



SAR EVALUATION REPORT

IEEE Std 1528-2013

For
Phablet Device

FCC ID: C3K1930
Model Name: 1930

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Table of Contents

1.	Attestation of Test Results	5
2.	Test Specification, Methods and Procedures.....	6
3.	Facilities and Accreditation.....	6
4.	SAR Measurement System & Test Equipment	7
4.1.	<i>SAR Measurement System.....</i>	<i>7</i>
4.2.	<i>SAR Scan Procedures.....</i>	<i>8</i>
4.3.	<i>Test Equipment.....</i>	<i>10</i>
5.	Measurement Uncertainty.....	11
6.	Device Under Test (DUT) Information	12
6.1.	<i>DUT Description</i>	<i>12</i>
6.2.	<i>Wireless Technologies.....</i>	<i>13</i>
6.3.	<i>General LTE SAR Test and Reporting Considerations.....</i>	<i>14</i>
6.4.	<i>LTE (TDD) Considerations.....</i>	<i>17</i>
6.5.	<i>Power Back-off/Angle Operation.....</i>	<i>18</i>
7.	RF Exposure Conditions (Test Configurations).....	19
7.1.	<i>Required Test Configurations</i>	<i>26</i>
8.	Dielectric Property Measurements & System Check	27
8.1.	<i>Dielectric Property Measurements</i>	<i>27</i>
8.2.	<i>System Check.....</i>	<i>34</i>
9.	Conducted Output Power Measurements.....	38
9.1.	<i>GSM</i>	<i>38</i>
9.2.	<i>W-CDMA</i>	<i>39</i>
9.3.	<i>LTE.....</i>	<i>43</i>
9.4.	<i>LTE Down-Link Carrier Aggregation</i>	<i>56</i>
9.5.	<i>Wi-Fi 2.4GHz (DTS Band)</i>	<i>66</i>
9.6.	<i>Wi-Fi 5GHz (U-NII Bands).....</i>	<i>68</i>
9.7.	<i>Bluetooth</i>	<i>72</i>
10.	Measured and Reported (Scaled) SAR Results.....	74
10.1.	<i>GSM850.....</i>	<i>76</i>
10.2.	<i>GSM1900.....</i>	<i>77</i>
10.3.	<i>W-CDMA Band II.....</i>	<i>78</i>
10.4.	<i>W-CDMA Band V</i>	<i>79</i>
10.5.	<i>LTE Band 5 (10MHz Bandwidth)</i>	<i>80</i>

10.6.	<i>LTE Band 7 (20MHz Bandwidth)</i>	81
10.7.	<i>LTE Band 12 (10MHz Bandwidth)</i>	82
10.8.	<i>LTE Band 13 (10MHz Bandwidth)</i>	83
10.9.	<i>LTE Band 14 (10MHz Bandwidth)</i>	84
10.10.	<i>LTE Band 25 (20MHz Bandwidth)</i>	85
10.11.	<i>LTE Band 26 (15MHz Bandwidth)</i>	86
10.12.	<i>LTE Band 30 (10MHz Bandwidth)</i>	87
10.13.	<i>LTE Band 41 (20MHz Bandwidth)</i>	88
10.14.	<i>LTE Band 66 (20MHz Bandwidth)</i>	89
10.15.	<i>Wi-Fi (DTS Band)</i>	90
10.16.	<i>Wi-Fi (U-NII Band)</i>	91
10.17.	<i>Bluetooth</i>	94
11.	SAR Measurement Variability	95
12.	Simultaneous Transmission Conditions	96
12.1.	<i>Simultaneous transmission SAR test exclusion considerations</i>	97
12.1.1.	Sum of SAR	97
12.1.2.	SAR to Peak Location Ratio (SPLSR)	97
12.2.	<i>Worst Case Sum of the SAR for WWAN & Wi-Fi & BT for 0/180 (Head)/360°</i>	98
12.3.	<i>Worst Case Sum of the SAR for WWAN & Wi-Fi & BT for 150°</i>	98
12.3.1.	Worst Case SPLSR for Wi-Fi & BT for 150°	98
12.4.	<i>Sum of the SAR for WWAN & Wi-Fi & BT for 180° (Body)</i>	99
12.4.1.	Worst Case SPLSR for WWAN & Wi-Fi & BT for 180° (Body)	103
Appendixes		104
	<i>Appendix A: SAR Setup Photos</i>	104
	<i>Appendix B: SAR System Check Plots</i>	104
	<i>Appendix C: SAR Highest Test Plots</i>	104
	<i>Appendix D: SAR Tissue Ingredients</i>	104
	<i>Appendix E: SAR Probe Certificates</i>	104
	<i>Appendix F: SAR Dipole Certificates</i>	104

1. Attestation of Test Results

Applicant Name	Microsoft Corporation			
FCC ID	C3K1930			
Model Name	1930			
Applicable Standards	Published RF exposure KDB procedures IEEE Std 1528-2013			
Exposure Category	SAR Limits (W/Kg)			
	Peak spatial-average (1g of tissue)		Extremities (hands, wrists, ankles, etc.) (10g of tissue)	
General population / Uncontrolled exposure	1.6		4	
RF Exposure Conditions	Equipment Class - Highest Reported SAR (W/kg)			
	PCE	DTS	NII	DSS
Head	1.272	0.307	0.207	0.039
Body-worn	1.129	0.955	1.007	0.245
Hotspot	1.129	1.194	1.179	0.245
Extremity	3.567	N/A		
Simultaneous TX	1.583	1.573	1.583	1.583
Date Tested	3/27/2020 to 5/27/2020			
Test Results	Pass			
<p>UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.</p> <p>The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.</p> <p>This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. 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 the U.S. government.</p>				
Approved & Released By:		Prepared By:		
				
Devin Chang Senior Test Engineer UL Verification Services Inc.		AJ Newcomer Laboratory Engineer UL Verification Services Inc.		

2. Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE STD 1528-2013, ANSI C63.10, ANSI C63.26, the following FCC Published RF exposure [KDB](#) procedures:

- 248227 D01 802.11 Wi-Fi SAR v02r02
- 447498 D01 General RF Exposure Guidance v06
- 447498 D03 Supplement C Cross-Reference v01
- 616217 D04 SAR for laptop and tablets v01r02
- 648474 D03 Wireless Chargers Battery Covers v01r04
- 648474 D04 Handset SAR v01r03
- 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- 865664 D02 RF Exposure Reporting v01r02
- 941225 D01 3G SAR Procedures v03r01
- 941225 D05 SAR for LTE Devices v02r05
- 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02
- 941225 D06 Hotspot Mode v02r01
- 941225 D07 UMPC Mini Tablet v01r02

In addition to the above, the following information was used:

- [TCB workshop](#) October 2014; RF Exposure Procedures (Other LTE Considerations)
- [TCB workshop](#) April 2015; RF Exposure Procedures (Overlapping LTE Bands)
- [TCB workshop](#) October 2015; RF Exposure Procedures (KDB 941225 D05A)
- [TCB workshop](#) April 2016; RF Exposure Procedures (LTE Carrier Aggregation for DL)
- [TCB workshop](#) October 2016; RF Exposure Procedures (Bluetooth Duty Factor)
- [TCB workshop](#) October 2016; RF Exposure Procedures (DUT Holder Perturbations)
- [TCB workshop](#) May 2017; RF Exposure Procedures (Broadband Liquid Above 3 GHz)
- [TCB workshop](#) April 2018; RF Exposure Procedures (LTE DL CA SAR Test Exclusion)
- [TCB workshop](#) April 2019; RF Exposure Procedures (Tissue Simulating Liquids (TSL))

3. Facilities and Accreditation

The test sites and measurement facilities used to collect data are located at 2800 Perimeter Park Dr, Morrisville, NC, USA.

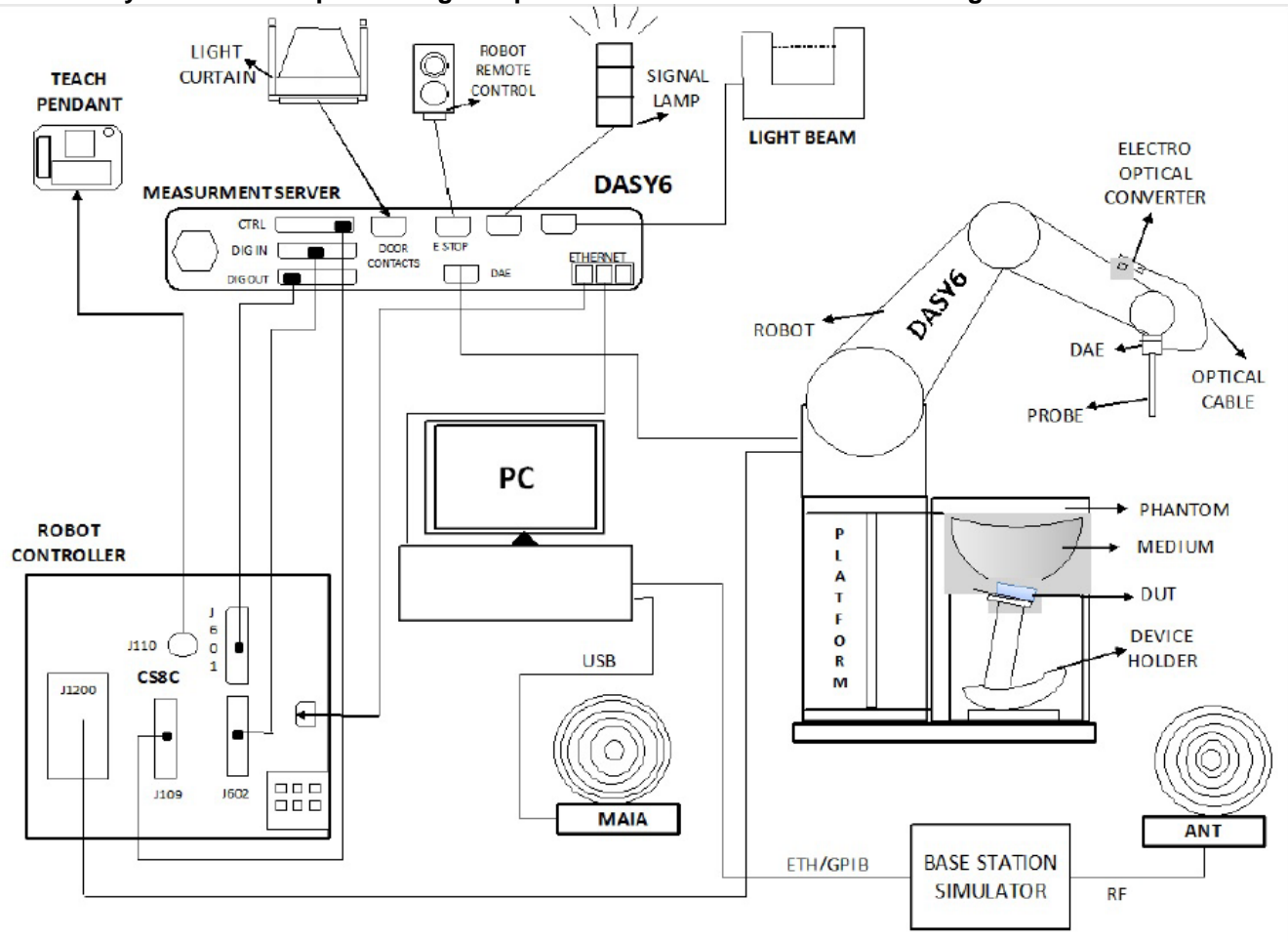
- SAR Lab 1A
- SAR Lab 2A

UL LLC (RTP) is accredited by NVLAP, Laboratory Code 200246-0. The full scope of accreditation can be viewed at <http://ts.nist.gov/standards/scopes/2002460.htm>.

4. SAR Measurement System & Test Equipment

4.1. SAR Measurement System

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.

4.2. SAR Scan Procedures

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

	≤ 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	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
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 \leq 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

		≤ 3 GHz	> 3 GHz	
Maximum zoom scan spatial resolution: $\Delta x_{Zoom}, \Delta y_{Zoom}$		≤ 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	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
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 <i>area scan based 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.

4.3. Test Equipment

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.

Dielectric Property Measurements

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Reflectometer (VNA)	Copper Mountain Technologies	R140	190514	11/21/2020
Dielectric Probe	SPEAG	DAKS-3.5	1051	11/12/2020
Shorting block	SPEAG	DAK-1.2/3.5 Short	SM DAK 200 CA	NA
Thermometer	Fisher Scientific	15-078-181	181705017	10/31/2020

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Signal Generator	Keysight	N5181A	MY50140788	10/22/2020
Power Meter	Keysight	N1912A	MY55136012	6/14/2020
Power Sensor*	Keysight	N1921A	MY55090030	5/06/2020
Power Sensor	Keysight	N1921A	MY55090047	6/10/2020
Power Sensor	Keysight	N1921A	MY55090025	8/23/2020
Amplifier	Ampical	AMP0.4G-34-27	150507	N/A
Bi-directional coupler	Werlatone, Inc.	C8060-102	3266	N/A
DC Power Supply	GW	Dual Tracking Power Supply	B900219	N/A

Notes:

* = Equipment was not used past its calibration date.

Lab Equipment

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
E-Field Probe (SAR Lab 1A)	SPEAG	EX3DV4	7335	2/21/2021
E-Field Probe (SAR Lab 2A)	SPEAG	EX3DV4	3990	8/28/2020
Data Acquisition Electronics (SAR Lab 1A)	SPEAG	DAE4	1380	8/27/2020
Data Acquisition Electronics (SAR Lab 2A)	SPEAG	DAE4	1434	11/15/2020
System Validation Dipole	SPEAG	D750V3	1139	11/11/2020
System Validation Dipole	SPEAG	D900V2	1d180	11/11/2020
System Validation Dipole	SPEAG	D1750V2	1136	11/13/2020
System Validation Dipole	SPEAG	D1900V2	5d202	11/13/2020
System Validation Dipole	SPEAG	D2300V2	1050	3/27/2021
System Validation Dipole	SPEAG	D2450V2	963	11/12/2020
System Validation Dipole	SPEAG	D2600V2	1104	3/27/2021
System Validation Dipole	SPEAG	D5GHzV2	1213	11/19/2020
Environmental Monitor (SAR Lab 1A)	Fisher Scientific	Traceable	161024885	6/17/2020
Environmental Monitor (SAR Lab 2A)	Fisher Scientific	Traceable	161016511	6/17/2020

Other

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Power Meter	Agilent	N1911A	MY55116002	9/02/2020
Power Meter	Agilent	N1911A	MY55116003	9/02/2020
Power Sensor	Agilent	N1921A	MY55090025	9/02/2020
Power Sensor	Agilent	N1921A	MY55120011	9/02/2020
Bluetooth Tester	R & S	CBT	1153.9000K35-100913-Xm	N/A
Wideband Communications Tester	R&S	CMW-500	132911	7/10/2020
Wideband Communications Tester	R&S	CMW-500	137877-ms	2/20/2021
Wideband Communications Tester	R&S	CMW-500	137873-WG	2/19/2021

5. Measurement Uncertainty

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be $\leq 30\%$, for a confidence interval of $k = 2$. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval.

Therefore, the measurement uncertainty is not required.

6. Device Under Test (DUT) Information

The EUT supports 802.11 a/b/g/n/ac 2x2 WLAN, Bluetooth, Bluetooth LE, GSM, WCDMA, and LTE radios.

Refer to Appendix A for more device information.

6.1. DUT Description

Device Dimension	Refer to Appendix A.		
Back Cover	The Back Cover is not removable		
Battery Options	The rechargeable battery is not user accessible.		
Accessory	Headset		
Wireless Router (Hotspot)	Wi-Fi Hotspot mode permits the device to share its cellular data connection with other Wi-Fi-enabled devices. <input checked="" type="checkbox"/> Mobile Hotspot (Wi-Fi 2.4 GHz) <input checked="" type="checkbox"/> Mobile Hotspot (Wi-Fi 5 GHz)		
Wi-Fi Direct	Wi-Fi Direct enabled devices transfer data directly between each other <input checked="" type="checkbox"/> Wi-Fi Direct (Wi-Fi 2.4 GHz) <input checked="" type="checkbox"/> Wi-Fi Direct (Wi-Fi 5 GHz)		
Bluetooth Tethering (Hotspot)	BT Tethering mode permits the device to share its cellular data connection with other devices. <input checked="" type="checkbox"/> BT Tethering (Bluetooth 2.4 GHz)		
Test sample information	S/N	IMEI	Notes
	sf2ef8796b	001102000800931	WLAN, WWAN
	sf5bd43482	001102000800873	WLAN, WWAN
	sfc17b2411	001102000798077	WLAN, WWAN
	sfce551d77	001102000800964	WLAN, WWAN
	sf1fc55a3b	001102000800634	WLAN, WWAN
	sf195b36db	N/A	WLAN, WWAN
	sf4c73ad0b	N/A	WLAN, WWAN
	sfe33d869f	N/A	WLAN, WWAN
	sf45d99335	N/A	WLAN, WWAN
Hardware Version	DV		
Software Version	2020.515.3		

6.2. Wireless Technologies

Wireless technologies	Frequency bands	Operating mode		Duty Cycle used for SAR testing
GSM	850 1900	Voice (GMSK) GPRS (GMSK)	GSM Class : B Multi-Slot Class: Class 10 - 2 Up, 4 Down	GSM Voice: 12.5% GPRS: 1 Slot: 12.5% 2 Slots: 25%
	Does this device support DTM (Dual Transfer Mode)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
W-CDMA (UMTS)	Band II Band V	UMTS Rel. 99 (Voice & Data) HSDPA (Rel. 5) HSUPA (Rel. 6) DC-HSDPA (Rel. 9) HSPA+ (Rel. 7)		100%
LTE	FDD Band 2 FDD Band 4 FDD Band 5 FDD Band 7 FDD Band 12 FDD Band 13 FDD Band 14 FDD Band 25 FDD Band 26 FDD Band 29 (DL Only) FDD Band 30 TDD Band 38 TDD Band 41 FDD Band 66	QPSK 16QAM 64QAM 256QAM (DL Only) Rel. 14 Carrier Aggregation (1 Uplink and 4 Downlinks)		100% (FDD) 63.3% (TDD) Refer to §6.4
	Does this device support SV-LTE (1xRTT-LTE)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Wi-Fi	2.4 GHz	802.11b 802.11g 802.11n (HT20) 802.11n (HT40)		98.81% ^{(802.11b) 1}
	5 GHz	802.11a 802.11n (HT20) 802.11n (HT40) 802.11ac (VHT20) 802.11ac (VHT40) 802.11ac (VHT80)		92.66% ^{(802.11ac 80MHz BW) 1}
	Does this device support bands 5.60 ~ 5.65 GHz? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
	Does this device support Band gap channel(s)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Bluetooth	2.4 GHz	BR, EDR, and LE		77.07%
NFC	13.56 MHz	Type A/B/F		N/A ²

Notes:

1. Duty cycle for Wi-Fi is referenced from the DTS and UNII reports.
2. Measured Duty Cycle is not required due to SAR test exemption.

6.3. General LTE SAR Test and Reporting Considerations

Item	Description						
Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 2	Frequency range: 1850 - 1910 MHz (BW = 60 MHz)					
		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	19185/ 1908.5	19193/ 1909.3
	Band 4	Frequency range: 1710 - 1755 MHz (BW = 45 MHz)					
		Channel Bandwidth					
		20 MHz ¹	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	20385/ 1753.5	20393/ 1754.3
	Band 5	Frequency range: 824 - 849 MHz (BW = 25 MHz)					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz ¹	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	20635/ 847.5	20643/ 848.3
	Band 7	Frequency range: 2500 - 2570 MHz (BW = 70 MHz)					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	20850 2510	20825 2507.5	20800 2505	20775 2502.5		
	Mid	21100 2535	21100 2535	21100 2535	21100 2535		
	High	21350 2560	21375 2562.5	21400 2565	21425 2567.5		
	Band 12	Frequency range: 699 – 716 MHz (BW = 17 MHz)					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz ¹	5 MHz	3 MHz	1.4 MHz
	Low			23060/ 704	23035/ 701.5	23025/ 700.5	23017/ 699.7
Mid			23095 707.5	23095/ 707.5	23095/ 707.5	23095/ 707.5	
High			23130/ 711	23155/ 713.5	23165/ 714.5	23173/ 715.3	
Band 13	Frequency range: 777 - 787 MHz (BW = 10 MHz)						
	Channel Bandwidth						
	20 MHz	15 MHz	10 MHz ¹	5 MHz ¹	3 MHz	1.4 MHz	
Low				23205/ 779.5			
Mid			23230 782	23230/ 782			
High				23255/ 784.5			

Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 14	Frequency range: 788 - 798 MHz (BW = 10 MHz)					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz ¹	5 MHz ¹	3 MHz	1.4 MHz
	Low				23305/ 790.5		
Mid			23330/ 793	23330/ 793			
High				23355/ 795.5			
Band 25	Frequency range: 1850 - 1915 MHz (BW = 65 MHz)						
	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	26675/ 1913.5	26683/ 1914.3	
Band 26	Frequency range: 814 - 849 MHz (BW = 35 MHz)						
	Channel Bandwidth						
	20 MHz	15 MHz ¹	10 MHz	5 MHz	3 MHz	1.4 MHz	
	Low		26765/ 821.5	26740/ 819	26715/ 816.5	26705/ 815.5	26697/ 814.7
Mid		26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5	
High		26965/ 841.5	26990/ 844	27015/ 846.5	27025/ 847.5	27033/ 848.3	
Band 30	Frequency range: 2305 - 2315 MHz (BW = 10 MHz)						
	Channel Bandwidth						
	20 MHz	15 MHz	10 MHz ¹	5 MHz ¹	3 MHz	1.4 MHz	
	Low				27685/ 2307.5		
Mid			27710/ 2310	27710/ 2310			
High				27735/ 2312.5			
Band 38	Frequency range: 2570 - 2620 MHz (BW = 50 MHz)						
	Channel Bandwidth						
	20 MHz ¹	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz	
	Low	37850/ 2580	37825/ 2577.5	37800/ 2575	37775/ 2572.5		
Mid	38000/ 2595	38000/ 2595	38000/ 2595	38000/ 2595			
High	38150 2610	38175/ 2612.5	38200/ 2615	38225/ 2617.5			

Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 41 ²	Frequency range: 2496 - 2690 MHz (BW = 194 MHz)																																																																		
		Channel Bandwidth																																																																		
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz																																																													
	Low	39750 / 2506.0																																																																		
	Mid- Low	40185 / 2549.5																																																																		
	Mid	40620 / 2593.0																																																																		
	Mid-High	41055 / 2636.5																																																																		
	High	41490 / 2680.0																																																																		
	Band 66	Frequency range: 1710 - 1780 MHz (BW = 70 MHz)																																																																		
		Channel Bandwidth																																																																		
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz																																																													
		Low	132072/ 1720	132047/ 1717.5	132022/ 1715	131997/ 1712.5	131987/ 1711.5	131979/ 1710.7																																																												
		Mid	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745																																																												
High		132572/ 1770	132597/ 1772.5	132622/ 1775	132647/ 1777.5	132657/ 1778.5	132665/ 1779.3																																																													
LTE transmitter and antenna implementation																																																																				
Refer to Appendix A.																																																																				
Maximum power reduction (MPR)																																																																				
<p>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3</p> <table border="1"> <thead> <tr> <th rowspan="2">Modulation</th> <th colspan="6">Channel bandwidth / Transmission bandwidth (N_{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> <tr> <td>64 QAM</td> <td>≤ 5</td> <td>≤ 4</td> <td>≤ 8</td> <td>≤ 12</td> <td>≤ 16</td> <td>≤ 18</td> <td>≤ 2</td> </tr> <tr> <td>64 QAM</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 3</td> </tr> <tr> <td>256 QAM</td> <td colspan="6">≥ 1</td> <td>≤ 5</td> </tr> </tbody> </table> <p>MPR Built-in by design The manufacturer MPR values are always within the 3GPP maximum MPR allowance but may not follow the default MPR values. A-MPR (additional MPR) was disabled during SAR testing</p>							Modulation	Channel bandwidth / Transmission bandwidth (N _{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	64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2	64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3	256 QAM	≥ 1						≤ 5
Modulation	Channel bandwidth / Transmission bandwidth (N _{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																																																													
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2																																																													
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3																																																													
256 QAM	≥ 1						≤ 5																																																													
Power reduction																																																																				
Yes																																																																				
Spectrum plots for RB configurations																																																																				
A properly configured base station simulator was used for the SAR and power measurements; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.																																																																				

Notes:

- Maximum bandwidth does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE Devices.
- LTE band 41 test channels in accordance with October 2014 TCB workshop for all channels bandwidths.
- SAR Testing for LTE was performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

6.4. LTE (TDD) Considerations

According to KDB 941225 D05 SAR for LTE Devices, for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

LTE TDD Bands support 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$(1+X) \cdot 2192 \cdot T_s$	$(1+X) \cdot 2560 \cdot T_s$	$7680 \cdot T_s$	$(1+X) \cdot 2192 \cdot T_s$	$(1+X) \cdot 2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$			$7680 \cdot T_s$		
5	$6592 \cdot T_s$	$(2+X) \cdot 2192 \cdot T_s$	$(2+X) \cdot 2560 \cdot T_s$	$20480 \cdot T_s$	$(2+X) \cdot 2192 \cdot T_s$	$(2+X) \cdot 2560 \cdot T_s$
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-		
9	$13168 \cdot T_s$			-		
10	$13168 \cdot T_s$	$13152 \cdot T_s$	$12800 \cdot T_s$	-	-	-

Table 4.2-2: Uplink-downlink configurations & Calculated Duty Cycle

Uplink-Downlink Configuration	Downlink-to-Uplink Switch-point Periodicity	Subframe Number										Calculated Duty Cycle (%)
		0	1	2	3	4	5	6	7	8	9	
0	5 ms	D	S	U	U	U	D	S	U	U	U	63.3%
1	5 ms	D	S	U	U	D	D	S	U	U	D	43.3%
2	5 ms	D	S	U	D	D	D	S	U	D	D	23.3%
3	10 ms	D	S	U	U	U	D	D	D	D	D	31.7%
4	10 ms	D	S	U	U	D	D	D	D	D	D	21.7%
5	10 ms	D	S	U	D	D	D	D	D	D	D	11.7%
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.3%

Calculated Duty Cycle = Extended cyclic prefix in uplink * (T_s) * # of S + # of U / period

Note(s):

This device supports uplink-downlink configurations 0-6. The configuration with highest duty cycle was used for SAR Testing: configuration 0 at 63.3% duty cycle.

6.5. Power Back-off/Angle Operation

WWAN supports 4 different power levels: High, Middle High, Middle, and Low. WLAN supports 3 different Power Levels: High, Middle, and Low. These tables are broken down into power states which are determined by the device configuration and operating conditions.

For full details of Power tables target powers, Power States description, Angle detection, and priority of detection/power state decision, please refer to the Operational Description.

Power State	Applicable Angles For SAR Testing	Exposure Conditions	Power Table used for WWAN	Power Table used for WLAN
Power State B	180/360°	Head	High Power	Middle Power
Power State B-	360°	Body-worn/ Hotspot	Middle High Power	High Power
Power State C	0/150°	Body/Body-worn/ Hotspot	Middle Power	High Power
Power State D	150°	Body	Middle Power	Middle Power
Power State E	180°	Body	Low Power	Middle Power
Power State F	180°	Body	Low Power	Low Power

Product Specific 10g (Extremity) Adjusted SAR Calculation

Wireless technologies	Max Tune-up Limit Power State B (dBm)	Reduced Tune-Up Limit Power State B- (dBm)	Power Factor	Reported SAR Limit (W/kg)
GSM 1900	30.5	29.0	1.41	0.850
W-CDMA B2	25.0	24.2	1.20	0.998
LTE B7	25.0	19.8	3.31	0.362
LTE B25	25.0	24.2	1.20	0.998
LTE B30	23.7	22.0	1.48	0.811
LTE B41	25.0	21.3	2.34	0.512
LTE B66	25.0	24.2	1.20	0.998

Note(s):

- Hotspot mode supports power reduction. When the measured SAR is scaled to the maximum tune-up limit, the adjusted SAR is < 1.2 W/kg. Therefore, Extremity SAR testing is not required for this band in accordance with KDB 648474 §2.5 b. Refer to §10 for Reported SAR results. If the Reported SAR 1g value in §10 is less than the Reported SAR Limit listed above, then Extremity SAR is not required.
- Extremity testing that requires adjustment to Maximum Power is only considered for 360° Hotspot at Power State B-. This power is adjusted to Power State B.
- LTE 50% RB is scaled up to the Max Tune-Up Limit with MPR included.

7. RF Exposure Conditions (Test Configurations)

Refer to Appendix A for the specific details of the antenna-to-antenna and antenna-to-edge(s) distances.

0° Closed Posture Test Configurations:

Wireless technologies	RF Exposure Conditions	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
WWAN	Body	10 mm	Rear	N/A	Yes	
			Front	N/A	Yes	
	Hotspot		Rear	≤ 25 mm	Yes	
			Front	≤ 25 mm	Yes	
			Edge 1 (Top)	> 25 mm	No	1
			Edge 2 (Right)	≤ 25 mm	Yes	
			Edge 3 (Bottom)	≤ 25 mm	Yes	
			Edge 4 (Left)	> 25 mm	No	1
WLAN & BT Antenna 1	Body	10 mm	Rear	N/A	Yes	
			Front	N/A	Yes	
	Hotspot		Rear	≤ 25 mm	Yes	
			Front	≤ 25 mm	Yes	
			Edge 1 (Top)	> 25 mm	No	1
			Edge 2 (Right)	≤ 25 mm	Yes	
			Edge 3 (Bottom)	≤ 25 mm	Yes	
			Edge 4 (Left)	> 25 mm	No	1
WLAN Antenna 2	Body	10 mm	Rear	N/A	Yes	
			Front	N/A	Yes	
	Hotspot		Rear	≤ 25 mm	Yes	
			Front	≤ 25 mm	Yes	
			Edge 1 (Top)	≤ 25 mm	Yes	
			Edge 2 (Right)	≤ 25 mm	Yes	
			Edge 3 (Bottom)	> 25 mm	No	1
			Edge 4 (Left)	> 25 mm	No	1

Notes:

- SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR.

150° Read/Compose Posture Test Configurations:

Wireless technologies	RF Exposure Conditions	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
WWAN	Body	5 mm	Rear	≤ 25 mm	Yes	
			Edge 1 (Top)	> 25 mm	No	1
			Edge 2 (Right)	≤ 25 mm	Yes	
			Edge 3 (Bottom)	≤ 25 mm	Yes	
			Edge 4 (Left)	> 25 mm	No	1
WLAN & BT Antenna 1	Body	5 mm	Rear	≤ 25 mm	Yes	
			Edge 1 (Top)	> 25 mm	No	1
			Edge 2 (Right)	≤ 25 mm	Yes	
			Edge 3 (Bottom)	≤ 25 mm	Yes	
			Edge 4 (Left)	> 25 mm	No	1
WLAN Antenna 2	Body	5 mm	Rear	≤ 25 mm	Yes	
			Edge 1 (Top)	≤ 25 mm	Yes	
			Edge 2 (Right)	≤ 25 mm	Yes	
			Edge 3 (Bottom)	> 25 mm	No	1
			Edge 4 (Left)	> 25 mm	No	1

Notes:

- SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR.

180° Flat Posture Test Configurations:

Since the *Dedicated Host Approach* is applied, the standalone SAR test exclusion procedure in KDB 447498 § 4.3.1 is applied in conjunction with KDB 616217 § 4.3 to determine the minimum test separation distance:

- When the separation distance from the antenna to an adjacent edge is ≤ 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.
- When the separation distance from the antenna to an adjacent edge is > 5 mm, the actual antenna-to-edge separation distance is applied to determine SAR test exclusion.

SAR Test Exclusion Calculations for WWAN

Antennas < 50mm to adjacent edges

Antenna	Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)					Calculated Threshold Value				
			dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Rear	Edge 1	Edge 2	Edge 3	Edge 4
Power State EF														
Cellular	GPRS 2 Slots	848.8	25.50	89	5	127.79	5	5	125.84	16.4 -MEASURE-	> 50 mm	16.4	16.4	> 50 mm
Cellular	GPRS 2 Slots	1909.8	18.20	17	5	127.79	5	5	125.84	4.7 -MEASURE-	> 50 mm	4.7	4.7	> 50 mm
Cellular	W-CDMA 2	1907.6	13.60	23	5	127.79	5	5	125.84	6.4 -MEASURE-	> 50 mm	6.4	6.4	> 50 mm
Cellular	W-CDMA 5	846.6	18.00	63	5	127.79	5	5	125.84	11.6 -MEASURE-	> 50 mm	11.6	11.6	> 50 mm
Cellular	LTE Band 2	1900	13.60	23	5	127.79	5	5	125.84	6.3 -MEASURE-	> 50 mm	6.3	6.3	> 50 mm
Cellular	LTE Band 4	1754.3	13.50	22	5	127.79	5	5	125.84	5.8 -MEASURE-	> 50 mm	5.8	5.8	> 50 mm
Cellular	LTE Band 5	844	17.50	56	5	127.79	5	5	125.84	10.3 -MEASURE-	> 50 mm	10.3	10.3	> 50 mm
Cellular	LTE Band 7	2560	10.20	10	5	127.79	5	5	125.84	3.2 -MEASURE-	> 50 mm	3.2	3.2	> 50 mm
Cellular	LTE Band 12	711	19.70	93	5	127.79	5	5	125.84	15.7 -MEASURE-	> 50 mm	15.7	15.7	> 50 mm
Cellular	LTE Band 13	782	18.40	69	5	127.79	5	5	125.84	12.2 -MEASURE-	> 50 mm	12.2	12.2	> 50 mm
Cellular	LTE Band 14	793	18.40	69	5	127.79	5	5	125.84	12.3 -MEASURE-	> 50 mm	12.3	12.3	> 50 mm
Cellular	LTE Band 19	837.5	17.50	56	5	127.79	5	5	125.84	10.2 -MEASURE-	> 50 mm	10.2	10.2	> 50 mm
Cellular	LTE Band 25	1905	13.60	23	5	127.79	5	5	125.84	6.3 -MEASURE-	> 50 mm	6.3	6.3	> 50 mm
Cellular	LTE Band 26	841.4	18.00	63	5	127.79	5	5	125.84	11.6 -MEASURE-	> 50 mm	11.6	11.6	> 50 mm
Cellular	LTE Band 30	2310	12.00	16	5	127.79	5	5	125.84	4.9 -MEASURE-	> 50 mm	4.9	4.9	> 50 mm
Cellular	LTE Band 38	2610	12.30	17	5	127.79	5	5	125.84	5.5 -MEASURE-	> 50 mm	5.5	5.5	> 50 mm
Cellular	LTE Band 41	2680	12.30	17	5	127.79	5	5	125.84	5.6 -MEASURE-	> 50 mm	5.6	5.6	> 50 mm
Cellular	LTE Band 66	1770	13.50	22	5	127.79	5	5	125.84	5.9 -MEASURE-	> 50 mm	5.9	5.9	> 50 mm

Note(s):

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

Antennas > 50mm to adjacent edges

Antenna	Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)					Calculated Threshold Value				
			dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Rear	Edge 1	Edge 2	Edge 3	Edge 4
Power State E/F														
Cellular	GPRS 2 Slots	848.8	25.50	89	5	127.79	5	5	125.84	< 50 mm	603 mW -EXEMPT-	< 50 mm	< 50 mm	592 mW -EXEMPT-
Cellular	GPRS 2 Slots	1909.8	18.20	17	5	127.79	5	5	125.84	< 50 mm	886.4 mW -EXEMPT-	< 50 mm	< 50 mm	866.9 mW -EXEMPT-
Cellular	W-CDMA 2	1907.6	13.60	23	5	127.79	5	5	125.84	< 50 mm	886.5 mW EXEMPT-	< 50 mm	< 50 mm	867 mW -EXEMPT-
Cellular	W-CDMA 5	846.6	18.00	63	5	127.79	5	5	125.84	< 50 mm	602.1mW -EXEMPT-	< 50 mm	< 50 mm	591.1mW -EXEMPT-
Cellular	LTE Band 2	1900	13.60	23	5	127.79	5	5	125.84	< 50 mm	886.7 mW -EXEMPT-	< 50 mm	< 50 mm	867.2 mW -EXEMPT-
Cellular	LTE Band 4	1754.3	13.50	22	5	127.79	5	5	125.84	< 50 mm	8912 mW -EXEMPT-	< 50 mm	< 50 mm	8717 mW -EXEMPT-
Cellular	LTE Band 5	844	17.50	56	5	127.79	5	5	125.84	< 50 mm	601mW -EXEMPT-	< 50 mm	< 50 mm	590 mW -EXEMPT-
Cellular	LTE Band 7	2560	10.20	10	5	127.79	5	5	125.84	< 50 mm	8717 mW -EXEMPT-	< 50 mm	< 50 mm	852.2mW -EXEMPT-
Cellular	LTE Band 12	711	19.70	93	5	127.79	5	5	125.84	< 50 mm	546.6mW -EXEMPT-	< 50 mm	< 50 mm	537.4mW -EXEMPT-
Cellular	LTE Band 13	782	18.40	69	5	127.79	5	5	125.84	< 50 mm	575.2mW -EXEMPT-	< 50 mm	< 50 mm	565 mW -EXEMPT-
Cellular	LTE Band 14	793	18.40	69	5	127.79	5	5	125.84	< 50 mm	579.7 mW -EXEMPT-	< 50 mm	< 50 mm	569.4 mW -EXEMPT-
Cellular	LTE Band 19	837.5	17.50	56	5	127.79	5	5	125.84	< 50 mm	598.2 mW -EXEMPT-	< 50 mm	< 50 mm	587.3 mW -EXEMPT-
Cellular	LTE Band 25	1905	13.60	23	5	127.79	5	5	125.84	< 50 mm	886.6mW EXEMPT-	< 50 mm	< 50 mm	867.1mW EXEMPT-
Cellular	LTE Band 26	841.4	18.00	63	5	127.79	5	5	125.84	< 50 mm	599.9 mW -EXEMPT-	< 50 mm	< 50 mm	588.9 mW -EXEMPT-
Cellular	LTE Band 30	2310	12.00	16	5	127.79	5	5	125.84	< 50 mm	876.6 mW -EXEMPT-	< 50 mm	< 50 mm	857.1mW -EXEMPT-
Cellular	LTE Band 38	2610	12.30	17	5	127.79	5	5	125.84	< 50 mm	870.7 mW -EXEMPT-	< 50 mm	< 50 mm	8512 mW -EXEMPT-
Cellular	LTE Band 41	2680	12.30	17	5	127.79	5	5	125.84	< 50 mm	869.5 mW -EXEMPT-	< 50 mm	< 50 mm	850 mW -EXEMPT-
Cellular	LTE Band 66	1770	13.50	22	5	127.79	5	5	125.84	< 50 mm	890.6 mW -EXEMPT-	< 50 mm	< 50 mm	871.1mW -EXEMPT-

Note(s):

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

SAR Test Exclusion Calculations for WLAN

Antennas < 50mm to adjacent edges

Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)					Calculated Threshold Value				
		dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Rear	Edge 1	Edge 2	Edge 3	Edge 4
Wi-Fi/BT Antenna 1 Power State B/D/E													
Wi-Fi 2.4 GHz	2462	11.50	14	5	82.63	5	38.13	180.09	4.4 -MEASURE-	> 50 mm	4.4 -MEASURE-	0.6 -EXEMPT-	> 50 mm
Wi-Fi 5.2 GHz	5240	9.00	8	5	82.63	5	38.13	180.09	3.7 -MEASURE-	> 50 mm	3.7 -MEASURE-	0.5 -EXEMPT-	> 50 mm
Wi-Fi 5.3 GHz	5320	9.00	8	5	82.63	5	38.13	180.09	3.7 -MEASURE-	> 50 mm	3.7 -MEASURE-	0.5 -EXEMPT-	> 50 mm
Wi-Fi 5.5 GHz	5700	8.50	7	5	82.63	5	38.13	180.09	3.3 -MEASURE-	> 50 mm	3.3 -MEASURE-	0.4 -EXEMPT-	> 50 mm
Wi-Fi 5.8 GHz	5825	8.50	7	5	82.63	5	38.13	180.09	3.4 -MEASURE-	> 50 mm	3.4 -MEASURE-	0.4 -EXEMPT-	> 50 mm
Bluetooth	2480	9.00	8	5	82.63	5	38.13	180.09	2.5 -EXEMPT-	> 50 mm	2.5 -EXEMPT-	0.3 -EXEMPT-	> 50 mm
Wi-Fi/BT Antenna 1 Power State F													
Wi-Fi 2.4 GHz	2462	8.50	7	5	82.63	5	38.13	180.09	2.2 -EXEMPT-	> 50 mm	2.2 -EXEMPT-	0.3 -EXEMPT-	> 50 mm
Wi-Fi 5.2 GHz	5240	4.00	3	5	82.63	5	38.13	180.09	14 -EXEMPT-	> 50 mm	14 -EXEMPT-	0.2 -EXEMPT-	> 50 mm
Wi-Fi 5.3 GHz	5320	4.00	3	5	82.63	5	38.13	180.09	14 -EXEMPT-	> 50 mm	14 -EXEMPT-	0.2 -EXEMPT-	> 50 mm
Wi-Fi 5.5 GHz	5700	4.00	3	5	82.63	5	38.13	180.09	14 -EXEMPT-	> 50 mm	14 -EXEMPT-	0.2 -EXEMPT-	> 50 mm
Wi-Fi 5.8 GHz	5825	4.00	3	5	82.63	5	38.13	180.09	14 -EXEMPT-	> 50 mm	14 -EXEMPT-	0.2 -EXEMPT-	> 50 mm
Wi-Fi Antenna 2 Power State B/D/E													
Wi-Fi 2.4 GHz	2462	11.50	14	5	5	5	127.74	176.44	4.4 -MEASURE-	4.4 -MEASURE-	4.4 -MEASURE-	> 50 mm	> 50 mm
Wi-Fi 5.2 GHz	5240	9.00	8	5	5	5	127.74	176.44	3.7 -MEASURE-	3.7 -MEASURE-	3.7 -MEASURE-	> 50 mm	> 50 mm
Wi-Fi 5.3 GHz	5320	9.00	8	5	5	5	127.74	176.44	3.7 -MEASURE-	3.7 -MEASURE-	3.7 -MEASURE-	> 50 mm	> 50 mm
Wi-Fi 5.5 GHz	5700	8.50	7	5	5	5	127.74	176.44	3.3 -MEASURE-	3.3 -MEASURE-	3.3 -MEASURE-	> 50 mm	> 50 mm
Wi-Fi 5.8 GHz	5825	8.50	7	5	5	5	127.74	176.44	3.4 -MEASURE-	3.4 -MEASURE-	3.4 -MEASURE-	> 50 mm	> 50 mm
Wi-Fi Antenna 2 Power State F													
Wi-Fi 2.4 GHz	2462	8.50	7	5	5	5	127.74	176.44	2.2 -EXEMPT-	2.2 -EXEMPT-	2.2 -EXEMPT-	> 50 mm	> 50 mm
Wi-Fi 5.2 GHz	5240	4.00	3	5	5	5	127.74	176.44	14 -EXEMPT-	14 -EXEMPT-	14 -EXEMPT-	> 50 mm	> 50 mm
Wi-Fi 5.3 GHz	5320	4.00	3	5	5	5	127.74	176.44	14 -EXEMPT-	14 -EXEMPT-	14 -EXEMPT-	> 50 mm	> 50 mm
Wi-Fi 5.5 GHz	5700	4.00	3	5	5	5	127.74	176.44	14 -EXEMPT-	14 -EXEMPT-	14 -EXEMPT-	> 50 mm	> 50 mm
Wi-Fi 5.8 GHz	5825	4.00	3	5	5	5	127.74	176.44	14 -EXEMPT-	14 -EXEMPT-	14 -EXEMPT-	> 50 mm	> 50 mm

