HSUPA	850	No	No	No	No	No	YES	No	No	No	No	No	No	No	No	YES
		HSUPA	1700	No	No	No	No	No	YES	No	No	No	No	No	No	No	No	YES
		HSUPA	1900	No	No	No	No	No	YES	No	No	No	No	No	No	No	No	YES
		HSPA+	850	No	No	No	No	No	No	YES	No	No	No	No	No	No	No	YES
		HSPA+	1700	No	No	No	No	No	No	YES	No	No	No	No	No	No	No	YES
		HSPA+	1900	No	No	No	No	No	No	YES	No	No	No	No	No	No	No	YES
		DC-HSDPA	850	No	No	No	No	No	No	No	No	YES	No	No	No	No	No	YES
		DC-HSDPA	1700	No	No	No	No	No	No	No	No	YES	No	No	No	No	No	YES
		DC-HSDPA	1900	No	No	No	No	No	No	No	No	YES	No	No	No	No	No	YES
		LTE	2	No	No	No	No	No	No	No	No	No	YES	No	No	No	No	YES
		LTE	4	No	No	No	No	No	No	No	No	No	YES	No	No	No	No	YES
LTE	5	No	No	No	No	No	No	No	No	No	YES	No	No	No	No	YES		
LTE	13	No	No	No	No	No	No	No	No	No	YES	No	No	No	No	YES		
LTE	17	No	No	No	No	No	No	No	No	No	YES	No	No	No	No	YES		
LTE	25	No	No	No	No	No	No	No	No	No	YES	No	No	No	No	YES		

Note(s):

- LTE Bands 13 and 17 are not supported in Canada and were therefore not included for SAR assessment.

WWAN + Wi-Fi SISO (1 Tx) + Bluetooth

Usage Scenario	Mode	Mode of Operation	BAND	CDMA 1xRTT	CDMA 1xEV-DO	GPRS/EDGE	WCDMA	HSDPA	HSUPA	HSPA+	DC-HSPA	LTE	Wi-Fi 2.4GHz Main	Wi-Fi 2.4GHz Aux	Wi-Fi 5 GHz Bands Main	Wi-Fi 5 GHz Bands Aux	BT 2.4 GHz		
Body SAR	WWAN + 2.4GHz WLAN MIMO (2 Tx on WLAN)	CDMA 1xRTT	BC0	YES	No	No	No	No	No	No	No	No	YES	No	No	No	YES		
		CDMA 1xRTT	BC1	YES	No	No	No	No	No	No	No	No	YES	No	No	No	YES		
		CDMA 1xRTT	BC10	YES	No	No	No	No	No	No	No	No	YES	No	No	No	YES		
		CDMA 1xEVDO	BC0	No	YES	No	No	No	No	No	No	No	No	YES	No	No	No	YES	
		CDMA 1xEVDO	BC1	No	YES	No	No	No	No	No	No	No	No	YES	No	No	No	YES	
		CDMA 1xEVDO	BC10	No	YES	No	No	No	No	No	No	No	No	YES	No	No	No	YES	
		EDGE	850	No	No	YES	No	No	No	No	No	No	No	YES	No	No	No	YES	
		EDGE	1900	No	No	YES	No	No	No	No	No	No	No	YES	No	No	No	YES	
		W-CDMA	850	No	No	No	YES	No	No	No	No	No	No	YES	No	No	No	YES	
		W-CDMA	1700	No	No	No	YES	No	No	No	No	No	No	YES	No	No	No	YES	
		W-CDMA	1900	No	No	No	YES	No	No	No	No	No	No	YES	No	No	No	YES	
		HSDPA	850	No	No	No	No	YES	No	No	No	No	No	YES	No	No	No	YES	
		HSDPA	1700	No	No	No	No	YES	No	No	No	No	No	YES	No	No	No	YES	
		HSDPA	1900	No	No	No	No	YES	No	No	No	No	No	YES	No	No	No	YES	
		HSUPA	850	No	No	No	No	No	YES	No	No	No	No	YES	No	No	No	YES	
		HSUPA	1700	No	No	No	No	No	YES	No	No	No	No	YES	No	No	No	YES	
		HSUPA	1900	No	No	No	No	No	YES	No	No	No	No	YES	No	No	No	YES	
		HSPA+	850	No	No	No	No	No	No	YES	No	No	No	YES	No	No	No	YES	
		HSPA+	1700	No	No	No	No	No	No	YES	No	No	No	YES	No	No	No	YES	
		HSPA+	1900	No	No	No	No	No	No	YES	No	No	No	YES	No	No	No	YES	
		DC-HSDPA	850	No	No	No	No	No	No	No	YES	No	YES	No	YES	No	No	YES	
		DC-HSDPA	1700	No	No	No	No	No	No	No	YES	No	YES	No	YES	No	No	YES	
		DC-HSDPA	1900	No	No	No	No	No	No	No	YES	No	YES	No	YES	No	No	YES	
		LTE	2	No	No	No	No	No	No	No	No	No	YES	YES	No	No	No	YES	
		LTE	4	No	No	No	No	No	No	No	No	No	YES	YES	No	No	No	YES	
		LTE	5	No	No	No	No	No	No	No	No	No	YES	YES	No	No	No	YES	
		LTE	13	No	No	No	No	No	No	No	No	No	YES	YES	No	No	No	YES	
		LTE	17	No	No	No	No	No	No	No	No	No	YES	YES	No	No	No	YES	
		LTE	25	No	No	No	No	No	No	No	No	No	YES	YES	No	No	No	YES	
		Body SAR	WWAN + 5 GHz Bands WLAN MIMO (2 Tx on WLAN)	CDMA 1xRTT	BC0	YES	No	No	No	No	No	No	No	No	No	No	YES	No	YES
				CDMA 1xRTT	BC1	YES	No	No	No	No	No	No	No	No	No	No	YES	No	YES
				CDMA 1xRTT	BC10	YES	No	No	No	No	No	No	No	No	No	No	YES	No	YES
				CDMA 1xEVDO	BC0	No	YES	No	No	No	No	No	No	No	No	No	YES	No	YES
				CDMA 1xEVDO	BC1	No	YES	No	No	No	No	No	No	No	No	No	YES	No	YES
				CDMA 1xEVDO	BC10	No	YES	No	No	No	No	No	No	No	No	No	YES	No	YES
				EDGE	850	No	No	YES	No	No	No	No	No	No	No	No	YES	No	YES
				EDGE	1900	No	No	YES	No	No	No	No	No	No	No	No	YES	No	YES
				W-CDMA	850	No	No	No	YES	No	No	No	No	No	No	No	YES	No	YES
				W-CDMA	1700	No	No	No	YES	No	No	No	No	No	No	No	YES	No	YES
				W-CDMA	1900	No	No	No	YES	No	No	No	No	No	No	No	YES	No	YES
				HSDPA	850	No	No	No	No	YES	No	No	No	No	No	No	YES	No	YES
				HSDPA	1700	No	No	No	No	YES	No	No	No	No	No	No	YES	No	YES
				HSDPA	1900	No	No	No	No	YES	No	No	No	No	No	No	YES	No	YES
				HSUPA	850	No	No	No	No	No	YES	No	No	No	No	No	YES	No	YES
				HSUPA	1700	No	No	No	No	No	YES	No	No	No	No	No	YES	No	YES
HSUPA	1900			No	No	No	No	No	YES	No	No	No	No	No	YES	No	YES		
HSPA+	850			No	No	No	No	No	No	YES	No	No	No	No	YES	No	YES		
HSPA+	1700			No	No	No	No	No	No	YES	No	No	No	No	YES	No	YES		
HSPA+	1900			No	No	No	No	No	No	YES	No	No	No	No	YES	No	YES		
DC-HSDPA	850			No	No	No	No	No	No	No	YES	No	YES	No	YES	No	YES		
DC-HSDPA	1700			No	No	No	No	No	No	No	YES	No	YES	No	YES	No	YES		
DC-HSDPA	1900			No	No	No	No	No	No	No	YES	No	YES	No	YES	No	YES		
LTE	2			No	No	No	No	No	No	No	No	No	YES	No	YES	No	YES		
LTE	4			No	No	No	No	No	No	No	No	No	YES	No	YES	No	YES		
LTE	5			No	No	No	No	No	No	No	No	No	YES	No	YES	No	YES		
LTE	13			No	No	No	No	No	No	No	No	No	YES	No	YES	No	YES		
LTE	17			No	No	No	No	No	No	No	No	No	YES	No	YES	No	YES		
LTE	25			No	No	No	No	No	No	No	No	No	YES	No	YES	No	YES		

Note(s):

- LTE Bands 13 and 17 are not supported in Canada and were therefore not included for SAR assessment.

WWAN + Wi-Fi MIMO (2 Tx)

Usage Scenario	Modes	Mode of Operation	BAND	CDMA 1xRTT	CDMA 1xEV-DO	GPRS/EDGE	WCDMA	HSDPA	HSUPA	HSPA+	DC-HSPA	LTE	Wi-Fi 2.4GHz Main	Wi-Fi 2.4GHz Aux	Wi-Fi 5 GHz Bands Main	Wi-Fi 5 GHz Bands Aux	BT 2.4 GHz			
Body SAR	WWAN + 2.4GHz WLAN + BT	CDMA 1xRTT	BC0	YES	No	No	No	No	No	No	No	No	YES	YES	No	No	No			
		CDMA 1xRTT	BC1	YES	No	No	No	No	No	No	No	No	No	YES	YES	No	No	No		
		CDMA 1xRTT	BC10	YES	No	No	No	No	No	No	No	No	No	YES	YES	No	No	No		
		CDMA 1xEVDO	BC0	No	YES	No	No	No	No	No	No	No	No	YES	YES	No	No	No		
		CDMA 1xEVDO	BC1	No	YES	No	No	No	No	No	No	No	No	YES	YES	No	No	No		
		CDMA 1xEVDO	BC10	No	YES	No	No	No	No	No	No	No	No	YES	YES	No	No	No		
		EDGE	850	No	No	YES	No	No	No	No	No	No	No	No	YES	YES	No	No	No	
		EDGE	1900	No	No	YES	No	No	No	No	No	No	No	No	YES	YES	No	No	No	
		W-CDMA	850	No	No	No	No	YES	No	No	No	No	No	No	YES	YES	No	No	No	
		W-CDMA	1700	No	No	No	No	YES	No	No	No	No	No	No	YES	YES	No	No	No	
		W-CDMA	1900	No	No	No	No	YES	No	No	No	No	No	No	YES	YES	No	No	No	
		HSDPA	850	No	No	No	No	No	YES	No	No	No	No	No	YES	YES	No	No	No	
		HSDPA	1700	No	No	No	No	No	YES	No	No	No	No	No	YES	YES	No	No	No	
		HSDPA	1900	No	No	No	No	No	YES	No	No	No	No	No	YES	YES	No	No	No	
		HSUPA	850	No	No	No	No	No	No	YES	No	No	No	No	YES	YES	No	No	No	
		HSUPA	1700	No	No	No	No	No	No	YES	No	No	No	No	YES	YES	No	No	No	
		HSUPA	1900	No	No	No	No	No	No	YES	No	No	No	No	YES	YES	No	No	No	
		HSPA+	850	No	No	No	No	No	No	No	YES	No	No	No	YES	YES	No	No	No	
		HSPA+	1700	No	No	No	No	No	No	No	YES	No	No	No	YES	YES	No	No	No	
		HSPA+	1900	No	No	No	No	No	No	No	YES	No	No	No	YES	YES	No	No	No	
		DC-HSDPA	850	No	No	No	No	No	No	No	No	YES	No	No	YES	YES	No	No	No	
		DC-HSDPA	1700	No	No	No	No	No	No	No	No	YES	No	No	YES	YES	No	No	No	
		DC-HSDPA	1900	No	No	No	No	No	No	No	No	YES	No	No	YES	YES	No	No	No	
		LTE	2	No	No	No	No	No	No	No	No	No	YES	YES	YES	YES	No	No	No	
		LTE	4	No	No	No	No	No	No	No	No	No	No	YES	YES	YES	No	No	No	
		LTE	5	No	No	No	No	No	No	No	No	No	No	YES	YES	YES	No	No	No	
		LTE	13	No	No	No	No	No	No	No	No	No	YES	YES	YES	YES	No	No	No	
		LTE	17	No	No	No	No	No	No	No	No	No	YES	YES	YES	YES	No	No	No	
		LTE	25	No	No	No	No	No	No	No	No	No	YES	YES	YES	YES	No	No	No	
		Body SAR	WWAN + 5 GHz Bands WLAN + BT	CDMA 1xRTT	BC0	YES	No	No	No	No	No	No	No	No	No	No	YES	YES	No	
				CDMA 1xRTT	BC1	YES	No	No	No	No	No	No	No	No	No	No	YES	YES	No	
				CDMA 1xRTT	BC10	YES	No	No	No	No	No	No	No	No	No	No	YES	YES	No	
				CDMA 1xEVDO	BC0	No	YES	No	No	No	No	No	No	No	No	No	No	YES	YES	No
				CDMA 1xEVDO	BC1	No	YES	No	No	No	No	No	No	No	No	No	No	YES	YES	No
				CDMA 1xEVDO	BC10	No	YES	No	No	No	No	No	No	No	No	No	No	YES	YES	No
				EDGE	850	No	No	YES	No	No	No	No	No	No	No	No	No	YES	YES	No
				EDGE	1900	No	No	YES	No	No	No	No	No	No	No	No	No	YES	YES	No
				W-CDMA	850	No	No	No	YES	No	No	No	No	No	No	No	No	YES	YES	No
				W-CDMA	1700	No	No	No	YES	No	No	No	No	No	No	No	No	YES	YES	No
				W-CDMA	1900	No	No	No	YES	No	No	No	No	No	No	No	No	YES	YES	No
				HSDPA	850	No	No	No	No	YES	No	No	No	No	No	No	No	YES	YES	No
				HSDPA	1700	No	No	No	No	YES	No	No	No	No	No	No	No	YES	YES	No
				HSDPA	1900	No	No	No	No	YES	No	No	No	No	No	No	No	YES	YES	No
				HSUPA	850	No	No	No	No	No	YES	No	No	No	No	No	No	YES	YES	No
				HSUPA	1700	No	No	No	No	No	YES	No	No	No	No	No	No	YES	YES	No
				HSUPA	1900	No	No	No	No	No	YES	No	No	No	No	No	No	YES	YES	No
				HSPA+	850	No	No	No	No	No	No	YES	No	No	No	No	No	YES	YES	No
HSPA+	1700			No	No	No	No	No	No	YES	No	No	No	No	No	YES	YES	No		
HSPA+	1900			No	No	No	No	No	No	YES	No	No	No	No	No	YES	YES	No		
DC-HSDPA	850			No	No	No	No	No	No	No	YES	No	No	No	No	YES	YES	No		
DC-HSDPA	1700			No	No	No	No	No	No	No	YES	No	No	No	No	YES	YES	No		
DC-HSDPA	1900			No	No	No	No	No	No	No	YES	No	No	No	No	YES	YES	No		
LTE	2			No	No	No	No	No	No	No	No	No	YES	YES	YES	YES	No	No	No	
LTE	4			No	No	No	No	No	No	No	No	No	YES	YES	YES	YES	No	No	No	
LTE	5			No	No	No	No	No	No	No	No	No	YES	YES	YES	YES	No	No	No	
LTE	13			No	No	No	No	No	No	No	No	No	YES	YES	YES	YES	No	No	No	
LTE	17			No	No	No	No	No	No	No	No	No	YES	YES	YES	YES	No	No	No	
LTE	25			No	No	No	No	No	No	No	No	No	YES	YES	YES	YES	No	No	No	

Notes:

- Bluetooth transmits using the WLAN Aux Antenna
- Bluetooth can transmit simultaneously with the WLAN Main Antenna, in either of the WLAN bands.
- Bluetooth cannot transmit simultaneously with the WLAN Aux Antenna, in either of the WLAN bands; this also precludes the transmission of Bluetooth when WLAN is in MIMO mode.
- LTE Bands 13 and 17 are not supported in Canada and were therefore not included for SAR assessment.

8.4. LTE Parameters

#	Description	Information
A	List the frequency range and channel bandwidths used in each LTE band; 2,4, 5, 13, 17,25 20 MHz, etc.	Band 2
		Tx: 1850 - 1910 MHz Rx: 1930 - 1990 MHz
		Band 4
		Tx: 1710 – 1755 MHz Rx: 2100 – 2155 MHz
		Band 5
		Tx: 824 - 849 MHz Rx: 869 - 894 MHz
		Band 13
		Tx: 777 – 787 MHz Rx: 746 – 756 MHz
		Band 17
		Tx: 704 – 716 MHz Rx: 734 – 746 MHz
		Band 25
		Tx: 1850 - 1915 MHz Rx: 1930 - 1995 MHz
		Channel Bandwidths for bands 2, 4, 5 and 25: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
		Channel Bandwidths for bands 13 and 17: 5MHz and 10MHz

Note(s):

- LTE Bands 13 and 17 are not supported in Canada and were therefore not included for SAR assessment.

LTE Parameters continued

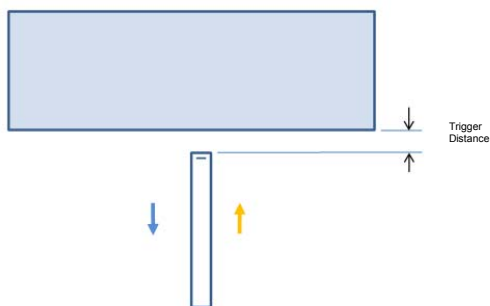
#	Description	Information						
B	Identify the high, middle and low (H, M, L) channel numbers and channel frequencies for each LTE bandwidth and frequency band	Band 2	Channel Bandwidth					
			20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Low	18700 /1860	18675/ 1857.5	18650/ 1855	18625/ 1852.5	18615/ 1851.5	18607/ 1850.7
		Mid	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880
		High	19100/ 1900	19125/ 1902.5	19150/ 1905	19175/ 1907.5	19184/ 1908.4	19192/ 1909.2
		Band 4	Channel Bandwidth					
			20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Low	20050/ 1720	20025/ 1717.5	20000/ 1715	19975/ 1712.5	19965/ 1711.5	19957/ 1710.7
		Mid	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5
		High	20300/ 1745	20325/ 1747.5	20350/ 1750	20375/ 1752.5	20384/ 1753.4	20392/ 1754.2
		Band 5	Channel Bandwidth					
			20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Low			20450/ 829	20425/ 826.5	20415/ 825.5	20407/ 824.7
		Mid			20525/ 836.5	20525/ 836.5	20525/ 836.5	20525/ 836.5
		High			20600/ 844	20625/ 846.5	20634/ 847.4	20642/ 848.2
		Band 13	Channel Bandwidth					
			20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Low				23205/ 779.5		
		Mid			23230/ 782	23230/ 782		
		High				23255/ 784.5		
		Band 17	Channel Bandwidth					
			20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Low			23780/ 709	23755/ 706.5		
		Mid			23790/ 710	23790/ 710		
		High			23800/ 711	23825/ 713.5		
		Band 25	Channel Bandwidth					
			20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Low	26140/ 1860	26115/ 1857.5	26090/ 1855	26065/ 1852.5	26055/ 1851.5	26047/ 1850.7
Mid	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5		
High	26590/ 1905	26615/ 1907.5	26640/ 1910	26665/ 1912.5	26674/ 1913.4	26682/ 1914.2		
C	Descriptions of the LTE transmitter and antenna implementation, and identify if the transmitter operates independently of the other wireless transmitters in the device; i.e., whether the LTE hardware, components and/or antenna(s) are shared with other transmitters.	A single antenna (Main) is used for LTE and other wireless modes (GPRS/EGPRS/W-CDMA/CDMA) for both transmit and receive.						

#	Description	Information																																						
D	Identify the voice and data transmission requirements for all LTE operating modes and exposure conditions, for standalone and simultaneous transmission, with respect to the required head and body test configurations, antenna locations, handset flip or slide cover positions, antenna diversity requirements, etc.	Data Only Device Exposure Conditions: <ul style="list-style-type: none"> ▪ Laptop Mode, Bystander <ul style="list-style-type: none"> ○ Rear side of the display screen at 15 mm from the phantom 																																						
E	Identify if Maximum Power Reduction (MPR) is implemented as an optional or permanent feature, i.e., built-in by design: <ol style="list-style-type: none"> 1. MPR may be considered during SAR testing only when the maximum output power is permanently limited by the MPR implemented within the device, according to the RB (resource block) configurations specified in 3GPP/LTE standards. 2. Regardless of network requirements, only those RB configurations allowed (see 3GPP standards) for the channel bandwidth and modulation combinations may be tested with MPR active. Configurations with RB allocations less than the RB thresholds required by 3GPP must be tested without MPR. 3. A-MPR (additional MPR) must be disabled during SAR testing. 	As per 3GPP TS 36.101 v11.0.0 (2012-03) Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3 <table border="1" style="margin: 10px auto;"> <thead> <tr> <th rowspan="2">Modulation</th> <th colspan="6">Channel bandwidth / Transmission bandwidth (RB)</th> <th rowspan="2">MPR (dB)</th> </tr> <tr> <th>1.4 MHz</th> <th>3.0 MHz</th> <th>5 MHz</th> <th>10 MHz</th> <th>15 MHz</th> <th>20 MHz</th> </tr> </thead> <tbody> <tr> <td>QPSK</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 1</td> </tr> <tr> <td>16 QAM</td> <td>≤ 5</td> <td>≤ 4</td> <td>≤ 8</td> <td>≤ 12</td> <td>≤ 16</td> <td>≤ 18</td> <td>≤ 1</td> </tr> <tr> <td>16 QAM</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 2</td> </tr> </tbody> </table> MPR is supported by design and is mandatory. A-MPR is supported by design, but is disabled for SAR testing. A-MPR is disabled, by using Network Setting value of NS_01.	Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1	16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1	16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)																																	
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz																																		
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1																																	
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1																																	
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2																																	
F	When power reduction is required for one or more LTE modes to satisfy SAR compliance for simultaneous transmission or other equipment certification and operating requirements, maximum average conducted output power measurement results for each power reduction mode applicable to the simultaneous voice/data transmission configurations for such wireless configurations and frequency bands are required.	Not applicable.																																						

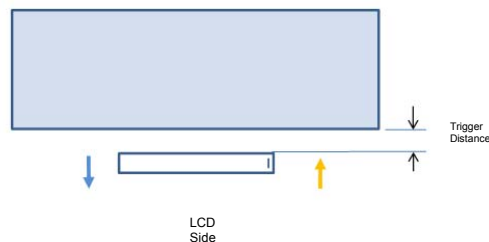
8.5. Proximity Sensor Triggering distance (KDB 616217 §6.2)

Edge 1 of the DUT was placed directly below the flat phantom. The DUT was moved toward the phantom in accordance with the steps outlined in KDB 616217 §6.2 to determine the trigger distance for enabling power reduction. The DUT was moved away from the phantom to determine the trigger distance for resuming full power.

The measurement was then repeated for the Rear surface.



Proximity Sensor Trigger Distance Assessment
 KDB 616217 §6.2, Edge 1



Proximity Sensor Trigger Distance Assessment
 KDB 616217 §6.2, Rear

LEGEND

- Direction of DUT travel for determination of full power resumption triggering point
- Direction of DUT travel for determination of power reduction triggering point

Summary of Trigger Distances

Tissue simulating liquid	Trigger distance - Edge 1		Trigger distance - Rear	
	Moving toward phantom	Moving from phantom	Moving toward phantom	Moving from phantom
750 muscle	24 mm	27 mm	11 mm	17 mm
850 muscle	23 mm	25 mm	11 mm	17 mm
1750 muscle	21 mm	26 mm	12 mm	15 mm
1900 muscle	21 mm	26 mm	11 mm	15 mm

Full power testing for Edge 1 and the rear was performed at 1mm less than the smallest measured trigger distance in accordance with KDB 616217.

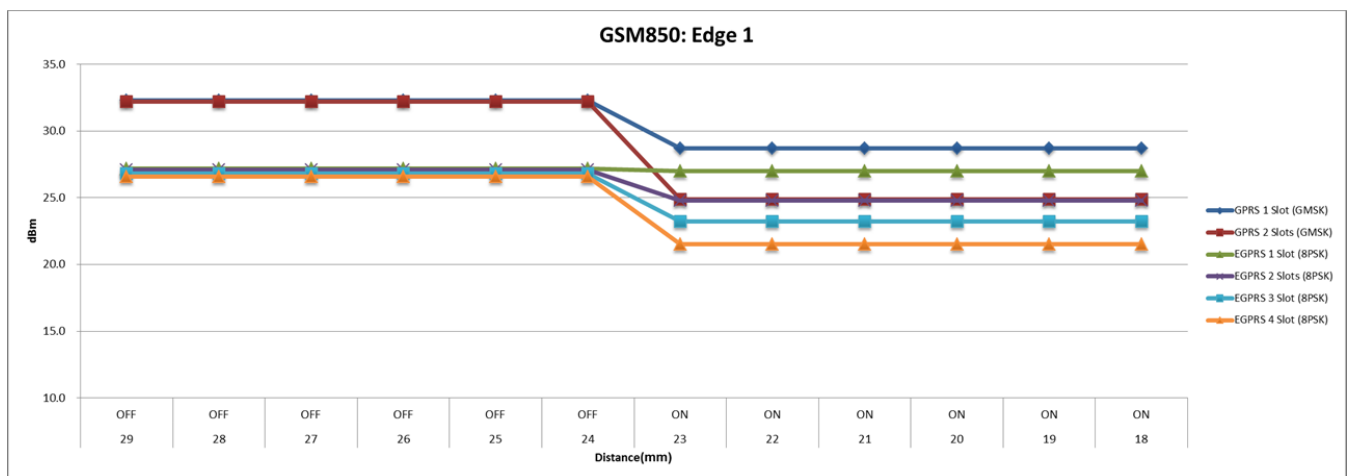
8.6. Triggering distances and power levels

8.6.1. DUT moving toward the phantom

GSM850

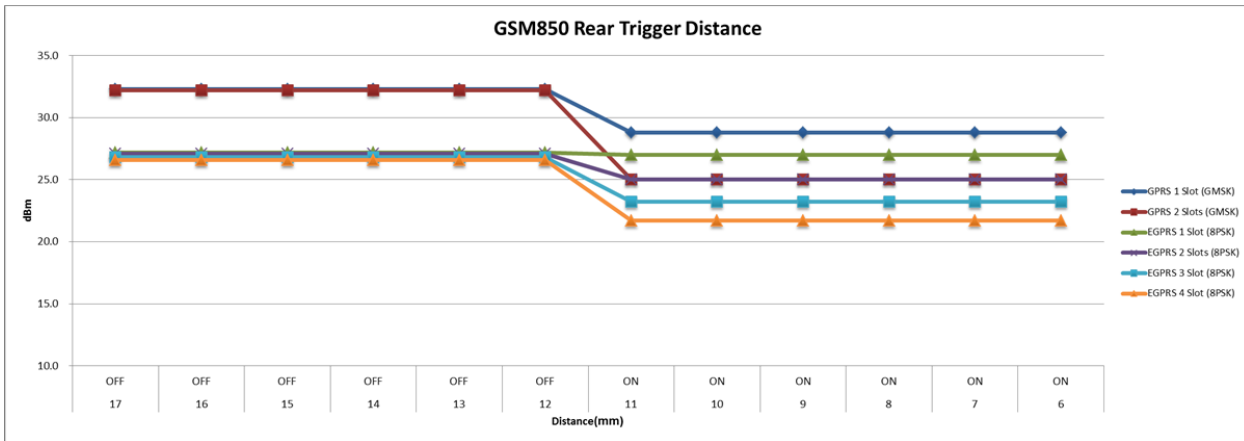
Edge 1

Edge 1, (GSM850)												
Distance (mm):	29	28	27	26	25	24	23	22	21	20	19	18
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
GPRS 1 Slot (GMSK)	32.3	32.3	32.3	32.3	32.3	32.3	28.7	28.7	28.7	28.7	28.7	28.7
GPRS 2 Slots (GMSK)	32.2	32.2	32.2	32.2	32.2	32.2	24.9	24.9	24.9	24.9	24.9	24.9
EGPRS 1 Slot (8PSK)	27.2	27.2	27.2	27.2	27.2	27.2	27.0	27.0	27.0	27.0	27.0	27.0
EGPRS 2 Slots (8PSK)	27.1	27.1	27.1	27.1	27.1	27.1	24.8	24.8	24.8	24.8	24.8	24.8
EGPRS 3 Slot (8PSK)	26.8	26.8	26.8	26.8	26.8	26.8	23.2	23.2	23.2	23.2	23.2	23.2
EGPRS 4 Slot (8PSK)	26.6	26.6	26.6	26.6	26.6	26.6	21.5	21.5	21.5	21.5	21.5	21.5



Rear

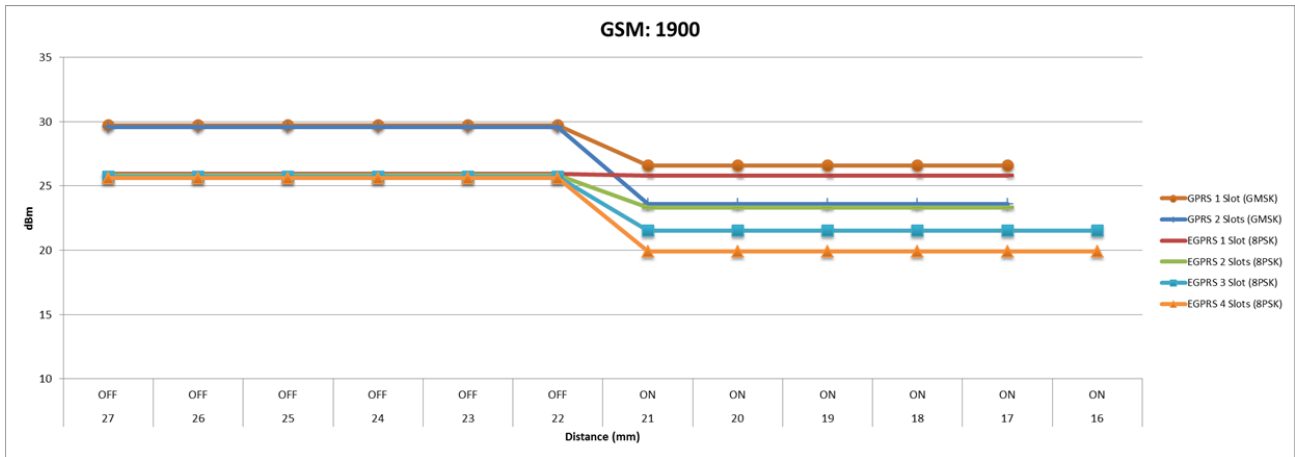
Rear, (GSM850)												
Distance (mm):	17	16	15	14	13	12	11	10	9	8	7	6
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
GPRS 1 Slot (GMSK)	32.3	32.3	32.3	32.3	32.3	32.3	28.7	28.7	28.7	28.7	28.7	28.7
GPRS 2 Slots (GMSK)	32.2	32.2	32.2	32.2	32.2	32.2	24.9	24.9	24.9	24.9	24.9	24.9
EGPRS 1 Slot (8PSK)	27.2	27.2	27.2	27.2	27.2	27.2	27.0	27.0	27.0	27.0	27.0	27.0
EGPRS 2 Slots (8PSK)	27.1	27.1	27.1	27.1	27.1	27.1	24.8	24.8	24.8	24.8	24.8	24.8
EGPRS 3 Slot (8PSK)	26.8	26.8	26.8	26.8	26.8	26.8	23.2	23.2	23.2	23.2	23.2	23.2
EGPRS 4 Slot (8PSK)	26.6	26.6	26.6	26.6	26.6	26.6	21.5	21.5	21.5	21.5	21.5	21.5



GSM1900

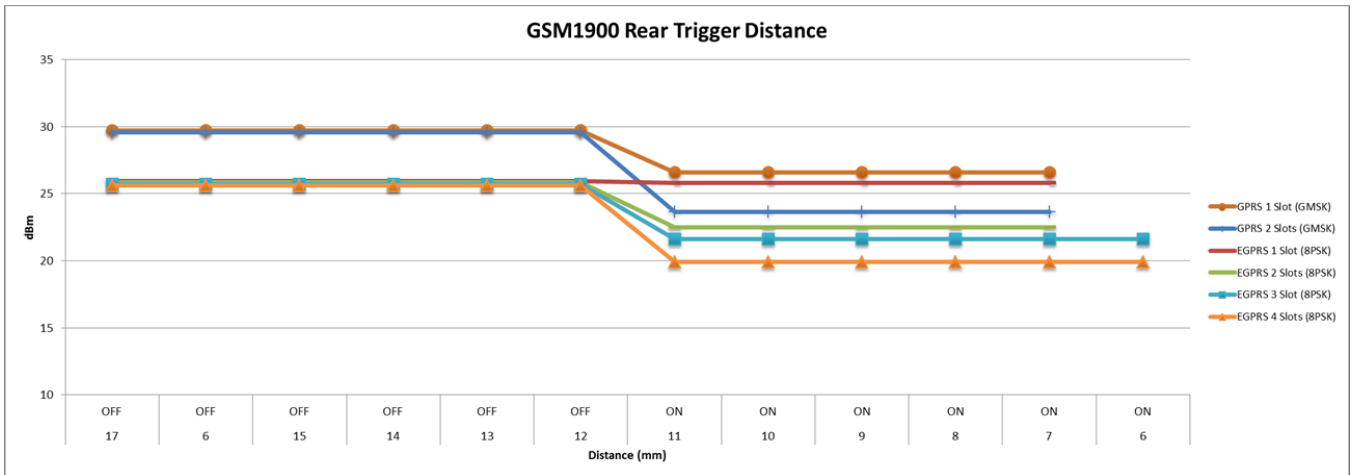
Edge 1

Edge 1, (GSM1900)												
Distance (mm):	27	26	25	24	23	22	21	20	19	18	17	16
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
GPRS 1 Slot (GMSK)	29.7	29.7	29.7	29.7	29.7	29.7	26.6	26.6	26.6	26.6	26.6	26.6
GPRS 2 Slots (GMSK)	29.6	29.6	29.6	29.6	29.6	29.6	23.6	23.6	23.6	23.6	23.6	23.6
EGPRS 1 Slot (8PSK)	26.0	26.0	26.0	26.0	26.0	26.0	25.8	25.8	25.8	25.8	25.8	25.8
EGPRS 2 Slots (8PSK)	25.9	25.9	25.9	25.9	25.9	25.9	23.3	23.3	23.3	23.3	23.3	23.3
EGPRS 3 Slot (8PSK)	25.7	25.7	25.7	25.7	25.7	25.7	21.5	21.5	21.5	21.5	21.5	21.5
EGPRS 4 Slots (8PSK)	25.6	25.6	25.6	25.6	25.6	25.6	19.9	19.9	19.9	19.9	19.9	19.9



Rear

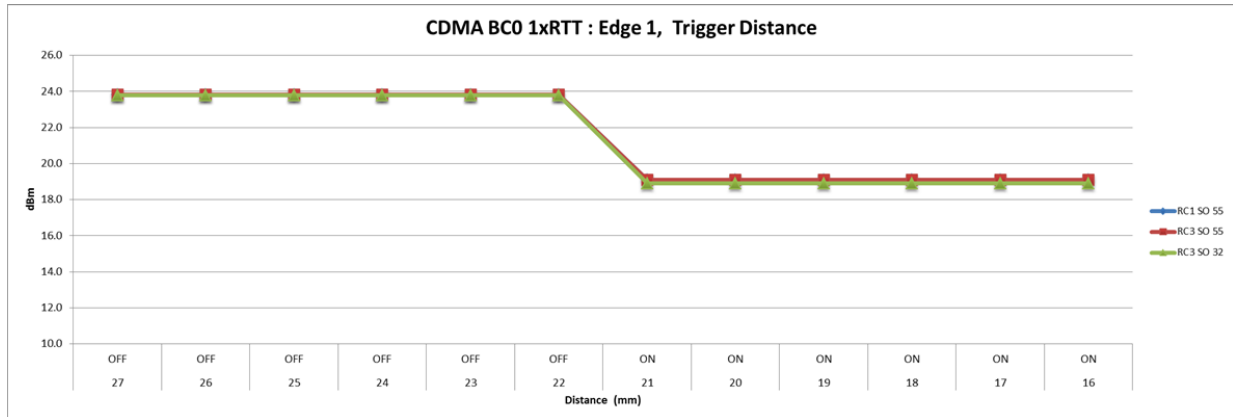
Rear, (GSM1900)												
Distance (mm):	17	6	15	14	13	12	11	10	9	8	7	6
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
GPRS 1 Slot (GMSK)	29.7	29.7	29.7	29.7	29.7	29.7	26.6	26.6	26.6	26.6	26.6	26.6
GPRS 2 Slots (GMSK)	29.6	29.6	29.6	29.6	29.6	29.6	23.6	23.6	23.6	23.6	23.6	23.6
EGPRS 1 Slot (8PSK)	26.0	26.0	26.0	26.0	26.0	26.0	25.8	25.8	25.8	25.8	25.8	25.8
EGPRS 2 Slots (8PSK)	25.9	25.9	25.9	25.9	25.9	25.9	23.3	23.3	23.3	23.3	23.3	23.3
EGPRS 3 Slot (8PSK)	25.7	25.7	25.7	25.7	25.7	25.7	21.5	21.5	21.5	21.5	21.5	21.5
EGPRS 4 Slots (8PSK)	25.6	25.6	25.6	25.6	25.6	25.6	19.9	19.9	19.9	19.9	19.9	19.9



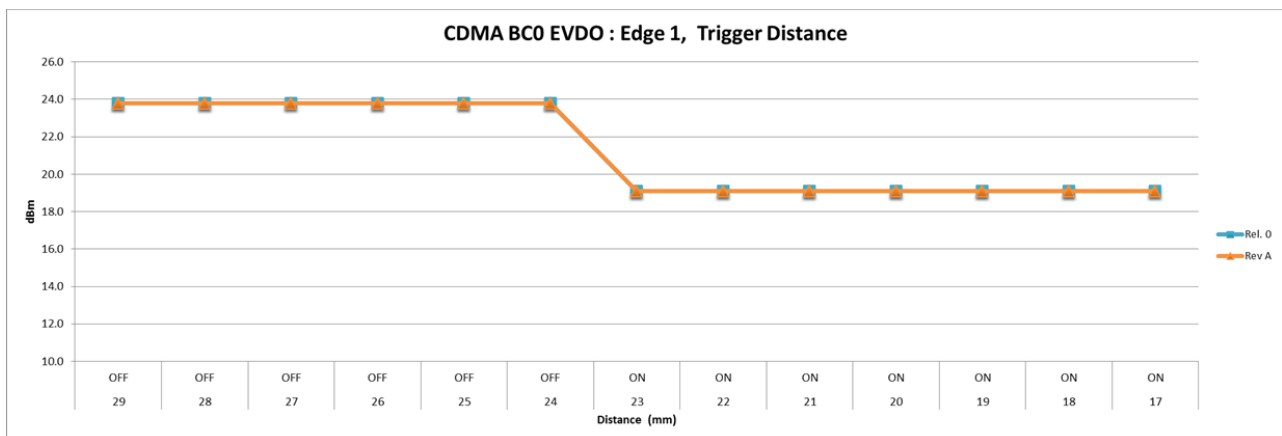
CDMA BC0

Edge 1

Edge 1, CDMA BC0 1xRTT												
Distance (mm):	27	26	25	24	23	22	21	20	19	18	17	16
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
RC1 SO 55	23.8	23.8	23.8	23.8	23.8	23.8	19.1	19.1	19.1	19.1	19.1	19.1
RC3 SO 55	23.8	23.8	23.8	23.8	23.8	23.8	19.1	19.1	19.1	19.1	19.1	19.1
RC3 SO 32	23.8	23.8	23.8	23.8	23.8	23.8	18.9	18.9	18.9	18.9	18.9	18.9



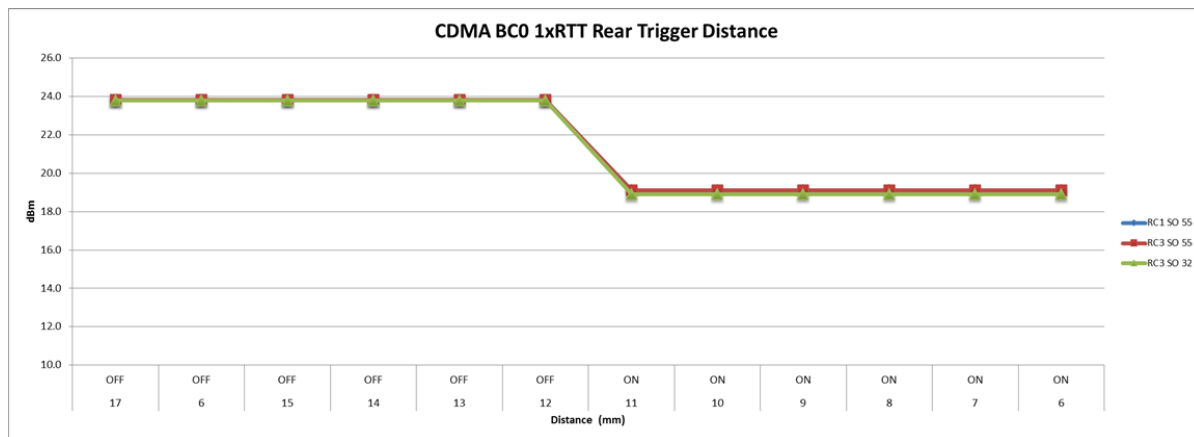
Edge 1, CDMA BC0 EVDO													
Distance (mm):	29	28	27	26	25	24	23	22	21	20	19	18	17
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON
Rel. 0	23.8	23.8	23.8	23.8	23.8	23.8	19.1	19.1	19.1	19.1	19.1	19.1	19.1
Rev A	23.8	23.8	23.8	23.8	23.8	23.8	19.1	19.1	19.1	19.1	19.1	19.1	19.1



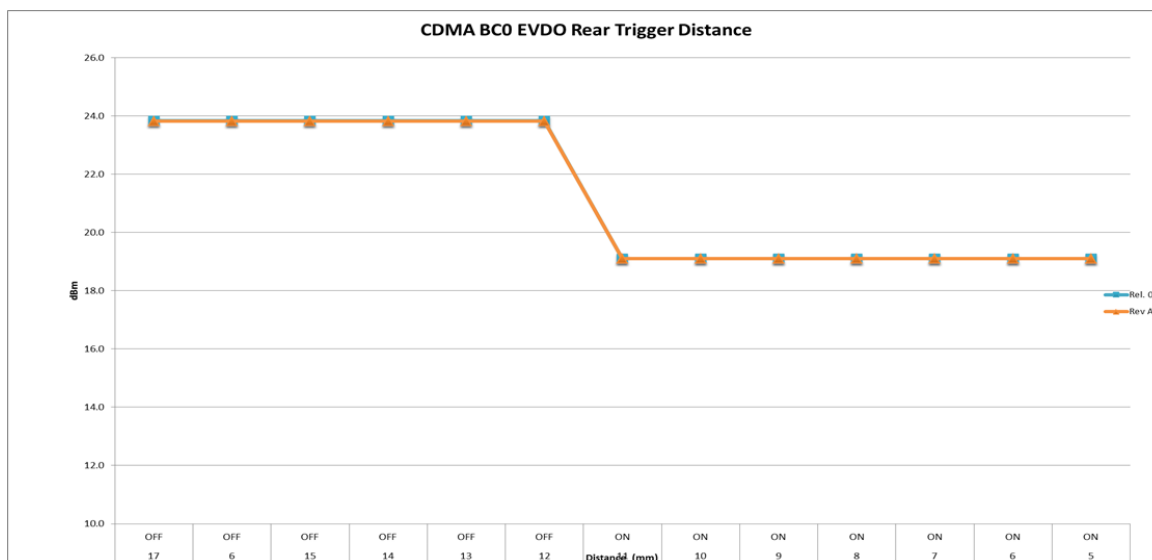
CDMA BC0

Rear

Rear, CDMA BC0 1xRTT												
Distance (mm):	17	6	15	14	13	12	11	10	9	8	7	6
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
RC1 SO 55	23.8	23.8	23.8	23.8	23.8	23.8	19.1	19.1	19.1	19.1	19.1	19.1
RC3 SO 55	23.8	23.8	23.8	23.8	23.8	23.8	19.1	19.1	19.1	19.1	19.1	19.1
RC3 SO 32	23.8	23.8	23.8	23.8	23.8	23.8	18.9	18.9	18.9	18.9	18.9	18.9



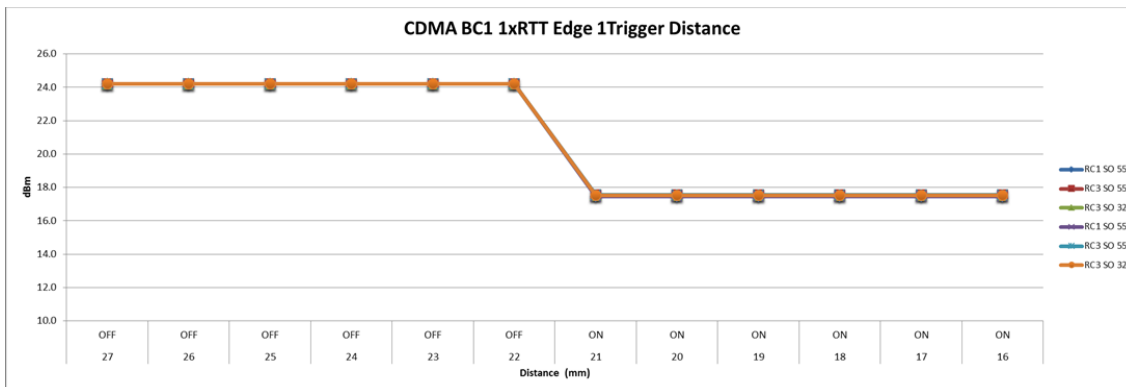
Rear, CDMA BC0 EVDO													
Distance (mm):	17	6	15	14	13	12	11	10	9	8	7	6	5
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON
Rel. 0	23.8	23.8	23.8	23.8	23.8	23.8	19.1	19.1	19.1	19.1	19.1	19.1	19.1
Rev A	23.8	23.8	23.8	23.8	23.8	23.8	19.1	19.1	19.1	19.1	19.1	19.1	19.1



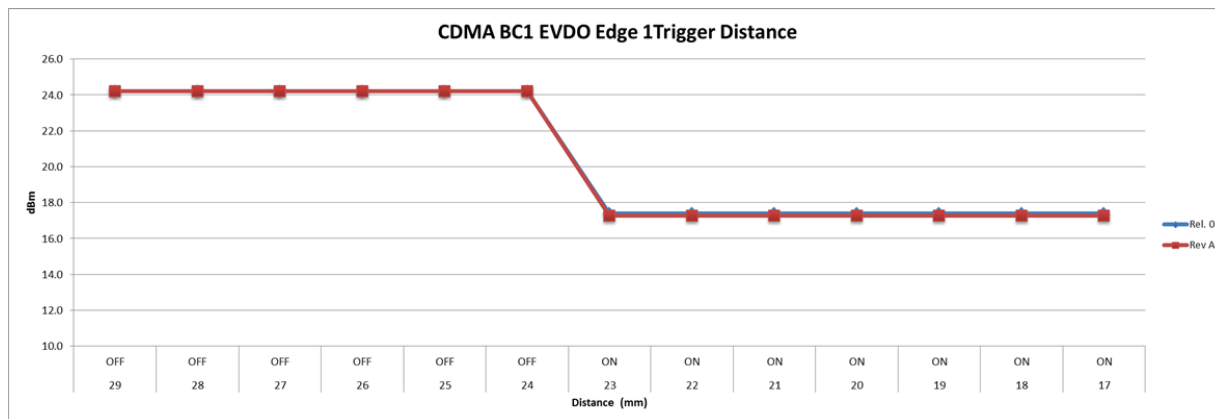
CDMA BC1

Edge 1

Rear, CDMA BC1 1xRTT												
Distance (mm):	17	6	15	14	13	12	11	10	9	8	7	6
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
RC1 SO 55	24.2	24.2	24.2	24.2	24.2	24.2	17.5	17.5	17.5	17.5	17.5	17.5
RC3 SO 55	24.2	24.2	24.2	24.2	24.2	24.2	17.6	17.6	17.6	17.6	17.6	17.6
RC3 SO 32	24.2	24.2	24.2	24.2	24.2	24.2	17.5	17.5	17.5	17.5	17.5	17.5