Note(s):

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

Antennas > 50mm to adjacent edges

Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)					Calculated Threshold Value				
		dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Rear	Edge 1	Edge 2	Edge 3	Edge 4
Wi-Fi/BT Antenna 1 Power State B/D/E													
Wi-Fi 2.4 GHz	2462	11.50	14	5	82.63	5	38.13	180.09	< 50 mm	4219 mW -EXEMPT-	< 50 mm	< 50 mm	1396.5 mW -EXEMPT-
Wi-Fi 5.2 GHz	5240	9.00	8	5	82.63	5	38.13	180.09	< 50 mm	3918 mW -EXEMPT-	< 50 mm	< 50 mm	1366.4 mW -EXEMPT-
Wi-Fi 5.3 GHz	5320	9.00	8	5	82.63	5	38.13	180.09	< 50 mm	3913 mW -EXEMPT-	< 50 mm	< 50 mm	1365.9 mW -EXEMPT-
Wi-Fi 5.5 GHz	5700	8.50	7	5	82.63	5	38.13	180.09	< 50 mm	389.1mW -EXEMPT-	< 50 mm	< 50 mm	1363.7 mW -EXEMPT-
Wi-Fi 5.8 GHz	5825	8.50	7	5	82.63	5	38.13	180.09	< 50 mm	388.5 mW -EXEMPT-	< 50 mm	< 50 mm	1363.1mW -EXEMPT-
Bluetooth	2480	9.00	8	5	82.63	5	38.13	180.09	< 50 mm	4216 mW -EXEMPT-	< 50 mm	< 50 mm	1396.2 mW -EXEMPT-
Wi-Fi/BT Antenna 1 Power State F													
Wi-Fi 2.4 GHz	2462	8.50	7	5	82.63	5	38.13	180.09	< 50 mm	4219 mW -EXEMPT-	< 50 mm	< 50 mm	1396.5 mW -EXEMPT-
Wi-Fi 5.2 GHz	5240	4.00	3	5	82.63	5	38.13	180.09	< 50 mm	3918 mW -EXEMPT-	< 50 mm	< 50 mm	1366.4 mW -EXEMPT-
Wi-Fi 5.3 GHz	5320	4.00	3	5	82.63	5	38.13	180.09	< 50 mm	3913 mW -EXEMPT-	< 50 mm	< 50 mm	1365.9 mW -EXEMPT-
Wi-Fi 5.5 GHz	5700	4.00	3	5	82.63	5	38.13	180.09	< 50 mm	389.1mW -EXEMPT-	< 50 mm	< 50 mm	1363.7 mW -EXEMPT-
Wi-Fi 5.8 GHz	5825	4.00	3	5	82.63	5	38.13	180.09	< 50 mm	388.5 mW -EXEMPT-	< 50 mm	< 50 mm	1363.1mW -EXEMPT-
Wi-Fi Antenna 2 Power State B/D/E													
Wi-Fi 2.4 GHz	2462	11.50	14	5	5	5	127.74	176.44	< 50 mm	< 50 mm	< 50 mm	873 mW -EXEMPT-	1360 mW -EXEMPT-
Wi-Fi 5.2 GHz	5240	9.00	8	5	5	5	127.74	176.44	< 50 mm	< 50 mm	< 50 mm	842.9 mW -EXEMPT-	1329.9 mW -EXEMPT-
Wi-Fi 5.3 GHz	5320	9.00	8	5	5	5	127.74	176.44	< 50 mm	< 50 mm	< 50 mm	842.4 mW -EXEMPT-	1329.4 mW -EXEMPT-
Wi-Fi 5.5 GHz	5700	8.50	7	5	5	5	127.74	176.44	< 50 mm	< 50 mm	< 50 mm	840.2 mW -EXEMPT-	1327.2 mW -EXEMPT-
Wi-Fi 5.8 GHz	5825	8.50	7	5	5	5	127.74	176.44	< 50 mm	< 50 mm	< 50 mm	839.6 mW -EXEMPT-	1326.6 mW -EXEMPT-
Wi-Fi Antenna 2 Power State F													
Wi-Fi 2.4 GHz	2462	8.50	7	5	5	5	127.74	176.44	< 50 mm	< 50 mm	< 50 mm	873 mW -EXEMPT-	1360 mW -EXEMPT-
Wi-Fi 5.2 GHz	5240	4.00	3	5	5	5	127.74	176.44	< 50 mm	< 50 mm	< 50 mm	842.9 mW -EXEMPT-	1329.9 mW -EXEMPT-
Wi-Fi 5.3 GHz	5320	4.00	3	5	5	5	127.74	176.44	< 50 mm	< 50 mm	< 50 mm	842.4 mW -EXEMPT-	1329.4 mW -EXEMPT-
Wi-Fi 5.5 GHz	5700	4.00	3	5	5	5	127.74	176.44	< 50 mm	< 50 mm	< 50 mm	840.2 mW -EXEMPT-	1327.2 mW -EXEMPT-
Wi-Fi 5.8 GHz	5825	4.00	3	5	5	5	127.74	176.44	< 50 mm	< 50 mm	< 50 mm	839.6 mW -EXEMPT-	1326.6 mW -EXEMPT-

Note(s):

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

360° Flip Posture Test Configurations:

Wireless technologies	RF Exposure Conditions	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
WWAN	Head	0 mm	Left Touch	N/A	Yes	
			Left Tilt (15°)	N/A	Yes	
			Right Touch	N/A	Yes	
			Right Tilt (15°)	N/A	Yes	
	Body	10 mm	Rear	N/A	Yes	
			Front	N/A	Yes	
	Hotspot	10 mm	Rear	≤ 25 mm	Yes	
			Front	≤ 25 mm	Yes	
			Edge 1 (Top)	> 25 mm	No	1
			Edge 2 (Right)	≤ 25 mm	Yes	
			Edge 3 (Bottom)	≤ 25 mm	Yes	
			Edge 4 (Left)	> 25 mm	No	1
WLAN & BT Antenna 1	Head	0 mm	Left Touch	N/A	Yes	
			Left Tilt (15°)	N/A	Yes	
			Right Touch	N/A	Yes	
			Right Tilt (15°)	N/A	Yes	
	Body	10 mm	Rear	N/A	Yes	
			Front	N/A	Yes	
	Hotspot	10 mm	Rear	≤ 25 mm	Yes	
			Front	≤ 25 mm	Yes	
			Edge 1 (Top)	> 25 mm	No	1
			Edge 2 (Right)	≤ 25 mm	Yes	
			Edge 3 (Bottom)	≤ 25 mm	Yes	
			Edge 4 (Left)	> 25 mm	No	1
WLAN Antenna 2	Head	0 mm	Left Touch	N/A	Yes	
			Left Tilt (15°)	N/A	Yes	
			Right Touch	N/A	Yes	
			Right Tilt (15°)	N/A	Yes	
	Body	10 mm	Rear	N/A	Yes	
			Front	N/A	Yes	
	Hotspot	10 mm	Rear	≤ 25 mm	Yes	
			Front	≤ 25 mm	Yes	
			Edge 1 (Top)	≤ 25 mm	Yes	
			Edge 2 (Right)	≤ 25 mm	Yes	
			Edge 3 (Bottom)	> 25 mm	No	1
			Edge 4 (Left)	> 25 mm	No	1

Notes:

- SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR.

7.1. Required Test Configurations

The table below identifies the standalone test configurations required for this device according to the findings in Section 7:

Angle Configuration	Test Configurations	Head	Body		Hotspot or standalone					
			Rear	Front	Rear	Front	Edge 1	Edge 2	Edge 3	Edge 4
0° Closed Posture	WWAN	N/A	Yes	Yes	Yes	Yes	No	Yes	Yes	No
	Wi-Fi 2.4 GHz Antenna 1	N/A	Yes	Yes	Yes	Yes	No	Yes	Yes	No
	Wi-Fi 5 GHz Antenna 1	N/A	Yes	Yes	Yes	Yes	No	Yes	Yes	No
	Bluetooth Antenna 1	N/A	Yes	Yes	Yes	Yes	No	Yes	Yes	No
	Wi-Fi 2.4 GHz Antenna 2	N/A	Yes	Yes	Yes	Yes	Yes	Yes	No	No
	Wi-Fi 5 GHz Antenna 2	N/A	Yes	Yes	Yes	Yes	Yes	Yes	No	No
150° Read/Compose Posture	WWAN	N/A	N/A	N/A	Yes	N/A	No	Yes	Yes	No
	Wi-Fi 2.4 GHz Antenna 1	N/A	N/A	N/A	Yes	N/A	No	Yes	Yes	No
	Wi-Fi 5 GHz Antenna 1	N/A	N/A	N/A	Yes	N/A	No	Yes	Yes	No
	Bluetooth Antenna 1	N/A	N/A	N/A	Yes	N/A	No	Yes	Yes	No
	Wi-Fi 2.4 GHz Antenna 2	N/A	N/A	N/A	Yes	N/A	Yes	Yes	No	No
	Wi-Fi 5 GHz Antenna 2	N/A	N/A	N/A	Yes	N/A	Yes	Yes	No	No
180° Flat Posture	WWAN	Yes*	N/A	N/A	Yes	N/A	No	Yes	Yes	No
	Wi-Fi 2.4 GHz Antenna 1	Yes*	N/A	N/A	Yes	N/A	No	Yes	No	No
	Wi-Fi 5 GHz Antenna 1	Yes*	N/A	N/A	Yes	N/A	No	Yes	No	No
	Bluetooth Antenna 1	Yes*	N/A	N/A	Yes	N/A	No	Yes	No	No
	Wi-Fi 2.4 GHz Antenna 2	Yes*	N/A	N/A	Yes	N/A	No	Yes	No	No
	Wi-Fi 5 GHz Antenna 2	Yes*	N/A	N/A	Yes	N/A	No	Yes	No	No
360° Flip Posture	WWAN	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No
	Wi-Fi 2.4 GHz Antenna 1	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No
	Wi-Fi 5 GHz Antenna 1	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No
	Bluetooth Antenna 1	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No
	Wi-Fi 2.4 GHz Antenna 2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
	Wi-Fi 5 GHz Antenna 2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No

Note(s):

Yes = Testing is required.

Yes* = Spot checks were performed on this Exposure Condition if Reported SAR of 360° Head Exposure Condition was > 0.6 W/kg.

No = Testing is not required.

N/A = Testing not considered (Not Applicable to specific Angle Configuration)

8. Dielectric Property Measurements & System Check

8.1. Dielectric Property Measurements

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within $\pm 2^\circ\text{C}$ 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.

The dielectric constant (ϵ_r) and conductivity (σ) of typical tissue-equivalent media recipes are expected to be within $\pm 5\%$ of the required target values; but for SAR measurement systems that have implemented the SAR error compensation algorithms documented in IEEE Std 1528-2013, to automatically compensate the measured SAR results for deviations between the measured and required tissue dielectric parameters, the tolerance for ϵ_r and σ may be relaxed to $\pm 10\%$. This is limited to frequencies ≤ 3 GHz.

Tissue Dielectric Parameters

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

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

IEEE Std 1528-2013

Refer to Table 3 within the IEEE Std 1528-2013

IEC 62209-1

Refer to Table A.3 within the IEC 62209-1

Dielectric Property Measurements Results:

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
1A	03/27/2020	2450	Head	2450	38.35	39.20	-2.17	1.87	1.80	4.06
				2400	38.56	39.30	-1.87	1.82	1.75	3.67
				2480	38.24	39.16	-2.35	1.91	1.83	4.12
1A	03/28/2020	5250	Head	5250	34.61	35.93	-3.68	4.53	4.70	-3.75
				5150	34.96	36.05	-3.02	4.45	4.60	-3.30
				5350	34.50	35.82	-3.68	4.70	4.80	-2.11
1A	03/31/2020	2450	Head	2450	37.72	39.20	-3.78	1.85	1.80	2.83
				2400	37.84	39.30	-3.71	1.80	1.75	2.70
				2480	37.64	39.16	-3.89	1.88	1.83	2.81
1A	04/03/2020	5250	Head	5250	35.22	35.93	-1.98	4.61	4.70	-1.96
				5150	35.55	36.05	-1.38	4.52	4.60	-1.71
				5350	35.09	35.82	-2.04	4.80	4.80	-0.07
1A	04/03/2020	5600	Head	5600	34.87	35.53	-1.87	4.97	5.06	-1.72
				5500	35.10	35.65	-1.54	4.93	4.96	-0.48
				5725	34.63	35.39	-2.15	5.21	5.19	0.38
1A	04/03/2020	5750	Head	5750	34.58	35.36	-2.21	5.19	5.21	-0.44
				5700	34.62	35.42	-2.26	5.19	5.16	0.61
				5850	34.31	35.30	-2.80	5.23	5.27	-0.68
1A	04/06/2020	2450	Head	2450	38.01	39.20	-3.04	1.87	1.80	4.00
				2400	38.23	39.30	-2.71	1.82	1.75	3.90
				2480	37.92	39.16	-3.17	1.91	1.83	3.96
1A	04/06/2020	5250	Head	5250	36.01	35.93	0.21	4.60	4.70	-2.28
				5150	36.31	36.05	0.73	4.55	4.60	-1.13
				5350	35.86	35.82	0.11	4.84	4.80	0.82
1A	04/06/2020	5600	Head	5600	35.59	35.53	0.16	5.01	5.06	-0.97
				5500	35.80	35.65	0.43	4.95	4.96	-0.26
				5725	35.24	35.39	-0.43	5.19	5.19	-0.04
1A	04/06/2020	5750	Head	5750	35.26	35.36	-0.29	5.17	5.21	-0.80
				5700	35.23	35.42	-0.54	5.18	5.16	0.42
				5850	35.10	35.30	-0.57	5.18	5.27	-1.78
1A	04/10/2020	2450	Head	2450	41.11	39.20	4.87	1.82	1.80	1.22
				2400	41.13	39.30	4.67	1.79	1.75	2.13
				2480	41.09	39.16	4.92	1.85	1.83	0.90
1A	4/14/2020	2450	Head	2450	40.36	39.20	2.96	1.78	1.80	-0.89
				2400	40.39	39.30	2.78	1.74	1.75	-0.44
				2480	40.34	39.16	3.01	1.81	1.83	-1.17
1A	4/16/2020	1900	Head	1900	38.63	40.00	-3.42	1.42	1.40	1.64
				1850	38.83	40.00	-2.93	1.37	1.40	-1.86
				1920	38.57	40.00	-3.58	1.44	1.40	2.86
1A	4/20/2020	1900	Head	1900	38.56	40.00	-3.60	1.45	1.40	3.50
				1850	38.78	40.00	-3.05	1.40	1.40	0.21
				1920	38.50	40.00	-3.75	1.47	1.40	4.64
1A	4/21/2020	1750	Head	1750	39.63	40.08	-1.13	1.32	1.37	-3.50
				1710	39.73	40.15	-1.04	1.29	1.35	-4.41
				1755	39.61	40.08	-1.17	1.33	1.37	-3.41

Dielectric Property Measurements Results (continued):

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
1A	4/21/2020	1750	Head	1750	39.63	40.08	-1.13	1.32	1.37	-3.50
				1710	39.73	40.15	-1.04	1.29	1.35	-4.41
				1755	39.61	40.08	-1.17	1.33	1.37	-3.41
1A	4/22/2020	2600	Head	2600	40.07	39.01	2.72	1.93	1.96	-1.49
				2495	40.17	39.14	2.62	1.86	1.85	0.40
				2690	39.94	38.90	2.68	2.01	2.06	-2.45
1A	4/22/2020	2300	Head	2300	40.48	39.47	2.55	1.71	1.66	2.90
				2350	40.37	39.38	2.50	1.76	1.71	3.18
				2400	40.30	39.30	2.55	1.78	1.75	1.79
1A	4/24/2020	750	Head	750	43.03	41.96	2.55	0.90	0.89	0.94
				695	43.18	42.24	2.22	0.88	0.89	-0.56
				800	42.85	41.71	2.75	0.92	0.90	2.60
1A	4/28/2020	1900	Head	1900	38.21	40.00	-4.48	1.45	1.40	3.71
				1850	38.37	40.00	-4.08	1.40	1.40	0.14
				1920	38.14	40.00	-4.65	1.47	1.40	4.93
1A	4/30/2020	750	Head	750	41.77	41.96	-0.46	0.91	0.89	2.35
				695	41.91	42.24	-0.79	0.90	0.89	1.72
				800	41.54	41.71	-0.40	0.92	0.90	3.04
1A	5/4/2020	750	Head	750	41.89	41.96	-0.17	0.92	0.89	2.57
				695	42.05	42.24	-0.46	0.90	0.89	1.05
				800	41.68	41.71	-0.06	0.93	0.90	3.99
1A	5/4/2020	1750	Head	1750	39.85	40.08	-0.59	1.36	1.37	-0.44
				1710	39.87	40.15	-0.69	1.34	1.35	-0.40
				1755	39.84	40.08	-0.59	1.37	1.37	-0.42
1A	5/9/2020	1750	Head	1750	39.18	40.08	-2.26	1.34	1.37	-2.19
				1710	39.23	40.15	-2.28	1.32	1.35	-2.18
				1755	39.17	40.08	-2.26	1.34	1.37	-2.17
1A	5/9/2020	1900	Head	1900	38.91	40.00	-2.73	1.43	1.40	2.29
				1850	39.00	40.00	-2.50	1.40	1.40	0.07
				1920	38.90	40.00	-2.75	1.44	1.40	3.00
1A	5/12/2020	1900	Head	1900	38.71	40.00	-3.23	1.45	1.40	3.64
				1850	38.79	40.00	-3.03	1.42	1.40	1.64
				1920	38.70	40.00	-3.25	1.46	1.40	4.29
1A	5/16/2020	900	Head	900	41.02	41.50	-1.16	0.95	0.97	-1.80
				805	42.22	41.68	1.30	0.86	0.90	-4.25
				905	40.96	41.50	-1.30	0.96	0.97	-1.56
1A	5/21/2020	900	Head	900	40.64	41.50	-2.07	0.98	0.97	0.70
				805	40.97	41.68	-1.70	0.94	0.90	4.90
				905	40.62	41.50	-2.12	0.98	0.97	0.65

Dielectric Property Measurements Results (continued):

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
2A	3/28/2020	5600	Head	5600	34.09	35.53	-4.06	5.03	5.06	-0.66
				5500	34.34	35.65	-3.67	4.96	4.96	0.02
				5725	33.65	35.39	-4.92	5.26	5.19	1.44
2A	3/28/2020	5750	Head	5750	33.70	35.36	-4.70	5.26	5.21	0.87
				5700	33.70	35.42	-4.86	5.24	5.16	1.50
				5850	33.71	35.30	-4.50	5.29	5.27	0.44
2A	3/31/2020	2450	Head	2450	37.89	39.20	-3.34	1.81	1.80	0.72
				2400	37.99	39.30	-3.33	1.78	1.75	1.50
				2480	37.87	39.16	-3.30	1.84	1.83	0.25
2A	3/31/2020	2450	Head	2450	37.97	39.20	-3.14	1.82	1.80	0.89
				2400	38.05	39.30	-3.17	1.78	1.75	1.85
				2480	37.96	39.16	-3.07	1.84	1.83	0.36
2A	4/3/2020	5250	Head	5250	36.33	35.93	1.10	4.65	4.70	-1.11
				5150	36.67	36.05	1.73	4.57	4.60	-0.71
				5350	36.07	35.82	0.70	4.83	4.80	0.59
2A	4/3/2020	5600	Head	5600	35.80	35.53	0.75	5.07	5.06	0.23
				5500	36.09	35.65	1.24	5.01	4.96	1.03
				5725	35.51	35.39	0.34	5.33	5.19	2.81
2A	4/3/2020	5750	Head	5750	35.48	35.36	0.33	5.32	5.21	1.98
				5700	35.52	35.42	0.28	5.30	5.16	2.64
				5850	34.95	35.30	-0.99	5.35	5.27	1.54
2A	4/6/2020	5250	Head	5250	35.88	35.93	-0.15	4.58	4.70	-2.55
				5150	36.23	36.05	0.51	4.50	4.60	-2.10
				5350	35.69	35.82	-0.36	4.78	4.80	-0.45
2A	4/6/2020	5600	Head	5600	35.37	35.53	-0.46	5.00	5.06	-1.11
				5500	35.62	35.65	-0.08	4.93	4.96	-0.50
				5725	35.03	35.39	-1.02	5.19	5.19	0.04
2A	4/6/2020	5750	Head	5750	35.09	35.36	-0.77	5.20	5.21	-0.24
				5700	34.96	35.42	-1.30	5.20	5.16	0.63
				5850	34.84	35.30	-1.30	5.13	5.27	-2.58
2A	4/7/2020	5250	Head	5250	35.04	35.93	-2.49	4.52	4.70	-3.94
				5150	35.37	36.05	-1.88	4.45	4.60	-3.30
				5350	34.91	35.82	-2.54	4.71	4.80	-1.92
2A	4/7/2020	5600	Head	5600	34.54	35.53	-2.80	4.92	5.06	-2.73
				5500	34.82	35.65	-2.32	4.85	4.96	-2.12
				5725	34.21	35.39	-3.34	5.11	5.19	-1.58
2A	4/7/2020	5750	Head	5750	34.22	35.36	-3.23	5.14	5.21	-1.43
				5700	34.28	35.42	-3.22	5.09	5.16	-1.33
				5850	34.00	35.30	-3.68	5.19	5.27	-1.54
2A	4/10/2020	5250	Head	5250	34.43	35.93	-4.18	4.47	4.70	-4.85
				5150	34.91	36.05	-3.15	4.40	4.60	-4.39
				5350	34.55	35.82	-3.54	4.70	4.80	-2.24
2A	4/10/2020	5600	Head	5600	34.20	35.53	-3.75	4.91	5.06	-2.99
				5500	34.43	35.65	-3.42	4.86	4.96	-2.04
				5725	33.97	35.39	-4.02	5.12	5.19	-1.39
2A	4/10/2020	5750	Head	5750	34.01	35.36	-3.83	5.11	5.21	-1.95
				5700	34.03	35.42	-3.92	5.09	5.16	-1.33
				5850	34.18	35.30	-3.17	5.07	5.27	-3.85

Dielectric Property Measurements Results (continued):

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
2A	4/13/2020	2450	Head	2450	40.31	39.20	2.83	1.82	1.80	1.11
				2400	40.41	39.30	2.83	1.78	1.75	1.62
				2480	40.28	39.16	2.85	1.85	1.83	0.74
2A	4/14/2020	5250	Head	5250	35.95	35.93	0.05	4.49	4.70	-4.55
				5150	36.30	36.05	0.70	4.41	4.60	-4.04
				5350	35.95	35.82	0.37	4.71	4.80	-2.01
2A	4/14/2020	5600	Head	5600	35.52	35.53	-0.04	4.88	5.06	-3.50
				5500	35.80	35.65	0.43	4.81	4.96	-3.00
				5725	35.22	35.39	-0.48	5.10	5.19	-1.72
2A	4/14/2020	5750	Head	5750	35.27	35.36	-0.26	5.09	5.21	-2.35
				5700	35.20	35.42	-0.62	5.10	5.16	-1.27
				5850	35.11	35.30	-0.54	5.09	5.27	-3.45
2A	4/15/2020	5250	Head	5250	35.23	35.93	-1.96	4.51	4.70	-4.06
				5150	35.56	36.05	-1.35	4.40	4.60	-4.34
				5350	35.11	35.82	-1.98	4.70	4.80	-2.17
2A	4/15/2020	5600	Head	5600	34.74	35.53	-2.23	4.87	5.06	-3.68
				5500	34.95	35.65	-1.96	4.82	4.96	-2.78
				5725	34.45	35.39	-2.66	5.09	5.19	-1.81
2A	4/15/2020	5750	Head	5750	34.54	35.36	-2.33	5.10	5.21	-2.16
				5700	34.44	35.42	-2.77	5.09	5.16	-1.44
				5850	34.30	35.30	-2.83	5.05	5.27	-4.19
2A	4/16/2020	900	Head	900	41.22	41.50	-0.67	0.94	0.97	-2.72
				805	41.52	41.68	-0.38	0.91	0.90	1.38
				905	41.20	41.50	-0.72	0.95	0.97	-2.79
2A	4/20/2020	900	Head	900	43.16	41.50	4.00	0.96	0.97	-1.03
				805	43.44	41.68	4.22	0.92	0.90	2.93
				905	43.14	41.50	3.95	0.96	0.97	-1.08
2A	4/20/2020	5750	Head	5750	34.96	35.36	-1.14	5.21	5.21	0.01
				5700	34.72	35.42	-1.98	5.22	5.16	1.05
				5850	34.73	35.30	-1.61	5.18	5.27	-1.69
2A	4/21/2020	5250	Head	5250	35.02	35.93	-2.54	4.52	4.70	-3.87
				5150	35.39	36.05	-1.82	4.43	4.60	-3.71
				5350	34.95	35.82	-2.43	4.74	4.80	-1.45
2A	4/21/2020	5600	Head	5600	34.52	35.53	-2.85	4.93	5.06	-2.65
				5500	34.81	35.65	-2.35	4.85	4.96	-2.14
				5725	34.23	35.39	-3.28	5.12	5.19	-1.26
2A	4/21/2020	5750	Head	5750	34.27	35.36	-3.09	5.14	5.21	-1.45
				5700	34.15	35.42	-3.58	5.11	5.16	-0.94
				5850	34.01	35.30	-3.65	5.09	5.27	-3.34
2A	4/21/2020	2450	Head	2450	39.82	39.20	1.58	1.84	1.80	2.11
				2400	39.91	39.30	1.56	1.79	1.75	2.19
				2480	39.77	39.16	1.55	1.87	1.83	1.94
2A	4/24/2020	900	Head	900	40.98	41.50	-1.25	0.97	0.97	0.49
				805	41.28	41.68	-0.96	0.94	0.90	4.79
				905	40.97	41.50	-1.28	0.98	0.97	0.43

Dielectric Property Measurements Results (continued):

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
2A	4/24/2020	2600	Head	2600	38.12	39.01	-2.28	1.93	1.96	-1.74
				2495	38.26	39.14	-2.26	1.86	1.85	0.34
				2690	38.00	38.90	-2.31	2.00	2.06	-2.74
2A	4/27/2020	5750	Head	5750	34.66	35.36	-1.99	5.11	5.21	-1.91
				5700	34.52	35.42	-2.54	5.12	5.16	-0.92
				5850	34.67	35.30	-1.78	5.15	5.27	-2.30
2A	4/27/2020	900	Head	900	41.18	41.50	-0.77	0.96	0.97	-0.80
				805	41.51	41.68	-0.41	0.93	0.90	3.22
				905	41.17	41.50	-0.80	0.96	0.97	-0.86
2A	4/30/2020	900	Head	900	41.58	41.50	0.19	0.96	0.97	-0.65
				805	42.06	41.68	0.91	0.93	0.90	3.92
				905	41.57	41.50	0.17	0.97	0.97	-0.72
2A	4/30/2020	2600	Head	2600	39.14	39.01	0.33	1.96	1.96	-0.31
				2495	39.29	39.14	0.37	1.86	1.85	0.67
				2690	38.91	38.90	0.03	2.03	2.06	-1.24
2A	5/4/2020	900	Head	900	43.38	41.50	4.53	0.93	0.97	-4.51
				805	43.69	41.68	4.82	0.89	0.90	-0.78
				905	43.35	41.50	4.46	0.93	0.97	-4.54
2A	5/4/2020	2300	Head	2300	41.16	39.47	4.28	1.69	1.66	1.64
				2350	41.07	39.38	4.28	1.74	1.71	1.95
				2400	40.96	39.30	4.23	1.78	1.75	1.56
2A	5/4/2020	2600	Head	2600	40.61	39.01	4.10	1.94	1.96	-1.33
				2495	40.80	39.14	4.23	1.86	1.85	0.45
				2690	40.45	38.90	3.99	2.01	2.06	-2.50
2A	5/8/2020	900	Head	900	41.27	41.50	-0.55	0.98	0.97	0.53
				805	41.53	41.68	-0.36	0.94	0.90	4.72
				905	41.25	41.50	-0.60	0.98	0.97	0.46
2A	5/8/2020	2300	Head	2300	38.83	39.47	-1.63	1.70	1.66	2.12
				2350	38.75	39.38	-1.61	1.74	1.71	1.60
				2400	38.66	39.30	-1.62	1.77	1.75	0.88
2A	5/8/2020	2600	Head	2600	38.45	39.01	-1.44	1.92	1.96	-2.30
				2495	38.56	39.14	-1.49	1.84	1.85	-0.36
				2690	38.34	38.90	-1.43	1.99	2.06	-3.57
2A	5/8/2020	900	Head	900	41.27	41.50	-0.55	0.98	0.97	0.53
				880	41.31	41.50	-0.46	0.97	0.95	2.40
				915	41.23	41.50	-0.65	0.98	0.98	0.08
2A	5/12/2020	900	Head	900	40.67	41.50	-2.00	0.95	0.97	-2.22
				805	40.95	41.68	-1.75	0.91	0.90	1.89
				905	40.65	41.50	-2.05	0.95	0.97	-2.27
2A	5/12/2020	2300	Head	2300	38.27	39.47	-3.05	1.70	1.66	2.12
				2350	38.17	39.38	-3.08	1.74	1.71	1.83
				2400	38.06	39.30	-3.15	1.77	1.75	1.10
2A	5/12/2020	2600	Head	2600	37.82	39.01	-3.05	1.92	1.96	-2.20
				2495	37.95	39.14	-3.05	1.84	1.85	-0.36
				2690	37.69	38.90	-3.10	1.99	2.06	-3.23
2A	5/15/2020	2600	Head	2600	38.21	39.01	-2.05	1.95	1.96	-0.77
				2495	38.36	39.14	-2.00	1.88	1.85	1.43
				2690	38.10	38.90	-2.05	2.02	2.06	-1.96

Dielectric Property Measurements Results (continued):

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
2A	5/15/2020	900	Head	900	41.13	41.50	-0.89	0.97	0.97	0.23
				805	41.45	41.68	-0.54	0.93	0.90	3.94
				905	41.12	41.50	-0.92	0.97	0.97	0.17
2A	5/19/2020	2300	Head	2300	38.16	39.47	-3.33	1.72	1.66	3.32
				2350	38.10	39.38	-3.26	1.76	1.71	3.12
				2400	38.00	39.30	-3.30	1.80	1.75	2.70
2A	5/26/2020	900	Head	900	40.59	41.50	-2.19	0.97	0.97	-0.06
				805	40.89	41.68	-1.90	0.93	0.90	4.09
				905	40.58	41.50	-2.22	0.97	0.97	-0.11
2A	5/26/2020	2300	Head	2300	38.07	39.47	-3.55	1.70	1.66	2.24
				2350	38.05	39.38	-3.39	1.74	1.71	1.95
				2400	37.99	39.30	-3.33	1.78	1.75	1.62

8.2. System 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 re-measured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

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 for SAR measurements ≤ 3 GHz and ≥ 10.0 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.

System 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 $\pm 10\%$ of the manufacturer calibrated dipole SAR target. Refer to Appendix B for the SAR System Check Plots.

SAR Lab	Date	Tissue Type	Dipole Type Serial #	Dipole Cal. Due Data	Measured Results for 1g SAR				Measured Results for 10g SAR				Plot No.
					Zoom Scan to 100 mW	Normalize to 1 W	Target (Ref. Value)	Delta $\pm 10\%$	Zoom Scan to 100 mW	Normalize to 1 W	Target (Ref. Value)	Delta $\pm 10\%$	
1A	3/27/2020	Head	D2450V2 SN: 963	11/12/2020	5.210	52.10	52.70	-1.14	2.400	24.00	24.50	-2.04	
1A	3/28/2020	Head	D5GHzV2 SN: 1213 (5.25 GHz)	11/19/2020	7.810	78.10	82.20	-4.99	2.250	22.50	23.20	-3.02	
1A	3/31/2020	Head	D2450V2 SN: 963	11/12/2020	5.210	52.10	52.70	-1.14	2.400	24.00	24.50	-2.04	
1A	4/3/2020	Head	D5GHzV2 SN: 1213 (5.25 GHz)	11/19/2020	7.690	76.90	82.20	-6.45	2.210	22.10	23.20	-4.74	1,2
1A	4/3/2020	Head	D5GHzV2 SN: 1213 (5.60 GHz)	11/19/2020	8.110	81.10	85.30	-4.92	2.310	23.10	24.20	-4.55	3,4
1A	4/3/2020	Head	D5GHzV2 SN: 1213 (5.75 GHz)	11/19/2020	7.480	74.80	81.30	-8.00	2.130	21.30	22.90	-6.99	5,6
1A	4/6/2020	Head	D2450V2 SN: 963	11/12/2020	5.260	52.60	52.70	-0.19	2.410	24.10	24.50	-1.63	
1A	4/6/2020	Head	D5GHzV2 SN: 1213 (5.25 GHz)	11/19/2020	7.780	77.80	82.20	-5.35	2.240	22.40	23.20	-3.45	
1A	4/6/2020	Head	D5GHzV2 SN: 1213 (5.60 GHz)	11/19/2020	8.280	82.80	85.30	-2.93	2.350	23.50	24.20	-2.89	
1A	4/6/2020	Head	D5GHzV2 SN: 1213 (5.75 GHz)	11/19/2020	7.580	75.80	81.30	-6.77	2.180	21.80	22.90	-4.80	
1A	4/10/2020	Head	D2450V2 SN: 963	11/12/2020	5.160	51.60	52.70	-2.09	2.420	24.20	24.50	-1.22	
1A	4/14/2020	Head	D2450V2 SN: 963	11/12/2020	5.080	50.80	52.70	-3.61	2.380	23.80	24.50	-2.86	7,8
1A	4/16/2020	Head	D1900V2 SN: 5d202	11/13/2020	3.920	39.20	41.00	-4.39	2.020	20.20	21.40	-5.61	
1A	4/20/2020	Head	D1900V2 SN: 5d202	11/13/2020	3.980	39.80	41.00	-2.93	2.050	20.50	21.40	-4.21	
1A	4/21/2020	Head	D1750V2 SN: 1136	11/13/2020	3.410	34.10	37.20	-8.33	1.820	18.20	19.50	-6.67	
1A	4/22/2020	Head	D2600V2 SN: 1104	3/27/2021	5.650	56.50	58.12	-2.79	2.550	25.50	26.07	-2.19	9,10
1A	4/22/2020	Head	D2300V2 SN: 1050	3/27/2021	4.920	49.20	51.35	-4.19	2.360	23.60	24.52	-3.75	11,12
1A	4/24/2020	Head	D750V3 SN: 1139	11/11/2020	0.885	8.85	8.43	4.98	0.581	5.81	5.53	5.06	
1A	4/28/2020	Head	D1900V2 SN: 5d202	11/13/2020	3.920	39.20	41.00	-4.39	2.030	20.30	21.40	-5.14	
1A	4/30/2020	Head	D750V3 SN: 1139	11/11/2020	0.847	8.47	8.43	0.47	0.556	5.56	5.53	0.54	
1A	5/4/2020	Head	D750V3 SN: 1139	11/11/2020	0.891	8.91	8.43	5.69	0.589	5.89	5.53	6.51	13,14
1A	5/5/2020	Head	D1750V2 SN: 1136	11/13/2020	3.440	34.40	37.20	-7.53	1.840	18.40	19.50	-5.64	
1A	5/9/2020	Head	D1750V2 SN: 1136	11/13/2020	3.400	34.00	37.20	-8.60	1.820	18.20	19.50	-6.67	15,16
1A	5/9/2020	Head	D1900V2 SN: 5d202	11/13/2020	3.860	38.60	41.00	-5.85	2.010	20.10	21.40	-6.07	17,18
1A	5/12/2020	Head	D1900V2 SN: 5d202	11/13/2020	3.930	39.30	41.00	-4.15	2.040	20.40	21.40	-4.67	
1A	5/16/2020	Head	D900V2 SN: 1d180	11/11/2020	1.100	11.00	11.20	-1.79	0.712	7.12	7.22	-1.39	
1A	5/22/2020	Head	D900V2 SN: 1d180	11/11/2020	1.140	11.40	11.20	1.79	0.734	7.34	7.22	1.66	19,20

SAR Lab	Date	Tissue Type	Dipole Type Serial #	Dipole Cal. Due Data	Measured Results for 1g SAR				Measured Results for 10g SAR				Plot No.
					Zoom Scan to 100 mW	Normalize to 1 W	Target (Ref. Value)	Delta ±10 %	Zoom Scan to 100 mW	Normalize to 1 W	Target (Ref. Value)	Delta ±10 %	
2A	3/28/2020	Head	D5GHzV2 SN: 1213 (5.60 GHz)	11/19/2020	8.320	83.20	85.30	-2.46	2.360	23.60	24.20	-2.48	
2A	3/28/2020	Head	D5GHzV2 SN: 1213 (5.75 GHz)	11/19/2020	7.810	78.10	81.30	-3.94	2.230	22.30	22.90	-2.62	
2A	3/31/2020	Head	D2450V2 SN: 963	11/12/2020	5.670	56.70	52.70	7.59	2.640	26.40	24.50	7.76	21,22
2A	3/31/2020	Head	D2450V2 SN: 963	11/12/2020	5.280	52.80	52.70	0.19	2.450	24.50	24.50	0.00	
2A	4/3/2020	Head	D5GHzV2 SN: 1213 (5.25 GHz)	11/19/2020	7.420	74.20	82.20	-9.73	2.130	21.30	23.20	-8.19	23,24
2A	4/3/2020	Head	D5GHzV2 SN: 1213 (5.60 GHz)	11/19/2020	8.170	81.70	85.30	-4.22	2.310	23.10	24.20	-4.55	25,26
2A	4/3/2020	Head	D5GHzV2 SN: 1213 (5.75 GHz)	11/19/2020	7.540	75.40	81.30	-7.26	2.130	21.30	22.90	-6.99	27,28
2A	4/7/2020	Head	D5GHzV2 SN: 1213 (5.60 GHz)	11/19/2020	8.300	83.00	85.30	-2.70	2.350	23.50	24.20	-2.89	
2A	4/7/2020	Head	D5GHzV2 SN: 1213 (5.75 GHz)	11/19/2020	7.730	77.30	81.30	-4.92	2.190	21.90	22.90	-4.37	
2A	4/7/2020	Head	D5GHzV2 SN: 1213 (5.25 GHz)	11/19/2020	8.100	81.00	82.20	-1.46	2.350	23.50	23.20	1.29	
2A	4/7/2020	Head	D5GHzV2 SN: 1213 (5.60 GHz)	11/19/2020	8.760	87.60	85.30	2.70	2.500	25.00	24.20	3.31	
2A	4/7/2020	Head	D5GHzV2 SN: 1213 (5.75 GHz)	11/19/2020	8.190	81.90	81.30	0.74	2.350	23.50	22.90	2.62	
2A	4/10/2020	Head	D5GHzV2 SN: 1213 (5.25 GHz)	11/19/2020	8.050	80.50	82.20	-2.07	2.330	23.30	23.20	0.43	
2A	4/10/2020	Head	D5GHzV2 SN: 1213 (5.60 GHz)	11/19/2020	8.730	87.30	85.30	2.34	2.480	24.80	24.20	2.48	
2A	4/10/2020	Head	D5GHzV2 SN: 1213 (5.75 GHz)	11/19/2020	8.240	82.40	81.30	1.35	2.370	23.70	22.90	3.49	
2A	4/13/2020	Head	D2450V2 SN: 963	11/12/2020	5.240	52.40	52.70	-0.57	2.430	24.30	24.50	-0.82	
2A	4/14/2020	Head	D5GHzV2 SN: 1213 (5.25 GHz)	11/19/2020	7.670	76.70	82.20	-6.69	2.220	22.20	23.20	-4.31	
2A	4/14/2020	Head	D5GHzV2 SN: 1213 (5.60 GHz)	11/19/2020	8.330	83.30	85.30	-2.34	2.370	23.70	24.20	-2.07	
2A	4/14/2020	Head	D5GHzV2 SN: 1213 (5.75 GHz)	11/19/2020	7.810	78.10	81.30	-3.94	2.240	22.40	22.90	-2.18	
2A	4/15/2020	Head	D5GHzV2 SN: 1213 (5.25 GHz)	11/19/2020	7.530	75.30	82.20	-8.39	2.160	21.60	23.20	-6.90	
2A	4/15/2020	Head	D5GHzV2 SN: 1213 (5.60 GHz)	11/19/2020	8.250	82.50	85.30	-3.28	2.320	23.20	24.20	-4.13	
2A	4/15/2020	Head	D5GHzV2 SN: 1213 (5.75 GHz)	11/19/2020	7.690	76.90	81.30	-5.41	2.170	21.70	22.90	-5.24	
2A	4/16/2020	Head	D900V2 SN: 1d180	11/11/2020	1.070	10.70	11.20	-4.46	0.690	6.90	7.22	-4.43	
2A	4/20/2020	Head	D900V2 SN: 1d180	11/11/2020	1.090	10.90	11.20	-2.68	0.707	7.07	7.22	-2.08	
2A	4/20/2020	Head	D5GHzV2 SN: 1213 (5.75 GHz)	11/19/2020	7.760	77.60	81.30	-4.55	2.190	21.90	22.90	-4.37	
2A	4/21/2020	Head	D5GHzV2 SN: 1213 (5.25 GHz)	11/19/2020	8.040	80.40	82.20	-2.19	2.320	23.20	23.20	0.00	
2A	4/21/2020	Head	D5GHzV2 SN: 1213 (5.60 GHz)	11/19/2020	8.640	86.40	85.30	1.29	2.450	24.50	24.20	1.24	
2A	4/21/2020	Head	D5GHzV2 SN: 1213 (5.75 GHz)	11/19/2020	8.200	82.00	81.30	0.86	2.350	23.50	22.90	2.62	
2A	4/21/2020	Head	D2450V2 SN: 963	11/12/2020	5.570	55.70	52.70	5.69	2.590	25.90	24.50	5.71	
2A	4/24/2020	Head	D900V2 SN: 1d180	11/11/2020	1.090	10.90	11.20	-2.68	0.702	7.02	7.22	-2.77	
2A	4/24/2020	Head	D2600V2 SN: 1104	3/27/2021	5.550	55.50	58.12	-4.51	2.490	24.90	26.07	-4.49	
2A	4/27/2020	Head	D5GHzV2 SN: 1213 (5.75 GHz)	11/19/2020	7.600	76.00	81.30	-6.52	2.150	21.50	22.90	-6.11	
2A	4/27/2020	Head	D900V2 SN: 1d180	11/11/2020	1.060	10.60	11.20	-5.36	0.685	6.85	7.22	-5.12	
2A	4/30/2020	Head	D900V2 SN: 1d180	11/11/2020	1.090	10.90	11.20	-2.68	0.704	7.04	7.22	-2.49	
2A	4/30/2020	Head	D2600V2 SN: 1104	3/27/2021	5.620	56.20	58.12	-3.30	2.520	25.20	26.07	-3.34	
2A	5/4/2020	Head	D900V2 SN: 1d180	11/11/2020	1.030	10.30	11.20	-8.04	0.671	6.71	7.22	-7.06	29,30
2A	5/5/2020	Head	D2300V2 SN: 1050	3/27/2021	4.890	48.90	51.35	-4.77	2.350	23.50	24.52	-4.16	31,32
2A	5/5/2020	Head	D2600V2 SN: 1104	3/27/2021	5.410	54.10	58.12	-6.92	2.430	24.30	26.07	-6.79	33,34
2A	5/9/2020	Head	D900V2 SN: 1d180	11/11/2020	1.050	10.50	11.20	-6.25	0.674	6.74	7.22	-6.65	
2A	5/9/2020	Head	D2300V2 SN: 1050	3/27/2021	5.040	50.40	51.35	-1.85	2.410	24.10	24.52	-1.71	
2A	5/9/2020	Head	D2600V2 SN: 1104	3/27/2021	5.490	54.90	58.12	-5.54	2.460	24.60	26.07	-5.64	
2A	5/13/2020	Head	D900V2 SN: 1d180	11/11/2020	1.050	10.50	11.20	-6.25	0.678	6.78	7.22	-6.09	
2A	5/13/2020	Head	D2300V2 SN: 1050	3/27/2021	4.970	49.70	51.35	-3.21	2.370	23.70	24.52	-3.34	
2A	5/13/2020	Head	D2600V2 SN: 1104	3/27/2021	5.490	54.90	58.12	-5.54	2.450	24.50	26.07	-6.02	
2A	5/15/2020	Head	D2600V2 SN: 1104	3/27/2021	5.640	56.40	58.12	-2.96	2.520	25.20	26.07	-3.34	

SAR Lab	Date	Tissue Type	Dipole Type Serial #	Dipole Cal. Due Data	Measured Results for 1g SAR				Measured Results for 10g SAR				Plot No.
					Zoom Scan to 100 mW	Normalize to 1 W	Target (Ref. Value)	Delta ±10 %	Zoom Scan to 100 mW	Normalize to 1 W	Target (Ref. Value)	Delta ±10 %	
2A	5/15/2020	Head	D900V2 SN: 1d180	11/11/2020	1.080	10.80	11.20	-3.57	0.696	6.96	7.22	-3.60	
2A	5/20/2020	Head	D2300V2 SN: 1050	3/27/2021	5.110	51.10	51.35	-0.49	2.440	24.40	24.52	-0.49	
2A	5/26/2020	Head	D900V2 SN: 1d180	44146	1.06	10.6	11.2	-5.36	0.679	6.79	7.22	-5.96	
2A	5/26/2020	Head	D2300V2 SN: 1050	44282	5.01	50.1	51.35	-2.43	2.39	23.9	24.52	-2.53	

9. Conducted Output Power Measurements

9.1. GSM

Per KDB 941225 D01 3G SAR Procedures:

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

When different maximum output power applies to GSM voice or GPRS/EDGE time slots, GSM voice and GPRS/EDGE time slots should be tested separately to determine compliance by summing the corresponding reported SAR.

The GMSK EDGE configurations are grouped with GPRS and considered with respect to time-averaged maximum output power to determine compliance

Per October 2013 TCB Workshop:

When the maximum frame-averaged powers levels are within 0.25 dB of each other, test the configuration with the most number of time slots.

Maximum Output Power (Tune-up Limit) for GSM

RF Air interface	Mode	Tune-up Power Limit (dBm)			
		Main Antenna			
		Power State B	Power State B-	Power State C/D	Power State E/F
GSM850	Voice/GPRS (1 slot)	32.7	32.7	32.5	27.5
	GPRS 2 slots	32.7	32.7	28.4	25.5
GSM1900	Voice/GPRS (1 slot)	30.5	30.5	28.6	21.9
	GPRS 2 slots	30.5	29.0	25.6	18.2

Notes:

EGPRS is not supported in this device.

GSM850 Measured Results

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Power State B Average Power (dBm)				Power State B- Average Power (dBm)				Power State C/D Average Power (dBm)				Power State E/F Average Power (dBm)			
					Measured		Tune-up Limit		Measured		Tune-up Limit		Measured		Tune-up Limit		Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GPRS/EDGE (GMSK)	CS1	1	128	824.2	31.8	22.7	32.7	23.7	31.8	22.7	32.7	23.7	31.5	22.4	32.5	23.5	26.3	17.3	27.5	18.5
			190	836.6	31.8	22.7			31.8	22.7			31.6	22.5			26.3	17.3		
			251	848.8	31.7	22.6			31.7	22.6			31.5	22.4			26.3	17.2		
		2	128	824.2	31.7	25.6	32.7	26.7	31.7	25.6	32.7	26.7	27.3	21.3	28.4	22.4	24.4	18.4	25.5	19.5
			190	836.6	31.6	25.6			31.6	25.6			27.3	21.3			24.4	18.4		
			251	848.8	31.6	25.5			31.6	25.5			27.3	21.3			24.2	18.1		

Notes:

Based on the Tune-up Procedure, GPRS/EDGE (GMSK) mode with 2 time slots for Power States B/B-/E/F and 1 time slot Power States C/D have maximum frame-averaged power.

GSM1900 Measured Results

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Power State B Average Power (dBm)				Power State B- Average Power (dBm)				Power State C/D Average Power (dBm)				Power State E/F Average Power (dBm)			
					Measured		Tune-up Limit		Measured		Tune-up Limit		Measured		Tune-up Limit		Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GPRS/EDGE (GMSK)	CS1	1	512	1850.2	29.6	20.6	30.5	21.5	29.6	20.6	30.5	21.5	27.4	18.4	28.6	19.6	20.5	11.5	21.9	12.9
			661	1880.0	29.4	20.4			29.4	20.4			27.5	18.5			20.5	11.4		
			810	1909.8	29.6	20.6			29.6	20.6			27.5	18.5			20.3	11.3		
		2	512	1850.2	29.6	23.5	30.5	24.5	29.0	23.0	29.0	23.0	24.3	18.2	25.6	19.6	16.8	10.8	18.2	12.2
			661	1880.0	29.3	23.3			28.9	22.8			24.4	18.4			16.7	10.7		
			810	1909.8	29.6	23.5			29.0	22.9			24.4	18.3			16.6	10.6		

Notes:

Based on the Tune-up Procedure, GPRS/EDGE (GMSK) mode with 2 time slots for Power States B/B-/C/D and 1 time slot for Power States E/F have maximum frame-averaged power.

9.2. W-CDMA

Per KDB 941225 D01 3G SAR Procedures for W-CDMA:

Maximum output power is verified on the high, middle and low channels and using the appropriate 12.2 kbps RMC with TPC (transmit power control) set to all "1's"

Release 99 Setup Procedures used to establish the test signals

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1. A summary of these settings is illustrated below:

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 2
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	β_c/β_d	8/15

HSDPA Setup Procedures used to establish the test signals

The following 4 Sub-tests were completed according to procedures in table C.10.1.4 of 3GPP TS 34.121-1. A summary of these settings is illustrated below:

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note 1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and $\Delta_{NACK} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$, and $\Delta_{CQI} = 24/15$ with $\beta_{HS} = 24/15 * \beta_c$.

Note 3: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{HS}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$.

HSUPA Setup Procedures used to establish the test signals

The following 5 Sub-tests were completed according to procedures in table C.11.1.3 of 3GPP TS 34.121-1. A summary of these settings is illustrated below:

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note 1)	β_{ec}	β_{ed} (Note 4) (Note 5)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/25	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed1}: 47/15$ $\beta_{ed2}: 47/15$	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

Note 1: For sub-test 1 to 4, Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$. For sub-test 5, Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 5/15$ with $\beta_{HS} = 5/15 * \beta_c$.

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

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

Note 4: In case of testing by UE using E-DPCCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.

Note 5: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Note 6: For subtests 2, 3 and 4, UE may perform E-DPCCH power scaling at max power which could results in slightly smaller MPR values.

DC-HSDPA Setup Procedures used to establish the test signals

The following 4 Sub-tests for DC-HSDPA were completed according to procedures in table C08.1.12 of 3GPP TS 34.121-1. A summary of subtest settings is illustrated below:

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Processes	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table. Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

HSPA+ Setup Procedures used to establish the test signals

The following 1 Sub-test was completed according to procedures in table C.11.1.4 of 3GPP TS34.121. A summary of these settings is illustrated below:

Table C.11.1.4: β values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM

Sub-test	β_c (Note 3)	β_d	β_{HS} (Note 1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed1} : 30/15 β_{ed2} : 30/15	β_{ed3} : 24/15 β_{ed4} : 24/15	3.5	2.5	14	105	105
Note 1: $\Delta_{ACK}, \Delta_{NACK}$ and $\Delta_{CGI} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$. Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0). Note 3: DPDCH is not configured, therefore the β_c is set to 1 and $\beta_d = 0$ by default. Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value. Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.											

Maximum Output Power (Tune-up Limit) for W-CDMA

SAR measurement is not required for the HSDPA, HSUPA, DC-HSDPA and HSPA+. When primary mode and the adjusted SAR is ≤ 1.2 W/kg and secondary mode is $\leq 1/4$ dB higher than the primary mode

RF Air interface	Mode	Tune-up Power Limit (dBm)			
		Main Antenna			
		Power State B	Power State B-	Power State C/D	Power State E/F
W-CDMA Band 2	R99	25.0	24.2	19.6	13.6
	HSDPA	25.0	24.2	19.6	13.6
	HSUPA	25.0	24.2	19.6	13.6
	DC-HSDPA	25.0	24.2	19.6	13.6
	HSPA+	25.0	24.2	19.6	13.6
W-CDMA Band 5	R99	25.0	25.0	23.1	18.0
	HSDPA	25.0	25.0	23.1	18.0
	HSUPA	25.0	25.0	23.1	18.0
	DC-HSDPA	25.0	25.0	23.1	18.0
	HSPA+	25.0	25.0	23.1	18.0

W-CDMA Band II Measured Results

Mode	UL Ch No.	Freq. (MHz)	Power State B Average Power (dBm)			Power State B- Average Power (dBm)			Power State C/D Average Power (dBm)			Power State E/F Average Power (dBm)			
			Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit	
Release 99	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	24.2	N/A	25.0	24.1	N/A	24.2	18.7	N/A	19.6	12.7	N/A	13.6
		9400	1880.0	24.2			24.0			18.7			12.7		
		9538	1907.6	24.1			24.0			18.7			12.8		
HSDPA	Subtest 1	9262	1852.4	24.0	0	25.0	23.9	0	24.2	18.6	0	19.6	12.6	0	13.6
		9400	1880.0	24.1			24.0			18.6			12.6		
		9538	1907.6	24.0			24.0			18.6			12.6		
	Subtest 2	9262	1852.4	24.0	0	25.0	23.9	0	24.2	18.6	0	19.6	12.6	0	13.6
		9400	1880.0	24.1			23.9			18.6			12.5		
		9538	1907.6	24.0			23.9			18.6			12.7		
	Subtest 3	9262	1852.4	23.6	0.5	24.5	23.5	0.5	23.7	18.2	0.5	19.1	12.2	0.5	13.1
		9400	1880.0	23.7			23.6			18.1			12.2		
		9538	1907.6	23.6			23.5			18.2			12.2		
	Subtest 4	9262	1852.4	23.7	0.5	24.5	23.5	0.5	23.7	18.2	0.5	19.1	12.2	0.5	13.1
		9400	1880.0	23.7			23.6			18.1			12.2		
		9538	1907.6	23.6			23.5			18.2			12.3		
HSUPA	Subtest 1	9262	1852.4	23.4	0	25.0	23.5	0	24.2	18.6	0	19.6	12.6	0	13.6
		9400	1880.0	23.5			23.6			18.6			12.6		
		9538	1907.6	23.5			23.6			18.7			12.7		
	Subtest 2	9262	1852.4	21.9	2	23.0	22.0	2	22.2	16.7	2	17.6	10.7	2	11.6
		9400	1880.0	22.0			22.1			16.7			10.7		
		9538	1907.6	21.9			22.0			16.7			10.8		
	Subtest 3	9262	1852.4	22.9	1	24.0	23.0	1	23.2	17.7	1	18.6	11.7	1	12.6
		9400	1880.0	22.9			23.1			17.7			11.7		
		9538	1907.6	22.9			23.1			17.8			11.8		
	Subtest 4	9262	1852.4	21.9	2	23.0	22.0	2	22.2	16.7	2	17.6	10.7	2	11.6
		9400	1880.0	22.0			22.1			16.7			10.7		
		9538	1907.6	22.0			22.1			16.7			10.8		
	Subtest 5	9262	1852.4	23.5	0	25.0	23.6	0	24.2	18.3	0	19.6	12.3	0	13.6
		9400	1880.0	23.5			23.7			18.3			12.3		
		9538	1907.6	23.5			23.6			18.3			12.3		
DC-HSDPA	Subtest 1	9262	1852.4	24.1	0	25.0	24.0	0	24.2	18.6	0	19.6	12.6	0	13.6
		9400	1880.0	24.1			24.0			18.6			12.6		
		9538	1907.6	24.0			24.0			18.6			12.6		
	Subtest 2	9262	1852.4	24.0	0	25.0	23.9	0	24.2	18.6	0	19.6	12.6	0	13.6
		9400	1880.0	24.1			24.0			18.6			12.6		
		9538	1907.6	24.0			23.9			18.6			12.6		
	Subtest 3	9262	1852.4	23.6	0.5	24.5	23.5	0.5	23.7	18.2	0.5	19.1	12.2	0.5	13.1
		9400	1880.0	23.7			23.6			18.2			12.2		
		9538	1907.6	23.6			23.6			18.2			12.3		
	Subtest 4	9262	1852.4	23.6	0.5	24.5	23.5	0.5	23.7	18.2	0.5	19.1	12.2	0.5	13.1
		9400	1880.0	23.7			23.6			18.2			12.2		
		9538	1907.6	23.6			23.5			18.2			12.2		
HSPA+	Subtest 1	9262	1852.4	21.8	2.5	22.5	21.5	2.5	21.7	16.2	2.5	17.1	10.2	2.5	11.1
		9400	1880.0	21.8			21.6			16.2			10.2		
		9538	1907.6	21.7			21.5			16.2			10.2		

W-CDMA Band V Measured Results

Mode	UL Ch No.	Freq. (MHz)	Power State B Average Power (dBm)			Power State B- Average Power (dBm)			Power State C/D Average Power (dBm)			Power State E/F Average Power (dBm)			
			Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit	
Release 99	Rel 99 (RMC, 12.2 kbps)	4132	826.4	24.2	N/A	25.0	24.2	N/A	25.0	22.4	N/A	23.1	17.8	N/A	18.0
		4183	836.6	24.2			24.2			22.4			17.8		
		4233	846.6	24.1			24.1			22.4			17.7		
HSDPA	Subtest 1	4132	826.4	24.1	0	25.0	24.1	0	25.0	22.3	0	23.1	17.7	0	18.0
		4183	836.6	24.1			24.1			22.3			17.7		
		4233	846.6	24.1			24.1			22.3			17.7		
	Subtest 2	4132	826.4	24.1	0	25.0	24.1	0	25.0	22.3	0	23.1	17.7	0	18.0
		4183	836.6	24.1			24.1			22.3			17.6		
		4233	846.6	24.0			24.0			22.3			17.6		
	Subtest 3	4132	826.4	23.7	0.5	24.5	23.7	0.5	24.5	21.9	0.5	22.6	17.3	0.5	17.5
		4183	836.6	23.7			23.7			21.9			17.3		
		4233	846.6	23.6			23.6			21.9			17.2		
	Subtest 4	4132	826.4	23.7	0.5	24.5	23.7	0.5	24.5	21.9	0.5	22.6	17.2	0.5	17.5
		4183	836.6	23.7			23.7			21.9			17.2		
		4233	846.6	23.6			23.6			21.9			17.2		
HSUPA	Subtest 1	4132	826.4	23.6	0	25.0	23.6	0	25.0	22.0	0	23.1	17.5	0	18.0
		4183	836.6	23.6			23.6			22.2			17.5		
		4233	846.6	23.5			23.5			22.2			17.5		
	Subtest 2	4132	826.4	22.1	2	23.0	22.1	2	23.0	20.4	2	21.1	15.8	2	16.0
		4183	836.6	22.1			22.1			20.5			15.8		
		4233	846.6	22.0			22.0			20.4			15.7		
	Subtest 3	4132	826.4	23.0	1	24.0	23.0	1	24.0	21.4	1	22.1	16.8	1	17.0
		4183	836.6	23.1			23.1			21.4			16.8		
		4233	846.6	23.0			23.0			21.5			16.8		
	Subtest 4	4132	826.4	22.1	2	23.0	22.1	2	23.0	20.4	2	21.1	15.8	2	16.0
		4183	836.6	22.1			22.1			20.4			15.7		
		4233	846.6	22.0			22.0			20.4			15.7		
	Subtest 5	4132	826.4	23.6	0	25.0	23.6	0	25.0	22.0	0	23.1	17.3	0	18.0
		4183	836.6	23.7			23.7			22.0			17.3		
		4233	846.6	23.6			23.6			22.0			17.3		
DC-HSDPA	Subtest 1	4132	826.4	24.1	0	25.0	24.1	0	25.0	22.3	0	23.1	17.7	0	18.0
		4183	836.6	24.1			24.1			22.3			17.6		
		4233	846.6	24.0			24.0			22.3			17.6		
	Subtest 2	4132	826.4	24.1	0	25.0	24.1	0	25.0	22.3	0	23.1	17.7	0	18.0
		4183	836.6	24.1			24.1			22.3			17.7		
		4233	846.6	24.0			24.0			22.3			17.6		
	Subtest 3	4132	826.4	23.6	0.5	24.5	23.6	0.5	24.5	21.9	0.5	22.6	17.3	0.5	17.5
		4183	836.6	23.7			23.7			21.9			17.3		
		4233	846.6	23.6			23.6			21.9			17.2		
	Subtest 4	4132	826.4	23.7	0.5	24.5	23.7	0.5	24.5	21.9	0.5	22.6	17.3	0.5	17.5
		4183	836.6	23.7			23.7			21.9			17.2		
		4233	846.6	23.6			23.6			21.9			17.2		
HSPA+	Subtest 1	4132	826.4	21.7	2.5	22.5	21.7	2.5	22.5	19.9	2.5	20.6	15.3	2.5	15.5
		4183	836.6	21.7			21.7			19.9			15.3		
		4233	846.6	21.6			21.6			19.9			15.2		

9.3. LTE

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 1, 2 and 3

Modulation	Channel bandwidth / Transmission bandwidth (N _{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
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
256 QAM	≥ 1						≤ 5

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 (subclause)	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	N/A

Maximum Output Power (Tune-up Limit) for LTE

According to April 2015 TCB workshop, SAR test exclusion can be applied for testing overlapping LTE bands as follows:

- a) The maximum output power, including tolerance, for the smaller band must be \leq the larger band to qualify for the SAR test exclusion.
- b) The channel bandwidth and other operating parameters for the smaller band must be fully supported by the larger band.
 - LTE Band 2 (1850-1910 MHz) is covered by LTE Band 25 (1850-1915 MHz)
 - LTE Band 4 (1710-1755 MHz) is covered by LTE Band 66 (1710-1780 MHz)
 - LTE Band 38 (2570-2620 MHz) is covered by LTE Band 41 (2496-2690 MHz)

Maximum bandwidth does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE Devices.

LTE QPSK configuration has the highest maximum average output power per 3GPP standard.

SAR measurement is not required for the 16QAM and 64QAM. When the highest maximum output power for 16QAM and 64QAM is $\leq \frac{1}{2}$ dB higher than the QPSK or when the reported SAR for the QPSK configuration is ≤ 1.45 W/kg.

Please refer to section 6.3. for LTE detail test channels.

RF Air interface	Mode	Tune-up Power Limit (dBm)			
		Main Antenna			
		Power State B	Power State B-	Power State C/D	Power State E/F
LTE Band 2	QPSK	25.0	24.2	19.6	13.6
LTE Band 4	QPSK	25.0	24.2	19.8	13.5
LTE Band 5	QPSK	25.0	25.0	22.7	17.5
LTE Band 7	QPSK	25.0	19.8	17.8	10.2
LTE Band 12	QPSK	25.5	25.5	24.5	19.7
LTE Band 13	QPSK	25.5	25.5	23.8	18.4
LTE Band 14	QPSK	25.5	25.5	23.2	18.4
LTE Band 25	QPSK	25.0	24.2	19.6	13.6
LTE Band 26	QPSK	25.0	25.0	22.7	18.0
LTE Band 30	QPSK	23.7	22.0	19.3	12.0
LTE Band 38	QPSK	25.0	21.3	18.7	12.3
LTE Band 41	QPSK	25.0	21.3	18.7	12.3
LTE Band 66	QPSK	25.0	24.2	19.8	13.5

LTE Band 5 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Power State B Average Power (dBm)				Power State B- Average Power (dBm)				Power State C/D Average Power (dBm)				Power State EF Average Power (dBm)											
				20525	836.5 MHz	MFR	Tune-up Limit	20525	836.5 MHz	MFR	Tune-up Limit	20525	836.5 MHz	MFR	Tune-up Limit	20525	836.5 MHz	MFR	Tune-up Limit								
10 MHz	QPSK	1	0	23.8	23.9	23.7	0	25.0	23.8	23.9	23.7	0	25.0	21.9	21.9	21.8	0	22.7	17.2	17.2	17.2	0	17.5				
		50	0	22.9	22.9	22.8	1	24.0	22.9	22.9	22.8	1	24.0	22.0	22.0	21.6	0	22.7	17.2	17.2	17.2	0	17.5				
		5 MHz	QPSK	1	0	23.8	23.9	23.7	0	25.0	23.8	23.9	23.7	0	25.0	21.9	21.9	21.8	0	22.7	17.3	17.3	17.3	0	17.5		
				25	0	22.9	22.9	22.8	1	24.0	22.9	22.9	22.8	1	24.0	22.0	22.0	21.6	0	22.7	17.3	17.3	17.3	0	17.5		
				3 MHz	QPSK	1	0	23.7	23.7	23.7	0	25.0	23.7	23.7	23.7	0	25.0	21.8	21.8	21.8	0	22.7	17.2	17.2	17.2	0	17.5
	15					0	22.9	22.9	22.8	1	24.0	22.9	22.9	22.8	1	24.0	22.0	22.0	21.6	0	22.7	17.3	17.3	17.3	0	17.5	
	1.4 MHz					QPSK	1	0	23.8	23.7	23.5	0	25.0	23.8	23.7	23.5	0	25.0	21.9	21.8	21.7	0	22.7	17.2	17.1	17.2	0
			6				0	22.8	22.8	22.7	1	24.0	22.8	22.8	22.7	1	24.0	21.9	21.9	21.9	0	22.7	17.4	17.3	17.2	0	17.5

LTE Band 7 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Power State B Average Power (dBm)					Power State B- Average Power (dBm)					Power State C/D Average Power (dBm)					Power State EF Average Power (dBm)					
				20850	21100	21350	MFR	Tune-up Limit	20850	21100	21350	MFR	Tune-up Limit	20850	21100	21350	MFR	Tune-up Limit	20850	21100	21350	MFR	Tune-up Limit	
				2510.5 MHz	2535 MHz	2560.5 MHz			2510.5 MHz	2535 MHz	2560.5 MHz			2510.5 MHz	2535 MHz	2560.5 MHz			2510.5 MHz	2535 MHz	2560.5 MHz			
20 MHz	QPSK	1	0	23.8	23.9	24.0	0	25.0	19.5	19.6	19.6	0	19.8	16.3	16.3	16.4	0	17.8	8.9	9.1	9.0	0	10.2	
		1	49	23.9	23.9	23.8	0	25.0	19.4	19.6	19.4	0	19.8	16.2	16.3	16.3	0	17.8	8.9	9.1	9.0	0	10.2	
		1	99	23.9	23.9	24.0	0	25.0	19.4	19.6	19.5	0	19.8	16.4	16.3	16.3	0	17.8	8.9	9.0	9.2	0	10.2	
		50	0	22.8	22.9	23.0	1	24.0	19.5	19.6	19.6	0	19.8	16.4	16.5	16.5	0	17.8	9.0	9.1	9.0	0	10.2	
		50	24	22.9	22.9	22.9	1	24.0	19.6	19.6	19.5	0	19.8	16.4	16.5	16.4	0	17.8	9.0	9.1	9.0	0	10.2	
		50	50	22.9	22.8	22.9	1	24.0	19.6	19.5	19.5	0	19.8	16.4	16.4	16.4	0	17.8	9.0	9.1	9.1	0	10.2	
	16QAM	1	0	23.3	23.4	23.4	1	24.0	19.8	19.8	19.8	0	19.8	16.8	16.8	16.8	0	17.8	9.4	9.6	9.6	0	10.2	
		1	49	23.2	23.4	23.2	1	24.0	19.8	19.8	19.8	0	19.8	16.8	16.7	16.6	0	17.8	9.4	9.5	9.5	0	10.2	
		1	99	23.2	23.5	23.4	1	24.0	19.8	19.8	19.8	0	19.8	16.8	16.7	16.7	0	17.8	9.5	9.5	9.7	0	10.2	
		50	0	21.8	21.9	22.0	2	23.0	19.5	19.6	19.6	0	19.8	16.3	16.4	16.4	0	17.8	9.0	9.1	9.0	0	10.2	
		50	24	21.9	22.0	22.0	2	23.0	19.6	19.6	19.5	0	19.8	16.4	16.5	16.4	0	17.8	9.1	9.1	9.1	0	10.2	
		50	50	21.9	21.9	21.9	2	23.0	19.6	19.5	19.5	0	19.8	16.4	16.4	16.3	0	17.8	9.1	9.1	9.1	0	10.2	
	64QAM	1	0	21.8	22.0	22.3	2	23.0	19.8	19.8	19.8	0	19.8	16.7	16.7	16.8	0	17.8	9.7	9.5	9.4	0	10.2	
		1	49	21.9	21.9	22.2	2	23.0	19.8	19.8	19.7	0	19.8	16.7	16.7	16.6	0	17.8	9.7	9.4	9.3	0	10.2	
		1	99	21.9	22.1	22.5	2	23.0	19.8	19.8	19.7	0	19.8	16.6	16.8	16.7	0	17.8	9.7	9.3	9.6	0	10.2	
		50	0	20.7	20.7	20.7	3	22.0	19.6	19.6	19.6	0	19.8	16.4	16.5	16.5	0	17.8	9.1	9.2	9.1	0	10.2	
		50	24	20.7	20.8	20.7	3	22.0	19.6	19.7	19.6	0	19.8	16.5	16.5	16.4	0	17.8	9.2	9.3	9.2	0	10.2	
		50	50	20.8	20.7	20.7	3	22.0	19.6	19.6	19.5	0	19.8	16.5	16.4	16.4	0	17.8	9.1	9.2	9.2	0	10.2	
	15 MHz	QPSK	1	0	24.0	23.9	23.9	0	25.0	19.5	19.6	19.6	0	19.8	16.4	16.4	16.5	0	17.8	9.0	9.1	8.9	0	10.2
			1	37	23.8	23.7	23.8	0	25.0	19.3	19.3	19.5	0	19.8	16.3	16.2	16.4	0	17.8	9.0	8.9	8.7	0	10.2
			1	74	23.8	23.8	23.9	0	25.0	19.4	19.4	19.6	0	19.8	16.4	16.3	16.4	0	17.8	9.0	9.0	9.0	0	10.2
			36	0	22.8	22.9	22.9	1	24.0	19.5	19.6	19.6	0	19.8	16.4	16.5	16.4	0	17.8	8.9	9.1	9.0	0	10.2
			36	20	22.9	22.9	22.9	1	24.0	19.5	19.6	19.5	0	19.8	16.4	16.5	16.4	0	17.8	9.0	9.1	9.0	0	10.2
			36	39	22.9	22.8	22.9	1	24.0	19.5	19.5	19.5	0	19.8	16.4	16.4	16.4	0	17.8	9.0	9.1	9.0	0	10.2
16QAM		1	0	23.2	22.8	23.3	1	24.0	19.4	19.8	19.8	0	19.8	16.7	16.8	16.8	0	17.8	9.4	9.6	9.6	0	10.2	
		1	37	23.2	22.8	23.1	1	24.0	19.3	19.8	19.7	0	19.8	16.7	16.7	16.7	0	17.8	9.2	9.5	8.9	0	10.2	
		1	74	23.2	22.7	23.3	1	24.0	19.4	19.8	19.8	0	19.8	16.8	16.7	16.8	0	17.8	9.4	9.6	9.2	0	10.2	
		36	0	21.8	21.9	22.0	2	23.0	19.5	19.6	19.5	0	19.8	16.3	16.4	16.4	0	17.8	9.1	9.1	9.0	0	10.2	
		36	20	21.9	21.9	22.0	2	23.0	19.5	19.6	19.5	0	19.8	16.4	16.4	16.4	0	17.8	9.1	9.1	9.1	0	10.2	
		36	39	21.9	21.8	22.0	2	23.0	19.6	19.5	19.5	0	19.8	16.4	16.4	16.4	0	17.8	9.1	9.1	9.1	0	10.2	
64QAM		1	0	22.2	22.0	21.8	2	23.0	19.8	19.8	19.8	0	19.8	16.9	17.0	16.9	0	17.8	9.2	9.8	9.5	0	10.2	
		1	37	22.1	22.0	21.6	2	23.0	19.8	19.8	19.7	0	19.8	16.9	17.0	16.9	0	17.8	9.2	9.6	9.4	0	10.2	
		1	74	22.3	22.0	22.0	2	23.0	19.8	19.8	19.8	0	19.8	17.0	17.0	17.1	0	17.8	9.2	9.8	9.6	0	10.2	
		36	0	20.6	20.7	20.6	3	22.0	19.5	19.7	19.7	0	19.8	16.4	16.5	16.4	0	17.8	9.1	9.2	9.1	0	10.2	
		36	20	20.7	20.8	20.7	3	22.0	19.6	19.6	19.7	0	19.8	16.4	16.5	16.5	0	17.8	9.2	9.2	9.2	0	10.2	
		36	39	20.7	20.7	20.8	3	22.0	19.6	19.6	19.6	0	19.8	16.4	16.4	16.4	0	17.8	9.2	9.2	9.2	0	10.2	
10 MHz		QPSK	1	0	23.6	23.7	23.7	0	25.0	19.3	19.3	19.3	0	19.8	16.1	16.3	16.0	0	17.8	8.7	8.8	8.9	0	10.2
			1	25	23.7	23.5	23.9	0	25.0	19.5	19.1	19.3	0	19.8	16.2	16.0	16.2	0	17.8	8.9	8.7	8.8	0	10.2
			1	49	23.6	23.6	23.8	0	25.0	19.3	19.3	19.3	0	19.8	16.0	16.1	16.2	0	17.8	8.8	8.8	8.9	0	10.2
			25	0	22.7	22.8	22.8	1	24.0	19.4	19.5	19.4	0	19.8	16.3	16.3	16.2	0	17.8	8.9	9.0	8.9	0	10.2
			25	12	22.7	22.8	22.8	1	24.0	19.4	19.5	19.4	0	19.8	16.3	16.3	16.3	0	17.8	8.9	9.0	8.9	0	10.2
			25	25	22.7	22.7	22.8	1	24.0	19.4	19.4	19.4	0	19.8	16.2	16.3	16.2	0	17.8	8.9	9.0	9.0	0	10.2
	16QAM	1	0	22.7	22.8	22.8	1	24.0	19.4	19.5	19.4	0	19.8	16.2	16.3	16.2	0	17.8	8.9	9.0	8.9	0	10.2	
		1	0	22.7	22.7	23.1	1	24.0	19.7	19.4	19.3	0	19.8	16.1	16.3	16.1	0	17.8	8.9	9.0	9.3	0	10.2	
		1	25	22.5	22.5	23.2	1	24.0	19.5	19.3	19.2	0	19.8	16.1	16.1	16.0	0	17.8	8.8	9.0	9.4	0	10.2	
		1	49	22.7	22.6	23.3	1	24.0	19.7	19.3	19.4	0	19.8	16.1	16.3	16.2	0	17.8	8.8	8.8	9.4	0	10.2	
		25	0	21.8	21.8	21.9	2	23.0	19.5	19.6	19.5	0	19.8	16.3	16.4	16.4	0	17.8	9.0	9.0	8.9	0	10.2	
		25	12	21.8	21.8	21.9	2	23.0	19.5	19.6	19.5	0	19.8	16.3	16.4	16.4	0	17.8	9.0	9.0	9.0	0	10.2	
	64QAM	1	0	21.6	21.8	21.6	2	23.0	19.6	19.6	19.6	0	19.8	16.4	16.3	16.3	0	17.8	9.2	9.4	9.0	0	10.2	
		1	25	21.7	21.8	21.7	2	23.0	19.5	19.4	19.6	0	19.8	16.4	16.3	16.2	0	17.8	9.2	9.5	8.9	0	10.2	
		1	49	21.7	21.8	21.9	2	23.0	19.7	19.6	19.6	0	19.8	16.3	16.4	16.4	0	17.8	9.2	9.3	9.1	0	10.2	
		25	0	20.6	20.6	20.4	3	22.0	19.5	19.6	19.5	0	19.8	16.3	16.4	16.4	0	17.8	9.0	9.1	9.0	0	10.2	
		25	12	20.6	20.6	20.7	3	22.0	19.5	19.6	19.5	0	19.8	16.3	16.4	16.4	0	17.8	9.1	9.1	9.1	0	10.2	
		25	25	20.6	20.6	20.7	3	22.0	19.5	19.5	19.5	0	19.8	16.3	16.4	16.4	0	17.8	9.1	9.1	9.1	0	10.2	
	5 MHz	QPSK	1	0	23.7	23.8	23.7	0	25.0	19.4	19.5	19.4	0	19.8	16.3	16.4	16.3	0	17.8	8.9	8.9	8.9	0	10.2
			1	12	23.8	23.8	23.8	0	25.0	19.5	19.5													

LTE Band 12 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Power State B Average Power (dBm)					Power State B Average Power (dBm)					Power State C/D Average Power (dBm)					Power State E/F Average Power (dBm)				
				23095 707.5 MHz		23155 713.5 MHz	MFR	Tune-up Limit	23095 707.5 MHz		23155 713.5 MHz	MFR	Tune-up Limit	23095 707.5 MHz		23155 713.5 MHz	MFR	Tune-up Limit	23095 707.5 MHz		23155 713.5 MHz	MFR	Tune-up Limit
10 MHz	QPSK	1	0	24.50	0	25.5	24.50	0	25.5	24.49	0	24.5	19.34	0	19.7								
		1	25	24.21	0	25.5	24.21	0	25.5	23.69	0	24.5	19.42	0	19.7								
		1	49	24.42	0	25.5	24.42	0	25.5	23.99	0	24.5	19.37	0	19.7								
		25	0	23.62	1	24.5	23.62	1	24.5	23.86	0	24.5	19.43	0	19.7								
		25	12	23.59	1	24.5	23.59	1	24.5	23.83	0	24.5	19.41	0	19.7								
		25	25	23.58	1	24.5	23.58	1	24.5	23.83	0	24.5	19.40	0	19.7								
		50	0	23.56	1	24.5	23.56	1	24.5	23.84	0	24.5	19.37	0	19.7								
		1	0	23.59	1	24.5	23.59	1	24.5	24.03	0	24.5	19.16	0	19.7								
		1	25	23.67	1	24.5	23.67	1	24.5	24.09	0	24.5	18.98	0	19.7								
		1	49	23.53	1	24.5	23.53	1	24.5	24.14	0	24.5	19.19	0	19.7								
	16QAM	25	0	22.74	2	23.5	22.74	2	23.5	22.90	0	24.5	19.44	0	19.7								
		25	12	22.73	2	23.5	22.73	2	23.5	22.88	0	24.5	19.42	0	19.7								
		25	25	22.70	2	23.5	22.70	2	23.5	22.87	0	24.5	19.42	0	19.7								
		50	0	22.67	2	23.5	22.67	2	23.5	22.82	0	24.5	19.38	0	19.7								
		1	0	22.62	2	23.5	22.62	2	23.5	23.43	0	24.5	19.70	0	19.7								
		1	25	22.67	2	23.5	22.67	2	23.5	23.47	0	24.5	19.70	0	19.7								
		1	49	22.62	2	23.5	22.62	2	23.5	23.44	0	24.5	19.70	0	19.7								
		25	0	21.60	3	22.5	21.60	3	22.5	22.93	0	24.5	19.46	0	19.7								
		25	12	21.60	3	22.5	21.60	3	22.5	22.87	0	24.5	19.45	0	19.7								
		25	25	21.59	3	22.5	21.59	3	22.5	23.01	0	24.5	19.46	0	19.7								
50	0	21.56	3	22.5	21.56	3	22.5	23.03	0	24.5	19.39	0	19.7										
5 MHz	QPSK	1	0	24.39	0	25.5	24.39	0	25.5	23.64	0	24.5	19.17	0	19.7								
		1	12	24.52	0	25.5	24.52	0	25.5	23.70	0	24.5	19.30	0	19.7								
		1	24	24.49	0	25.5	24.49	0	25.5	23.77	0	24.5	19.32	0	19.7								
		12	0	23.51	1	24.5	23.51	1	24.5	23.75	0	24.5	19.27	0	19.7								
		12	7	23.60	1	24.5	23.60	1	24.5	23.85	0	24.5	19.36	0	19.7								
		12	13	23.62	1	24.5	23.62	1	24.5	23.87	0	24.5	19.36	0	19.7								
		25	0	23.58	1	24.5	23.58	1	24.5	23.82	0	24.5	19.29	0	19.7								
		1	0	23.96	1	24.5	23.96	1	24.5	24.17	0	24.5	19.26	0	19.7								
		1	12	24.11	1	24.5	24.11	1	24.5	24.29	0	24.5	19.34	0	19.7								
		1	24	24.02	1	24.5	24.02	1	24.5	24.30	0	24.5	19.40	0	19.7								
	16QAM	12	0	22.67	2	23.5	22.67	2	23.5	22.93	0	24.5	19.32	0	19.7								
		12	7	22.80	2	23.5	22.80	2	23.5	23.04	0	24.5	19.42	0	19.7								
		12	13	22.79	2	23.5	22.79	2	23.5	23.02	0	24.5	19.39	0	19.7								
		25	0	22.64	2	23.5	22.64	2	23.5	22.88	0	24.5	19.31	0	19.7								
		1	0	22.67	2	23.5	22.67	2	23.5	23.21	0	24.5	19.49	0	19.7								
		1	12	22.83	2	23.5	22.83	2	23.5	23.33	0	24.5	19.63	0	19.7								
		1	24	22.80	2	23.5	22.80	2	23.5	23.31	0	24.5	19.62	0	19.7								
		12	0	21.43	3	22.5	21.43	3	22.5	23.19	0	24.5	19.38	0	19.7								
		12	7	21.51	3	22.5	21.51	3	22.5	23.12	0	24.5	19.50	0	19.7								
		12	13	21.47	3	22.5	21.47	3	22.5	23.31	0	24.5	19.45	0	19.7								
64QAM	25	0	21.50	3	22.5	21.50	3	22.5	23.18	0	24.5	19.42	0	19.7									
	1	0	24.43	0	25.5	24.43	0	25.5	23.60	0	24.5	19.17	0	19.7									
	1	8	24.55	0	25.5	24.55	0	25.5	23.72	0	24.5	19.23	0	19.7									
	1	14	24.53	0	25.5	24.53	0	25.5	23.70	0	24.5	19.23	0	19.7									
	8	0	23.55	1	24.5	23.55	1	24.5	23.69	0	24.5	19.26	0	19.7									
	8	4	23.61	1	24.5	23.61	1	24.5	23.80	0	24.5	19.35	0	19.7									
	8	7	23.63	1	24.5	23.63	1	24.5	23.79	0	24.5	19.38	0	19.7									
	15	0	23.67	1	24.5	23.67	1	24.5	23.79	0	24.5	19.33	0	19.7									
	1	0	23.36	1	24.5	23.36	1	24.5	23.96	0	24.5	19.26	0	19.7									
	1	8	23.47	1	24.5	23.47	1	24.5	24.09	0	24.5	19.28	0	19.7									
3 MHz	16QAM	1	14	23.43	1	24.5	23.43	1	24.5	24.07	0	24.5	19.31	0	19.7								
		8	0	22.73	2	23.5	22.73	2	23.5	22.80	0	24.5	19.37	0	19.7								
		8	4	22.80	2	23.5	22.80	2	23.5	22.91	0	24.5	19.45	0	19.7								
		8	7	22.82	2	23.5	22.82	2	23.5	22.91	0	24.5	19.45	0	19.7								
		15	0	22.68	2	23.5	22.68	2	23.5	22.84	0	24.5	19.30	0	19.7								
		1	0	21.52	2	23.5	21.52	2	23.5	22.98	0	24.5	19.56	0	19.7								
		1	8	22.78	2	23.5	22.78	2	23.5	23.10	0	24.5	19.59	0	19.7								
		1	14	22.76	2	23.5	22.76	2	23.5	23.12	0	24.5	19.58	0	19.7								
		8	0	21.51	3	22.5	21.51	3	22.5	23.31	0	24.5	19.36	0	19.7								
		8	4	21.64	3	22.5	21.64	3	22.5	23.10	0	24.5	19.46	0	19.7								
	64QAM	8	7	21.65	3	22.5	21.65	3	22.5	23.12	0	24.5	19.47	0	19.7								
		15	0	21.52	3	22.5	21.52	3	22.5	23.11	0	24.5	19.38	0	19.7								
		1	0	24.48	0	25.5	24.48	0	25.5	23.71	0	24.5	19.18	0	19.7								
		1	3	24.54	0	25.5	24.54	0	25.5	23.73	0	24.5	19.26	0	19.7								
		1	5	24.49	0	25.5	24.49	0	25.5	23.69	0	24.5	19.19	0	19.7								
		3	0	24.49	0	25.5	24.49	0	25.5	23.65	0	24.5	19.13	0	19.7								
		3	1	24.55	0	25.5	24.55	0	25.5	23.71	0	24.5	19.17	0	19.7								
		3	3	24.52	0	25.5	24.52	0	25.5	23.72	0	24.5	19.18	0	19.7								
		6	0	23.51	1	24.5	23.51	1	24.5	23.70	0	24.5	19.25	0	19.7								
		1	0	23.59	1	24.5	23.59	1	24.5	23.73	0	24.5	19.28	0	19.7								
1.4 MHz	16QAM	1	3	23.62	1	24.5	23.62	1	24.5	23.78	0	24.5	19.31	0	19.7								
		1	5	23.61	1	24.5	23.61	1	24.5	23.78	0	24.5	19.29	0	19.7								
		3	0	23.57	1	24.5	23.57	1	24.5	23.84	0	24.5	19.21	0	19.7								
		3	1	23.63	1	24.5	23.63	1	24.5	23.75	0	24.5	19.28	0	19.7								
		3	3	23.64	1	24.5	23.64	1	24.5	23.79	0	24.5	19.28	0	19.7								
		6	0	22.67	2	23.5	22.67	2	23.5	22.86	0	24.5	19.25	0	19.7								
		1	0	22.53	2	23.5	22.53	2	23.5	23.28	0	24.5	19.59	0	19.7								
		1	3	22.63	2	23.5	22.63	2	23.5	23.38	0	24.5	19.70	0	19.7								
		1	5	22.55	2	23.5	22.55	2	23.5	23.32	0	24.5	19.58	0	19.7								
		3	0	22.37	2	23.5	22.37	2	23.5	23.22	0	24.5	19.50	0	19.7								
	64QAM	3	1	22.44	2	23.5	22.44	2	23.5	23.30	0	24.5	19.57	0	19.7								
		3	3	22.45	2	23.5	22.45	2	23.5	23.29	0	24.5	19.56	0	19.7								
		6	0	21.49	3	22.5	21.49	3	22.5	22.89	0	24.5	19.29	0	19.7								