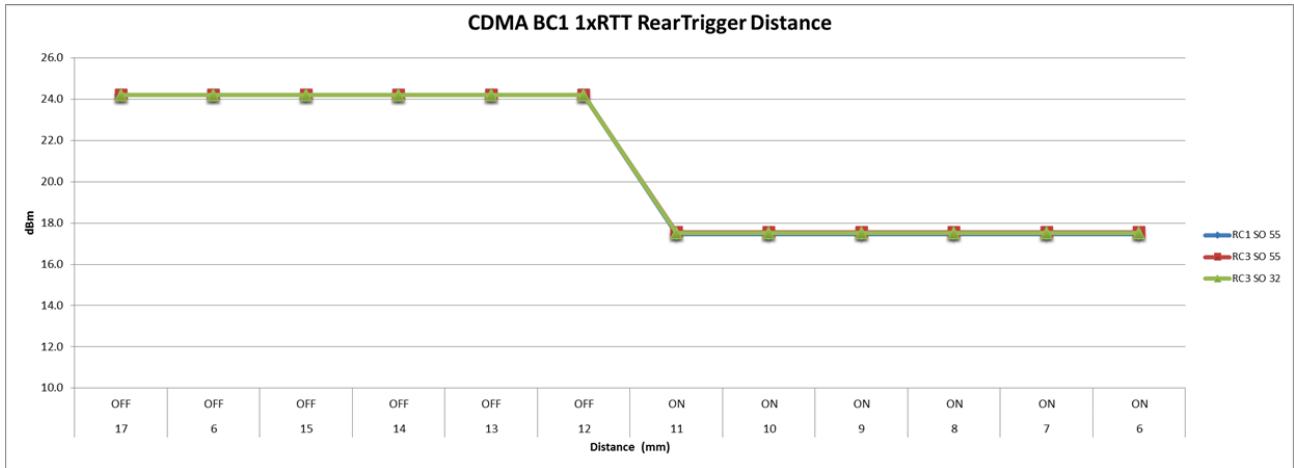


Edge 1, CDMA BC1 EVDO													
Distance (mm):	29	28	27	26	25	24	23	22	21	20	19	18	17
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON
Rel. 0	24.2	24.2	24.2	24.2	24.2	24.2	17.4	17.4	17.4	17.4	17.4	17.4	17.4
Rev A	24.2	24.2	24.2	24.2	24.2	24.2	17.3	17.3	17.3	17.3	17.3	17.3	17.3

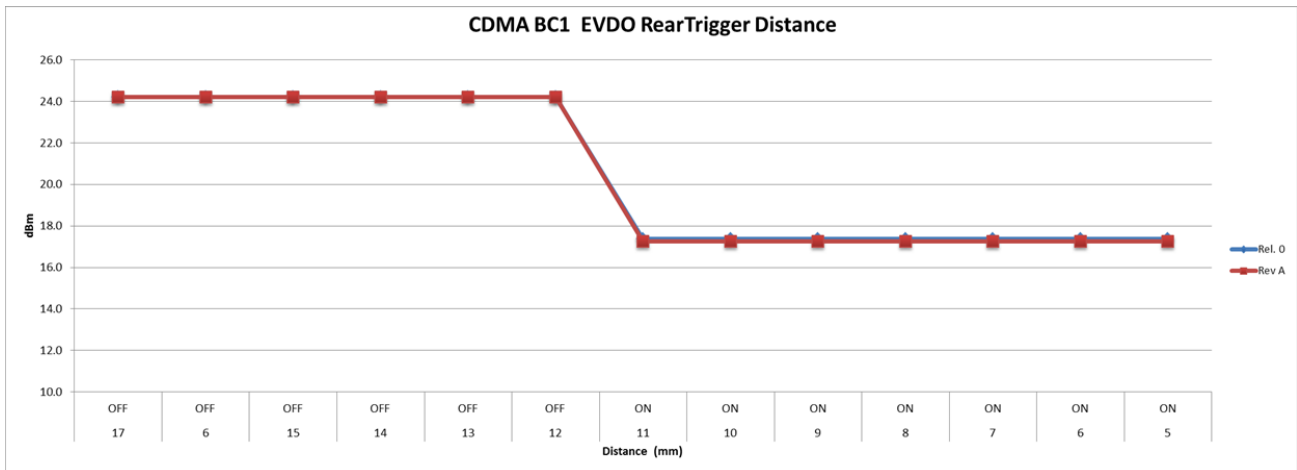


Rear

Rear, CDMA BC1 1xRTT												
Distance (mm):	17	6	15	14	13	12	11	10	9	8	7	6
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
RC1 SO 55	24.2	24.2	24.2	24.2	24.2	24.2	17.5	17.5	17.5	17.5	17.5	17.5
RC3 SO 55	24.2	24.2	24.2	24.2	24.2	24.2	17.6	17.6	17.6	17.6	17.6	17.6
RC3 SO 32	24.2	24.2	24.2	24.2	24.2	24.2	17.5	17.5	17.5	17.5	17.5	17.5



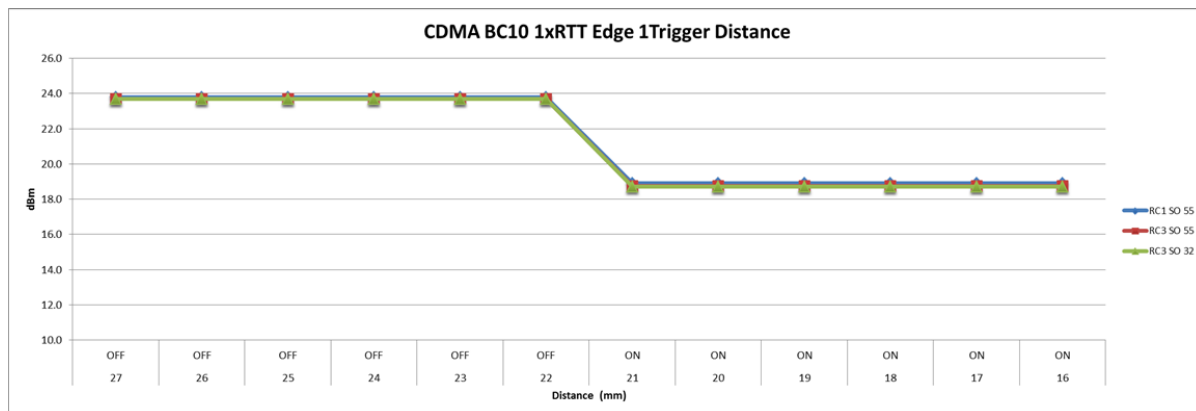
Rear, CDMA BC1 EVDO													
Distance (mm):	17	6	15	14	13	12	11	10	9	8	7	6	5
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON
Rel. 0	24.2	24.2	24.2	24.2	24.2	24.2	17.4	17.4	17.4	17.4	17.4	17.4	17.4
Rev A	24.2	24.2	24.2	24.2	24.2	24.2	17.3	17.3	17.3	17.3	17.3	17.3	17.3



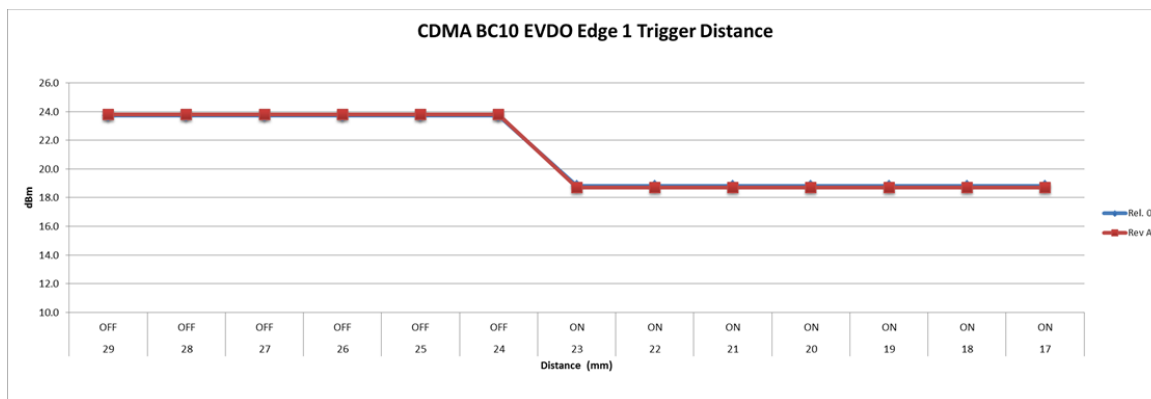
CDMA BC10

Edge 1

Rear, CDMA BC10 1xRTT												
Distance (mm):	27	26	25	24	23	22	21	20	19	18	17	16
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
RC1 SO 55	23.8	23.8	23.8	23.8	23.8	23.8	18.9	18.9	18.9	18.9	18.9	18.9
RC3 SO 55	23.7	23.7	23.7	23.7	23.7	23.7	18.7	18.7	18.7	18.7	18.7	18.7
RC3 SO 32	23.7	23.7	23.7	23.7	23.7	23.7	18.7	18.7	18.7	18.7	18.7	18.7

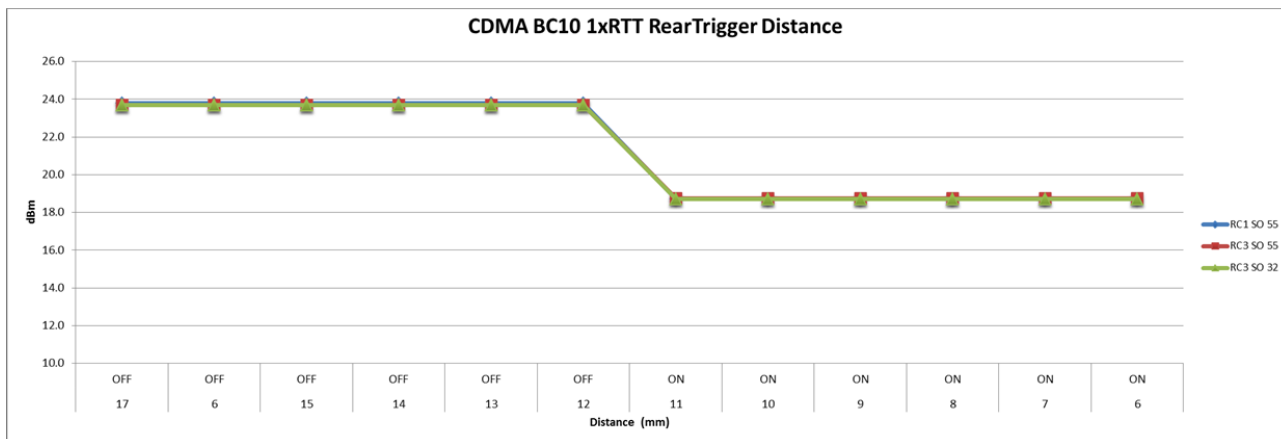


Edge 1, CDMA BC10 EVDO													
Distance (mm):	29	28	27	26	25	24	23	22	21	20	19	18	17
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON
Rel. 0	23.7	23.7	23.7	23.7	23.7	23.7	18.8	18.8	18.8	18.8	18.8	18.8	18.8
Rev A	23.8	23.8	23.8	23.8	23.8	23.8	18.7	18.7	18.7	18.7	18.7	18.7	18.7

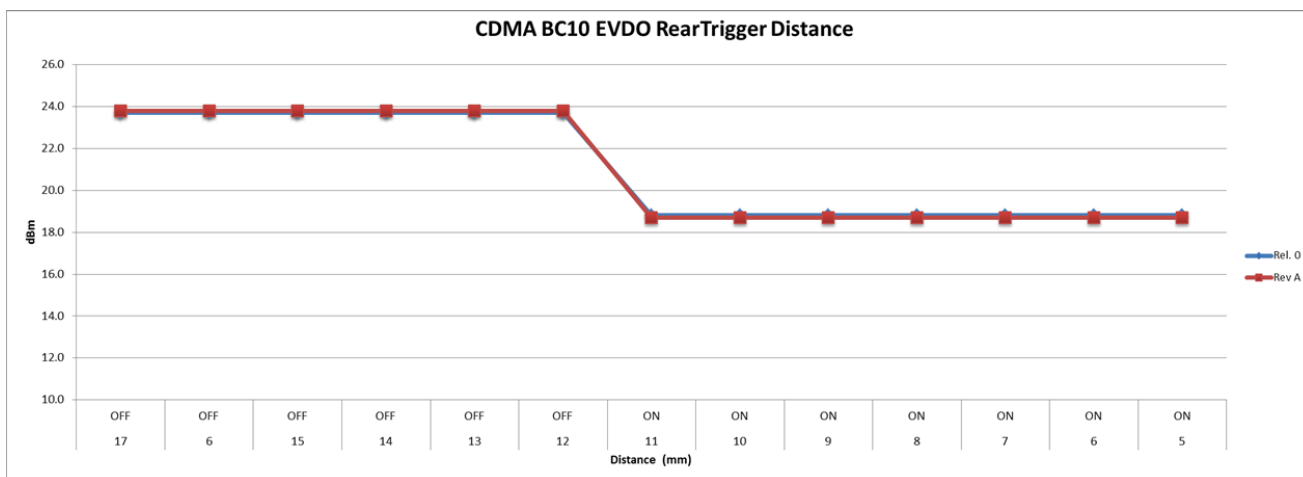


Rear

Rear, CDMA BC10 1xRTT												
Distance (mm):	17	6	15	14	13	12	11	10	9	8	7	6
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
RC1 SO 55	23.8	23.8	23.8	23.8	23.8	23.8	18.9	18.7	18.7	18.7	18.7	18.7
RC3 SO 55	23.7	23.7	23.7	23.7	23.7	23.7	18.7	18.7	18.7	18.7	18.7	18.7
RC3 SO 32	23.7	23.7	23.7	23.7	23.7	23.7	18.7	18.7	18.7	18.7	18.7	18.7



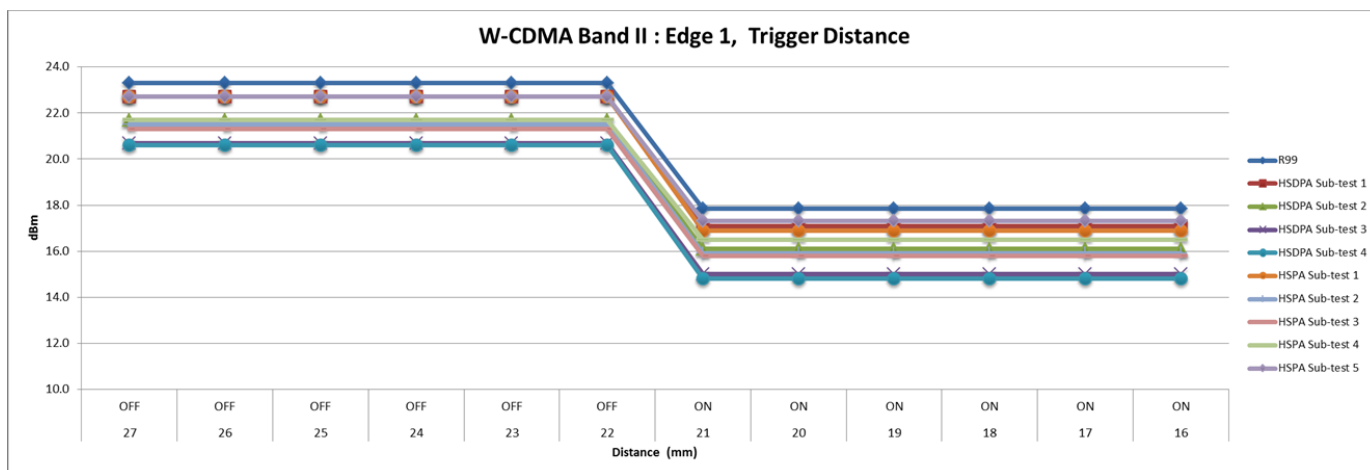
Rear, CDMA BC10 EVDO													
Distance (mm):	17	6	15	14	13	12	11	10	9	8	7	6	5
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON
Rel. 0	23.7	23.7	23.7	23.7	23.7	23.7	18.8	18.8	18.8	18.8	18.8	18.8	18.8
Rev A	23.8	23.8	23.8	23.8	23.8	23.8	18.7	18.7	18.7	18.7	18.7	18.7	18.7



WCDMA Band II

Edge 1

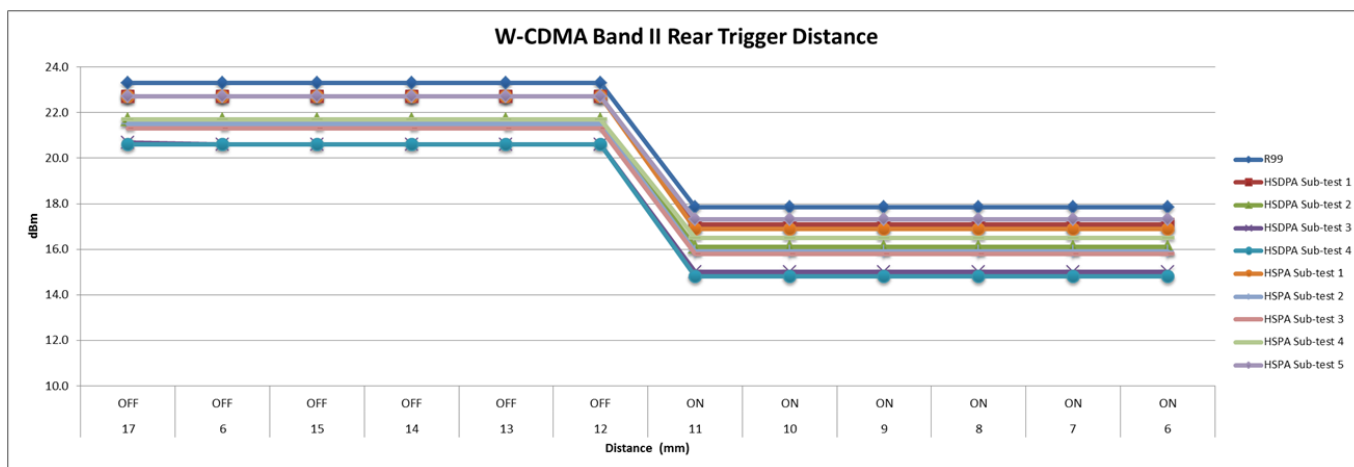
Rear, W-CDMA Band II												
Distance (mm):	17	6	15	14	13	12	11	10	9	8	7	6
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
R99	23.3	23.3	23.3	23.3	23.3	23.3	17.8	17.8	17.8	17.8	17.8	17.8
HSDPA Sub-test 1	22.7	22.7	22.7	22.7	22.7	22.7	17.1	17.1	17.1	17.1	17.1	17.1
HSDPA Sub-test 2	21.7	21.7	21.7	21.7	21.7	21.7	16.1	16.1	16.1	16.1	16.1	16.1
HSDPA Sub-test 3	20.7	20.6	20.6	20.6	20.6	20.6	15.0	15.0	15.0	15.0	15.0	15.0
HSDPA Sub-test 4	20.6	20.6	20.6	20.6	20.6	20.6	14.8	14.8	14.8	14.8	14.8	14.8
HSPA Sub-test 1	22.7	22.7	22.7	22.7	22.7	22.7	16.9	16.9	16.9	16.9	16.9	16.9
HSPA Sub-test 2	21.5	21.5	21.5	21.5	21.5	21.5	15.9	15.9	15.9	15.9	15.9	15.9
HSPA Sub-test 3	21.3	21.3	21.3	21.3	21.3	21.3	15.8	15.8	15.8	15.8	15.8	15.8
HSPA Sub-test 4	21.7	21.7	21.7	21.7	21.7	21.7	16.5	16.5	16.5	16.5	16.5	16.5
HSPA Sub-test 5	22.7	22.7	22.7	22.7	22.7	22.7	17.3	17.3	17.3	17.3	17.3	17.3



W-CDMA Band II

Rear

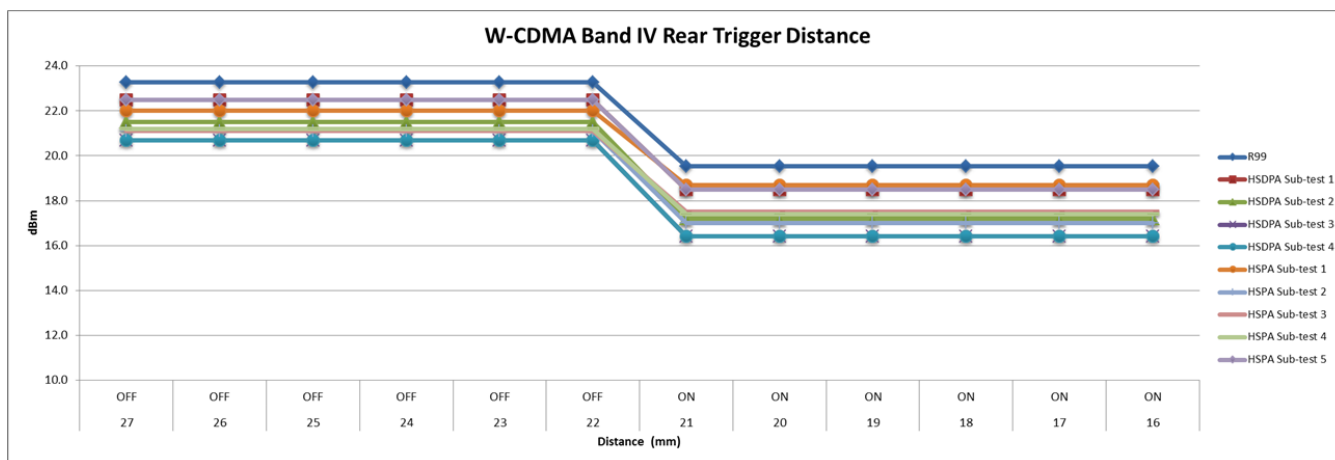
Rear, W-CDMA Band II												
Distance (mm):	17	6	15	14	13	12	11	10	9	8	7	6
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
R99	23.3	23.3	23.3	23.3	23.3	23.3	17.8	17.8	17.8	17.8	17.8	17.8
HSDPA Sub-test 1	22.7	22.7	22.7	22.7	22.7	22.7	17.1	17.1	17.1	17.1	17.1	17.1
HSDPA Sub-test 2	21.7	21.7	21.7	21.7	21.7	21.7	16.1	16.1	16.1	16.1	16.1	16.1
HSDPA Sub-test 3	20.7	20.6	20.6	20.6	20.6	20.6	15.0	15.0	15.0	15.0	15.0	15.0
HSDPA Sub-test 4	20.6	20.6	20.6	20.6	20.6	20.6	14.8	14.8	14.8	14.8	14.8	14.8
HSPA Sub-test 1	22.7	22.7	22.7	22.7	22.7	22.7	16.9	16.9	16.9	16.9	16.9	16.9
HSPA Sub-test 2	21.5	21.5	21.5	21.5	21.5	21.5	15.9	15.9	15.9	15.9	15.9	15.9
HSPA Sub-test 3	21.3	21.3	21.3	21.3	21.3	21.3	15.8	15.8	15.8	15.8	15.8	15.8
HSPA Sub-test 4	21.7	21.7	21.7	21.7	21.7	21.7	16.5	16.5	16.5	16.5	16.5	16.5
HSPA Sub-test 5	22.7	22.7	22.7	22.7	22.7	22.7	17.3	17.3	17.3	17.3	17.3	17.3



W-CDMA Band IV

Edge 1

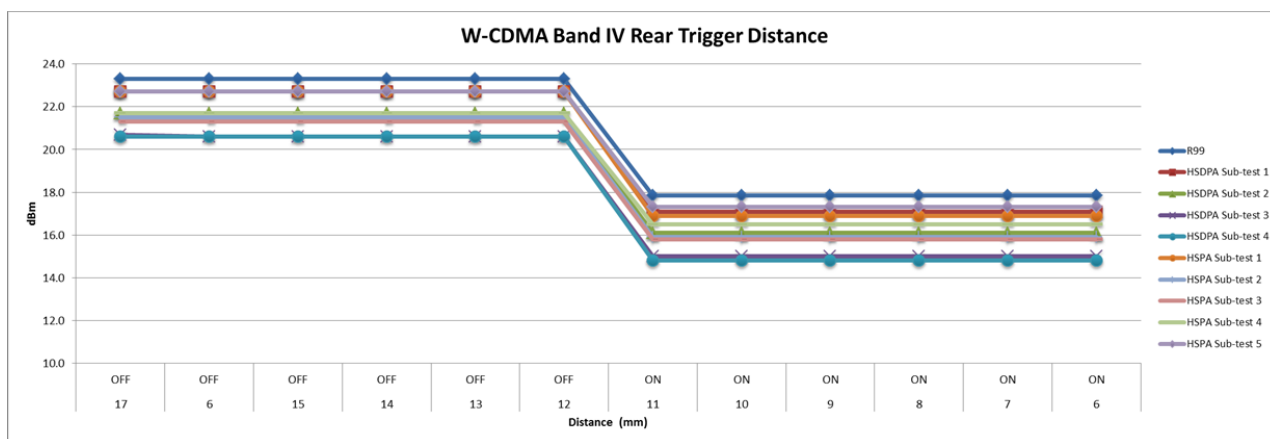
Rear, W-CDMA Band IV												
Distance (mm):	27	26	25	24	23	22	21	20	19	18	17	16
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
R99	23.3	23.3	23.3	23.3	23.3	23.3	19.5	19.5	19.5	19.5	19.5	19.5
HSDPA Sub-test 1	22.5	22.5	22.5	22.5	22.5	22.5	18.5	18.5	18.5	18.5	18.5	18.5
HSDPA Sub-test 2	21.5	21.5	21.5	21.5	21.5	21.5	17.2	17.2	17.2	17.2	17.2	17.2
HSDPA Sub-test 3	20.7	20.7	20.7	20.7	20.7	20.7	16.4	16.4	16.4	16.4	16.4	16.4
HSDPA Sub-test 4	20.7	20.7	20.7	20.7	20.7	20.7	16.4	16.4	16.4	16.4	16.4	16.4
HSPA Sub-test 1	22.0	22.0	22.0	22.0	22.0	22.0	18.7	18.7	18.7	18.7	18.7	18.7
HSPA Sub-test 2	21.1	21.1	21.1	21.1	21.1	21.1	17.0	17.0	17.0	17.0	17.0	17.0
HSPA Sub-test 3	21.1	21.1	21.1	21.1	21.1	21.1	17.5	17.5	17.5	17.5	17.5	17.5
HSPA Sub-test 4	21.2	21.2	21.2	21.2	21.2	21.2	17.4	17.4	17.4	17.4	17.4	17.4
HSPA Sub-test 5	22.5	22.5	22.5	22.5	22.5	22.5	18.5	18.5	18.5	18.5	18.5	18.5



W-CDMA Band IV

Rear

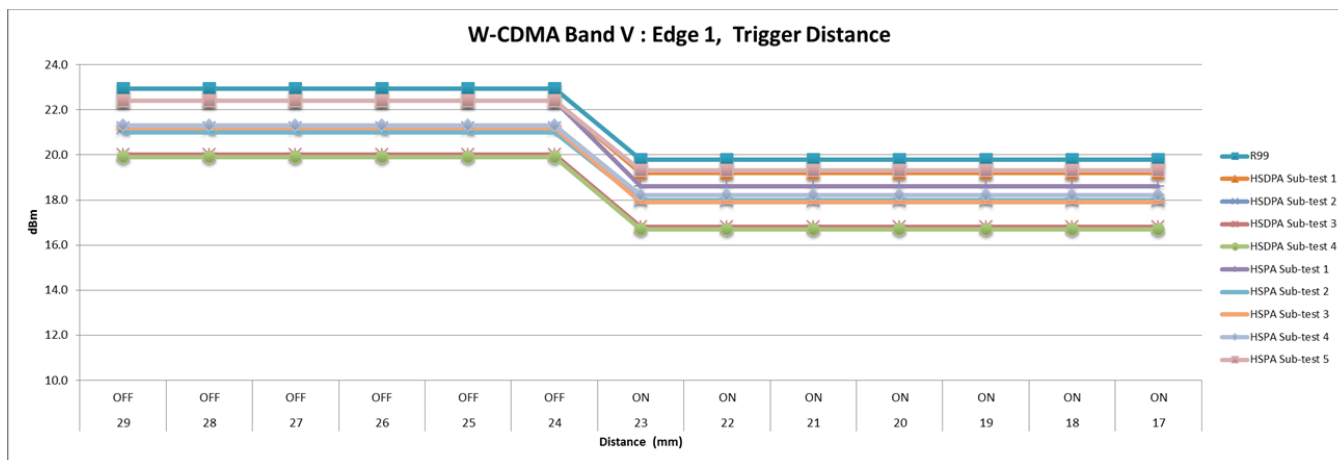
Rear, W-CDMA Band IV												
Distance (mm):	17	6	15	14	13	12	11	10	9	8	7	6
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
R99	23.3	23.3	23.3	23.3	23.3	23.3	19.5	19.5	19.5	19.5	19.5	19.5
HSDPA Sub-test 1	22.5	22.5	22.5	22.5	22.5	22.5	18.5	18.5	18.5	18.5	18.5	18.5
HSDPA Sub-test 2	21.5	21.5	21.5	21.5	21.5	21.5	17.2	17.2	17.2	17.2	17.2	17.2
HSDPA Sub-test 3	20.7	20.7	20.7	20.7	20.7	20.7	16.4	16.4	16.4	16.4	16.4	16.4
HSDPA Sub-test 4	20.7	20.7	20.7	20.7	20.7	20.7	16.4	16.4	16.4	16.4	16.4	16.4
HSPA Sub-test 1	22.0	22.0	22.0	22.0	22.0	22.0	18.7	18.7	18.7	18.7	18.7	18.7
HSPA Sub-test 2	21.1	21.1	21.1	21.1	21.1	21.1	17.0	17.0	17.0	17.0	17.0	17.0
HSPA Sub-test 3	21.1	21.1	21.1	21.1	21.1	21.1	17.5	17.5	17.5	17.5	17.5	17.5
HSPA Sub-test 4	21.2	21.2	21.2	21.2	21.2	21.2	17.4	17.4	17.4	17.4	17.4	17.4
HSPA Sub-test 5	22.5	22.5	22.5	22.5	22.5	22.5	18.5	18.5	18.5	18.5	18.5	18.5



W-CDMA Band V

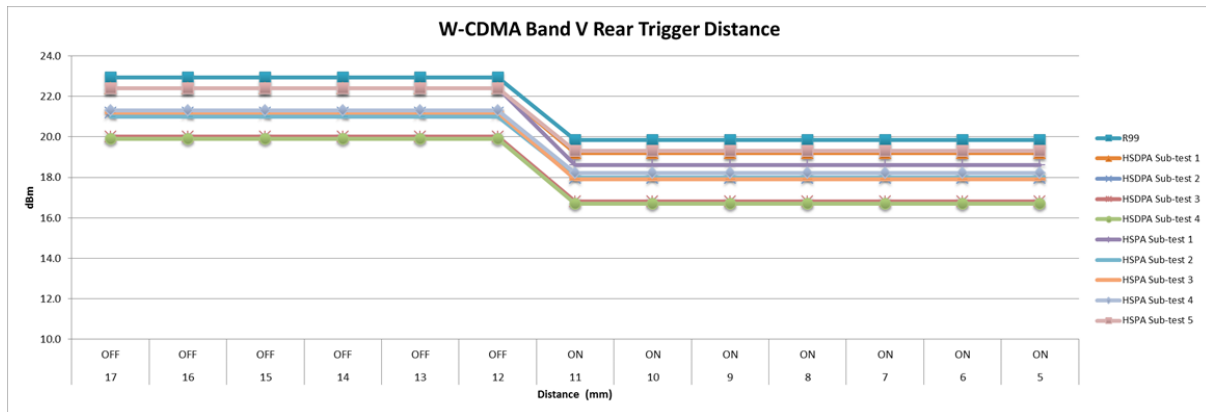
Edge 1

Edge 1, W-CDMA Band V													
Distance (mm):	29	28	27	26	25	24	23	22	21	20	19	18	17
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON
R99	22.9	22.9	22.9	22.9	22.9	22.9	19.8	19.8	19.8	19.8	19.8	19.8	19.8
HSDPA Sub-test 1	22.4	22.4	22.4	22.4	22.4	22.4	19.2	19.2	19.2	19.2	19.2	19.2	19.2
HSDPA Sub-test 2	21.2	21.2	21.2	21.2	21.2	21.2	18.0	18.0	18.0	18.0	18.0	18.0	18.0
HSDPA Sub-test 3	20.0	20.0	20.0	20.0	20.0	20.0	16.8	16.8	16.8	16.8	16.8	16.8	16.8
HSDPA Sub-test 4	19.9	19.9	19.9	19.9	19.9	19.9	16.7	16.7	16.7	16.7	16.7	16.7	16.7
HSPA Sub-test 1	22.4	22.4	22.4	22.4	22.4	22.4	18.6	18.6	18.6	18.6	18.6	18.6	18.6
HSPA Sub-test 2	21.0	21.0	21.0	21.0	21.0	21.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
HSPA Sub-test 3	21.2	21.2	21.2	21.2	21.2	21.2	17.9	17.9	17.9	17.9	17.9	17.9	17.9
HSPA Sub-test 4	21.3	21.3	21.3	21.3	21.3	21.3	18.2	18.2	18.2	18.2	18.2	18.2	18.2
HSPA Sub-test 5	22.4	22.4	22.4	22.4	22.4	22.4	19.3	19.3	19.3	19.3	19.3	19.3	19.3



Rear

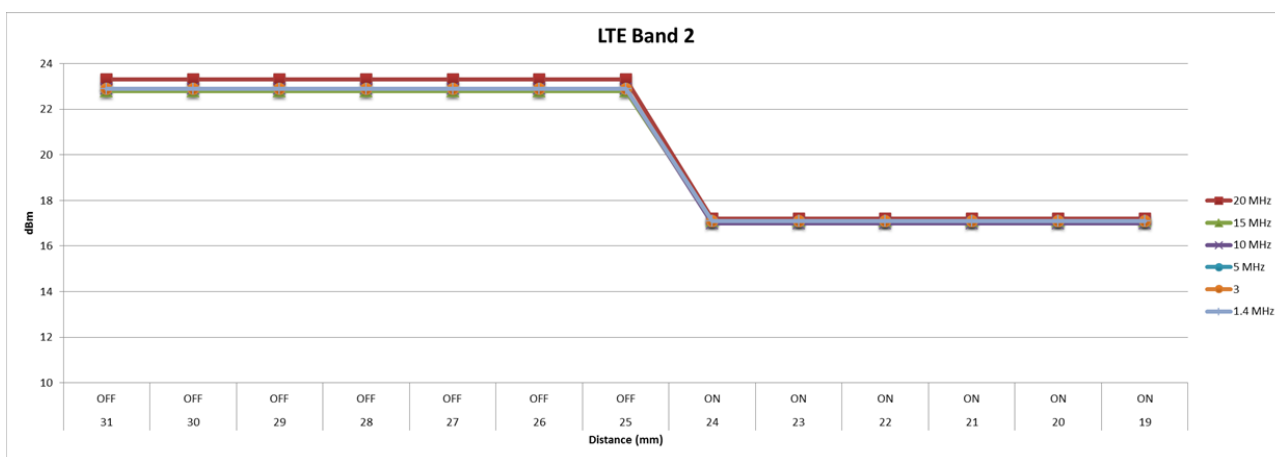
Rear, W-CDMA Band V													
Distance (mm):	17	16	15	14	13	12	11	10	9	8	7	6	5
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON
R99	22.9	22.9	22.9	22.9	22.9	22.9	19.8	19.8	19.8	19.8	19.8	19.8	19.8
HSDPA Sub-test 1	22.4	22.4	22.4	22.4	22.4	22.4	19.2	19.2	19.2	19.2	19.2	19.2	19.2
HSDPA Sub-test 2	21.2	21.2	21.2	21.2	21.2	21.2	18.0	18.0	18.0	18.0	18.0	18.0	18.0
HSDPA Sub-test 3	20.0	20.0	20.0	20.0	20.0	20.0	16.8	16.8	16.8	16.8	16.8	16.8	16.8
HSDPA Sub-test 4	19.9	19.9	19.9	19.9	19.9	19.9	16.7	16.7	16.7	16.7	16.7	16.7	16.7
HSPA Sub-test 1	22.4	22.4	22.4	22.4	22.4	22.4	18.6	18.6	18.6	18.6	18.6	18.6	18.6
HSPA Sub-test 2	21.0	21.0	21.0	21.0	21.0	21.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
HSPA Sub-test 3	21.2	21.2	21.2	21.2	21.2	21.2	17.9	17.9	17.9	17.9	17.9	17.9	17.9
HSPA Sub-test 4	21.3	21.3	21.3	21.3	21.3	21.3	18.2	18.2	18.2	18.2	18.2	18.2	18.2
HSPA Sub-test 5	22.4	22.4	22.4	22.4	22.4	22.4	19.3	19.3	19.3	19.3	19.3	19.3	19.3



LTE Band 2

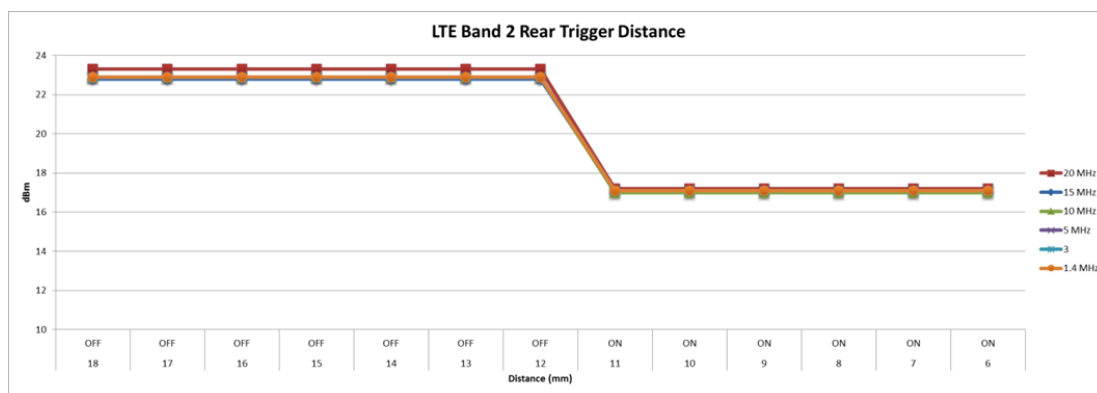
Edge 1

Edge 1, LTE Band 2													
Distance (mm):	31	30	29	28	27	26	25	24	23	22	21	20	19
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
20 MHz	23.3	23.3	23.3	23.3	23.3	23.3	23.3	17.6	17.6	17.6	17.6	17.6	17.6
15 MHz	22.8	22.8	22.8	22.8	22.8	22.8	22.8	17.3	17.3	17.3	17.3	17.3	17.3
10 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	17.4	17.4	17.4	17.4	17.4	17.4
5 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	17.1	17.1	17.1	17.1	17.1	17.1
3	22.9	22.9	22.9	22.9	22.9	22.9	22.9	17.3	17.3	17.3	17.3	17.3	17.3
1.4 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	17.4	17.4	17.4	17.4	17.4	17.4



Rear

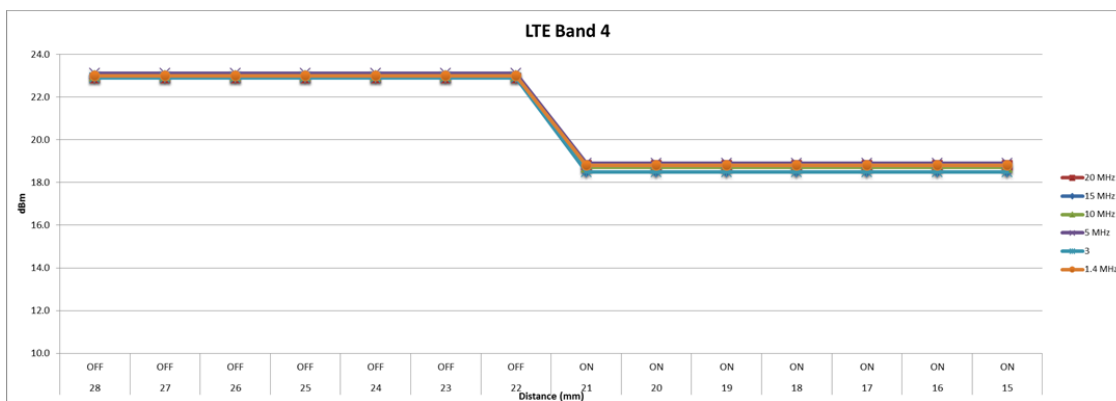
Rear, LTE Band 2													
Distance (mm):	18	17	16	15	14	13	12	11	10	9	8	7	6
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
20 MHz	23.3	23.3	23.3	23.3	23.3	23.3	23.3	17.2	17.2	17.2	17.2	17.2	17.2
15 MHz	22.8	22.8	22.8	22.8	22.8	22.8	22.8	17.1	17.1	17.1	17.1	17.1	17.1
10 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	17.0	17.0	17.0	17.0	17.0	17.0
5 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	17.0	17.0	17.0	17.0	17.0	17.0
3	22.9	22.9	22.9	22.9	22.9	22.9	22.9	17.1	17.1	17.1	17.1	17.1	17.1
1.4 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	17.1	17.1	17.1	17.1	17.1	17.1



LTE Band 4

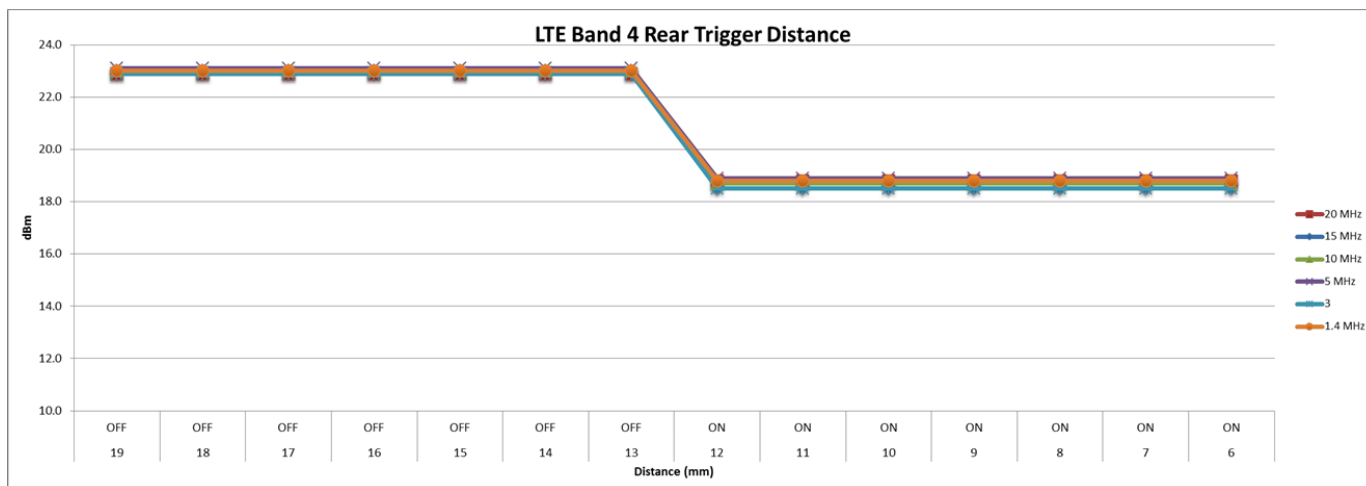
Edge 1

Edge 1, LTE Band 4														
Distance (mm):	28	27	26	25	24	23	22	21	20	19	18	17	16	15
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON
20 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	19.0	19.0	19.0	19.0	19.0	19.0	19.0
15 MHz	23.0	23.0	23.0	23.0	23.0	23.0	23.0	19.2	19.2	19.2	19.2	19.2	19.2	19.2
10 MHz	23.0	23.0	23.0	23.0	23.0	23.0	23.0	19.1	19.1	19.1	19.1	19.1	19.1	19.1
5 MHz	23.1	23.1	23.1	23.1	23.1	23.1	23.1	19.2	19.2	19.2	19.2	19.2	19.2	19.2
3	22.9	22.9	22.9	22.9	22.9	22.9	22.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9
1.4 MHz	23.0	23.0	23.0	23.0	23.0	23.0	23.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0



Rear

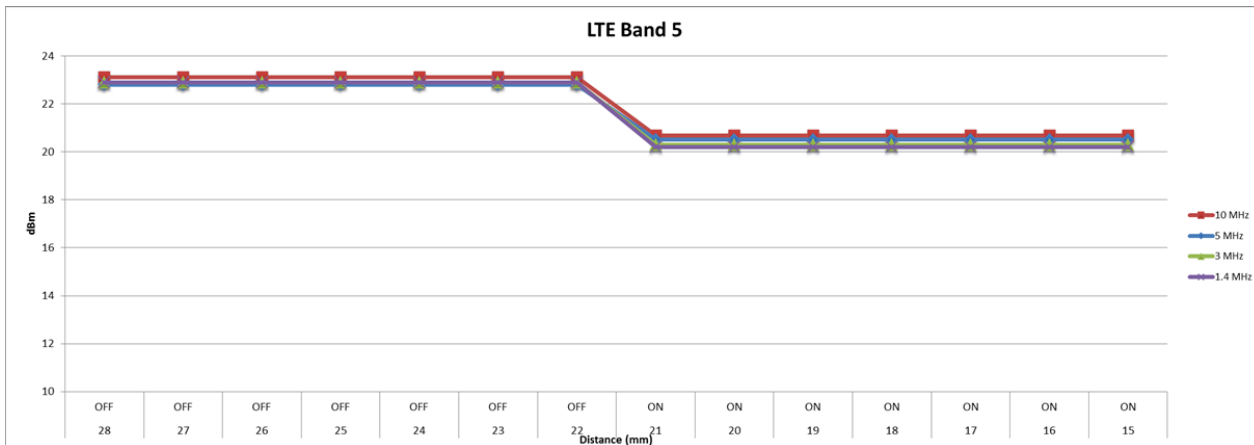
Rear, LTE Band 4														
Distance (mm):	19	18	17	16	15	14	13	12	11	10	9	8	7	6
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON
20 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	19.0	19.0	19.0	19.0	19.0	19.0	19.0
15 MHz	23.0	23.0	23.0	23.0	23.0	23.0	23.0	19.2	19.2	19.2	19.2	19.2	19.2	19.2
10 MHz	23.0	23.0	23.0	23.0	23.0	23.0	23.0	19.1	19.1	19.1	19.1	19.1	19.1	19.1
5 MHz	23.1	23.1	23.1	23.1	23.1	23.1	23.1	19.2	19.2	19.2	19.2	19.2	19.2	19.2
3	22.9	22.9	22.9	22.9	22.9	22.9	22.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9
1.4 MHz	23.0	23.0	23.0	23.0	23.0	23.0	23.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0



LTE Band 5

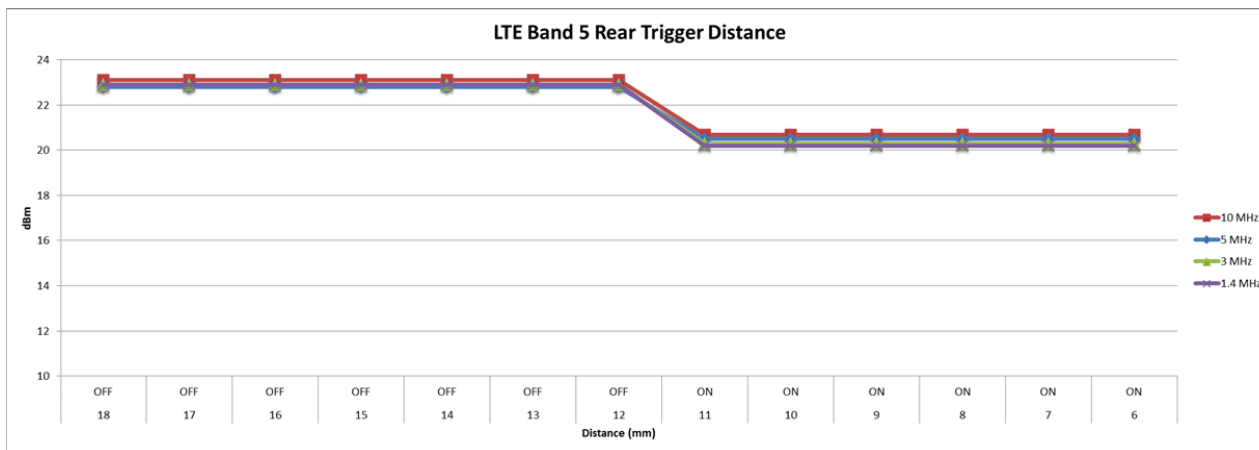
Edge 1

Edge 1, LTE Band 5															
Distance (mm):	28	27	26	25	24	23	22	21	20	19	18	17	16	15	
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON	
10 MHz	23.1	23.1	23.1	23.1	23.1	23.1	23.1	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7
5 MHz	22.8	22.8	22.8	22.8	22.8	22.8	22.8	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5
3 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
1.4 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2



Rear

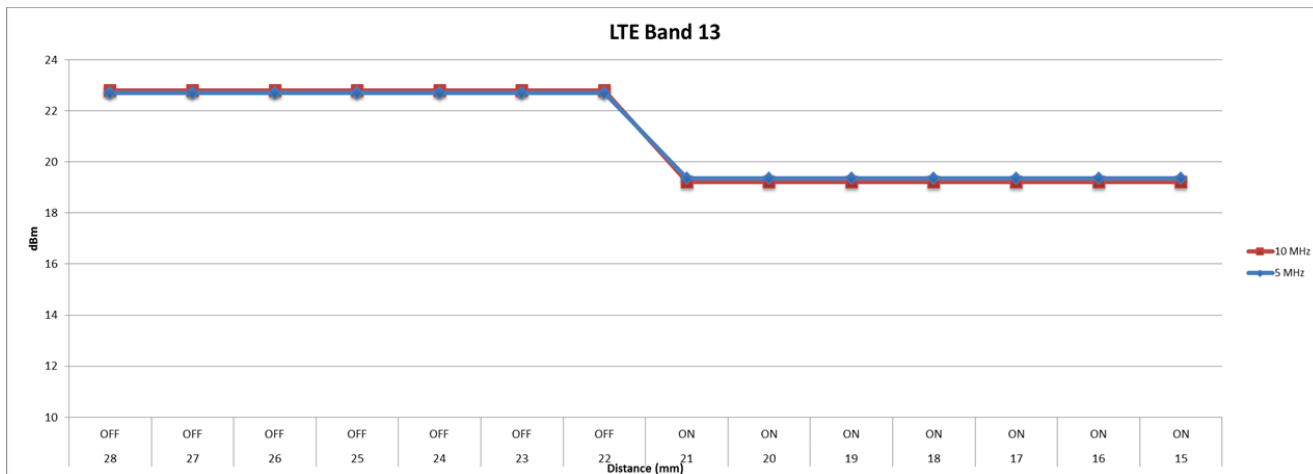
Rear, LTE Band 5														
Distance (mm):	18	17	16	15	14	13	12	11	10	9	8	7	6	
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	
10 MHz	23.1	23.1	23.1	23.1	23.1	23.1	23.1	20.7	20.7	20.7	20.7	20.7	20.7	20.7
5 MHz	22.8	22.8	22.8	22.8	22.8	22.8	22.8	20.5	20.5	20.5	20.5	20.5	20.5	20.5
3	22.9	22.9	22.9	22.9	22.9	22.9	22.9	20.3	20.3	20.3	20.3	20.3	20.3	20.3
1.4	22.9	22.9	22.9	22.9	22.9	22.9	22.9	20.2	20.2	20.2	20.2	20.2	20.2	20.2



LTE Band 13

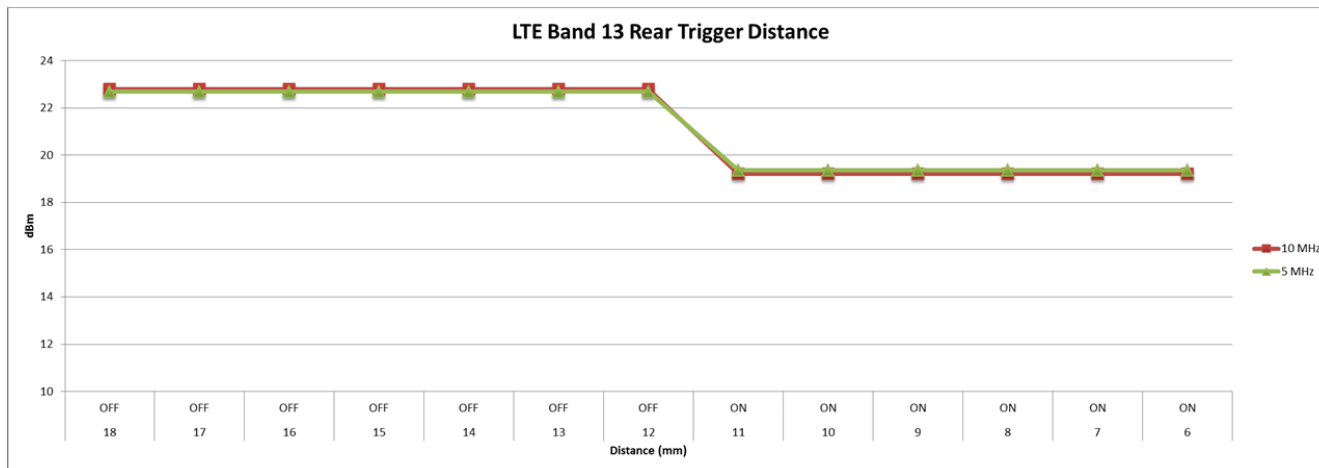
Edge 1

Edge 1, LTE Band 13														
Distance (mm):	28	27	26	25	24	23	22	21	20	19	18	17	16	15
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON
10 MHz	22.8	22.8	22.8	22.8	22.8	22.8	22.8	19.7	19.7	19.7	19.7	19.7	19.7	19.7
5 MHz	22.7	22.7	22.7	22.7	22.7	22.7	22.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7



Rear

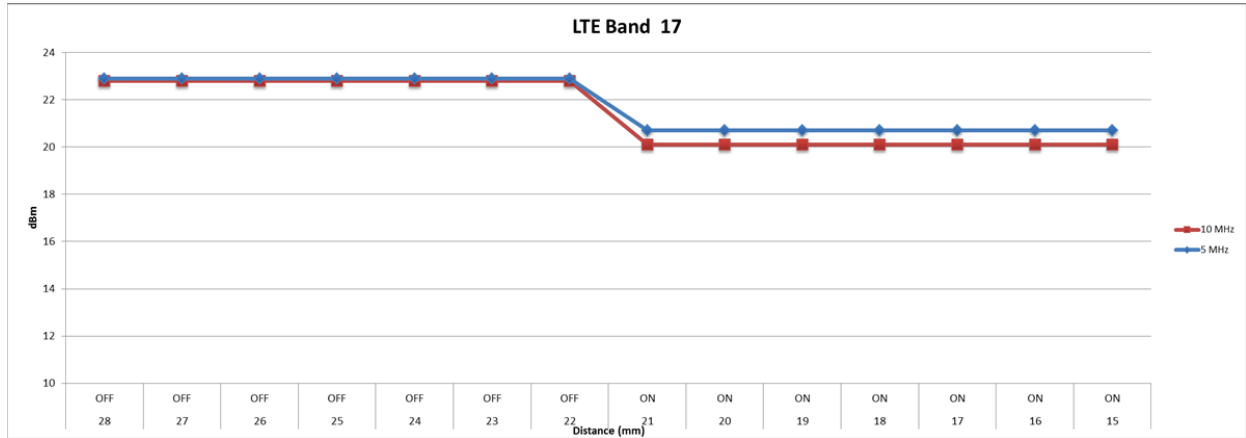
Rear, LTE Band 13														
Distance (mm):	18	17	16	15	14	13	12	11	10	9	8	7	6	
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	
10 MHz	22.8	22.8	22.8	22.8	22.8	22.8	22.8	19.7	19.7	19.7	19.7	19.7	19.7	
5 MHz	22.7	22.7	22.7	22.7	22.7	22.7	22.7	19.7	19.7	19.7	19.7	19.7	19.7	



LTE Band 17

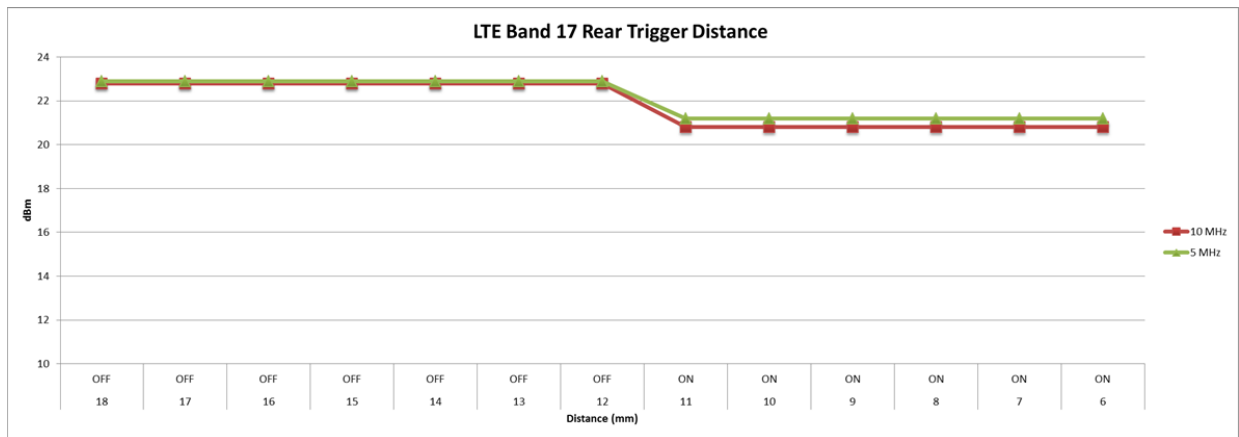
Edge 1

Edge 1, LTE Band 17														
Distance (mm):	28	27	26	25	24	23	22	21	20	19	18	17	16	15
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON
10 MHz	22.8	22.8	22.8	22.8	22.8	22.8	22.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8
5 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	21.2	21.2	21.2	21.2	21.2	21.2	21.2



Rear

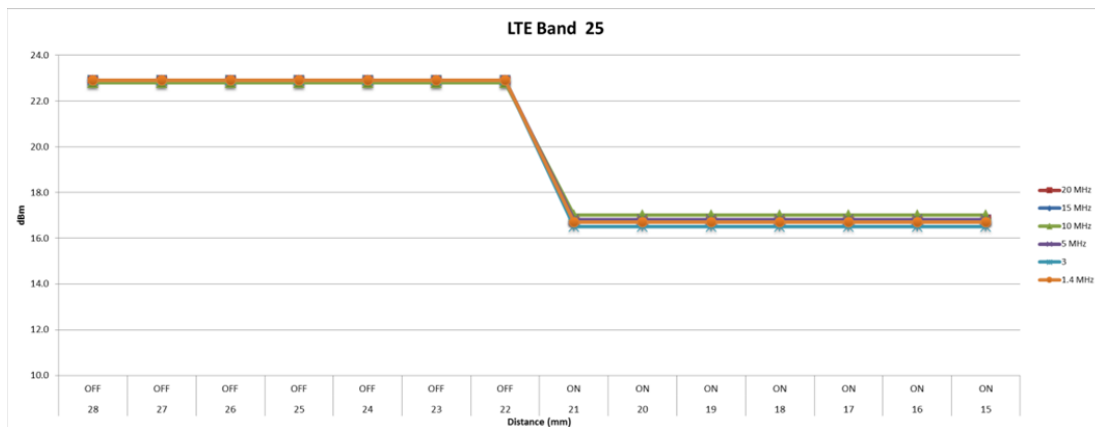
Rear, LTE Band 17													
Distance (mm):	18	17	16	15	14	13	12	11	10	9	8	7	6
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
10 MHz	22.8	22.8	22.8	22.8	22.8	22.8	22.8	20.8	20.8	20.8	20.8	20.8	20.8
5 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	21.2	21.2	21.2	21.2	21.2	21.2



LTE Band 25

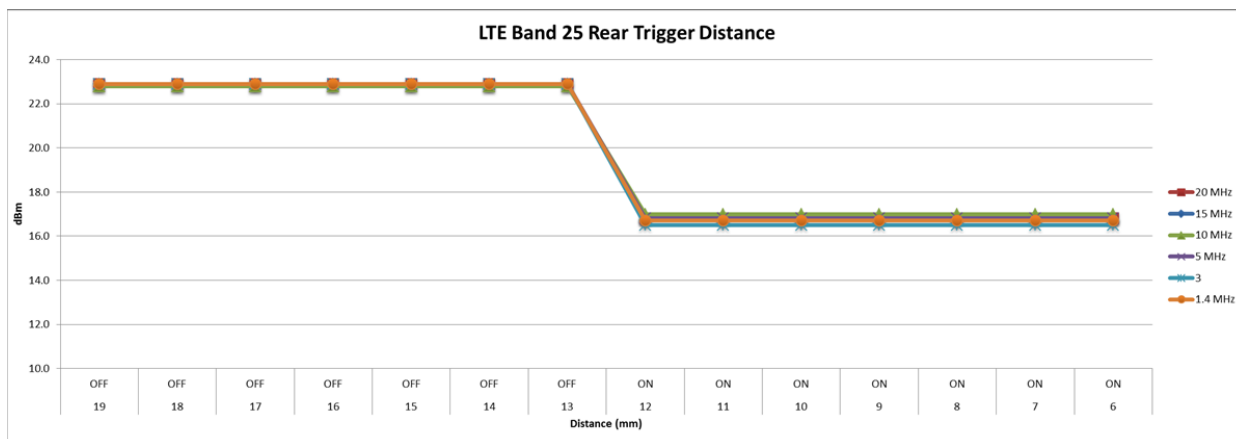
Edge 1

Edge 1, LTE Band 25														
Distance (mm):	28	27	26	25	24	23	22	21	20	19	18	17	16	15
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON
20 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	16.8	16.8	16.8	16.8	16.8	16.8	16.8
15 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	16.7	16.7	16.7	16.7	16.7	16.7	16.7
10 MHz	22.8	22.8	22.8	22.8	22.8	22.8	22.8	17.0	17.0	17.0	17.0	17.0	17.0	17.0
5 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	16.8	16.8	16.8	16.8	16.8	16.8	16.8
3	22.9	22.9	22.9	22.9	22.9	22.9	22.9	16.5	16.5	16.5	16.5	16.5	16.5	16.5
1.4 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	16.7	16.7	16.7	16.7	16.7	16.7	16.7



Rear

Rear, LTE Band 25															
Distance (mm):	19	18	17	16	15	14	13	12	11	10	9	8	7	6	
Proximity sensor with reduced power activation:	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON	
20 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	16.8	16.8	16.8	16.8	16.8	16.8	16.8	
15 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	16.7	16.7	16.7	16.7	16.7	16.7	16.7	
10 MHz	22.8	22.8	22.8	22.8	22.8	22.8	22.8	17.0	17.0	17.0	17.0	17.0	17.0	17.0	
5 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	16.8	16.8	16.8	16.8	16.8	16.8	16.8	
3	22.9	22.9	22.9	22.9	22.9	22.9	22.9	16.5	16.5	16.5	16.5	16.5	16.5	16.5	
1.4 MHz	22.9	22.9	22.9	22.9	22.9	22.9	22.9	16.7	16.7	16.7	16.7	16.7	16.7	16.7	

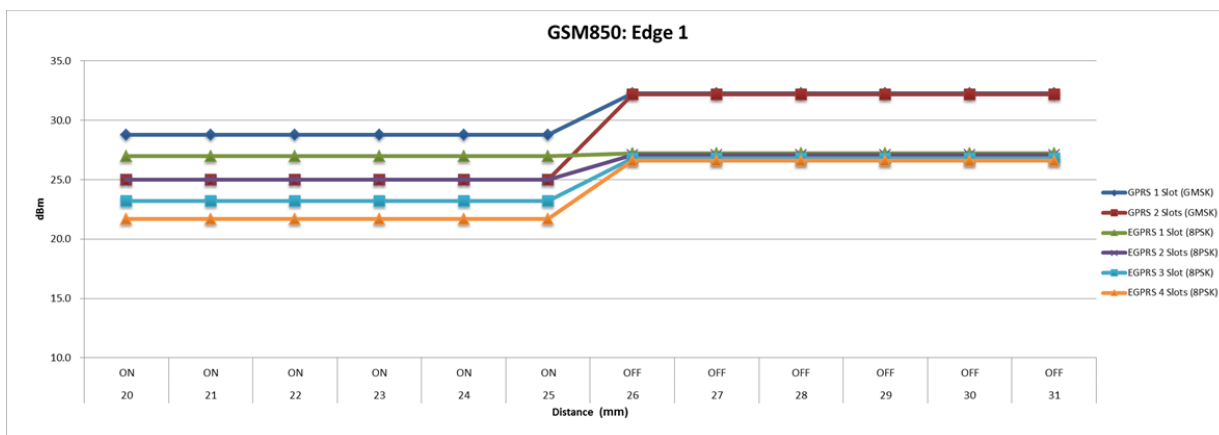


8.6.2. DUT moving away from the phantom

GSM850

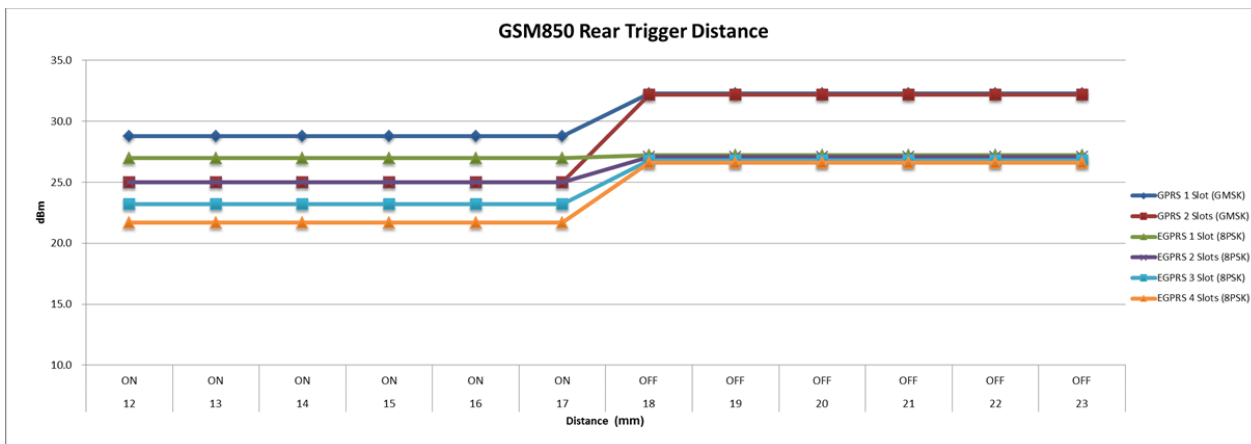
Edge 1

Edge 1, GSM850												
Distance (mm):	20	21	22	23	24	25	26	27	28	29	30	31
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
GPRS 1 Slot (GMSK)	28.7	28.7	28.7	28.7	28.7	28.7	32.3	32.3	32.3	32.3	32.3	32.3
GPRS 2 Slots (GMSK)	24.9	24.9	24.9	24.9	24.9	24.9	32.2	32.2	32.2	32.2	32.2	32.2
EGPRS 1 Slot (8PSK)	27.0	27.0	27.0	27.0	27.0	27.0	27.2	27.2	27.2	27.2	27.2	27.2
EGPRS 2 Slots (8PSK)	24.8	24.8	24.8	24.8	24.8	24.8	27.1	27.1	27.1	27.1	27.1	27.1
EGPRS 3 Slot (8PSK)	23.2	23.2	23.2	23.2	23.2	23.2	26.8	26.8	26.8	26.8	26.8	26.8
EGPRS 4 Slots (8PSK)	21.5	21.5	21.5	21.5	21.5	21.5	26.6	26.6	26.6	26.6	26.6	26.6



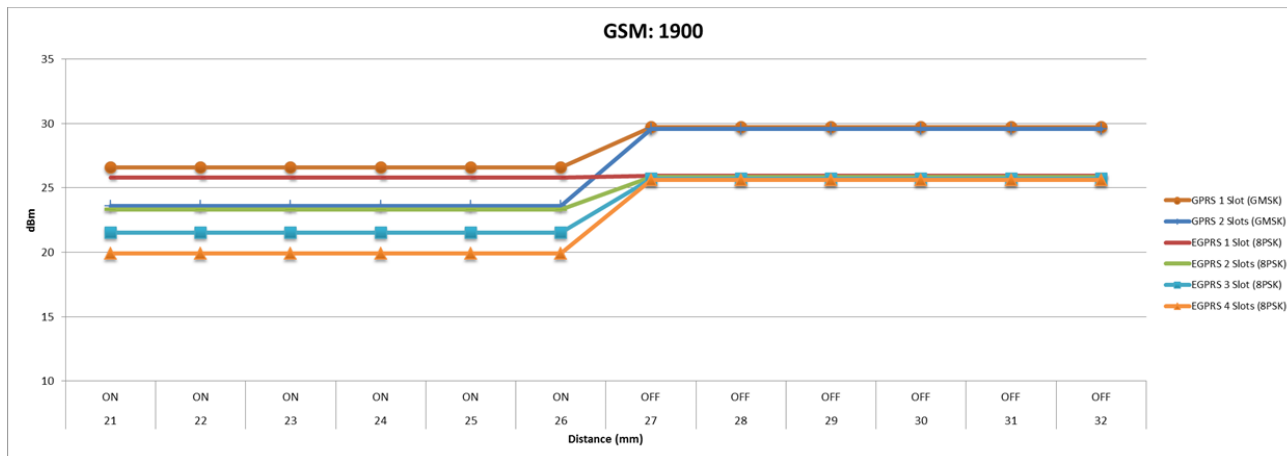
Rear

Rear, GSM850												
Distance (mm):	12	13	14	15	16	17	18	19	20	21	22	23
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
GPRS 1 Slot (GMSK)	28.7	28.7	28.7	28.7	28.7	28.7	32.3	32.3	32.3	32.3	32.3	32.3
GPRS 2 Slots (GMSK)	24.9	24.9	24.9	24.9	24.9	24.9	32.2	32.2	32.2	32.2	32.2	32.2
EGPRS 1 Slot (8PSK)	27.0	27.0	27.0	27.0	27.0	27.0	27.2	27.2	27.2	27.2	27.2	27.2
EGPRS 2 Slots (8PSK)	24.8	24.8	24.8	24.8	24.8	24.8	27.1	27.1	27.1	27.1	27.1	27.1
EGPRS 3 Slot (8PSK)	23.2	23.2	23.2	23.2	23.2	23.2	26.8	26.8	26.8	26.8	26.8	26.8
EGPRS 4 Slots (8PSK)	21.5	21.5	21.5	21.5	21.5	21.5	26.6	26.6	26.6	26.6	26.6	26.6



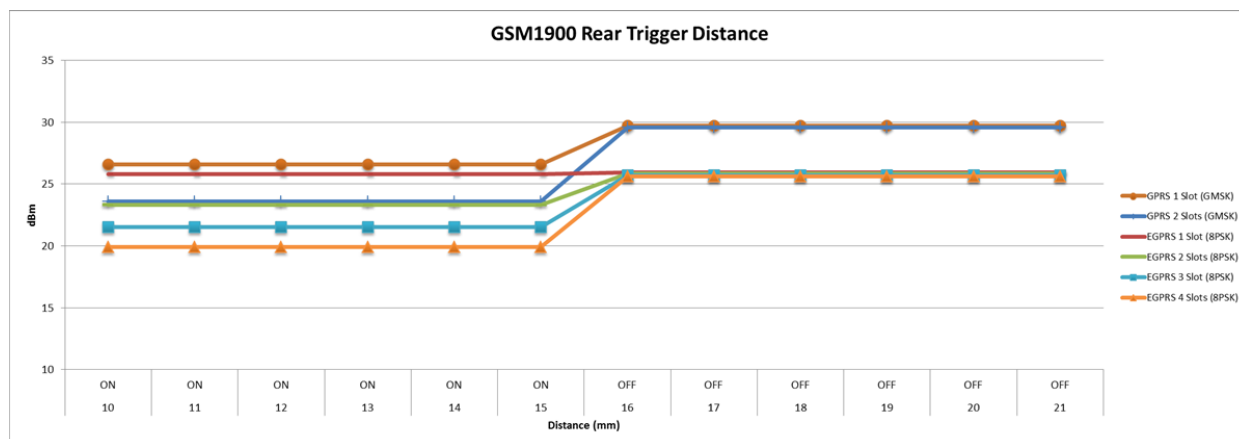
GSM1900 Edge 1

Edge 1 (GSM1900)												
Distance (mm):	21	22	23	24	25	26	27	28	29	30	31	32
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
GPRS 1 Slot (GMSK)	26.6	26.6	26.6	26.6	26.6	26.6	29.7	29.7	29.7	29.7	29.7	29.7
GPRS 2 Slots (GMSK)	23.6	23.6	23.6	23.6	23.6	23.6	29.6	29.6	29.6	29.6	29.6	29.6
EGPRS 1 Slot (8PSK)	25.8	25.8	25.8	25.8	25.8	25.8	26.0	26.0	26.0	26.0	26.0	26.0
EGPRS 2 Slots (8PSK)	23.3	23.3	23.3	23.3	23.3	23.3	25.9	25.9	25.9	25.9	25.9	25.9
EGPRS 3 Slot (8PSK)	21.5	21.5	21.5	21.5	21.5	21.5	25.7	25.7	25.7	25.7	25.7	25.7
EGPRS 4 Slots (8PSK)	19.9	19.9	19.9	19.9	19.9	19.9	25.6	25.6	25.6	25.6	25.6	25.6



Rear

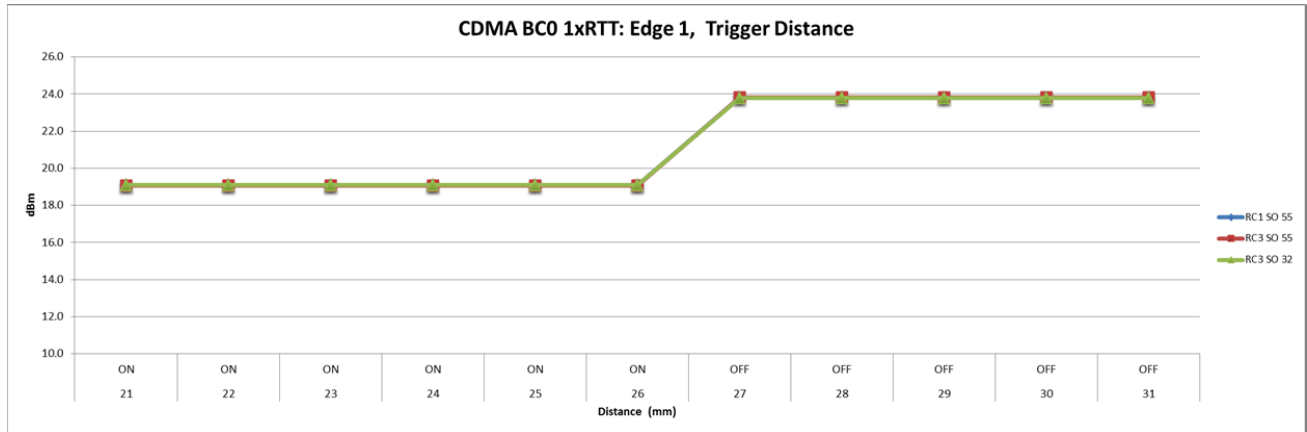
Rear, GSM1900												
Distance (mm):	10	11	12	13	14	15	16	17	18	19	20	21
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
GPRS 1 Slot (GMSK)	26.6	26.6	26.6	26.6	26.6	26.6	29.7	29.7	29.7	29.7	29.7	29.7
GPRS 2 Slots (GMSK)	23.6	23.6	23.6	23.6	23.6	23.6	29.6	29.6	29.6	29.6	29.6	29.6
EGPRS 1 Slot (8PSK)	25.8	25.8	25.8	25.8	25.8	25.8	26.0	26.0	26.0	26.0	26.0	26.0
EGPRS 2 Slots (8PSK)	23.3	23.3	23.3	23.3	23.3	23.3	25.9	25.9	25.9	25.9	25.9	25.9
EGPRS 3 Slot (8PSK)	21.5	21.5	21.5	21.5	21.5	21.5	25.7	25.7	25.7	25.7	25.7	25.7
EGPRS 4 Slots (8PSK)	19.9	19.9	19.9	19.9	19.9	19.9	25.6	25.6	25.6	25.6	25.6	25.6



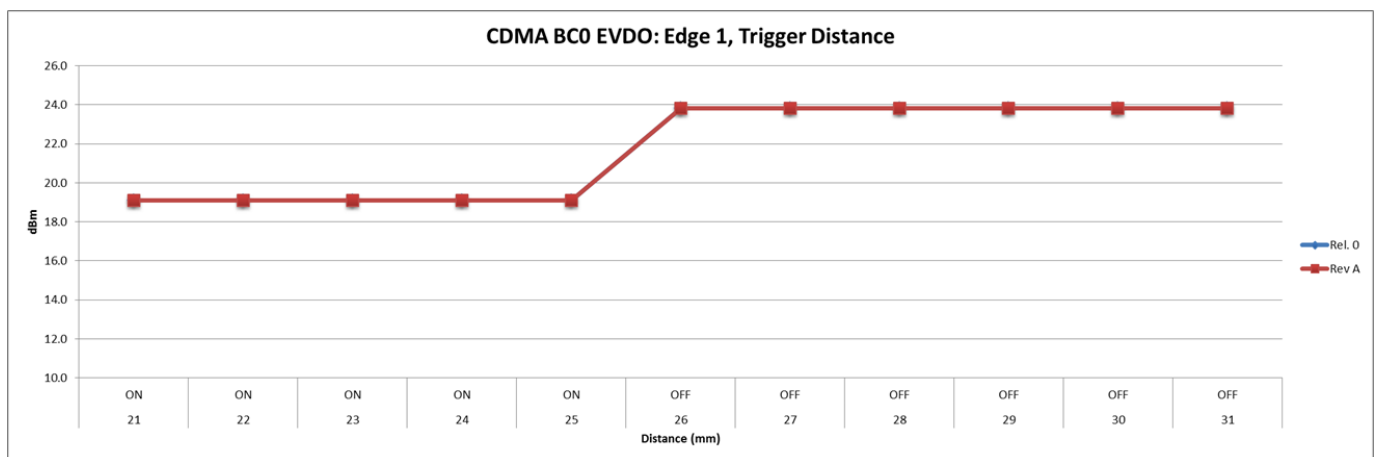
CDMA BC0

Edge 1

Edge 1, CDMA BC0 1xRTT											
Distance (mm):	21	22	23	24	25	26	27	28	29	30	31
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
RC1 SO 55	19.1	19.1	19.1	19.1	19.1	19.1	23.8	23.8	23.8	23.8	23.8
RC3 SO 55	19.1	19.1	19.1	19.1	19.1	19.1	23.8	23.8	23.8	23.8	23.8
RC3 SO 32	18.9	18.9	18.9	18.9	18.9	18.9	23.8	23.8	23.8	23.8	23.8

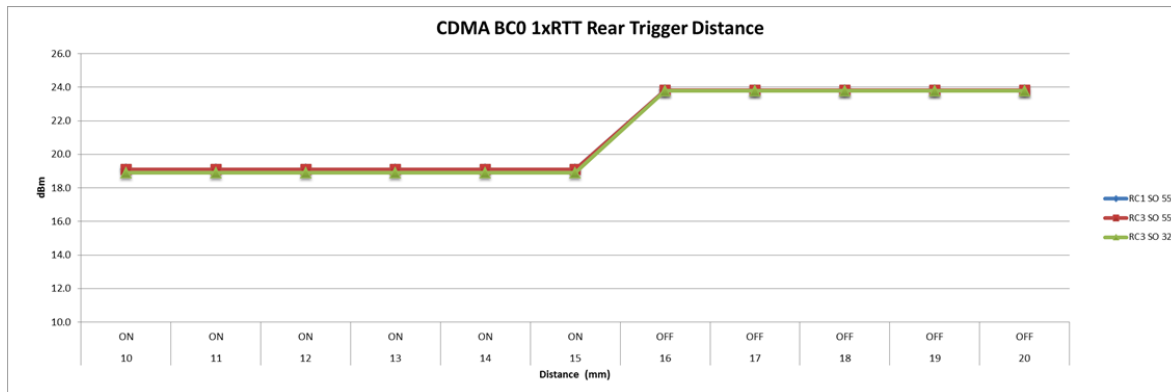


Edge 1, CDMA BC0 EVDO											
Distance (mm):	21	22	23	24	25	26	27	28	29	30	31
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
Rel. 0	19.1	19.1	19.1	19.1	19.1	23.8	23.8	23.8	23.8	23.8	23.8
Rev A	19.1	19.1	19.1	19.1	19.1	23.8	23.8	23.8	23.8	23.8	23.8

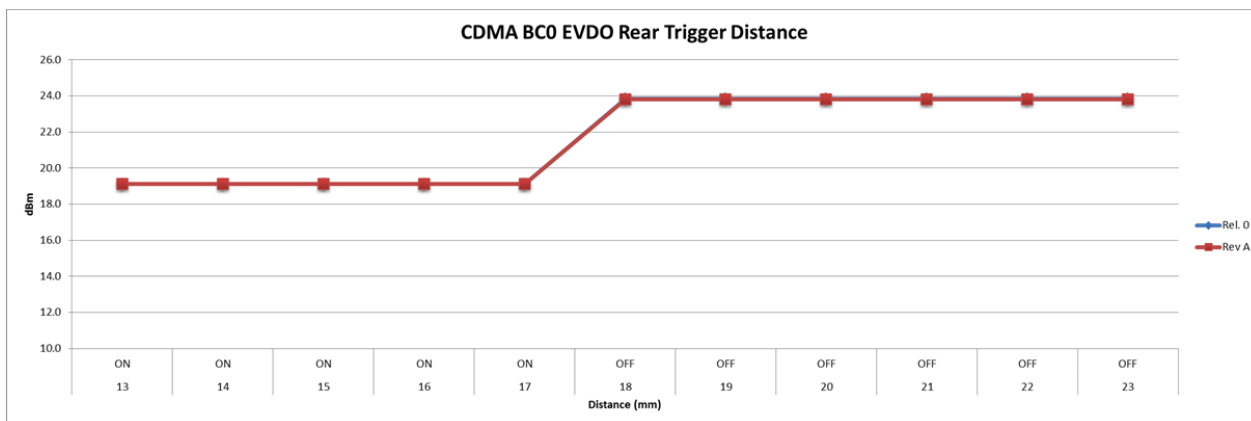


Rear

Rear, CDMA BC0 1xRTT											
Distance (mm):	10	11	12	13	14	15	16	17	18	19	20
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
RC1 SO 55	19.1	19.1	19.1	19.1	19.1	19.1	23.8	23.8	23.8	23.8	23.8
RC3 SO 55	19.1	19.1	19.1	19.1	19.1	19.1	23.8	23.8	23.8	23.8	23.8
RC3 SO 32	18.9	18.9	18.9	18.9	18.9	18.9	23.8	23.8	23.8	23.8	23.8



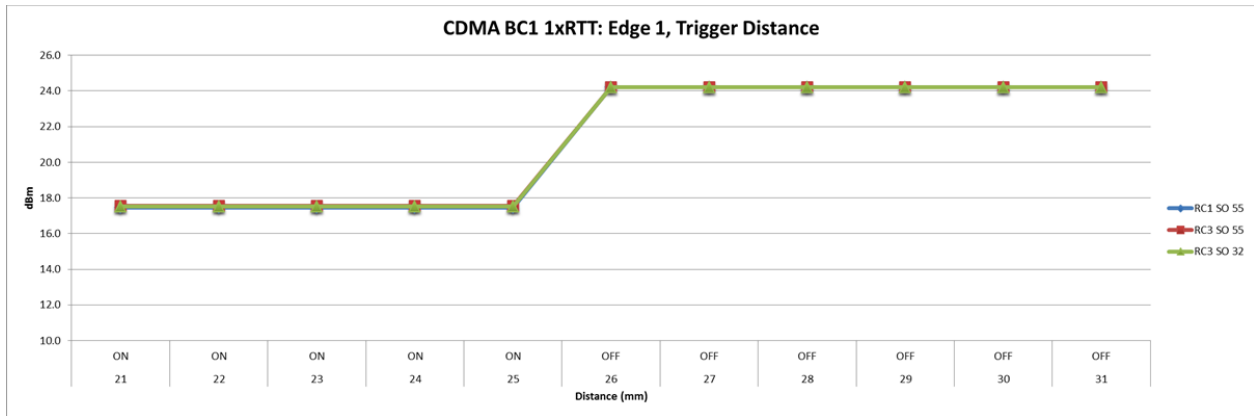
Rear, CDMA BC0 EVDO											
Distance (mm):	13	14	15	16	17	18	19	20	21	22	23
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
Rel. 0	19.1	19.1	19.1	19.1	19.1	23.8	23.8	23.8	23.8	23.8	23.8
Rev A	19.1	19.1	19.1	19.1	19.1	23.8	23.8	23.8	23.8	23.8	23.8



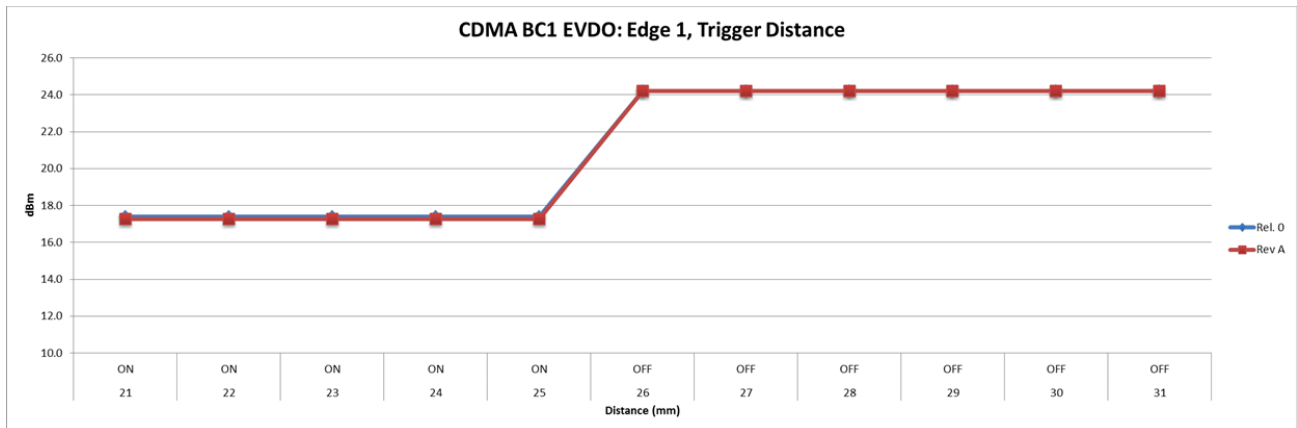
CDMA BC1

Edge 1

Edge 1, CDMA BC1 1xRTT												
Distance (mm):	21	22	23	24	25	26	27	28	29	30	31	
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	
RC1 SO 55	17.5	17.5	17.5	17.5	17.5	24.2	24.2	24.2	24.2	24.2	24.2	
RC3 SO 55	17.6	17.6	17.6	17.6	17.6	24.2	24.2	24.2	24.2	24.2	24.2	
RC3 SO 32	17.5	17.5	17.5	17.5	17.5	24.2	24.2	24.2	24.2	24.2	24.2	

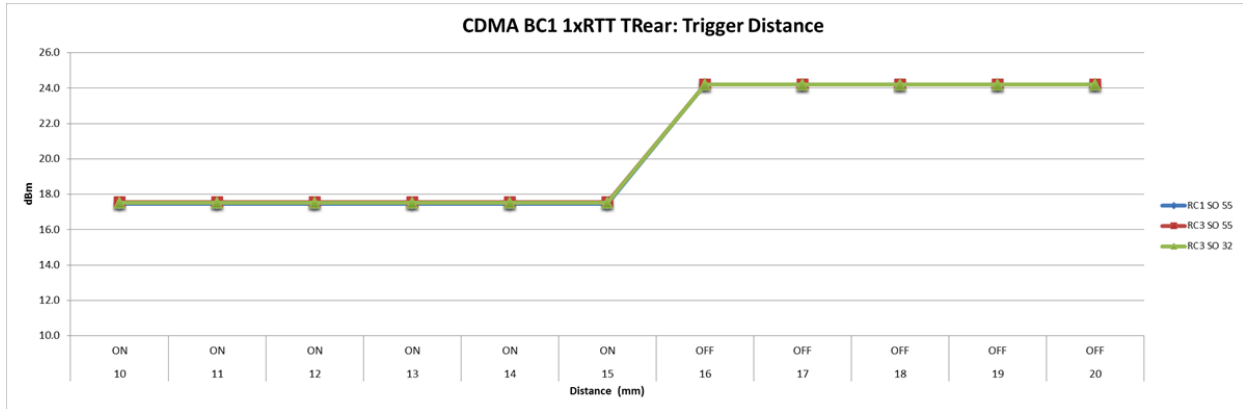


Edge 1, CDMA BC1 EVDO												
Distance (mm):	21	22	23	24	25	26	27	28	29	30	31	
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	
Rel. 0	17.4	17.4	17.4	17.4	17.4	24.2	24.2	24.2	24.2	24.2	24.2	
Rev A	17.3	17.3	17.3	17.3	17.3	24.2	24.2	24.2	24.2	24.2	24.2	

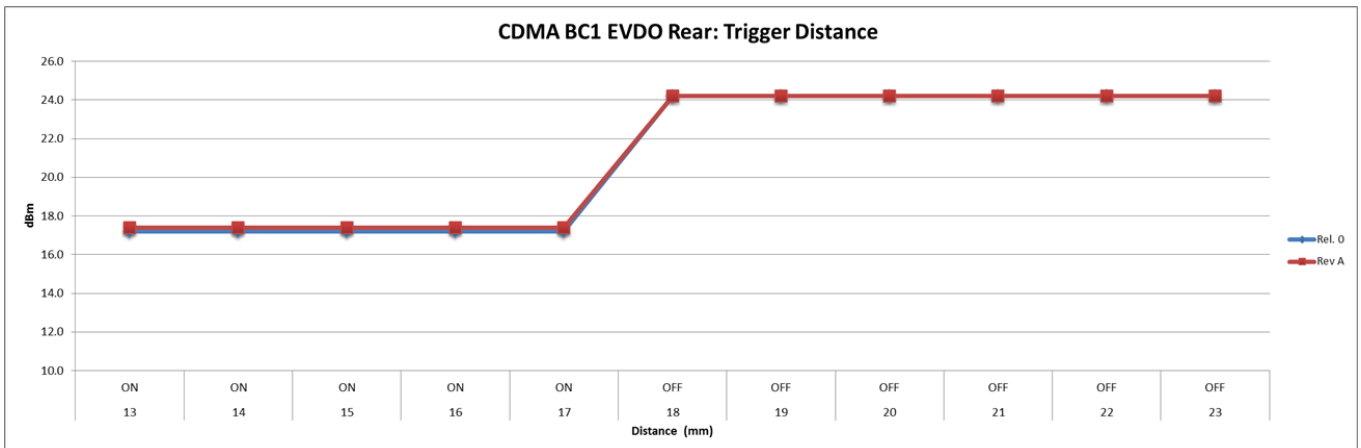


Rear

Rear, CDMA BC1 1xRTT											
Distance (mm):	10	11	12	13	14	15	16	17	18	19	20
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
RC1 SO 55	17.5	17.5	17.5	17.5	17.5	17.5	24.2	24.2	24.2	24.2	24.2
RC3 SO 55	17.6	17.6	17.6	17.6	17.6	17.6	24.2	24.2	24.2	24.2	24.2
RC3 SO 32	17.5	17.5	17.5	17.5	17.5	17.5	24.2	24.2	24.2	24.2	24.2



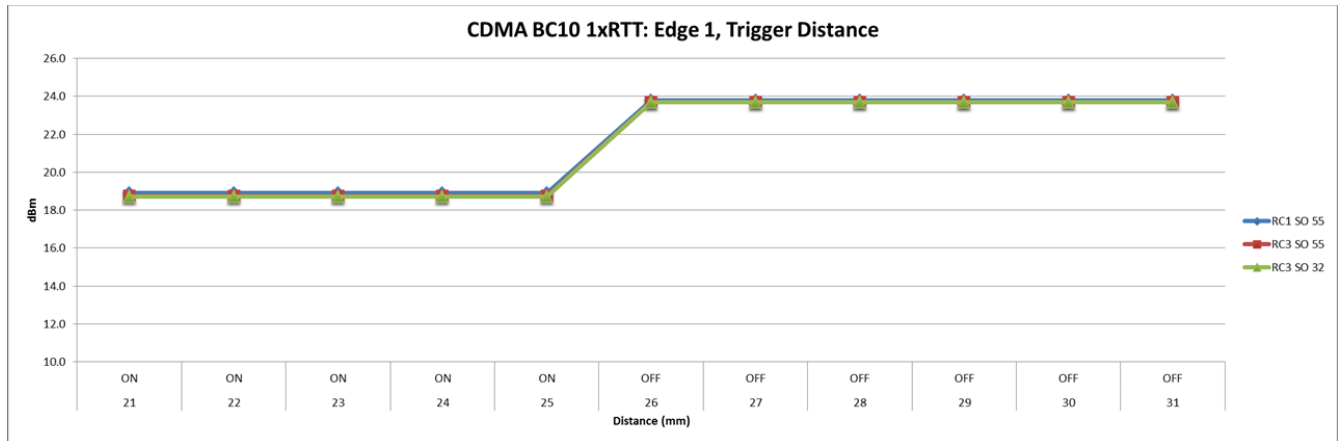
Rear, CDMA BC1 EVDO												
Distance (mm):	13	14	15	16	17	18	19	20	21	22	23	
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	
Rel. 0	17.2	17.2	17.2	17.2	17.2	24.2	24.2	24.2	24.2	24.2	24.2	
Rev A	17.4	17.4	17.4	17.4	17.4	24.2	24.2	24.2	24.2	24.2	24.2	



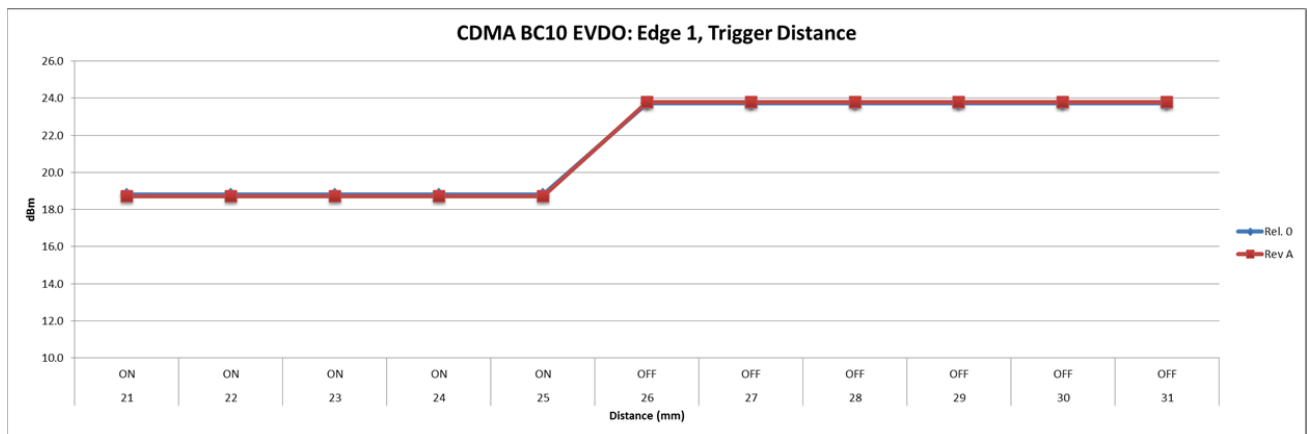
CDMA BC10

Edge 1

Edge 10, CDMA BC10 1xRTT												
Distance (mm):	21	22	23	24	25	26	27	28	29	30	31	
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	
RC1 SO 55	18.9	18.9	18.9	18.9	18.9	23.8	23.8	23.8	23.8	23.8	23.8	
RC3 SO 55	18.7	18.7	18.7	18.7	18.7	23.7	23.7	23.7	23.7	23.7	23.7	
RC3 SO 32	18.7	18.7	18.7	18.7	18.7	23.7	23.7	23.7	23.7	23.7	23.7	

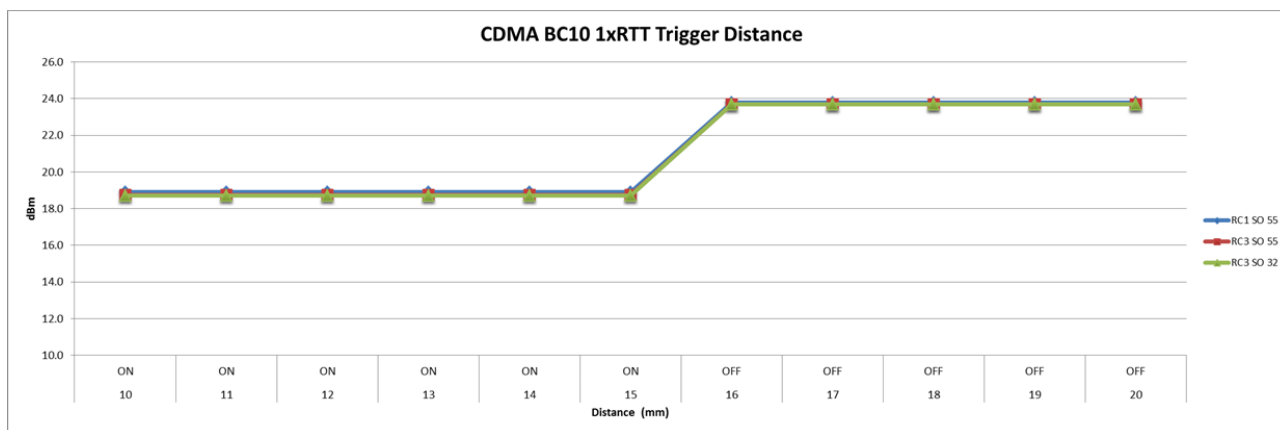


Edge 1, CDMA BC10 EVDO												
Distance (mm):	21	22	23	24	25	26	27	28	29	30	31	
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	
Rel. 0	18.8	18.8	18.8	18.8	18.8	23.7	23.7	23.7	23.7	23.7	23.7	
Rev A	18.7	18.7	18.7	18.7	18.7	23.8	23.8	23.8	23.8	23.8	23.8	