LTE Band 13 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Power State B Average Power (dBm)				Power State B Average Power (dBm)				Power State C/D Average Power (dBm)				Power State EF Average Power (dBm)			
				23230 782 MHz	MFR	Tune-up Limit	23230 782 MHz	MFR	Tune-up Limit	23230 782 MHz	MFR	Tune-up Limit	23230 782 MHz	MFR	Tune-up Limit				
10 MHz	QPSK	1	0	24.4	0	25.5	24.4	0	25.5	23.4	0	23.8	18.2	0	18.4				
		1	25	24.4	0	25.5	24.4	0	25.5	23.6	0	23.8	18.3	0	18.4				
		1	49	24.4	0	25.5	24.4	0	25.5	23.5	0	23.8	18.3	0	18.4				
		25	0	23.4	1	24.5	23.4	1	24.5	23.7	0	23.8	18.3	0	18.4				
		25	12	23.4	1	24.5	23.4	1	24.5	23.8	0	23.8	18.4	0	18.4				
	16QAM	25	25	23.4	1	24.5	23.4	1	24.5	23.6	0	23.8	18.4	0	18.4				
		50	0	23.4	1	24.5	23.4	1	24.5	23.7	0	23.8	18.4	0	18.4				
		1	0	23.5	1	24.5	23.5	1	24.5	23.6	0	23.8	18.4	0	18.4				
		1	25	23.5	1	24.5	23.5	1	24.5	23.6	0	23.8	18.4	0	18.4				
		1	49	23.5	1	24.5	23.5	1	24.5	23.9	0	23.8	18.2	0	18.4				
	64QAM	25	0	22.6	2	23.5	22.6	2	23.5	22.9	0	23.8	18.4	0	18.4				
		25	12	22.5	2	23.5	22.5	2	23.5	22.9	0	23.8	18.4	0	18.4				
		25	25	22.5	2	23.5	22.5	2	23.5	22.9	0	23.8	18.4	0	18.4				
		50	0	22.5	2	23.5	22.5	2	23.5	22.9	0	23.8	18.4	0	18.4				
		1	0	22.5	2	23.5	22.5	2	23.5	22.5	0	23.8	18.4	0	18.4				
	10 MHz	QPSK	1	0	24.4	0	25.5	24.4	0	25.5	23.8	0	23.8	18.3	0	18.4			
			1	25	24.4	0	25.5	24.4	0	25.5	23.2	0	23.8	18.3	0	18.4			
			1	49	24.4	0	25.5	24.4	0	25.5	23.0	0	23.8	18.4	0	18.4			
			25	0	23.4	1	24.5	23.4	1	24.5	23.3	0	23.8	18.4	0	18.4			
			25	12	23.4	1	24.5	23.4	1	24.5	23.6	0	23.8	18.4	0	18.4			
16QAM	25	25	23.4	1	24.5	23.4	1	24.5	23.1	0	23.8	18.3	0	18.4					
	50	0	23.4	1	24.5	23.4	1	24.5	23.8	0	23.8	18.3	0	18.4					
	1	0	23.5	1	24.5	23.5	1	24.5	23.7	0	23.8	18.4	0	18.4					
	1	25	23.5	1	24.5	23.5	1	24.5	23.6	0	23.8	18.4	0	18.4					
	1	49	23.5	1	24.5	23.5	1	24.5	22.9	0	23.8	18.4	0	18.4					
64QAM	25	0	22.5	2	23.5	22.5	2	23.5	22.9	0	23.8	18.4	0	18.4					
	25	12	22.4	2	23.5	22.4	2	23.5	22.8	0	23.8	18.3	0	18.4					
	25	25	22.5	2	23.5	22.5	2	23.5	22.6	0	23.8	18.4	0	18.4					
	50	0	22.6	2	23.5	22.6	2	23.5	22.6	0	23.8	18.4	0	18.4					
	1	0	22.6	2	23.5	22.6	2	23.5	22.6	0	23.8	18.4	0	18.4					
5 MHz	QPSK	1	0	24.3	0	25.5	24.3	0	25.5	23.6	0	23.8	18.3	0	18.4				
		1	12	24.4	0	25.5	24.4	0	25.5	23.8	0	23.8	18.4	0	18.4				
		1	24	24.4	0	25.5	24.4	0	25.5	23.2	0	23.8	18.3	0	18.4				
		12	0	23.4	1	24.5	23.4	1	24.5	23.0	0	23.8	18.4	0	18.4				
		12	7	23.4	1	24.5	23.4	1	24.5	23.3	0	23.8	18.4	0	18.4				
16QAM	12	13	23.5	1	24.5	23.5	1	24.5	23.6	0	23.8	18.4	0	18.4					
	25	0	23.4	1	24.5	23.4	1	24.5	23.1	0	23.8	18.3	0	18.4					
	1	0	23.4	1	24.5	23.4	1	24.5	23.8	0	23.8	18.3	0	18.4					
	1	12	23.5	1	24.5	23.5	1	24.5	23.7	0	23.8	18.4	0	18.4					
	1	24	23.5	1	24.5	23.5	1	24.5	23.6	0	23.8	18.4	0	18.4					
64QAM	12	0	22.5	2	23.5	22.5	2	23.5	22.9	0	23.8	18.4	0	18.4					
	12	7	22.5	2	23.5	22.5	2	23.5	22.9	0	23.8	18.4	0	18.4					
	12	13	22.5	2	23.5	22.5	2	23.5	22.9	0	23.8	18.4	0	18.4					
	25	0	22.4	2	23.5	22.4	2	23.5	22.8	0	23.8	18.3	0	18.4					
	1	0	22.5	2	23.5	22.5	2	23.5	22.6	0	23.8	18.4	0	18.4					

LTE Band 14 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Power State B Average Power (dBm)				Power State B Average Power (dBm)				Power State C/D Average Power (dBm)				Power State EF Average Power (dBm)			
				23330 793 MHz	MFR	Tune-up Limit	23330 793 MHz	MFR	Tune-up Limit	23330 793 MHz	MFR	Tune-up Limit	23330 793 MHz	MFR	Tune-up Limit				
10 MHz	QPSK	1	0	24.3	0	25.5	24.3	0	25.5	23.2	0	23.2	18.3	0	18.4				
		1	25	24.1	0	25.5	24.1	0	25.5	23.2	0	23.2	18.3	0	18.4				
		1	49	24.4	0	25.5	24.4	0	25.5	23.1	0	23.2	18.2	0	18.4				
		25	0	23.5	1	24.5	23.5	1	24.5	23.1	0	23.2	18.4	0	18.4				
		25	12	23.5	1	24.5	23.5	1	24.5	23.2	0	23.2	18.3	0	18.4				
	16QAM	25	25	23.4	1	24.5	23.4	1	24.5	23.2	0	23.2	18.3	0	18.4				
		50	0	23.5	1	24.5	23.5	1	24.5	23.1	0	23.2	18.3	0	18.4				
		1	0	23.5	1	24.5	23.5	1	24.5	22.4	0	23.2	18.4	0	18.4				
		1	25	23.6	1	24.5	23.6	1	24.5	22.1	0	23.2	18.3	0	18.4				
		1	49	23.5	1	24.5	23.5	1	24.5	22.4	0	23.2	18.1	0	18.4				
	64QAM	25	0	22.7	2	23.5	22.7	2	23.5	22.5	0	23.2	18.4	0	18.4				
		25	12	22.6	2	23.5	22.6	2	23.5	22.4	0	23.2	18.4	0	18.4				
		25	25	22.5	2	23.5	22.5	2	23.5	22.4	0	23.2	18.3	0	18.4				
		50	0	22.5	2	23.5	22.5	2	23.5	22.3	0	23.2	18.3	0	18.4				
		1	0	22.7	2	23.5	22.7	2	23.5	22.5	0	23.2	18.4	0	18.4				
	5 MHz	QPSK	1	0	24.4	0	25.5	24.4	0	25.5	23.2	0	23.2	18.3	0	18.4			
			1	12	24.5	0	25.5	24.5	0	25.5	23.1	0	23.2	18.2	0	18.4			
			1	24	24.5	0	25.5	24.5	0	25.5	23.1	0	23.2	18.4	0	18.4			
			12	0	23.4	1	24.5	23.4	1	24.5	22.9	0	23.2	18.3	0	18.4			
			12	7	23.5	1	24.5	23.5	1	24.5	23.1	0	23.2	18.3	0	18.4			
16QAM	12	13	23.5	1	24.5	23.5	1	24.5	23.0	0	23.2	18.4	0	18.4					
	25	0	23.5	1	24.5	23.5	1	24.5	23.1	0	23.2	18.3	0	18.4					
	1	0	23.5	1	24.5	23.5	1	24.5	22.4	0	23.2	18.3	0	18.4					
	1	12	23.6	1	24.5	23.6	1	24.5	22.4	0	23.2	18.4	0	18.4					
	1	24	23.6	1	24.5	23.6	1	24.5	22.5	0	23.2	18.4	0	18.4					
64QAM	12	0	22.5	2	23.5	22.5	2	23.5	22.4	0	23.2	18.3	0	18.4					
	12	7	22.6	2	23.5	22.6	2	23.5	22.4	0	23.2	18.4	0	18.4					
	12	13	22.6	2	23.5	22.6	2	23.5	22.4	0	23.2	18.4	0	18.4					
	25	0	22.5	2	23.5	22.5	2	23.5	22.3	0	23.2	18.4	0	18.4					
	1	0	22.7	2	23.5	22.7	2	23.5	22.4	0	23.2	18.3	0	18.4					
5 MHz	QPSK	1	0	24.4	0	25.5	24.4	0	25.5	23.2	0	23.2	18.3	0	18.4				
		1	12	24.5	0	25.5	24.5	0	25.5	23.1	0	23.2	18.2	0	18.4				
		1	24	24.5	0	25.5	24.5	0	25.5	23.1	0	23.2	18.4	0	18.4				
		12	0	23.4	1	24.5	23.4	1	24.5	22.9	0	23.2	18.3	0	18.4				
		12	7	23.5	1	24.5	23.5	1	24.5	23.1	0	23.2	18.3	0	18.4				
16QAM	12	13	23.5	1	24.5	23.5	1	24.5	23.0	0	23.2	18.4	0	18.4					
	25	0	23.5	1	24.5	23.5	1	24.5	23.1	0	23.2	18.3	0	18.4					
	1	0	23.5	1	24.5	23.5	1	24.5	22.4	0	23.2	18.3	0	18.4					
	1	12	23.6	1	24.5	23.6	1	24.5	22.4	0	23.2	18.4	0	18.4					
	1	24	23.6	1	24.5	23.6	1	24.5	22.5	0	23.2	18.4	0	18.4					
64QAM	12	0	22.5	2	23.5	22.5	2	23.5	22.4	0	23.2	18.3	0	18.4					
	12	7	22.6	2	23.5	22.6	2	23.5											

LTE Band 25 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Power State B Average Power (dBm)					Power State B Average Power (dBm)					Power State C/D Average Power (dBm)					Power State EF Average Power (dBm)					
				26140			26365		26590		26140			26365		26590		26140			26365		26590	
				1860 MHz	1882.5 MHz	1905 MHz	MFR	Tune-up Limit	1860 MHz	1882.5 MHz	1905 MHz	MFR	Tune-up Limit	1860 MHz	1882.5 MHz	1905 MHz	MFR	Tune-up Limit	1860 MHz	1882.5 MHz	1905 MHz	MFR	Tune-up Limit	
20 MHz	QPSK	1	0	24.2	24.1	24.2	0	25.0	24.2	24.2	24.1	0	24.2	18.9	18.9	18.9	0	19.6	12.5	12.5	12.5	0	13.6	
		1	49	24.2	24.2	24.2	0	25.0	24.1	24.1	24.2	0	24.2	18.9	18.9	18.8	0	19.6	12.5	12.5	12.5	0	13.6	
		1	99	24.1	24.1	24.2	0	25.0	24.1	24.1	24.0	0	24.2	18.8	18.9	18.9	0	19.6	12.4	12.4	12.4	0	13.6	
		50	0	23.2	23.2	23.2	1	24.0	23.1	23.2	23.1	0.2	24.0	18.9	18.9	18.8	0	19.6	12.6	12.5	12.5	0	13.6	
		50	24	23.2	23.3	23.2	1	24.0	23.2	23.3	23.2	0.2	24.0	18.9	18.9	18.9	0	19.6	12.6	12.5	12.6	0	13.6	
	16QAM	50	50	23.2	23.3	23.2	1	24.0	23.1	23.2	23.2	0.2	24.0	18.9	18.9	19.0	0	19.6	12.5	12.5	12.5	0	13.6	
		100	0	23.1	23.2	23.2	1	24.0	23.1	23.2	23.2	0.2	24.0	18.9	18.9	18.9	0	19.6	12.6	12.5	12.6	0	13.6	
		1	0	23.7	23.5	23.5	1	24.0	23.7	23.5	23.5	0.2	24.0	19.5	19.1	19.2	0	19.6	13.1	13.0	13.0	0	13.6	
		1	49	23.6	23.5	23.5	1	24.0	23.7	23.5	23.5	0.2	24.0	19.3	19.2	19.2	0	19.6	13.1	12.9	12.9	0	13.6	
		1	99	23.6	23.5	23.4	1	24.0	23.5	23.5	23.4	0.2	24.0	19.3	19.1	19.1	0	19.6	13.0	12.8	12.9	0	13.6	
	64QAM	50	0	22.2	22.3	22.1	2	23.0	22.1	22.1	22.1	1.2	23.0	18.9	18.8	18.8	0	19.6	12.6	12.5	12.5	0	13.6	
		50	24	22.2	22.3	22.2	2	23.0	22.2	22.2	22.1	1.2	23.0	18.8	18.8	18.9	0	19.6	12.6	12.5	12.6	0	13.6	
		50	50	22.2	22.3	22.2	2	23.0	22.1	22.2	22.1	1.2	23.0	18.8	18.8	18.9	0	19.6	12.6	12.5	12.5	0	13.6	
		100	0	22.2	22.2	22.2	2	23.0	22.1	22.1	22.1	1.2	23.0	18.9	18.8	18.8	0	19.6	12.6	12.5	12.6	0	13.6	
		1	0	22.7	22.2	22.3	2	23.0	22.6	22.4	22.4	1.2	23.0	19.5	19.1	19.1	0	19.6	12.9	12.8	12.7	0	13.6	
		1	49	22.5	22.3	22.3	2	23.0	22.4	22.5	22.3	1.2	23.0	19.4	19.1	19.0	0	19.6	12.8	12.7	12.7	0	13.6	
		1	99	22.5	22.3	22.3	2	23.0	22.4	22.4	22.3	1.2	23.0	19.4	19.0	19.0	0	19.6	12.8	12.6	12.7	0	13.6	
		50	0	21.0	21.1	21.0	3	22.0	21.2	21.2	21.1	2.2	22.0	18.9	18.8	18.9	0	19.6	12.6	12.6	12.6	0	13.6	
		50	24	21.0	21.1	21.1	3	22.0	21.2	21.2	21.2	2.2	22.0	18.9	18.9	18.9	0	19.6	12.6	12.6	12.6	0	13.6	
		50	50	21.0	21.1	21.1	3	22.0	21.1	21.2	21.2	2.2	22.0	18.8	18.9	18.9	0	19.6	12.6	12.5	12.6	0	13.6	
100	0	20.9	21.0	21.0	3	22.0	21.1	21.2	21.1	2.2	22.0	18.8	18.8	18.8	0	19.6	12.6	12.5	12.5	0	13.6			
15 MHz	QPSK	1	0	24.1	24.2	24.2	0	25.0	24.0	24.1	24.1	0	24.2	19.0	19.0	19.0	0	19.6	12.5	12.5	12.6	0	13.6	
		1	37	24.0	24.1	24.1	0	25.0	24.1	24.1	24.0	0	24.2	19.0	18.9	18.8	0	19.6	12.4	12.4	12.4	0	13.6	
		1	74	24.1	24.1	24.1	0	25.0	24.2	24.1	24.0	0	24.2	19.0	18.9	18.9	0	19.6	12.5	12.4	12.5	0	13.6	
		36	0	23.1	23.2	23.2	1	24.0	23.1	23.1	23.1	0.2	24.0	18.9	18.9	18.9	0	19.6	12.5	12.5	12.5	0	13.6	
		36	20	23.2	23.3	23.2	1	24.0	23.1	23.2	23.1	0.2	24.0	19.0	19.0	19.0	0	19.6	12.6	12.5	12.6	0	13.6	
	16QAM	36	39	23.2	23.3	23.2	1	24.0	23.2	23.2	23.1	0.2	24.0	19.0	18.9	19.0	0	19.6	12.5	12.5	12.6	0	13.6	
		75	0	23.2	23.2	23.2	1	24.0	23.1	23.2	23.1	0.2	24.0	18.9	18.9	18.9	0	19.6	12.5	12.5	12.5	0	13.6	
		1	0	23.0	23.6	23.5	1	24.0	23.3	23.5	23.4	0.2	24.0	19.2	19.1	19.1	0	19.6	13.0	13.0	13.0	0	13.6	
		1	37	23.1	23.5	23.5	1	24.0	23.3	23.4	23.3	0.2	24.0	19.1	19.0	19.0	0	19.6	12.9	12.8	12.9	0	13.6	
		1	74	23.0	23.5	23.4	1	24.0	23.4	23.4	23.4	0.2	24.0	19.1	19.0	19.1	0	19.6	12.9	12.8	13.0	0	13.6	
	64QAM	36	0	22.1	22.2	22.1	2	23.0	22.0	22.1	22.1	1.2	23.0	18.9	18.8	18.9	0	19.6	12.5	12.5	12.5	0	13.6	
		36	20	22.2	22.3	22.2	2	23.0	22.1	22.2	22.1	1.2	23.0	18.9	18.9	18.9	0	19.6	12.5	12.5	12.6	0	13.6	
		36	39	22.2	22.3	22.2	2	23.0	22.1	22.1	22.1	1.2	23.0	18.9	18.8	18.9	0	19.6	12.5	12.5	12.5	0	13.6	
		75	0	22.2	22.3	22.2	2	23.0	22.1	22.1	22.1	1.2	23.0	18.9	18.8	18.9	0	19.6	12.5	12.5	12.5	0	13.6	
		1	0	22.5	22.4	22.1	2	23.0	22.6	22.7	22.7	1.2	23.0	19.2	19.4	19.4	0	19.6	13.1	13.1	13.2	0	13.6	
		1	37	22.4	22.4	22.1	2	23.0	22.6	22.7	22.6	1.2	23.0	19.2	19.3	19.4	0	19.6	12.9	12.9	13.0	0	13.6	
		1	74	22.5	22.3	22.1	2	23.0	22.6	22.6	22.7	1.2	23.0	19.1	19.3	19.5	0	19.6	13.1	12.9	13.1	0	13.6	
		36	0	21.0	21.1	21.0	3	22.0	21.0	21.1	21.1	2.2	22.0	18.9	18.9	18.9	0	19.6	12.6	12.5	12.6	0	13.6	
		36	20	21.1	21.1	21.1	3	22.0	21.1	21.2	21.2	2.2	22.0	19.0	18.9	19.0	0	19.6	12.6	12.5	12.6	0	13.6	
		36	39	21.1	21.2	21.1	3	22.0	21.1	21.2	21.2	2.2	22.0	19.0	18.9	19.0	0	19.6	12.5	12.5	12.6	0	13.6	
75	0	21.0	21.1	21.0	3	22.0	21.1	21.2	21.2	2.2	22.0	18.9	18.9	19.0	0	19.6	12.6	12.5	12.6	0	13.6			
10 MHz	QPSK	1	0	23.8	24.0	23.9	0	25.0	23.8	23.8	23.7	0	24.2	18.6	18.6	18.7	0	19.6	12.3	12.3	12.2	0	13.6	
		1	25	23.8	24.1	23.8	0	25.0	23.9	23.8	23.6	0	24.2	18.4	18.5	18.7	0	19.6	12.2	12.3	12.3	0	13.6	
		1	49	24.0	23.9	23.9	0	25.0	23.9	23.8	23.7	0	24.2	18.7	18.6	18.7	0	19.6	12.3	12.2	12.2	0	13.6	
		25	0	23.1	23.1	23.0	1	24.0	22.9	22.9	22.9	0.2	24.0	18.8	18.7	18.7	0	19.6	12.4	12.4	12.4	0	13.6	
		25	12	23.1	23.1	23.0	1	24.0	23.0	22.9	22.9	0.2	24.0	18.8	18.7	18.7	0	19.6	12.4	12.4	12.4	0	13.6	
	16QAM	25	25	23.1	23.1	23.0	1	24.0	23.0	23.0	22.9	0.2	24.0	18.8	18.7	18.7	0	19.6	12.4	12.4	12.4	0	13.6	
		50	0	23.1	23.1	23.0	1	24.0	22.9	23.0	22.9	0.2	24.0	18.7	18.7	18.7	0	19.6	12.4	12.3	12.4	0	13.6	
		1	0	22.8	23.4	22.9	1	24.0	22.9	22.8	22.8	0.2	24.0	18.6	18.6	18.7	0	19.6	12.4	12.4	12.4	0	13.6	
		1	25	22.9	23.4	23.0	1	24.0	22.8	22.9	22.8	0.2	24.0	18.4	18.5	18.7	0	19.6	12.4	12.3	12.3	0	13.6	
		1	49	22.8	23.3	22.9	1	24.0	22.9	22.9	22.8	0.2	24.0	18.6	18.6	18.6	0	19.6	12.3	12.3	12.4	0	13.6	
	64QAM	25	0	22.1	22.1	22.1	2	23.0	22.0	22.0	22.0	1.2	23.0	18.9	18.7	18.8	0	19.6	12.5	12.5	12.5	0	13.6	
		25	12	22.1	22.1	22.1	2	23.0	22.0	22.0	22.0	1.2	23.0	18.8	18.8	18.8	0	19.6	12.5	12.5	12.5	0	13.6	
		25	25	22.0	22.1	22.1	2	23.0	22.0	22.1	22.0	1.2	23.0	18.8	18.									

LTE Band 25 Measured Results (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power State B Average Power (dBm)					Power State B' Average Power (dBm)					Power State C/D Average Power (dBm)					Power State EF Average Power (dBm)					
				26065		26365		26665	MFR	Tune-up Limit	26065		26365		26665	MFR	Tune-up Limit	26065		26365		26665	MFR	Tune-up Limit
				1852.5 MHz	1882.5 MHz	1912.5 MHz	1852.5 MHz	1882.5 MHz			1912.5 MHz	1852.5 MHz	1882.5 MHz	1912.5 MHz	1852.5 MHz			1882.5 MHz	1912.5 MHz	1852.5 MHz	1882.5 MHz	1912.5 MHz		
5 MHz	QPSK	1	0	24.0	24.0	23.8	0	25.0	23.9	23.8	23.8	0	24.2	18.8	18.6	18.7	0	19.6	12.3	12.3	12.3	0	13.6	
		1	12	24.0	24.1	23.9	0	25.0	24.0	24.0	23.8	0	24.2	18.8	18.7	18.7	0	19.6	12.4	12.3	12.4	0	13.6	
		1	24	24.1	24.1	23.8	0	25.0	24.0	24.0	23.8	0	24.2	18.9	18.8	18.7	0	19.6	12.3	12.3	12.4	0	13.6	
		12	0	23.0	23.0	23.0	1	24.0	22.9	22.9	22.9	0.2	24.0	18.7	18.7	18.8	0	19.6	12.4	12.3	12.4	0	13.6	
		12	7	23.1	23.1	23.0	1	24.0	23.0	22.9	22.9	0.2	24.0	18.8	18.7	18.8	0	19.6	12.4	12.3	12.4	0	13.6	
	16QAM	12	13	23.1	23.1	23.0	1	24.0	23.0	23.0	22.9	0.2	24.0	18.8	18.8	18.8	0	19.6	12.4	12.3	12.4	0	13.6	
		25	0	23.1	23.0	23.0	1	24.0	23.0	23.0	22.9	0.2	24.0	18.8	18.7	18.8	0	19.6	12.4	12.3	12.4	0	13.6	
		1	0	23.1	23.1	23.4	1	24.0	22.9	22.9	22.9	0.2	24.0	18.8	18.7	19.2	0	19.6	12.4	12.5	12.5	0	13.6	
		1	12	23.2	23.2	23.5	1	24.0	23.0	23.0	22.9	0.2	24.0	18.9	18.8	19.3	0	19.6	12.5	12.6	12.5	0	13.6	
		1	24	23.1	23.3	23.3	1	24.0	23.1	23.1	22.8	0.2	24.0	18.9	18.8	19.2	0	19.6	12.5	12.6	12.6	0	13.6	
	64QAM	12	0	22.1	22.1	22.2	2	23.0	22.0	21.9	21.9	1.2	23.0	18.8	18.6	18.9	0	19.6	12.4	12.4	12.5	0	13.6	
		12	7	22.2	22.2	22.2	2	23.0	22.0	22.0	21.9	1.2	23.0	18.9	18.7	18.9	0	19.6	12.5	12.4	12.5	0	13.6	
		12	13	22.2	22.2	22.2	2	23.0	22.0	22.1	22.0	1.2	23.0	18.8	18.8	18.9	0	19.6	12.4	12.5	12.5	0	13.6	
		25	0	22.0	22.1	22.1	2	23.0	21.9	21.9	21.8	1.2	23.0	18.8	18.6	18.8	0	19.6	12.4	12.4	12.4	0	13.6	
		1	0	22.0	21.7	22.0	2	23.0	22.1	22.1	22.1	1.2	23.0	18.9	18.8	19.0	0	19.6	12.3	12.5	12.6	0	13.6	
	QPSK	1	12	22.1	21.8	22.0	2	23.0	22.2	22.2	22.1	1.2	23.0	19.0	18.9	19.1	0	19.6	12.3	12.6	12.6	0	13.6	
		1	24	22.1	21.9	21.9	2	23.0	22.2	22.3	22.0	1.2	23.0	19.0	19.0	19.0	0	19.6	12.3	12.5	12.6	0	13.6	
		12	0	20.9	20.8	20.7	3	22.0	21.0	20.9	20.9	2.2	22.0	18.8	18.7	18.7	0	19.6	12.5	12.4	12.4	0	13.6	
		12	7	21.0	20.9	20.8	3	22.0	21.1	21.0	21.0	2.2	22.0	18.9	18.7	18.8	0	19.6	12.5	12.4	12.4	0	13.6	
		12	13	21.0	21.0	20.8	3	22.0	21.0	21.1	21.0	2.2	22.0	18.9	18.8	18.7	0	19.6	12.4	12.4	12.5	0	13.6	
	16QAM	25	0	21.0	20.8	20.7	3	22.0	21.0	20.9	20.9	2.2	22.0	18.8	18.7	18.7	0	19.6	12.4	12.3	12.4	0	13.6	
		QPSK	1	0	23.9	23.8	23.9	0	25.0	23.7	23.7	23.7	0	24.2	18.6	18.5	18.6	0	19.6	12.3	12.2	12.3	0	13.6
			1	8	23.9	24.0	23.9	0	25.0	23.9	23.9	23.8	0	24.2	18.7	18.6	18.6	0	19.6	12.3	12.2	12.2	0	13.6
			1	14	24.0	24.0	23.8	0	25.0	23.9	23.9	23.7	0	24.2	18.7	18.7	18.7	0	19.6	12.3	12.2	12.3	0	13.6
			8	0	23.0	23.0	23.0	1	24.0	22.9	22.9	22.8	0.2	24.0	18.8	18.6	18.8	0	19.6	12.3	12.3	12.4	0	13.6
8	4		23.1	23.1	23.0	1	24.0	23.0	22.9	22.9	0.2	24.0	18.8	18.7	18.8	0	19.6	12.4	12.3	12.4	0	13.6		
16QAM	8	7	23.1	23.1	23.0	1	24.0	23.0	23.0	22.9	0.2	24.0	18.8	18.8	18.8	0	19.6	12.4	12.4	12.4	0	13.6		
	15	0	23.1	23.1	23.0	1	24.0	22.9	22.9	22.8	0.2	24.0	18.8	18.6	18.7	0	19.6	12.4	12.3	12.4	0	13.6		
	1	0	23.0	22.8	23.2	1	24.0	22.7	22.8	22.8	0.2	24.0	18.5	18.5	18.6	0	19.6	12.4	12.4	12.5	0	13.6		
	1	8	23.0	22.9	23.2	1	24.0	22.8	22.9	22.8	0.2	24.0	18.6	18.6	18.7	0	19.6	12.4	12.4	12.4	0	13.6		
	1	14	23.0	22.9	23.2	1	24.0	22.8	22.9	22.7	0.2	24.0	18.6	18.6	18.7	0	19.6	12.4	12.4	12.4	0	13.6		
64QAM	8	0	22.1	22.1	22.0	2	23.0	22.0	21.9	21.8	1.2	23.0	18.8	18.7	18.8	0	19.6	12.4	12.4	12.5	0	13.6		
	8	4	22.2	22.1	22.1	2	23.0	22.0	22.0	21.9	1.2	23.0	18.9	18.8	18.8	0	19.6	12.5	12.4	12.5	0	13.6		
	8	7	22.2	22.3	22.1	2	23.0	22.1	22.1	22.0	1.2	23.0	18.9	18.8	18.8	0	19.6	12.4	12.5	12.6	0	13.6		
	15	0	22.0	22.1	22.1	2	23.0	21.9	21.9	21.8	1.2	23.0	18.8	18.6	18.6	0	19.6	12.4	12.3	12.4	0	13.6		
	1	0	21.9	22.0	21.8	2	23.0	22.0	22.0	22.0	1.2	23.0	18.9	18.8	18.9	0	19.6	12.5	12.4	12.5	0	13.6		
QPSK	1	8	22.1	22.1	21.9	2	23.0	22.1	22.1	22.0	1.2	23.0	19.0	18.8	19.0	0	19.6	12.5	12.5	12.5	0	13.6		
	1	14	22.0	22.1	21.8	2	23.0	22.1	22.1	21.9	1.2	23.0	18.9	18.9	19.0	0	19.6	12.5	12.4	12.5	0	13.6		
	8	0	20.8	20.9	20.8	3	22.0	20.9	20.8	20.8	2.2	22.0	18.7	18.6	18.8	0	19.6	12.3	12.2	12.3	0	13.6		
	8	4	20.9	21.0	20.9	3	22.0	21.0	20.9	20.9	2.2	22.0	18.8	18.7	18.9	0	19.6	12.4	12.3	12.4	0	13.6		
	8	7	21.0	21.0	20.9	3	22.0	21.0	21.0	20.9	2.2	22.0	18.8	18.8	18.9	0	19.6	12.4	12.3	12.4	0	13.6		
16QAM	15	0	20.9	20.8	20.8	3	22.0	21.0	20.9	20.8	2.2	22.0	18.8	18.7	18.7	0	19.6	12.4	12.3	12.5	0	13.6		
	QPSK	1	0	23.8	23.9	23.8	0	25.0	23.7	23.7	23.6	0	24.2	18.6	18.5	18.6	0	19.6	12.2	12.1	12.1	0	13.6	
		1	3	23.9	24.0	23.9	0	25.0	23.8	23.8	23.7	0	24.2	18.7	18.7	18.7	0	19.6	12.3	12.2	12.2	0	13.6	
		1	5	23.9	24.0	23.8	0	25.0	23.8	23.8	23.6	0	24.2	18.7	18.6	18.7	0	19.6	12.2	12.1	12.2	0	13.6	
		3	0	23.9	23.8	23.8	0	25.0	23.7	23.7	23.6	0	24.2	18.6	18.4	18.6	0	19.6	12.2	12.1	12.2	0	13.6	
3		1	23.9	23.9	23.9	0	25.0	23.8	23.9	23.7	0	24.2	18.7	18.6	18.6	0	19.6	12.2	12.2	12.2	0	13.6		
16QAM	3	3	24.0	24.0	23.9	0	25.0	23.8	23.9	23.7	0	24.2	18.7	18.6	18.6	0	19.6	12.2	12.2	12.2	0	13.6		
	6	0	23.0	23.0	22.9	1	24.0	22.8	22.9	22.8	0.2	24.0	18.7	18.7	18.7	0	19.6	12.2	12.2	12.2	0	13.6		
	1	0	22.9	23.0	23.2	1	24.0	22.8	22.8	22.7	0.2	24.0	19.0	18.5	18.9	0	19.6	12.3	12.3	12.4	0	13.6		
	1	3	23.0	23.1	23.2	1	24.0	22.9	22.9	22.8	0.2	24.0	19.0	18.7	19.0	0	19.6	12.4	12.4	12.4	0	13.6		
	1	5	22.9	23.0	23.2	1	24.0	22.8	22.9	22.7	0.2	24.0	19.0	18.6	19.0	0	19.6	12.4	12.3	12.3	0	13.6		
64QAM	3	0	23.0	22.9	23.0	1	24.0	22.9	22.9	22.9	0.2	24.0	18.8	18.6	18.7	0	19.6	12.3	12.5	12.5	0	13.6		
	3	1	23.1	23.1	23.0	1	24.0	23.0	23.0	22.9	0.2	24.0	18.8	18.7	18.8	0	19.6	12.4	12.5	12.5	0	13.6		
	3	3	23.1	23.0	23.1	1	24.0	23.0	22.9	22.9</														

LTE Band 26 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Power State B Average Power (dBm)					Power State B Average Power (dBm)					Power State C/D Average Power (dBm)					Power State EF Average Power (dBm)				
				26985 831.5 MHz	26990 844 MHz	MFR	Tune-up Limit	26985 831.5 MHz	26990 844 MHz	MFR	Tune-up Limit	26985 831.5 MHz	26990 844 MHz	MFR	Tune-up Limit	26985 831.5 MHz	26990 844 MHz	MFR	Tune-up Limit				
15 MHz	QPSK	1	0	24.0	24.0	0	25.0	24.0	24.0	0	25.0	22.2	22.2	0	22.7	17.7	17.7	0	18.0				
		1	37	23.7	23.7	0	25.0	23.7	23.7	0	25.0	21.9	21.9	0	22.7	17.6	17.6	0	18.0				
		1	74	23.8	23.8	0	25.0	23.8	23.8	0	25.0	21.9	21.9	0	22.7	17.5	17.5	0	18.0				
		36	0	23.0	23.0	1	24.0	23.0	23.0	1	24.0	22.2	22.2	0	22.7	17.6	17.6	0	18.0				
		36	20	23.0	23.0	1	24.0	23.0	23.0	1	24.0	22.2	22.2	0	22.7	17.6	17.6	0	18.0				
		36	39	23.0	23.0	1	24.0	23.0	23.0	1	24.0	22.2	22.2	0	22.7	17.5	17.5	0	18.0				
		75	0	22.9	22.9	1	24.0	22.9	22.9	1	24.0	22.2	22.2	0	22.7	17.5	17.5	0	18.0				
		1	0	23.0	23.0	1	24.0	23.0	23.0	1	24.0	22.2	22.2	0	22.7	17.8	17.8	0	18.0				
		1	37	22.9	22.9	1	24.0	22.9	22.9	1	24.0	21.9	21.9	0	22.7	17.7	17.7	0	18.0				
		1	74	22.9	22.9	1	24.0	22.9	22.9	1	24.0	22.0	22.0	0	22.7	17.8	17.8	0	18.0				
	64QAM	36	0	22.0	22.0	2	23.0	22.0	22.0	2	23.0	21.8	21.8	0	22.7	17.5	17.5	0	18.0				
		36	20	22.0	22.0	2	23.0	22.0	22.0	2	23.0	21.8	21.8	0	22.7	17.5	17.5	0	18.0				
		36	39	22.0	22.0	2	23.0	22.0	22.0	2	23.0	21.7	21.7	0	22.7	17.5	17.5	0	18.0				
		75	0	22.0	22.0	2	23.0	22.0	22.0	2	23.0	21.7	21.7	0	22.7	17.5	17.5	0	18.0				
		1	0	22.6	22.6	2	23.0	22.6	22.6	2	23.0	22.3	22.3	0	22.7	17.9	17.9	0	18.0				
		1	37	22.4	22.4	2	23.0	22.4	22.4	2	23.0	22.1	22.1	0	22.7	17.9	17.9	0	18.0				
		1	74	22.5	22.5	2	23.0	22.5	22.5	2	23.0	22.2	22.2	0	22.7	18.0	18.0	0	18.0				
		36	0	20.9	20.9	3	22.0	20.9	20.9	3	22.0	22.0	22.0	0	22.7	17.6	17.6	0	18.0				
		36	20	21.1	21.1	3	22.0	21.1	21.1	3	22.0	22.0	22.0	0	22.7	17.6	17.6	0	18.0				
		36	39	21.0	21.0	3	22.0	21.0	21.0	3	22.0	22.0	22.0	0	22.7	17.5	17.5	0	18.0				
10 MHz	QPSK	1	0	23.9	24.0	0	25.0	23.9	24.0	0	25.0	22.3	22.1	0	22.7	17.5	17.5	0	18.0				
		1	25	23.9	23.9	0	25.0	23.9	23.9	0	25.0	22.0	22.0	0	22.7	17.2	17.2	0	18.0				
		1	49	23.9	23.8	0	25.0	23.9	23.8	0	25.0	22.1	22.0	0	22.7	17.3	17.3	0	18.0				
		25	0	22.9	22.9	1	24.0	22.9	22.9	1	24.0	22.2	22.2	0	22.7	17.5	17.5	0	18.0				
		25	12	22.9	23.0	1	24.0	22.9	23.0	1	24.0	22.3	22.2	0	22.7	17.5	17.8	0	18.0				
		25	25	22.9	22.9	1	24.0	22.9	22.9	1	24.0	22.2	22.1	0	22.7	17.5	18.0	0	18.0				
		50	0	23.0	22.9	1	24.0	23.0	22.9	1	24.0	22.2	22.1	0	22.7	17.5	18.0	0	18.0				
		1	0	23.0	23.3	1	24.0	23.0	23.3	1	24.0	22.1	22.1	0	22.7	17.5	17.7	0	18.0				
		1	25	23.0	23.2	1	24.0	23.0	23.2	1	24.0	22.2	21.9	0	22.7	17.3	17.1	0	18.0				
		1	49	23.0	22.5	1	24.0	23.0	23.2	1	24.0	21.9	22.1	0	22.7	17.3	17.7	0	18.0				
	64QAM	25	0	22.0	22.0	2	23.0	22.0	22.0	2	23.0	21.8	21.8	0	22.7	17.6	17.4	0	18.0				
		25	12	22.0	22.0	2	23.0	22.0	22.0	2	23.0	21.8	21.8	0	22.7	17.6	17.3	0	18.0				
		25	25	22.0	21.8	2	23.0	22.0	21.8	2	23.0	21.7	21.8	0	22.7	17.5	17.4	0	18.0				
		50	0	22.0	22.0	2	23.0	22.0	22.0	2	23.0	21.7	21.7	0	22.7	17.5	16.9	0	18.0				
		1	0	22.2	22.1	2	23.0	22.2	22.1	2	23.0	22.0	21.9	0	22.7	17.6	17.5	0	18.0				
		1	25	21.9	21.9	2	23.0	21.9	21.9	2	23.0	21.8	21.8	0	22.7	18.0	18.0	0	18.0				
		1	49	22.0	21.9	2	23.0	22.0	21.9	2	23.0	21.8	21.8	0	22.7	17.8	17.9	0	18.0				
		25	0	21.1	21.0	3	22.0	21.1	21.0	3	22.0	21.8	21.6	0	22.7	17.2	17.7	0	18.0				
		25	12	21.1	21.0	3	22.0	21.1	21.0	3	22.0	21.5	21.6	0	22.7	17.6	17.3	0	18.0				
		25	25	21.1	21.0	3	22.0	21.1	21.0	3	22.0	21.8	22.0	0	22.7	17.8	17.3	0	18.0				
5 MHz	QPSK	1	0	23.8	23.8	0	25.0	23.8	23.8	0	25.0	22.1	22.1	0	22.7	17.4	17.3	0	18.0				
		1	12	23.9	24.0	0	25.0	23.9	24.0	0	25.0	22.2	22.1	0	22.7	17.5	17.4	0	18.0				
		1	24	23.9	23.9	0	25.0	23.9	23.9	0	25.0	22.2	22.2	0	22.7	17.5	17.4	0	18.0				
		12	0	22.9	22.9	1	24.0	22.9	22.9	1	24.0	22.2	22.2	0	22.7	17.5	17.4	0	18.0				
		12	7	23.0	22.9	1	24.0	23.0	22.9	1	24.0	22.3	22.2	0	22.7	17.6	17.4	0	18.0				
		12	13	23.0	22.9	1	24.0	23.0	22.9	1	24.0	22.2	22.2	0	22.7	17.5	17.4	0	18.0				
		25	0	22.9	22.9	1	24.0	22.9	22.9	1	24.0	22.2	22.2	0	22.7	17.5	17.4	0	18.0				
		64QAM	1	0	22.9	23.0	1	24.0	22.9	23.0	1	24.0	22.2	22.2	0	22.7	17.5	17.5	0	18.0			
			1	12	23.0	23.0	1	24.0	23.0	23.0	1	24.0	22.3	22.2	0	22.7	17.5	17.5	0	18.0			
			1	24	23.0	23.0	1	24.0	23.0	23.0	1	24.0	22.3	22.2	0	22.7	17.6	17.5	0	18.0			
	12		0	22.9	22.9	2	23.0	22.9	22.9	2	23.0	21.7	21.7	0	22.7	17.5	17.5	0	18.0				
	12		7	23.0	22.9	2	23.0	23.0	22.9	2	23.0	21.8	21.7	0	22.7	17.6	17.5	0	18.0				
	12		13	22.0	22.0	2	23.0	22.0	22.0	2	23.0	21.8	21.8	0	22.7	17.6	17.5	0	18.0				
	25		0	21.9	21.9	2	23.0	21.9	21.9	2	23.0	21.7	21.6	0	22.7	17.4	17.4	0	18.0				
	1		0	21.9	22.2	2	23.0	21.9	22.2	2	23.0	21.9	21.9	0	22.7	17.7	17.7	0	18.0				
	1		12	22.0	22.3	2	23.0	22.0	22.3	2	23.0	22.0	21.9	0	22.7	17.8	17.7	0	18.0				
	1		24	22.0	22.3	2	23.0	22.0	22.3	2	23.0	22.0	21.9	0	22.7	17.8	17.7	0	18.0				
	3 MHz	QPSK	1	0	23.7	23.8	0	25.0	23.7	23.8	0	25.0	22.1	22.1	0	22.7	17.3	17.3	0	18.0			
			1	8	23.8	23.8	0	25.0	23.8	23.8	0	25.0	22.1	22.1	0	22.7	17.4	17.3	0	18.0			
			1	14	23.8	23.8	0	25.0	23.8	23.8	0	25.0	22.0	22.1	0	22.7	17.3	17.3	0	18.0			
8			0	22.8	22.9	1	24.0	22.8	22.9	1	24.0	22.2	22.1	0	22.7	17.5	17.4	0	18.0				
8			4	22.9	22.9	1	24.0	22.9	22.9	1	24.0	22.2	22.2	0	22.7	17.5	17.4	0	18.0				
8			7	22.9	22.9	1	24.0	22.9	22.9	1	24.0	22.2	22.2	0	22.7	17.5	17.5	0	18.0				
15			0	22.9	22.9	1	24.0	22.9	22.9	1	24.0	22.2	22.2	0	22.7	17.5	17.5	0	18.0				
1			0	22.6	22.9	1	24.0	22.6	22.9	1	24.0	22.2	22.1	0	22.7	17.4	17.4	0	18.0				
1			8	22.8	22.9	1	24.0	22.8	22.9	1	24.0	22.2	22.2	0	22.7	17.5	17.4	0	18.0				
1			14	22.7	22.8	1	24.0	22.7	22.8	1	24.0	22.1	22.1	0	22.7	17.4	17.4	0	18.0				
64QAM		8	0	22.0	21.9	2	23.0	22.0	21.9	2	23.0	21.7	21.6	0	22.7	17.5	17.4	0	18.0				
		8	4	22.0	22.0	2	23.0	22.0	22.0	2	23.0	21.8	21.7	0	22.7	17.6							