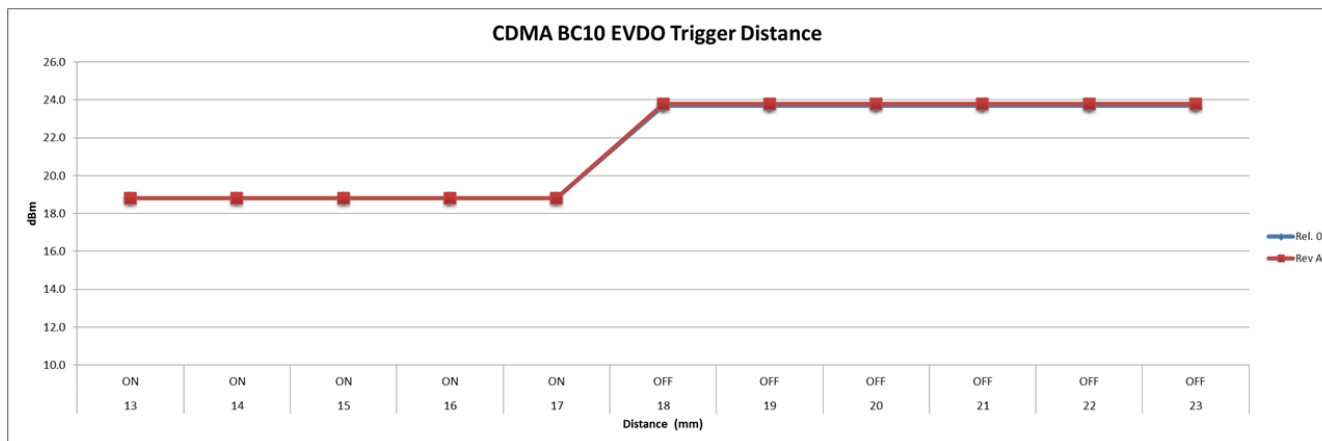


Rear

Rear, CDMA BC10 1xRTT											
Distance (mm):	10	11	12	13	14	15	16	17	18	19	20
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
RC1 SO 55	18.9	18.9	18.9	18.9	18.9	18.9	23.8	23.8	23.8	23.8	23.8
RC3 SO 55	18.7	18.7	18.7	18.7	18.7	18.7	23.7	23.7	23.7	23.7	23.7
RC3 SO 32	18.7	18.7	18.7	18.7	18.7	18.7	23.7	23.7	23.7	23.7	23.7



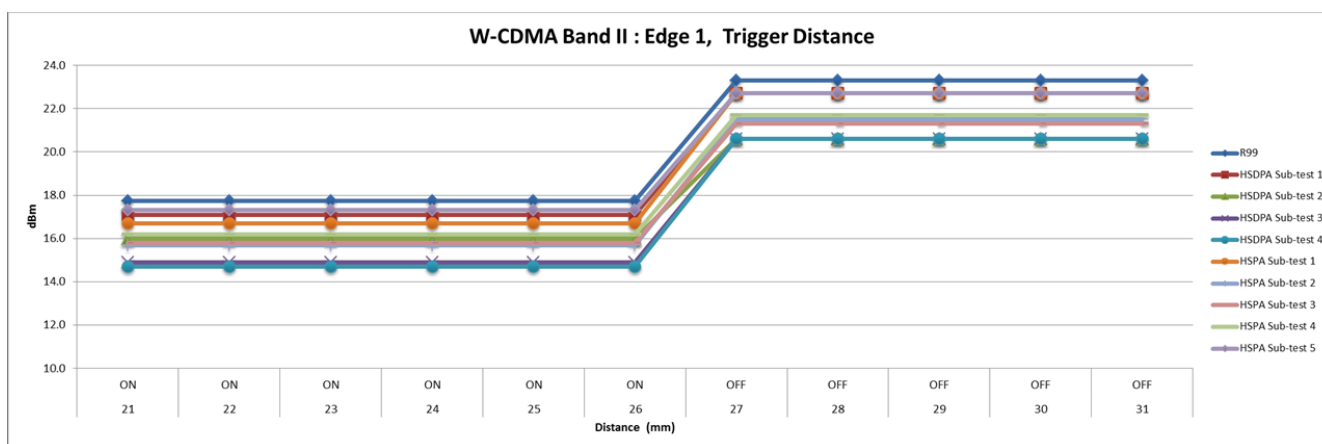
Rear, CDMA BC10 EVDO											
Distance (mm):	13	14	15	16	17	18	19	20	21	22	23
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
Rel. 0	18.8	18.8	18.8	18.8	18.8	23.7	23.7	23.7	23.7	23.7	23.7
Rev A	18.8	18.8	18.8	18.8	18.8	23.8	23.8	23.8	23.8	23.8	23.8



W-CDMA Band II

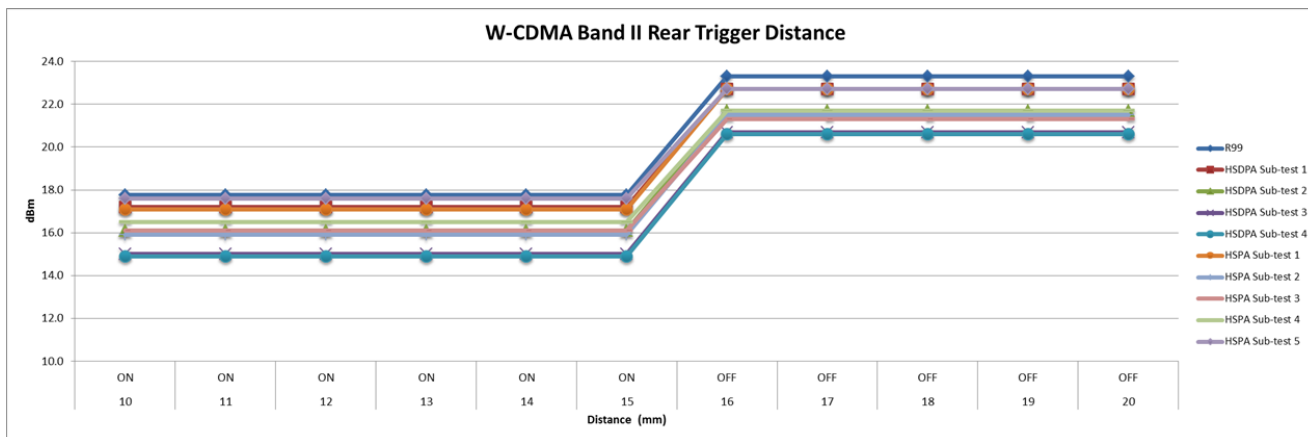
Edge 1

Edge 1, W-CDMA Band II											
Distance (mm):	21	22	23	24	25	26	27	28	29	30	31
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
R99	17.8	17.8	17.8	17.8	17.8	17.8	23.3	23.3	23.3	23.3	23.3
HSDPA Sub-test 1	17.1	17.1	17.1	17.1	17.1	17.1	22.7	22.7	22.7	22.7	22.7
HSDPA Sub-test 2	16.1	16.1	16.1	16.1	16.1	16.1	21.7	21.7	21.7	21.7	21.7
HSDPA Sub-test 3	15.0	15.0	15.0	15.0	15.0	15.0	20.7	20.7	20.7	20.7	20.7
HSDPA Sub-test 4	14.8	14.8	14.8	14.8	14.8	14.8	20.6	20.6	20.6	20.6	20.6
HSPA Sub-test 1	16.9	16.9	16.9	16.9	16.9	16.9	22.7	22.7	22.7	22.7	22.7
HSPA Sub-test 2	15.9	15.9	15.9	15.9	15.9	15.9	21.5	21.5	21.5	21.5	21.5
HSPA Sub-test 3	15.8	15.8	15.8	15.8	15.8	15.8	21.3	21.3	21.3	21.3	21.3
HSPA Sub-test 4	16.5	16.5	16.5	16.5	16.5	16.5	21.7	21.7	21.7	21.7	21.7
HSPA Sub-test 5	17.3	17.3	17.3	17.3	17.3	17.3	22.7	22.7	22.7	22.7	22.7



Rear

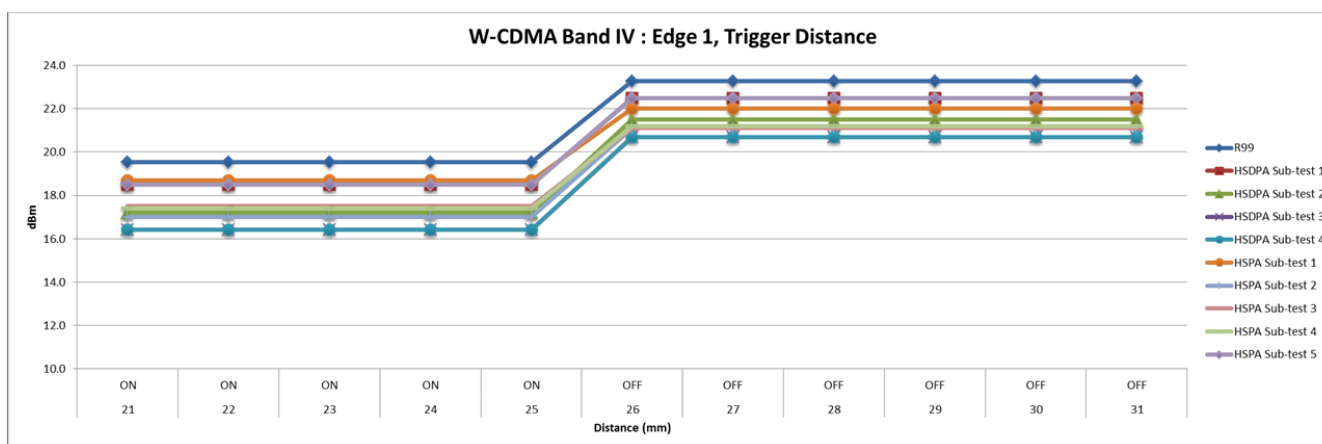
Rear, W-CDMA Band II											
Distance (mm):	10	11	12	13	14	15	16	17	18	19	20
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
R99	17.8	17.8	17.8	17.8	17.8	17.8	23.3	23.3	23.3	23.3	23.3
HSDPA Sub-test 1	17.1	17.1	17.1	17.1	17.1	17.1	22.7	22.7	22.7	22.7	22.7
HSDPA Sub-test 2	16.1	16.1	16.1	16.1	16.1	16.1	21.7	21.7	21.7	21.7	21.7
HSDPA Sub-test 3	15.0	15.0	15.0	15.0	15.0	15.0	20.7	20.7	20.7	20.7	20.7
HSDPA Sub-test 4	14.8	14.8	14.8	14.8	14.8	14.8	20.6	20.6	20.6	20.6	20.6
HSPA Sub-test 1	16.9	16.9	16.9	16.9	16.9	16.9	22.7	22.7	22.7	22.7	22.7
HSPA Sub-test 2	15.9	15.9	15.9	15.9	15.9	15.9	21.5	21.5	21.5	21.5	21.5
HSPA Sub-test 3	15.8	15.8	15.8	15.8	15.8	15.8	21.3	21.3	21.3	21.3	21.3
HSPA Sub-test 4	16.5	16.5	16.5	16.5	16.5	16.5	21.7	21.7	21.7	21.7	21.7
HSPA Sub-test 5	17.3	17.3	17.3	17.3	17.3	17.3	22.7	22.7	22.7	22.7	22.7



W-CDMA Band IV

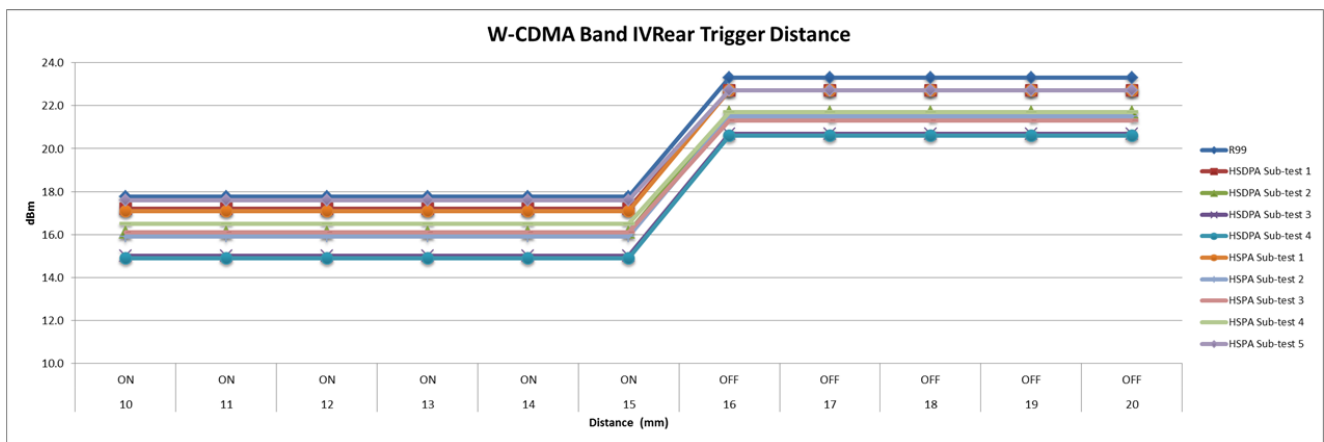
Edge 1

Edge 1, W-CDMA Band IV											
Distance (mm):	21	22	23	24	25	26	27	28	29	30	31
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
R99	19.5	19.5	19.5	19.5	19.5	23.3	23.3	23.3	23.3	23.3	23.3
HSDPA Sub-test 1	18.5	18.5	18.5	18.5	18.5	22.5	22.5	22.5	22.5	22.5	22.5
HSDPA Sub-test 2	17.2	17.2	17.2	17.2	17.2	21.5	21.5	21.5	21.5	21.5	21.5
HSDPA Sub-test 3	16.4	16.4	16.4	16.4	16.4	20.7	20.7	20.7	20.7	20.7	20.7
HSDPA Sub-test 4	16.4	16.4	16.4	16.4	16.4	20.7	20.7	20.7	20.7	20.7	20.7
HSPA Sub-test 1	18.7	18.7	18.7	18.7	18.7	22.0	22.0	22.0	22.0	22.0	22.0
HSPA Sub-test 2	17.0	17.0	17.0	17.0	17.0	21.1	21.1	21.1	21.1	21.1	21.1
HSPA Sub-test 3	17.5	17.5	17.5	17.5	17.5	21.1	21.1	21.1	21.1	21.1	21.1
HSPA Sub-test 4	17.4	17.4	17.4	17.4	17.4	21.2	21.2	21.2	21.2	21.2	21.2
HSPA Sub-test 5	18.5	18.5	18.5	18.5	18.5	22.5	22.5	22.5	22.5	22.5	22.5



Rear

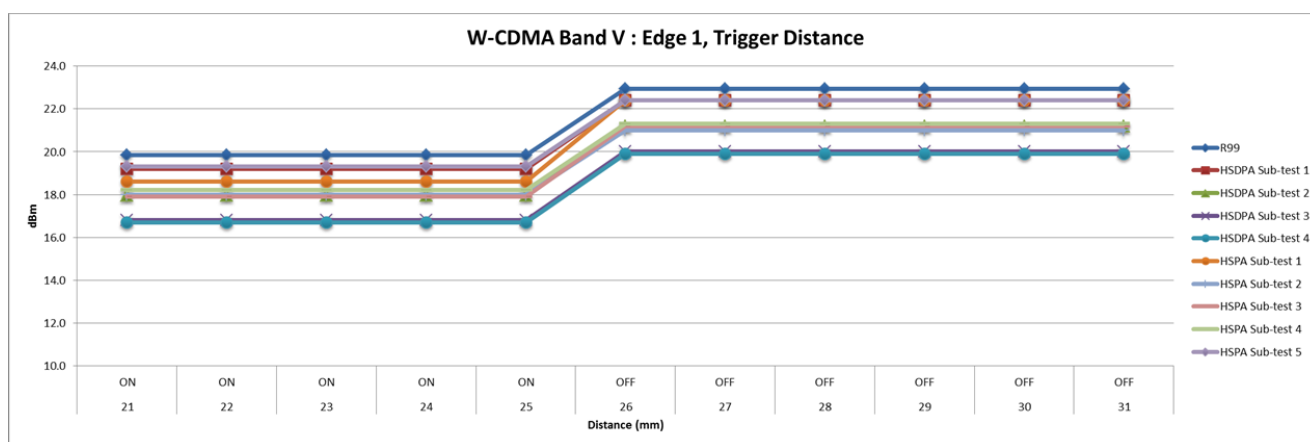
Rear, W-CDMA Band IV											
Distance (mm):	10	11	12	13	14	15	16	17	18	19	20
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
R99	19.5	19.5	19.5	19.5	19.5	19.5	23.3	23.3	23.3	23.3	23.3
HSDPA Sub-test 1	18.5	18.5	18.5	18.5	18.5	18.5	22.5	22.5	22.5	22.5	22.5
HSDPA Sub-test 2	17.2	17.2	17.2	17.2	17.2	17.2	21.5	21.5	21.5	21.5	21.5
HSDPA Sub-test 3	16.4	16.4	16.4	16.4	16.4	16.4	20.7	20.7	20.7	20.7	20.7
HSDPA Sub-test 4	16.4	16.4	16.4	16.4	16.4	16.4	20.7	20.7	20.7	20.7	20.7
HSPA Sub-test 1	18.7	18.7	18.7	18.7	18.7	18.7	22.0	22.0	22.0	22.0	22.0
HSPA Sub-test 2	17.0	17.0	17.0	17.0	17.0	17.0	21.1	21.1	21.1	21.1	21.1
HSPA Sub-test 3	17.5	17.5	17.5	17.5	17.5	17.5	21.1	21.1	21.1	21.1	21.1
HSPA Sub-test 4	17.4	17.4	17.4	17.4	17.4	17.4	21.2	21.2	21.2	21.2	21.2
HSPA Sub-test 5	18.5	18.5	18.5	18.5	18.5	18.5	22.5	22.5	22.5	22.5	22.5



W-CDMA Band V

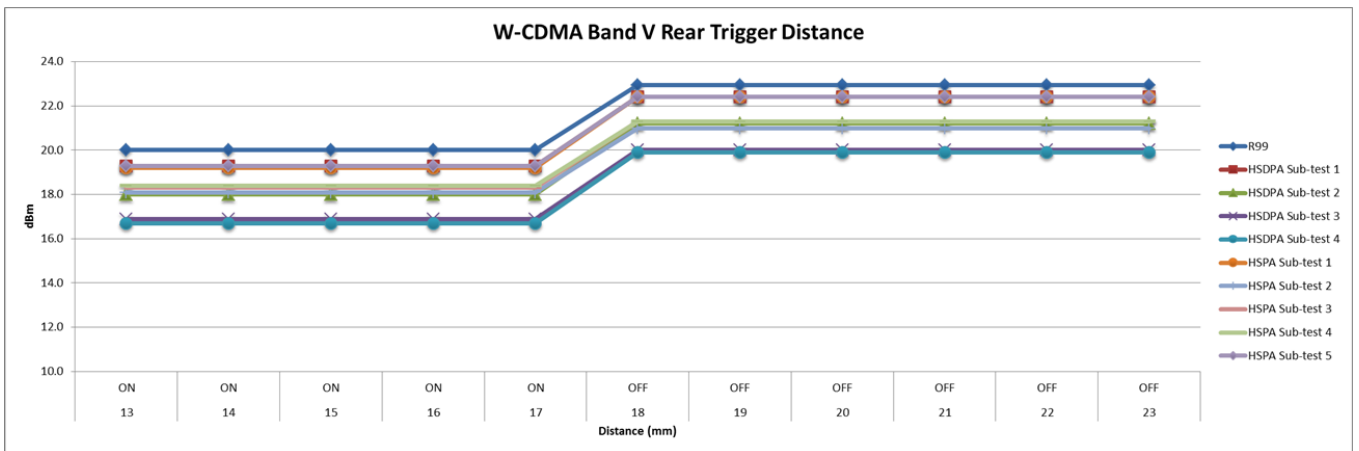
Edge 1

Edge 1, W-CDMA Band V											
Distance (mm):	21	22	23	24	25	26	27	28	29	30	31
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
R99	19.8	19.8	19.8	19.8	19.8	22.9	22.9	22.9	22.9	22.9	22.9
HSDPA Sub-test 1	19.2	19.2	19.2	19.2	19.2	22.4	22.4	22.4	22.4	22.4	22.4
HSDPA Sub-test 2	18.0	18.0	18.0	18.0	18.0	21.2	21.2	21.2	21.2	21.2	21.2
HSDPA Sub-test 3	16.8	16.8	16.8	16.8	16.8	20.0	20.0	20.0	20.0	20.0	20.0
HSDPA Sub-test 4	16.7	16.7	16.7	16.7	16.7	19.9	19.9	19.9	19.9	19.9	19.9
HSPA Sub-test 1	18.6	18.6	18.6	18.6	18.6	22.4	22.4	22.4	22.4	22.4	22.4
HSPA Sub-test 2	18.0	18.0	18.0	18.0	18.0	21.0	21.0	21.0	21.0	21.0	21.0
HSPA Sub-test 3	17.9	17.9	17.9	17.9	17.9	21.2	21.2	21.2	21.2	21.2	21.2
HSPA Sub-test 4	18.2	18.2	18.2	18.2	18.2	21.3	21.3	21.3	21.3	21.3	21.3
HSPA Sub-test 5	19.3	19.3	19.3	19.3	19.3	22.4	22.4	22.4	22.4	22.4	22.4



Rear

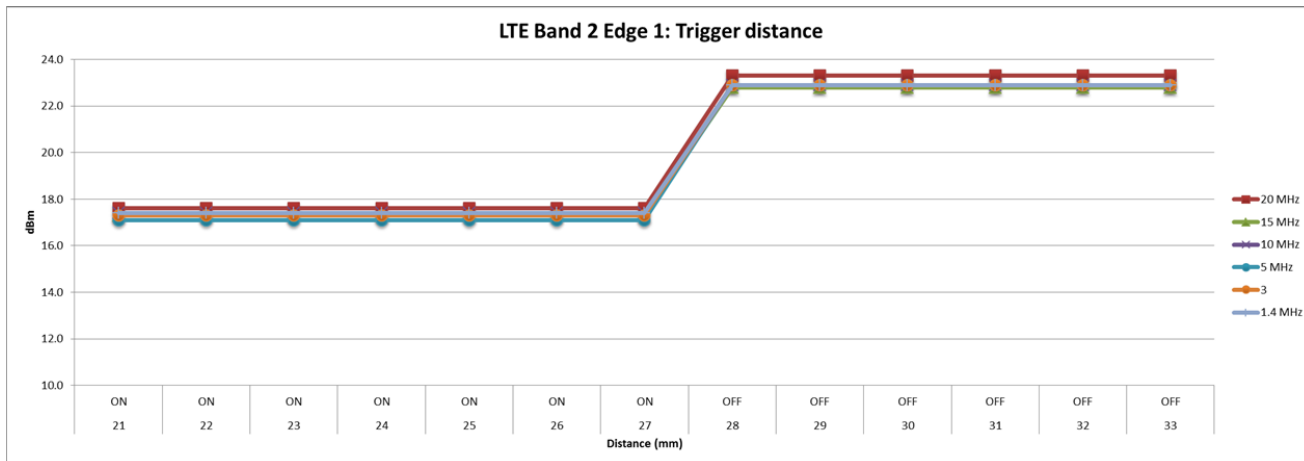
Rear, W-CDMA Band V											
Distance (mm):	13	14	15	16	17	18	19	20	21	22	23
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
R99	19.8	19.8	19.8	19.8	19.8	22.9	22.9	22.9	22.9	22.9	22.9
HSDPA Sub-test 1	19.2	19.2	19.2	19.2	19.2	22.4	22.4	22.4	22.4	22.4	22.4
HSDPA Sub-test 2	18.0	18.0	18.0	18.0	18.0	21.2	21.2	21.2	21.2	21.2	21.2
HSDPA Sub-test 3	16.8	16.8	16.8	16.8	16.8	20.0	20.0	20.0	20.0	20.0	20.0
HSDPA Sub-test 4	16.7	16.7	16.7	16.7	16.7	19.9	19.9	19.9	19.9	19.9	19.9
HSPA Sub-test 1	18.6	18.6	18.6	18.6	18.6	22.4	22.4	22.4	22.4	22.4	22.4
HSPA Sub-test 2	18.0	18.0	18.0	18.0	18.0	21.0	21.0	21.0	21.0	21.0	21.0
HSPA Sub-test 3	17.9	17.9	17.9	17.9	17.9	21.2	21.2	21.2	21.2	21.2	21.2
HSPA Sub-test 4	18.2	18.2	18.2	18.2	18.2	21.3	21.3	21.3	21.3	21.3	21.3
HSPA Sub-test 5	19.3	19.3	19.3	19.3	19.3	22.4	22.4	22.4	22.4	22.4	22.4



LTE Band 2

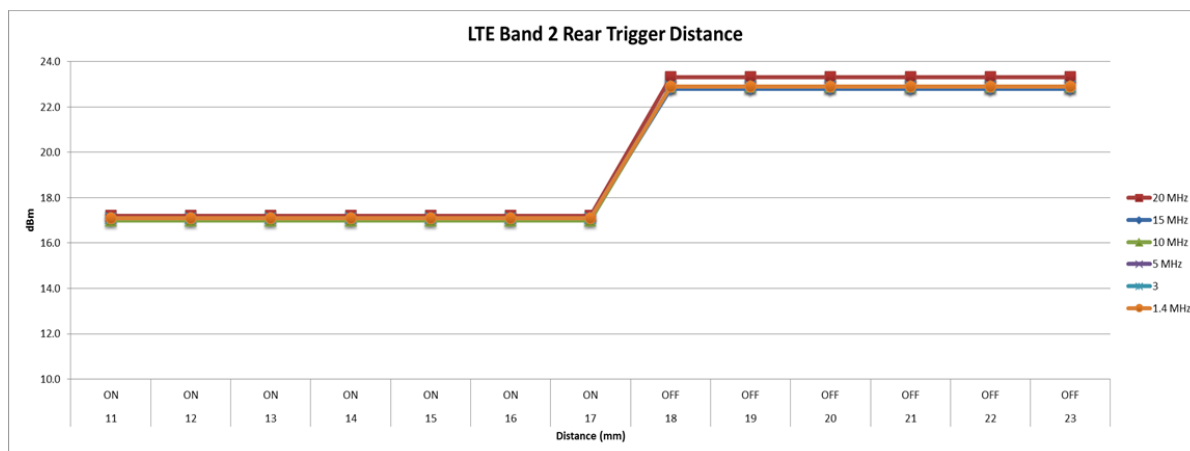
Edge 1

Edge 1, LTE Band 2													
Distance (mm):	21	22	23	24	25	26	27	28	29	30	31	32	33
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
20 MHz	17.6	17.6	17.6	17.6	17.6	17.6	17.6	23.3	23.3	23.3	23.3	23.3	23.3
15 MHz	17.3	17.3	17.3	17.3	17.3	17.3	17.3	22.8	22.8	22.8	22.8	22.8	22.8
10 MHz	17.4	17.4	17.4	17.4	17.4	17.4	17.4	22.9	22.9	22.9	22.9	22.9	22.9
5 MHz	17.1	17.1	17.1	17.1	17.1	17.1	17.1	22.9	22.9	22.9	22.9	22.9	22.9
3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	22.9	22.9	22.9	22.9	22.9	22.9
1.4 MHz	17.4	17.4	17.4	17.4	17.4	17.4	17.4	22.9	22.9	22.9	22.9	22.9	22.9



Rear

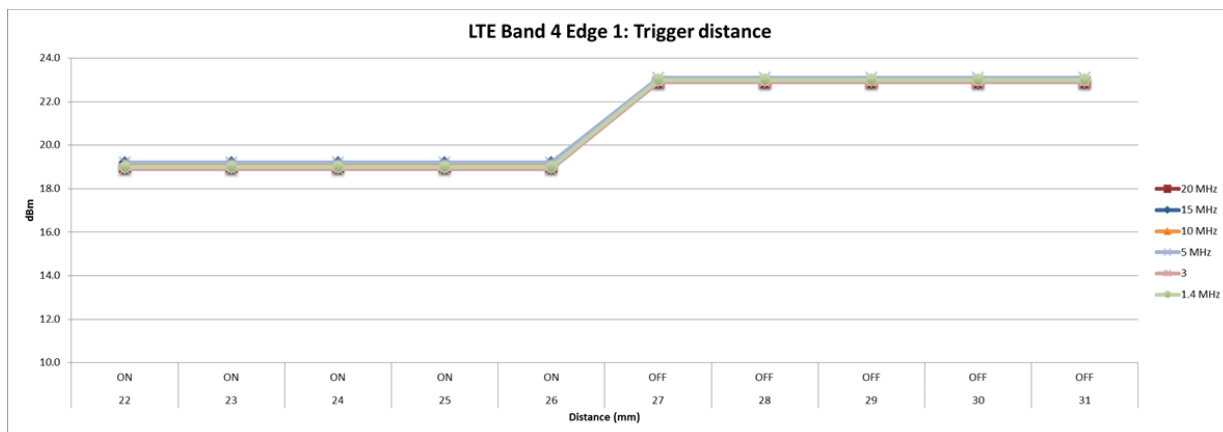
Rear, LTE Band 2													
Distance (mm):	11	12	13	14	15	16	17	18	19	20	21	22	23
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
20 MHz	17.2	17.2	17.2	17.2	17.2	17.2	17.2	23.3	23.3	23.3	23.3	23.3	23.3
15 MHz	17.1	17.1	17.1	17.1	17.1	17.1	17.1	22.8	22.8	22.8	22.8	22.8	22.8
10 MHz	17.0	17.0	17.0	17.0	17.0	17.0	17.0	22.9	22.9	22.9	22.9	22.9	22.9
5 MHz	17.1	17.1	17.1	17.1	17.1	17.1	17.1	22.9	22.9	22.9	22.9	22.9	22.9
3	17.1	17.1	17.1	17.1	17.1	17.1	17.1	22.9	22.9	22.9	22.9	22.9	22.9
1.4 MHz	17.1	17.1	17.1	17.1	17.1	17.1	17.1	22.9	22.9	22.9	22.9	22.9	22.9



LTE band 4

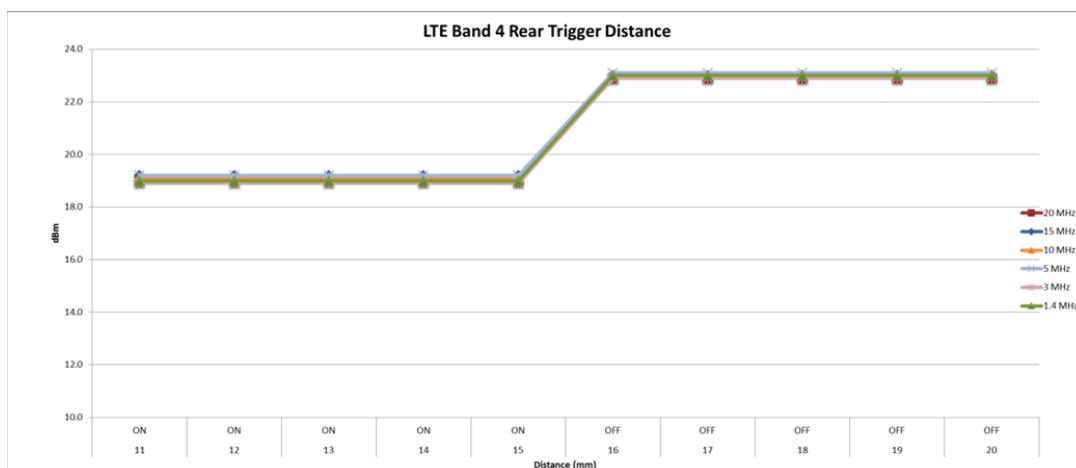
Edge 1

Edge 1, LTE Band 4										
Distance (mm):	22	23	24	25	26	27	28	29	30	31
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
20 MHz	19.0	19.0	19.0	19.0	19.0	22.9	22.9	22.9	22.9	22.9
15 MHz	19.2	19.2	19.2	19.2	19.2	23.0	23.0	23.0	23.0	23.0
10 MHz	19.1	19.1	19.1	19.1	19.1	23.0	23.0	23.0	23.0	23.0
5 MHz	19.2	19.2	19.2	19.2	19.2	23.1	23.1	23.1	23.1	23.1
3	18.9	18.9	18.9	18.9	18.9	22.9	22.9	22.9	22.9	22.9
1.4 MHz	19.0	19.0	19.0	19.0	19.0	23.0	23.0	23.0	23.0	23.0



Rear

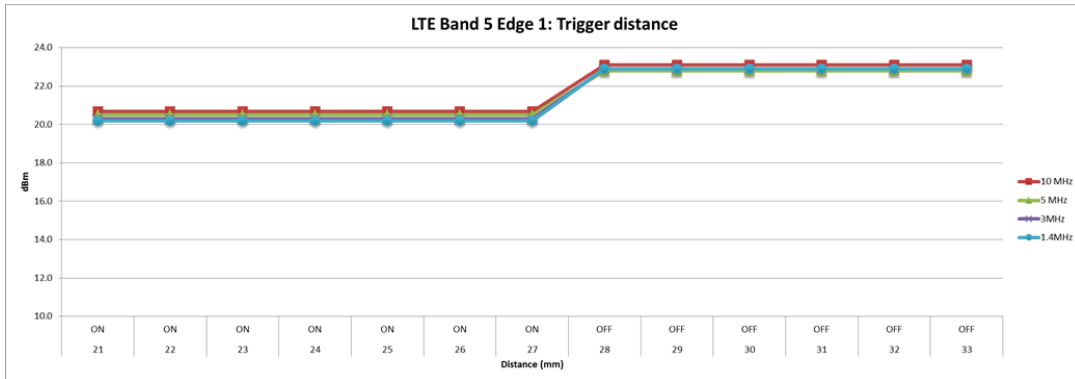
Rear, LTE Band 4										
Distance (mm):	11	12	13	14	15	16	17	18	19	20
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
20 MHz	19.0	19.0	19.0	19.0	19.0	22.9	22.9	22.9	22.9	22.9
15 MHz	19.2	19.2	19.2	19.2	19.2	23.0	23.0	23.0	23.0	23.0
10 MHz	19.1	19.1	19.1	19.1	19.1	23.0	23.0	23.0	23.0	23.0
5 MHz	19.2	19.2	19.2	19.2	19.2	23.1	23.1	23.1	23.1	23.1
3 MHz	18.9	18.9	18.9	18.9	18.9	22.9	22.9	22.9	22.9	22.9
1.4 MHz	19.0	19.0	19.0	19.0	19.0	23.0	23.0	23.0	23.0	23.0



LTE Band 5

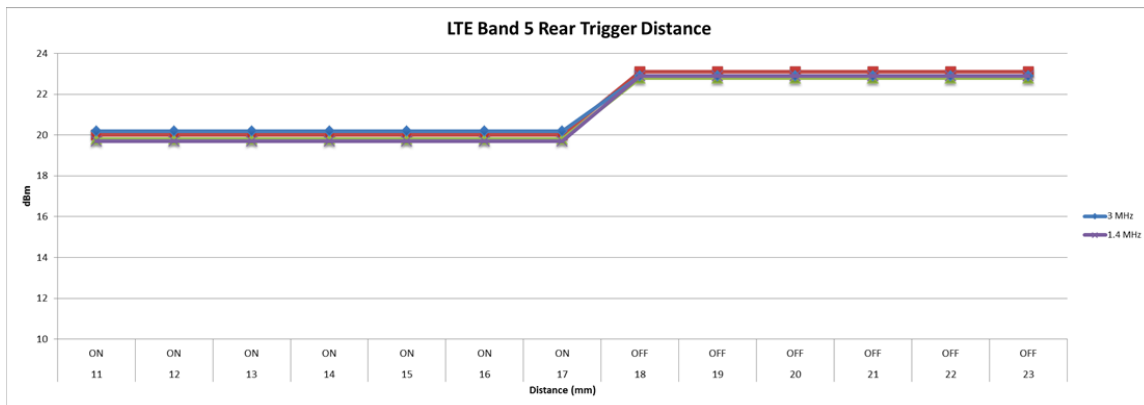
Edge 1

Edge 1, LTE Band 5													
Distance (mm):	21	22	23	24	25	26	27	28	29	30	31	32	33
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
10 MHz	20.7	20.7	20.7	20.7	20.7	20.7	20.7	23.1	23.1	23.1	23.1	23.1	23.1
5 MHz	20.5	20.5	20.5	20.5	20.5	20.5	20.5	22.8	22.8	22.8	22.8	22.8	22.8
3MHz	20.3	20.3	20.3	20.3	20.3	20.3	20.3	22.9	22.9	22.9	22.9	22.9	22.9
1.4MHz	20.2	20.2	20.2	20.2	20.2	20.2	20.2	22.9	22.9	22.9	22.9	22.9	22.9



Rear

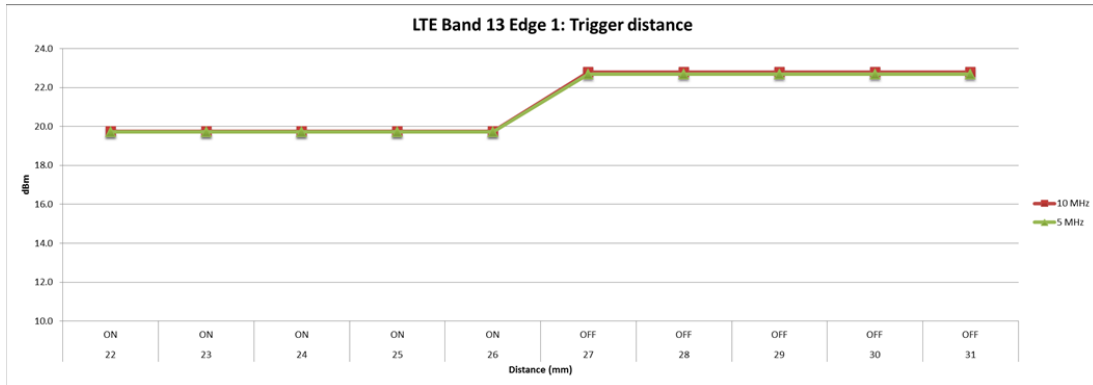
Rear, LTE Band 5													
Distance (mm):	11	12	13	14	15	16	17	18	19	20	21	22	23
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
10 MHz	20.7	20.7	20.7	20.7	20.7	20.7	20.7	23.1	23.1	23.1	23.1	23.1	23.1
5 MHz	20.5	20.5	20.5	20.5	20.5	20.5	20.5	22.8	22.8	22.8	22.8	22.8	22.8
3 MHz	20.3	20.3	20.3	20.3	20.3	20.3	20.3	22.9	22.9	22.9	22.9	22.9	22.9
1.4 MHz	20.2	20.2	20.2	20.2	20.2	20.2	20.2	22.9	22.9	22.9	22.9	22.9	22.9



LTE Band 13

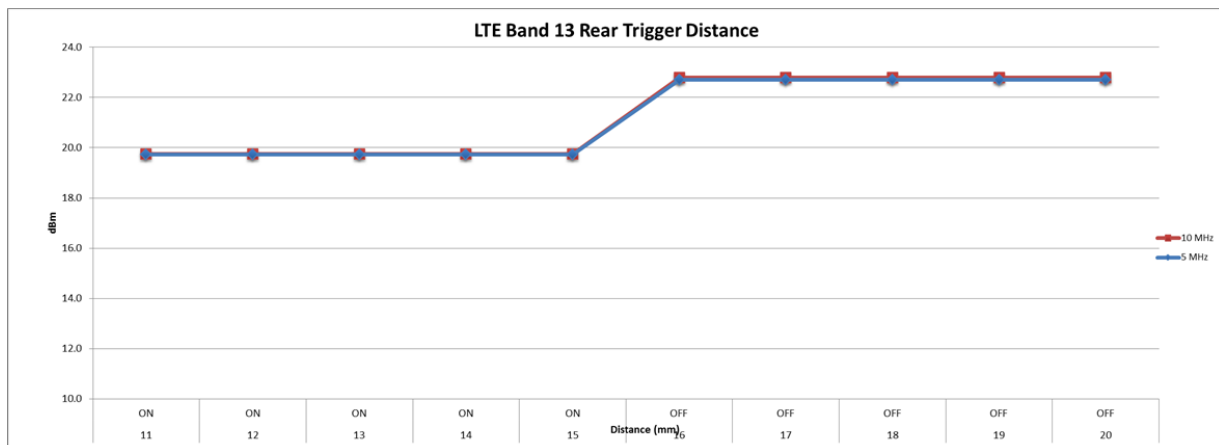
Edge 1

Edge 1, LTE Band 13										
Distance (mm):	22	23	24	25	26	27	28	29	30	31
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
10 MHz	19.7	19.7	19.7	19.7	19.7	22.8	22.8	22.8	22.8	22.8
5 MHz	19.7	19.7	19.7	19.7	19.7	22.7	22.7	22.7	22.7	22.7



Rear

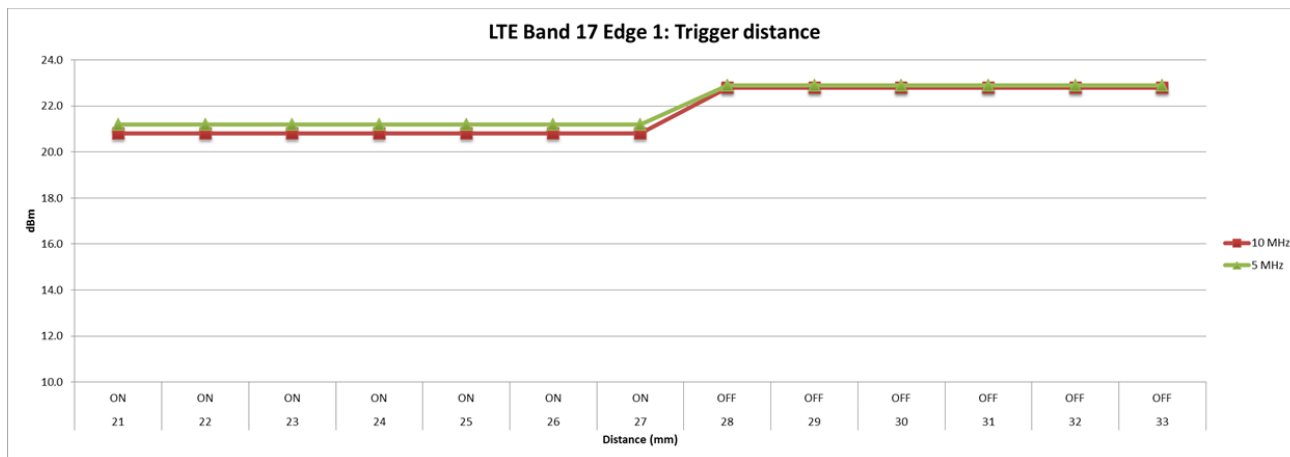
Rear, LTE Band 13										
Distance (mm):	11	12	13	14	15	16	17	18	19	20
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
10 MHz	19.7	19.7	19.7	19.7	19.7	22.8	22.8	22.8	22.8	22.8
5 MHz	19.7	19.7	19.7	19.7	19.7	22.7	22.7	22.7	22.7	22.7



LTE Band 17

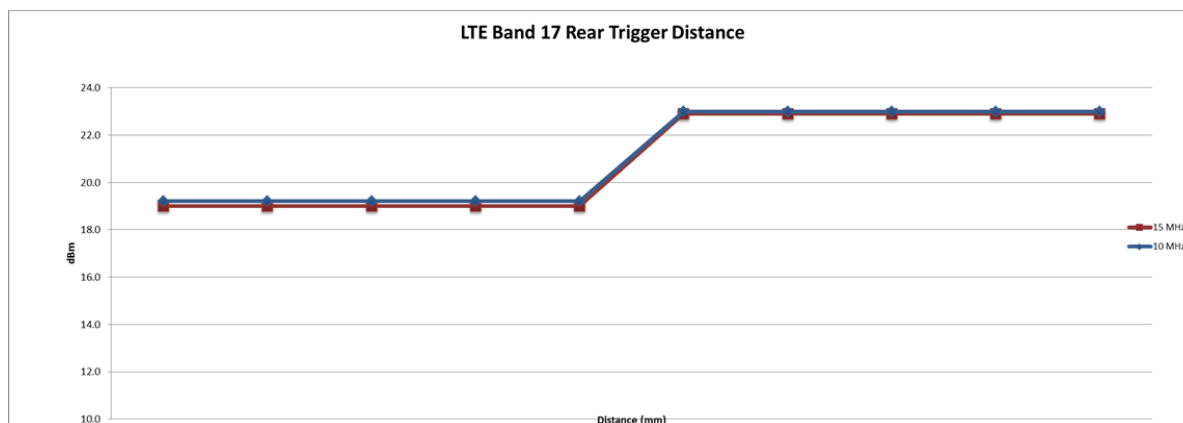
Edge 1

Edge 1, LTE Band 17													
Distance (mm):	21	22	23	24	25	26	27	28	29	30	31	32	33
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
10 MHz	20.8	20.8	20.8	20.8	20.8	20.8	20.8	22.8	22.8	22.8	22.8	22.8	22.8
5 MHz	21.2	21.2	21.2	21.2	21.2	21.2	21.2	22.9	22.9	22.9	22.9	22.9	22.9



Rear

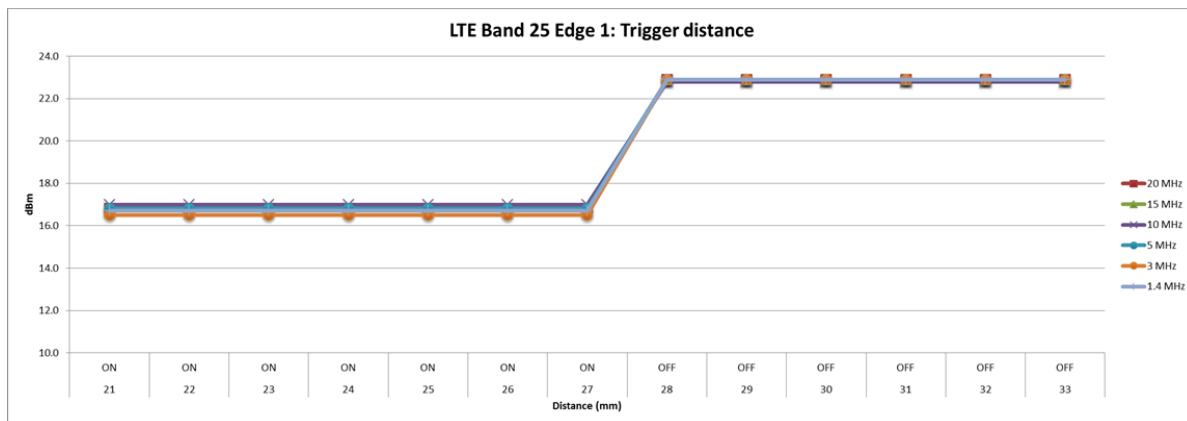
Rear, LTE Band 17											
Distance (mm):	11	12	13	14	15	16	17	18	19	20	
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	
10 MHz	20.8	20.8	20.8	20.8	20.8	22.8	22.8	22.8	22.8	22.8	
5 MHz	21.2	21.2	21.2	21.2	21.2	22.9	22.9	22.9	22.9	22.9	



LTE Band 25

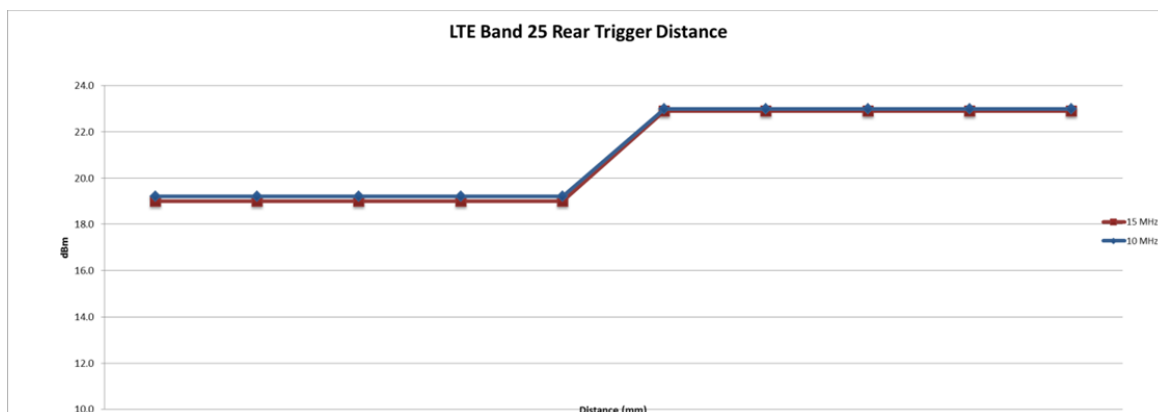
Edge 1

Edge 1, LTE Band 25													
Distance (mm):	21	22	23	24	25	26	27	28	29	30	31	32	33
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
20 MHz	16.8	16.8	16.8	16.8	16.8	16.8	16.8	22.9	22.9	22.9	22.9	22.9	22.9
15 MHz	16.7	16.7	16.7	16.7	16.7	16.7	16.7	22.9	22.9	22.9	22.9	22.9	22.9
10 MHz	17.0	17.0	17.0	17.0	17.0	17.0	17.0	22.8	22.8	22.8	22.8	22.8	22.8
5 MHz	16.8	16.8	16.8	16.8	16.8	16.8	16.8	22.9	22.9	22.9	22.9	22.9	22.9
3 MHz	16.5	16.5	16.5	16.5	16.5	16.5	16.5	22.9	22.9	22.9	22.9	22.9	22.9
1.4 MHz	16.7	16.7	16.7	16.7	16.7	16.7	16.7	22.9	22.9	22.9	22.9	22.9	22.9



Rear

Rear, LTE Band 25											
Distance (mm):	11	12	13	14	15	16	17	18	19	20	
Proximity sensor with reduced power activation:	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	
20 MHz	16.8	16.8	16.8	16.8	16.8	22.9	22.9	22.9	22.9	22.9	
15 MHz	16.7	16.7	16.7	16.7	16.7	22.9	22.9	22.9	22.9	22.9	
10 MHz	17.0	17.0	17.0	17.0	17.0	22.8	22.8	22.8	22.8	22.8	
5 MHz	16.8	16.8	16.8	16.8	16.8	22.9	22.9	22.9	22.9	22.9	
3	16.5	16.5	16.5	16.5	16.5	22.9	22.9	22.9	22.9	22.9	
1.4 MHz	16.7	16.7	16.7	16.7	16.7	22.9	22.9	22.9	22.9	22.9	



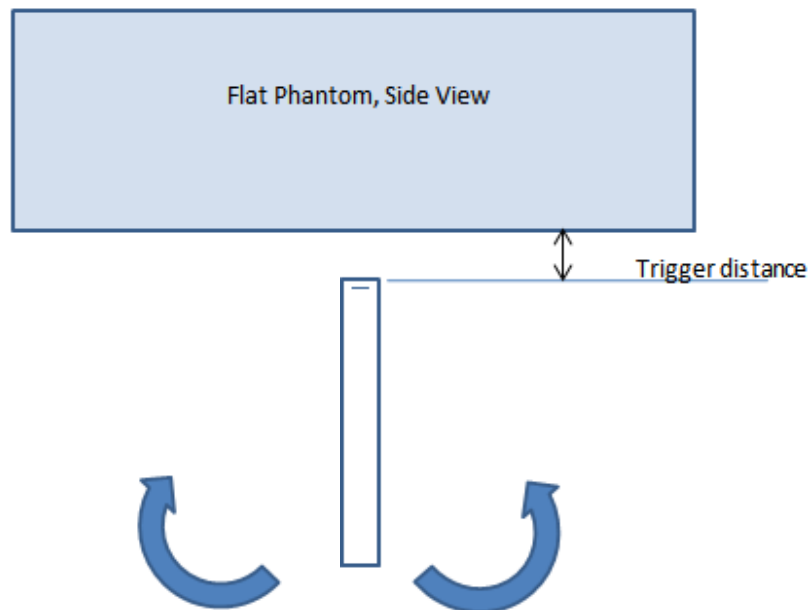
8.7. Proximity Sensor Coverage (KDB 616217 §6.3)

As there is no spatial offset between the antenna and the proximity sensor element, except on the display side of the antenna, proximity sensor coverage did not need to be assessed.

8.8. Proximity Sensor Tilt Angle (KDB 616217 §6.3)

The DUT was positioned directly below the flat phantom at the minimum measured trigger distance with edge 1 parallel to the base of the flat phantom. The DUT was rotated in both directions about edge 1.

The proximity sensor remained triggered with the DUT positioned at the minimum measured trigger distance from the phantom for all angles up to 45°.



9. RF Exposure Conditions

Refer to Section 18 “Antenna Dimensions and Separation Distances” for the specific details of the antenna-to-antenna and antenna-to-edge(s) distances.

9.1. Body Exposure Conditions for WWAN

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Rear	7.5 mm	YES	
Front	-	No	SAR is not required as this is not a typical use scenario
Edge 1	3.3 mm	YES	
Edge 2	167.6 mm	No	Refer to section 13 for SAR exclusion justification
Edge 3	185.1 mm	No	Refer to section 13 for SAR exclusion justification
Edge 4	47.0 mm	YES	

LEGEND:

- Bottom = Back
- Edge 1 = Top Edge
- Edge 2 = Right Edge
- Edge 3 = Bottom Edge
- Edge 4 = Left Edge

9.2. Special test considerations

The DUT is a ruggedized tablet computer. A feature of the ruggedization is the inclusion of prominent bumpers at each corner. The antennas are located close to the corners of the DUT. Testing the edges or base against the flat phantom with the bumpers in place did not represent the most conservative usage scenarios. Testing of the base was performed with the bumpers removed. Testing of the edges was also performed with the bumpers removed. Additionally the faceplate in the area of the bumpers was ground down so that the spacers adjacent to the WWAN antenna could be in direct contact with the flat phantom.

9.3. Test Configurations for WLAN

All Wi-Fi 1-g SAR values were taken from results recorded in SAR report 12J14673-1F, submitted under FCC ID ACJ9TGWL12A or from the MIMO estimated values in section 12.2.2 of this report.

10. RF Output Power Measurement

As this device implements proximity sensor-triggered power reduction for SAR compliance, conducted output power was measured for the two different operating power levels. The following serves to clarify and establish the relation between power level and proximity sensor status:

- Full Power = Proximity Sensor Off
- Reduced Power= Proximity Sensor On

Each operating power level has its own set of target power and tune-up limit, and the scaling of SAR values is applied according to the corresponding target for the given operating power level

10.1. GSM850

Target Power for GSM850 32 dBm

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

Full Power

GPRS (GMSK) - Coding Scheme: CS1										
Band	Ch No.	f (MHz)	1 Slot Power (dBm)		2 Slot Power (dBm)		3 Slot Power (dBm)		4 Slot Power (dBm)	
			Burst Avg	Frame Avg	Burst Avg	Frame Avg	Burst Avg	Frame Avg	Burst Avg	Frame Avg
850	128	824.2	32.3	23.3	32.2	26.2				
	190	836.6	32.3	23.3	32.2	26.2				
	251	848.8	32.3	23.3	32.2	26.2				
EGPRS (8PSK) - Coding Scheme: MCS5										
Band	Ch No.	f (MHz)	1 Slot Power (dBm)		2 Slot Power (dBm)		3 Slot Power (dBm)		4 Slot Power (dBm)	
			Burst Avg	Frame Avg	Burst Avg	Frame Avg	Burst Avg	Frame Avg	Burst Avg	Frame Avg
850	128	824.2	27.2	18.2	27.1	21.1	26.8	22.5	26.6	23.6
	190	836.6	27.2	18.2	27.1	21.1	26.8	22.5	26.6	23.6
	251	848.8	27.1	18.1	27.0	21.0	26.8	22.5	26.6	23.6

Reduced Power

GPRS (GMSK) - Coding Scheme: CS1										
Band	Ch No.	f (MHz)	1 Slot Power (dBm)		2 Slot Power (dBm)		3 Slot Power (dBm)		4 Slot Power (dBm)	
			Burst Avg	Frame Avg	Burst Avg	Frame Avg	Burst Avg	Frame Avg	Burst Avg	Frame Avg
850	128	824.2	28.7	19.7	24.9	18.9				
	190	836.6	28.7	19.7	25.0	19.0				
	251	848.8	28.7	19.7	24.9	18.9				
EGPRS (8PSK) - Coding Scheme: MCS5										
Band	Ch No.	f (MHz)	1 Slot Power (dBm)		2 Slot Power (dBm)		3 Slot Power (dBm)		4 Slot Power (dBm)	
			Burst Avg	Frame Avg	Burst Avg	Frame Avg	Burst Avg	Frame Avg	Burst Avg	Frame Avg
850	128	824.2	27.0	18.0	24.8	18.8	23.2	18.9	21.7	18.7
	190	836.6	27.0	18.0	24.8	18.8	23.2	18.9	21.5	18.5
	251	848.8	27.0	18.0	24.8	18.8	23.2	18.9	21.7	18.7

Notes:

The worst-case configuration and mode for SAR testing is determined to be as follows:

- Body: GMSK (GPRS) mode with 2 time slots, based on the output power measurements above
- SAR is not required for EGPRS (8PSK) Mode at full power because its output power is less than that of GPRS Mode at full power.
- SAR is required for EGPRS (8PSK) Mode at reduced power because its output power is greater than that of GPRS Mode at reduced power

10.2. GSM1900

Target Power for GSM1900 29 dBm

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

Full Power

GPRS (GMSK) - Coding Scheme: CS1										
Band	Ch No.	f (MHz)	1 Slot Power (dBm)		2 Slot Power (dBm)		3 Slot Power (dBm)		4 Slot Power (dBm)	
			Burst Avg	Frame Avg	Burst Avg	Frame Avg	Burst Avg	Frame Avg	Burst Avg	Frame Avg
1900	512	1850.2	29.5	20.4	29.5	23.5				
	661	1880	29.6	20.6	29.4	23.4				
	810	1909.8	29.7	20.7	29.6	23.5				

EGPRS (8PSK) - Coding Scheme: MCS5										
Band	Ch No.	f (MHz)	1 Slot Power (dBm)		2 Slot Power (dBm)		3 Slot Power (dBm)		4 Slot Power (dBm)	
			Burst Avg	Frame Avg	Burst Avg	Frame Avg	Burst Avg	Frame Avg	Burst Avg	Frame Avg
1900	512	1850.2	25.9	16.9	25.9	19.8	25.7	21.4	25.5	22.5
	661	1880	25.9	16.9	25.8	19.8	25.6	21.3	25.5	22.5
	810	1909.8	26.0	16.9	25.8	19.8	25.7	21.4	25.6	22.6

Reduced Power

Band	Ch No.	f (MHz)	Power (dBm)		Power (dBm)		Power (dBm)		Power (dBm)	
			Burst Avg	Frame Avg	Burst Avg	Frame Avg	Burst Avg	Frame Avg	Burst Avg	Frame Avg
1900	512	1850.2	26.5	17.4	23.6	17.6				
	661	1880	26.5	17.5	23.5	17.5				
	810	1909.8	26.6	17.5	23.6	17.6				

EGPRS (8PSK) - Coding Scheme: MCS5										
Band	Ch No.	f (MHz)	1 Slot Power (dBm)		2 Slot Power (dBm)		3 Slot Power (dBm)		4 Slot Power (dBm)	
			Burst Avg	Frame Avg	Burst Avg	Frame Avg	Burst Avg	Frame Avg	Burst Avg	Frame Avg
1900	512	1850.2	25.8	16.8	23.3	17.3	21.6	17.3	19.9	16.9
	661	1880	25.8	16.8	23.2	17.2	21.6	17.3	19.8	16.8
	810	1909.8	25.8	16.8	23.2	17.2	21.5	17.2	19.9	16.9

Notes:

The worst-case configuration and mode for SAR testing is determined to be as follows:

- Body: GMSK (GPRS) mode with 2 time slots, based on the output power measurements above
- SAR is not required for EGPRS (8PSK) Mode at full power or reduced power because its output power is less than that of GPRS Mode at either full power or reduced power

10.3. W-CDMA Band V

Target Power for W-CDMA Band V 23 dBm

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

Release 99

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	β_c/β_d	8/15

Release 99 RMC Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	(dBm)	
				Full Power	Reduced Power
W-CDMA (UMTS) Band V	Rel 99 (RMC, 12.2 kbps)	4132	826.4	22.9	19.9
		4183	836.6	22.9	19.8
		4233	846.6	22.9	20.0

HSDPA

The following 4 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
W-CDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm 2			
	β_c	2/15	12/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	β_c/β_d	2/15	12/15	15/8	15/4
	β_{hs}	4/15	24/15	30/15	30/15
CM (dB)	0	0	0.5	0.5	
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	$A_{hs} = \beta_{hs}/\beta_c$	30/15			

HSDPA Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)	
				Full Power	Reduced Power
W-CDMA (UMTS) Band V	Subtest 1	4132	826.4	22.2	19.3
		4183	836.6	22.3	9.2
		4233	846.6	22.4	19.2
	Subtest 2	4132	826.4	21.1	18.0
		4183	836.6	21.2	18.0
		4233	846.6	21.1	18.0
	Subtest 3	4132	826.4	20.0	16.9
		4183	836.6	20.0	16.8
		4233	846.6	20.0	16.9
	Subtest 4	4132	826.4	19.8	16.7
		4183	836.6	19.9	16.7
		4233	846.6	19.8	16.7

Note(s):

KDB 941225 D01 – Body SAR is not required for HSDPA when the maximum average output of each RF channel with HSDPA active is less than ¼ dB higher than that measured without HSDPA using 12.2 kbps RMC or the maximum SAR for 12.2 kbps RMC is < 75% of the SAR limit.

HSPA (HSDPA & HSUPA)

The following 5 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSPA	HSPA	HSPA	HSPA	HSPA
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/15	15/15
	β_{ec}	209/225	12/15	30/15	2/15	24/15
	β_c/β_d	11/15	6/15	15/9	2/15	15/15
	β_{hs}	22/15	12/15	30/15	4/15	30/15
	β_{ed}	1309/225	94/75	47/15 47/15	56/75	134/15
	CM (dB)	1.0	3.0	2.0	3.0	1.0
MPR (dB)	0	2	1	2	0	
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = β_{hs}/β_c	30/15				
HSUPA Specific Settings	D E-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_TFCIs	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18		E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27

HSUPA Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)	
				Full Power	Reduced Power
WCDMA (UMTS) Band V	Subtest 1	4132	826.4	22.1	18.7
		4183	836.6	21.9	19.2
		4233	846.6	22.4	18.6
	Subtest 2	4132	826.4	21.0	18.0
		4183	836.6	20.8	18.0
		4233	846.6	20.7	18.1
	Subtest 3	4132	826.4	21.1	18.1
		4183	836.6	21.1	18.3
		4233	846.6	21.2	17.9
	Subtest 4	4132	826.4	21.3	18.2
		4183	836.6	21.2	18.4
		4233	846.6	21.3	18.4
	Subtest 5	4132	826.4	22.2	19.3
		4183	836.6	22.4	19.3
		4233	846.6	22.3	19.3

Note(s):

- KDB 941225 D01 – Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit.

10.4. W-CDMA Band IV

Target Power for W-CDMA Band IV 23 dBm

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

Release 99

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	β_c/β_d	8/15

Release 99 RMC Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)	
				Full Power	Reduced Power
W-CDMA (UMTS) Band IV	Rel 99 (RMC, 12.2 kbps)	1312	1712.4	23.3	19.5
		1413	1732.6	23.2	19.5
		1513	1752.6	23.3	19.5

HSDPA

The following 4 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
W-CDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm 2			
	β_c	2/15	12/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	β_c/β_d	2/15	12/15	15/8	15/4
	β_{hs}	4/15	24/15	30/15	30/15
CM (dB)	0	0	0.5	0.5	
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	$A_{hs} = \beta_{hs}/\beta_c$	30/15			

HSDPA Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)	
				Full Power	Reduced Power
W-CDMA (UMTS) Band IV	Subtest 1	1312	1712.4	22.4	18.5
		1413	1732.6	22.5	18.5
		1513	1752.6	22.5	18.6
	Subtest 2	1312	1712.4	21.5	17.2
		1413	1732.6	21.4	17.3
		1513	1752.6	21.5	17.4
	Subtest 3	1312	1712.4	20.2	16.3
		1413	1732.6	20.4	16.3
		1513	1752.6	20.7	16.4
	Subtest 4	1312	1712.4	20.5	16.3
		1413	1732.6	20.5	16.4
		1513	1752.6	20.7	16.4

Note(s):

KDB 941225 D01 – Body SAR is not required for HSDPA when the maximum average output of each RF channel with HSDPA active is less than ¼ dB higher than that measured without HSDPA using 12.2 kbps RMC or the maximum SAR for 12.2 kbps RMC is < 75% of the SAR limit.

HSPA (HSDPA & HSUPA)

The following 5 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSPA	HSPA	HSPA	HSPA	HSPA
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/15	15/15
	β_{ec}	209/225	12/15	30/15	2/15	24/15
	β_c/β_d	11/15	6/15	15/9	2/15	15/15
	β_{hs}	22/15	12/15	30/15	4/15	30/15
	β_{ed}	1309/225	94/75	47/15	56/75	134/15
	CM (dB)	1.0	3.0	2.0	3.0	1.0
MPR (dB)	0	2	1	2	0	
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = β_{hs}/β_c	30/15				
HSUPA Specific Settings	D E-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_TFCIs	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18		E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27

HSUPA Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)	
				Full Power	Reduced Power
WCDMA (UMTS) Band IV	Subtest 1	1312	1712.4	21.9	18.4
		1413	1732.6	21.8	18.5
		1513	1752.6	22.0	18.7
	Subtest 2	1312	1712.4	20.8	17.3
		1413	1732.6	20.9	17.3
		1513	1752.6	21.1	17.0
	Subtest 3	1312	1712.4	21.1	17.3
		1413	1732.6	21.1	17.4
		1513	1752.6	21.0	17.5
	Subtest 4	1312	1712.4	20.7	17.4
		1413	1732.6	21.0	17.6
		1513	1752.6	21.2	17.4
	Subtest 5	1312	1712.4	22.4	18.6
		1413	1732.6	22.4	18.4
		1513	1752.6	22.5	18.5

Note(s):

- KDB 941225 D01 – Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit.

10.5. W-CDMA Band II

Target Power for W-CDMA Band II 23 dBm

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

Release 99

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	β_c/β_d	8/15

Release 99 RMC Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)	
				Full Power	Reduced Power
W-CDMA (UMTS) Band II	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	23.3	17.8
		9400	1880.0	23.2	17.7
		9538	1907.6	23.3	17.8

HSDPA

The following 4 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
W-CDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm 2			
	β_c	2/15	12/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	β_c/β_d	2/15	12/15	15/8	15/4
	β_{hs}	4/15	24/15	30/15	30/15
CM (dB)	0	0	0.5	0.5	
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	Ahs = β_{hs}/β_c	30/15			

HSDPA Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)	
				Full Power	Reduced Power
W-CDMA (UMTS) Band II	Subtest 1	9262	1852.4	22.7	17.1
		9400	1880.0	22.6	17.2
		9538	1907.6	22.6	17.1
	Subtest 2	9262	1852.4	21.6	16.0
		9400	1880.0	21.6	16.1
		9538	1907.6	21.7	16.0
	Subtest 3	9262	1852.4	20.6	14.9
		9400	1880.0	20.6	14.9
		9538	1907.6	20.7	15.0
	Subtest 4	9262	1852.4	20.6	14.8
		9400	1880.0	20.4	14.7
		9538	1907.6	20.5	14.9

Note(s):

KDB 941225 D01 – Body SAR is not required for HSDPA when the maximum average output of each RF channel with HSDPA active is less than ¼ dB higher than that measured without HSDPA using 12.2 kbps RMC or the maximum SAR for 12.2 kbps RMC is < 75% of the SAR limit.

HSPA (HSDPA & HSUPA)

The following 5 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSPA	HSPA	HSPA	HSPA	HSPA
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/15	15/15
	β_{ec}	209/225	12/15	30/15	2/15	24/15
	β_c/β_d	11/15	6/15	15/9	2/15	15/15
	β_{hs}	22/15	12/15	30/15	4/15	30/15
	β_{ed}	1309/225	94/75	47/15	56/75	134/15
CM (dB)	1.0	3.0	2.0	3.0	1.0	
MPR (dB)	0	2	1	2	0	
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = β_{hs}/β_c	30/15				
HSUPA Specific Settings	D E-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_TFCIs	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18		E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27

HSUPA Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)	
				Full Power	Reduced Power
WCDMA (UMTS) Band II	Subtest 1	9262	1852.4	22.2	17.1
		9400	1880.0	22.3	16.7
		9538	1907.6	22.7	16.9
	Subtest 2	9262	1852.4	21.2	15.8
		9400	1880.0	21.2	15.7
		9538	1907.6	21.5	15.9
	Subtest 3	9262	1852.4	21.3	16.1
		9400	1880.0	21.3	15.8
		9538	1907.6	21.2	16.1
	Subtest 4	9262	1852.4	21.5	16.2
		9400	1880.0	21.6	16.2
		9538	1907.6	21.7	16.5
	Subtest 5	9262	1852.4	22.7	17.4
		9400	1880.0	22.7	17.3
		9538	1907.6	22.7	17.6

Note(s):

- KDB 941225 D01 – Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit.

10.6. CDMA BC0

Target Power for CDMA BC0 24 dBm

Tune-Up Tolerance: +0.5 dB/- 1.0 dB

1xRTT Output Power Measurement Results

CDMA			Avg Pwr (dBm)					
Band	Ch	Freq. (MHz)	RC1 - SO55		RC3 - SO55		RC3 - SO32	
			(Loopback)		(Loopback)		(+F-SCH)	
			Full Power	Reduced Power	Full Power	Reduced Power	Full Power	Reduced Power
BC 0	1013	824.70	23.8	19.1	23.8	18.9	23.8	19.1
	384	836.52	23.8	18.9	23.8	18.9	23.8	18.9
	777	848.31	23.7	18.8	23.7	19.1	23.7	18.8

1xEV-DO Rel. 0 Output Power Measurement Results

Band	FTAP Rate	RTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)	
					Full Power	Reduced Power
BC 0	307.2 kbps (2 slot, QPSK)	153.6 kbps	1013	824.70	23.8	19.1
			384	836.52	23.8	18.9
			777	848.31	23.6	18.8

1xEV-DO Rev. A Output Power Measurement Results

Band	FETAP Traffic Format	RETAP Data Payload Size	Channel	f (MHz)	Avg Pwr (dBm)	
					Full Power	Reduced Power
BC 0	307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	1013	824.70	23.7	19.1
			384	836.52	23.8	18.6
			777	848.31	23.6	18.6

10.7. CDMA BC1

Target Power for CDMA BC1 24 dBm

Tune-Up Tolerance: +0.5 dB/- 1.0 dB

1xRTT Output Power Measurement Results

CDMA			Avg Pwr (dBm)					
Band	Ch	Freq. (MHz)	RC1 - SO55		RC3 - SO55		RC3 - SO32	
			(Loopback)		(Loopback)		(+F-SCH)	
			Full Power	Reduced Power	Full Power	Reduced Power	Full Power	Reduced Power
BC 1	25	1851.25	24.2	17.5	24.2	17.6	24.2	17.5
	600	1880	24.0	17.0	24.0	17.4	24.0	17.4
	1175	1908.75	24.0	17.6	24.0	17.8	24.0	17.7

1xEV-DO Rel. 0 Output Power Measurement Results

Band	FTAP Rate	RTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)	
					Full Power	Reduced Power
BC 1	307.2 kbps (2 slot, QPSK)	153.6 kbps	25	1851.25	24.2	17.4
			600	1880	24.0	17.2
			1175	1908.75	24.0	17.7

1xEV-DO Rev. A Output Power Measurement Results

Band	FETAP Traffic Format	RETAP Data Payload Size	Channel	f (MHz)	Avg Pwr (dBm)	
					Full Power	Reduced Power
BC 1	307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	25	1851.25	24.2	17.3
			600	1880	24.0	17.3
			1175	1908.75	24.0	17.5

10.8. CDMA BC10

Target Power for CDMA BC10 24 dBm

Tune-Up Tolerance: +0.5 dB/- 1.0 dB

1xRTT Output Power Measurement Results

CDMA			Avg Pwr (dBm)					
Band	Ch	Freq. (MHz)	RC1 - SO55		RC3 - SO55		RC3 - SO32	
			(Loopback)		(Loopback)		(+F-SCH)	
			Full Power	Reduced Power	Full Power	Reduced Power	Full Power	Reduced Power
BC 10	450	817.25	23.75	18.71	23.70	18.73	23.7	18.7
	560	820	23.72	18.75	23.70	18.83	23.7	18.9
	670	822.75	23.80	18.90	23.70	18.9	23.7	18.9

1xEV-DO Rel. 0 Output Power Measurement Results

Band	FTAP Rate	RTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)	
					Full Power	Reduced Power
BC 10	307.2 kbps (2 slot, QPSK)	153.6 kbps	450	817.25	23.7	18.8
			560	820.0	23.7	18.8
			670	822.75	23.7	18.8

1xEV-DO Rev. A Output Power Measurement Results

Band	FETAP Traffic Format	RETAP Data Payload Size	Channel	f (MHz)	Avg Pwr (dBm)	
					Full Power	Reduced Power
BC 10	307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	450	817.25	23.8	18.7
			560	820.0	23.7	18.7
			670	822.75	23.8	18.8

10.9. LTE Band 2

Target Power for LTE Band 2, QPSK and 16QAM modulations

LTE Band 2	
All Bandwidths	23.0 dBm

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4, 10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3	13	10	Table 6.2.4-2	Table 6.2.4-2
	6.6.3.3.2				
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
				> 40	≤ 1
NS_09	6.6.3.3.4	21	10, 15	> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23 ¹	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

LTE Band 2, 20 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)	
20	18700	1860	QPSK	1	0	0	0	22.8	
				1	49	0	0	22.9	
				1	99	0	0	22.8	
				50	0	1	1	21.8	
				50	24	1	2	21.7	
				50	49	1	2	21.7	
				100	0	1	2	21.7	
			16QAM	1	0	1	1	21.9	
				1	49	1	1	22.1	
				1	99	1	1	21.8	
				50	0	2	3	20.7	
				50	24	2	3	20.6	
				50	49	2	3	20.6	
				100	0	2	3	20.7	
	18900	1880	QPSK	1	0	0	1	22.8	
				1	49	0	0	22.8	
				1	99	0	1	22.7	
				50	0	1	2	21.8	
				50	24	1	2	21.7	
				50	49	1	2	21.7	
				100	0	1	1	21.8	
			16QAM	1	0	1	1	22.1	
				1	49	1	1	22.1	
				1	99	1	1	22.2	
				50	0	2	3	20.7	
				50	24	2	3	20.6	
				50	49	2	3	20.6	
				100	0	2	3	20.7	
	19100	1900	QPSK	1	0	0	0	22.9	
				1	49	0	0	22.8	
1				99	0	0	23.3		
50				0	1	2	21.7		
50				24	1	2	21.6		
50				49	1	2	21.7		
100				0	1	2	21.7		
16QAM			1	0	1	1	22.1		
			1	49	1	1	21.8		
			1	99	1	1	22.2		
			50	0	2	3	20.7		
			50	24	2	3	20.6		
			50	49	2	3	20.7		
			100	0	2	3	20.7		

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
20	18700	1860	QPSK	1	0	MPR is disabled when power reduction is enabled		17.4
				1	49			17.5
				1	99			17.3
				50	0			17.4
				50	24			17.4
				50	49			17.3
			100	0	17.3			
			16QAM	1	0			17.4
				1	49			17.4
				1	99			17.3
				50	0			17.3
				50	24			17.3
	50	49		17.2				
	18900	1880	QPSK	1	0			17.5
				1	49			17.5
				1	99			17.5
				50	0			17.4
				50	24			17.4
				50	49			17.3
			100	0	17.3			
			16QAM	1	0			17.6
				1	49			17.6
				1	99			17.6
				50	0			17.3
				50	24			17.3
	50	49		17.3				
	19100	1900	QPSK	1	0			17.5
				1	49			17.4
				1	99			17.6
				50	0			17.4
				50	24			17.3
				50	49			17.4
			100	0	17.3			
			16QAM	1	0			17.5
				1	49			17.6
				1	99			17.6
50				0	17.3			
50				24	17.3			
50	49	17.4						
100	0	17.3						

LTE Band 2, 15 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
15	18675	1857.5	QPSK	1	0	0	0	22.8
				1	37	0	0	22.8
				1	74	0	0	22.8
				38	0	1	2	21.5
				38	18	1	1	21.7
				38	37	1	1	21.7
				75	0	1	1	21.7
			16QAM	1	0	1	1	22.0
				1	37	1	1	22.0
				1	74	1	1	21.9
				38	0	2	2	20.6
				38	18	2	2	20.7
				38	37	2	2	20.7
				75	0	2	2	20.7
	18900	1880	QPSK	1	0	0	0	22.8
				1	37	0	0	22.8
				1	74	0	0	22.8
				38	0	1	1	21.6
				38	18	1	2	21.6
				38	37	1	2	21.5
				75	0	1	2	21.6
			16QAM	1	0	1	2	21.4
				1	37	1	2	21.5
				1	74	1	2	21.5
				38	0	2	2	20.6
				38	18	2	2	20.7
				38	37	2	3	20.6
				75	0	2	3	20.5
	19125	1902.5	QPSK	1	0	0	0	22.7
				1	37	0	0	22.8
1				74	0	0	23.1	
38				0	1	2	21.6	
38				18	1	1	21.7	
38				37	1	1	21.7	
75				0	1	1	21.7	
16QAM			1	0	1	1	22.1	
			1	37	1	1	22.2	
			1	74	1	1	22.4	
			38	0	2	2	21.0	
			38	18	2	2	20.8	
			38	37	2	2	20.8	
			75	0	2	2	20.8	

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
15	18675	1857.5	QPSK	1	0	MPR is disabled when power reduction is enabled		17.7
				1	37			17.4
				1	74			17.4
				38	0			17.4
				38	18			17.3
				38	37			17.4
				75	0			17.3
			16QAM	1	0			17.2
				1	37			17.3
				1	74			17.1
				38	0			17.4
				38	18			17.3
				38	37			17.4
				75	0			17.4
	18900	1880	QPSK	1	0			17.8
				1	37			17.6
				1	74			17.6
				38	0			17.2
				38	18			17.2
				38	37			17.3
				75	0			17.3
			16QAM	1	0			17.4
				1	37			17.6
				1	74			17.6
				38	0			17.2
				38	18			17.4
				38	37			17.4
				75	0			17.3
	19125	1902.5	QPSK	1	0			17.5
				1	37			17.5
				1	74			17.6
				38	0			17.2
				38	18			17.4
				38	37			17.4
				75	0			17.4
			16QAM	1	0			17.5
				1	37			17.8
				1	74			17.7
				38	0			17.2
				38	18			17.3
				38	37			17.3
				75	0			17.4

LTE Band 2, 10 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
10	18650	1855	QPSK	1	0	0	0	22.7
				1	24	0	0	22.8
				1	49	0	0	22.8
				25	0	1	1	21.8
				25	12	1	1	21.8
				25	24	1	1	21.8
				50	0	1	1	21.6
			16QAM	1	0	1	1	21.9
				1	24	1	1	21.6
				1	49	1	1	21.6
				25	0	2	2	20.9
				25	12	2	2	20.8
				25	24	2	2	20.9
				50	0	2	2	20.8
	18900	1880	QPSK	1	0	0	0	22.7
				1	24	0	0	22.9
				1	49	0	0	22.8
				25	0	1	1	21.7
				25	12	1	1	21.8
				25	24	1	1	21.8
				50	0	1	1	21.7
			16QAM	1	0	1	1	21.6
				1	24	1	1	21.6
				1	49	1	1	21.5
				25	0	2	2	20.8
				25	12	2	2	20.8
				25	24	2	2	20.8
				50	0	2	2	20.6
	19150	1905	QPSK	1	0	0	1	21.4
				1	24	0	0	22.4
1				49	0	1	22.3	
25				0	1	1	21.8	
25				12	1	1	21.8	
25				24	1	1	21.9	
50				0	1	1	21.7	
16QAM			1	0	1	1	21.8	
			1	24	1	1	21.5	
			1	49	1	1	21.6	
			25	0	2	2	20.9	
			25	12	2	2	20.9	
			25	24	2	2	21.0	
			50	0	2	2	20.9	

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
10	18650	1855	QPSK	1	0	MPR is disabled when power reduction is enabled		17.5
				1	24			17.5
				1	49			17.4
				25	0			17.1
				25	12			17.4
				25	24			17.3
			50	0	17.3			
			16QAM	1	0			17.4
				1	24			17.5
				1	49			17.6
				25	0			17.3
				25	12			17.4
				25	24			17.3
			18900	1880	QPSK			1
	1	24						17.4
	1	49						17.3
	25	0						17.2
	25	12						17.3
	25	24						17.3
	50	0			17.3			
	16QAM	1			0			17.2
		1			24			17.2
		1			49			17.0
		25			0			17.1
		25			12			17.4
		25			24			17.3
	19150	1905			QPSK			1
			1	24				17.4
			1	49				17.7
			25	0				17.3
			25	12				17.4
			25	24				17.4
			50	0	17.4			
			16QAM	1	0			17.1
				1	24			17.0
				1	49			17.1
				25	0			17.3
				25	12			17.3
				25	24			17.4
			50	0	17.4			

LTE Band 2, 5 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
5	18625	1852.5	QPSK	1	0	0	0	22.5
				1	12	0	0	22.9
				1	24	0	0	22.8
				12	0	1	1	21.8
				12	6	1	1	21.9
				12	11	1	1	21.9
			16QAM	25	0	1	1	21.7
				1	0	1	1	22.3
				1	12	1	1	22.4
				1	24	1	1	22.3
				12	0	2	2	20.9
				12	6	2	2	20.9
	18900	1880	QPSK	12	11	2	2	20.9
				25	0	2	2	20.8
				1	0	0	0	22.9
				1	12	0	0	22.9
				1	24	0	0	22.9
				12	0	1	1	21.9
			16QAM	12	6	1	1	21.9
				12	11	1	1	21.9
				25	0	1	1	21.7
				1	0	1	1	22.2
				1	12	1	1	22.1
				1	24	1	1	22.1
	19175	1907.5	QPSK	12	0	2	2	21.0
				12	6	2	2	20.9
				12	11	2	2	20.9
				25	0	2	2	20.8
				1	0	0	1	22.4
				1	12	0	0	22.9
			16QAM	1	24	0	0	22.9
				12	0	1	1	22.0
				12	6	1	1	22.1
				12	11	1	1	22.1
				25	0	1	1	21.9
				1	0	1	1	22.4
16QAM	1	12	1	0	22.5			
	1	24	1	0	22.6			
	12	0	2	2	21.1			
	12	6	2	2	21.1			
	12	11	2	2	21.1			
	25	0	2	2	21.0			

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
5	18625	1852.5	QPSK	1	0	MPR is disabled when power reduction is enabled		17.4
				1	12			17.4
				1	24			17.4
				12	0			17.3
				12	6			17.5
				12	11			17.4
				25	0			17.4
			16QAM	1	0			17.7
				1	12			17.8
				1	24			17.9
				12	0			17.3
				12	6			17.4
				12	11			17.3
				25	0			17.3
	18900	1880	QPSK	1	0			17.5
				1	12			17.4
				1	24			17.4
				12	0			17.0
				12	6			17.4
				12	11			17.4
				25	0			17.3
			16QAM	1	0			17.5
				1	12			17.6
				1	24			17.8
				12	0			17.4
				12	6			17.4
				12	11			17.3
				25	0			17.3
	19175	1907.5	QPSK	1	0			17.5
				1	12			17.5
				1	24			17.6
				12	0			17.4
				12	6			17.5
				12	11			17.6
				25	0			17.5
			16QAM	1	0			17.5
1				12	17.9			
1				24	17.9			
12				0	17.6			
12				6	17.6			
12				11	17.5			
25				0	17.5			

LTE Band 2, 3 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
3	18615	1851.5	QPSK	1	0	0	0	22.6
				1	7	0	0	22.9
				1	14	0	0	22.9
				8	0	1	1	21.8
				8	4	1	1	21.8
				8	7	1	1	21.9
			15	0	1	1	21.8	
			16QAM	1	0	1	1	21.5
			1	7	1	1	21.5	
			1	14	1	1	21.5	
			8	0	2	2	20.9	
			8	4	2	2	20.9	
	8	7	2	2	21.0			
	15	0	2	2	20.8			
	18900	1880	QPSK	1	0	0	0	22.9
				1	7	0	0	22.9
				1	14	0	0	22.9
				8	0	1	1	21.9
				8	4	1	1	22.0
				8	7	1	1	22.0
			15	0	1	1	21.9	
			16QAM	1	0	1	1	22.2
			1	7	1	1	22.3	
			1	14	1	1	22.1	
			8	0	2	2	20.9	
			8	4	2	2	20.9	
	8	7	2	2	20.9			
	15	0	2	2	21.0			
	19184	1908.4	QPSK	1	0	0	0	22.9
				1	7	0	0	22.9
				1	14	0	0	22.9
				8	0	1	1	22.2
				8	4	1	1	22.1
				8	7	1	1	22.1
			15	0	1	1	22.0	
			16QAM	1	0	1	1	21.9
1			7	1	1	21.7		
1			14	1	1	21.7		
8			0	2	2	21.1		
8			4	2	2	21.1		
8	7	2	2	21.2				
15	0	2	2	21.0				

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
3	18615	1851.5	QPSK	1	0	MPR is disabled when power reduction is enabled		17.3
				1	7			17.3
				1	14			17.6
				8	0			17.4
				8	4			17.4
				8	7			17.3
			15	0	17.4			
			16QAM	1	0			17.1
				1	7			17.1
				1	14			17.1
				8	0			17.2
				8	4			17.3
				8	7			17.4
			18900	1880	QPSK			1
	1	7						17.4
	1	14						17.4
	8	0						17.3
	8	4						17.4
	8	7						17.4
	15	0			17.4			
	16QAM	1			0			17.5
		1			7			17.5
		1			14			17.5
		8			0			17.3
		8			4			17.5
		8			7			17.4
	19184	1908.4			QPSK			1
			1	7				17.6
			1	14				17.7
			8	0				17.7
			8	4				17.6
			8	7				17.7
			15	0	17.5			
			16QAM	1	0			17.7
				1	7			17.9
				1	14			17.8
				8	0			17.6
				8	4			17.6
				8	7			17.6
			15	0	17.6			

LTE Band 2, 1.4 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
1.4	18607	1850.7	QPSK	1	0	0	0	22.7
				1	2	0	0	22.7
				1	5	0	0	22.8
				8	0	1	0	22.9
				8	1	1	0	22.7
				8	2	1	0	22.7
				15	0	1	1	22.0
			16QAM	1	0	1	1	22.2
				1	2	1	1	22.2
				1	5	1	1	22.2
				8	0	2	1	21.8
				8	1	2	1	21.8
				8	2	2	1	21.9
				15	0	2	2	20.9
	18900	1880	QPSK	1	0	0	0	22.5
				1	2	0	0	22.8
				1	5	0	0	22.9
				8	0	1	0	22.9
				8	1	1	0	22.8
				8	2	1	0	22.8
				15	0	1	1	22.1
			16QAM	1	0	1	1	22.0
				1	2	1	1	21.5
				1	5	1	1	21.5
				8	0	2	1	22.1
				8	1	2	1	22.1
				8	2	2	1	22.3
				15	0	2	2	21.1
	19192	1909.2	QPSK	1	0	0	0	22.7
				1	2	0	0	22.9
				1	5	0	0	22.9
				8	0	1	0	22.9
				8	1	1	0	22.9
				8	2	1	0	22.9
				15	0	1	1	22.2
			16QAM	1	0	1	1	22.1
1				2	1	1	22.1	
1				5	1	1	22.1	
8				0	2	1	22.1	
8				1	2	1	22.1	
8				2	2	1	22.1	
15				0	2	2	21.4	

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
1.4	18607	1850.7	QPSK	1	0	MPR is disabled when power reduction is enabled		17.4
				1	2			17.6
				1	5			17.4
				8	0			17.6
				8	1			17.6
				8	2			17.4
			16QAM	15	0			17.6
				1	0			17.7
				1	2			17.7
				1	5			17.6
				8	0			17.4
				8	1			17.5
	18900	1880	QPSK	8	2			17.2
				8	2			17.2
				15	0			17.2
				1	0			17.5
				1	2			17.4
				1	5			17.4
			16QAM	8	0			17.4
				8	1			17.4
				8	2			17.4
				15	0			17.4
				1	0			17.4
				1	2			17.5
	19192	1909.2	QPSK	1	0			17.5
				1	2			17.5
				1	5			17.8
				8	0			17.6
				8	1			17.6
				8	2			17.6
			16QAM	15	0			17.6
				1	0			17.1
				1	2			17.1
				1	5			17.3
				8	0			17.8
				8	1			17.8
			8	2	17.8			
			15	0	17.8			

10.10. LTE Band 4

Target Power for LTE Band 4, QPSK and 16QAM modulations

LTE Band 4	
All Bandwidths	23.0 dBm

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4, 10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3	13	10	Table 6.2.4-2	Table 6.2.4-2
	6.6.3.3.2				
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23 ¹	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

LTE Band 4, 20 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
20	20050	1720	QPSK	1	0	0	0	22.9
				1	49	0	0	22.9
				1	99	0	0	22.9
				50	0	1	1	21.7
				50	24	1	1	21.7
				50	49	1	1	21.6
				100	0	1	1	21.6
			16QAM	1	0	1	1	22.0
				1	49	1	1	22.0
				1	99	1	1	22.0
				50	0	2	3	19.8
				50	24	2	3	19.7
				50	49	2	2	20.6
				100	0	2	2	20.6
	20175	1732.5	QPSK	1	0	0	0	22.9
				1	49	0	0	22.9
				1	99	0	0	22.9
				50	0	1	2	20.8
				50	24	1	2	20.8
				50	49	1	2	20.8
				100	0	1	2	20.8
			16QAM	1	0	1	2	21.3
				1	49	1	2	21.3
				1	99	1	2	21.2
				50	0	2	3	19.8
				50	24	2	3	19.8
				50	49	2	3	19.7
				100	0	2	3	19.7
	20300	1745	QPSK	1	0	0	0	22.9
				1	49	0	0	22.9
				1	99	0	0	22.9
				50	0	1	1	21.8
				50	24	1	1	21.7
				50	49	1	1	21.7
				100	0	1	1	21.7
			16QAM	1	0	1	1	22.1
1				49	1	1	22.0	
1				99	1	1	22.0	
50				0	2	2	20.8	
50				24	2	2	20.8	
50				49	2	2	20.7	
100				0	2	2	20.8	

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
20	20050	1720	QPSK	1	0	MPR is disabled when power reduction is enabled		19.0
				1	49			19.1
				1	99			19.1
				50	0			19.0
				50	24			19.0
				50	49			18.9
				100	0			19.0
			16QAM	1	0			19.0
				1	49			19.0
				1	99			19.0
				50	0			19.0
				50	24			18.9
				50	49			18.8
				100	0			18.9
	20175	1732.5	QPSK	1	0			19.0
				1	49			19.1
				1	99			19.1
				50	0			19.0
				50	24			19.0
				50	49			18.9
				100	0			18.9
			16QAM	1	0			19.0
				1	49			19.0
				1	99			19.0
				50	0			18.9
				50	24			19.0
				50	49			18.8
				100	0			18.9
	20300	1745	QPSK	1	0			19.0
				1	49			19.0
				1	99			19.0
				50	0			18.9
				50	24			18.9
				50	49			18.9
				100	0			19.0
			16QAM	1	0			19.0
				1	49			19.0
				1	99			19.1
				50	0			18.8
				50	24			18.9
				50	49			18.9
				100	0			18.8

LTE Band 4, 15 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
15	20025	1715	QPSK	1	0	0	0	22.9
				1	37	0	0	23.0
				1	74	0	0	22.9
				38	0	1	1	21.6
				38	18	1	1	21.7
				38	37	1	1	21.6
				75	0	1	2	21.5
			16QAM	1	0	1	1	22.3
				1	37	1	1	22.2
				1	74	1	1	22.2
				38	0	2	2	20.8
				38	18	2	2	20.8
				38	37	2	2	20.8
				75	0	2	2	20.7
	20175	1732.5	QPSK	1	0	0	0	22.9
				1	37	0	0	22.9
				1	74	0	0	22.9
				38	0	1	1	21.7
				38	18	1	1	21.8
				38	37	1	1	21.6
				75	0	1	1	21.6
			16QAM	1	0	1	1	22.4
				1	37	1	1	22.5
				1	74	1	1	22.4
				38	0	2	2	20.9
				38	18	2	2	20.9
				38	37	2	2	20.9
				75	0	2	2	20.8
	20325	1750	QPSK	1	0	0	0	22.9
				1	37	0	0	22.9
1				74	0	0	22.8	
38				0	1	2	21.5	
38				18	1	1	21.6	
38				37	1	1	21.6	
75				0	1	2	21.5	
16QAM			1	0	1	1	21.8	
			1	37	1	1	21.7	
			1	74	1	1	21.6	
			38	0	2	2	20.7	
			38	18	2	2	20.8	
			38	37	2	2	20.8	
			75	0	2	2	20.6	

**Reduced Power
 (Proximity Sensor
 On)**

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
15	20025	1715	QPSK	1	0	MPR is disabled when power reduction is enabled		18.8
				1	37			19.2
				1	74			19.1
				38	0			18.8
				38	18			19.1
				38	37			19.0
				75	0			19.0
			16QAM	1	0			19.3
				1	37			19.3
				1	74			19.2
				38	0			18.8
				38	18			19.0
				38	37			18.9
				75	0			18.9
	20175	1732.5	QPSK	1	0			19.2
				1	37			19.3
				1	74			19.2
				38	0			19.0
				38	18			19.1
				38	37			19.0
				75	0			18.9
			16QAM	1	0			19.4
				1	37			19.4
				1	74			19.4
				38	0			18.9
				38	18			19.0
				38	37			19.1
				75	0			18.9
	20325	1750	QPSK	1	0			19.1
				1	37			19.0
				1	74			19.1
				38	0			18.9
				38	18			18.9
				38	37			18.5
				75	0			18.6
			16QAM	1	0			19.2
1				37	19.2			
1				74	19.2			
38				0	18.7			
38				18	18.8			
38				37	18.5			
75				0	18.7			

LTE Band 4, 10 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
10	20000	1715	QPSK	1	0	0	0	22.8
				1	24	0	1	22.4
				1	49	0	0	22.8
				25	0	1	1	22.0
				25	12	1	1	21.9
				25	24	1	1	22.0
				50	0	1	1	21.9
			16QAM	1	0	1	1	22.3
				1	24	1	1	22.3
				1	49	1	0	22.5
				25	0	2	2	21.0
				25	12	2	2	21.0
				25	24	2	2	20.9
				50	0	2	2	20.9
	20175	1732.5	QPSK	1	0	0	0	22.9
				1	24	0	0	23.0
				1	49	0	0	22.9
				25	0	1	1	22.0
				25	12	1	1	22.0
				25	24	1	1	22.0
				50	0	1	1	21.9
			16QAM	1	0	1	1	21.8
				1	24	1	1	21.8
				1	49	1	1	21.7
				25	0	2	2	21.0
				25	12	2	2	21.0
				25	24	2	2	21.1
				50	0	2	2	21.1
	20350	1750	QPSK	1	0	0	0	22.6
				1	24	0	0	22.8
				1	49	0	0	22.7
				25	0	1	1	21.8
				25	12	1	1	21.9
				25	24	1	1	21.9
				50	0	1	1	21.8
			16QAM	1	0	1	1	21.7
1				24	1	1	21.5	
1				49	1	2	21.5	
25				0	2	2	20.8	
25				12	2	2	20.9	
25				24	2	2	20.8	
50				0	2	2	20.7	

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
10	20000	1715	QPSK	1	0	MPR is disabled when power reduction is enabled		19.3
				1	24			19.2
				1	49			19.2
				25	0			19.1
				25	12			19.1
				25	24			19.0
				50	0			19.1
			16QAM	1	0			19.3
				1	24			19.2
				1	49			19.4
				25	0			19.1
				25	12			19.2
				25	24			19.0
				50	0			19.0
	20175	1732.5	QPSK	1	0			18.9
				1	24			19.1
				1	49			19.2
				25	0			19.0
				25	12			19.1
				25	24			19.1
				50	0			19.1
			16QAM	1	0			18.7
				1	24			18.9
				1	49			18.8
				25	0			18.9
				25	12			19.1
				25	24			19.1
				50	0			19.0
	20350	1750	QPSK	1	0			19.0
				1	24			19.1
				1	49			19.0
				25	0			18.8
				25	12			19.0
				25	24			18.9
				50	0			18.9
			16QAM	1	0			18.7
				1	24			18.7
				1	49			18.7
				25	0			18.8
				25	12			18.9
				25	24			18.9
				50	0			18.8

LTE Band 4, 5 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
5	19975	1712.5	QPSK	1	0	0	0	22.9
				1	12	0	0	23.0
				1	24	0	0	23.0
				12	0	1	1	22.0
				12	6	1	1	22.1
				12	11	1	1	22.1
			16QAM	25	0	1	1	22.0
				1	0	1	1	22.5
				1	12	1	1	22.4
				1	24	1	1	22.4
				12	0	2	2	21.1
				12	6	2	2	21.1
	20175	1732.5	QPSK	12	11	2	2	21.1
				25	0	2	2	20.9
				1	0	0	0	22.7
				1	12	0	0	23.1
				1	24	0	0	23.1
				12	0	1	1	22.1
			16QAM	12	6	1	1	22.1
				12	11	1	1	22.1
				25	0	1	1	22.0
				1	0	1	1	22.5
				1	12	1	1	22.6
				1	24	1	1	22.6
	20375	1752.5	QPSK	12	0	2	2	21.2
				12	6	2	2	21.2
				12	11	2	2	21.2
				25	0	2	2	21.0
				1	0	0	0	22.8
				1	12	0	0	22.8
			16QAM	1	24	0	1	22.6
				12	0	1	1	21.9
				12	6	1	1	21.9
				12	11	1	1	21.9
				25	0	1	1	21.7
				1	0	1	2	21.5
16QAM	1	12	1	2	21.5			
	1	24	1	2	21.5			
	12	0	2	2	20.8			
	12	6	2	2	20.9			
	12	11	2	2	20.9			
	25	0	2	2	20.9			