LTE Band 30 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Power State B Average Power (dBm)				Power State B- Average Power (dBm)				Power State C/D Average Power (dBm)				Power State EF Average Power (dBm)			
				27710 2310 MHz	MFR	Tune-up Limit		27710 2310 MHz	MFR	Tune-up Limit		27710 2310 MHz	MFR	Tune-up Limit		27710 2310 MHz	MFR	Tune-up Limit	
10 MHz	QPSK	1	0	21.3	0	22.0	20.07	0	22.0	18.1	0	19.3	10.6	0	12.0				
		1	25	21.2	0	22.0	20.06	0	22.0	18.0	0	19.3	10.8	0	12.0				
		1	49	21.2	0	22.0	20.08	0	22.0	18.1	0	19.3	10.6	0	12.0				
		25	0	22.0	1	22.7	20.69	0	22.0	18.2	0	19.3	10.8	0	12.0				
		25	12	22.0	1	22.7	20.67	0	22.0	18.2	0	19.3	10.8	0	12.0				
		25	25	22.0	1	22.7	20.65	0	22.0	18.2	0	19.3	10.7	0	12.0				
		50	0	22.0	1	22.7	20.66	0	22.0	18.2	0	19.3	10.8	0	12.0				
		1	0	19.4	1	21.0	20.01	0	22.0	18.4	0	19.3	10.7	0	12.0				
	16QAM	1	25	19.3	1	21.0	20.04	0	22.0	18.6	0	19.3	10.7	0	12.0				
		1	49	19.4	1	21.0	20.02	0	22.0	18.5	0	19.3	10.8	0	12.0				
		25	0	20.3	2	21.7	19.70	0.3	21.7	18.3	0	19.3	10.9	0	12.0				
		25	12	20.3	2	21.7	19.72	0.3	21.7	18.2	0	19.3	10.9	0	12.0				
		25	25	20.2	2	21.7	19.74	0.3	21.7	18.2	0	19.3	10.8	0	12.0				
		50	0	20.2	2	21.7	19.71	0.3	21.7	18.2	0	19.3	10.8	0	12.0				
		1	0	18.7	2	20.0	20.54	0.3	21.7	18.3	0	19.3	10.7	0	12.0				
		1	25	18.6	2	20.0	20.44	0.3	21.7	18.4	0	19.3	10.8	0	12.0				
	64QAM	1	49	18.6	2	20.0	20.51	1.3	21.7	18.3	0	19.3	10.7	0	12.0				
		25	0	19.3	3	20.7	19.34	1.3	20.7	18.3	0	19.3	10.9	0	12.0				
		25	12	19.3	3	20.7	20.21	1.3	20.7	18.3	0	19.3	10.9	0	12.0				
		25	25	19.3	3	20.7	20.23	1.3	20.7	18.3	0	19.3	10.9	0	12.0				
		50	0	19.2	3	20.7	20.18	1.3	20.7	18.3	0	19.3	10.8	0	12.0				
		5 MHz	QPSK	1	0	21.1	0	22.0	20.65	0	22.0	18.1	0	19.3	10.6	0	12.0		
				1	12	21.3	0	22.0	20.02	0	22.0	18.3	0	19.3	10.7	0	12.0		
				1	24	21.1	0	22.0	20.01	0	22.0	18.1	0	19.3	10.6	0	12.0		
12	0			22.0	1	22.7	20.62	0	22.0	18.1	0	19.3	10.7	0	12.0				
12	7			22.0	1	22.7	20.71	0	22.0	18.2	0	19.3	10.8	0	12.0				
12	13			22.0	1	22.7	20.67	0	22.0	18.2	0	19.3	10.7	0	12.0				
25	0			22.0	1	22.7	20.63	0	22.0	18.2	0	19.3	10.7	0	12.0				
1	0			19.4	1	21.0	20.05	0	22.0	18.2	0	19.3	11.2	0	12.0				
16QAM	1		12	19.6	1	21.0	20.11	0	22.0	18.4	0	19.3	11.3	0	12.0				
	1		24	19.5	1	21.0	20.02	0	22.0	18.3	0	19.3	11.2	0	12.0				
	12		0	20.2	2	21.7	19.82	0.3	21.7	18.3	0	19.3	10.8	0	12.0				
	12		7	20.3	2	21.7	19.90	0.3	21.7	18.3	0	19.3	10.9	0	12.0				
	12		13	20.3	2	21.7	19.77	0.3	21.7	18.3	0	19.3	10.9	0	12.0				
	25		0	20.1	2	21.7	19.72	0.3	21.7	18.2	0	19.3	10.7	0	12.0				
	1		0	18.6	2	20.0	20.17	0.3	21.7	18.1	0	19.3	11.0	0	12.0				
	1		12	18.8	2	20.0	20.36	0.3	21.7	18.3	0	19.3	10.9	0	12.0				
64QAM	1		24	18.7	2	20.0	20.23	0.3	21.7	18.4	0	19.3	10.9	0	12.0				
	12		0	19.3	3	20.7	19.12	1.3	20.7	18.3	0	19.3	11.0	0	12.0				
	12		7	19.3	3	20.7	19.12	1.3	20.7	18.3	0	19.3	11.0	0	12.0				
	12		13	19.3	3	20.7	19.09	1.3	20.7	18.3	0	19.3	10.9	0	12.0				
	25		0	19.3	3	20.7	19.08	1.3	20.7	18.3	0	19.3	10.9	0	12.0				

Notes:

RB Allocations 1-7 for Power State B are at a lower Tune-Up Limit than the Tune-Up Limit for described in the Table under **Maximum Output Power (Tune-up Limit)** for LTE in the beginning of §9.3. SAR was tested using a higher measured power shown in the table in §10.12.

LTE Band 41 Measured Results

Table with columns for BW (MHz), Mode, RB Allocation, RB offset, Power State B Average Power (dBm), Power State B Average Power (dBm), Power State CD Average Power (dBm), and Power State EF Average Power (dBm). Rows include test configurations for 20 MHz, 15 MHz, 10 MHz, and 5 MHz bandwidths across various modulation schemes (QPSK, 16QAM, 64QAM).

LTE Band 66 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Power State B Average Power (dBm)					Power State B Average Power (dBm)					Power State C/D Average Power (dBm)					Power State EF Average Power (dBm)					
				132072			132322		132572		132072			132322		132572		132072			132322		132572	
				1720 MHz	1745 MHz	1770 MHz	MFR	Tune-up Limit	1720 MHz	1745 MHz	1770 MHz	MFR	Tune-up Limit	1720 MHz	1745 MHz	1770 MHz	MFR	Tune-up Limit	1720 MHz	1745 MHz	1770 MHz	MFR	Tune-up Limit	
20 MHz	QPSK	1	0	24.0	24.1	24.1	0	25.0	24.1	24.2	24.2	0	24.2	19.0	19.0	19.0	0	19.8	12.6	12.6	12.5	0	13.5	
				24.0	24.1	24.0	0	25.0	24.1	24.1	24.0	0	24.2	18.9	18.9	18.8	0	19.8	12.5	12.4	12.4	0	13.5	
				24.1	24.1	23.9	0	25.0	24.1	24.1	23.9	0	24.2	18.9	18.9	18.7	0	19.8	12.5	12.4	12.3	0	13.5	
				23.1	23.2	23.1	1	24.0	23.2	23.3	23.2	1	24.0	18.9	19.0	19.0	0	19.8	12.5	12.5	12.5	0	13.5	
				23.1	23.2	23.1	1	24.0	23.2	23.3	23.2	1	24.0	18.9	19.0	18.9	0	19.8	12.5	12.5	12.4	0	13.5	
	16QAM	1	0	23.5	23.5	23.7	1	24.0	23.5	23.6	23.6	1	24.0	19.2	19.3	19.3	0	19.8	13.0	13.2	13.0	0	13.5	
				23.4	23.5	23.6	1	24.0	23.4	23.5	23.4	1	24.0	19.2	19.2	19.1	0	19.8	12.9	13.1	12.9	0	13.5	
				23.4	23.4	23.5	1	24.0	23.5	23.4	23.3	1	24.0	19.2	19.2	19.0	0	19.8	12.9	13.0	12.9	0	13.5	
				22.2	22.2	22.2	2	23.0	22.2	22.3	22.2	2	23.0	18.9	19.0	19.0	0	19.8	12.5	12.6	12.5	0	13.5	
				22.1	22.2	22.1	2	23.0	22.2	22.3	22.1	2	23.0	18.8	19.0	18.9	0	19.8	12.5	12.6	12.5	0	13.5	
	64QAM	1	0	22.1	22.0	22.0	2	23.0	22.1	22.2	22.0	2	23.0	18.8	18.9	18.8	0	19.8	12.4	12.5	12.4	0	13.5	
				22.1	22.2	22.1	2	23.0	22.2	22.3	22.2	2	23.0	18.9	19.0	18.9	0	19.8	12.5	12.5	12.4	0	13.5	
				22.5	22.3	22.3	2	23.0	22.4	22.6	22.5	2	23.0	19.2	19.2	19.2	0	19.8	12.9	13.1	13.0	0	13.5	
				22.6	22.2	22.3	2	23.0	22.3	22.4	22.3	2	23.0	19.1	19.1	19.2	0	19.8	12.7	12.9	13.2	0	13.5	
				22.6	22.2	22.1	2	23.0	22.3	22.3	22.2	2	23.0	19.1	19.1	19.0	0	19.8	12.8	12.9	13.1	0	13.5	
	15 MHz	QPSK	1	0	24.2	24.2	24.2	0	25.0	24.2	24.2	24.2	0	24.2	19.0	19.0	19.0	0	19.8	12.5	12.6	12.5	0	13.5
					24.0	24.0	23.8	0	25.0	23.9	24.2	24.0	0	24.2	18.7	18.8	18.7	0	19.8	12.2	12.5	12.4	0	13.5
					24.1	24.1	23.9	0	25.0	24.1	24.2	24.0	0	24.2	18.8	18.9	18.8	0	19.8	12.3	12.4	12.4	0	13.5
					23.1	23.2	23.1	1	24.0	23.2	23.3	23.2	1	24.0	19.0	19.1	19.0	0	19.8	12.5	12.5	12.4	0	13.5
					23.1	23.2	23.1	1	24.0	23.2	23.3	23.1	1	24.0	19.0	19.0	19.0	0	19.8	12.5	12.5	12.4	0	13.5
16QAM		1	0	23.5	23.6	23.0	1	24.0	23.6	23.7	23.5	1	24.0	18.8	19.4	19.4	0	19.8	12.5	13.0	13.0	0	13.5	
				23.3	23.3	22.8	1	24.0	23.4	23.6	23.2	1	24.0	18.6	19.3	19.2	0	19.8	12.4	12.7	12.8	0	13.5	
				23.4	23.4	22.8	1	24.0	23.5	23.5	23.3	1	24.0	18.7	19.2	19.1	0	19.8	12.4	12.8	12.8	0	13.5	
				22.2	22.2	22.1	2	23.0	22.2	22.3	22.2	2	23.0	19.0	19.0	19.0	0	19.8	12.5	12.6	12.4	0	13.5	
				22.2	22.1	22.1	2	23.0	22.2	22.3	22.1	2	23.0	18.9	19.0	18.9	0	19.8	12.5	12.5	12.4	0	13.5	
64QAM		1	0	22.1	22.0	22.0	2	23.0	22.1	22.2	22.0	2	23.0	18.9	18.9	18.9	0	19.8	12.4	12.5	12.3	0	13.5	
				22.1	22.1	22.0	2	23.0	22.1	22.2	22.1	2	23.0	18.9	18.9	18.9	0	19.8	12.4	12.5	12.3	0	13.5	
				22.2	22.2	22.1	2	23.0	22.2	22.2	22.1	2	23.0	19.0	19.0	18.9	0	19.8	12.5	12.5	12.4	0	13.5	
				22.2	22.7	22.3	2	23.0	22.8	22.9	22.9	2	23.0	19.3	19.6	19.6	0	19.8	13.3	13.2	12.8	0	13.5	
				22.0	22.6	22.2	2	23.0	22.5	22.6	22.7	2	23.0	19.0	19.3	19.3	0	19.8	13.1	12.8	12.6	0	13.5	
10 MHz		QPSK	1	0	23.8	23.9	23.9	0	25.0	23.9	24.0	23.9	0	24.2	18.8	18.7	18.7	0	19.8	12.2	12.3	12.2	0	13.5
					23.6	23.8	23.7	0	25.0	23.9	24.1	23.7	0	24.2	18.5	18.6	18.7	0	19.8	12.0	12.4	12.2	0	13.5
					23.8	23.9	23.8	0	25.0	23.9	23.9	23.8	0	24.2	18.7	18.7	18.7	0	19.8	12.1	12.3	12.2	0	13.5
					23.0	23.0	22.9	1	24.0	23.0	23.1	23.0	1	24.0	18.8	18.9	18.8	0	19.8	12.3	12.4	12.3	0	13.5
					23.0	23.0	22.9	1	24.0	23.0	23.1	23.0	1	24.0	18.8	18.8	18.8	0	19.8	12.3	12.4	12.3	0	13.5
	16QAM	1	0	22.8	23.3	22.8	1	24.0	22.9	23.1	23.0	1	24.0	18.5	18.8	18.6	0	19.8	12.3	12.7	12.3	0	13.5	
				22.8	23.3	22.7	1	24.0	22.8	23.1	22.7	1	24.0	18.7	18.9	18.4	0	19.8	12.0	12.5	12.0	0	13.5	
				22.7	23.2	22.8	1	24.0	22.9	23.1	22.8	1	24.0	18.6	18.8	18.5	0	19.8	12.1	12.6	12.2	0	13.5	
				22.0	22.1	22.0	2	23.0	22.1	22.2	22.1	2	23.0	18.8	19.0	18.8	0	19.8	12.3	12.4	12.3	0	13.5	
				21.9	22.0	22.0	2	23.0	22.0	22.1	22.0	2	23.0	18.7	18.9	18.8	0	19.8	12.3	12.4	12.3	0	13.5	
	64QAM	1	0	21.9	22.0	21.9	2	23.0	22.0	22.1	22.0	2	23.0	18.7	18.8	18.7	0	19.8	12.3	12.4	12.3	0	13.5	
				22.1	22.0	22.0	2	23.0	22.3	22.3	22.1	2	23.0	19.0	19.0	19.0	0	19.8	12.8	13.0	12.7	0	13.5	
				21.9	22.0	22.0	2	23.0	22.2	22.3	22.0	2	23.0	19.0	19.0	19.1	0	19.8	12.5	12.7	12.6	0	13.5	
				22.1	22.0	21.9	2	23.0	22.2	22.1	22.1	2	23.0	18.9	18.9	19.0	0	19.8	12.6	12.8	12.6	0	13.5	
				20.8	21.0	20.9	3	22.0	21.1	21.2	21.1	3	22.0	18.8	19.0	18.8	0	19.8	12.6	12.6	12.6	0	13.5	

LTE Band 66 Measured Results (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power State B Average Power (dBm)					Power State B Average Power (dBm)					Power State C/D Average Power (dBm)					Power State E/F Average Power (dBm)					
				131997	132322	132647	MFR	Tune-up Limit	131997	132322	132647	MFR	Tune-up Limit	131997	132322	132647	MFR	Tune-up Limit	131997	132322	132647	MFR	Tune-up Limit	
				1712.5 MHz	1745 MHz	1777.5 MHz			1712.5 MHz	1745 MHz	1777.5 MHz			1712.5 MHz	1745 MHz	1777.5 MHz			1712.5 MHz	1745 MHz	1777.5 MHz			
5 MHz	QPSK	1	0	23.9	23.9	23.9	0	25.0	24.0	24.0	23.9	0.0	24.2	18.8	18.8	18.7	0	19.8	12.2	12.3	12.1	0	13.5	
			12	24.0	23.9	23.9	0	25.0	24.0	24.1	24.0	0.0	24.2	18.8	18.9	18.8	0	19.8	12.3	12.4	12.2	0	13.5	
		1	24	24.1	24.0	23.9	0	25.0	24.0	24.2	24.0	0.0	24.2	18.9	19.0	18.9	0	19.8	12.2	12.3	12.1	0	13.5	
			12	23.0	23.0	22.9	1	24.0	23.1	23.1	23.0	0.2	24.0	18.8	18.8	18.7	0	19.8	12.3	12.3	12.2	0	13.5	
		12	7	23.0	23.0	23.0	1	24.0	23.1	23.1	23.0	0.2	24.0	18.9	18.9	18.7	0	19.8	12.4	12.4	12.2	0	13.5	
			13	23.0	23.0	23.0	1	24.0	23.1	23.1	23.0	0.2	24.0	18.9	18.9	18.8	0	19.8	12.3	12.3	12.3	0	13.5	
		12	25	23.0	23.0	22.9	1	24.0	23.1	23.1	23.0	0.2	24.0	18.8	18.8	18.7	0	19.8	12.3	12.3	12.2	0	13.5	
			0	23.0	23.4	22.9	1	24.0	23.1	23.1	23.1	0.2	24.0	18.9	18.9	18.8	0	19.8	12.4	12.4	12.7	0	13.5	
		16QAM	1	12	23.1	23.5	23.0	1	24.0	23.1	23.2	23.0	0.2	24.0	18.8	19.0	18.8	0	19.8	12.5	12.5	12.8	0	13.5
				24	23.2	23.5	23.0	1	24.0	23.1	23.2	23.1	0.2	24.0	18.9	19.1	18.9	0	19.8	12.4	12.4	12.7	0	13.5
	12		0	22.1	22.1	22.0	2	23.0	22.1	22.1	22.1	1.2	23.0	18.8	18.9	18.8	0	19.8	12.3	12.4	12.3	0	13.5	
			7	22.1	22.2	22.0	2	23.0	22.2	22.2	22.1	1.2	23.0	18.9	18.9	18.8	0	19.8	12.4	12.4	12.4	0	13.5	
	12		13	22.1	22.2	22.0	2	23.0	22.1	22.2	22.1	1.2	23.0	18.8	19.0	18.9	0	19.8	12.4	12.4	12.4	0	13.5	
			0	22.0	22.0	21.9	2	23.0	22.0	22.0	21.9	1.2	23.0	18.7	18.9	18.7	0	19.8	12.3	12.3	12.3	0	13.5	
	1		0	22.0	21.8	22.1	2	23.0	22.2	22.3	22.2	1.2	23.0	19.0	18.8	18.6	0	19.8	12.4	12.8	12.6	0	13.5	
			12	22.1	21.8	22.1	2	23.0	22.3	22.4	22.2	1.2	23.0	19.0	18.8	18.7	0	19.8	12.5	12.9	12.7	0	13.5	
	64QAM		1	24	22.1	21.9	22.1	2	23.0	22.3	22.4	22.3	1.2	23.0	19.1	19.1	18.7	0	19.8	12.4	12.7	12.6	0	13.5
				0	20.9	20.9	20.7	3	22.0	21.1	21.1	21.1	2.2	22.0	18.9	18.9	18.8	0	19.8	12.6	12.5	12.5	0	13.5
		12	7	20.9	20.9	20.8	3	22.0	21.1	21.2	21.1	2.2	22.0	18.9	18.9	18.8	0	19.8	12.6	12.5	12.5	0	13.5	
			13	20.9	20.9	20.8	3	22.0	21.1	21.2	21.1	2.2	22.0	18.9	19.0	18.8	0	19.8	12.6	12.5	12.5	0	13.5	
		12	0	20.9	20.8	20.8	3	22.0	21.1	21.1	21.0	2.2	22.0	18.8	18.8	18.7	0	19.8	12.5	12.6	12.4	0	13.5	
			0	20.9	20.8	20.8	3	22.0	21.1	21.1	21.0	2.2	22.0	18.8	18.8	18.7	0	19.8	12.5	12.6	12.4	0	13.5	
		3 MHz	QPSK	1	0	23.6	23.6	23.6	0	25.0	23.9	23.9	23.8	0.0	24.2	18.72	18.70	18.68	0	19.8	12.1	12.2	12.1	0
	8				23.6	23.7	23.6	0	25.0	23.9	24.0	23.9	0.0	24.2	18.70	18.69	18.63	0	19.8	12.1	12.2	12.1	0	13.5
	1			14	23.6	23.7	23.6	0	25.0	23.9	24.0	23.9	0.0	24.2	18.73	18.73	18.70	0	19.8	12.1	12.2	12.1	0	13.5
0				22.7	22.8	22.6	1	24.0	23.0	23.0	22.9	0.2	24.0	18.81	18.81	18.77	0	19.8	12.3	12.3	12.2	0	13.5	
8	4			22.7	22.8	22.7	1	24.0	23.1	23.1	23.0	0.2	24.0	18.82	18.81	18.80	0	19.8	12.3	12.3	12.3	0	13.5	
	7			22.8	22.8	22.7	1	24.0	23.1	23.2	23.0	0.2	24.0	18.86	18.91	18.81	0	19.8	12.3	12.3	12.2	0	13.5	
15	0			22.7	22.8	22.7	1	24.0	23.1	23.1	23.0	0.2	24.0	18.79	18.80	18.76	0	19.8	12.3	12.3	12.2	0	13.5	
	0			22.7	22.6	23.0	1	24.0	23.0	23.1	22.9	0.2	24.0	19.04	18.76	18.67	0	19.8	12.2	12.6	12.2	0	13.5	
16QAM	1			8	22.7	22.6	23.0	1	24.0	22.9	23.1	22.9	0.2	24.0	19.01	18.77	18.66	0	19.8	12.2	12.7	12.2	0	13.5
				14	22.7	22.6	23.0	1	24.0	23.0	23.0	22.9	0.2	24.0	19.06	18.78	18.69	0	19.8	12.1	12.6	12.2	0	13.5
	8		0	21.8	21.9	21.7	2	23.0	22.1	22.1	22.0	1.2	23.0	18.85	18.83	18.78	0	19.8	12.4	12.3	12.2	0	13.5	
			4	21.8	21.9	21.8	2	23.0	22.1	22.2	22.1	1.2	23.0	18.86	18.91	18.82	0	19.8	12.4	12.3	12.3	0	13.5	
	8		7	21.8	22.0	21.8	2	23.0	22.1	22.2	22.1	1.2	23.0	18.90	18.98	18.88	0	19.8	12.4	12.4	12.3	0	13.5	
			0	21.7	21.8	21.7	2	23.0	22.0	22.0	21.9	1.2	23.0	18.80	18.77	18.71	0	19.8	12.3	12.3	12.2	0	13.5	
	1		0	22.0	22.1	21.8	2	23.0	22.2	22.3	22.1	1.2	23.0	19.04	18.98	18.93	0	19.8	12.7	12.8	12.5	0	13.5	
			8	21.9	22.1	21.8	2	23.0	22.2	22.3	22.1	1.2	23.0	19.01	18.99	18.88	0	19.8	12.7	12.8	12.6	0	13.5	
	64QAM		1	14	22.0	22.2	21.9	2	23.0	22.2	22.3	22.1	1.2	23.0	19.01	19.01	18.89	0	19.8	12.6	12.8	12.5	0	13.5
				0	20.8	20.9	20.8	3	22.0	21.0	21.1	20.9	2.2	22.0	18.83	18.76	18.73	0	19.8	12.5	12.6	12.5	0	13.5
8			4	20.8	20.9	20.8	3	22.0	21.1	21.1	21.0	2.2	22.0	18.91	18.83	18.74	0	19.8	12.5	12.6	12.5	0	13.5	
			7	20.9	21.0	20.9	3	22.0	21.1	21.1	21.0	2.2	22.0	18.90	18.90	18.82	0	19.8	12.6	12.7	12.6	0	13.5	
15			0	20.9	20.9	20.8	3	22.0	21.1	21.1	21.0	2.2	22.0	18.75	18.83	18.79	0	19.8	12.6	12.6	12.5	0	13.5	
			0	20.9	20.8	20.8	3	22.0	21.1	21.1	21.0	2.2	22.0	18.75	18.83	18.79	0	19.8	12.6	12.6	12.5	0	13.5	
1.4 MHz			QPSK	1	0	23.6	23.7	23.6	0	25.0	23.8	23.9	23.8	0.0	24.2	18.80	18.72	18.73	0	19.8	12.1	12.3	12.1	0
	3				23.6	23.8	23.6	0	25.0	23.9	24.0	23.9	0.0	24.2	18.85	18.83	18.80	0	19.8	12.2	12.3	12.2	0	13.5
	1			5	23.6	23.7	23.6	0	25.0	23.8	23.9	23.8	0.0	24.2	18.80	18.78	18.74	0	19.8	12.1	12.2	12.1	0	13.5
		0		23.6	23.7	23.5	0	24.0	23.8	23.9	23.8	0.0	24.2	18.59	18.75	18.54	0	19.8	12.1	12.2	12.1	0	13.5	
	3	1		23.6	23.7	23.6	0	24.0	23.9	24.0	23.9	0.0	24.2	18.64	18.82	18.61	0	19.8	12.2	12.3	12.2	0	13.5	
		3		23.6	23.7	23.6	0	24.0	23.9	24.0	23.9	0.0	24.2	18.65	18.79	18.62	0	19.8	12.2	12.2	12.2	0	13.5	
	6	0		22.7	22.7	22.6	1	24.0	23.0	23.0	22.9	0.2	24.0	18.86	18.80	18.76	0	19.8	12.2	12.3	12.2	0	13.5	
		0		22.6	22.8	22.9	1	24.0	22.9	23.0	22.9	0.2	24.0	18.77	19.13	18.73	0	19.8	12.3	12.3	12.5	0	13.5	
	16QAM	1		3	22.7	22.9	23.0	1	24.0	23.0	23.1	23.0	0.2	24.0	18.82	19.19	18.79	0	19.8	12.4	12.4	12.6	0	13.5
				5	22.7	22.8	22.9	1	24.0	22.9	23.0	22.9	0.2	24.0	18.79	19.14	18.71	0	19.8	12.3	12.4	12.5	0	13.5
		3	0	22.8	22.7	22.7	1	23.0	23.1	23.2	23.0													

9.4. LTE Down-Link Carrier Aggregation

The tables below show the supported frequency bands of the device for DL Inter-band and DL Intra-band combinations.

Power measurements were performed on the channel with the highest maximum output power from Tune-up Procedure on ANT1 antenna.

When carrier aggregation is limited to downlink only, uplink maximum output power (single carrier) is measured for the supported combinations of downlink carrier aggregation listed in the table below. In applying the power measurement procedures of KDB 941225 D05A and April 2018 TCB workshop for DL CA to qualify for UL SAR test exclusion, power measurement is required only for the subset in each row with the largest combination of frequency bands and CCs (far right most configuration highlighted in the table below).

Index	2CC	Restriction	Completely Covered by Measurement Superset	Index	3CC	Restriction	Completely Covered by Measurement Superset	Index	4CC	Restriction	Completely Covered by Measurement Superset	Index	5CC	Restriction	Completely Covered by Measurement Superset
2CC # 1	2A-2A		5CC #1	3CC # 1	2A-2A-5A		5CC #7	4CC # 1	2A-2A-5A-30A		5CC #7	5CC # 1	2A-2A-46D		No
2CC # 2	2A-4A		3CC #7	3CC # 2	2A-2A-12A		5CC #4	4CC # 2	2A-2A-5A-66A		5CC #7	5CC # 2	2A-12A-30A-66A-66A		No
2CC # 3	2A-5A		5CC #7	3CC # 3	2A-2A-13A		4CC #5	4CC # 3	2A-2A-12A-30A		5CC #4	5CC # 3	2A-14A-30A-66A-66A		No
2CC # 4	2A-12A		5CC #2	3CC # 4	2A-2A-30A		5CC #4	4CC # 4	2A-2A-12A-66A		5CC #4	5CC # 4	2A-2A-12A-30A-66A		No
2CC # 5	2A-13A		4CC #5	3CC # 5	2A-2A-46A		5CC #14	4CC # 5	2A-2A-13A-66A		No	5CC # 5	2A-2A-14A-30A-66A		No
2CC # 6	2A-14A		5CC #3	3CC # 6	2A-2A-66A		5CC #4	4CC # 6	2A-2A-30A-66A		5CC #4	5CC # 6	2A-2A-14A-66A-66A		No
2CC # 7	2A-29A		3CC #29	3CC # 7	2A-4A-4A		No	4CC # 7	2A-2A-46C		5CC #1	5CC # 7	2A-2A-5A-30A-66A		No
2CC # 8	2A-30A		5CC #2	3CC # 8	2A-4A-5A		No	4CC # 8	2A-5A-30A-66A		5CC #9	5CC # 8	2A-2A-5A-66A-66A		No
2CC # 9	2A-46A		5CC #1	3CC # 9	2A-4A-12A		No	4CC # 9	2A-2A-66A-66A		5CC #6	5CC # 9	2A-5A-30A-66A-66A		No
2CC # 10	2A-66A		5CC #2	3CC # 10	2A-2A-14A		5CC #5	4CC # 10	2A-30A-66A-66A		5CC #2	5CC # 10	2A-5B-30A-66A		No
2CC # 11	4A-4A		3CC #28	3CC # 11	2A-4A-13A		No	4CC # 11	2A-2A-14A-30A		5CC #5	5CC # 11	2A-5B-66A-66A		No
2CC # 12	4A-5A		3CC #28	3CC # 12	2A-5A-30A		5CC #7	4CC # 12	2A-2A-14A-66A		5CC #5	5CC # 12	2A-46D-66A		No
2CC # 13	4A-12A		3CC #32	3CC # 13	2A-5A-66A		5CC #7	4CC # 13	2A-5A-66A-66A		5CC #9	5CC # 13	2A-46E		No
2CC # 14	4A-13A		3CC #30	3CC # 14	2A-5B		5CC #10	4CC # 14	2A-5A-66B		No	5CC # 14	4A-46A-46D		No
2CC # 15	4A-29A		3CC #33	3CC # 15	2A-12A-30A		5CC #2	4CC # 15	2A-5B-30A		5CC #10	5CC # 15	5B-30A-66A-66A		No
2CC # 16	4A-30A		3CC #33	3CC # 16	2A-12A-66A		5CC #2	4CC # 16	2A-5B-66A		5CC #10				
2CC # 17	4A-46A		5CC #15	3CC # 17	2A-13A-66A		4CC #5	4CC # 17	2A-12A-30A-66A		5CC #2				
2CC # 18	5B		5CC #15	3CC # 18	2A-14A-30A		5CC #3	4CC # 18	2A-12A-66A-66A		5CC #2				
2CC # 19	5A-5A		3CC #37	3CC # 19	2A-14A-66A		5CC #3	4CC # 19	2A-13A-66A-66A		No				
2CC # 20	5A-30A		4CC #27	3CC # 20	2A-29A-30A		No	4CC # 20	2A-13A-66B		No				
2CC # 21	5A-66A		4CC #27	3CC # 21	2A-30A-66A		5CC #2	4CC # 21	12A-30A-66A-66A		No				
2CC # 22	7A-7A		No	3CC # 22	2A-46A-46A		5CC #13	4CC # 22	2A-14A-30A-66A		5CC #3				
2CC # 23	7A-12A		No	3CC # 23	2A-46A-66A		5CC #12	4CC # 23	2A-14A-66A-66A		5CC #3				
2CC # 24	7A-46A		No	3CC # 24	2A-46C		3CC #24	3CC # 24	2A-46C-66A		5CC #12				
2CC # 25	7C		No	3CC # 25	2A-66A-66A		5CC #2	4CC # 25	2A-46D		5CC #12				
2CC # 26	12A-30A		4CC #21	3CC # 26	2A-66B		4CC #14	4CC # 26	4A-46D		5CC #14				
2CC # 27	12A-66A		4CC #21	3CC # 27	2A-66C		No	4CC # 27	5A-30A-66A-66A		5CC #15				
2CC # 28	13A-66A		3CC #45	3CC # 28	4A-4A-5A		No	4CC # 28	5B-30A-66A		5CC #15				
2CC # 29	14A-30A		4CC #30	3CC # 29	4A-4A-12A		No	4CC # 29	5B-66A-66A		5CC #15				
2CC # 30	14A-66A		4CC #30	3CC # 30	4A-4A-13A		No	4CC # 30	14A-30A-66A-66A		No				
2CC # 31	25A-25A		No	3CC # 31	4A-5A-30A		No								
2CC # 32	25A-26A		No	3CC # 32	4A-12A-30A		No								
2CC # 33	30A-66A		3CC #49	3CC # 33	4A-29A-30A		No								
2CC # 34	41A-41A		No	3CC # 34	4A-46C		5CC #14								
2CC # 35	41C		No	3CC # 35	5A-30A-66A		4CC #27								
2CC # 36	66A-66A		3CC #50	3CC # 36	5A-66A-66A		4CC #27								
2CC # 37	66B		No	3CC # 37	5A-5A-66A		5CC #15								
2CC # 38	66C		No	3CC # 38	5A-66B		No								
				3CC # 39	5A-66C		No								
				3CC # 40	5B-30A		5CC #15								
				3CC # 41	5B-66A		5CC #15								
				3CC # 42	7C-28A		No								
				3CC # 43	12A-30A-66A		4CC #21								
				3CC # 44	12A-66A-66A		4CC #21								
				3CC # 45	13A-66A-66A		No								
				3CC # 46	13A-66B		No								
				3CC # 47	13A-66C		No								
				3CC # 48	14A-30A-66A		4CC #30								
				3CC # 49	14A-66A-66A		4CC #30								
				3CC # 50	30A-66A-66A		No								
				3CC # 51	66A-66C		No								

In applying the power measurement procedures of KDB 941225 D05A for DL CA to qualify for UL SAR test exclusion, power measurement is required only for the CA configuration with the largest aggregated DL CA BW in each frequency band, independently for contiguous and non-contiguous CA; however, if the same frequency band is used for both contiguous and non-contiguous CA, power measurement was performed using the configuration with the largest aggregated BW and maximum output power among contiguous and non-contiguous CA.

Power State B

2CC DL CA Measured Results

E-UTRA CA configuration	CC1 (UL)					CC2 (DL)			Aggregated BW	CA Inactive (dBm)	CA Active (dBm)	Delta	2CC #
	Mode	BW (MHz)	Channel	Freq (MHz)	RB,Offset	BW (MHz)	Channel	Freq (MHz)					
CA_7A-7A	QPSK	20	20850	2510	1,0	20	3350	2680	40	23.83	23.75	-0.08	22
CA_7A-12A	QPSK	20	20850	2510	1,0	10	5095	737.5	30	23.90	23.76	-0.14	23
CA_7A-46A	QPSK	20	20850	2510	1,0	20	54340	5905	40	23.90	23.80	-0.10	24
CA_7C	QPSK	20	21001	2525.1	1,0	20	3199	2664.9	40	23.95	23.84	-0.11	25
CA_25A-25A	QPSK	20	26140	1860	1,0	20	8590	1985	40	24.50	24.50	0.00	31
CA_25A-26A	QPSK	20	26140	1860	1,0	15	8765	866.5	35	24.50	24.50	0.00	33
CA_41A-41A	QPSK	20	39750	2506	1,0	20	41490	2680	40	23.96	23.77	-0.19	34
CA_41C	QPSK	20	40521	2583.1	1,0	20	40719	2602.9	40	24.20	23.70	-0.50	35
CA_66B	QPSK	10	132373	1750.1	1,0	10	66936	2160	20	24.30	24.20	-0.10	37
CA_66C	QPSK	20	132323	1745.1	1,0	20	66985	2164.9	40	24.65	24.60	-0.05	38

3CC DL CA Measured Results

E-UTRA CA configuration	CC1 (UL)					CC2 (DL)			CC3 (DL)			Aggregated BW	CA Inactive (dBm)	CA Active (dBm)	Delta	3CC #
	Mode	BW (MHz)	Channel	Freq (MHz)	RB,Offset	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)					
CA_2A-4A-4A	QPSK	20	18700	1860	1,0	20	2050	2120	20	2300	2145	60	24.02	23.70	-0.32	7
CA_2A-4A-5A	QPSK	20	18700	1860	1,0	20	2300	2145	10	2525	881.5	50	24.02	24.10	0.08	8
CA_2A-4A-12A	QPSK	20	18700	1860	1,0	20	2300	2145	10	5095	737.5	50	24.02	24.04	0.02	9
CA_2A-4A-13A	QPSK	20	18700	1860	1,0	20	2300	2145	10	5230	751	50	24.02	24.00	-0.02	11
CA_2A-29A-30A	QPSK	20	18700	1860	1,0	10	9720	723	10	9820	2355	40	24.02	24.10	0.08	20
CA_2A-66C	QPSK	20	18700	1860	1,0	20	67036	2170	20	67234	2189.8	60	24.02	24.00	-0.02	27
CA_4A-4A-5A	QPSK	20	20050	1720	1,0	20	2300	2145	10	2525	881.5	50	24.00	24.00	0.00	28
CA_4A-4A-12A	QPSK	20	20050	1720	1,0	20	2300	2145	10	5155	743.5	50	24.00	23.99	-0.01	29
CA_4A-4A-13A	QPSK	20	20050	1720	1,0	20	2300	2145	10	5230	751	50	24.00	23.98	-0.02	30
CA_4A-5A-30A	QPSK	20	20050	1720	1,0	10	2600	889	10	9820	2355	40	24.00	24.00	0.00	31
CA_4A-12A-30A	QPSK	20	20050	1720	1,0	10	5095	737.5	10	9820	2355	40	24.00	23.98	-0.02	32
CA_4A-29A-30A	QPSK	20	20050	1720	1,0	10	9720	723	10	9820	2355	40	24.00	23.95	-0.05	33
CA_5A-66B	QPSK	10	20450	829	1,0	10	67086	2175	10	67185	2184.9	30	23.74	23.78	0.04	38
CA_5A-66C	QPSK	10	20450	829	1,0	20	67036	2170	20	67234	2189.8	50	23.74	23.76	0.02	39
CA_13A-66A-66A	QPSK	10	23230	782	1,0	20	66536	2120	20	67236	2190	50	23.80	23.75	-0.05	45
CA_13A-66B	QPSK	10	23230	782	1,0	10	67086	2175	10	67185	2184.9	30	23.80	23.80	0.00	46
CA_13A-66C	QPSK	10	23230	782	1,0	20	67036	2170	20	67234	2189.8	50	23.80	23.70	-0.10	47
CA_30A-66A-66A	QPSK	10	27710	2310	1,0	20	66536	2120	20	67236	2190	50	22.82	22.72	-0.10	50
CA_66A-66C	QPSK	20	132072	1720	1,0	20	67036	2170	20	67234	2189.8	60	24.07	23.95	-0.12	51

4CC DL CA Measured Results

E-UTRA CA configuration	CC1 (UL)					CC2 (DL)			CC3 (DL)			CC4 (DL)			Aggregated BW	CA Inactive (dBm)	CA Active (dBm)	Delta	4CC #
	Mode	BW (MHz)	Channel	Freq (MHz)	RB, Offset	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)					
CA_2A-2A-13A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	5230	751	20	67236	2190	70	24.02	22.96	-1.06	5
CA_2A-5A-66B	QPSK	20	18700	1860	1,0	10	2600	889	10	67086	2175	10	67185	2184.9	50	24.02	23.08	-0.94	14
CA_2A-13A-66A-66A	QPSK	20	18700	1860	1,0	10	5230	751	20	66536	2120	20	67236	2190	70	24.02	23.09	-0.93	19
CA_2A-13A-66B	QPSK	20	18700	1860	1,0	10	5230	751	10	67086	2175	10	67185	2184.9	50	24.02	23.16	-0.86	20
CA_12A-30A-66A-66A	QPSK	10	23095	707.5	1,0	10	9820	2355	20	66536	2120	20	67236	2190	60	24.50	24.52	0.02	21
CA_14A-30A-66A-66A	QPSK	10	23330	793	1,0	10	9820	2355	20	66536	2120	20	67236	2190	60	24.50	24.52	0.02	30