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
5	19975	1712.5	QPSK	1	0	0	0	19.3
				1	12	0	0	19.3
				1	24	0	0	19.2
				12	0	1	0	19.1
				12	6	1	0	19.2
				12	11	1	0	19.2
				25	0	1	0	19.2
			16QAM	1	0	1	0	19.4
				1	12	1	0	19.4
				1	24	1	0	19.4
				12	0	2	0	19.1
				12	6	2	0	19.2
				12	11	2	0	19.2
				25	0	2	0	19.2
	20175	1732.5	QPSK	1	0	0	0	19.1
				1	12	0	0	19.2
				1	24	0	0	19.2
				12	0	1	0	19.1
				12	6	1	0	19.2
				12	11	1	0	19.2
				25	0	1	0	19.1
			16QAM	1	0	1	0	19.4
				1	12	1	0	19.3
				1	24	1	0	19.3
				12	0	2	0	19.2
				12	6	2	0	19.1
				12	11	2	0	19.1
				25	0	2	0	19.1
	20375	1752.5	QPSK	1	0	0	0	19.2
				1	12	0	0	19.1
				1	24	0	0	19.0
				12	0	1	1	18.9
				12	6	1	0	19.1
				12	11	1	0	19.0
				25	0	1	1	18.9
			16QAM	1	0	1	0	19.3
1				12	1	0	19.4	
1				24	1	0	19.2	
12				0	2	0	19.0	
12				6	2	0	19.0	
12				11	2	0	19.0	
25				0	2	1	18.9	

LTE Band 4, 3 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
3	19965	1711.5	QPSK	1	0	0	0	22.7
				1	7	0	0	22.7
				1	14	0	0	22.5
				8	0	1	1	22.1
				8	4	1	1	22.2
				8	7	1	1	22.2
				15	0	1	1	22.2
			16QAM	1	0	1	0	22.4
				1	7	1	0	22.4
				1	14	1	0	22.5
				8	0	2	2	21.1
				8	4	2	2	21.1
				8	7	2	2	21.1
				15	0	2	2	21.2
	20175	1732.5	QPSK	1	0	0	0	22.6
				1	7	0	1	22.3
				1	14	0	1	22.2
				8	0	1	1	22.1
				8	4	1	1	22.1
				8	7	1	1	22.2
				15	0	1	1	22.1
			16QAM	1	0	1	1	21.7
				1	7	1	1	21.8
				1	14	1	1	21.7
				8	0	2	2	21.1
				8	4	2	2	21.1
				8	7	2	2	21.2
				15	0	2	2	21.1
	20384	1753.4	QPSK	1	0	0	0	22.8
				1	7	0	0	22.9
1				14	0	0	22.8	
8				0	1	1	21.9	
8				4	1	1	21.9	
8				7	1	1	22.0	
15				0	1	1	21.9	
16QAM			1	0	1	1	21.5	
			1	7	1	1	21.6	
			1	14	1	1	21.5	
			8	0	2	2	21.1	
			8	4	2	2	21.0	
			8	7	2	2	21.0	
			15	0	2	2	21.0	

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
3	19965	1711.5	QPSK	1	0	MPR is disabled when power reduction is enabled		19.3
				1	7			19.3
				1	14			19.3
				8	0			19.1
				8	4			19.2
				8	7			19.2
				15	0			19.1
			16QAM	1	0			19.3
				1	7			19.3
				1	14			19.4
				8	0			19.1
				8	4			19.1
				8	7			19.2
				15	0			19.2
	20175	1732.5	QPSK	1	0			19.0
				1	7			19.1
				1	14			19.1
				8	0			19.1
				8	4			19.1
				8	7			19.2
				15	0			19.3
			16QAM	1	0			18.6
				1	7			18.6
				1	14			18.7
				8	0			19.0
				8	4			19.1
				8	7			19.1
				15	0			19.1
	20384	1753.4	QPSK	1	0			18.9
				1	7			19.0
				1	14			18.9
				8	0			18.9
				8	4			18.9
				8	7			18.9
				15	0			18.9
			16QAM	1	0			18.8
1				7	18.5			
1				14	18.6			
8				0	19.0			
8				4	19.0			
8				7	19.0			
15				0	19.0			

LTE Band 4, 1.4 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
1.4	19957	1710.7	QPSK	1	0	0	0	22.5
				1	2	0	0	22.6
				1	5	0	1	22.5
				8	0	1	0	22.6
				8	1	1	0	22.6
				8	2	1	0	22.6
			15	0	1	1	22.2	
			16QAM	1	0	1	1	21.9
			1	2	1	1	21.7	
			1	5	1	1	21.7	
			8	0	2	1	22.3	
			8	1	2	1	22.4	
	8	2	2	1	22.4			
	15	0	2	1	22.5			
	20175	1732.5	QPSK	1	0	0	0	22.9
				1	2	0	0	23.0
				1	5	0	0	22.9
				8	0	1	0	22.9
				8	1	1	0	22.9
				8	2	1	0	22.9
			15	0	1	1	22.2	
			16QAM	1	0	1	1	22.2
			1	2	1	1	22.1	
			1	5	1	1	22.1	
			8	0	2	1	22.1	
			8	1	2	1	22.1	
	8	2	2	1	22.1			
	15	0	2	2	21.3			
	20392	1754.2	QPSK	1	0	0	0	22.9
				1	2	0	0	22.9
				1	5	0	0	22.9
				8	0	1	0	22.9
				8	1	1	0	23.0
				8	2	1	0	22.9
			15	0	1	1	22.0	
			16QAM	1	0	1	2	21.5
1			2	1	1	21.6		
1			5	1	2	21.5		
8			0	2	1	22.1		
8			1	2	1	22.1		
8	2	2	1	22.1				
15	0	2	2	21.4				

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)		
1.4	19957	1710.7	QPSK	1	0	MPR is disabled when power reduction is enabled		18.9		
				1	2			19.0		
				1	5			19.0		
				8	0			19.0		
				8	1			19.0		
				8	2			19.0		
			15	0	19.0					
			16QAM	1	0			18.5		
				1	2			18.5		
				1	5			18.5		
				8	0			19.1		
				8	1			19.2		
	8	2		19.2						
	20175	1732.5	QPSK	15	0			19.2		
				1	0			19.2		
				1	2			19.1		
				1	5			19.1		
				8	0			19.1		
				8	1			19.2		
			16QAM	8	2			19.2		
				15	0			19.2		
				1	0			19.1		
				1	2			19.1		
				1	5			19.2		
				8	0			19.2		
	20392	1754.2	QPSK	8	1			19.1		
				8	2			19.2		
				15	0			19.2		
				1	0			18.8		
				1	2			18.9		
				1	5			18.9		
			16QAM	8	0			18.9		
				8	1			19.0		
				8	2			19.0		
				15	0			19.1		
				1	0			18.9		
1				2	18.9					
								18.9		
								1	5	18.9
								8	0	19.0
								8	1	19.0
								8	2	19.0
								15	0	18.9

10.11. LTE Band 5

Target Power for LTE Band 5, QPSK and 16QAM modulations

LTE Band 5	
All Bandwidths	23.0 dBm

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4, 10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3	13	10	Table 6.2.4-2	Table 6.2.4-2
	6.6.3.3.2				
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23 ¹	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

LTE Band 5, 10 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
10	20450	829	QPSK	1	0	0	0	22.7
				1	24	0	0	22.8
				1	49	0	0	22.8
				25	0	1	1	21.9
				25	12	1	1	21.9
				25	24	1	1	21.8
				50	0	1	1	21.8
			16QAM	1	0	1	1	21.5
				1	24	1	1	21.6
				1	49	1	1	21.5
				25	0	2	2	21.0
				25	12	2	2	21.0
				25	24	2	2	20.9
				50	0	2	2	20.7
	20525	836.5	QPSK	1	0	0	0	22.6
				1	24	0	1	22.3
				1	49	0	0	22.8
				25	0	1	1	21.8
				25	12	1	1	21.7
				25	24	1	1	21.8
				50	0	1	1	21.7
			16QAM	1	0	1	2	21.3
				1	24	1	2	21.5
				1	49	1	2	21.5
				25	0	2	2	20.9
				25	12	2	2	20.9
				25	24	2	2	21.0
				50	0	2	2	20.7
	20600	844	QPSK	1	0	0	0	22.9
				1	24	0	0	23.1
1				49	0	0	22.9	
25				0	1	1	21.9	
25				12	1	1	21.9	
25				24	1	1	21.9	
50				0	1	1	21.8	
16QAM			1	0	1	2	21.6	
			1	24	1	1	21.7	
			1	49	1	2	21.6	
			25	0	2	2	21.0	
			25	12	2	2	21.0	
			25	24	2	2	21.0	
			50	0	2	2	20.9	

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
10	20450	829	QPSK	1	0	MPR is disabled when power reduction is enabled		20.2
				1	24			20.5
				1	49			20.5
				25	0			20.4
				25	12			20.5
				25	24			20.4
			50	0	20.3			
			16QAM	1	0			19.9
				1	24			20.1
				1	49			20.0
				25	0			20.5
				25	12			20.5
				25	24			20.4
			20525	836.5	QPSK			1
	1	24						20.3
	1	49						20.4
	25	0						20.5
	25	12						20.4
	25	24						20.4
	50	0			20.3			
	16QAM	1			0			20.1
		1			24			20.1
		1			49			20.0
		25			0			20.5
		25			12			20.4
		25			24			20.5
	20600	844			QPSK			1
			1	24				20.7
			1	49				20.5
			25	0				20.4
			25	12				20.5
			25	24				20.5
			50	0	20.4			
			16QAM	1	0			20.2
				1	24			20.3
				1	49			20.1
				25	0			20.5
				25	12			20.6
				25	24			20.6
			50	0	20.4			

LTE Band 5, 5 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
5	20425	826.5	QPSK	1	0	0	0	22.7
				1	12	0	0	22.8
				1	24	0	0	22.8
				12	0	1	1	21.9
				12	6	1	1	21.9
				12	11	1	1	21.9
				25	0	1	1	21.8
			16QAM	1	0	1	2	21.1
				1	12	1	2	21.2
				1	24	1	2	21.3
				12	0	2	2	20.7
				12	6	2	2	20.9
				12	11	2	2	20.9
				25	0	2	2	20.9
	20525	836.5	QPSK	1	0	0	1	22.2
				1	12	0	1	22.0
				1	24	0	1	22.0
				12	0	1	2	21.0
				12	6	1	2	20.9
				12	11	1	2	20.9
				25	0	1	1	22.1
			16QAM	1	0	1	0	22.7
				1	12	1	0	22.5
				1	24	1	0	22.5
				12	0	2	2	21.3
				12	6	2	2	21.3
				12	11	2	2	21.2
				25	0	2	2	21.1
	20625	846.5	QPSK	1	0	0	0	22.8
				1	12	0	0	22.7
1				24	0	0	22.8	
12				0	1	1	21.9	
12				6	1	1	21.8	
12				11	1	1	21.8	
25				0	1	1	21.7	
16QAM			1	0	1	0	22.7	
			1	12	1	0	22.5	
			1	24	1	0	22.4	
			12	0	2	2	21.3	
			12	6	2	2	21.3	
			12	11	2	2	21.2	
			25	0	2	2	21.1	

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
5	20425	826.5	QPSK	1	0	MPR is disabled when power reduction is enabled		20.3
				1	12			20.6
				1	24			20.5
				12	0			20.4
				12	6			20.5
				12	11			20.5
			25	0	20.4			
			16QAM	1	0			20.1
				1	12			20.1
				1	24			20.2
				12	0			19.8
				12	6			19.9
	12	11		20.0				
	20525	836.5	QPSK	25	0			19.9
				1	0			20.2
				1	12			20.1
				1	24			20.1
				12	0			19.9
				12	6			20.0
			16QAM	12	11			20.0
				25	0			19.9
				1	0			20.3
				1	12			20.5
				1	24			20.3
				12	0			19.9
	20625	846.5	QPSK	12	6			19.9
				12	11			19.9
				25	0			19.8
				1	0			20.5
				1	12			20.3
				1	24			20.5
			16QAM	12	0			20.6
				12	6			20.5
				12	11			20.5
				25	0			20.4
				1	0			20.5
1				12	20.4			
16QAM	1	24	20.2					
	12	0	20.1					
	12	6	20.1					
	12	11	20.0					
	25	0	20.0					
	25	0	20.0					

LTE Band 5, 3 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
3	20415	825.5	QPSK	1	0	0	0	22.7
				1	7	0	0	22.7
				1	14	0	0	22.6
				8	0	1	1	22.1
				8	4	1	1	22.1
				8	7	1	1	22.1
			15	0	1	1	22.0	
			16QAM	1	0	1	1	21.6
			1	7	1	1	21.7	
			1	14	1	1	21.7	
			8	0	2	2	21.1	
			8	4	2	2	21.1	
	8	7	2	2	21.2			
	15	0	2	2	21.1			
	1	0	0	1	22.2			
	1	7	0	0	22.7			
	1	14	0	1	22.3			
	8	0	1	1	22.2			
	8	4	1	1	22.2			
	8	7	1	1	22.2			
	15	0	1	1	22.1			
	1	0	1	1	22.2			
	1	7	1	1	21.8			
	1	14	1	1	21.7			
	8	0	2	2	21.2			
	8	4	2	2	21.3			
	8	7	2	2	21.3			
	15	0	2	2	21.2			
	1	0	0	0	22.7			
	1	7	0	0	22.9			
	1	14	0	0	22.7			
	8	0	1	1	22.1			
	8	4	1	1	22.2			
	8	7	1	1	22.2			
	15	0	1	1	22.2			
	1	0	1	0	22.5			
1	7	1	0	22.5				
1	14	1	0	22.5				
8	0	2	2	21.2				
8	4	2	2	21.2				
8	7	2	2	21.2				
15	0	2	2	21.2				

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
3	20415	825.5	QPSK	1	0	MPR is disabled when power reduction is enabled		20.6
				1	7			20.6
				1	14			20.7
				8	0			20.6
				8	4			20.6
				8	7			20.7
			15	0	20.7			
			16QAM	1	0			20.2
				1	7			20.2
				1	14			20.3
				8	0			20.2
				8	4			20.2
	8	7		20.3				
	20525	836.5	QPSK	1	0			20.5
				1	7			20.4
				1	14			20.4
				8	0			20.2
				8	4			20.3
				8	7			20.3
			15	0	20.4			
			16QAM	1	0			20.5
				1	7			20.5
				1	14			20.7
				8	0			20.2
				8	4			20.3
	8	7		20.3				
	20634	847.4	QPSK	1	0			20.3
				1	7			20.3
				1	14			20.4
				8	0			20.3
				8	4			20.4
				8	7			20.4
			15	0	20.4			
			16QAM	1	0			20.2
				1	7			19.9
				1	14			19.9
8				0	20.2			
8				4	20.4			
8	7	20.4						
15	0	20.3						

LTE Band 5, 1.4 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
1.4	20407	824.7	QPSK	1	0	0	0	22.6
				1	2	0	0	22.6
				1	5	0	0	22.6
				8	0	1	0	22.8
				8	1	1	0	22.6
				8	2	1	0	22.6
				15	0	1	1	22.1
			16QAM	1	0	1	1	21.6
				1	2	1	1	21.5
				1	5	1	1	21.6
				8	0	2	1	22.2
				8	1	2	1	22.2
				8	2	2	1	22.2
				15	0	2	2	21.2
	20525	836.5	QPSK	1	0	0	0	22.7
				1	2	0	0	22.7
				1	5	0	0	22.7
				8	0	1	0	22.8
				8	1	1	0	22.6
				8	2	1	0	22.6
				15	0	1	1	22.2
			16QAM	1	0	1	1	22.2
				1	2	1	1	22.2
				1	5	1	1	22.1
				8	0	2	1	22.1
				8	1	2	1	22.2
				8	2	2	1	22.2
				15	0	2	2	21.3
	20642	848.2	QPSK	1	0	0	0	22.9
				1	2	0	0	22.9
1				5	0	0	22.9	
8				0	1	0	22.9	
8				1	1	0	22.9	
8				2	1	0	22.9	
15				0	1	1	22.3	
16QAM			1	0	1	1	21.7	
			1	2	1	1	21.8	
			1	5	1	1	21.8	
			8	0	2	1	22.3	
			8	1	2	1	22.4	
			8	2	2	1	22.4	
			15	0	2	1	21.6	

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
1.4	20407	824.7	QPSK	1	0	MPR is disabled when power reduction is enabled		20.2
				1	2			20.2
				1	5			20.2
				8	0			20.1
				8	1			20.2
				8	2			20.2
				15	0			20.2
			16QAM	1	0			19.9
				1	2			19.7
				1	5			19.7
				8	0			20.3
				8	1			20.4
				8	2			20.4
				15	0			20.4
	20525	836.5	QPSK	1	0			20.2
				1	2			20.3
				1	5			20.3
				8	0			20.3
				8	1			20.4
				8	2			20.4
				15	0			20.4
			16QAM	1	0			20.2
				1	2			20.2
				1	5			20.2
				8	0			20.3
				8	1			20.3
				8	2			20.3
				15	0			20.4
	20642	848.2	QPSK	1	0			20.2
				1	2			20.3
				1	5			20.4
				8	0			20.3
				8	1			20.3
				8	2			20.4
				15	0			20.3
			16QAM	1	0			20.2
				1	2			20.2
				1	5			20.3
				8	0			20.3
				8	1			20.3
				8	2			20.3
				15	0			20.4

10.12. LTE Band 13

Target Power for LTE Band 13, QPSK and 16QAM modulations

LTE Band 13	
All Bandwidths	23.0 dBm

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

Target power indicated above is the nominal value. The measured value shall fall within +/- 1dB of this value.

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4, 10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10, 15, 20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3	13	10	Table 6.2.4-2	Table 6.2.4-2
	6.6.3.3.2				
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23 ¹	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

LTE Band 13, 10 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
10	23230	782	QPSK	1	0	0	0	22.8
				1	24	0	0	22.6
				1	49	0	0	22.7
				25	0	1	1	21.6
				25	12	1	1	21.5
				25	24	1	1	21.6
			16QAM	50	0	1	1	21.5
				1	0	1	1	21.4
				1	24	1	2	21.1
				1	49	1	1	21.5
				25	0	2	2	20.6
				25	12	2	2	20.5
				25	24	2	2	20.6
				50	0	2	2	20.4

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
10	23230	782	QPSK	1	0	MPR is disabled when power reduction is enabled		19.7
				1	24			19.5
				1	49			19.7
				25	0			19.6
				25	12			19.5
				25	24			19.7
			16QAM	50	0			19.5
				1	0			19.3
				1	24			19.1
				1	49			19.2
				25	0			19.6
				25	12			19.6
				25	24			19.6
				50	0			19.5

LTE Band 13, 5 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
5	23205	779.5	QPSK	1	0	0	0	22.7
				1	12	0	0	22.6
				1	24	0	0	22.5
				12	0	1	1	21.6
				12	6	1	1	21.5
				12	11	1	1	21.5
			16QAM	25	0	1	1	21.5
				1	0	1	2	21.1
				1	12	1	2	21.0
				1	24	1	2	20.9
				12	0	2	2	20.6
				12	6	2	2	20.5
	23230	782	QPSK	12	11	2	2	20.5
				25	0	2	2	20.5
				1	0	0	0	22.5
				1	12	0	0	22.6
				1	24	0	0	22.7
				12	0	1	1	21.6
			16QAM	12	6	1	1	21.6
				12	11	1	1	21.7
				25	0	1	1	21.6
				1	0	1	1	21.5
				1	12	1	1	21.7
				1	24	1	1	21.9
	23255	784.5	QPSK	12	0	2	2	20.5
				12	6	2	2	20.6
				12	11	2	2	20.7
				25	0	2	2	20.6
				1	0	0	0	22.5
				1	12	0	0	22.6
			16QAM	1	24	0	0	22.7
				12	0	1	1	21.6
				12	6	1	1	21.6
				12	11	1	1	21.6
				25	0	1	1	21.5
				1	0	1	2	21.2
16QAM	1	12	1	1	21.3			
	1	24	1	1	21.5			
	12	0	2	2	20.4			
	12	6	2	2	20.4			
	12	11	2	2	20.4			
	25	0	2	2	20.4			

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)		
5	23205	779.5	QPSK	1	0	MPR is disabled when power reduction is enabled		19.7		
				1	12			19.7		
				1	24			19.6		
				12	0			19.6		
				12	6			19.4		
				12	11			19.5		
			25	0	19.4					
			16QAM	1	0			19.6		
				1	12			19.4		
				1	24			19.4		
				12	0			19.6		
				12	6			19.5		
				12	11			19.4		
			23230	782	QPSK			1	0	19.4
								1	12	19.5
								1	24	19.6
	12	0						19.5		
	12	6						19.6		
	12	11						19.6		
	25	0			19.5					
	16QAM	1			0			19.6		
		1			12			19.7		
		1			24			19.8		
		12			0			19.5		
		12			6			19.5		
		12			11			19.5		
	23255	784.5			QPSK			1	0	19.6
								1	12	19.6
								1	24	19.7
			12	0				19.6		
			12	6				19.7		
			12	11				19.6		
			25	0	19.6					
			16QAM	1	0			19.5		
				1	12			19.5		
				1	24			19.4		
				12	0			19.3		
				12	6			19.4		
				12	11			19.4		
			25	0	19.5					

10.13. LTE Band 17

Target Power for LTE Band 17, QPSK and 16QAM modulations

LTE Band 17	
All Bandwidths	23.0 dBm

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4, 10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3	13	10	Table 6.2.4-2	Table 6.2.4-2
	6.6.3.3.2				
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23 ¹	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

LTE Band 17, 10 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
10	23780	709	QPSK	1	0	0	0	22.7
				1	24	0	0	22.8
				1	49	0	0	22.6
				25	0	1	1	21.8
				25	12	1	1	21.9
				25	24	1	1	21.8
			16QAM	50	0	1	1	21.7
				1	0	1	1	21.8
				1	24	1	1	22.0
				1	49	1	1	21.8
				25	0	2	2	20.8
				25	12	2	2	20.8
	23790	710	QPSK	25	24	2	20	2.8
				25	24	2	2	20.6
				50	0	2	2	20.6
				1	0	0	0	22.7
				1	24	0	0	22.7
				1	49	0	0	22.5
			16QAM	25	0	1	1	21.8
				25	12	1	1	21.8
				25	24	1	1	21.7
				50	0	1	1	21.7
				1	0	1	1	22.0
				1	24	1	1	22.0
	23800	711	QPSK	1	49	1	1	21.8
				25	0	2	2	20.8
				25	12	2	2	20.8
				25	24	2	2	20.7
				50	0	2	2	20.6
				1	0	0	0	22.7
			16QAM	1	24	0	0	22.8
				1	49	0	0	22.4
				25	0	1	1	21.9
				25	12	1	1	21.8
				25	24	1	1	21.6
				50	0	1	1	21.7
1	0	1	2	21.0				
1	24	1	2	21.1				
1	49	1	2	20.7				
25	0	2	2	20.8				
25	12	2	2	20.8				
25	24	2	2	20.6				
50	0	2	1	21.6				

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)		
10	23780	709	QPSK	1	0	0	0	20.6		
				1	24	0	0	20.8		
				1	49	0	0	20.6		
				25	0	1	0	20.7		
				25	12	1	0	20.8		
				25	24	1	0	20.7		
				50	0	1	0	20.7		
			16QAM	1	0	1	0	20.8		
				1	24	1	0	20.7		
				1	49	1	0	20.8		
				25	0	2	0	20.8		
				25	12	2	0	20.7		
				25	24	2	0	20.8		
				50	0	2	0	20.6		
	23790	710	QPSK	1	0	0	0	20.8		
				1	24	0	0	20.8		
				1	49	0	0	20.5		
				25	0	1	0	20.8		
				25	12	1	0	20.7		
				25	24	1	0	20.6		
				50	0	1	0	20.7		
			16QAM	1	0	1	1	20.1		
		1		24	1	1	20.1			
		1		49	1	1	19.9			
		25		0	2	0	20.8			
		25		12	2	0	20.8			
		25		24	2	0	20.8			
		50		0	2	0	20.8			
		23800		711	QPSK	1	0	0	0	20.6
						1	24	0	0	20.7
1	49		0			1	20.3			
25	0		1			0	20.7			
25	12		1			0	20.7			
25	24		1			0	20.6			
50	0		1			0	20.7			
16QAM	1		0		1	0	20.5			
	1		24		1	0	20.4			
	1		49	1	1	20.0				
	25		0	2	0	20.8				
	25		12	2	0	20.8				
	25		24	2	0	20.7				
	50		0	2	0	20.6				

LTE Band 17, 5 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
5	23755	706.5	QPSK	1	0	MPR is disabled when power reduction is enabled		22.6
				1	12			22.5
				1	24			22.7
				12	0			21.9
				12	6			21.8
				12	11			21.8
			25	0	21.8			
			16QAM	1	0			22.1
				1	12			22.1
				1	24			21.9
				12	0			20.8
				12	6			20.7
	12	11		20.8				
	23790	710	QPSK	1	0			22.9
				1	12			22.9
				1	24			22.9
				12	0			22.1
				12	6			22.1
				12	11			22.1
			25	0	22.0			
			16QAM	1	0			22.5
				1	12			22.3
				1	24			22.3
				12	0			21.2
				12	6			21.1
	12	11		21.1				
	23825	713.5	QPSK	1	0			22.6
				1	12			22.6
				1	24			22.5
				12	0			21.8
				12	6			21.6
				12	11			21.5
			25	0	21.7			
			16QAM	1	0			22.3
				1	12			22.3
				1	24			22.1
12				0	20.9			
12				6	21.0			
12	11	20.9						
25	0	20.9						

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
5	23755	706.5	QPSK	1	0	MPR is disabled when power reduction is enabled		21.1
				1	12			21.0
				1	24			21.1
				12	0			20.9
				12	6			21.1
				12	11			21.1
				25	0			21.0
			16QAM	1	0			21.2
				1	12			21.2
				1	24			21.3
				12	0			21.0
				12	6			21.0
				12	11			21.1
				25	0			20.6
	23790	710	QPSK	1	0			21.3
				1	12			21.3
				1	24			21.2
				12	0			21.1
				12	6			21.1
				12	11			21.0
				25	0			21.0
			16QAM	1	0			21.3
				1	12			21.3
				1	24			21.3
				12	0			21.0
				12	6			21.1
				12	11			21.1
				25	0			21.0
	23825	713.5	QPSK	1	0			21.1
				1	12			20.9
				1	24			20.8
				12	0			20.8
				12	6			20.9
				12	11			20.9
				25	0			20.8
			16QAM	1	0			21.2
1				12	21.2			
1				24	21.0			
12				0	20.7			
12				6	20.9			
12				11	20.9			
25				0	20.8			

10.14. LTE Band 25

Target Power for LTE Band 25, QPSK and 16QAM modulations

LTE Band 25	
All Bandwidths	23.0 dBm

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4, 10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3	13	10	Table 6.2.4-2	Table 6.2.4-2
	6.6.3.3.2				
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23 ¹	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

LTE Band 25, 20 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
20	26140	1860	QPSK	1	0	0	0	22.8
				1	49	0	0	22.7
				1	99	0	0	22.6
				50	0	1	1	21.6
				50	24	1	1	21.5
				50	49	1	1	21.5
				100	0	1	1	21.5
			16QAM	1	0	1	1	22.1
				1	49	1	1	21.9
				1	99	1	1	21.8
				50	0	2	2	20.6
				50	24	2	2	20.4
				50	49	2	3	20.4
				100	0	2	2	20.4
	26365	1882.5	QPSK	1	0	0	0	22.8
				1	49	0	0	22.7
				1	99	0	0	22.6
				50	0	1	1	21.6
				50	24	1	1	21.5
				50	49	1	1	21.5
				100	0	1	1	21.6
			16QAM	1	0	1	1	21.9
				1	49	1	1	21.7
				1	99	1	1	21.7
				50	0	2	2	20.5
				50	24	2	2	20.5
				50	49	2	2	20.6
				100	0	2	2	20.5
	26590	1905	QPSK	1	0	0	0	22.7
				1	49	0	0	22.6
1				99	0	0	22.9	
50				0	1	1	21.6	
50				24	1	1	21.6	
50				49	1	1	21.8	
100				0	1	1	21.7	
16QAM			1	0	1	1	21.8	
			1	49	1	1	21.9	
			1	99	1	1	22.0	
			50	0	2	2	20.5	
			50	24	2	2	20.6	
			50	49	2	2	20.7	
			100	0	2	2	20.7	

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
20	26140	1860	QPSK	1	0	MPR is disabled when power reduction is enabled		16.6
				1	49			16.6
				1	99			16.7
				50	0			16.6
				50	24			16.6
				50	49			16.5
			100	0	16.5			
			16QAM	1	0			16.7
				1	49			16.7
				1	99			16.6
				50	0			16.7
				50	24			16.6
	50	49		16.5				
	100	0	16.6					
	26365	1882.5	QPSK	1	0			16.7
				1	49			16.7
				1	99			16.6
				50	0			16.5
				50	24			16.6
				50	49			16.6
			100	0	16.6			
			16QAM	1	0			16.7
				1	49			16.8
				1	99			16.8
				50	0			16.7
				50	24			16.6
	50	49		16.6				
	100	0	16.6					
	26590	1905	QPSK	1	0			16.7
				1	49			16.7
				1	99			16.8
				50	0			16.8
				50	24			16.8
				50	49			16.9
			100	0	16.6			
			16QAM	1	0			16.6
1				49	16.6			
1				99	16.7			
50				0	16.7			
50				24	16.7			
50	49	16.8						
100	0	16.6						

LTE Band 25, 15 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
15	26115	1857.5	QPSK	1	0	0	0	22.8
				1	37	0	0	22.9
				1	74	0	0	22.8
				38	0	1	1	21.5
				38	18	1	1	21.6
				38	37	1	1	21.6
				75	0	1	1	21.5
			16QAM	1	0	1	1	22.3
				1	37	1	1	22.1
				1	74	1	1	22.0
				38	0	2	2	20.7
				38	18	2	2	20.7
				38	37	2	2	20.5
				75	0	2	2	20.5
	26365	1882.5	QPSK	1	0	0	0	22.7
				1	37	0	0	22.7
				1	74	0	0	22.7
				38	0	1	1	21.5
				38	18	1	1	21.5
				38	37	1	1	21.5
				75	0	1	1	21.4
			16QAM	1	0	1	1	22.1
				1	37	1	1	22.1
				1	74	1	1	22.2
				38	0	2	1	22.0
				38	18	2	2	20.6
				38	37	2	2	20.5
				75	0	2	2	20.5
	26615	1907.5	QPSK	1	0	0	0	22.7
				1	37	0	0	22.7
1				74	0	0	22.8	
38				0	1	1	21.5	
38				18	1	1	21.6	
38				37	1	1	21.8	
75				0	1	1	21.6	
16QAM			1	0	1	1	22.1	
			1	37	1	1	22.1	
			1	74	1	1	21.9	
			38	0	2	2	20.7	
			38	18	2	2	20.7	
			38	37	2	2	20.7	
			75	0	2	2	20.6	

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
15	26115	1857.5	QPSK	1	0	MPR is disabled when power reduction is enabled		16.8
				1	37			16.7
				1	74			16.7
				38	0			16.6
				38	18			16.6
				38	37			16.6
			16QAM	75	0			16.6
				1	0			16.8
				1	37			16.9
				1	74			16.7
				38	0			16.4
				38	18			16.8
	26365	1882.5	QPSK	38	37			16.6
				75	0			16.6
				1	0			16.8
				1	37			16.7
				1	74			16.7
				38	0			16.5
			16QAM	38	18			16.5
				38	37			16.6
				75	0			16.6
				1	0			16.6
				1	37			16.8
				1	74			16.7
	26615	1907.5	QPSK	38	0			16.7
				38	18			16.7
				38	37			16.8
				75	0			16.7
				1	0			16.8
				1	37			16.9
			16QAM	1	74			16.9
				38	0			16.9
				38	18			16.5
				38	37			16.7
				38	18			16.7
				75	0			16.8

LTE Band 25, 10 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
10	26090	1855	QPSK	1	0	0	0	22.6
				1	24	0	0	22.8
				1	49	0	0	22.7
				25	0	1	1	21.6
				25	12	1	1	21.7
				25	24	1	1	21.7
				50	0	1	1	21.6
			16QAM	1	0	1	1	22.1
				1	24	1	1	22.1
				1	49	1	1	21.9
				25	0	2	2	20.6
				25	12	2	2	20.6
				25	24	2	2	20.6
				50	0	2	2	20.6
	26365	1882.5	QPSK	1	0	0	0	22.7
				1	24	0	0	22.6
				1	49	0	0	22.6
				25	0	1	1	21.7
				25	12	1	1	21.7
				25	24	1	1	21.5
				50	0	1	1	21.5
			16QAM	1	0	1	1	22.1
				1	24	1	1	22.0
				1	49	1	1	21.9
				25	0	2	2	20.7
				25	12	2	2	20.7
				25	24	2	2	20.6
				50	0	2	2	20.5
	26640	1910	QPSK	1	0	0	0	22.7
				1	24	0	0	22.9
				1	49	0	0	22.8
				25	0	1	1	21.8
				25	12	1	1	21.8
				25	24	1	1	21.8
				50	0	1	1	21.7
			16QAM	1	0	1	1	22.1
1				24	1	1	21.4	
1				49	1	1	21.5	
25				0	2	2	20.8	
25				12	2	2	20.8	
25				24	2	2	20.9	
50				0	2	2	20.8	

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
10	26090	1855	QPSK	1	0	MPR is disabled when power reduction is enabled		16.8
				1	24			17.0
				1	49			16.6
				25	0			16.6
				25	12			16.9
				25	24			16.7
				50	0			16.6
			16QAM	1	0			16.5
				1	24			16.5
				1	49			16.2
				25	0			16.4
				25	12			16.7
				25	24			16.7
				50	0			16.7
	26365	1882.5	QPSK	1	0			16.7
				1	24			16.6
				1	49			16.7
				25	0			16.7
				25	12			16.5
				25	24			16.6
				50	0			16.5
			16QAM	1	0			16.7
				1	24			16.8
				1	49			16.8
				25	0			16.6
				25	12			16.5
				25	24			16.6
				50	0			16.6
	26640	1910	QPSK	1	0			16.5
				1	24			16.8
				1	49			16.7
				25	0			16.5
				25	12			16.5
				25	24			16.6
				50	0			16.7
			16QAM	1	0			16.3
1				24	16.4			
1				49	16.4			
25				0	16.4			
25				12	16.5			
25				24	16.6			
50				0	16.7			

LTE Band 25, 5 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
5	26065	1852.5	QPSK	1	0	0	0	22.8
				1	12	0	0	22.8
				1	24	0	0	22.6
				12	0	1	1	21.7
				12	6	1	1	21.8
				12	11	1	1	21.8
			16QAM	25	0	1	1	21.6
				1	0	1	1	22.3
				1	12	1	1	22.3
				1	24	1	1	22.3
				12	0	2	2	20.8
				12	6	2	2	20.7
	26365	1882.5	QPSK	12	11	2	2	20.8
				25	0	2	2	20.7
				1	0	0	1	22.3
				1	12	0	0	22.7
				1	24	0	0	22.7
				12	0	1	1	21.7
			16QAM	12	6	1	1	21.6
				12	11	1	1	21.7
				25	0	1	1	21.5
				1	0	1	1	22.1
				1	12	1	1	22.0
				1	24	1	1	22.0
	26665	1912.5	QPSK	12	0	2	2	21.0
				12	6	2	2	20.7
				12	11	2	2	20.7
				25	0	2	2	20.7
				1	0	0	0	22.7
				1	12	0	0	22.8
			16QAM	1	24	0	0	22.9
				12	0	1	1	21.9
				12	6	1	1	22.0
				12	11	1	1	22.0
				25	0	1	1	21.8
				1	0	1	0	22.4
16QAM	1	12	1	0	22.4			
	1	24	1	1	22.3			
	12	0	2	2	21.0			
	12	6	2	2	20.9			
	12	11	2	2	20.8			
	25	0	2	2	20.8			

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
5	26065	1852.5	QPSK	1	0	MPR is disabled when power reduction is enabled		16.7
				1	12			17.0
				1	24			16.7
				12	0			16.6
				12	6			16.7
				12	11			17.0
			25	0	16.6			
			16QAM	1	0			16.9
				1	12			17.0
				1	24			16.6
				12	0			16.7
				12	6			16.6
				12	11			16.7
			26365	1882.5	QPSK			1
	1	12						16.8
	1	24						17.0
	12	0						16.5
	12	6						16.5
	12	11						16.6
	25	0			16.6			
	16QAM	1			0			16.7
		1			12			16.7
		1			24			16.9
		12			0			16.6
		12			6			16.6
		12			11			16.6
	26665	1912.5			QPSK			1
			1	12				16.9
			1	24				16.8
			12	0				16.7
			12	6				16.8
			12	11				16.8
			25	0	16.8			
			16QAM	1	0			16.8
				1	12			16.9
				1	24			16.8
				12	0			16.6
				12	6			16.8
				12	11			16.7
			25	0	16.7			

LTE Band 25, 3 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
3	26055	1851.5	QPSK	1	0	0	0	22.9
				1	7	0	0	22.9
				1	14	0	0	22.8
				8	0	1	1	21.7
				8	4	1	1	21.8
				8	7	1	1	21.8
				15	0	1	1	21.6
			16QAM	1	0	1	1	22.2
				1	7	1	1	22.1
				1	14	1	1	22.1
				8	0	2	2	20.8
				8	4	2	2	20.8
				8	7	2	2	20.8
				15	0	2	2	20.7
				26365	1882.5	QPSK	1	0
	1	7	0				0	22.6
	1	14	0				0	22.4
	8	0	1				1	21.6
	8	4	1				1	21.7
	8	7	1				1	21.7
	15	0	1				1	21.7
	16QAM	1	0			1	2	21.2
		1	7			1	2	21.2
		1	14			1	2	21.2
		8	0			2	2	20.6
		8	4			2	2	20.7
		8	7			2	2	20.7
		15	0			2	2	20.6
		26674	1913.4			QPSK	1	0
	1			7	0		0	22.5
1	14			0	0		22.8	
8	0			1	1		21.9	
8	4			1	1		21.9	
8	7			1	1		21.9	
15	0			1	1		21.7	
16QAM	1			0	1	1	22.1	
	1			7	1	1	22.2	
	1			14	1	1	22.1	
	8			0	2	2	21.1	
	8			4	2	2	20.9	
	8			7	2	2	20.8	
	15			0	2	2	20.8	

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
3	26055	1851.5	QPSK	1	0	MPR is disabled when power reduction is enabled		16.6
				1	7			16.7
				1	14			16.7
				8	0			16.6
				8	4			16.7
				8	7			16.8
			15	0	16.9			
			16QAM	1	0			16.3
				1	7			16.5
				1	14			16.5
				8	0			16.6
				8	4			16.6
	8	7		16.7				
	26365	1882.5	QPSK	1	0			16.6
				1	7			16.7
				1	14			16.7
				8	0			16.6
				8	4			16.6
				8	7			16.6
			15	0	16.7			
			16QAM	1	0			16.6
				1	7			16.7
				1	14			16.6
				8	0			16.6
				8	4			16.6
	8	7		16.6				
	26674	1913.4	QPSK	1	0			16.6
				1	7			16.8
				1	14			16.9
				8	0			16.8
				8	4			16.7
				8	7			16.7
			15	0	16.6			
			16QAM	1	0			16.5
				1	7			16.3
				1	14			16.1
8				0	16.7			
8				4	16.7			
8	7	17.0						
15	0	16.6						

LTE Band 25, 1.4 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
1.4	26047	1850.7	QPSK	1	0	0	0	22.4
				1	2	0	1	22.4
				1	5	0	0	22.4
				8	0	1	0	22.7
				8	1	1	1	22.3
				8	2	1	0	22.4
				15	0	1	1	21.8
			16QAM	1	0	1	1	21.9
				1	2	1	2	21.3
				1	5	1	2	21.3
				8	0	2	1	21.8
				8	1	2	1	21.9
				8	2	2	1	22.0
				15	0	2	2	21.3
	26365	1882.5	QPSK	1	0	0	0	22.6
				1	2	0	0	22.6
				1	5	0	0	22.6
				8	0	1	0	22.6
				8	1	1	0	22.5
				8	2	1	0	22.5
				15	0	1	1	21.9
			16QAM	1	0	1	1	22.1
				1	2	1	1	21.5
				1	5	1	1	21.5
				8	0	2	1	21.7
				8	1	2	1	21.7
				8	2	2	1	21.7
				15	0	2	2	21.1
	26682	1914.2	QPSK	1	0	0	0	22.4
				1	2	0	0	22.4
1				5	0	0	22.4	
8				0	1	0	22.8	
8				1	1	0	22.8	
8				2	1	0	22.9	
15				0	1	1	21.8	
16QAM			1	0	1	1	22.2	
			1	2	1	2	21.3	
			1	5	1	1	21.4	
			8	0	2	1	22.0	
			8	1	2	1	22.0	
			8	2	2	1	22.0	
			15	0	2	2	21.1	

Reduced Power (Proximity Sensor On)

BW	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Avg Pwr (dBm)
1.4	26047	1850.7	QPSK	1	0	MPR is disabled when power reduction is enabled		16.8
				1	2			16.7
				1	5			16.7
				8	0			16.9
				8	1			16.7
				8	2			16.7
			15	0	16.6			
			16QAM	1	0			16.2
				1	2			16.1
				1	5			16.2
				8	0			16.8
				8	1			16.7
				8	2			16.7
			26365	1882.5	QPSK			1
	1	2						16.6
	1	5						16.7
	8	0						16.6
	8	1						16.6
	8	2						16.6
	15	0			16.6			
	16QAM	1			0			16.7
		1			2			16.6
		1			5			16.7
		8			0			16.5
		8			1			16.5
		8			2			16.6
	26682	1914.2			QPSK			1
			1	2				16.7
			1	5				16.7
			8	0				16.7
			8	1				16.7
			8	2				16.7
			15	0	16.7			
			16QAM	1	0			16.5
				1	2			16.1
				1	5			16.3
				8	0			16.7
				8	1			16.7
				8	2			16.7
			15	0	16.7			

11. Tissue Dielectric Properties

IEEE Std 1528-2003 Table 2

Target Frequency (MHz)	Head	
	ϵ_r	σ (S/m)
300	45.3	0.87
450	43.5	0.87
835	41.5	0.90
900	41.5	0.97
1450	40.5	1.20
1800 – 2000	40.0	1.40
2450	39.2	1.80
2600	39.0	1.96
3000	38.5	2.40

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Target Frequency (MHz)	Head		Body	
	ϵ_r	σ (S/m)	ϵ_r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800 – 2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5000	36.2	4.45	49.3	5.07
5100	36.1	4.55	49.1	5.18
5200	36.0	4.66	49.0	5.30
5300	35.9	4.76	48.9	5.42
5400	35.8	4.86	48.7	5.53
5500	35.6	4.96	48.6	5.65
5600	35.5	5.07	48.5	5.77
5700	35.4	5.17	48.3	5.88
5800	35.3	5.27	48.2	6.00

11.2. Tissue Dielectric Parameter Check Results

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized.

The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.

Tissue dielectric parameters were measured at the low, middle and high frequency of each operating frequency range of the test device.

Tissue Dielectric Parameter Check Results (continued)

Date	Freq. (MHz)	Liquid Parameters		Measured	Target	Delta (%)	Limit ±(%)	
5/21/2013	Body 1900	e'	50.9800	Relative Permittivity (ϵ_r):	50.98	53.30	-4.35	5
		e"	14.3300	Conductivity (σ):	1.51	1.52	-0.40	5
	Body 1850	e'	51.1600	Relative Permittivity (ϵ_r):	51.16	53.30	-4.02	5
		e"	14.2400	Conductivity (σ):	1.46	1.52	-3.63	5
	Body 1910	e'	50.9400	Relative Permittivity (ϵ_r):	50.94	53.30	-4.43	5
		e"	14.3500	Conductivity (σ):	1.52	1.52	0.26	5
5/23/2013	Body 1750	e'	52.6200	Relative Permittivity (ϵ_r):	52.62	53.44	-1.54	5
		e"	15.4500	Conductivity (σ):	1.50	1.49	1.16	5
	Body 1710	e'	52.7600	Relative Permittivity (ϵ_r):	52.76	53.54	-1.46	5
		e"	15.3400	Conductivity (σ):	1.46	1.46	-0.20	5
	Body 1755	e'	52.5800	Relative Permittivity (ϵ_r):	52.58	53.43	-1.59	5
		e"	15.4600	Conductivity (σ):	1.51	1.49	1.30	5
5/24/2013	Body 1900	e'	53.9400	Relative Permittivity (ϵ_r):	53.94	53.30	1.20	5
		e"	14.5100	Conductivity (σ):	1.53	1.52	0.85	5
	Body 1850	e'	54.1200	Relative Permittivity (ϵ_r):	54.12	53.30	1.54	5
		e"	14.3500	Conductivity (σ):	1.48	1.52	-2.89	5
	Body 1910	e'	53.8700	Relative Permittivity (ϵ_r):	53.87	53.30	1.07	5
		e"	14.5100	Conductivity (σ):	1.54	1.52	1.38	5
5/28/2013	Body 835	e'	53.1900	Relative Permittivity (ϵ_r):	53.19	55.20	-3.64	5
		e"	21.6300	Conductivity (σ):	1.00	0.97	3.53	5
	Body 820	e'	53.3400	Relative Permittivity (ϵ_r):	53.34	55.28	-3.50	5
		e"	21.6700	Conductivity (σ):	0.99	0.97	2.02	5
	Body 850	e'	53.0200	Relative Permittivity (ϵ_r):	53.02	55.16	-3.87	5
		e"	21.5400	Conductivity (σ):	1.02	0.99	3.13	5
5/29/2013	Body 750	e'	54.6200	Relative Permittivity (ϵ_r):	54.62	55.55	-1.67	5
		e"	23.6500	Conductivity (σ):	0.99	0.96	2.41	5
	Body 700	e'	55.2200	Relative Permittivity (ϵ_r):	55.22	55.74	-0.93	5
		e"	24.1100	Conductivity (σ):	0.94	0.96	-2.17	5
	Body 710	e'	55.1200	Relative Permittivity (ϵ_r):	55.12	55.70	-1.04	5
		e"	24.0100	Conductivity (σ):	0.95	0.96	-1.26	5
5/31/2013	Body 835	e'	53.2800	Relative Permittivity (ϵ_r):	53.28	55.20	-3.48	5
		e"	21.2200	Conductivity (σ):	0.99	0.97	1.57	5
	Body 820	e'	53.3900	Relative Permittivity (ϵ_r):	53.39	55.28	-3.41	5
		e"	21.2700	Conductivity (σ):	0.97	0.97	0.14	5
	Body 850	e'	53.1100	Relative Permittivity (ϵ_r):	53.11	55.16	-3.71	5
		e"	21.1300	Conductivity (σ):	1.00	0.99	1.17	5
6/4/2013	Body 1750	e'	53.0600	Relative Permittivity (ϵ_r):	53.06	53.44	-0.71	5
		e"	15.1400	Conductivity (σ):	1.47	1.49	-0.87	5
	Body 1710	e'	53.1400	Relative Permittivity (ϵ_r):	53.14	53.54	-0.75	5
		e"	14.9500	Conductivity (σ):	1.42	1.46	-2.74	5
	Body 1755	e'	53.0600	Relative Permittivity (ϵ_r):	53.06	53.43	-0.69	5
		e"	15.1300	Conductivity (σ):	1.48	1.49	-0.86	5

12. System Performance Check

SAR system verification is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device. The same SAR probe(s) and tissue-equivalent media combinations used with each specific SAR system for system verification must be used for device testing. When multiple probe calibration points are required to cover substantially large transmission bands, independent system verifications are required for each probe calibration point. A system verification must be performed before each series of SAR measurements using the same probe calibration point and tissue-equivalent medium. Additional system verification should be considered according to the conditions of the tissue-equivalent medium and measured tissue dielectric parameters, typically every three to four days when the liquid parameters are remeasured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

12.1. System Performance Check Measurement Conditions

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ± 0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm ± 0.5 cm for SAR measurements ≤ 3 GHz and ≥ 10.0 cm ± 0.5 cm for measurements > 3 GHz.
- The DASY system with an E-Field Probe was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10 mm (above 1 GHz) and 15 mm (below 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 15 mm was aligned with the dipole.
For 5 GHz band - The coarse grid with a grid spacing of 10 mm was aligned with the dipole.
- Special 7x7x7 (below 3 GHz) and/or 8x8x7 (above 3 GHz) fine cube was chosen for the cube.
- Distance between probe sensors and phantom surface was set to 3 mm.
For 5 GHz band - Distance between probe sensors and phantom surface was set to 2.5 mm
- The dipole input power (forward power) was 100 mW.
- The results are normalized to 1 W input power
- .