5CC DL CA Measured Results

E-UTRA CA configuration	CC1 (UL)					CC2 (DL)			CC3 (DL)			CC4 (DL)			CC5 (DL)		Aggregated BW	CA Inactive (dBm)	CA Active (dBm)	Delta	5CC #	
	Mode	BW (MHz)	Channel	Freq (MHz)	RB, Offset	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel						Freq (MHz)
CA_2A-2A-46D	QPSK	20	18700	1860	1,0	20	1100	1980	20	53942	5865.2	20	54140	5885	20	54338	5904.8	100	23.95	23.37	-0.58	1
CA_2A-12A-30A-66A-66A	QPSK	20	18700	1860	1,0	10	5095	737.5	10	9820	2355	20	66536	2120	20	67236	2190	80	23.95	23.95	0.00	2
CA_2A-14A-30A-66A-66A	QPSK	20	18700	1860	1,0	10	5330	763	10	9820	2355	20	66536	2120	20	67236	2190	80	23.95	24.01	0.06	3
CA_2A-2A-12A-30A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	5095	737.5	10	9820	2355	20	67236	2190	80	23.95	24.00	0.05	4
CA_2A-2A-14A-30A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	5330	763	10	9820	2355	20	67236	2190	80	23.95	23.92	-0.03	5
CA_2A-2A-14A-66A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	5330	763	20	66536	2120	20	67236	2190	90	23.95	24.02	0.07	6
CA_2A-2A-5A-30A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	2600	889	10	9820	2355	20	67236	2190	80	23.95	24.01	0.06	7
CA_2A-2A-5A-66A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	2600	889	20	66536	2120	20	67236	2190	90	23.95	23.90	-0.05	8
CA_2A-5A-30A-66A-66A	QPSK	20	18700	1860	1,0	10	2600	889	10	9820	2355	20	66536	2120	20	67236	2190	80	23.95	23.90	-0.05	9
CA_2A-5B-30A-66A	QPSK	20	18700	1860	1,0	10	2501	879.1	10	2600	889	10	9820	2355	20	67236	2190	70	23.95	23.98	0.03	10
CA_2A-5B-66A-66A	QPSK	20	18700	1860	1,0	10	2501	879.1	10	2600	889	20	66536	2120	20	67236	2190	80	23.95	23.60	-0.35	11
CA_2A-46D-66A	QPSK	20	18700	1860	1,0	20	53942	5865.2	20	54140	5885	20	54338	5904.8	20	67236	2190	100	23.95	23.93	-0.02	12
CA_2A-46E	QPSK	20	18700	1860	1,0	20	53740	5845	20	53941	5865.1	20	54142	5885.2	20	54340	5905	100	23.95	23.96	0.01	13
CA_4A-46A-46D	QPSK	20	20050	1720	1,0	20	46890	5160	20	53942	5865.2	20	54140	5885	20	54338	5904.8	100	23.93	23.87	-0.06	14
CA_5B-30A-66A-66A	QPSK	10	20501	834.1	1,0	10	2600	889	10	9820	2355	20	66536	2120	20	67236	2190	70	23.70	23.55	-0.15	15

Power State B-

2CC DL CA Measured Results

E-UTRA CA configuration	CC1 (UL)					CC2 (DL)			Aggregated BW	CA Inactive (dBm)	CA Active (dBm)	Delta	2CC #
	Mode	BW (MHz)	Channel	Freq (MHz)	RB,Offset	BW (MHz)	Channel	Freq (MHz)					
CA_7A-7A	QPSK	20	20850	2510	1,0	20	3350	2680	40	19.40	19.34	-0.06	22
CA_7A-12A	QPSK	20	20850	2510	1,0	10	5095	737.5	30	19.40	19.24	-0.16	23
CA_7A-46A	QPSK	20	20850	2510	1,0	20	54340	5905	40	19.40	19.30	-0.10	24
CA_7C	QPSK	20	21001	2525.1	1,0	20	3199	2664.9	40	19.23	18.94	-0.29	25
CA_25A-25A	QPSK	20	26140	1860	1,0	20	8590	1985	40	24.42	23.38	-1.04	31
CA_25A-26A	QPSK	20	26140	1860	1,0	15	8765	866.5	35	24.42	23.33	-1.09	33
CA_41A-41A	QPSK	20	39750	2506	1,0	20	41490	2680	40	21.10	21.00	-0.10	34
CA_41C	QPSK	20	40521	2583.1	1,0	20	40719	2602.9	40	21.30	21.21	-0.09	35
CA_66B	QPSK	10	132373	1750.1	1,0	10	66936	2160	20	24.34	24.48	0.14	37
CA_66C	QPSK	20	132323	1745.1	1,0	20	66985	2164.9	40	24.51	24.50	-0.01	38

3CC DL CA Measured Results

E-UTRA CA configuration	CC1 (UL)					CC2 (DL)			CC3 (DL)			Aggregated BW	CA Inactive (dBm)	CA Active (dBm)	Delta	3CC #
	Mode	BW (MHz)	Channel	Freq (MHz)	RB,Offset	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)					
CA_2A-4A-4A	QPSK	20	18700	1860	1,0	20	2050	2120	20	2300	2145	60	23.13	23.07	-0.06	7
CA_2A-4A-5A	QPSK	20	18700	1860	1,0	20	2300	2145	10	2525	881.5	50	23.13	23.11	-0.02	8
CA_2A-4A-12A	QPSK	20	18700	1860	1,0	20	2300	2145	10	5095	737.5	50	23.13	23.21	0.08	9
CA_2A-4A-13A	QPSK	20	18700	1860	1,0	20	2300	2145	10	5230	751	50	23.13	23.21	0.08	11
CA_2A-29A-30A	QPSK	20	18700	1860	1,0	10	9720	723	10	9820	2355	40	23.13	23.09	-0.04	20
CA_2A-66C	QPSK	20	18700	1860	1,0	20	67036	2170	20	67234	2189.8	60	23.13	23.07	-0.06	27
CA_4A-4A-5A	QPSK	20	20050	1720	1,0	20	2300	2145	10	2525	881.5	50	23.60	23.54	-0.06	28
CA_4A-4A-12A	QPSK	20	20050	1720	1,0	20	2300	2145	10	5155	743.5	50	23.60	23.52	-0.08	29
CA_4A-4A-13A	QPSK	20	20050	1720	1,0	20	2300	2145	10	5230	751	50	23.60	23.50	-0.10	30
CA_4A-5A-30A	QPSK	20	20050	1720	1,0	10	2600	889	10	9820	2355	40	23.60	23.55	-0.05	31
CA_4A-12A-30A	QPSK	20	20050	1720	1,0	10	5095	737.5	10	9820	2355	40	23.60	23.60	0.00	32
CA_4A-29A-30A	QPSK	20	20050	1720	1,0	10	9720	723	10	9820	2355	40	23.60	23.54	-0.06	33
CA_5A-66B	QPSK	10	20450	829	1,0	10	67086	2175	10	67185	2184.9	30	23.74	23.78	0.04	38
CA_5A-66C	QPSK	10	20450	829	1,0	20	67036	2170	20	67234	2189.8	50	23.74	23.76	0.02	39
CA_13A-66A-66A	QPSK	10	23230	782	1,0	20	66536	2120	20	67236	2190	50	23.80	23.75	-0.05	45
CA_13A-66B	QPSK	10	23230	782	1,0	10	67086	2175	10	67185	2184.9	30	23.80	23.80	0.00	46
CA_13A-66C	QPSK	10	23230	782	1,0	20	67036	2170	20	67234	2189.8	50	23.80	23.70	-0.10	47
CA_30A-66A-66A	QPSK	10	27710	2310	1,0	20	66536	2120	20	67236	2190	50	21.58	21.62	0.04	50
CA_66A-66C	QPSK	20	132072	1720	1,0	20	67036	2170	20	67234	2189.8	60	23.94	23.85	-0.09	51

4CC DL CA Measured Results

E-UTRA CA configuration	CC1 (UL)					CC2 (DL)			CC3 (DL)			CC4 (DL)			Aggregated BW	CA Inactive (dBm)	CA Active (dBm)	Delta	4CC #
	Mode	BW (MHz)	Channel	Freq (MHz)	RB, Offset	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)					
CA_2A-2A-13A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	5230	751	20	67236	2190	70	23.13	22.62	-0.51	5
CA_2A-5A-66B	QPSK	20	18700	1860	1,0	10	2600	889	10	67086	2175	10	67185	2184.9	50	23.13	23.13	0.00	14
CA_2A-13A-66A-66A	QPSK	20	18700	1860	1,0	10	5230	751	20	66536	2120	20	67236	2190	70	23.13	22.78	-0.35	19
CA_2A-13A-66B	QPSK	20	18700	1860	1,0	10	5230	751	10	67086	2175	10	67185	2184.9	50	23.13	23.08	-0.05	20
CA_12A-30A-66A-66A	QPSK	10	23095	707.5	1,0	10	9820	2355	20	66536	2120	20	67236	2190	60	24.50	24.52	0.02	21
CA_14A-30A-66A-66A	QPSK	10	23330	793	1,0	10	9820	2355	20	66536	2120	20	67236	2190	60	24.50	24.52	0.02	30

5CC DL CA Measured Results

E-UTRA CA configuration	CC1 (UL)					CC2 (DL)			CC3 (DL)			CC4 (DL)			CC5 (DL)			Aggregated BW	CA Inactive (dBm)	CA Active (dBm)	Delta	5CC #
	Mode	BW (MHz)	Channel	Freq (MHz)	RB, Offset	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)					
CA_2A-2A-46D	QPSK	20	18700	1860	1,0	20	1100	1980	20	53942	5865.2	20	54140	5885	20	54338	5904.8	100	23.13	23.13	0.00	1
CA_2A-12A-30A-66A-66A	QPSK	20	18700	1860	1,0	10	5095	737.5	10	9820	2355	20	66536	2120	20	67236	2190	80	23.13	23.02	-0.11	2
CA_2A-14A-30A-66A-66A	QPSK	20	18700	1860	1,0	10	5330	763	10	9820	2355	20	66536	2120	20	67236	2190	80	23.13	23.14	0.01	3
CA_2A-2A-12A-30A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	5095	737.5	10	9820	2355	20	67236	2190	80	23.13	23.13	0.00	4
CA_2A-2A-14A-30A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	5330	763	10	9820	2355	20	67236	2190	80	23.13	23.16	0.03	5
CA_2A-2A-14A-66A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	5330	763	20	66536	2120	20	67236	2190	90	23.13	23.10	-0.03	6
CA_2A-2A-5A-30A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	2600	889	10	9820	2355	20	67236	2190	80	23.13	23.21	0.08	7
CA_2A-2A-5A-66A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	2600	889	20	66536	2120	20	67236	2190	90	23.13	23.14	0.01	8
CA_2A-5A-30A-66A-66A	QPSK	20	18700	1860	1,0	10	2600	889	10	9820	2355	20	66536	2120	20	67236	2190	80	23.13	23.15	0.02	9
CA_2A-5B-30A-66A	QPSK	20	18700	1860	1,0	10	2501	879.1	10	2600	889	10	9820	2355	20	67236	2190	70	23.13	23.22	0.09	10
CA_2A-5B-66A-66A	QPSK	20	18700	1860	1,0	10	2501	879.1	10	2600	889	20	66536	2120	20	67236	2190	80	23.13	22.87	-0.26	11
CA_2A-46D-66A	QPSK	20	18700	1860	1,0	20	53942	5865.2	20	54140	5885	20	54338	5904.8	20	67236	2190	100	23.13	23.15	0.02	12
CA_2A-46E	QPSK	20	18700	1860	1,0	20	53740	5845	20	53941	5865.1	20	54142	5885.2	20	54340	5905	100	23.13	23.02	-0.11	13
CA_4A-46A-46D	QPSK	20	20050	1720	1,0	20	46890	5160	20	53942	5865.2	20	54140	5885	20	54338	5904.8	100	23.60	23.51	-0.09	14
CA_5B-30A-66A-66A	QPSK	10	20501	834.1	1,0	10	2600	889	10	9820	2355	20	66536	2120	20	67236	2190	70	23.70	23.55	-0.15	15

Power State C/D

2CC DL CA Measured Results

E-UTRA CA configuration	CC1 (UL)					CC2 (DL)			Aggregated BW	CA Inactive (dBm)	CA Active (dBm)	Delta	2CC #
	Mode	BW (MHz)	Channel	Freq (MHz)	RB,Offset	BW (MHz)	Channel	Freq (MHz)					
CA_7A-7A	QPSK	20	20850	2510	1,0	20	3350	2680	40	16.50	16.43	-0.07	22
CA_7A-12A	QPSK	20	20850	2510	1,0	10	5155	743.5	30	16.50	16.41	-0.09	23
CA_7A-46A	QPSK	20	20850	2510	1,0	20	54340	5905	40	16.50	16.50	0.00	24
CA_7C	QPSK	20	21001	2525.1	1,0	20	3199	2664.9	40	16.50	16.32	-0.18	25
CA_25A-25A	QPSK	20	26140	1860	1,0	20	8590	1985	40	18.84	18.71	-0.13	31
CA_25A-26A	QPSK	20	26140	1860	1,0	15	8765	866.5	35	18.84	18.90	0.06	33
CA_41A-41A	QPSK	20	39750	2506	1,0	20	41490	2680	40	18.01	18.08	0.07	34
CA_41C	QPSK	20	40521	2583.1	1,0	20	40719	2602.9	40	18.70	18.88	0.18	35
CA_66B	QPSK	10	132373	1750.1	1,0	10	66936	2160	20	20.40	20.36	-0.04	37
CA_66C	QPSK	20	132323	1745.1	1,0	20	66985	2164.9	40	20.42	20.39	-0.03	38

3CC DL CA Measured Results

E-UTRA CA configuration	CC1 (UL)					CC2 (DL)			CC3 (DL)			Aggregated BW	CA Inactive (dBm)	CA Active (dBm)	Delta	3CC #
	Mode	BW (MHz)	Channel	Freq (MHz)	RB,Offset	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)					
CA_2A-4A-4A	QPSK	20	18700	1860	1,0	20	2050	2120	20	2300	2145	60	18.70	18.31	-0.39	7
CA_2A-4A-5A	QPSK	20	18700	1860	1,0	20	2300	2145	10	2575	886.5	50	18.70	18.71	0.01	8
CA_2A-4A-12A	QPSK	20	18700	1860	1,0	20	2300	2145	10	5155	743.5	50	18.70	18.67	-0.03	9
CA_2A-4A-13A	QPSK	20	18700	1860	1,0	20	2300	2145	10	5230	751	50	18.70	18.75	0.05	11
CA_2A-29A-30A	QPSK	20	18700	1860	1,0	10	9720	723	10	9820	2355	40	18.70	18.68	-0.02	20
CA_2A-66C	QPSK	20	18700	1860	1,0	20	67036	2170	20	67234	2189.8	60	18.70	18.68	-0.02	27
CA_4A-4A-5A	QPSK	20	20050	1720	1,0	20	2300	2145	10	2575	886.5	50	19.20	19.05	-0.15	28
CA_4A-4A-12A	QPSK	20	20050	1720	1,0	20	2300	2145	10	5155	743.5	50	19.20	19.01	-0.19	29
CA_4A-4A-13A	QPSK	20	20050	1720	1,0	20	2300	2145	10	5230	751	50	19.20	19.15	-0.05	30
CA_4A-5A-30A	QPSK	20	20050	1720	1,0	10	2600	889	10	9820	2355	40	19.20	19.12	-0.08	31
CA_4A-12A-30A	QPSK	20	20050	1720	1,0	10	5155	743.5	10	9820	2355	40	19.20	19.10	-0.10	32
CA_4A-29A-30A	QPSK	20	20050	1720	1,0	10	9720	723	10	9820	2355	40	19.20	19.09	-0.11	33
CA_5A-66B	QPSK	10	20450	829	1,0	10	67086	2175	10	67185	2184.9	30	23.37	23.30	-0.07	38
CA_5A-66C	QPSK	10	20450	829	1,0	20	67036	2170	20	67234	2189.8	50	23.37	23.32	-0.05	39
CA_13A-66A-66A	QPSK	10	23230	782	1,0	20	66536	2120	20	67236	2190	50	22.10	22.11	0.01	45
CA_13A-66B	QPSK	10	23230	782	1,0	10	67086	2175	10	67185	2184.9	30	22.10	22.10	0.00	46
CA_13A-66C	QPSK	10	23230	782	1,0	20	67036	2170	20	67234	2189.8	50	22.10	22.11	0.01	47
CA_30A-66A-66A	QPSK	10	27710	2310	1,0	20	66536	2120	20	67236	2190	50	18.33	18.23	-0.10	50
CA_66A-66C	QPSK	20	132072	1720	1,0	20	67036	2170	20	67234	2189.8	60	19.80	19.91	0.11	51

4CC DL CA Measured Results

E-UTRA CA configuration	CC1 (UL)					CC2 (DL)			CC3 (DL)			CC4 (DL)			Aggregated BW	CA Inactive (dBm)	CA Active (dBm)	Delta	4CC #
	Mode	BW (MHz)	Channel	Freq (MHz)	RB,Offset	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)					
CA_2A-2A-13A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	5230	751	20	67236	2190	70	18.7	18.66	-0.04	5
CA_2A-5A-66B	QPSK	20	18700	1860	1,0	10	2600	889	10	67086	2175	10	67185	2184.9	50	18.70	18.67	-0.03	14
CA_2A-13A-66A-66A	QPSK	20	18700	1860	1,0	10	5230	751	20	66536	2120	20	67236	2190	70	18.70	18.50	-0.20	19
CA_2A-13A-66B	QPSK	20	18700	1860	1,0	10	5230	751	10	67086	2175	10	67185	2184.9	50	18.70	18.40	-0.30	20
CA_12A-30A-66A-66A	QPSK	10	23095	707.5	1,0	10	9820	2355	20	66536	2120	20	67236	2190	60	23.60	23.61	0.01	21
CA_14A-30A-66A-66A	QPSK	10	23330	793	1,0	10	9820	2355	20	66536	2120	20	67236	2190	60	23.60	23.61	0.01	30

5CC DL CA Measured Results

E-UTRA CA configuration	CC1 (UL)					CC2 (DL)			CC3 (DL)			CC4 (DL)			CC5 (DL)			Aggregated BW	CA Inactive (dBm)	CA Active (dBm)	Delta	5CC #
	Mode	BW (MHz)	Channel	Freq (MHz)	RB,Offset	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)					
CA_2A-2A-46D	QPSK	20	18700	1860	1,0	20	1100	1980	20	53942	5865.2	20	54140	5885	20	54338	5904.8	100	18.70	18.50	-0.20	1
CA_2A-12A-30A-66A-66A	QPSK	20	18700	1860	1,0	10	5155	743.5	10	9820	2355	20	66536	2120	20	67236	2190	80	18.70	18.44	-0.26	2
CA_2A-14A-30A-66A-66A	QPSK	20	18700	1860	1,0	10	5330	763	10	9820	2355	20	66536	2120	20	67236	2190	80	18.70	18.41	-0.29	3
CA_2A-2A-12A-30A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	5155	743.5	10	9820	2355	20	67236	2190	80	18.70	18.50	-0.20	4
CA_2A-2A-14A-30A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	9820	2355	10	9820	2355	20	67236	2190	80	18.70	18.64	-0.06	5
CA_2A-2A-14A-66A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	9820	2355	20	66536	2120	20	67236	2190	90	18.70	18.50	-0.20	6
CA_2A-2A-5A-30A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	2600	889	10	9820	2355	20	67236	2190	80	18.70	18.51	-0.19	7
CA_2A-2A-5A-66A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	2600	889	20	66536	2120	20	67236	2190	90	18.70	18.54	-0.16	8
CA_2A-5A-30A-66A-66A	QPSK	20	18700	1860	1,0	10	2600	889	10	9820	2355	20	66536	2120	20	67236	2190	80	18.70	18.47	-0.23	9
CA_2A-5B-30A-66A	QPSK	20	18700	1860	1,0	10	2501	879.1	10	2600	889	10	9820	2355	20	67236	2190	70	18.70	18.45	-0.25	10
CA_2A-5B-66A-66A	QPSK	20	18700	1860	1,0	10	2501	879.1	10	2600	889	20	66536	2120	20	67236	2190	80	18.70	18.21	-0.49	11
CA_2A-46D-66A	QPSK	20	18700	1860	1,0	20	53942	5865.2	20	54140	5885	20	54338	5904.8	20	67236	2190	100	18.70	18.43	-0.27	12
CA_2A-46E	QPSK	20	18700	1860	1,0	20	53740	5845	20	53941	5865.1	20	54142	5885.2	20	54340	5905	100	18.70	18.48	-0.22	13
CA_4A-46A-46D	QPSK	20	20050	1720	1,0	20	46890	5160	20	53942	5865.2	20	54140	5885	20	54338	5904.8	100	19.20	19.10	-0.10	14
CA_5B-30A-66A-66A	QPSK	10	20501	834.1	1,0	10	2600	889	10	9820	2355	20	66536	2120	20	67236	2190	70	21.51	21.58	0.07	15

Power State E/F

2CC DL CA Measured Results

E-UTRA CA configuration	CC1 (UL)					CC2 (DL)			Aggregated BW	CA Inactive (dBm)	CA Active (dBm)	Delta	2CC #
	Mode	BW (MHz)	Channel	Freq (MHz)	RB,Offset	BW (MHz)	Channel	Freq (MHz)					
CA_7A-7A	QPSK	20	20850	2510	1,0	20	3350	2680	40	8.80	8.70	-0.10	22
CA_7A-12A	QPSK	20	20850	2510	1,0	10	5095	737.5	30	8.80	8.74	-0.06	23
CA_7A-46A	QPSK	20	20850	2510	1,0	20	54340	5905	40	8.80	8.60	-0.20	24
CA_7C	QPSK	20	21001	2525.1	1,0	20	3199	2664.9	40	8.90	8.81	-0.09	25
CA_25A-25A	QPSK	20	26140	1860	1,0	20	8590	1985	40	12.80	12.68	-0.12	31
CA_25A-26A	QPSK	20	26140	1860	1,0	15	8765	866.5	35	12.80	12.80	0.00	33
CA_41A-41A	QPSK	20	39750	2506	1,0	20	41490	2680	40	10.94	10.94	0.00	34
CA_41C	QPSK	20	40521	2583.1	1,0	20	40719	2602.9	40	11.22	11.30	0.08	35
CA_66B	QPSK	10	132373	1750.1	1,0	10	66936	2160	20	14.10	14.10	0.00	37
CA_66C	QPSK	20	132323	1745.1	1,0	20	66985	2164.9	40	14.20	14.10	-0.10	38

3CC DL CA Measured Results

E-UTRA CA configuration	CC1 (UL)					CC2 (DL)			CC3 (DL)			Aggregated BW	CA Inactive (dBm)	CA Active (dBm)	Delta	3CC #
	Mode	BW (MHz)	Channel	Freq (MHz)	RB,Offset	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)					
CA_2A-4A-4A	QPSK	20	18700	1860	1,0	20	2050	2120	20	2300	2145	60	12.64	12.50	-0.14	7
CA_2A-4A-5A	QPSK	20	18700	1860	1,0	20	2300	2145	10	2525	881.5	50	12.64	12.68	0.04	8
CA_2A-4A-12A	QPSK	20	18700	1860	1,0	20	2300	2145	10	5095	737.5	50	12.64	12.65	0.01	9
CA_2A-4A-13A	QPSK	20	18700	1860	1,0	20	2300	2145	10	5230	751	50	12.64	12.61	-0.03	11
CA_2A-29A-30A	QPSK	20	18700	1860	1,0	10	9720	723	10	9820	2355	40	12.64	12.70	0.06	20
CA_2A-66C	QPSK	20	18700	1860	1,0	20	67036	2170	20	67234	2189.8	60	12.64	12.61	-0.03	27
CA_4A-4A-5A	QPSK	20	20050	1720	1,0	20	2300	2145	10	2525	881.5	50	13.08	13.05	-0.03	28
CA_4A-4A-12A	QPSK	20	20050	1720	1,0	20	2300	2145	10	5155	743.5	50	13.08	13.00	-0.08	29
CA_4A-4A-13A	QPSK	20	20050	1720	1,0	20	2300	2145	10	5230	751	50	13.08	13.20	0.12	30
CA_4A-5A-30A	QPSK	20	20050	1720	1,0	10	2600	889	10	9820	2355	40	13.08	13.15	0.07	31
CA_4A-12A-30A	QPSK	20	20050	1720	1,0	10	5095	737.5	10	9820	2355	40	13.08	13.06	-0.02	32
CA_4A-29A-30A	QPSK	20	20050	1720	1,0	10	9720	723	10	9820	2355	40	13.08	13.07	-0.01	33
CA_5A-66B	QPSK	10	20450	829	1,0	10	67086	2175	10	67185	2184.9	30	18.60	18.54	-0.06	38
CA_5A-66C	QPSK	10	20450	829	1,0	20	67036	2170	20	67234	2189.8	50	18.60	18.62	0.02	39
CA_13A-66A-66A	QPSK	10	23230	782	1,0	20	66536	2120	20	67236	2190	50	17.80	17.71	-0.09	45
CA_13A-66B	QPSK	10	23230	782	1,0	10	67086	2175	10	67185	2184.9	30	17.80	17.81	0.01	46
CA_13A-66C	QPSK	10	23230	782	1,0	20	67036	2170	20	67234	2189.8	50	17.80	17.81	0.01	47
CA_30A-66A-66A	QPSK	10	27710	2310	1,0	20	66536	2120	20	67236	2190	50	10.92	10.96	0.04	50
CA_66A-66C	QPSK	20	132072	1720	1,0	20	67036	2170	20	67234	2189.8	60	13.10	13.04	-0.06	51

4CC DL CA Measured Results

E-UTRA CA configuration	CC1 (UL)					CC2 (DL)			CC3 (DL)			CC4 (DL)			Aggregated BW	CA Inactive (dBm)	CA Active (dBm)	Delta	4CC #
	Mode	BW (MHz)	Channel	Freq (MHz)	RB, Offset	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)					
CA_2A-2A-13A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	5230	751	20	67236	2190	70	12.64	12.60	-0.04	5
CA_2A-5A-66B	QPSK	20	18700	1860	1,0	10	2600	889	10	67086	2175	10	67185	2184.9	50	12.64	12.57	-0.07	14
CA_2A-13A-66A-66A	QPSK	20	18700	1860	1,0	10	5230	751	20	66536	2120	20	67236	2190	70	12.64	12.70	0.06	19
CA_2A-13A-66B	QPSK	20	18700	1860	1,0	10	5230	751	10	67086	2175	10	67185	2184.9	50	12.64	12.70	0.06	20
CA_12A-30A-66A-66A	QPSK	10	23095	707.5	1,0	10	9820	2355	20	66536	2120	20	67236	2190	60	19.70	19.70	0.00	21
CA_14A-30A-66A-66A	QPSK	10	23330	793	1,0	10	9820	2355	20	66536	2120	20	67236	2190	60	19.70	19.70	0.00	30

5CC DL CA Measured Results

E-UTRA CA configuration	CC1 (UL)					CC2 (DL)			CC3 (DL)			CC4 (DL)			CC5 (DL)			Aggregated BW	CA Inactive (dBm)	CA Active (dBm)	Delta	5CC #
	Mode	BW (MHz)	Channel	Freq (MHz)	RB, Offset	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)					
CA_2A-2A-46D	QPSK	20	18700	1860	1,0	20	1100	1980	20	53942	5865.2	20	54140	5885	20	54338	5904.8	100	12.64	12.61	-0.03	1
CA_2A-12A-30A-66A-66A	QPSK	20	18700	1860	1,0	10	5095	737.5	10	9820	2355	20	66536	2120	20	67236	2190	80	12.64	12.51	-0.13	2
CA_2A-14A-30A-66A-66A	QPSK	20	18700	1860	1,0	10	5330	763	10	9820	2355	20	66536	2120	20	67236	2190	80	12.64	12.65	0.01	3
CA_2A-2A-12A-30A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	5095	737.5	10	9820	2355	20	67236	2190	80	12.64	12.63	-0.01	4
CA_2A-2A-14A-30A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	5330	763	10	9820	2355	20	67236	2190	80	12.64	12.60	-0.04	5
CA_2A-2A-14A-66A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	5330	763	20	66536	2120	20	67236	2190	90	12.64	12.57	-0.07	6
CA_2A-2A-5A-30A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	2600	889	10	9820	2355	20	67236	2190	80	12.64	12.64	0.00	7
CA_2A-2A-5A-66A-66A	QPSK	20	18700	1860	1,0	20	1100	1980	10	2600	889	20	66536	2120	20	67236	2190	90	12.64	12.60	-0.04	8
CA_2A-5A-30A-66A-66A	QPSK	20	18700	1860	1,0	10	2600	889	10	9820	2355	20	66536	2120	20	67236	2190	80	12.64	12.46	-0.18	9
CA_2A-5B-30A-66A	QPSK	20	18700	1860	1,0	10	2501	879.1	10	2600	889	10	9820	2355	20	67236	2190	70	12.64	12.58	-0.06	10
CA_2A-5B-66A-66A	QPSK	20	18700	1860	1,0	10	2501	879.1	10	2600	889	20	66536	2120	20	67236	2190	80	12.64	12.49	-0.15	11
CA_2A-46D-66A	QPSK	20	18700	1860	1,0	20	53942	5865.2	20	54140	5885	20	54338	5904.8	20	67236	2190	100	12.64	12.61	-0.03	12
CA_2A-46E	QPSK	20	18700	1860	1,0	20	53740	5845	20	53941	5865.1	20	54142	5885.2	20	54340	5905	100	12.64	12.55	-0.09	13
CA_4A-46A-46D	QPSK	20	20050	1720	1,0	20	46890	5160	20	53942	5865.2	20	54140	5885	20	54338	5904.8	100	13.08	13.01	-0.07	14
CA_5B-30A-66A-66A	QPSK	10	20501	834.1	1,0	10	2600	889	10	9820	2355	20	66536	2120	20	67236	2190	70	17.02	16.95	-0.07	15

9.5. Wi-Fi 2.4GHz (DTS Band)

Maximum Output Power (Tune-up Limit) for Wi-Fi 2.4 GHz

The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures.

For “Not required”, SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11b/g/n mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.

SAR testing is not required for OFDM mode(s) when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

Mode	Bandwidth	Channel	Frequency (MHz)	Tune-up Power Limit (dBm)					
				Antenna 1			Antenna 2		
				Power State B/D/E	Power State B-/C	Power State F	Power State B/D/E	Power State B-/C	Power State F
802.11b DSSS	20 MHz	1	2412	11.5	17.0	8.5	11.5	17.0	8.5
		2	2417	11.5	19.1	8.5	11.5	19.1	8.5
		6	2437	11.5	19.1	8.5	11.5	19.1	8.5
		10	2457	11.5	19.1	8.5	11.5	19.1	8.5
		11	2462	11.5	18.0	8.5	11.5	18.0	8.5
		12	2467	11.5	14.0	8.5	11.5	14.0	8.5
		13	2472	11.5	13.0	8.5	11.5	13.0	8.5
802.11g OFDM	20 MHz	1	2412	11.5	17.0	8.5	11.5	17.0	8.5
		2	2417	11.5	19.1	8.5	11.5	19.1	8.5
		6	2437	11.5	19.1	8.5	11.5	19.1	8.5
		10	2457	11.5	19.1	8.5	11.5	19.1	8.5
		11	2462	11.5	18.0	8.5	11.5	18.0	8.5
		12	2467	11.5	14.0	8.5	11.5	14.0	8.5
		13	2472	3.0	3.0	8.5	3.0	3.0	8.5
802.11n OFDM	20 MHz	1	2412	11.5	17.0	8.5	11.5	17.0	8.5
		2	2417	11.5	19.1	8.5	11.5	19.1	8.5
		6	2437	11.5	19.1	8.5	11.5	19.1	8.5
		10	2457	11.5	19.1	8.5	11.5	19.1	8.5
		11	2462	11.5	18.0	8.5	11.5	18.0	8.5
		12	2467	11.5	14.0	8.5	11.5	14.0	8.5
		13	2472	2.5	2.5	8.5	2.5	2.5	8.5
802.11n OFDM	40 MHz	3	2422	11.5	15.0	8.5	11.5	15.0	8.5
		4	2427	11.5	17.0	8.5	11.5	17.0	8.5
		6	2437	11.5	18.5	8.5	11.5	18.5	8.5
		9	2452	11.5	17.0	8.5	11.5	17.0	8.5
		11	2462	11.5	10.0	8.5	11.5	10.0	8.5

Note(s):

SAR is not required for channel 12 and 13 because the tune-up limit and the measured output power for these two channels are not greater than those for the default test channels. Refer to KDB 248227 D01 section 3.1

Power State B/D/E Wi-Fi 2.4GHz Measured Results

Band	Mode	Ch #	Freq. (MHz)	Antenna 1 Average Power (dBm)			Antenna 2 Average Power (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
DSSS 2.4 GHz	802.11b	1	2412	10.4	11.5	Yes	9.9	11.5	Yes
		6	2437	10.0	11.5		10.5	11.5	
		11	2462	9.9	11.5		10.3	11.5	

Power State B/C Wi-Fi 2.4GHz Measured Results

Band	Mode	Ch #	Freq. (MHz)	Antenna 1 Average Power (dBm)			Antenna 2 Average Power (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
DSSS 2.4 GHz	802.11b	2	2417	19.0	19.1	Yes	18.9	19.1	Yes
		6	2437	18.9	19.1		19.1	19.1	
		10	2457	19.1	19.1		19.0	19.1	

Power State F Wi-Fi 2.4GHz Measured Results

Band	Mode	Ch #	Freq. (MHz)	Antenna 1 Average Power (dBm)			Antenna 2 Average Power (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
DSSS 2.4 GHz	802.11b	1	2412	8.4	8.5	Yes	8.4	8.5	Yes
		6	2437	8.4	8.5		8.4	8.5	
		11	2462	8.1	8.5		8.1	8.5	

9.6. Wi-Fi 5GHz (U-NII Bands)

Maximum Output Power (Tune-up Limit) for Wi-Fi 5 GHz

When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac modes, the channel in the lower order/sequence 802.11 transmission mode is selected.

The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures.

For “Not required”, SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11 a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.

When the specified maximum output power is the same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the reported SAR for UNII 2A is ≤ 1.2 W/kg, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.

Mode	Bandwidth	Channel	Frequency (MHz)	Tune-up PowerLimit (dBm)					
				Antenna 1			Antenna 2		
				Power State B/D/E	Power State B-/C	Power State F	Power State B/D/E	Power State B-/C	Power State F
U-NII-1 5.2 GHz	802.11a 20 MHz	36	5180	9.0	13.0	4.0	9.0	13.0	4.0
		40	5200	9.0	13.0	4.0	9.0	13.0	4.0
		44	5220	9.0	13.0	4.0	9.0	13.0	4.0
		48	5240	9.0	13.0	4.0	9.0	13.0	4.0
	802.11n/ac 20 MHz	36	5180	9.0	13.5	4.0	9.0	13.5	4.0
		40	5200	9.0	13.5	4.0	9.0	13.5	4.0
		44	5220	9.0	13.5	4.0	9.0	13.5	4.0
		48	5240	9.0	13.5	4.0	9.0	13.5	4.0
	802.11n/ac 40 MHz	38	5190	9.0	14.0	4.0	9.0	14.0	4.0
		46	5230	9.0	14.0	4.0	9.0	14.0	4.0
802.11ac 80 MHz	42	5210	9.0	14.0	4.0	9.0	14.0	4.0	
U-NII-2A 5.3 GHz	802.11a/n/ac 20 MHz	52	5260	9.0	15.8	4.0	9.0	15.8	4.0
		56	5280	9.0	15.8	4.0	9.0	15.8	4.0
		60	5300	9.0	15.8	4.0	9.0	15.8	4.0
		64	5320	9.0	15.8	4.0	9.0	15.8	4.0
	802.11n/ac 40 MHz	54	5270	9.0	15.8	4.0	9.0	15.8	4.0
		62	5310	9.0	15.8	4.0	9.0	15.8	4.0
	802.11ac 80 MHz	58	5290	9.0	15.8	4.0	9.0	15.8	4.0
U-NII-2C 5.5 GHz	802.11a/n/ac 20 MHz	100	5500	8.5	14.0	4.0	8.5	14.0	4.0
		116	5580	8.5	14.0	4.0	8.5	14.0	4.0
		124	5620	8.5	14.0	4.0	8.5	14.0	4.0
		144	5720	8.5	14.0	4.0	8.5	14.0	4.0
	802.11n/ac 40 MHz	102	5510	8.5	14.0	4.0	8.5	14.0	4.0
		118	5590	8.5	14.0	4.0	8.5	14.0	4.0
		126	5630	8.5	14.0	4.0	8.5	14.0	4.0
		142	5710	8.5	14.0	4.0	8.5	14.0	4.0
	802.11ac 80 MHz	106	5530	8.5	14.0	4.0	8.5	14.0	4.0
		122	5610	8.5	14.0	4.0	8.5	14.0	4.0
138		5690	8.5	14.0	4.0	8.5	14.0	4.0	
U-NII-3 5.8 GHz	802.11a/n/ac 20 MHz	149	5745	8.5	14.0	4.0	8.5	14.0	4.0
		157	5785	8.5	14.0	4.0	8.5	14.0	4.0
		165	5825	8.5	14.0	4.0	8.5	14.0	4.0
	802.11n/ac 40 MHz	151	5755	8.5	14.0	4.0	8.5	14.0	4.0
		159	5795	8.5	14.0	4.0	8.5	14.0	4.0
	802.11ac 80 MHz	155	5775	8.5	14.0	4.0	8.5	14.0	4.0

Power State B/D/E Wi-Fi 5 GHz Measured Results

Band	Mode	Ch #	Freq. (MHz)	Antenna 1 Average Power (dBm)			Antenna 2 Average Power (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
UNII-1 5.2 GHz	802.11ac (VHT80)	42	5210	7.8	9.0	No	7.6	9.0	No
Band	Mode	Ch #	Freq. (MHz)	Antenna 1 Average Power (dBm)			Antenna 2 Average Power (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
UNII-2A 5.3 GHz	802.11ac (VHT80)	58	5290	7.4	9.0	Yes	7.2	9.0	Yes
Band	Mode	Ch #	Freq. (MHz)	Antenna 1 Average Power (dBm)			Antenna 2 Average Power (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
UNII-2C 5.5 GHz	802.11ac (VHT80)	106	5530	7.1	8.5	Yes	7.6	8.5	Yes
		122	5610	6.9	8.5		6.9	8.5	
		138	5690	7.0	8.5		7.0	8.5	
Band	Mode	Ch #	Freq. (MHz)	Antenna 1 Average Power (dBm)			Antenna 2 Average Power (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
UNII-3 5.8 GHz	802.11ac (VHT80)	155	5775	7.2	8.5	Yes	6.9	8.5	Yes

Power State B/C Wi-Fi 5 GHz Measured Results

Band	Mode	Ch #	Freq. (MHz)	Antenna 1 Average Power (dBm)			Antenna 2 Average Power (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
UNII-1 5.2 GHz	802.11ac (VHT80)	42	5210	13.0	14.0	No	13.3	14.0	No
Band	Mode	Ch #	Freq. (MHz)	Antenna 1 Average Power (dBm)			Antenna 2 Average Power (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
UNII-2A 5.3 GHz	802.11ac (VHT80)	58	5290	15.3	15.8	Yes	15.1	15.8	Yes
Band	Mode	Ch #	Freq. (MHz)	Antenna 1 Average Power (dBm)			Antenna 2 Average Power (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
UNII-2C 5.5 GHz	802.11ac (VHT80)	106	5530	12.4	14.0	Yes	12.5	14.0	Yes
		122	5610	12.4	14.0		12.4	14.0	
		138	5690	12.6	14.0		12.3	14.0	
Band	Mode	Ch #	Freq. (MHz)	Antenna 1 Average Power (dBm)			Antenna 2 Average Power (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
UNII-3 5.8 GHz	802.11ac (VHT80)	155	5775	12.0	14.0	Yes	12.2	14.0	Yes

Power State F Wi-Fi 5 GHz Measured Results

Band	Mode	Ch #	Freq. (MHz)	Antenna 1 Average Power (dBm)			Antenna 2 Average Power (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
UNII-1 5.2 GHz	802.11ac (VHT80)	42	5210	3.5	4.0	No	2.9	4.0	No
Band	Mode	Ch #	Freq. (MHz)	Antenna 1 Average Power (dBm)			Antenna 2 Average Power (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
UNII-2A 5.3 GHz	802.11ac (VHT80)	58	5290	3.7	4.0	Yes	3.5	4.0	Yes
Band	Mode	Ch #	Freq. (MHz)	Antenna 1 Average Power (dBm)			Antenna 2 Average Power (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
UNII-2C 5.5 GHz	802.11ac (VHT80)	106	5530	3.8	4.0	Yes	3.7	4.0	Yes
		122	5610	3.7	4.0		3.4	4.0	
		138	5690	3.9	4.0		3.5	4.0	
Band	Mode	Ch #	Freq. (MHz)	Antenna 1 Average Power (dBm)			Antenna 2 Average Power (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
UNII-3 5.8 GHz	802.11ac (VHT80)	155	5775	3.8	4.0	Yes	3.4	4.0	Yes

9.7. Bluetooth

Maximum Output Power (Tune-up Limit) for Bluetooth

From October 2016 TCB workshop, Power and SAR measurements were performed with test software using DH5 modulation and a duty cycle of 100%.

SAR measurement is not required for the EDR and LE. When the secondary mode is $\leq 1/4$ dB higher than the primary mode.

Bluetooth Measured Results

Band	Mode	Ch #	Freq. (MHz)	Antenna 1 Average Power (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)
2.4	BR GFSK	0	2402	8.0	9.0	Yes
		39	2441	8.5	9.0	
		78	2480	9.0	9.0	
	EDR, $\pi/4$ DQPSK	0	2402	5.2	7.5	No
		39	2441	4.4	7.5	
		78	2480	5.3	7.5	
	EDR, 8-DPSK	0	2402	5.2	7.5	No
		39	2441	4.4	7.5	
		78	2480	5.3	7.5	
	LE, GFSK	0	2402	4.9	7.5	No
		19	2440	4.8	7.5	
		39	2480	6.0	7.5	

Duty Factor Measured Results

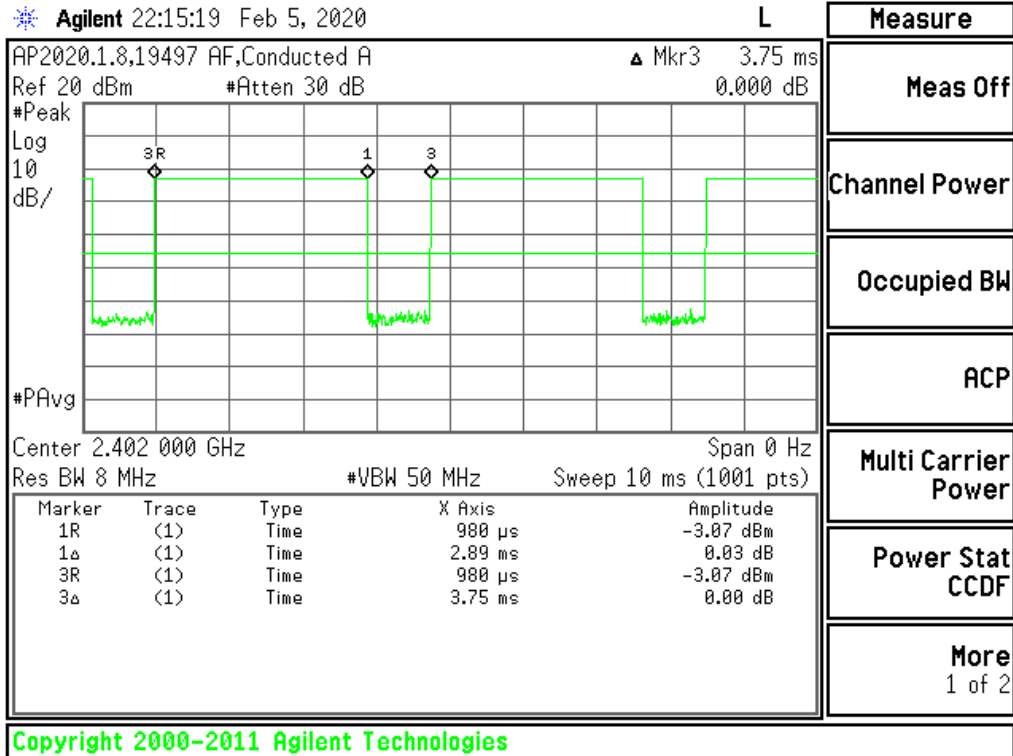
Mode	Type	T on (ms)	Period (ms)	Duty Cycle	Crest Factor (1/duty cycle)
GFSK	DH5	2.89	3.75	77.07%	1.30

Note(s):

Duty Cycle = (T on / period) * 100%

Duty Cycle plots

GFSK



10. Measured and Reported (Scaled) SAR Results

SAR Test Reduction criteria are as follows:

- Reported SAR(W/kg) for WWAN and Bluetooth = Measured SAR *Tune-up Scaling Factor
- Reported SAR(W/kg) for Wi-Fi = Measured SAR * Tune-up scaling factor * Duty Cycle scaling factor
- Duty Cycle scaling factor = 1 / Duty cycle (%)

KDB 447498 D01 General RF Exposure Guidance:

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

KDB 648474 D04 Handset SAR:

With headset attached, when the reported SAR for body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

KDB 648474 D04 Handset SAR (Phablet Only):

For smart phones, with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm.