12.2. Reference SAR Values for System Performance Check

The reference SAR values can be obtained from the calibration certificate of system validation dipoles

System Dipole	Serial No.	Cal. Date	Freq. (MHz)	Target SAR Values (mW/g)		
				1g/10g	Head	Body
D750v3	1019	03/05/2013	720	1g	8.50	8.68
				10g	5.59	5.75
D835v2	4d142	10/04/2012	835	1g	9.45	9.50
				10g	6.23	6.29
D835v2	4d002	10/24/2012	835	1g	9.58	9.48
				10g	6.28	6.26
D1750v2	1053	8/15/2012	1750	1g	35.9	37.5
				10g	19.1	20.2
D1750v2	1077	10/03/2012	1750	1g	36.1	37.7
				10g	19.3	20.3
D1900v2	5d043	11/06/2012	1900	1g	39.9	40.9
				10g	20.9	21.6

12.3. System Performance Check Results

The 1-g and 10-g SAR measured with a reference dipole, using the required tissue-equivalent medium at the test frequency, must be within 10% of the manufacturer calibrated dipole SAR target.

Date Tested	System Dipole		T.S. Liquid	Measured Results			Target (Ref. Value)	Delta ±10 %	Est./Zoom Ratio ±3 %	
	Type	Serial #		Area Scan	Zoom Scan	Normalize to 1 W				
5/21/2013	D1900V2	5d043	Body	1g	3.69	3.73	37.3	40.9	-8.80	-1.08
				10g	1.88	1.97	19.7	21.6	-8.80	
5/23/2013	D1750V2	1077	Body	1g	3.71	3.70	37.0	37.7	-1.86	0.27
				10g	1.94	2.00	20.0	20.3	-1.48	
5/24/2013	D1900V2	5d043	Body	1g	4.06	4.02	40.20	40.90	-1.71	0.99
				10g	2.04	2.14	21.40	21.60	-0.93	
5/28/2013	D835V2	4d142	Body	1g	1.00	0.98	9.79	9.5	3.05	2.10
				10g	0.67	0.65	6.46	6.29	2.70	
5/29/2013	D750V2	1019	Body	1g	0.88	0.86	8.6	8.68	-1.38	2.51
				10g	0.60	0.57	5.69	5.75	-1.04	
5/31/2013	D835V2	4d002	Body	1g	0.95	0.92	9.24	9.48	-2.53	2.43
				10g	0.63	0.60	6.04	6.26	-3.51	
5/6/2013	D1750V2	1053	Body	1g	3.67	3.62	9.2	37.5	-2.53	2.43
				10g	1.92	1.96	6.04	20.2	-3.51	
6/14/2013	D835V2	4d002	Body	1g	0.983	0.957	9.57	9.48	0.95	2.64
				10g	0.660	0.633	6.33	6.26	1.12	

13. SAR Test Results

13.1. Standalone SAR Test Exclusion Considerations

Standalone SAR test exclusion was based upon the following criteria:

1. If the antenna to DUT adjacent edge or bottom separation distance is < 50mm a distance of 5mm (reduced power) or the proximity sensor trigger distance (full power) is used to determine SAR exclusion and estimated SAR value
2. If the antenna to DUT adjacent edge or bottom separation distance is >50mm the actual antenna to user separation distance is used to determine SAR exclusion and estimated SAR value
3. Reduced power does not apply for edges 2, 3 and 4.

13.1.1. SAR Test Exclusion Calculations for antennas <50mm to adjacent edges

Antenna	Tx	Frequency (MHz)	Output power		Separation distances (mm)						Calculated Threshold Value					
			dBm	mW	Bottom	Edge 1	Edge 2	Edge 3	Edge 4	Front	Bottom	Edge 1	Edge 2	Edge 3	Edge 4	Front
Full Power 3G – distances include sensor triggering distance for rear (10mm) and edge 1 (20mm)																
3G Main	GSM	848.8	26.98	499	10	20	167.6	185.1	0		46.0	23.0	> 50 mm	> 50 mm	92.0	N/A
3G Main	GSM	1909.8	23.98	250	10	20	167.6	185.1	0		35.0	17.0	> 50 mm	> 50 mm	69.0	N/A
3G Main	WCDMA	846.6	24.0	251	10	20	167.6	185.1	0		23.0	12.0	> 50 mm	> 50 mm	46.0	N/A
3G Main	WCDMA	1752.6	24.0	251	10	20	167.6	185.1	0		33.0	17.0	> 50 mm	> 50 mm	66.0	N/A
3G Main	WCDMA	1907.6	24.0	251	10	20	167.6	185.1	0		35.0	17.0	> 50 mm	> 50 mm	69.0	N/A
3G Main	CDMA BC0	848.3	24.5	282	10	20	167.6	185.1	0		26.0	13.0	> 50 mm	> 50 mm	52.0	N/A
3G Main	CDMA BC1	1908.8	24.5	282	10	20	167.6	185.1	0		39.0	19.0	> 50 mm	> 50 mm	78.0	N/A
3G Main	CDMA BC10	822.75	19.5	89	10	20	167.6	185.1	0		8.0	4.0	> 50 mm	> 50 mm	16.0	N/A
3G Main	LTE 2	1909.2	24.0	251	10	20	167.6	185.1	0		35.0	17.0	> 50 mm	> 50 mm	69.0	N/A
3G Main	LTE 4	1754.2	24.0	251	10	20	167.6	185.1	0		33.0	17.0	> 50 mm	> 50 mm	66.0	N/A
3G Main	LTE 5	848.2	24.0	251	10	20	167.6	185.1	0		23.0	12.0	> 50 mm	> 50 mm	46.0	N/A
3G Main	LTE 13	784.5	24.0	251	10	20	167.6	185.1	0		22.0	11.0	> 50 mm	> 50 mm	44.0	N/A
3G Main	LTE 17	713.5	24.0	251	10	20	167.6	185.1	0		21.0	11.0	> 50 mm	> 50 mm	42.0	N/A
3G Main	LTE 25	1914.2	24.0	251	10	20	167.6	185.1	0		35.0	17.0	> 50 mm	> 50 mm	69.0	N/A
Reduced Power 3G – distances are for device in contact with phantom for right edge and rear face																
3G Main	GSM	848.8	23.48	223	0	0					41.0	41.0	N/A	N/A	N/A	N/A
3G Main	GSM	1909.8	18.48	70	0	0					19.0	19.0	N/A	N/A	N/A	N/A
3G Main	WCDMA	846.6	21.00	126	0	0					23.0	23.0	N/A	N/A	N/A	N/A
3G Main	WCDMA	1752.6	19.90	98	0	0					26.0	26.0	N/A	N/A	N/A	N/A
3G Main	WCDMA	1907.6	18.70	74	0	0					20.0	20.0	N/A	N/A	N/A	N/A
3G Main	CDMA BC0	848.3	19.50	89	0	0					16.0	16.0	N/A	N/A	N/A	N/A
3G Main	CDMA BC1	1908.8	17.70	59	0	0					16.0	16.0	N/A	N/A	N/A	N/A
3G Main	CDMA BC10	822.75	19.50	89	0	0					16.0	16.0	N/A	N/A	N/A	N/A
3G Main	LTE 2	1909.2	18.50	71	0	0					20.0	20.0	N/A	N/A	N/A	N/A
3G Main	LTE 4	1754.2	20.50	112	0	0					30.0	30.0	N/A	N/A	N/A	N/A
3G Main	LTE 5	848.2	21.50	141	0	0					26.0	26.0	N/A	N/A	N/A	N/A
3G Main	LTE 13	784.5	21.00	126	0	0					22.0	22.0	N/A	N/A	N/A	N/A
3G Main	LTE 17	713.5	22.00	158	0	0					27.0	27.0	N/A	N/A	N/A	N/A
3G Main	LTE 25	1914.2	18.00	63	0	0					17.0	17.0	N/A	N/A	N/A	N/A

Note(s):

1. According to KDB 447498, if the calculated threshold value is >3 then SAR testing is required.

Conclusion:

As the calculated threshold value is >3 SAR testing is required for the bottom and Edge 1 at full and reduced power. Testing is required for Edge 4 at full power.

13.1.2. SAR Test Exclusion Calculations for antennas >50mm to adjacent edges

Antenna	Tx	Frequency (MHz)	Output power		Separation distances (mm)						Calculated Threshold Value					
			dBm	mW	Bottom	Edge 1	Edge 2	Edge 3	Edge 4	Front	Bottom	Edge 1	Edge 2	Edge 3	Edge 4	Front
Full Power 3G – distances include sensor triggering distance for rear (10mm) and edge 1 (20mm)																
3G Main	GSM	848.8	26.98	499	10	20	167.6	185.1	0		< 50 mm	< 50 mm	828	927	< 50 mm	N/A
3G Main	GSM	1909.8	23.98	250	10	20	167.6	185.1	0		< 50 mm	< 50 mm	1285	1460	< 50 mm	N/A
3G Main	WCDMA	846.6	24.00	251	10	20	167.6	185.1	0		< 50 mm	< 50 mm	827	926	< 50 mm	N/A
3G Main	WCDMA	1752.6	24.00	251	10	20	167.6	185.1	0		< 50 mm	< 50 mm	1289	1464	< 50 mm	N/A
3G Main	WCDMA	1907.6	24.00	251	10	20	167.6	185.1	0		< 50 mm	< 50 mm	1285	1460	< 50 mm	N/A
3G Main	CDMA	848.3	24.50	282	10	20	167.6	185.1	0		< 50 mm	< 50 mm	828	927	< 50 mm	N/A
3G Main	CDMA	1908.8	24.50	282	10	20	167.6	185.1	0		< 50 mm	< 50 mm	1285	1460	< 50 mm	N/A
3G Main	CDMA	822.75	24.50	282	10	20	167.6	185.1	0		< 50 mm	< 50 mm	810	906	< 50 mm	N/A
3G Main	LTE 2	1909.2	24.00	251	10	20	167.6	185.1	0		< 50 mm	< 50 mm	1285	1460	< 50 mm	N/A
3G Main	LTE 4	1754.2	24.00	251	10	20	167.6	185.1	0		< 50 mm	< 50 mm	1289	1464	< 50 mm	N/A
3G Main	LTE 5	848.2	24.00	251	10	20	167.6	185.1	0		< 50 mm	< 50 mm	828	927	< 50 mm	N/A
3G Main	LTE 13	784.5	24.00	251	10	20	167.6	185.1	0		< 50 mm	< 50 mm	784	876	< 50 mm	N/A
3G Main	LTE 17	713.5	24.00	251	10	20	167.6	185.1	0		< 50 mm	< 50 mm	737	820	< 50 mm	N/A
3G Main	LTE 25	1914.2	24.00	251	10	20	167.6	185.1	0		< 50 mm	< 50 mm	1284	1459	< 50 mm	N/A
Reduced Power 3G – distances are for device in contact with phantom for right edge and rear face																
3G Main	GSM	848.8	23.48	223	0	0					< 50 mm	< 50 mm	N/A	N/A	N/A	N/A
3G Main	GSM	1909.8	18.48	70	0	0					< 50 mm	< 50 mm	N/A	N/A	N/A	N/A
3G Main	WCDMA	846.6	21.00	126	0	0					< 50 mm	< 50 mm	N/A	N/A	N/A	N/A
3G Main	WCDMA	1752.6	19.90	98	0	0					< 50 mm	< 50 mm	N/A	N/A	N/A	N/A
3G Main	WCDMA	1907.6	18.70	74	0	0					< 50 mm	< 50 mm	N/A	N/A	N/A	N/A
3G Main	CDMA	848.3	19.50	89	0	0					< 50 mm	< 50 mm	N/A	N/A	N/A	N/A
3G Main	CDMA	1908.8	17.70	59	0	0					< 50 mm	< 50 mm	N/A	N/A	N/A	N/A
3G Main	CDMA	822.75	19.50	89	0	0					< 50 mm	< 50 mm	N/A	N/A	N/A	N/A
3G Main	LTE 2	1909.2	18.50	71	0	0					< 50 mm	< 50 mm	N/A	N/A	N/A	N/A
3G Main	LTE 4	1754.2	20.50	112	0	0					< 50 mm	< 50 mm	N/A	N/A	N/A	N/A
3G Main	LTE 5	848.2	21.50	141	0	0					< 50 mm	< 50 mm	N/A	N/A	N/A	N/A
3G Main	LTE 13	784.5	21.00	126	0	0					< 50 mm	< 50 mm	N/A	N/A	N/A	N/A
3G Main	LTE 17	713.5	22.00	158	0	0					< 50 mm	< 50 mm	N/A	N/A	N/A	N/A
3G Main	LTE 25	1914.2	18.00	63	0	0					< 50 mm	< 50 mm	N/A	N/A	N/A	N/A

Note(s):

1. According to KDB 447498, if the calculated Power threshold is less than the output power then SAR testing is required.

Conclusion:

As the calculated Power Threshold is greater than the DUT output power for Edge2 and 3 SAR testing is not required

13.2. Estimated SAR for Simultaneous Transmission SAR Analysis

Considerations for using estimated SAR values:

1. If the antenna to DUT adjacent edge or bottom separation distance is < 50mm a distance of 5mm is used to determine SAR estimated SAR value.
2. If the antenna to DUT adjacent edge or bottom separation distance is >50mm the actual antenna to user separation distance is used to determine SAR estimated SAR value.
3. Output power is the maximum rated power (including tune-up or manufacturing tolerances) and includes source-based averaging.
4. If the antenna separation distance is > 50mm then the estimated SAR value is the lesser of the estimated value at 50mm or 0.4 W/Kg.
5. Formulas round separation distance to nearest mm and power to nearest mW before calculating estimated SAR

13.2.1. Estimated SAR for WWAN

Antenna	Tx	Frequency (MHz)	Output power		Separation distances (mm)						Estimated SAR Value					
			dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front
Full Power 3G - distances include sensor triggering distance for rear (10mm) and edge 1 (20mm)																
3G Main	GSM	848.8	26.98	499	10	20	167.6	185.1	0		Measure	Measure	0.400	0.400	Measure	N/A
3G Main	GSM	1909.8	23.98	250	10	20	167.6	185.1	0		Measure	Measure	0.400	0.400	Measure	N/A
3G Main	WCDMA	846.6	24.00	251	10	20	167.6	185.1	0		Measure	Measure	0.400	0.400	Measure	N/A
3G Main	WCDMA	1752.6	24.00	251	10	20	167.6	185.1	0		Measure	Measure	0.400	0.400	Measure	N/A
3G Main	WCDMA	1907.6	24.00	251	10	20	167.6	185.1	0		Measure	Measure	0.400	0.400	Measure	N/A
3G Main	CDMA	848.3	24.50	282	10	20	167.6	185.1	0		Measure	Measure	0.400	0.400	Measure	N/A
3G Main	CDMA	1908.8	24.50	282	10	20	167.6	185.1	0		Measure	Measure	0.400	0.400	Measure	N/A
3G Main	CDMA	822.75	24.50	282	10	20	167.6	185.1	0		Measure	Measure	0.400	0.400	Measure	N/A
3G Main	LTE 2	1909.2	24.00	251	10	20	167.6	185.1	0		Measure	Measure	0.400	0.400	Measure	N/A
3G Main	LTE 4	1754.2	24.00	251	10	20	167.6	185.1	0		Measure	Measure	0.400	0.400	Measure	N/A
3G Main	LTE 5	848.2	24.00	251	10	20	167.6	185.1	0		Measure	Measure	0.400	0.400	Measure	N/A
3G Main	LTE 13	784.5	24.00	251	10	20	167.6	185.1	0		Measure	Measure	0.400	0.400	Measure	N/A
3G Main	LTE 17	713.5	24.00	251	10	20	167.6	185.1	0		Measure	Measure	0.400	0.400	Measure	N/A
3G Main	LTE 25	1914.2	24.00	251	10	20	167.6	185.1	0		Measure	Measure	0.400	0.400	Measure	N/A
Reduced Power 3G - distances are for device in contact with phantom for right edge and rear face																
3G Main	GSM	848.8	23.48	223	0	0					Measure	Measure	N/A	N/A	N/A	N/A
3G Main	GSM	1909.8	18.48	70	0	0					Measure	Measure	N/A	N/A	N/A	N/A
3G Main	WCDMA	846.6	21.00	126	0	0					Measure	Measure	N/A	N/A	N/A	N/A
3G Main	WCDMA	1752.6	19.90	98	0	0					Measure	Measure	N/A	N/A	N/A	N/A
3G Main	WCDMA	1907.6	18.70	74	0	0					Measure	Measure	N/A	N/A	N/A	N/A
3G Main	CDMA	848.3	19.50	89	0	0					Measure	Measure	N/A	N/A	N/A	N/A
3G Main	CDMA	1908.8	17.70	59	0	0					Measure	Measure	N/A	N/A	N/A	N/A
3G Main	CDMA	822.75	19.50	89	0	0					Measure	Measure	N/A	N/A	N/A	N/A
3G Main	LTE 2	1909.2	18.50	71	0	0					Measure	Measure	N/A	N/A	N/A	N/A
3G Main	LTE 4	1754.2	20.50	112	0	0					Measure	Measure	N/A	N/A	N/A	N/A
3G Main	LTE 5	848.2	21.50	141	0	0					Measure	Measure	N/A	N/A	N/A	N/A
3G Main	LTE 13	784.5	21.00	126	0	0					Measure	Measure	N/A	N/A	N/A	N/A
3G Main	LTE 17	713.5	22.00	158	0	0					Measure	Measure	N/A	N/A	N/A	N/A
3G Main	LTE 25	1914.2	18.00	63	0	0					Measure	Measure	N/A	N/A	N/A	N/A

Notes:

- Situations that comprised only estimated values (i.e. edge 2) are not reported as they are inherently compliant. The maximum SAR value based on three estimated values would be 1.2 W/Kg. Situations that were justifiably omitted for simultaneous transmission SAR analysis include:
 - Edge 2, for all combinations.
 - Edge 3, WWAN + Wi-Fi 1 Tx on Main: This is WWAN + WLAN Main + Bluetooth, all of which qualify for standalone SAR test exclusion under this test position.
 - Edge4: WWAN + Wi-Fi 1 Tx on Aux: This is WWAN + WLAN Aux and is effectively covered by WWAN + Wi-Fi 2 Tx, which adds the SAR of WLAN Main at its most conservative edge to this combination.

13.2.2. Estimated SAR for Wi-Fi 2 Tx (MIMO)

UL CCS Report number 12J14673-1F does not contain estimated SAR values for Wi-Fi 2Tx (MIMO). For the purpose of the simultaneous transmission analysis Wi-Fi 2Tx (MIMO) has been calculated here using power and separation distances from report number 12J14673-1F. These values have been used for the Edge 1 and Edge 3 WWAN and Wi-Fi 2Tx (MIMO) simultaneous transmission analysis.

Antenna	Tx	Frequency (MHz)	Output power		Separation distances (mm)						Estimated SAR Value					
			dBm	mW	Bottom	Edge 1	Edge 2	Edge 3	Edge 4	Front	Bottom	Edge 1	Edge 2	Edge 3	Edge 4	Front
WiFi - Main Antenna																
WLAN Main	WiFi	2412	12.50	18	5	5	265.5	139	5		Measure	Measure	0.075	0.075	Measure	N/A
WLAN Main	WiFi	5180	12.00	16	5	5	265.5	139	5		Measure	Measure	0.097	0.097	Measure	N/A
WLAN Main	WiFi	5260	12.40	17	5	5	265.5	139	5		Measure	Measure	0.104	0.104	Measure	N/A
WLAN Main	WiFi	5500	12.50	18	5	5	265.5	139	5		Measure	Measure	0.113	0.113	Measure	N/A
WLAN Main	WiFi	5745	12.00	16	5	5	265.5	139	5		Measure	Measure	0.102	0.102	Measure	N/A
Bluetooth / WiFi - Aux Antenna																
WLAN Aux	WiFi	2412	12.50	18	5	184.5	228.3	5	5		Measure	0.075	0.075	Measure	Measure	N/A
WLAN Aux	WiFi	5180	12.00	16	5	184.5	228.3	5	5		Measure	0.097	0.097	Measure	Measure	N/A
WLAN Aux	WiFi	5260	12.30	17	5	184.5	228.3	5	5		Measure	0.104	0.104	Measure	Measure	N/A
WLAN Aux	WiFi	5500	12.50	18	5	184.5	228.3	5	5		Measure	0.113	0.113	Measure	Measure	N/A
WLAN Aux	WiFi	5745	12.00	16	5	184.5	228.3	5	5		Measure	0.102	0.102	Measure	Measure	N/A
WLAN Aux	Bluetooth	2402	6.50	4	5	184.5	228.3	5	5		0.165	0.017	0.017	0.165	0.165	N/A

Notes:

- Situations that comprised only estimated values (i.e. edge 2) are not reported as they are inherently compliant. The maximum SAR value based on two estimated values would be 0.8 W/Kg, well below the highest stand-alone SAR value for Edges 3 and 4 and therefore not the most conservative exposure condition for simultaneous transmission analysis. Situations that were justifiably omitted for simultaneous transmission SAR analysis include:
 - Edge 2, for all combinations.
 - Edge 3, WWAN + Wi-Fi 1 Tx on Main: This is WWAN + WLAN Main + Bluetooth, all of which qualify for standalone SAR test exclusion under this test position.
 - Edge4: WWAN + Wi-Fi 1 Tx on Aux: This is WWAN + WLAN Aux and is effectively covered by WWAN + Wi-Fi 2 Tx, which adds the SAR of WLAN Main at its most conservative edge to this combination.
- Wherever appropriate, measured or estimated Wi-Fi 1 Tx (SISO) SAR values were used to represent those of Wi-Fi 2 Tx (MIMO); if compliance can be shown with the more conservative Wi-Fi 1 Tx values, then there is no need to perform separate assessment for Wi-Fi 2 Tx.
- However, where estimated Wi-Fi 1 Tx SAR values are overly conservative, then estimated Wi-Fi 2 Tx (MIMO) values are used in accordance with the table above.

13.3. GSM850

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	GPRS 1 Slots	128	824.2	29.5	28.7				
			190	836.6	29.5	28.7	0.279	0.335		1
			251	848.8	29.5	28.7				
Edge 1	0	GPRS 1 Slots	128	824.2	29.5	28.7	0.808	0.965		
			190	836.6	29.5	28.7	0.911	1.093		
			251	848.8	29.5	28.7	0.984	1.183	1	

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	10	GPRS 2 Slots	128	824.2	33.0	32.2				
			190	836.6	33.0	32.2	0.510	0.617		1
			251	848.8	33.0	32.2				
Edge 1	20	GPRS 2 Slots	128	824.2	33.0	32.2				
			190	836.6	33.0	32.2	0.316	0.383		1
			251	848.8	33.0	32.2				
Edge 4	0	GPRS 2 Slots	128	824.2	33.0	32.2				
			190	836.6	33.0	32.2	0.123	0.149		1
			251	848.8	33.0	32.2				

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

1. ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
2. ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
3. ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

13.4. GSM1900

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	GPRS 2 Slots	512	1850.2	24.5	23.60				
			661	1880.0	24.5	23.49	0.511	0.645		1
			810	1909.8	24.5	23.62				
Edge 1	0	GPRS 2 Slots	512	1850.2	24.5	23.60	0.681	0.838		
			661	1880.0	24.5	23.49	0.770	0.972		
			810	1909.8	24.5	23.62	0.948	1.161	2	

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	10	GPRS 2 Slots	128	1850.2	30.0	29.5				
			190	1880.0	30.0	29.4	0.484	0.552		1
			251	1909.8	30.0	29.6				
Edge 1	20	GPRS 2 Slots	128	1850.2	30.0	29.5				
			190	1880.0	30.0	29.4	0.263	0.300		1
			251	1909.8	30.0	29.6				
Edge 4	0	GPRS 2 Slots	128	1850.2	30.0	29.5				
			190	1880.0	30.0	29.4	0.146	0.166		1
			251	1909.8	30.0	29.6				

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

1. ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
2. ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
3. ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

13.5. W-CDMA Band V

Test mode reduction considerations

Per KDB 941225 D01, Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit.

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	Rel 99 RMC 12.2 kbps	4132	826.4	21.0	19.9				
			4183	836.6	21.0	19.8	0.250	0.327		1
			4233	846.6	21.0	20.0				
Edge 1	0	Rel 99 RMC 12.2 kbps	4132	826.4	21.0	19.9				
			4183	836.6	21.0	19.8	0.430	0.562	3	1
			4233	846.6	21.0	20.0				

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	10	Rel 99 RMC 12.2 kbps	4132	826.4	24.0	22.9				
			4183	836.6	24.0	22.9	0.173	0.221		1
			4233	846.6	24.0	22.9				
Edge 1	20	Rel 99 RMC 12.2 kbps	4132	826.4	24.0	22.9				
			4183	836.6	24.0	22.9	0.176	0.225		1
			4233	846.6	24.0	22.9				
Edge 4	0	Rel 99 RMC 12.2 kbps	4132	826.4	24.0	22.9				
			4183	836.6	24.0	22.9	0.0245	0.031		1
			4233	846.6	24.0	22.9				

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

1. ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
2. ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
3. ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

13.6. W-CDMA Band IV

Test mode reduction considerations

Per KDB 941225 D01, Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	Rel 99 RMC 12.2 kbps	1312	1712.4	19.9	19.46				
			1413	1732.6	19.9	19.45	0.501	0.556		1
			1513	1752.6	19.9	19.52				
Edge 1	0	Rel 99 RMC 12.2 kbps	1312	1712.4	19.9	19.46	1.040	1.151	4	
			1413	1732.6	19.9	19.45	1.060	1.176		1
			1513	1752.6	19.9	19.52	1.030	1.124		

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	10	Rel 99 RMC 12.2 kbps	1312	1712.4	24.0	23.26				
			1413	1732.6	24.0	23.20	0.509	0.612		1
			1513	1752.6	24.0	23.25				
Edge 1	20	Rel 99 RMC 12.2 kbps	1312	1712.4	24.0	23.26				
			1413	1732.6	24.0	23.20	0.348	0.418		1
			1513	1752.6	24.0	23.25				
Edge 4	0	Rel 99 RMC 12.2 kbps	1312	1712.4	24.0	23.26				
			1413	1732.6	24.0	23.20	0.180	0.216		1
			1513	1752.6	24.0	23.25				

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

1. ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
2. ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
3. ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

13.7. W-CDMA Band II

Test mode reduction considerations

Per KDB 941225 D01, Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit.

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	Rel 99 RMC 12.2 kbps	9262	1852.4	18.7	17.77				
			9400	1880.0	18.7	17.74	0.359	0.448		1
			9538	1907.6	18.7	17.84				
Edge 1	0	Rel 99 RMC 12.2 kbps	9262	1852.4	18.7	17.77				
			9400	1880.0	18.7	17.74	0.601	0.750	5	1
			9538	1907.6	18.7	17.84				

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	10	Rel 99 RMC 12.2 kbps	9262	1852.4	24.0	23.3				
			9400	1880.0	24.0	23.2	0.618	0.743		1
			9538	1907.6	24.0	23.3				
Edge 1	20	Rel 99 RMC 12.2 kbps	9262	1852.4	24.0	23.3				
			9400	1880.0	24.0	23.2	0.242	0.291		1
			9538	1907.6	24.0	23.3				
Edge 4	0	Rel 99 RMC 12.2 kbps	9262	1852.4	24.0	23.3				
			9400	1880.0	24.0	23.2	0.139	0.167		1
			9538	1907.6	24.0	23.3				

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

1. ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
2. ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
3. ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

13.8. CDMA Band 0

Test mode reduction considerations

Per KDB 941225 D01, Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit.

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-Up Limit	Meas.	Meas.	Scaled		
Rear	0	1xRTT (RC3 SO32)	1013	824.7	19.5	19.1				
			384	836.52	19.5	18.85	0.201	0.233		1
			777	848.31	19.5	18.84				
		1xEVDO Rel. 0	1013	824.7	19.5	19.13				
			384	836.52	19.5	18.90	0.147	0.169		1
			777	848.31	19.5	18.84				
Edge 1	0	1xRTT (RC3 SO32)	1013	824.7	19.5	19.1				
			384	836.52	19.5	18.85	0.341	0.396		1
			777	848.31	19.5	18.84				
		1xEVDO Rel. 0	1013	824.7	19.5	19.13				
			384	836.52	19.5	18.90	0.347	0.398		6
			777	848.31	19.5	18.84				

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-Up Limit	Meas.	Meas.	Scaled		
Rear	10	1xRTT (RC3 SO32)	1013	824.7	24.5	23.80				
			384	836.52	24.5	23.80	0.240	0.282		1
			777	848.31	24.5	23.70				
		1xEVDO Rel. 0	1013	824.7	24.5	23.80				
			384	836.52	24.5	23.80	0.302	0.355		1
			777	848.31	24.5	23.60				
Edge 1	20	1xRTT (RC3 SO32)	1013	824.7	24.5	23.80				
			384	836.52	24.5	23.80	0.078	0.091		1
			777	848.31	24.5	23.70				
		1xEVDO Rel. 0	1013	824.7	24.5	23.80				
			384	836.52	24.5	23.80	0.093	0.109		
			777	848.31	24.5	23.60				
Edge 4	0	1xRTT (RC3 SO32)	1013	824.7	24.5	23.80				
			384	836.52	24.5	23.80	0.025	0.029		
			777	848.31	24.5	23.70				
		1xEVDO Rel. 0	1013	824.7	24.5	23.80				
			384	836.52	24.5	23.80	0.028	0.033		
			777	848.31	24.5	23.60				

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

13.9. CDMA Band I

Test mode reduction considerations

Per KDB 941225 D01, Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit.

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-Up Limit	Meas.	Meas.	Scaled		
Rear	0	1xRTT (RC3 SO32)	25	1851.25	17.7	17.53				
			600	1880	17.7	17.43	0.393	0.393		
			1175	1908.75	17.7	17.7				
		1xEVDO Rel. 0	25	1851.25	17.7	17.38				
			600	1880	17.7	17.20	0.408	0.458		
			1175	1908.75	17.7	17.67				
Edge 1	0	1xRTT (RC3 SO32)	25	1851.25	17.7	17.53	0.825	0.858		
			600	1880	17.7	17.43	0.919	0.978		
			1175	1908.75	17.7	17.7	1.060	1.060		
		1xEVDO Rel. 0	25	1851.25	17.7	17.38	0.857	0.923		
			600	1880	17.7	17.20	1.040	1.167	7	
			1175	1908.75	17.7	17.67	0.994	1.001		

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-Up Limit	Meas.	Meas.	Scaled		
Rear	10	1xRTT (RC3 SO32)	25	1851.25	24.5	24.20				
			600	1880	24.5	24.00	0.640	0.718		1
			1175	1908.75	24.5	24.04				
		1xEVDO Rel. 0	25	1851.25	24.5	24.20				
			600	1880	24.5	24.00	0.617	0.692		1
			1175	1908.75	24.5	24.00				
Edge 1	20	1xRTT (RC3 SO32)	25	1851.25	24.5	24.20				
			600	1880	24.5	24.00	0.299	0.335		1
			1175	1908.75	24.5	24.04				
		1xEVDO Rel. 0	25	1851.25	24.5	24.20				
			600	1880	24.5	24.00	0.301	0.338		1
			1175	1908.75	24.5	24.00				
Edge 4	0	1xRTT (RC3 SO32)	25	1851.25	24.5	24.20				
			600	1880	24.5	24.00	0.166	0.186		1
			1175	1908.75	24.5	24.04				
		1xEVDO Rel. 0	25	1851.25	24.5	24.20				
			600	1880	24.5	24.00	0.147	0.165		1
			1175	1908.75	24.5	24.00				

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

13.10. CDMA Band 10

Test mode reduction considerations

Per KDB 941225 D01, Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit.

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-Up Limit	Meas.	Meas.	Scaled		
Rear	0	1xRTT (RC3 SO32)	450	817.25	19.5	18.7				
			580	820.5	19.5	18.85	0.186	0.216		1
			670	822.75	19.5	18.93				
		1xEVDO Rel. 0	450	817.25	19.5	18.80				
			580	820.5	19.5	18.80	0.187	0.220		1
			670	822.75	19.5	18.83				
Edge 1	0	1xRTT (RC3 SO32)	450	817.25	19.5	18.7				
			580	820.5	19.5	18.85	0.318	0.369		1
			670	822.75	19.5	18.93				
		1xEVDO Rel. 0	450	817.25	19.5	18.80				
			580	820.5	19.5	18.80	0.315	0.370	8	1
			670	822.75	19.5	18.83				

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-Up Limit	Meas.	Meas.	Scaled		
Rear	10	1xRTT (RC3 SO32)	450	817.25	24.5	23.74				
			580	820.5	24.5	23.70	0.223	0.268		1
			670	822.75	24.5	23.70				
		1xEVDO Rel. 0	450	817.25	24.5	23.70				
			580	820.5	24.5	23.73	0.176	0.210		1
			670	822.75	24.5	23.7				
Edge 1	20	1xRTT (RC3 SO32)	450	817.25	24.5	23.74				
			580	820.5	24.5	23.70	0.096	0.116		1
			670	822.75	24.5	23.70				
		1xEVDO Rel. 0	450	817.25	24.5	23.70				
			580	820.5	24.5	23.73	0.114	0.136		1
			670	822.75	24.5	23.7				
Edge 4	0	1xRTT (RC3 SO32)	450	817.25	24.5	23.74				
			580	820.5	24.5	23.70	0.009	0.011		1
			670	822.75	24.5	23.70				
		1xEVDO Rel. 0	450	817.25	24.5	23.70				
			580	820.5	24.5	23.73	0.02600	0.031		1
			670	822.75	24.5	23.7				

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

13.11. LTE Band 2

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	QPSK	19100	1900	1	99	18.5	17.6	0.646	0.795		1
			18900	1880	1	49	18.5	17.5				
			18700	1860	1	49	18.5	17.5				
			18900	1880	50	0	18.5	17.4	0.574	0.739		1
			18700	1860	50	24	18.5	17.4				
			19100	1900	50	0	18.5	17.4				
			18900	1880	100	0	18.5	17.3				
Edge 1	0	QPSK	19100	1900	1	99	18.5	17.6	1.090	1.341	9	
			18900	1880	1	49	18.5	17.5	1.010	1.272		
			18700	1860	1	49	18.5	17.5	0.973	1.225		
			18900	1880	50	0	18.5	17.4	0.972	1.252		
			18700	1860	50	24	18.5	17.4	0.945	1.217		
			19100	1900	50	0	18.5	17.4	1.030	1.327		
			18900	1880	100	0	18.5	17.3	1.000	1.318		

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 14.5 “SAR Test Plots for LTE”

LTE Band 2 Continued

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	10	QPSK	19100	1900	1	99	24.0	23.3	0.418	0.491		1
			18700	1860	1	49	24.0	22.9				
			18900	1880	1	49	24.0	22.8				
			18700	1860	50	0	24.0	21.8	0.301	0.500		1
			18900	1880	50	0	24.0	21.8				
			19100	1900	50	0	24.0	21.7				
			18900	1880	100	0	24.0	21.8				
Edge 1	20	QPSK	19100	1900	1	99	24.0	23.3	0.244	0.287		1
			18700	1860	1	49	24.0	22.9				
			18900	1880	1	49	24.0	22.8				
			18700	1860	50	0	24.0	21.8	0.142	0.236		1
			18900	1880	50	0	24.0	21.8				
			19100	1900	50	0	24.0	21.7				
			18900	1880	100	0	24.0	21.8				
Edge 4	0	QPSK	19100	1900	1	99	24.0	23.3	0.162	0.190		1
			18700	1860	1	49	24.0	22.9				
			18900	1880	1	49	24.0	22.8				
			18700	1860	50	0	24.0	21.8	0.147	0.244		1
			18900	1880	50	0	24.0	21.8				
			19100	1900	50	0	24.0	21.7				
			18900	1880	100	0	24.0	21.8				

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 14.5 "SAR Test Plots for LTE"

13.12. LTE Band 4

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	QPSK	20175	1732.5	1	49	20.5	19.1	0.485	0.669		1
			20050	1720	1	0	20.5	19.0				
			20300	1745	1	0	20.5	19.0				
			20175	1732.5	50	0	20.5	19.0				
			20050	1720	50	0	20.5	19.0	0.478	0.675		1
			20300	1745	50	24	20.5	18.9				
			20300	1745	100	0	20.5	19.0				
Edge 1	0	QPSK	20175	1732.5	1	49	20.5	19.1	0.858	1.184		
			20050	1720	1	0	20.5	19.1	0.764	1.055		
			20300	1745	1	0	20.5	19.0	0.849	1.199		
			20175	1732.5	50	0	20.5	19.0	0.789	1.114		
			20050	1720	50	0	20.5	19.0	0.777	1.098		
			20300	1745	50	24	20.5	18.9	0.872	1.260	10	
			20300	1745	100	0	20.5	19.0	0.865	1.222		

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - o When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - o When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - o For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - o Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
2. Plot numbers correspond to the numbers found in the footnotes of Appendix 14.5 “SAR Test Plots for LTE”

LTE Band 4 Continued

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	10	QPSK	20050	1720	1	99	24.0	22.9	0.319	0.411		1
			20175	1732.5	1	0	24.0	22.9				
			20300	1745	1	0	24.0	22.9				
			20300	1745	50	0	24.0	21.8	0.236	0.392		1
			20050	1720	50	0	24.0	21.7				
			20175	1732.5	50	24	24.0	20.8				
			20300	1745	100	0	24.0	21.7				
Edge 1	20	QPSK	20050	1720	1	99	24.0	22.9	0.189	0.243		1
			20175	1732.5	1	0	24.0	22.9				
			20300	1745	1	0	24.0	22.9				
			20300	1745	50	0	24.0	21.8	0.135	0.224		1
			20050	1720	50	0	24.0	21.7				
			20175	1732.5	50	24	24.0	20.8				
			20300	1745	100	0	24.0	21.7				
Edge 4	0	QPSK	20050	1720	1	99	24.0	22.9	0.112	0.144		1
			20175	1732.5	1	0	24.0	22.9				
			20300	1745	1	0	24.0	22.9				
			20300	1745	50	0	24.0	21.8	0.085	0.141		1
			20050	1720	50	0	24.0	21.7				
			20175	1732.5	50	24	24.0	20.8				
			20300	1745	100	0	24.0	21.7				

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 14.5 "SAR Test Plots for LTE"

13.13. LTE Band 5

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	QPSK	20600	844	1	24	21.5	20.7	0.289	0.349		1
			20525	836.5	1	49	21.5	20.4				
			20450	829	1	24	21.5	20.5				
			20600	844	25	24	21.5	20.6	0.384	0.471		1
			20525	836.5	25	0	21.5	20.5				
			20450	829	25	12	21.5	20.5				
Edge 1	0	QPSK	20600	844	1	24	21.5	20.7	0.962	1.162		
			20525	836.5	1	49	21.5	20.4	1.030	1.315		
			20450	829	1	24	21.5	20.5	1.010	1.283		
			20600	844	25	24	21.5	20.6	0.929	1.140		
			20525	836.5	25	0	21.5	20.5	1.030	1.300		
			20450	829	25	12	21.5	20.5	1.000	1.268		
			20600	844	50	0	21.5	20.4	1.050	1.346	11	

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 14.5 “SAR Test Plots for LTE”

LTE Band 5 Continued

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	10	QPSK	20600	844	1	24	24.0	23.1	0.164	0.202		1
			20525	836.5	1	49	24.0	22.8				
			20450	829	1	24	24.0	22.8				
			20600	844	25	24	24.0	21.9	0.121	0.197		1
			20525	836.5	25	24	24.0	21.8				
			20450	829	25	12	24.0	21.9				
			20600	844	50	0	24.0	20.9				
Edge 1	20	QPSK	20600	844	1	24	24.0	23.1	0.068	0.084		1
			20525	836.5	1	49	24.0	22.8				
			20450	829	1	24	24.0	22.8				
			20600	844	25	24	24.0	21.9	0.054	0.087		1
			20525	836.5	25	24	24.0	21.8				
			20450	829	25	12	24.0	21.9				
			20600	844	50	0	24.0	20.9				
Edge 4	0	QPSK	20600	844	1	24	24.0	23.1	0.027	0.033		1
			20525	836.5	1	49	24.0	22.8				
			20450	829	1	24	24.0	22.8				
			20600	844	25	24	24.0	21.9	0.020	0.033		1
			20525	836.5	25	24	24.0	21.8				
			20450	829	25	12	24.0	21.9				
			20600	844	50	0	24.0	20.9				

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 14.5 "SAR Test Plots for LTE"

13.14. LTE Band 13

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	QPSK	23230	782	1	0	21.0	19.74	0.342	0.457		1
			23230	782	1	24	21.0	19.50				
			23230	782	1	49	21.0	19.73				
			23230	782	25	24	21.0	19.70	0.300	0.405		1
			23230	782	25	12	21.0	19.51				
			23230	782	25	0	21.0	19.58				
			23230	782	50	0	21.0	19.53				
Edge 1	0	QPSK	23230	782	1	0	21.0	19.74	0.452	0.604	12	1
			23230	782	1	24	21.0	19.50				
			23230	782	1	49	21.0	19.73				
			23230	782	25	24	21.0	19.70	0.433	0.584		1
			23230	782	25	12	21.0	19.51				
			23230	782	25	0	21.0	19.58				
			23230	782	50	0	21.0	19.53				

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 14.5 “SAR Test Plots for LTE”

LTE Band 13 Continued

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	10	QPSK	23230	782	1	0	24.0	22.80	0.254	0.335		1
			23230	782	1	24	24.0	22.55				
			23230	782	1	49	24.0	22.70				
			23230	782	25	24	24.0	21.56	0.205	0.360		1
			23230	782	25	0	24.0	21.55				
			23230	782	25	12	24.0	21.48				
			23230	782	50	0	24.0	21.45				
Edge 1	20	QPSK	23230	782	1	0	24.0	22.80	0.239	0.315		1
			23230	782	1	24	24.0	22.55				
			23230	782	1	49	24.0	22.70				
			23230	782	25	24	24.0	21.56	0.181	0.317		1
			23230	782	25	0	24.0	21.55				
			23230	782	25	12	24.0	21.48				
			23230	782	50	0	24.0	21.45				
Edge 4	0	QPSK	23230	782	1	0	24.0	22.80	0.0677	0.089		1
			23230	782	1	24	24.0	22.55				
			23230	782	1	49	24.0	22.70				
			23230	782	25	24	24.0	21.56	0.069	0.121		1
			23230	782	25	0	24.0	21.55				
			23230	782	25	12	24.0	21.48				
			23230	782	50	0	24.0	21.45				

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 14.5 "SAR Test Plots for LTE"

13.15. LTE Band 17

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	QPSK	23780	709	1	24	22.0	20.80	0.282	0.372		1
			23790	710	1	0	22.0	20.78				
			23800	711	1	24	22.0	20.70				
			23780	709	25	12	22.0	20.80	0.284	0.374		1
			23790	710	25	0	22.0	20.76				
			23800	711	25	0	22.0	20.73				
			23790	710	50	0	22.0	20.70				
Edge 1	0	QPSK	23780	709	1	24	22.0	20.80	0.537	0.708	13	1
			23790	709	1	0	22.0	20.78				
			23800	711	1	24	22.0	20.70				
			23780	709	25	12	22.0	20.80	0.525	0.692		1
			23790	710	25	0	22.0	20.76				
			23800	711	25	0	22.0	20.73				
			23790	710	50	0	22.0	20.70				

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 14.5 "SAR Test Plots for LTE"

LTE Band 17 Continued

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	10	QPSK	23780	709	1	24	24.0	22.8	0.177	0.233		1
			23790	710	1	0	24.0	22.7				
			23800	711	1	24	24.0	22.8				
			23780	709	25	12	24.0	21.9	0.142	0.231		1
			23790	710	25	0	24.0	21.8				
			23800	711	25	0	24.0	20.7				
			23790	710	50	0	24.0	21.7				
Edge 1	20	QPSK	23780	709	1	24	24.0	22.8	0.071	0.094		1
			23790	710	1	0	24.0	22.7				
			23800	711	1	24	24.0	22.8				
			23780	709	25	12	24.0	21.9	0.057	0.093		1
			23790	710	25	0	24.0	21.8				
			23800	711	25	0	24.0	20.7				
			23790	710	50	0	24.0	21.7				
Edge 4	0	QPSK	23780	709	1	24	24.0	22.8	0.022	0.028		1
			23790	710	1	0	24.0	22.7				
			23800	711	1	24	24.0	22.8				
			23780	709	25	12	24.0	21.9	0.014	0.023		1
			23790	710	25	0	24.0	21.8				
			23800	711	25	0	24.0	20.7				
			23790	710	50	0	24.0	21.7				

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 14.5 "SAR Test Plots for LTE"

13.16. LTE Band 25

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	QPSK	26590	1905	1	99	18.0	16.8	0.535	0.705		1
			26365	1882.5	1	0	18.0	16.7				
			26140	1860	1	0	18.0	16.6				
			26590	1905	50	49	18.0	16.9	0.525	0.676		1
			26140	1860	50	0	18.0	16.6				
			26365	1882.5	50	24	18.0	16.6				
			26365	1882.5	100	0	18.0	16.6				
Edge 1	0	QPSK	26590	1905	1	99	18.0	16.8	0.857	1.130		
			26365	1882.5	1	0	18.0	16.7	0.871	1.175		
			26140	1860	1	0	18.0	16.7	0.813	1.097		
			26590	1905	50	49	18.0	16.9	0.879	1.132		
			26140	1860	50	0	18.0	16.6	0.824	1.137		
			26365	1882.5	50	24	18.0	16.6	0.841	1.161		
			26365	1882.5	100	0	18.0	16.6	0.859	1.186	14	

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 14.5 “SAR Test Plots for LTE”

LTE Band 25 Continued

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	10	QPSK	26590	1905	1	99	24.0	22.9	0.385	0.496		1
			26365	1882.5	1	0	24.0	22.8				
			26140	1860	1	0	24.0	22.8				
			26590	1905	50	49	24.0	21.8	0.295	0.490		1
			26365	1882.5	50	0	24.0	21.6				
			26140	1860	50	24	24.0	21.5				
			26590	1905	100	0	24.0	21.7				
Edge 1	20	QPSK	26590	1905	1	99	24.0	22.9	0.290	0.374		1
			26365	1882.5	1	0	24.0	22.8				
			26140	1860	1	0	24.0	22.8				
			26590	1905	50	49	24.0	21.8	0.230	0.382		1
			26365	1882.5	50	0	24.0	21.6				
			26140	1860	50	24	24.0	21.5				
			26590	1905	100	0	24.0	21.7				
Edge 4	0	QPSK	26590	1905	1	99	24.0	22.9	0.108	0.139		1
			26365	1882.5	1	0	24.0	22.8				
			26140	1860	1	0	24.0	22.8				
			26590	1905	50	49	24.0	21.8	0.103	0.171		1
			26365	1882.5	50	0	24.0	21.6				
			26140	1860	50	24	24.0	21.5				
			26590	1905	100	0	24.0	21.7				

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 14.5 "SAR Test Plots for LTE"

13.18. Summary of Highest SAR Values

Results for the highest measured SAR values in each frequency band and mode

Technology Band	Test Configuration		Mode	Dist. (mm)	Freq. (MHz)	dBm	1g/SAR (w/KG)
	Exposure	Position					
GSM 850	Body	Edge 1 (Prox on)	GPRS 1 Slot	0	848.8	28.8	0.984
GSM 1900	Body	Edge 1 (Prox on)	GPRS 2 slot	0	1909.8	23.62	0.948
CDMA BC0	Body	Edge 1 (Prox on)	1xEVDO (rel. 0)	0	836.6	18.9	0.347
CDMA BC1	Body	Edge 1 (Prox on)	1xEVDO (rel. 0)	0	1880	17.2	1.04
CDMA BC 10	Body	Edge 1 (Prox on)	1xRTT (RC3 SO32)	0	820.5	19.5	0.318
W-CDMA Band V	Body	Edge 1 (Prox on)	Rel 99 RMC 12.2kbps	0	836.6	19.84	0.53
W-CDMA Band IV	Body	Edge 1 (Prox on)	Rel 99 RMC 12.2kbps	0	1732.6	19.45	1.06
W-CDMA Band II	Body	Edge 1 (Prox off)	Rel 99 RMC 12.2kbps	10	23.2	1880	0.618
LTE Band 2	Body	Edge 1 (Prox on)	20 MHz(QPSK) RB 1/99	0	1900	17.6	1.09
LTE Band 4	Body	Edge 1 (Prox on)	20 MHz(QPSK) RB 50/24	0	1745	20.5	0.872
LTE Band 5	Body	Edge 1 (Prox on)	10 MHz (QPSK) RB 25/24	0	844	20.4	1.05
LTE Band 13	Body	Edge 1 (Prox on)	10 MHZ (QPSK) RB 1/0	0	782	19.74	0.452
LTE Band 17	Body	Edge 1 (Prox on)	10 MHz (QPSK) RB 1/24	0	709	20.8	0.537
LTE Band 25	Body	Edge 1 (Prox on)	20 MHz(QPSK) RB 50/49	0	1882.5	1905	0.879

13.19. SAR Measurement Variability and Uncertainty

In accordance with published RF Exposure KDB procedure 865664 D01 SAR measurement 100 MHz to 6 GHz v01. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

- 1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
- 2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
- 3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
- 4) 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.

Wireless Technologies	Test Configuration		Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Meas. SAR (W/kg)		Largest to Smallest SAR Ratio	Plot No.
	Exposure	Position					Original	Repeated		
LTE band 5	Body	Edge 1 Prox. On	10 MHz (QPSK) 50/0	0	20600	844.0	1.050	1.020	1.03	1
W-CDMA Band IV	Body	Edge 1 Prox. On	Rel 99 RMC 12.2kbps	0	1413	1732.6	1.06	1.03	1.03	2
LTE Band 2	Body	Edge 1 Prox. On	20 MHz (QPSK) RB 1/0	0	19100	1900.0	1.09	1.09	1.00	3

Note(s):

- Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is not > 1.20.