When hotspot mode does not apply, 10-g Extremity SAR is required for all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge in direct contact with a flat phantom, to address interactive hand use exposure conditions. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

Additional 1-g SAR testing at 5 mm is not required when hotspot mode 10-g extremity SAR is not required for the surfaces and edges; since all 1-g reported SAR < 1.2 W/kg.

KDB 941225 D01 SAR test for 3G devices:

When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

KDB 941225 D05 SAR for LTE Devices:

SAR test reduction is applied using the following criteria:

- Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel.
- When the reported SAR is > 0.8 W/kg, testing for other Channels is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
- Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are > 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
- Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
- Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.
- For LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing; therefore, the requirement for H, M and L channels may not fully apply.

KDB 248227 D01 SAR meas for 802.11:

SAR test reduction for 802.11 Wi-Fi transmission mode configurations are considered separately for DSSS and OFDM. An initial test position is determined to reduce the number of tests required for certain exposure configurations with multiple test positions. An initial test configuration is determined for each frequency band and aggregated band according to maximum output power, channel bandwidth, wireless mode configurations and other operating parameters to streamline the measurement requirements. For 2.4 GHz DSSS, either the initial test position or DSSS procedure is applied to reduce the number of SAR tests; these are mutually exclusive. For OFDM, an initial test position is only applicable to next to the ear, UMPC mini-tablet and hotspot mode configurations, which is tested using the initial test configuration to facilitate test reduction. For other exposure conditions with a fixed test position, SAR test reduction is determined using only the initial test configuration.

The multiple test positions require SAR measurements in head, hotspot mode or UMPC mini-tablet configurations may be reduced according to the highest reported SAR determined using the initial test position(s) by applying the DSSS or OFDM SAR measurement procedures in the required wireless mode test configuration(s). The initial test position(s) is measured using the highest measured maximum output power channel in the required wireless mode test configuration(s). When the reported SAR for the initial test position is:

- ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.
- > 0.4 W/kg, SAR is repeated using the same wireless mode test configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions are tested.
 - For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
 - When it is unclear, all equivalent conditions must be tested.
- For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required test channels are considered.
 - The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.
- When the specified maximum output power is the same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the reported SAR for UNII 2A is ≤ 1.2 W/kg, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.
- When the specified maximum output power is different between UNII 1 and UNII 2A, begin SAR with the band that has the higher specified maximum output. If the highest reported SAR for the band with the highest specified power is ≤ 1.2 W/kg, testing for the band with the lower specified output power is not required; otherwise test the remaining bands independently for SAR.

To determine the initial test position, Area Scans were performed to determine the position with the *Maximum Value of SAR (measured)*. The position that produced the highest *Maximum Value of SAR* is considered the worst case position; thus used as the initial test position.

10.1. GSM850

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up Limit	Meas.	Meas.	Scaled	
Head	GPRS 2 Slots	Power State B 360°	0	Left Touch	190	836.6	32.7	31.6	0.072	0.093	
				Left Tilt	190	836.6	32.7	31.6	0.063	0.081	
				Right Touch	190	836.6	32.7	31.6	0.129	0.166	1
				Right Tilt	190	836.6	32.7	31.6	0.054	0.070	
Body-worn & Hotspot	GPRS 1 Slot	Power State C/D 0°	10	Rear	190	836.6	32.5	31.6	0.327	0.402	
				Front	190	836.6	32.5	31.6	0.145	0.178	
				Edge 2	190	836.6	32.5	31.6	0.065	0.080	
				Edge 3	190	836.6	32.5	31.6	0.213	0.262	
		Power State C/D 150°	5	Rear	190	836.6	32.5	31.6	0.224	0.276	
				Edge 2	190	836.6	32.5	31.6	0.043	0.053	
				Edge 3	190	836.6	32.5	31.6	0.157	0.193	
		GPRS 2 Slots	Power State E/F 180°	0	Rear	190	836.6	25.5	24.4	0.127	0.164
	Edge 2				190	836.6	25.5	24.4	0.018	0.023	
	Edge 3				190	836.6	25.5	24.4	0.084	0.109	
	GPRS 2 Slots	Power State B-360°	10	Rear	190	836.6	32.7	31.6	0.420	0.541	2
				Front	190	836.6	32.7	31.6	0.333	0.429	
				Edge 2	190	836.6	32.7	31.6	0.173	0.223	
				Edge 3	190	836.6	32.7	31.6	0.528	0.680	3

10.2. GSM1900

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up Limit	Meas.	Meas.	Scaled	
Head	GPRS 2 Slots	Power State B 360°	0	Left Touch	661	1880.0	30.5	29.3	0.225	0.297	
				Left Tilt	661	1880.0	30.5	29.3	0.179	0.236	
				Right Touch	661	1880.0	30.5	29.3	0.535	0.705	
				Right Tilt	661	1880.0	30.5	29.3	0.142	0.187	
		Power State B 180°	0	Right Touch	512	1850.2	30.5	29.6	0.598	0.736	
					661	1880.0	30.5	29.3	0.685	0.903	4
					810	1909.8	30.5	29.6	0.620	0.763	
Body-worn & Hot-spot	GPRS 2 Slots	Power State C/D 0°	10	Rear	661	1880.0	25.6	24.4	0.165	0.218	
				Front	661	1880.0	25.6	24.4	0.089	0.117	
				Edge 2	661	1880.0	25.6	24.4	0.105	0.138	
				Edge 3	661	1880.0	25.6	24.4	0.069	0.091	
		Power State C/D 150°	5	Rear	661	1880.0	25.6	24.4	0.423	0.558	
				Edge 2	661	1880.0	25.6	24.4	0.187	0.247	
	Edge 3			661	1880.0	25.6	24.4	0.125	0.165		
	GPRS 1 Slots	Power State E/F 180°	0	Rear	661	1880.0	21.9	20.5	0.494	0.689	5
				Edge 2	661	1880.0	21.9	20.5	0.120	0.167	
				Edge 3	661	1880.0	21.9	20.5	0.114	0.159	
	GPRS 2 Slots	Power State B-360°	10	Rear	661	1880.0	29.0	28.9	0.280	0.289	
				Front	661	1880.0	29.0	28.9	0.526	0.542	
				Edge 2	661	1880.0	29.0	28.9	0.283	0.292	
Edge 3				661	1880.0	29.0	28.9	0.175	0.180		

10.3. W-CDMA Band II

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up Limit	Meas.	Meas.	Scaled	
Head	Rel 99 RMC 12.2 kbps	Power State B 360°	0	Left Touch	9400	1880.0	25.0	24.2	0.263	0.316	
				Left Tilt	9400	1880.0	25.0	24.2	0.170	0.204	
				Right Touch	9400	1880.0	25.0	24.2	0.651	0.783	
				Right Tilt	9400	1880.0	25.0	24.2	0.148	0.178	
		Power State B 180°	0	Right Touch	9262	1852.4	25.0	24.2	0.998	1.200	
					9400	1880.0	25.0	24.2	1.030	1.238	6
					9538	1907.6	25.0	24.1	0.978	1.203	
Body-w orn & Hotspot	Rel 99 RMC 12.2 kbps	Power State C/D 0°	10	Rear	9400	1880.0	19.6	18.7	0.161	0.198	
				Front	9400	1880.0	19.6	18.7	0.087	0.107	
				Edge 2	9400	1880.0	19.6	18.7	0.072	0.088	
				Edge 3	9400	1880.0	19.6	18.7	0.052	0.064	
		Power State C/D 150°	5	Rear	9400	1880.0	19.6	18.7	0.443	0.544	
				Edge 2	9400	1880.0	19.6	18.7	0.243	0.298	
				Edge 3	9400	1880.0	19.6	18.7	0.148	0.182	
		Power State E/F 180°	0	Rear	9262	1852.4	13.6	12.7	0.719	0.877	
					9400	1880.0	13.6	12.7	0.655	0.800	
					9538	1907.6	13.6	12.8	0.743	0.904	
				Edge 2	9400	1880.0	13.6	12.7	0.212	0.259	
		Edge 3	9400	1880.0	13.6	12.7	0.173	0.211			
		Power State B- 360°	10	Rear	9400	1880.0	24.2	24.0	0.442	0.463	
				Front	9262	1852.4	24.2	24.1	0.925	0.947	
					9400	1880.0	24.2	24.0	0.852	0.892	
					9538	1907.6	24.2	24.0	0.905	0.948	7
				Edge 2	9400	1880.0	24.2	24.0	0.379	0.397	
		Edge 3	9400	1880.0	24.2	24.0	0.270	0.283			

10.4. W-CDMA Band V

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up Limit	Meas.	Meas.	Scaled	
Head	Rel 99 RMC 12.2 kbps	Power State B 360°	0	Left Touch	4183	836.6	25.0	24.2	0.097	0.117	
				Left Tilt	4183	836.6	25.0	24.2	0.080	0.096	
				Right Touch	4183	836.6	25.0	24.2	0.164	0.197	8
				Right Tilt	4183	836.6	25.0	24.2	0.085	0.102	
Body-worn & Hot-spot	Rel 99 RMC 12.2 kbps	Power State C/D 0°	10	Rear	4183	836.6	23.1	22.4	0.400	0.467	
				Front	4183	836.6	23.1	22.4	0.171	0.200	
				Edge 2	4183	836.6	23.1	22.4	0.101	0.118	
				Edge 3	4183	836.6	23.1	22.4	0.262	0.306	
		Power State C/D 150°	5	Rear	4132	826.4	23.1	22.4	0.804	0.936	
					4183	836.6	23.1	22.4	0.926	1.081	9
					4233	846.6	23.1	22.4	0.872	1.023	
				Edge 2	4183	836.6	23.1	22.4	0.090	0.105	
		Edge 3	4183	836.6	23.1	22.4	0.577	0.673			
		Power State E/F 180°	0	Rear	4132	826.4	18.0	17.8	0.937	0.974	
					4183	836.6	18.0	17.8	1.020	1.076	
					4233	846.6	18.0	17.7	0.943	1.002	
				Edge 2	4183	836.6	18.0	17.8	0.037	0.039	
		Edge 3	4183	836.6	18.0	17.8	0.340	0.359			
		Power State B- 360°	10	Rear	4183	836.6	25.0	24.2	0.250	0.301	
				Front	4183	836.6	25.0	24.2	0.448	0.539	
				Edge 2	4183	836.6	25.0	24.2	0.111	0.133	
				Edge 3	4183	836.6	25.0	24.2	0.326	0.392	

10.5. LTE Band 5 (10MHz Bandwidth)

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.		
									Tune-up Limit	Meas.	Meas.	Scaled			
Head	QPSK	Power State B 360°	0	Left Touch	20525	836.5	1	25	25.0	23.9	0.082	0.106	10		
							25	0	24.0	22.9	0.064	0.082			
				Left Tilt	20525	836.5	1	25	25.0	23.9	0.079	0.102			
							25	0	24.0	22.9	0.063	0.081			
				Right Touch	20525	836.5	1	25	25.0	23.9	0.151	0.195			
							25	0	24.0	22.9	0.123	0.158			
			Right Tilt	20525	836.5	1	25	25.0	23.9	0.068	0.088				
						25	0	24.0	22.9	0.054	0.070				
			Body-worn & Hot-spot	QPSK	Power State C/D 0°	10	Rear	20525	836.5	1	25	22.7	22.0	0.305	0.358
										25	0	22.7	22.0	0.308	0.362
							Front	20525	836.5	1	25	22.7	22.0	0.127	0.149
										25	0	22.7	22.0	0.129	0.152
Edge 2	20525	836.5					1	25	22.7	22.0	0.079	0.093			
							25	0	22.7	22.0	0.081	0.095			
Edge 3	20525	836.5					1	25	22.7	22.0	0.215	0.253			
							25	0	22.7	22.0	0.231	0.271			
5	Rear	20525					836.5	1	25	22.7	22.0	0.810	0.952		
								25	0	22.7	22.0	0.821	0.965		
	Edge 2	20525					836.5	1	25	22.7	22.0	0.073	0.086		
								25	0	22.7	22.0	0.071	0.083		
	Edge 3	20525				836.5	1	25	22.7	22.0	0.494	0.580			
							25	0	22.7	22.0	0.499	0.586			
	Power State E/F 180°	0				Rear	20525	836.5	1	49	17.5	17.2	0.756	0.810	
									25	0	17.5	17.3	0.795	0.832	
						Edge 2	20525	836.5	1	49	17.5	17.2	0.027	0.029	
									25	0	17.5	17.3	0.025	0.026	
						Edge 3	20525	836.5	1	49	17.5	17.2	0.253	0.271	
									25	0	17.5	17.3	0.273	0.286	
Power State B-360°		10				Rear	20525	836.5	1	25	25.0	23.9	0.234	0.301	
									25	0	24.0	22.9	0.191	0.246	
						Front	20525	836.5	1	25	25.0	23.9	0.419	0.540	
									25	0	24.0	22.9	0.343	0.442	
					Edge 2	20525	836.5	1	25	25.0	23.9	0.102	0.131		
								25	0	24.0	22.9	0.082	0.106		
	Edge 3	20525			836.5	1	25	25.0	23.9	0.260	0.335				
						25	0	24.0	22.9	0.227	0.292				

10.6. LTE Band 7 (20MHz Bandwidth)

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.				
									Tune-up Limit	Meas.	Meas.	Scaled					
Head	QPSK	Power State B 360°	0	Left Touch	21100	2535.0	1	0	25.0	23.9	0.164	0.211					
							50	0	24.0	22.9	0.129	0.166					
				Left Tilt	21100	2535.0	1	0	25.0	23.9	0.213	0.274					
							50	0	24.0	22.9	0.182	0.234					
				Right Touch	21100	2535.0	1	0	25.0	23.9	0.537	0.692					
							50	0	24.0	22.9	0.449	0.578					
				Right Tilt	21100	2535.0	1	0	25.0	23.9	0.165	0.213					
							50	0	24.0	22.9	0.140	0.180					
		Power State B 180°	0	Right Touch	20850	2510.0	1	0	25.0	23.9	0.653	0.841					
					21100	2535.0	1	0	25.0	23.9	0.830	1.069					
					21350	2560.0	1	0	25.0	24.0	1.010	1.272	12				
		Body-worn & Hot-spot	QPSK	Power State C/D 0°	10	Rear	21100	2535.0	1	0	17.8	16.3	0.180	0.254			
50	0								17.8	16.5	0.183	0.247					
Front	21100					2535.0	1	0	17.8	16.3	0.054	0.077					
							50	0	17.8	16.5	0.055	0.075					
Edge 2	21100					2535.0	1	0	17.8	16.3	0.096	0.136					
							50	0	17.8	16.5	0.102	0.138					
Edge 3	21100					2535.0	1	0	17.8	16.3	0.073	0.103					
							50	0	17.8	16.5	0.078	0.105					
Power State C/D 150°	5					Rear	21100	2535.0	1	99	17.8	16.4	0.521	0.719			
									50	50	17.8	16.4	0.533	0.736			
									1	0	17.8	16.3	0.675	0.953			
									50	0	17.8	16.5	0.667	0.900			
				100	0				17.8	16.5	0.650	0.877					
				21350	2560.0				1	0	17.8	16.4	0.736	1.016	13		
				Edge 2	21100	2535.0	1	0	17.8	16.3	0.275	0.388					
							50	0	17.8	16.5	0.274	0.370					
				Edge 3	21100	2535.0	1	0	17.8	16.3	0.138	0.195					
							50	0	17.8	16.5	0.143	0.193					
				Power State E/F 180°	0	Rear	21100	2535.0	1	0	10.2	9.1	0.498	0.642			
									50	24	10.2	9.1	0.545	0.702			
Edge 2	21100					2535.0	1	0	10.2	9.1	0.120	0.155					
							50	24	10.2	9.1	0.125	0.161					
Edge 3	21100					2535.0	1	0	10.2	9.1	0.122	0.157					
							50	24	10.2	9.1	0.127	0.164					
Power State B-360°	10			Rear	21100	2535.0	1	0	19.8	19.6	0.208	0.216					
							50	24	19.8	19.6	0.211	0.220					
				Front	21100	2535.0	1	0	19.8	19.6	0.542	0.562					
							50	24	19.8	19.6	0.576	0.601					
				Edge 2	21100	2535.0	1	0	19.8	19.6	0.186	0.193					
							50	24	19.8	19.6	0.188	0.196					
				Edge 3	21100	2535.0	1	0	19.8	19.6	0.196	0.203					
							50	24	19.8	19.6	0.205	0.214					
				RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		10-g SAR (W/kg)		Plot No.
													Tune-up Limit	Meas.	Meas.	Scaled	
				Extremity	QPSK	Power State B-360°	0	Front	20850	2510.0	1	0	19.8	19.6	3.060	3.174	
											50	24	19.8	19.6	3.100	3.233	
21100	2535.0								1	0	19.8	19.6	3.030	3.143			
									50	24	19.8	19.6	3.330	3.473			
21350	2560.0								1	0	19.8	19.6	3.320	3.444			
									50	0	19.8	19.6	3.310	3.433			
										19.8	19.6	3.420	3.567	14			

10.7. LTE Band 12 (10MHz Bandwidth)

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.			
									Tune-up Limit	Meas.	Meas.	Scaled				
Head	QPSK	Power State B 360°	0	Left Touch	23095	707.5	1	0	25.5	24.5	0.082	0.103				
							25	0	24.5	23.6	0.075	0.092				
				Left Tilt	23095	707.5	1	0	25.5	24.5	0.083	0.104				
							25	0	24.5	23.6	0.055	0.068				
				Right Touch	23095	707.5	1	0	25.5	24.5	0.121	0.152	15			
							25	0	24.5	23.6	0.116	0.143				
			Right Tilt	23095	707.5	1	0	25.5	24.5	0.061	0.077					
						25	0	24.5	23.6	0.055	0.068					
			Body-worn & Hot-spot	QPSK	Power State C/D 0°	10	Rear	23095	707.5	1	0	24.5	24.5	0.353	0.353	
										25	0	24.5	23.9	0.367	0.421	
							Front	23095	707.5	1	0	24.5	24.5	0.149	0.149	
										25	0	24.5	23.9	0.158	0.181	
Edge 2	23095	707.5					1	0	24.5	24.5	0.130	0.130				
							25	0	24.5	23.9	0.145	0.166				
Edge 3	23095	707.5					1	0	24.5	24.5	0.186	0.186				
							25	0	24.5	23.9	0.197	0.226				
5	Rear	23095					707.5	1	0	24.5	24.5	0.692	0.692			
								25	0	24.5	23.9	0.722	0.829			
	Edge 2	23095					707.5	1	0	24.5	24.5	0.061	0.061			
								25	0	24.5	23.9	0.067	0.077			
	Edge 3	23095				707.5	1	0	24.5	24.5	0.354	0.354				
							25	0	24.5	23.9	0.214	0.246				
	Power State E/F 180°	0				Rear	23095	707.5	1	25	19.7	19.4	0.820	0.879		
									25	0	19.7	19.4	0.858	0.919	16	
						Edge 2	23095	707.5	1	25	19.7	19.4	0.040	0.043		
									25	0	19.7	19.4	0.038	0.041		
						Edge 3	23095	707.5	1	25	19.7	19.4	0.400	0.429		
									25	0	19.7	19.4	0.333	0.357		
10		Rear				23095	707.5	1	0	25.5	24.5	0.187	0.235			
								25	0	24.5	23.6	0.177	0.218			
		Front				23095	707.5	1	0	25.5	24.5	0.399	0.502			
								25	0	24.5	23.6	0.384	0.472			
		Edge 2			23095	707.5	1	0	25.5	24.5	0.131	0.165				
							25	0	24.5	23.6	0.131	0.161				
Edge 3	23095	707.5			1	0	25.5	24.5	0.192	0.242						
					25	0	24.5	23.6	0.177	0.218						

10.8. LTE Band 13 (10MHz Bandwidth)

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.			
									Tune-up Limit	Meas.	Meas.	Scaled				
Head	QPSK	Power State B 360°	0	Left Touch	23230	782.0	1	25	25.5	24.4	0.088	0.113				
							25	25	24.5	23.4	0.083	0.107				
				Left Tilt	23230	782.0	1	25	25.5	24.4	0.082	0.106				
							25	25	24.5	23.4	0.062	0.080				
				Right Touch	23230	782.0	1	25	25.5	24.4	0.155	0.200	17			
							25	25	24.5	23.4	0.142	0.183				
			Right Tilt	23230	782.0	1	25	25.5	24.4	0.067	0.086					
						25	25	24.5	23.4	0.065	0.084					
			Body-worn & Hot-spot	QPSK	Power State C/D 0°	10	Rear	23230	782.0	1	25	23.8	23.6	0.138	0.145	
										25	12	23.8	23.8	0.145	0.145	
							Front	23230	782.0	1	25	23.8	23.6	0.320	0.335	
										25	12	23.8	23.8	0.337	0.337	
Edge 2	23230	782.0					1	25	23.8	23.6	0.121	0.127				
							25	12	23.8	23.8	0.127	0.127				
Edge 3	23230	782.0					1	25	23.8	23.6	0.191	0.200				
							25	12	23.8	23.8	0.200	0.200				
5	Rear	23230					782.0	1	25	23.8	23.6	0.753	0.788			
								25	12	23.8	23.8	0.786	0.786			
	Edge 2	23230					782.0	1	25	23.8	23.6	0.076	0.080			
								25	12	23.8	23.8	0.080	0.080			
	Edge 3	23230				782.0	1	25	23.8	23.6	0.494	0.517				
							25	12	23.8	23.8	0.539	0.539				
	Power State E/F 180°	0				Rear	23230	782.0	1	49	18.4	18.3	0.855	0.875		
									25	25	18.4	18.4	0.905	0.905		
						Edge 2	23230	782.0	1	49	18.4	18.3	1.110	1.110	18	
									25	0	18.4	18.4	0.039	0.040		
						Edge 3	23230	782.0	1	49	18.4	18.3	0.039	0.039		
									25	25	18.4	18.4	0.308	0.315		
Edge 3		23230				782.0	1	49	18.4	18.3	0.329	0.329				
							25	25	18.4	18.4	0.329	0.329				
Power State B-360°		10				Rear	23230	782.0	1	25	25.5	24.4	0.253	0.326		
									25	25	24.5	23.4	0.240	0.309		
					Front		23230	782.0	1	25	25.5	24.4	0.494	0.636		
									25	25	24.5	23.4	0.469	0.604		
	Edge 2				23230		782.0	1	25	25.5	24.4	0.170	0.219			
								25	25	24.5	23.4	0.161	0.207			
	Edge 3				23230	782.0	1	25	25.5	24.4	0.254	0.327				
							25	25	24.5	23.4	0.243	0.313				

10.9. LTE Band 14 (10MHz Bandwidth)

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.					
									Tune-up Limit	Meas.	Meas.	Scaled						
Head	QPSK	Power State B 360°	0	Left Touch	23330	793.0	1	49	25.5	24.4	0.123	0.158						
							25	0	24.5	23.5	0.110	0.138						
				Left Tilt	23330	793.0	1	49	25.5	24.4	0.088	0.113						
							25	0	24.5	23.5	0.061	0.077						
				Right Touch	23330	793.0	1	49	25.5	24.4	0.222	0.286	19					
							25	0	24.5	23.5	0.180	0.227						
			Right Tilt	23330	793.0	1	49	25.5	24.4	0.104	0.134							
						25	0	24.5	23.5	0.078	0.098							
			Body-worn & Hot-spot	QPSK	Power State C/D 0°	10	Rear	23330	793.0	1	0	23.2	23.2	0.473	0.473			
										25	25	23.2	23.2	0.427	0.427			
							Front	23330	793.0	1	0	23.2	23.2	0.203	0.203			
										25	25	23.2	23.2	0.183	0.183			
Edge 2	23330	793.0					1	0	23.2	23.2	0.119	0.119						
							25	25	23.2	23.2	0.125	0.125						
Edge 3	23330	793.0				1	0	23.2	23.2	0.165	0.165							
						25	25	23.2	23.2	0.171	0.171							
Power State C/D 150°	5	Rear				23330	793.0	1	0	23.2	23.2	0.875	0.875					
								25	25	23.2	23.2	0.874	0.874					
								50	0	23.2	23.1	0.925	0.947					
		Edge 2				23330	793.0	1	0	23.2	23.2	0.086	0.086					
					25			25	23.2	23.2	0.102	0.102						
					1			0	23.2	23.2	0.502	0.502						
Edge 3	23330	793.0			1	0	23.2	23.2	0.502	0.502								
					25	25	23.2	23.2	0.523	0.523								
Power State E/F 180°	0	Rear			23330	793.0	1	25	18.4	18.3	0.983	1.006						
							25	0	18.4	18.4	1.110	1.110	20					
							50	0	18.4	18.3	0.873	0.893						
							1	25	18.4	18.3	0.045	0.046						
							25	0	18.4	18.4	0.046	0.046						
							1	25	18.4	18.3	0.315	0.322						
		Edge 2			23330	793.0	1	25	18.4	18.3	0.046	0.046						
							25	0	18.4	18.4	0.347	0.347						
							Edge 3	23330	793.0	1	25	18.4	18.3	0.315	0.322			
										25	0	18.4	18.4	0.347	0.347			
							Power State B-360°	10	Rear	23330	793.0	1	49	25.5	24.4	0.291	0.375	
												25	0	24.5	23.5	0.259	0.326	
Front	23330	793.0			1	49						25.5	24.4	0.497	0.640			
					25	0						24.5	23.5	0.445	0.560			
Edge 2	23330	793.0			1	49						25.5	24.4	0.191	0.246			
					25	0						24.5	23.5	0.150	0.189			
Edge 3	23330	793.0			1	49			25.5	24.4	0.264	0.340						
					25	0			24.5	23.5	0.199	0.251						

10.10. LTE Band 25 (20MHz Bandwidth)

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.				
									Tune-up Limit	Meas.	Meas.	Scaled					
Head	QPSK	Power State B 360°	0	Left Touch	26365	1882.5	1	49	25.0	24.2	0.285	0.343					
							50	24	24.0	23.3	0.232	0.273					
				Left Tilt	26365	1882.5	1	49	25.0	24.2	0.177	0.213					
							50	24	24.0	23.3	0.142	0.167					
				Right Touch	26365	1882.5	1	49	25.0	24.2	0.634	0.762					
							50	24	24.0	23.3	0.507	0.596					
				Right Tilt	26365	1882.5	1	49	25.0	24.2	0.127	0.153					
							50	24	24.0	23.3	0.115	0.135					
		Power State B 180°	0	Right Touch	26140	1860.0	1	0	25.0	24.2	0.980	1.178					
					26365	1882.5	1	49	25.0	24.2	1.040	1.250	21				
					26590	1905.0	1	0	25.0	24.2	0.958	1.152					
Body-worn & Hot-spot	QPSK	Power State C/D 0°	10	Rear	26365	1882.5	1	49	19.6	18.9	0.143	0.167					
							50	24	19.6	18.9	0.145	0.171					
				Front	26365	1882.5	1	49	19.6	18.9	0.082	0.096					
							50	24	19.6	18.9	0.084	0.099					
				Edge 2	26365	1882.5	1	49	19.6	18.9	0.086	0.101					
							50	24	19.6	18.9	0.092	0.109					
				Edge 3	26365	1882.5	1	49	19.6	18.9	0.037	0.043					
							50	24	19.6	18.9	0.058	0.068					
				Power State C/D 150°	5	Rear	26140	1860.0	1	49	19.6	18.9	0.485	0.566			
									50	24	19.6	18.9	0.495	0.580			
									26365	1882.5	1	49	19.6	18.9	0.692	0.809	
											50	24	19.6	18.9	0.744	0.878	
		26590	1905.0			1	0	19.6	18.9	0.433	0.513						
						50	50	19.6	19.0	0.466	0.541						
		Edge 2	26365			1882.5	1	49	19.6	18.9	0.243	0.284					
							50	24	19.6	18.9	0.263	0.310					
		Edge 3	26365			1882.5	1	49	19.6	18.9	0.119	0.139					
							50	24	19.6	18.9	0.161	0.190					
		Power State E/F 180°	0			Rear	26365	1882.5	1	0	13.6	12.5	0.596	0.761			
									50	24	13.6	12.5	0.612	0.782			
				Edge 2	26365	1882.5	1	0	13.6	12.5	0.187	0.239					
							50	24	13.6	12.5	0.195	0.249					
				Edge 3	26365	1882.5	1	0	13.6	12.5	0.182	0.232					
							50	24	13.6	12.5	0.182	0.233					
		Power State B-360°	10	Rear	26365	1882.5	1	0	24.2	24.2	0.546	0.546					
							50	24	24.0	23.3	0.436	0.512					
				Front	26140	1860.0	1	0	24.2	24.2	0.693	0.693					
							50	24	24.0	23.2	0.622	0.748					
					26365	1882.5	1	0	24.2	24.2	0.957	0.957	22				
							50	24	24.0	23.3	0.749	0.880					
					26590	1905.0	1	49	24.2	24.2	0.945	0.945					
							50	24	24.0	23.2	0.760	0.914					
				Edge 2	26365	1882.5	1	0	24.2	24.2	0.508	0.508					
							50	24	24.0	23.3	0.388	0.456					
				Edge 3	26365	1882.5	1	0	24.2	24.2	0.250	0.250					
							50	24	24.0	23.3	0.194	0.228					

10.11. LTE Band 26 (15MHz Bandwidth)

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.			
									Tune-up Limit	Meas.	Meas.	Scaled				
Head	QPSK	Power State B 360°	0	Left Touch	26865	831.5	1	0	25.0	24.0	0.078	0.098				
							36	0	24.0	23.0	0.060	0.076				
				Left Tilt	26865	831.5	1	0	25.0	24.0	0.057	0.072				
							36	0	24.0	23.0	0.049	0.062				
				Right Touch	26865	831.5	1	0	25.0	24.0	0.122	0.154	23			
							36	0	24.0	23.0	0.105	0.132				
			Right Tilt	26865	831.5	1	0	25.0	24.0	0.056	0.070					
						36	0	24.0	23.0	0.046	0.058					
			Body-worn & Hot-spot	QPSK	Power State C/D 0°	10	Rear	26865	831.5	1	0	22.7	22.2	0.314	0.352	
										36	20	22.7	22.2	0.362	0.402	
							Front	26865	831.5	1	0	22.7	22.2	0.126	0.141	
										36	20	22.7	22.2	0.136	0.151	
Edge 2	26865	831.5					1	0	22.7	22.2	0.063	0.071				
							36	20	22.7	22.2	0.072	0.080				
Edge 3	26865	831.5					1	0	22.7	22.2	0.217	0.243				
							36	20	22.7	22.2	0.226	0.251				
5	Rear	26865					831.5	1	0	22.7	22.2	0.784	0.880			
								36	20	22.7	22.2	0.875	0.973	24		
	Edge 2	26865					831.5	1	0	22.7	22.2	0.067	0.075			
								36	20	22.7	22.2	0.078	0.087			
	Edge 3	26865				831.5	1	0	22.7	22.2	0.529	0.594				
							36	20	22.7	22.2	0.512	0.569				
	Power State E/F 180°	0				Rear	26865	831.5	1	0	18.0	17.7	0.825	0.886		
									36	0	18.0	17.6	0.800	0.883		
						Edge 2	26865	831.5	1	0	18.0	17.7	0.033	0.035		
									36	0	18.0	17.6	0.034	0.038		
						Edge 3	26865	831.5	1	0	18.0	17.7	0.349	0.375		
									36	0	18.0	17.6	0.374	0.413		
10		Rear				26865	831.5	1	0	25.0	24.0	0.223	0.281			
								36	0	24.0	23.0	0.184	0.232			
		Front				26865	831.5	1	0	25.0	24.0	0.464	0.584			
								36	0	24.0	23.0	0.374	0.471			
		Edge 2			26865	831.5	1	0	25.0	24.0	0.100	0.126				
							36	0	24.0	23.0	0.085	0.107				
Edge 3	26865	831.5			1	0	25.0	24.0	0.329	0.414						
					36	0	24.0	23.0	0.268	0.337						

10.12. LTE Band 30 (10MHz Bandwidth)

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.			
									Tune-up Limit	Meas.	Meas.	Scaled				
Head	QPSK	Power State B 360°	0	Left Touch	27710	2310.0	1	49	23.7	22.8	0.174	0.214				
							25	12	22.7	21.9	0.143	0.172				
				Left Tilt	27710	2310.0	1	49	23.7	22.8	0.224	0.276				
							25	12	22.7	21.9	0.183	0.220				
				Right Touch	27710	2310.0	1	49	23.7	22.8	0.385	0.474	25			
							25	12	22.7	21.9	0.262	0.315				
			Right Tilt	27710	2310.0	1	49	23.7	22.8	0.099	0.122					
						25	12	22.7	21.9	0.066	0.079					
			Body-worn & Hot-spot	QPSK	Power State C/D 0°	10	Rear	27710	2310.0	1	49	19.3	18.1	0.215	0.283	
										25	0	19.3	18.2	0.220	0.283	
							Front	27710	2310.0	1	49	19.3	18.1	0.073	0.096	
										25	0	19.3	18.2	0.074	0.095	
Edge 2	27710	2310.0					1	49	19.3	18.1	0.105	0.138				
							25	0	19.3	18.2	0.111	0.143				
Edge 3	27710	2310.0				1	49	19.3	18.1	0.068	0.089					
						25	0	19.3	18.2	0.070	0.090					
Power State C/D 150°	5	Rear				27710	2310.0	1	49	19.3	18.1	0.784	1.034	26		
								25	0	19.3	18.2	0.789	1.016			
								50	0	19.3	18.2	0.720	0.928			
		Edge 2				27710	2310.0	1	49	19.3	18.1	0.338	0.446			
					25			0	19.3	18.2	0.300	0.386				
		Edge 3			27710	2310.0	1	49	19.3	18.1	0.209	0.276				
25	0						19.3	18.2	0.216	0.278						
Power State E/F 180°	0	Rear			27710	2310.0	1	25	12.0	10.8	0.555	0.732				
							25	0	12.0	10.8	0.620	0.817				
							1	25	12.0	10.8	0.217	0.286				
		Edge 2			27710	2310.0	25	0	12.0	10.8	0.235	0.310				
							1	25	12.0	10.8	0.143	0.189				
		Edge 3			27710	2310.0	25	0	12.0	10.8	0.156	0.206				
1	49						22.0	20.1	0.094	0.146						
Power State B-360°	10	Rear			27710	2310.0	1	49	22.0	20.1	0.094	0.146				
							25	0	22.0	20.7	0.098	0.132				
							Front	27710	2310.0	1	49	22.0	20.1	0.315	0.490	
										25	0	22.0	20.7	0.391	0.529	
							Edge 2	27710	2310.0	1	49	22.0	20.1	0.096	0.150	
										25	0	22.0	20.7	0.100	0.135	
		Edge 3			27710	2310.0	1	49	22.0	20.1	0.148	0.230				
							25	0	22.0	20.7	0.182	0.246				

Notes:

RB Allocations 1-7 for Power State B are at a lower Tune-Up Limit than the Tune-Up Limit for described in the Table under **Maximum Output Power (Tune-up Limit) for LTE** in the beginning of §9.3. SAR was tested using a higher measured power than the power listed in §9.3 and was scaled up to the maximum possible Tune-Up Limit.

10.13. LTE Band 41 (20MHz Bandwidth)

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.					
									Tune-up Limit	Meas.	Meas.	Scaled						
Head	QPSK	Power State B 360°	0	Left Touch	41055	2636.5	1	0	25.0	24.9	0.144	0.147	27					
							50	0	24.0	23.9	0.124	0.127						
					Left Tilt	41055	2636.5	1	0	25.0	24.9	0.153		0.157				
								50	0	24.0	23.9	0.127		0.130				
					Right Touch	41055	2636.5	1	0	25.0	24.9	0.442		0.452				
								50	0	24.0	23.9	0.414		0.424				
				Right Tilt	41055	2636.5	1	0	25.0	24.9	0.110	0.113						
							50	0	24.0	23.9	0.088	0.090						
				Body-worn & Hot-spot	QPSK	Power State C/D 0°	10	Rear	40620	2593.0	1	0		18.7	18.2	0.206	0.231	
											50	24		18.7	18.3	0.216	0.237	
									Front	40620	2593.0	1		0	18.7	18.2	0.072	0.081
												50		24	18.7	18.3	0.076	0.083
Edge 2	40620	2593.0	1						0	18.7	18.2	0.103	0.116					
			50						24	18.7	18.3	0.105	0.115					
Edge 3	40620	2593.0	1					0	18.7	18.2	0.085	0.095						
			50					24	18.7	18.3	0.088	0.096						
Power State C/D 150°	5	Rear	39750					2506.0	1	0	18.7	18.2	0.598	0.671				
									50	24	18.7	18.2	0.576	0.646				
			40185					2549.5	1	0	18.7	18.1	0.612	0.703				
									50	24	18.7	18.2	0.687	0.771				
			40620			2593.0	1	0	18.7	18.2	0.816	0.916						
							50	24	18.7	18.3	0.747	0.819						
		41055	2636.5			1	0	18.7	18.3	0.764	0.838							
						100	0	18.7	18.3	0.726	0.796							
		41490	2680.0			1	99	18.7	18.3	0.924	1.013							
						50	50	18.7	18.3	1.030	1.129	28						
		Edge 2	40620			2593.0	1	0	18.7	18.2	0.300	0.337						
							50	24	18.7	18.3	0.312	0.342						
			Edge 3			40620	2593.0	1	0	18.7	18.2	0.161	0.181					
								50	24	18.7	18.3	0.161	0.177					
			Power State E/F 180°			0	Rear	40620	2593.0	1	0	12.3	11.1	0.397	0.523			
										50	0	12.3	11.1	0.368	0.485			
		Edge 2					40620	2593.0	1	0	12.3	11.1	0.217	0.286				
									50	0	12.3	11.1	0.213	0.281				
Edge 3	40620	2593.0					1	0	12.3	11.1	0.139	0.183						
							50	0	12.3	11.1	0.138	0.182						
Power State B-360°	10	Rear	40620			2593.0	1	0	21.3	21.1	0.142	0.149						
							50	24	21.3	21.2	0.131	0.134						
			Front			40620	2593.0	1	0	21.3	21.1	0.526	0.551					
								50	24	21.3	21.2	0.526	0.538					
			Edge 2			40620	2593.0	1	0	21.3	21.1	0.179	0.187					
								50	24	21.3	21.2	0.196	0.201					
		Edge 3	40620			2593.0	1	0	21.3	21.1	0.203	0.213						
							50	24	21.3	21.2	0.200	0.205						
		Extremity	QPSK			Power State B-360°	0	Front	39750	2506.0	1	0	21.3	21.1	2.730	2.847		
											50	24	21.3	21.1	2.880	2.998		
									40185	2549.5	1	0	21.3	21.1	2.840	2.997		
											50	24	21.3	21.1	3.020	3.164		
40620	2593.0								1	0	21.3	21.1	2.860	2.973				
									50	24	21.3	21.2	3.020	3.084				
41055	2636.5								1	0	21.3	21.2	3.200	3.238				
									50	0	21.3	21.3	3.380	3.395				
41490	2680.0								1	99	21.3	21.3	3.350	3.408				
									50	50	21.3	21.2	3.200	3.218				
Power State B-360°	10								Rear	40620	2593.0	1	0	21.3	21.2	3.400	3.440	
												50	24	21.3	21.2	3.400	3.440	
				Front	40620			2593.0		1	0	21.3	21.1	0.200	0.205			
										50	24	21.3	21.2	0.200	0.205			
				Edge 2	40620			2593.0		1	0	21.3	21.1	0.179	0.187			
										50	24	21.3	21.2	0.196	0.201			
				Edge 3	40620			2593.0	1	0	21.3	21.1	0.203	0.213				
									50	24	21.3	21.2	0.200	0.205				

10.14. LTE Band 66 (20MHz Bandwidth)

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.		
									Tune-up Limit	Meas.	Meas.	Scaled			
Head	QPSK	Power State B 360°	0	Left Touch	132322	1745.0	1	0	25.0	24.1	0.254	0.312			
							50	0	24.0	23.2	0.201	0.242			
				Left Tilt	132322	1745.0	1	0	25.0	24.1	0.140	0.172			
							50	0	24.0	23.2	0.112	0.135			
				Right Touch	132322	1745.0	1	0	25.0	24.1	0.584	0.718			
							50	0	24.0	23.2	0.468	0.563			
				Right Tilt	132322	1745.0	1	0	25.0	24.1	0.233	0.287			
							50	0	24.0	23.2	0.188	0.226			
		Power State B 180°	0	Right Touch	132072	1720.0	1	99	25.0	24.1	0.892	1.097			
					132322	1745.0	1	0	25.0	24.1	0.865	1.064			
					132572	1770.0	1	0	25.0	24.1	0.947	1.165	30		
Body-worn & Hot-spot	QPSK	Power State C/D 0°	10	Rear	132322	1745.0	1	0	19.8	19.0	0.173	0.208			
							50	24	19.8	19.0	0.180	0.216			
				Front	132322	1745.0	1	0	19.8	19.0	0.084	0.101			
							50	24	19.8	19.0	0.068	0.082			
				Edge 2	132322	1745.0	1	0	19.8	19.0	0.089	0.107			
							50	24	19.8	19.0	0.088	0.106			
				Edge 3	132322	1745.0	1	0	19.8	19.0	0.051	0.061			
							50	24	19.8	19.0	0.051	0.061			
				Power State C/D 150°	5	Rear	132322	1745.0	1	0	19.8	19.0	0.621	0.747	
									50	24	19.8	19.0	0.627	0.754	
						Edge 2	132322	1745.0	1	0	19.8	19.0	0.248	0.298	
									50	24	19.8	19.0	0.244	0.293	
		Edge 3	132322			1745.0	1	0	19.8	19.0	0.205	0.246			
							50	24	19.8	19.0	0.195	0.234			
		Power State E/F 180°	0	Rear	132322	1745.0	1	0	13.5	12.6	0.598	0.736			
							50	0	13.5	12.5	0.597	0.752			
				Edge 2	132322	1745.0	1	0	13.5	12.6	0.161	0.198			
							50	0	13.5	12.5	0.163	0.205			
				Edge 3	132322	1745.0	1	0	13.5	12.6	0.126	0.155			
							50	0	13.5	12.5	0.126	0.159			
		Power State B-360°	10	Rear	132322	1745.0	1	0	24.2	24.2	0.385	0.385			
							50	0	24.0	23.3	0.305	0.358			
				Front	132072	1720.0	1	0	24.2	24.1	0.905	0.926	31		
					132322	1745.0	1	0	24.2	24.2	0.813	0.813			
					50	0	24.0	23.3	0.651	0.765					
				Edge 2	132322	1745.0	132572	1770.0	1	0	24.2	24.2	0.894	0.894	
							1	0	24.2	24.2	0.368	0.368			
				Edge 3	132322	1745.0	1	0	24.2	24.2	0.317	0.372			
							50	0	24.0	23.3	0.317	0.372			
									1	0	24.2	24.2	0.203	0.203	
									50	0	24.0	23.3	0.197	0.231	

10.15. Wi-Fi (DTS Band)

When the 802.11b reported SAR of the highest measured maximum output power channel is ≤ 0.8 W/kg, no further SAR testing is required. If SAR is > 0.8 W/kg and ≤ 1.2 W/kg, SAR is required for the next highest measured output power channel. Finally, if SAR is > 1.2 W/kg, SAR is required for the third channel.