14. Simultaneous Transmission SAR Analysis

All Wi-Fi 1-g SAR values were taken from results recorded in SAR report 12J14673-1F, submitted under FCC ID ACJ9TGWL12A or from the MIMO estimated values in section 12.2.2 of this report.

All Simultaneous Transmission SAR analysis applies scaling in accordance with the scaled values documented in this report (for the WWAN radios) and the aforementioned SAR report (12J14673-1F) with scaling applied (for the WLAN radios).

14.1. Sum of the SAR for GSM & Wi-Fi 2.4 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	GSM850	GSM1900	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.617		0.196		0.165	0.978
	0.617			0.062		0.679
		0.645	0.196		0.165	1.006
		0.645		0.062		0.707
Rear, Wi-Fi 2 Tx	0.617		0.196	0.062		0.875
		0.645	0.196	0.062		0.903
Edge 1, Wi-Fi 1 Tx	1.183		0.084		0.017	1.284
	1.183			0.133		1.316
		1.161	0.084		0.017	1.262
		1.161		0.133		1.294
Edge 1, Wi-Fi 2 Tx	1.183		0.084	0.075		1.342
		1.161	0.084	0.075		1.320
Edge 3, Wi-Fi 2 Tx	0.400		0.075	0.418		0.893
		0.400	0.075	0.418		0.893
Edge 4, Wi-Fi 1 Tx	0.149		1.093		0.0089	1.251
		0.166	1.093		0.0089	1.268
Edge 4, Wi-Fi 2 Tx	0.149		1.093	0.126		1.368
		0.166	1.093	0.126		1.385

- As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
- Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.3. Sum of the SAR for W-CDMA & Wi-Fi 2.4 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	Band II	Band IV	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.743		0.196		0.165	1.104
	0.743			0.062		0.805
		0.612	0.196		0.165	0.973
		0.612		0.062		0.674
Rear, Wi-Fi 2 Tx	0.743		0.196	0.062		1.001
		1.176	0.196	0.062		1.434
Edge 1, Wi-Fi 1 Tx	0.750		0.084		0.017	0.851
	0.750			0.133		0.883
		1.176	0.084		0.017	1.277
		1.176		0.133		1.309
Edge 1, Wi-Fi 2 Tx	0.750		0.084	0.075		0.909
		1.176	0.084	0.075		1.335
Edge 3, Wi-Fi 2 Tx	0.400		0.075	0.418		0.893
		0.400	0.075	0.418		0.893
Edge 4, Wi-Fi 1 Tx	0.167		1.093		0.0089	1.269
		0.216	1.093		0.0089	1.318
Edge 4, Wi-Fi 2 Tx	0.167		1.093	0.126		1.386
		0.216	1.093	0.126		1.435

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.4. Sum of the SAR for W-CDMA Band V & Wi-Fi 2.4 GHz Band

Test Position	Data				Σ 1-g SAR (mW/g)
	Band V	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.327	0.196		0.165	0.688
	0.327		0.062		0.389
Rear, Wi-Fi 2 Tx	0.327	0.196	0.062		0.585
Edge 1, Wi-Fi 1 Tx	0.562	0.084		0.017	0.663
	0.562		0.133		0.695
Edge 1,	0.562	0.084	0.075		0.721
Edge 3,	0.400	0.075	0.418		0.893
Edge 4,	0.031	1.093		0.0089	1.133
Edge 4,	0.031	1.093	0.126		1.250

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.5. Sum of the SAR for CDMA BC0 & Wi-Fi 2.4 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.282		0.196		0.165	0.643
	0.282			0.062		0.344
		0.355	0.196		0.165	0.716
		0.355		0.062		0.417
Rear, Wi-Fi 2 Tx	0.282		0.196	0.062		0.540
		0.355	0.196	0.062		0.613
Edge 1, Wi-Fi 1 Tx	0.396		0.084		0.017	0.497
	0.396			0.133		0.529
		0.398	0.084		0.017	0.499
		0.398		0.133		0.531
Edge 1, Wi-Fi 2 Tx	0.396		0.084	0.075		0.555
		0.398	0.084	0.075		0.557
Edge 3, Wi-Fi 2 Tx	0.400		0.075	0.418		0.893
		0.400	0.075	0.418		0.893
Edge 4, Wi-Fi 1 Tx	0.029		1.093		0.0089	1.131
		0.033	1.093		0.0089	1.135
Edge 4, Wi-Fi 2 Tx	0.029		1.093	0.126		1.248
		0.033	1.093	0.126		1.252

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.6. Sum of the SAR for CDMA BC1 & Wi-Fi 2.4 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.718		0.196		0.165	1.079
	0.718			0.062		0.780
		0.692	0.196		0.165	1.053
		0.692		0.062		0.754
Rear, Wi-Fi 2 Tx	0.718		0.196	0.062		0.976
		0.692	0.196	0.062		0.950
Edge 1, Wi-Fi 1 Tx	1.06		0.084		0.017	1.161
	1.06			0.133		1.193
		1.167	0.084		0.017	1.268
		1.167		0.133		1.300
Edge 1, Wi-Fi 2 Tx	1.06		0.084	0.075		1.219
		1.167	0.084	0.075		1.326
Edge 3, Wi-Fi 2 Tx	0.400		0.075	0.418		0.893
		0.400	0.075	0.418		0.893
Edge 4, Wi-Fi 1 Tx	0.186		1.093		0.0089	1.288
		0.165	1.093		0.0089	1.267
Edge 4, Wi-Fi 2 Tx	0.186		1.093	0.126		1.405
		0.165	1.093	0.126		1.384

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.7. Sum of the SAR for CDMA BC10 & Wi-Fi 2.45GHz Bands.

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.268		0.196		0.165	0.629
	0.268			0.062		0.330
		0.22	0.196		0.165	0.581
		0.22		0.062		0.282
Rear, Wi-Fi 2 Tx	0.268		0.196	0.062		0.526
		0.22	0.196	0.062		0.478
Edge 1, Wi-Fi 1 Tx	0.369		0.084		0.017	0.470
	0.369			0.133		0.502
		0.37	0.084		0.017	0.471
		0.37		0.133		0.503
Edge 1, Wi-Fi 2 Tx	0.369		0.084	0.075		0.528
		0.37	0.084	0.075		0.529
Edge 3, Wi-Fi 2 Tx	0.400		0.075	0.418		0.893
		0.400	0.075	0.418		0.893
Edge 4, Wi-Fi 1 Tx	0.011		1.093		0.0089	1.113
		0.031	1.093		0.0089	1.133
Edge 4, Wi-Fi 2 Tx	0.011		1.093	0.126		1.230
		0.031	1.093	0.126		1.250

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.8. Sum of the SAR for LTE Bands 2 and 4 & Wi-Fi 2.4 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 2	LTE Band 4	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.795		0.196		0.165	1.156
	0.795			0.062		0.857
		0.675	0.196		0.165	1.036
		0.675		0.062		0.737
Rear, Wi-Fi 2 Tx	0.795		0.196	0.062		1.053
		0.675	0.196	0.062		0.933
Edge 1, Wi-Fi 1 Tx	1.341		0.084		0.017	1.442
	1.341			0.133		1.474
		1.26	0.084		0.017	1.361
		1.26		0.133		1.393
Edge 1, Wi-Fi 2 Tx	1.341		0.084	0.075		1.500
		1.26	0.084	0.075		1.419
Edge 3, Wi-Fi 2 Tx	0.400		0.075	0.418		0.893
		0.400	0.075	0.418		0.893
Edge 4, Wi-Fi 1 Tx	0.244		1.093		0.0089	1.346
		0.144	1.093		0.0089	1.246
Edge 4, Wi-Fi 2 Tx	0.244		1.093	0.126		1.463
		0.144	1.093	0.126		1.363

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.9. Sum of the SAR for LTE Bands 5 and 13 & Wi-Fi 2.4 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 5	LTE Band 13	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.471		0.196		0.165	0.832
	0.471			0.062		0.533
		0.457	0.196		0.165	0.818
		0.457		0.062		0.519
Rear, Wi-Fi 2 Tx	0.471		0.196	0.062		0.729
		0.457	0.196	0.062		0.715
Edge 1, Wi-Fi 1 Tx	1.346		0.084		0.017	1.447
	1.346			0.133		1.479
		0.604	0.084		0.017	0.705
		0.604		0.133		0.737
Edge 1, Wi-Fi 2 Tx	1.346		0.084	0.075		1.505
		0.604	0.084	0.075		0.763
Edge 3, Wi-Fi 2 Tx	0.400		0.075	0.418		0.893
		0.400	0.075	0.418		0.893
Edge 4, Wi-Fi 1 Tx	0.033		1.093		0.0089	1.135
		0.121	1.093		0.0089	1.223
Edge 4, Wi-Fi 2 Tx	0.033		1.093	0.126		1.252
		0.121	1.093	0.126		1.340

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.10. Sum of the SAR for LTE Bands 17 and 25 & Wi-Fi 2.4 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 17	LTE Band 25	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.374		0.196		0.165	0.735
	0.374			0.062		0.436
		0.705	0.196		0.165	1.066
		0.705		0.062		0.767
Rear, Wi-Fi 2 Tx	0.374		0.196	0.062		0.632
		0.705	0.196	0.062		0.963
Edge 1, Wi-Fi 1 Tx	0.708		0.084		0.017	0.809
	0.708			0.133		0.841
		1.186	0.084		0.017	1.287
		1.186		0.133		1.319
Edge 1, Wi-Fi 2 Tx	0.708		0.084	0.075		0.867
		1.186	0.084	0.075		1.345
Edge 3, Wi-Fi 2 Tx	0.400		0.075	0.418		0.893
		0.400	0.075	0.418		0.893
Edge 4, Wi-Fi 1 Tx	0.028		1.093		0.0089	1.130
		0.171	1.093		0.0089	1.273
Edge 4, Wi-Fi 2 Tx	0.028		1.093	0.126		1.247
		0.171	1.093	0.126		1.390

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.11. Sum of the SAR for GSM & Wi-Fi 5.2 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	850	1900	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.617		0.136		0.165	0.918
	0.617			0.149		0.766
		0.645	0.136		0.165	0.946
		0.645		0.149		0.794
Rear, Wi-Fi 2 Tx	0.617		0.136	0.149		0.902
		0.645	0.136	0.149		0.930
Edge 1, Wi-Fi 1 Tx	1.183		0.061		0.017	1.261
	1.183			0.194		1.377
		1.161	0.061		0.017	1.239
		1.161		0.194		1.355
Edge 1, Wi-Fi 2 Tx	1.183		0.061	0.097		1.341
		1.161	0.061	0.097		1.319
Edge 3, Wi-Fi 2 Tx	0.400		0.097	0.545		1.042
		0.400	0.097	0.545		1.042
Edge 4, Wi-Fi 1 Tx	0.149		0.797		0.0089	0.955
		0.146	0.797		0.0089	0.952
Edge 4, Wi-Fi 2 Tx	0.149		0.797	0.057		1.003
		0.146	0.797	0.057		1.000

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.12. Sum of the SAR for W-CDMA Bands II and IV & Wi-Fi 5.2 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	W-CDMA Band II	W-CDMA Band IV	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.743		0.136		0.165	1.044
	0.743			0.149		0.892
		0.612	0.136		0.165	0.913
		0.612		0.149		0.761
Rear, Wi-Fi 2 Tx	0.743		0.136	0.149		1.028
		0.612	0.136	0.149		0.897
Edge 1, Wi-Fi 1 Tx	0.750		0.061		0.017	0.828
	0.750			0.194		0.944
		1.176	0.061		0.017	1.254
		1.176		0.194		1.370
Edge 1, Wi-Fi 2 Tx	0.750		0.061	0.097		0.908
		1.176	0.061	0.097		1.334
Edge 3, Wi-Fi 2 Tx	0.400		0.097	0.545		1.042
		0.400	0.097	0.545		1.042
Edge 4, Wi-Fi 1 Tx	0.167		0.797		0.0089	0.973
		0.216	0.797		0.0089	1.022
Edge 4, Wi-Fi 2 Tx	0.167		0.797	0.057		1.021
		0.216	0.797	0.057		1.070

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.13. Sum of the SAR for W-CDMA Band V & Wi-Fi 5.2 GHz Band

Test Position	Data				Σ 1-g SAR (mW/g)
	W-CDMA Band V	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.327	0.136		0.165	0.628
	0.327		0.149		0.476
Rear, Wi-Fi 2 Tx	0.327	0.136	0.149		0.612
Edge 1, Wi-Fi 1 Tx	0.562	0.061		0.017	0.640
	0.562		0.194		0.756
Edge 1, Wi-Fi 2 Tx	0.562	0.061	0.097		0.720
Edge 3, Wi-Fi 2 Tx	0.400	0.097	0.545		1.042
Edge 4, Wi-Fi 1 Tx	0.031	0.797		0.0089	0.837
Edge 4, Wi-Fi 2 Tx	0.031	0.797	0.057		0.885

1. As there were only estimated values for edge it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation

14.14. Sum of the SAR for CDMA BC0 & Wi-Fi 5.2GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.282		0.136		0.165	0.583
	0.282			0.149		0.431
		0.355	0.136		0.165	0.656
		0.355		0.149		0.504
Rear, Wi-Fi 2 Tx	0.282		0.136	0.149		0.567
		0.355	0.136	0.149		0.640
Edge 1, Wi-Fi 1 Tx	0.396		0.061		0.017	0.474
	0.396			0.194		0.590
		0.398	0.061		0.017	0.476
		0.398		0.194		0.592
Edge 1, Wi-Fi 2 Tx	0.396		0.061	0.097		0.554
		0.398	0.061	0.097		0.556
Edge 3, Wi-Fi 2 Tx	0.400		0.097	0.545		1.042
		0.400	0.097	0.545		1.042
Edge 4, Wi-Fi 1 Tx	0.029		0.797		0.0089	0.835
		0.033	0.797		0.0089	0.839
Edge 4, Wi-Fi 2 Tx	0.029		0.797	0.057		0.883
		0.033	0.797	0.057		0.887

1. As there were only estimated values for edge it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.15. Sum of the SAR for CDMA BC1 & Wi-Fi5.2GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.718		0.136		0.165	1.019
	0.718			0.149		0.867
		0.692	0.136		0.165	0.993
		0.692		0.149		0.841
Rear, Wi-Fi 2 Tx	0.718		0.136	0.149		1.003
		0.692	0.136	0.149		0.977
Edge 1, Wi-Fi 1 Tx	1.06		0.061		0.017	1.138
	1.06			0.194		1.254
		1.167	0.061		0.017	1.245
		1.167		0.194		1.361
Edge 1, Wi-Fi 2 Tx	1.06		0.061	0.097		1.218
		1.167	0.061	0.097		1.325
Edge 3, Wi-Fi 2 Tx	0.400		0.097	0.545		1.042
		0.400	0.097	0.545		1.042
Edge 4, Wi-Fi 1 Tx	0.186		0.797		0.0089	0.992
		0.165	0.797		0.0089	0.971
Edge 4, Wi-Fi 2 Tx	0.186		0.797	0.057		1.040
		0.165	0.797	0.057		1.019

1. As there were only estimated values for edge it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.16. Sum of the SAR for CDMA BC10 & Wi-Fi 5.2GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.268		0.136		0.165	0.569
	0.268			0.149		0.417
		0.22	0.136		0.165	0.521
		0.22		0.149		0.369
Rear, Wi-Fi 2 Tx	0.268		0.136	0.149		0.553
		0.22	0.136	0.149		0.505
Edge 1, Wi-Fi 1 Tx	0.369		0.061		0.017	0.447
	0.369			0.194		0.563
		0.37	0.061		0.017	0.448
		0.37		0.194		0.564
Edge 1, Wi-Fi 2 Tx	0.369		0.061	0.097		0.527
		0.37	0.061	0.097		0.528
Edge 3, Wi-Fi 2 Tx	0.400		0.097	0.545		1.042
		0.400	0.097	0.545		1.042
Edge 4, Wi-Fi 1 Tx	0.011		0.797		0.0089	0.817
		0.031	0.797		0.0089	0.837
Edge 4, Wi-Fi 2 Tx	0.011		0.797	0.057		0.865
		0.031	0.797	0.057		0.885

1. As there were only estimated values for edge it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation

14.17. Sum of the SAR for LTE Bands 2 and 4 & Wi-Fi 5.2 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 2	LTE Band 4	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.795		0.136		0.165	1.096
	0.795			0.149		0.944
		0.675	0.136		0.165	0.976
		0.675		0.149		0.824
Rear, Wi-Fi 2 Tx	0.795		0.136	0.149		1.080
		0.675	0.136	0.149		0.960
Edge 1, Wi-Fi 1 Tx	1.341		0.061		0.017	1.419
	1.341			0.194		1.535
		1.26	0.061		0.017	1.338
		1.26		0.194		1.454
Edge 1, Wi-Fi 2 Tx	1.341		0.061	0.097		1.499
		1.26	0.061	0.097		1.418
Edge 3, Wi-Fi 2 Tx	0.400		0.097	0.545		1.042
		0.400	0.097	0.545		1.042
Edge 4, Wi-Fi 1 Tx	0.244		0.797		0.0089	1.050
		0.144	0.797		0.0089	0.950
Edge 4, Wi-Fi 2 Tx	0.244		0.797	0.057		1.098
		0.144	0.797	0.057		0.998

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.18. Sum of the SAR for LTE Bands 5 and 13 & Wi-Fi 5.2 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 5	LTE Band 13	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.471		0.136		0.165	0.772
	0.471			0.149		0.620
		0.457	0.136		0.165	0.758
		0.457		0.149		0.606
Rear, Wi-Fi 2 Tx	0.471		0.136	0.149		0.756
		0.457	0.136	0.149		0.742
Edge 1, Wi-Fi 1 Tx	1.346		0.061		0.017	1.424
	1.346			0.194		1.540
		0.604	0.061		0.017	0.682
		0.604		0.194		0.798
Edge 1, Wi-Fi 2 Tx	1.346		0.061	0.097		1.504
		0.604	0.061	0.097		0.762
Edge 3, Wi-Fi 2 Tx	0.400		0.097	0.545		1.042
		0.400	0.097	0.545		1.042
Edge 4, Wi-Fi 1 Tx	0.033		0.797		0.0089	0.839
		0.121	0.797		0.0089	0.927
Edge 4, Wi-Fi 2 Tx	0.033		0.797	0.057		0.887
		0.121	0.797	0.057		0.975

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.19. Sum of the SAR for LTE Bands 17 and 25 & Wi-Fi 5.2 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 17	LTE Band 25	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.374		0.136		0.165	0.675
	0.374			0.149		0.523
		0.705	0.136		0.165	1.006
		0.705		0.149		0.854
Rear, Wi-Fi 2 Tx	0.374		0.136	0.149		0.659
		0.705	0.136	0.149		0.990
Edge 1, Wi-Fi 1 Tx	0.708		0.061		0.017	0.786
	0.708			0.194		0.902
		1.186	0.061		0.017	1.264
		1.186		0.194		1.380
Edge 1, Wi-Fi 2 Tx	0.708		0.061	0.097		0.866
		1.186	0.061	0.097		1.344
Edge 3, Wi-Fi 2 Tx	0.400		0.097	0.545		1.042
		0.400	0.097	0.545		1.042
Edge 4, Wi-Fi 1 Tx	0.028		0.797		0.0089	0.834
		0.171	0.797		0.0089	0.977
Edge 4, Wi-Fi 2 Tx	0.028		0.797	0.057		0.882
		0.171	0.797	0.057		1.025

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.20. Sum of the SAR for GSM & Wi-Fi 5.3 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	GSM850	GSM1900	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.617		0.206		0.165	0.988
	0.617			0.254		0.871
		0.645	0.206		0.165	1.016
		0.645		0.254		0.899
Rear, Wi-Fi 2 Tx	0.617		0.206	0.254		1.077
		0.645	0.206	0.254		1.105
Edge 1, Wi-Fi 1 Tx	1.183		0.138		0.017	1.338
	1.183			0.196		1.379
		1.161	0.138		0.017	1.316
		1.161		0.196		1.357
Edge 1, Wi-Fi 2 Tx	1.183		0.138	0.104		1.425
		1.161	0.138	0.104		1.403
Edge 3, Wi-Fi 2 Tx	0.400		0.104	0.938		1.442
		0.400	0.104	0.938		1.442
Edge 4, Wi-Fi 1 Tx	0.149		1.19		0.0089	1.348
		0.166	1.19		0.0089	1.365
Edge 4, Wi-Fi 2 Tx	0.149		1.19	0.124		1.463
		0.166	1.19	0.124		1.480

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.21. Sum of the SAR for W-CDMA Bands II and IV & Wi-Fi 5.3 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	W-CDMA Band II	W-CDMA Band IV	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.743	.	0.206		0.165	1.114
	0.743			0.254		0.997
		0.612	0.206		0.165	0.983
		0.612		0.254		0.866
Rear, Wi-Fi 2 Tx	0.743		0.206	0.254		1.203
		0.612	0.206	0.254		1.072
Edge 1, Wi-Fi 1 Tx	0.75		0.138		0.017	0.905
	0.75			0.196		0.946
		1.176	0.138		0.017	1.331
		1.176		0.196		1.372
Edge 1, Wi-Fi 2 Tx	0.75		0.138	0.104		0.992
		1.176	0.138	0.104		1.418
Edge 3, Wi-Fi 2 Tx	0.400		0.104	0.938		1.442
		0.400	0.104	0.938		1.442
Edge 4, Wi-Fi 1 Tx	0.167		1.19		0.0089	1.366
		0.216	1.19		0.0089	1.415
Edge 4, Wi-Fi 2 Tx	0.167		1.19	0.124		1.481
		0.216	1.19	0.124		1.530

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.22. Sum of the SAR for W-CDMA Band V & Wi-Fi 5.3 GHz Band

Test Position	Data				Σ 1-g SAR (mW/g)
	W-CDMA Band V	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.327	0.206		0.165	0.698
	0.327		0.254		0.581
		0.206		0.165	0.371
Rear, Wi-Fi 2 Tx	0.327	0.206	0.254		0.787
		0.206	0.254		0.460
Edge 1, Wi-Fi 1 Tx	0.562	0.138		0.017	0.717
	0.562		0.196		0.758
		0.138		0.017	0.155
Edge 1, Wi-Fi 2 Tx	0.562	0.138	0.104		0.804
		0.138	0.104		0.242
Edge 3, Wi-Fi 2 Tx	0.400	0.104	0.938		1.442
		0.104	0.938		1.042
Edge 4, Wi-Fi 1 Tx	0.031	1.19		0.0089	1.230
		1.19		0.0089	1.199
Edge 4, Wi-Fi 2 Tx	0.031	1.19	0.124		1.345
		1.19	0.124		1.314

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation

14.23. Sum of the SAR for CDMA 0 & Wi-Fi 5.3GHz

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.282		0.206		0.165	0.653
	0.282			0.254		0.536
		0.355	0.206		0.165	0.726
		0.355		0.254		0.609
Rear, Wi-Fi 2 Tx	0.282		0.206	0.254		0.742
		0.355	0.206	0.254		0.815
Edge 1, Wi-Fi 1 Tx	0.396		0.138		0.017	0.551
	0.396			0.196		0.592
		0.398	0.138		0.017	0.553
		0.398		0.196		0.594
Edge 1, Wi-Fi 2 Tx	0.396		0.138	0.104		0.638
		0.398	0.138	0.104		0.640
Edge 3, Wi-Fi 2 Tx	0.400		0.104	0.938		1.442
		0.400	0.104	0.938		1.442
Edge 4, Wi-Fi 1 Tx	0.029		1.19		0.0089	1.228
		0.033	1.19		0.0089	1.232
Edge 4, Wi-Fi 2 Tx	0.029		1.19	0.124		1.343
		0.033	1.19	0.124		1.347

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.24. Sum of the SAR for CDMA BC1 & Wi-Fi 5.3GHz

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.718		0.206		0.165	1.089
	0.718			0.254		0.972
		0.692	0.206		0.165	1.063
		0.692		0.254		0.946
Rear, Wi-Fi 2 Tx	0.718		0.206	0.254		1.178
		0.692	0.206	0.254		1.152
Edge 1, Wi-Fi 1 Tx	1.06		0.138		0.017	1.215
	1.06			0.196		1.256
		1.04	0.138		0.017	1.195
		1.04		0.196		1.236
Edge 1, Wi-Fi 2 Tx	1.06		0.138	0.104		1.302
		1.04	0.138	0.104		1.282
Edge 3, Wi-Fi 2 Tx	0.400		0.104	0.938		1.442
		0.400	0.104	0.938		1.442
Edge 4, Wi-Fi 1 Tx	0.186		1.19		0.0089	1.385
		0.165	1.19		0.0089	1.364
Edge 4, Wi-Fi 2 Tx	0.186		1.19	0.124		1.500
		0.165	1.19	0.124		1.479

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.25. Sum of the SAR for CDMA BC10 & Wi-Fi5.3GHz

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.268		0.206		0.165	0.639
	0.268			0.254		0.522
		0.22	0.206		0.165	0.591
		0.22		0.254		0.474
Rear, Wi-Fi 2 Tx	0.268		0.206	0.254		0.728
		0.22	0.206	0.254		0.680
Edge 1, Wi-Fi 1 Tx	0.369		0.138		0.017	0.524
	0.369			0.196		0.565
		0.37	0.138		0.017	0.525
		0.37		0.196		0.566
Edge 1, Wi-Fi 2 Tx	0.369		0.138	0.104		0.611
		0.37	0.138	0.104		0.612
Edge 3, Wi-Fi 2 Tx	0.400		0.104	0.938		1.442
		0.400	0.104	0.938		1.442
Edge 4, Wi-Fi 1 Tx	0.011		1.19		0.0089	1.210
		0.031	1.19		0.0089	1.230
Edge 4, Wi-Fi 2 Tx	0.011		1.19	0.124		1.325
		0.031	1.19	0.124		1.345

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation

14.26. Sum of the SAR for LTE Bands 2 and 4 & Wi-Fi 5.3 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 2	LTE Band 4	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.795		0.206		0.165	1.166
	0.795			0.254		1.049
		0.675	0.206		0.165	1.046
		0.675		0.254		0.929
Rear, Wi-Fi 2 Tx	0.795		0.206	0.254		1.255
		0.675	0.206	0.254		1.135
Edge 1, Wi-Fi 1 Tx	1.341		0.138		0.017	1.496
	1.341			0.196		1.537
		1.26	0.138		0.017	1.415
		1.26		0.196		1.456
Edge 1, Wi-Fi 2 Tx	1.341		0.138	0.104		1.583
		1.26	0.138	0.104		1.502
Edge 3, Wi-Fi 2 Tx	0.400		0.104	0.938		1.442
		0.400	0.104	0.938		1.442
Edge 4, Wi-Fi 1 Tx	0.244		1.19		0.0089	1.443
		0.144	1.19		0.0089	1.343
Edge 4, Wi-Fi 2 Tx	0.244		1.19	0.124		1.558
		0.144	1.19	0.124		1.458

- As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
- Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.27. Sum of the SAR for LTE Bands 5 and 13 & Wi-Fi 5.3 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 5	LTE Band 13	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.471		0.206		0.165	0.842
	0.471			0.254		0.725
		0.457	0.206		0.165	0.828
		0.457		0.254		0.711
Rear, Wi-Fi 2 Tx	0.471		0.206	0.254		0.931
		0.457	0.206	0.254		0.917
Edge 1, Wi-Fi 1 Tx	1.346		0.138		0.017	1.501
	1.346			0.196		1.542
		0.604	0.138		0.017	0.759
		0.604		0.196		0.800
Edge 1, Wi-Fi 2 Tx	1.346		0.138	0.104		1.588
		0.604	0.138	0.104		0.846
Edge 3, Wi-Fi 2 Tx	0.400		0.104	0.938		1.442
		0.400	0.104	0.938		1.442
Edge 4, Wi-Fi 1 Tx	0.033		1.19		0.0089	1.232
		0.121	1.19		0.0089	1.320
Edge 4, Wi-Fi 2 Tx	0.033		1.19	0.124		1.347
		0.121	1.19	0.124		1.435

1. As there were only estimated values for edge it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.28. Sum of the SAR for LTE Bands 17 and 25 & Wi-Fi 5.3 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 17	LTE Band 25	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.374		0.206		0.165	0.745
	0.374			0.254		0.628
		0.705	0.206		0.165	1.076
		0.705		0.254		0.959
Rear, Wi-Fi 2 Tx	0.374		0.206	0.254		0.834
		0.705	0.206	0.254		1.165
Edge 1, Wi-Fi 1 Tx	0.708		0.138		0.017	0.863
	0.708			0.196		0.904
		1.186	0.138		0.017	1.341
		1.186		0.196		1.382
Edge 1, Wi-Fi 2 Tx	0.708		0.138	0.104		0.950
		1.186	0.138	0.104		1.428
Edge 3, Wi-Fi 2 Tx	0.400		0.104	0.938		1.442
		0.400	0.104	0.938		1.442
Edge 4, Wi-Fi 1 Tx	0.028		1.19		0.0089	1.227
		0.171	1.19		0.0089	1.370
Edge 4, Wi-Fi 2 Tx	0.028		1.19	0.124		1.342
		0.171	1.19	0.124		1.485

1. As there were only estimated values for edge it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.29. Sum of the SAR for GSM & Wi-Fi 5.5 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	850	1900	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.617		0.220		0.165	1.002
	0.617			0.229		0.846
		0.645	0.220		0.165	1.030
		0.645		0.229		0.874
Rear, Wi-Fi 2 Tx	0.617		0.220	0.229		1.066
		0.645	0.220	0.229		1.094
Edge 1, Wi-Fi 1 Tx	1.183		0.082		0.017	1.282
	1.183			0.200		1.383
		1.161	0.082		0.017	1.260
		1.161		0.200		1.361
Edge 1, Wi-Fi 2 Tx	1.183		0.082	0.113		1.378
		1.161	0.082	0.113		1.356
Edge 3, Wi-Fi 2 Tx	0.400		0.113	1.030		1.543
		0.400	0.113	1.030		1.543
Edge 4, Wi-Fi 1 Tx	0.149		1.099		0.0089	1.257
		0.166	1.099		0.0089	1.274
Edge 4, Wi-Fi 2 Tx	0.149		1.099	0.094		1.342
		0.166	1.099	0.094		1.359

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.30. Sum of the SAR for W-CDMA Bands II and IV & Wi-Fi 5.5 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	W-CDMA Band II	W-CDMA Band IV	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.743		0.220		0.165	1.128
	0.743			0.229		0.972
		0.612	0.220		0.165	0.997
		0.612		0.229		0.841
Rear, Wi-Fi 2 Tx	0.743		0.220	0.229		1.192
		0.612	0.220	0.229		1.061
Edge 1, Wi-Fi 1 Tx	0.750		0.082		0.017	0.849
	0.750			0.200		0.950
		1.176	0.082		0.017	1.275
		1.176		0.200		1.376
Edge 1, Wi-Fi 2 Tx	0.750		0.082	0.113		0.945
		1.176	0.082	0.113		1.371
Edge 3, Wi-Fi 2 Tx	0.400		0.113	1.03		1.543
		0.400	0.113	1.03		1.543
Edge 4, Wi-Fi 1 Tx	0.167		1.099		0.0089	1.275
		0.216	1.099		0.0089	1.324
Edge 4, Wi-Fi 2 Tx	0.167		1.099	0.094		1.360
		0.216	1.099	0.094		1.409

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.31. Sum of the SAR for W-CDMA Band V & Wi-Fi 5.5 GHz Band

Test Position	Data				Σ 1-g SAR (mW/g)
	W-CDMA Band V	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.327	0.220		0.165	0.712
	0.327		0.229		0.556
Rear, Wi-Fi 2 Tx	0.327	0.220	0.229		0.776
Edge 1, Wi-Fi 1 Tx	0.562	0.082		0.017	0.661
	0.562		0.200		0.762
Edge 1, Wi-Fi 2 Tx	0.562	0.082	0.113		0.757
Edge 3, Wi-Fi 2 Tx	0.400	0.113	1.03		1.543
Edge 4, Wi-Fi 1 Tx	0.031	1.099		0.0089	1.139

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation

14.32. Sum of the SAR for CDMA BC0 & Wi-Fi 5.5GHz

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.282		0.220		0.165	0.667
	0.282			0.229		0.511
		0.355	0.220		0.165	0.740
		0.355		0.229		0.584
Rear, Wi-Fi 2 Tx	0.282		0.220	0.229		0.731
		0.355	0.220	0.229		0.804
Edge 1, Wi-Fi 1 Tx	0.396		0.082		0.017	0.495
	0.396			0.200		0.596
		0.398	0.082		0.017	0.497
		0.398		0.200		0.598
Edge 1, Wi-Fi 2 Tx	0.396		0.082	0.113		0.591
		0.398	0.082	0.113		0.593
Edge 3, Wi-Fi 2 Tx	0.400		0.113	1.03		1.543
		0.400	0.113	1.03		1.543
Edge 4, Wi-Fi 1 Tx	0.029		1.099		0.0089	1.137
		0.033	1.099		0.0089	1.141
Edge 4, Wi-Fi 2 Tx	0.029		1.099	0.094		1.222
		0.033	1.099	0.094		1.226

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.33. Sum of the SAR for CDMA BC1 & Wi-Fi 5.5GHz

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.718		0.220		0.165	1.103
	0.718			0.229		0.947
		0.692	0.220		0.165	1.077
		0.692		0.229		0.921
Rear, Wi-Fi 2 Tx	0.718		0.220	0.229		1.167
		0.692	0.220	0.229		1.141
Edge 1, Wi-Fi 1 Tx	1.06		0.082		0.017	1.159
	1.06			0.200		1.260
		1.04	0.082		0.017	1.139
		1.04		0.200		1.240
Edge 1, Wi-Fi 2 Tx	1.06		0.082	0.113		1.255
		1.04	0.082	0.113		1.235
Edge 3, Wi-Fi 2 Tx	0.400		0.113	1.03		1.543
		0.400	0.113	1.03		1.543
Edge 4, Wi-Fi 1 Tx	0.186		1.099		0.0089	1.294
		0.165	1.099		0.0089	1.273
Edge 4, Wi-Fi 2 Tx	0.186		1.099	0.094		1.379
		0.165	1.099	0.094		1.358

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.34. Sum of the SAR for CDMA BC10 & Wi-Fi 5.5GHz

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.268		0.220		0.165	0.653
	0.268			0.229		0.497
		0.22	0.220		0.165	0.605
		0.22		0.229		0.449
Rear, Wi-Fi 2 Tx	0.268		0.220	0.229		0.717
		0.22	0.220	0.229		0.669
Edge 1, Wi-Fi 1 Tx	0.369		0.082		0.017	0.468
	0.369			0.200		0.569
		0.37	0.082		0.017	0.469
		0.37		0.200		0.570
Edge 1, Wi-Fi 2 Tx	0.369		0.082	0.113		0.564
		0.37	0.082	0.113		0.565
Edge 3, Wi-Fi 2 Tx	0.400		0.113	1.03		1.543
		0.400	0.113	1.03		1.543
Edge 4, Wi-Fi 1 Tx	0.011		1.099		0.0089	1.119
		0.031	1.099		0.0089	1.139
Edge 4, Wi-Fi 2 Tx	0.011		1.099	0.094		1.204
		0.031	1.099	0.094		1.224

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation

14.35. Sum of the SAR for LTE Bands 2 and 4 & Wi-Fi 5.5 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 2	LTE Band 4	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.795		0.220		0.165	1.180
	0.795			0.229		1.024
		0.675	0.220		0.165	1.060
		0.675		0.229		0.904
Rear, Wi-Fi 2 Tx	0.795		0.220	0.229		1.244
		0.675	0.220	0.229		1.124
Edge 1, Wi-Fi 1 Tx	1.341		0.082		0.017	1.440
	1.341			0.200		1.541
		1.26	0.082		0.017	1.359
		1.26		0.200		1.460
Edge 1, Wi-Fi 2 Tx	1.341		0.082	0.113		1.536
		1.26	0.082	0.113		1.455
Edge 3, Wi-Fi 2 Tx	0.400		0.113	1.03		1.543
		0.400	0.113	1.03		1.543
Edge 4, Wi-Fi 1 Tx	0.244		1.099		0.0089	1.352
		0.144	1.099		0.0089	1.252
Edge 4, Wi-Fi 2 Tx	0.244		1.099	0.094		1.437
		0.144	1.099	0.094		1.337

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.36. Sum of the SAR for LTE Bands 5 and 13 & Wi-Fi 5.5 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 5	LTE Band 13	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.471		0.220		0.165	0.856
	0.471			0.229		0.700
		0.457	0.220		0.165	0.842
		0.457		0.229		0.686
Rear, Wi-Fi 2 Tx	0.471		0.220	0.229		0.920
		0.457	0.220	0.229		0.906
Edge 1, Wi-Fi 1 Tx	1.346		0.082		0.017	1.445
	1.346			0.200		1.546
		0.604	0.082		0.017	0.703
		0.604		0.200		0.804
Edge 1, Wi-Fi 2 Tx	1.346		0.082	0.113		1.541
		0.604	0.082	0.113		0.799
Edge 3, Wi-Fi 2 Tx	0.400		0.113	1.03		1.543
		0.400	0.113	1.03		1.543
Edge 4, Wi-Fi 1 Tx	0.033		1.099		0.0089	1.141
		0.121	1.099		0.0089	1.229
Edge 4, Wi-Fi 2 Tx	0.033		1.099	0.094		1.226
		0.121	1.099	0.094		1.314

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.37. Sum of the SAR for LTE Bands 17 and 25 & Wi-Fi 5.5 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 17	LTE Band 25	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.374		0.220		0.165	0.759
	0.374			0.229		0.603
		0.705	0.220		0.165	1.090
		0.705		0.229		0.934
Rear, Wi-Fi 2 Tx	0.374		0.220	0.229		0.823
		0.705	0.220	0.229		1.154
Edge 1, Wi-Fi 1 Tx	0.708		0.082		0.017	0.807
	0.708			0.200		0.908
		1.186	0.082		0.017	1.285
		1.186		0.200		1.386
Edge 1, Wi-Fi 2 Tx	0.708		0.082	0.113		0.903
		1.186	0.082	0.113		1.381
Edge 3, Wi-Fi 2 Tx	0.400		0.113	1.03		1.543
		0.400	0.113	1.03		1.543
Edge 4, Wi-Fi 1 Tx	0.028		1.099		0.0089	1.136
		0.171	1.099		0.0089	1.279
Edge 4, Wi-Fi 2 Tx	0.028		1.099	0.094		1.221
		0.171	1.099	0.094		1.364

1. As there were only estimated values for edge it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.38. Sum of the SAR for GSM & Wi-Fi 5.8 GHz Band

Test Position	GSM850	GSM1900	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	Σ 1-g SAR (mW/g)
Rear, Wi-Fi 1 Tx	0.617		0.090		0.165	0.872
	0.617			0.148		0.765
		0.645	0.090		0.165	0.900
		0.645		0.148		0.793
Rear, Wi-Fi 2 Tx	0.617		0.090	0.148		0.855
		0.645	0.090	0.148		0.883
Edge 1, Wi-Fi 1 Tx	1.183		0.038		0.017	1.238
	1.183			0.205		1.388
		1.161	0.038		0.017	1.216
		1.161		0.205		1.366
Edge 1, Wi-Fi 2 Tx	1.183		0.038	0.102		1.323
		1.161	0.038	0.102		1.301
Edge 3, Wi-Fi 2 Tx	0.400		0.102	0.754		1.256
		0.400	0.102	0.754		1.256
Edge 4, Wi-Fi 1 Tx	0.149		0.414		0.0089	0.572
		0.166	0.414		0.0089	0.589
Edge 4, Wi-Fi 2 Tx	0.149		0.414	0.043		0.606
		0.166	0.414	0.043		0.623

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.39. Sum of the SAR for W-CDMA Bands II and V & Wi-Fi 5.8 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	W-CDMA Band II	W-CDMA Band IV	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.743		0.090		0.165	0.998
	0.743			0.148		0.891
		0.612	0.090		0.165	0.867
		0.612		0.148		0.760
Rear, Wi-Fi 2 Tx	0.743		0.090	0.148		0.981
		0.612	0.090	0.148		0.850
Edge 1, Wi-Fi 1 Tx	0.750		0.038		0.017	0.805
	0.750			0.205		0.955
		1.176	0.038		0.017	1.231
		1.176		0.205		1.381
Edge 1, Wi-Fi 2 Tx	0.750		0.038	0.102		0.890
		1.176	0.038	0.102		1.316
Edge 3, Wi-Fi 2 Tx	0.400		0.102	0.754		1.256
		0.400	0.102	0.754		1.256
Edge 4, Wi-Fi 1 Tx	0.167		0.414		0.0089	0.590
		0.216	0.414		0.0089	0.639
Edge 4, Wi-Fi 2 Tx	0.167		0.414	0.043		0.624
		0.216	0.414	0.043		0.673

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.40. Sum of the SAR for W-CDMA Band V & Wi-Fi 5.8 GHz Band

Test Position	Data				Σ 1-g SAR (mW/g)
	W-CDMA Band V	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.327	0.090		0.165	0.582
	0.327		0.148		0.475
		0.090		0.165	0.255
Rear, Wi-Fi 2 Tx	0.327	0.090	0.148		0.565
		0.090	0.148		0.238
Edge 1, Wi-Fi 1 Tx	0.562	0.038		0.017	0.617
	0.562		0.205		0.767
		0.038		0.017	0.055
Edge 1, Wi-Fi 2 Tx	0.562	0.038	0.102		0.702
		0.038	0.102		0.140
Edge 3, Wi-Fi 2 Tx	0.031	0.102	0.754		0.887
		0.102	0.754		0.856
Edge 4, Wi-Fi 1 Tx	0.0031	0.414		0.0089	0.426
		0.414		0.0089	0.423
Edge 4, Wi-Fi 2 Tx	0.0031	0.414	0.043		0.460
		0.414	0.043		0.457

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.41. Sum of the SAR for CDMA BC0 & Wi-Fi 5.8GHz.

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.282		0.090		0.165	0.537
	0.282			0.148		0.430
		0.355	0.090		0.165	0.610
		0.355		0.148		0.503
Rear, Wi-Fi 2 Tx	0.282		0.090	0.148		0.520
		0.355	0.090	0.148		0.593
Edge 1, Wi-Fi 1 Tx	0.396		0.038		0.017	0.451
	0.396			0.205		0.601
		0.398	0.038		0.017	0.453
		0.398		0.205		0.603
Edge 1, Wi-Fi 2 Tx	0.396		0.038	0.102		0.536
		0.398	0.038	0.102		0.538
Edge 3, Wi-Fi 2 Tx	0.400		0.102	0.754		1.256
		0.400	0.102	0.754		1.256
Edge 4, Wi-Fi 1 Tx	0.029		0.414		0.0089	0.452
		0.033	0.414		0.0089	0.456
Edge 4, Wi-Fi 2 Tx	0.029		0.414	0.043		0.486
		0.033	0.414	0.043		0.490

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.42. Sum of the SAR for CDMA BC1 5.8GHz Band.

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.718		0.090		0.165	0.973
	0.718			0.148		0.866
		0.692	0.090		0.165	0.947
		0.692		0.148		0.840
Rear, Wi-Fi 2 Tx	0.718		0.090	0.148		0.956
		0.692	0.090	0.148		0.930
Edge 1, Wi-Fi 1 Tx	1.06		0.038		0.017	1.115
	1.06			0.205		1.265
		1.167	0.038		0.017	1.222
		1.167		0.205		1.372
Edge 1, Wi-Fi 2 Tx	1.06		0.038	0.102		1.200
		1.167	0.038	0.102		1.307
Edge 3, Wi-Fi 2 Tx	0.400		0.102	0.754		1.256
		0.400	0.102	0.754		1.256
Edge 4, Wi-Fi 1 Tx	0.186		0.414		0.0089	0.609
		0.165	0.414		0.0089	0.588
Edge 4, Wi-Fi 2 Tx	0.186		0.414	0.043		0.643
		0.165	0.414	0.043		0.622

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.43. Sum of the SAR for the CDMA BC10 & Wi-Fi 5.8GHz Band.

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.268		0.090		0.165	0.523
	0.268			0.148		0.416
		0.22	0.090		0.165	0.475
		0.22		0.148		0.368
Rear, Wi-Fi 2 Tx	0.268		0.090	0.148		0.506
		0.22	0.090	0.148		0.458
Edge 1, Wi-Fi 1 Tx	0.369		0.038		0.017	0.424
	0.369			0.205		0.574
		0.37	0.038		0.017	0.425
		0.37		0.205		0.575
Edge 1, Wi-Fi 2 Tx	0.369		0.038	0.102		0.509
		0.37	0.038	0.102		0.510
Edge 3, Wi-Fi 2 Tx	0.400		0.102	0.754		1.256
		0.400	0.102	0.754		1.256
Edge 4, Wi-Fi 1 Tx	0.011		0.414		0.0089	0.434
		0.031	0.414		0.0089	0.454
Edge 4, Wi-Fi 2 Tx	0.011		0.414	0.043		0.468
		0.031	0.414	0.043		0.488

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.44. Sum of the SAR LTE Bands 2 and 4 & Wi-Fi 5.8 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 2	LTE Band 4	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.795		0.090		0.165	1.050
	0.795			0.148		0.943
		0.675	0.090		0.165	0.930
		0.675		0.148		0.823
Rear, Wi-Fi 2 Tx	0.795		0.090	0.148		1.033
		0.675	0.090	0.148		0.913
Edge 1, Wi-Fi 1 Tx	1.341		0.038		0.017	1.396
	1.341			0.205		1.546
		1.26	0.038		0.017	1.315
		1.26		0.205		1.465
Edge 1, Wi-Fi 2 Tx	1.341		0.038	0.102		1.481
		1.26	0.038	0.102		1.400
Edge 3, Wi-Fi 2 Tx	0.400		0.102	0.754		1.256
		0.400	0.102	0.754		1.256
Edge 4, Wi-Fi 1 Tx	0.244		0.414		0.0089	0.667
		0.144	0.414		0.0089	0.567
Edge 4, Wi-Fi 2 Tx	0.244		0.414	0.043		0.701
		0.144	0.414	0.043		0.601

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.45. Sum of the SAR LTE Bands 5 and 13 & Wi-Fi 5.8 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 5	LTE Band 13	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.471		0.090		0.165	0.726
	0.471			0.148		0.619
		0.457	0.090		0.165	0.712
		0.457		0.148		0.605
Rear, Wi-Fi 2 Tx	0.471		0.090	0.148		0.709
		0.457	0.090	0.148		0.695
Edge 1, Wi-Fi 1 Tx	1.346		0.038		0.017	1.401
	1.346			0.205		1.551
		0.604	0.038		0.017	0.659
		0.604		0.205		0.809
Edge 1, Wi-Fi 2 Tx	1.346		0.038	0.102		1.486
		0.604	0.038	0.102		0.744
Edge 3, Wi-Fi 2 Tx	0.400		0.102	0.754		1.256
		0.400	0.102	0.754		1.256
Edge 4, Wi-Fi 1 Tx	0.033		0.414		0.0089	0.456
		0.121	0.414		0.0089	0.544
Edge 4, Wi-Fi 2 Tx	0.033		0.414	0.043		0.490
		0.121	0.414	0.043		0.578

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

14.46. Sum of the SAR LTE Bands 17 and 25 & Wi-Fi 5.8 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 17	LTE Band 25	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.374		0.090		0.165	0.629
	0.374			0.148		0.522
		0.705	0.090		0.165	0.960
		0.705		0.148		0.853
Rear, Wi-Fi 2 Tx	0.374		0.090	0.148		0.612
		0.705	0.090	0.148		0.943
Edge 1, Wi-Fi 1 Tx			0.038		0.017	0.055
	0.708			0.205		0.913
		1.186	0.038		0.017	1.241
		1.186		0.205		1.391
Edge 1, Wi-Fi 2 Tx	0.708		0.038	0.102		0.848
		1.186	0.038	0.102		1.326
Edge 3, Wi-Fi 2 Tx	0.400		0.102	0.754		1.256
		0.400	0.102	0.754		1.256
Edge 4, Wi-Fi 1 Tx	0.028		0.414		0.0089	0.451
		0.171	0.414		0.0089	0.594
Edge 4, Wi-Fi 2 Tx	0.028		0.414	0.043		0.485
		0.171	0.414	0.043		0.628

1. As there were only estimated values for edge 2 it was not assessed as it is inherently compliant
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

15. Appendixes

Refer to separated files for the following appendixes.

- 15.1. System Performance Check Plots
- 15.2. Highest SAR Test Plots
- 15.3. Calibration Certificate for E-Field Probe EX3DV4 - SN 3902
- 15.4. Calibration Certificate for E-Field Probe EX3DV4 - SN 3773
- 15.5. Calibration Certificate for D750V3 - SN 1019
- 15.6. Calibration Certificate for D835V2 - SN 4d142
- 15.7. Calibration Certificate for D835V2 – SN4d002
- 15.8. Calibration Certificate for D1750V2 - SN 1077
- 15.9. Calibration Certificate for D1750V2 – SN 1053
- 15.10. Calibration Certificate for D1900V2 - SN 5d043