SAR testing is not required for OFDM mode(s) when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Antenna 1						Antenna 2						Plot No.
							Area Scan Max. SAR (W/kg)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)		Area Scan Max. SAR (W/kg)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)		
									Tune-up Limit	Meas.	Meas.	Scaled			Tune-up Limit	Meas.	Meas.	Scaled	
Head	SISO 802.11b	Power State B 360°	0	Left Touch	1	2412	0.022	98.8%	11.5	10.4	0.008	0.011							
				Left Tilt	1	2412	0.022	98.8%	11.5	10.4	0.017	0.022							
				Right Touch	1	2412	0.099	98.8%	11.5	10.4	0.069	0.090							
				Right Tilt	1	2412	0.020	98.8%	11.5	10.4	0.013	0.017							
	Power State B 360°	0	Left Touch	6	2437								0.486	98.8%	11.5	10.5	0.241	0.307	33
			Left Tilt	6	2437								0.334	98.8%	11.5	10.5	0.174	0.222	
			Right Touch	6	2437								0.127	98.8%	11.5	10.5	0.087	0.111	
			Right Tilt	6	2437								0.130	98.8%	11.5	10.5	0.088	0.112	
Body-worn & Hot-spot	MIMO 802.11b	Power State C 150°	5	Rear	10	2457	1.390	98.8%	19.1	19.1	0.944	0.955	1.390	98.8%	19.1	19.0	0.683	0.707	34
				Edge 1	10	2457	0.487	98.8%	19.1	19.1	-	-	0.487	98.8%	19.1	19.0	0.323	0.335	
				Edge 2	2	2417	1.190	98.8%	19.1	19.0	0.722	0.748	1.190	98.8%	19.1	18.9	0.682	0.723	
					6	2437	1.700	98.8%	19.1	18.9	0.327	0.347	1.700	98.8%	19.1	19.1	1.180	1.194	35
		Edge 3	10	2457	1.610	98.8%	19.1	19.1	0.278	0.281	1.610	98.8%	19.1	19.0	1.070	1.108			
		Power State E 180°	0	Rear	6	2437	0.912	98.8%	11.5	10.0	0.529	0.756	0.912	98.8%	11.5	10.5	0.356	0.454	
				Edge 1	6	2437	0.487	98.8%	11.5	10.0	-	-	0.487	98.8%	11.5	10.5	0.298	0.380	
				Edge 2	6	2437	0.615	98.8%	11.5	10.0	0.309	0.442	0.615	98.8%	11.5	10.5	0.210	0.268	
	Edge 3			6	2437	0.008	98.8%	11.5	10.0	0.006	0.008	0.008	98.8%	11.5	10.5	-	-		
	MIMO 802.11b	Power State C 0°	10	Rear	10	2457	0.458	98.8%	19.1	19.1	0.301	0.305	0.458	98.8%	19.1	19.0	0.261	0.270	
				Front	10	2457	0.232	98.8%	19.1	19.1	0.146	0.148	0.232	98.8%	19.1	19.0	0.121	0.125	
				Edge 1	10	2457	0.199	98.8%	19.1	19.1	-	-	0.199	98.8%	19.1	19.0	0.123	0.127	
				Edge 2	10	2457	0.563	98.8%	19.1	19.1	0.058	0.059	0.563	98.8%	19.1	19.0	0.397	0.411	
		Edge 3	10	2457	0.046	98.8%	19.1	19.1	0.029	0.029	0.046	98.8%	19.1	19.0	-	-			
		Power State B-360°	10	Rear	10	2457	0.172	98.8%	19.1	19.1	0.113	0.114	0.172	98.8%	19.1	19.0	0.111	0.115	
				Front	10	2457	0.537	98.8%	19.1	19.1	0.248	0.251	0.537	98.8%	19.1	19.0	0.311	0.322	
Edge 1				10	2457	0.250	98.8%	19.1	19.1	-	-	0.250	98.8%	19.1	19.0	0.163	0.169		
Edge 2	10			2457	0.624	98.8%	19.1	19.1	0.136	0.138	0.624	98.8%	19.1	19.0	0.415	0.430			
Edge 3	10	2457	0.063	98.8%	19.1	19.1	0.042	0.043	0.063	98.8%	19.1	19.0	-	-					
MIMO 802.11b	Power State D 150°	5	Rear	6	2437	0.229	98.8%	11.5	10.0	0.132	0.189	0.229	98.8%	11.5	10.5	0.121	0.154		
			Edge 1	6	2437	0.136	98.8%	11.5	10.0	-	-	0.136	98.8%	11.5	10.5	0.102	0.130		
			Edge 2	6	2437	0.134	98.8%	11.5	10.0	0.080	0.115	0.134	98.8%	11.5	10.5	0.089	0.113		
			Edge 3	6	2437	<0.01	98.8%	11.5	10.0	<0.01	<0.01	<0.01	98.8%	11.5	10.5	-	-		
	Power State F 180°	0	Rear	6	2437	0.528	98.8%	8.5	8.4	0.294	0.302	0.528	98.8%	8.5	8.4	0.195	0.201		
			Edge 1	6	2437	0.154	98.8%	8.5	8.4	-	-	0.154	98.8%	8.5	8.4	0.095	0.098		
			Edge 2	6	2437	0.254	98.8%	8.5	8.4	0.180	0.185	0.254	98.8%	8.5	8.4	0.079	0.082		
			Edge 3	6	2437	0.031	98.8%	8.5	8.4	0.014	0.014	<0.01	98.8%	8.5	8.4	-	-		

Notes:

- For results listed with "-", only one antenna was within 25mm of the surface/edge that was measured.

10.16. Wi-Fi (U-NII Band)

UNII-1 &2A

When the specified maximum output power is the same for both UNII band 1 and UNII band 2A, begin SAR measurement in UNII band 2A; and if the highest reported SAR for UNII band 2A is

- ≤ 1.2 W/kg, SAR is not required for UNII band 1
- > 1.2 W/kg, both bands should be tested independently for SAR.

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Antenna 1						Antenna 2						Plot No.		
							Area Scan Max. SAR (W/kg)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)		Area Scan Max. SAR (W/kg)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)				
									Tune-up Limit	Meas.	Meas.	Scaled			Tune-up Limit	Meas.	Meas.	Scaled			
Head	SISO 802.11ac (VHT80)	Power State B 360°	0	Left Touch	58	5290	<0.01	92.7%	9.0	7.4	<0.01	<0.01									
				Left Tilt	58	5290	<0.01	92.7%	9.0	7.4	<0.01	<0.01									
				Right Touch	58	5290	0.066	92.7%	9.0	7.4	0.034	0.053									
				Right Tilt	58	5290	<0.01	92.7%	9.0	7.4	<0.01	<0.01									
	Power State B 360°	0	Left Touch	58	5290								0.278	92.7%	9.0	7.2	0.119	0.194		37	
			Left Tilt	58	5290								0.204	92.7%	9.0	7.2	0.065	0.107			
			Right Touch	58	5290								0.031	92.7%	9.0	7.2	0.013	0.021			
			Right Tilt	58	5290								0.027	92.7%	9.0	7.2	0.017	0.028			
Body-worn & Hot-spot	MIMO 802.11ac (VHT80)	Power State C 150°	5	Rear	58	5290	1.510	92.7%	15.8	15.3	0.832	1.007	1.510	92.7%	15.8	15.1	0.325	0.412		38	
				Edge 1	58	5290	0.336	92.7%	15.8	15.3	-	-	0.336	92.7%	15.8	15.1	0.143	0.181			
				Edge 2	58	5290	1.750	92.7%	15.8	15.3	0.974	1.179	1.750	92.7%	15.8	15.1	0.200	0.254		39	
				Edge 3	58	5290	0.133	92.7%	15.8	15.3	0.064	0.077	0.133	92.7%	15.8	15.1	-	-			
		Power State E 180°	0	Rear	58	5290	1.480	92.7%	9.0	7.4	0.535	0.835	1.480	92.7%	9.0	7.4	0.213	0.332			
				Edge 1	58	5290	0.067	92.7%	9.0	7.4	-	-	0.067	92.7%	9.0	7.4	0.026	0.041			
				Edge 2	58	5290	0.693	92.7%	9.0	7.4	0.420	0.655	0.693	92.7%	9.0	7.4	0.052	0.081			
				Edge 3	58	5290	<0.01	92.7%	9.0	7.4	<0.01	<0.01	<0.01	92.7%	9.0	7.4	<0.01	<0.01			
	MIMO 802.11ac (VHT80)	Power State C 0°	10	Rear	58	5290	0.429	92.7%	15.8	15.3	0.190	0.230	0.429	92.7%	15.8	15.1	0.116	0.147			
				Front	58	5290	0.201	92.7%	15.8	15.3	0.077	0.093	0.201	92.7%	15.8	15.1	0.078	0.099			
				Edge 1	58	5290	0.173	92.7%	15.8	15.3	-	-	0.173	92.7%	15.8	15.1	0.075	0.095			
				Edge 2	58	5290	0.486	92.7%	15.8	15.3	0.282	0.341	0.486	92.7%	15.8	15.1	0.050	0.063			
		Power State B-360°	10	Rear	58	5290	0.130	92.7%	15.8	15.3	0.037	0.045	0.130	92.7%	15.8	15.1	0.050	0.063			
				Front	58	5290	0.380	92.7%	15.8	15.3	0.132	0.160	0.380	92.7%	15.8	15.1	0.159	0.202			
				Edge 1	58	5290	0.124	92.7%	15.8	15.3	-	-	0.124	92.7%	15.8	15.1	0.058	0.074			
				Edge 2	58	5290	0.546	92.7%	15.8	15.3	0.268	0.325	0.546	92.7%	15.8	15.1	0.044	0.056			
	MIMO 802.11ac (VHT80)	Power State D 150°	5	Edge 3	58	5290	0.068	92.7%	15.8	15.3	0.025	0.030	0.068	92.7%	15.8	15.1	-	-			
				Rear	58	5290	0.180	92.7%	9.0	7.4	0.059	0.092	0.180	92.7%	9.0	7.4	0.025	0.039			
				Edge 1	58	5290	0.036	92.7%	9.0	7.4	-	-	0.036	92.7%	9.0	7.4	0.013	0.020			
				Edge 2	58	5290	0.366	92.7%	9.0	7.4	0.169	0.264	0.366	92.7%	9.0	7.4	0.032	0.050			
Power State F 180°		0	Rear	58	5290	0.387	92.7%	4.0	3.7	0.172	0.199	0.387	92.7%	4.0	3.5	0.063	0.076				
			Edge 1	58	5290	0.024	92.7%	4.0	3.7	-	-	0.024	92.7%	4.0	3.5	0.015	0.018				
			Edge 2	58	5290	0.305	92.7%	4.0	3.7	0.231	0.267	0.305	92.7%	4.0	3.5	0.052	0.063				
			Edge 3	58	5290	<0.01	92.7%	4.0	3.7	<0.01	<0.01	<0.01	92.7%	4.0	3.5	-	-				

Note(s):

1. For results listed with “-“, only one antenna was within 25mm of the surface/edge that was measured.

UNII-2C

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Antenna 1						Antenna 2						Plot No.		
							Area Scan Max. SAR (W/kg)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)		Area Scan Max. SAR (W/kg)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)				
									Tune-up Limit	Meas.	Meas.	Scaled			Tune-up Limit	Meas.	Meas.	Scaled			
Head	SISO 802.11ac (VHT80)	Power State B 360°	0	Left Touch	106	5530	<0.01	92.7%	8.5	7.1	<0.01	<0.01									
				Left Tilt	106	5530	<0.01	92.7%	8.5	7.1	<0.01	<0.01									
				Right Touch	106	5530	0.4	92.7%	8.5	7.1	0.088	0.130									
				Right Tilt	106	5530	<0.01	92.7%	8.5	7.1	<0.01	<0.01									
	Power State B 360°	0	Left Touch	106	5530								0.245	92.7%	8.5	7.6	0.154	0.204	41		
			Left Tilt	106	5530								0.238	92.7%	8.5	7.6	0.114	0.151			
			Right Touch	106	5530								0.052	92.7%	8.5	7.6	0.015	0.020			
			Right Tilt	106	5530								0.030	92.7%	8.5	7.6	0.012	0.016			
Body-worn & Hot-spot	MIMO 802.11ac (VHT80)	Power State C 150°	5	Rear	138	5690	0.858	92.7%	14.0	12.6	0.387	0.583	0.858	92.7%	14.0	12.3	0.108	0.172			
				Edge 1	138	5690	0.297	92.7%	14.0	12.6	-	-	0.297	92.7%	14.0	12.3	0.154	0.245	42		
				Edge 2	106	5530	1.650	92.7%	14.0	12.4	0.738	1.148	1.650	92.7%	14.0	12.5	0.083	0.126	43		
					138	5690	1.070	92.7%	14.0	12.6	0.537	0.809	1.070	92.7%	14.0	12.3	0.066	0.105			
		Edge 3	138	5690	<0.01	92.7%	14.0	12.6	<0.01	<0.01	<0.01	92.7%	14.0	12.3	-	-					
		Power State E 180°	0	Rear	106	5530	1.540	92.7%	8.5	7.1	0.596	0.879	1.540	92.7%	8.5	7.6	0.162	0.214	44		
					138	5690	1.260	92.7%	8.5	7.0	0.482	0.738	1.260	92.7%	8.5	7.0	0.100	0.154			
				Edge 1	106	5530	0.161	92.7%	8.5	7.1	-	-	0.161	92.7%	8.5	7.6	0.064	0.085			
	106			5530	1.190	92.7%	8.5	7.1	0.543	0.801	1.190	92.7%	8.5	7.6	0.088	0.116					
	Edge 2	138	5690	0.705	92.7%	8.5	7.0	0.372	0.569	0.705	92.7%	8.5	7.0	0.046	0.071						
	Edge 3	106	5530	<0.01	92.7%	8.5	7.1	<0.01	<0.01	<0.01	92.7%	8.5	7.6	-	-						
	MIMO 802.11ac (VHT80)	Power State C 0°	10	Rear	138	5690	0.186	92.7%	14.0	12.6	0.088	0.133	0.186	92.7%	14.0	12.3	0.009	0.014			
				Front	138	5690	0.072	92.7%	14.0	12.6	0.029	0.044	0.072	92.7%	14.0	12.3	0.037	0.059			
Edge 1				138	5690	0.134	92.7%	14.0	12.6	-	-	0.134	92.7%	14.0	12.3	0.069	0.110				
Edge 2				138	5690	0.395	92.7%	14.0	12.6	0.183	0.276	0.395	92.7%	14.0	12.3	0.034	0.054				
Edge 3				138	5690	<0.01	92.7%	14.0	12.6	<0.01	<0.01	<0.01	92.7%	14.0	12.3	-	-				
Power State B-360°		10	Rear	138	5690	0.064	92.7%	14.0	12.6	0.027	0.041	0.064	92.7%	14.0	12.3	0.019	0.030				
			Front	138	5690	0.281	92.7%	14.0	12.6	0.124	0.187	0.281	92.7%	14.0	12.3	0.064	0.102				
			Edge 1	138	5690	0.185	92.7%	14.0	12.6	-	-	0.185	92.7%	14.0	12.3	0.078	0.124				
			Edge 2	138	5690	0.458	92.7%	14.0	12.6	0.235	0.354	0.458	92.7%	14.0	12.3	0.032	0.051				
			Edge 3	138	5690	0.015	92.7%	14.0	12.6	0.005	0.007	0.015	92.7%	14.0	12.3	-	-				
MIMO 802.11ac (VHT80)	Power State D 150°	5	Rear	106	5530	0.221	92.7%	8.5	7.1	0.114	0.168	0.221	92.7%	8.5	7.6	0.019	0.025				
			Edge 1	106	5530	0.063	92.7%	8.5	7.1	-	-	0.063	92.7%	8.5	7.6	0.028	0.037				
			Edge 2	106	5530	0.637	92.7%	8.5	7.1	0.332	0.490	0.637	92.7%	8.5	7.6	0.031	0.041				
			Edge 3	106	5530	<0.01	92.7%	8.5	7.1	<0.01	<0.01	<0.01	92.7%	8.5	7.6	-	-				
	Power State F 180°	0	Rear	106	5530	0.496	92.7%	4.0	3.8	0.159	0.180	0.496	92.7%	4.0	3.7	0.033	0.038				
			Edge 1	106	5530	0.036	92.7%	4.0	3.8	-	-	0.036	92.7%	4.0	3.7	0.014	0.016				
			Edge 2	106	5530	0.5	92.7%	4.0	3.8	0.204	0.231	0.5	92.7%	4.0	3.7	0.027	0.032				
			Edge 3	106	5530	<0.01	92.7%	4.0	3.8	<0.01	<0.01	<0.01	92.7%	4.0	3.7	-	-				

Note(s):

- For results listed with “-”, only one antenna was within 25mm of the surface/edge that was measured.

UNII-3

Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #	Freq. (MHz)	Antenna 1						Antenna 2						Plot No.	
						Area Scan Max. SAR (W/kg)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)		Area Scan Max. SAR (W/kg)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)			
								Tune-up Limit	Meas.	Meas.	Scaled			Tune-up Limit	Meas.	Meas.	Scaled		
SISO 802.11ac (VHT80)	Power State B 360°	0	Left Touch	155	5775	< 0.01	92.7%	8.5	7.2	<0.01	<0.01								
			Left Tilt	155	5775	< 0.01	92.7%	8.5	7.2	<0.01	<0.01								
			Right Touch	155	5775	0.187	92.7%	8.5	7.2	0.037	0.054								45
			Right Tilt	155	5775	< 0.01	92.7%	8.5	7.2	<0.01	<0.01								
	Power State B 360°	0	Left Touch	155	5775							0.245	92.7%	8.5	6.9	0.133	0.207	46	
			Left Tilt	155	5775							0.238	92.7%	8.5	6.9	0.066	0.102		
			Right Touch	155	5775							0.052	92.7%	8.5	6.9	<0.01	<0.01		
			Right Tilt	155	5775							0.030	92.7%	8.5	6.9	0.013	0.020		
MIMO 802.11ac (VHT80)	Power State C 150°	5	Rear	155	5775	0.528	92.7%	14.0	12.0	0.245	0.419	0.528	92.7%	14.0	12.2	0.097	0.158	47	
			Edge 1	155	5775	0.240	92.7%	14.0	12.0	-	-	0.240	92.7%	14.0	12.2	0.117	0.191		
			Edge 2	155	5775	0.767	92.7%	14.0	12.0	0.382	0.653	0.767	92.7%	14.0	12.2	0.046	0.075	48	
			Edge 3	155	5775	0.004	92.7%	14.0	12.0	< 0.01	< 0.01	0.004	92.7%	14.0	12.2	-	-		
	Power State E 180°	0	Rear	155	5775	0.930	92.7%	8.5	7.2	0.370	0.537	0.930	92.7%	8.5	6.9	0.084	0.131	49	
			Edge 1	155	5775	0.194	92.7%	8.5	7.2	-	-	0.194	92.7%	8.5	6.9	0.072	0.112		
			Edge 2	155	5775	0.579	92.7%	8.5	7.2	0.264	0.383	0.579	92.7%	8.5	6.9	0.053	0.083		
			Edge 3	155	5775	< 0.01	92.7%	8.5	7.2	< 0.01	< 0.01	< 0.01	92.7%	8.5	6.9	-	-		
MIMO 802.11ac (VHT80)	Power State C 0°	10	Rear	155	5775	0.264	92.7%	14.0	12.0	0.113	0.193	0.264	92.7%	14.0	12.2	0.023	0.038		
			Front	155	5775	0.078	92.7%	14.0	12.0	0.018	0.031	0.078	92.7%	14.0	12.2	0.037	0.060		
			Edge 1	155	5775	0.135	92.7%	14.0	12.0	-	-	0.135	92.7%	14.0	12.2	0.064	0.105		
			Edge 2	155	5775	0.260	92.7%	14.0	12.0	0.032	0.055	0.260	92.7%	14.0	12.2	0.148	0.242		
	Power State B- 360°	10	Rear	155	5775	0.063	92.7%	14.0	12.0	0.024	0.041	0.063	92.7%	14.0	12.2	0.013	0.021		
			Front	155	5775	0.163	92.7%	14.0	12.0	0.054	0.092	0.163	92.7%	14.0	12.2	0.040	0.065		
			Edge 1	155	5775	0.126	92.7%	14.0	12.0	-	-	0.126	92.7%	14.0	12.2	0.046	0.075		
			Edge 2	155	5775	0.400	92.7%	14.0	12.0	0.028	0.048	0.400	92.7%	14.0	12.2	0.176	0.287	50	
MIMO 802.11ac (VHT80)	Power State D 150°	5	Rear	155	5775	0.214	92.7%	8.5	7.2	0.081	0.118	0.214	92.7%	8.5	6.9	0.024	0.037		
			Edge 1	155	5775	0.078	92.7%	8.5	7.2	-	-	0.078	92.7%	8.5	6.9	0.023	0.036		
			Edge 2	155	5775	0.316	92.7%	8.5	7.2	0.133	0.193	0.316	92.7%	8.5	6.9	0.007	0.010		
			Edge 3	155	5775	<0.01	92.7%	8.5	7.2	<0.01	<0.01	<0.01	92.7%	8.5	6.9	-	-		
	Power State F 180°	0	Rear	155	5775	0.684	92.7%	4.0	3.8	0.198	0.224	0.7	92.7%	4.0	3.4	0.039	0.048		
			Edge 1	155	5775	0.071	92.7%	4.0	3.8	-	-	0.071	92.7%	4.0	3.4	0.024	0.030		
			Edge 2	155	5775	0.245	92.7%	4.0	3.8	0.107	0.121	0.245	92.7%	4.0	3.4	0.017	0.021		
			Edge 3	155	5775	<0.01	92.7%	4.0	3.8	<0.01	<0.01	<0.01	92.7%	4.0	3.4	-	-		

Note(s):

- For results listed with “-”, only one antenna was within 25mm of the surface/edge that was measured.

10.17. Bluetooth

RF Exposure Conditions	Mode	Power State & Angle	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
									Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	GFSK	Power State B 360°	0	Left Touch	78	2480	0.014	77.1%	9.0	9.0	0.014	0.018	0.009	0.012	
				Left Tilt	78	2480	0.010	77.1%	9.0	9.0	0.008	0.010	0.003	0.004	
				Right Touch	78	2480	0.036	77.1%	9.0	9.0	0.027	0.035	0.019	0.024	
				Right Tilt	78	2480	0.010	77.1%	9.0	9.0	0.007	0.009	0.003	0.004	
		Power State B 180°	0	Right Touch	78	2480	0.039	77.1%	9.0	9.0	0.030	0.039	0.016	0.021	51
Body-w orn & Hotspot	GFSK	Power State C/D 150°	5	Rear	78	2480	0.085	77.1%	9.0	9.0	0.049	0.064	0.019	0.025	
				Edge 2	78	2480	0.050	77.1%	9.0	9.0	0.027	0.034	0.009	0.012	
		Power State E/F 180°	0	Rear	78	2480	0.343	77.1%	9.0	9.0	0.190	0.245	0.069	0.088	52
				Edge 2	78	2480	0.162	77.1%	9.0	9.0	0.104	0.134	0.035	0.045	
	GFSK	Power State C 0°	10	Rear	78	2480	0.026	77.1%	9.0	9.0	0.016	0.021	0.006	0.008	
				Front	78	2480	0.003	77.1%	9.0	9.0	0.001	0.001	0.000	0.000	
				Edge 2	78	2480	0.008	77.1%	9.0	9.0	0.003	0.004	0.001	0.001	
		Power State B-360°	10	Rear	78	2480	<0.01	77.1%	9.0	9.0	<0.01	<0.01	<0.01	<0.01	
				Front	78	2480	0.013	77.1%	9.0	9.0	0.007	0.009	0.003	0.004	
				Edge 2	78	2480	0.005	77.1%	9.0	9.0	0.002	0.002	0.001	0.001	

11. SAR Measurement Variability

In accordance with published RF Exposure KDB 865664 D01 SAR measurement 100 MHz to 6 GHz. 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 < 0.8 or 2 W/kg (1-g or 10-g respectively); steps 2) through 4) do not apply.
- 2) When the original highest measured SAR is ≥ 0.8 or 2 W/kg (1-g or 10-g respectively), 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 or 3.6 W/kg (~ 10% from the 1-g or 10-g respective SAR limit).
- 4) Perform a third repeated measurement only if the original, first, or second repeated measurement is ≥ 1.5 or 3.75 W/kg (1-g or 10-g respectively) and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .

1g SAR Repeated Measurements

Frequency Band (MHz)	Air Interface	RF Exposure Conditions	Test Position	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	First Repeated	
						Measured SAR (W/kg)	Largest to Smallest SAR Ratio
700	LTE Band 14	Body	Rear	Yes	1.110	1.110	1.00
850	WCDMA Band V	Body & Hotspot	Rear	Yes	1.020	0.980	1.04
1700	LTE Band 66	Head	Right Touch	Yes	0.947	0.926	1.02
1900	LTE Band 25	Head	Right Touch	Yes	1.040	0.907	1.15
2400	Wi-Fi 802.11b/g/n	Body	Edge 2	Yes	1.180	1.140	1.04
2500	LTE Band 7	Head	Right Touch	No	1.010	0.967	1.04
2600	LTE Band 41	Body	Rear	Yes	1.030	0.976	1.06
5300	Wi-Fi 802.11a/n/ac	Body	Edge 2	Yes	0.974	0.953	1.02

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 < 1.20 .

10g SAR Repeated Measurements

Frequency Band (MHz)	Air Interface	RF Exposure Conditions	Test Position	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	First Repeated	
						Measured SAR (W/kg)	Largest to Smallest SAR Ratio
2500	LTE Band 7	Extremity	Front	Yes	3.420	3.070	1.11
2600	LTE Band 41	Extremity	Front	Yes	3.400	3.170	1.07

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 < 1.20 .

12. Simultaneous Transmission Conditions

Posture	Angle Orientation	BT/BLE Antenna 1	WLAN 2.4 G Antenna 1	WLAN 2.4 G Antenna 2	WLAN 5G Antenna 1	WLAN 5 G Antenna 2	WWAN Main
Head - Flip/Flat	180/360°	ON			ON (Middle Power)	ON (Middle Power)	ON (High Power)
Head - Flip/Flat	180/360°		ON (Middle Power)	ON (Middle Power)			ON (High Power)
Body - Read/compose 5mm	150°	ON			ON (Middle Power)	ON (Middle Power)	ON (Middle Power)
Body - Read/compose 5mm	150°						ON (Middle Power)
Body - Read/compose 5mm	150°		ON (High Power)	ON (High Power)			
Body - Read/compose 5mm	150°	ON			ON (High Power)	ON (High Power)	
Body - Read/compose 5mm	150°	ON					ON (Mid Power)
Body - Flip/Closed 10 mm	0/360°	ON			ON (High Power)	ON (High Power)	ON (Mid-High Power)
Body - Flip/Closed 10 mm	0/360°		ON (High Power)	ON (High Power)			ON (Mid-High Power)
Body - Flat 0mm	180°	ON					ON (Low Power)
Body - Flat 0mm	180°	ON			ON (Low Power)	ON (Middle Power)	ON (Low Power)
Body - Flat 0mm	180°		ON (Low Power)	ON (Middle Power)			ON (Low Power)

Note(s):

High Power: WWAN Power State B, WLAN Power State B-/C
 Mid-High Power: WWAN Power State B-
 Middle Power: WWAN Power State C/D, WLAN Power State B/D/E
 Low Power: WWAN Power State E/F, WLAN Power State F

12.1. Simultaneous transmission SAR test exclusion considerations

KDB 447498 D01 General RF Exposure Guidance provides two procedures for determining simultaneous transmission SAR test exclusion: Sum of SAR and SAR to Peak Location Ratio (SPLSR)

12.1.1. Sum of SAR

To qualify for simultaneous transmission SAR test exclusion based upon Sum of SAR the sum of the reported standalone SARs for all simultaneously transmitting antennas shall be below the applicable standalone SAR limit. If the sum of the SARs is above the applicable limit then simultaneous transmission SAR test exclusion may still apply if the requirements of the SAR to Peak Location Ratio (SPLSR) evaluation are met.

12.1.2. SAR to Peak Location Ratio (SPLSR)

KDB 447498 D01 General RF Exposure Guidance explains how to calculate the SAR to Peak Location Ratio (SPLSR) between pairs of simultaneously transmitting antennas:

$$SPLSR = (SAR_1 + SAR_2)^{1.5} / Ri$$

Where:

SAR₁ is the highest reported or estimated SAR for the first of a pair of simultaneous transmitting antennas, in a specific test operating mode and exposure condition

SAR₂ is the highest reported or estimated SAR for the second of a pair of simultaneous transmitting antennas, in the same test operating mode and exposure condition as the first

Ri is the separation distance between the pair of simultaneous transmitting antennas. When the SAR is measured, for both antennas in the pair, it is determined by the actual x, y and z coordinates in the 1-g SAR for each SAR peak location, based on the extrapolated and interpolated result in the zoom scan measurement, using the formula of $[(x_1-x_2)^2 + (y_1-y_2)^2 + (z_1-z_2)^2]$

In order for a pair of simultaneous transmitting antennas with the sum of 1-g SAR > 1.6 W/kg to qualify for exemption from Simultaneous Transmission SAR measurements, it has to satisfy the condition of:

$$(SAR_1 + SAR_2)^{1.5} / Ri \leq 0.04$$

When an individual antenna transmits at on two bands simultaneously, the sum of the highest *reported* SAR for the frequency bands should be used to determine **SAR₁**, or **SAR₂**. When SPLSR is necessary, the smallest distance between the peak SAR locations for the antenna pair with respect to the peaks from each antenna should be used.

The antennas in all antenna pairs that do not qualify for simultaneous transmission SAR test exclusion must be tested for SAR compliance, according to the enlarged zoom scan and volume scan post-processing procedures in KDB Publication 865664 D01

12.2. Worst Case Sum of the SAR for WWAN & Wi-Fi & BT for 0/180 (Head)/360°

RF Exposure conditions	Test Position	Standalone SAR (W/kg)						Σ 1-g SAR (W/kg)			
		WWAN	DTS		NIJ		DSS	1+2+3	1+4+5	1+4+5+6	1+6
			Antenna 1	Antenna 2	Antenna 1	Antenna 2	Antenna 1				
		1	2	3	4	5	6				
Head	Left Touch	0.400	0.011	0.307	0.000	0.207	0.018	0.718	0.608	0.626	0.418
	Left Tilt	0.292	0.022	0.222	0.000	0.151	0.010	0.536	0.443	0.453	0.302
	Right Touch	1.272	0.090	0.111	0.130	0.021	0.035	1.472	1.422	1.457	1.306
	Right Tilt	0.287	0.017	0.112	0.000	0.028	0.009	0.416	0.315	0.324	0.296
Body-w orn	Rear	0.546	0.305	0.270	0.230	0.147	0.021	1.121	0.923	0.944	0.567
	Front	0.957	0.251	0.322	0.187	0.202	0.009	1.530	1.345	1.355	0.966
Hotspot	Rear	0.546	0.305	0.270	0.230	0.147	0.021	1.121	0.923	0.944	0.567
	Front	0.957	0.251	0.322	0.187	0.202	0.009	1.530	1.345	1.355	0.966
	Edge 1	0.000	0.000	0.169	0.000	0.124	0.000	0.169	0.124	0.124	0.000
	Edge 2	0.508	0.138	0.430	0.354	0.287	0.004	1.075	1.149	1.153	0.512
	Edge 3	0.680	0.043	0.000	0.030	0.000	0.000	0.723	0.710	0.710	0.680

Conclusion:

SPLSR analysis is required because the Sum of the SAR is > 1.6 W/kg.

12.3. Worst Case Sum of the SAR for WWAN & Wi-Fi & BT for 150°

RF Exposure conditions	Test Position	Standalone SAR (W/kg)						Σ 1-g SAR (W/kg)						
		WWAN	DTS		NIJ		DSS	1+2+3	1+4+5	1+4+5+6	1+6	2+3	4+5	4+5+6
			Antenna 1	Antenna 2	Antenna 1	Antenna 2	Antenna 1							
		1	2	3	4	5	6							
Body	Rear	0.955	0.707	1.007	0.412	0.064					1.662	1.419	1.483	
	Edge 1	0.000	0.335	0.000	0.245	0.000					0.335	0.245	0.245	
	Edge 2	0.380	1.194	1.179	0.254	0.034					1.574	1.433	1.467	
	Edge 3	0.093	0.000	0.077	0.000	0.000					0.093	0.077	0.077	
Body (Hotspot ON)	Rear	1.129	0.189	0.154	0.168	0.039	0.064	1.472	1.336	1.400	1.193			
	Front	0.000	0.000	0.130	0.000	0.037	0.000	0.130	0.037	0.037	0.000			
	Edge 1	0.446	0.115	0.113	0.490	0.050	0.034	0.674	0.986	1.020	0.480			
	Edge 2	0.673	0.000	0.000	0.012	0.000	0.000	0.673	0.685	0.685	0.673			

Conclusion:

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

12.3.1. Worst Case SPLSR for Wi-Fi & BT for 150°

RF Exposure Conditions	Test Position	Standalone SAR (W/kg)		Σ 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)	
		DTS							
		Antenna 1	Antenna 2	2 + 3	1.662				
Body	Rear	0.955	0.707	2 + 3	1.662	84.0	0.03	No	
RF Exposure Conditions	Test Position	Mode		Peak SAR	X	Y	Z	d: Calculated distance (mm)	
				W/kg	m	m	m		
Body	Rear	DTS	Antenna 1	1.480	-0.084	-0.024	-0.183	2 + 3	84.0
		DTS	Antenna 2	1.230	-0.083	0.060	-0.182		

12.4. Sum of the SAR for WWAN & Wi-Fi & BT for 180° (Body)

RF Exposure conditions	Test Position	Standalone SAR (W/kg)						Σ 1-g SAR (W/kg)			
		GSM 850	DTS		NII		DSS	1+2+3	1+4+5	1+4+5+6	1+6
			Antenna 1	Antenna 2	Antenna 1	Antenna 2	Antenna 1				
		1	2	3	4	5	6				
Body	Rear	0.164		0.454		0.332	0.245	0.920	0.720	0.964	0.408
	Edge 1	0.000		0.380		0.112	0.000	0.380	0.112	0.112	0.000
	Edge 2	0.023		0.268		0.116	0.134	0.476	0.406	0.540	0.157
	Edge 3	0.109		0.000		0.000	0.000	0.123	0.109	0.109	0.109
Body (Hotspot ON)	Rear		0.302		0.224			0.920	0.720	0.964	0.408
	Front		0.000		0.000			0.380	0.112	0.112	0.000
	Edge 1		0.185		0.267			0.476	0.406	0.540	0.157
	Edge 2		0.014		0.000			0.123	0.109	0.109	0.109

RF Exposure conditions	Test Position	Standalone SAR (W/kg)						Σ 1-g SAR (W/kg)			
		GSM 1900	DTS		NII		DSS	1+2+3	1+4+5	1+4+5+6	1+6
			Antenna 1	Antenna 2	Antenna 1	Antenna 2	Antenna 1				
		1	2	3	4	5	6				
Body	Rear	0.689		0.454		0.332	0.245	1.445	1.245	1.490	0.934
	Edge 1	0.000		0.380		0.112	0.000	0.380	0.112	0.112	0.000
	Edge 2	0.167		0.268		0.116	0.134	0.620	0.550	0.684	0.301
	Edge 3	0.159		0.000		0.000	0.000	0.173	0.159	0.159	0.159
Body (Hotspot ON)	Rear		0.302		0.224			1.445	1.245	1.490	0.934
	Front		0.000		0.000			0.380	0.112	0.112	0.000
	Edge 1		0.185		0.267			0.620	0.550	0.684	0.301
	Edge 2		0.014		0.000			0.173	0.159	0.159	0.159

RF Exposure conditions	Test Position	Standalone SAR (W/kg)						Σ 1-g SAR (W/kg)			
		W-CDMA Band 2	DTS		NII		DSS	1+2+3	1+4+5	1+4+5+6	1+6
			Antenna 1	Antenna 2	Antenna 1	Antenna 2	Antenna 1				
		1	2	3	4	5	6				
Body	Rear	0.904		0.454		0.332	0.245	1.660	1.460	1.704	1.148
	Edge 1	0.000		0.380		0.112	0.000	0.380	0.112	0.112	0.000
	Edge 2	0.259		0.268		0.116	0.134	0.712	0.642	0.776	0.393
	Edge 3	0.211		0.000		0.000	0.000	0.226	0.211	0.211	0.211
Body (Hotspot ON)	Rear		0.302		0.224			1.660	1.460	1.704	1.148
	Front		0.000		0.000			0.380	0.112	0.112	0.000
	Edge 1		0.185		0.267			0.712	0.642	0.776	0.393
	Edge 2		0.014		0.000			0.226	0.211	0.211	0.211

RF Exposure conditions	Test Position	Standalone SAR (W/kg)						Σ 1-g SAR (W/kg)			
		W-CDMA Band 5	DTS		NII		DSS	1+2+3	1+4+5	1+4+5+6	1+6
			Antenna 1	Antenna 2	Antenna 1	Antenna 2	Antenna 1				
		1	2	3	4	5	6				
Body	Rear	1.076		0.454		0.332	0.245	1.833	1.632	1.877	1.321
	Edge 1	0.000		0.380		0.112	0.000	0.380	0.112	0.112	0.000
	Edge 2	0.039		0.268		0.116	0.134	0.492	0.422	0.556	0.173
	Edge 3	0.359		0.000		0.000	0.000	0.373	0.359	0.359	0.359
Body (Hotspot ON)	Rear		0.302		0.224			1.833	1.632	1.877	1.321
	Front		0.000		0.000			0.380	0.112	0.112	0.000
	Edge 1		0.185		0.267			0.492	0.422	0.556	0.173
	Edge 2		0.014		0.000			0.373	0.359	0.359	0.359

RF Exposure conditions	Test Position	Standalone SAR (W/kg)						Σ 1-g SAR (W/kg)			
		LTE Band 5	DTS		NII		DSS	1+2+3	1+4+5	1+4+5+6	1+6
			Antenna 1	Antenna 2	Antenna 1	Antenna 2	Antenna 1				
1	2	3	4	5	6						
Body	Rear	0.950		0.454		0.331	0.245	1.706	1.505	1.750	1.195
	Edge 1	0.000		0.380		0.112	0.000	0.380	0.112	0.112	0.000
	Edge 2	0.029		0.268		0.116	0.134	0.482	0.412	0.546	0.163
	Edge 3	0.286		0.000		0.000	0.000	0.300	0.286	0.286	0.286
Body (Hotspot ON)	Rear		0.302		0.224			1.706	1.505	1.750	1.195
	Front		0.000		0.000			0.380	0.112	0.112	0.000
	Edge 1		0.185		0.267			0.482	0.412	0.546	0.163
	Edge 2		0.014		0.000			0.300	0.286	0.286	0.286

RF Exposure conditions	Test Position	Standalone SAR (W/kg)						Σ 1-g SAR (W/kg)			
		LTE Band 7	DTS		NII		DSS	1+2+3	1+4+5	1+4+5+6	1+6
			Antenna 1	Antenna 2	Antenna 1	Antenna 2	Antenna 1				
1	2	3	4	5	6						
Body	Rear	0.702		0.454		0.332	0.245	1.458	1.258	1.503	0.947
	Edge 1	0.000		0.380		0.112	0.000	0.380	0.112	0.112	0.000
	Edge 2	0.161		0.268		0.116	0.134	0.614	0.544	0.678	0.295
	Edge 3	0.164		0.000		0.000	0.000	0.178	0.164	0.164	0.164
Body (Hotspot ON)	Rear		0.302		0.224			1.458	1.258	1.503	0.947
	Front		0.000		0.000			0.380	0.112	0.112	0.000
	Edge 1		0.185		0.267			0.614	0.544	0.678	0.295
	Edge 2		0.014		0.000			0.178	0.164	0.164	0.164

RF Exposure conditions	Test Position	Standalone SAR (W/kg)						Σ 1-g SAR (W/kg)			
		LTE Band 12	DTS		NII		DSS	1+2+3	1+4+5	1+4+5+6	1+6
			Antenna 1	Antenna 2	Antenna 1	Antenna 2	Antenna 1				
1	2	3	4	5	6						
Body	Rear	0.919		0.454		0.332	0.245	1.675	1.475	1.720	1.164
	Edge 1	0.000		0.380		0.112	0.000	0.380	0.112	0.112	0.000
	Edge 2	0.043		0.268		0.116	0.134	0.496	0.426	0.560	0.177
	Edge 3	0.429		0.000		0.000	0.000	0.443	0.429	0.429	0.429
Body (Hotspot ON)	Rear		0.302		0.224			1.675	1.475	1.720	1.164
	Front		0.000		0.000			0.380	0.112	0.112	0.000
	Edge 1		0.185		0.267			0.496	0.426	0.560	0.177
	Edge 2		0.014		0.000			0.443	0.429	0.429	0.429

RF Exposure conditions	Test Position	Standalone SAR (W/kg)						Σ 1-g SAR (W/kg)			
		LTE Band 13	DTS		NII		DSS	1+2+3	1+4+5	1+4+5+6	1+6
			Antenna 1	Antenna 2	Antenna 1	Antenna 2	Antenna 1				
1	2	3	4	5	6						
Body	Rear	1.110		0.454		0.332	0.245	1.866	1.666	1.911	1.355
	Edge 1	0.000		0.380		0.112	0.000	0.380	0.112	0.112	0.000
	Edge 2	0.040		0.268		0.116	0.134	0.493	0.423	0.557	0.174
	Edge 3	0.329		0.000		0.000	0.000	0.343	0.329	0.329	0.329
Body (Hotspot ON)	Rear		0.302		0.224			1.866	1.666	1.911	1.355
	Front		0.000		0.000			0.380	0.112	0.112	0.000
	Edge 1		0.185		0.267			0.493	0.423	0.557	0.174
	Edge 2		0.014		0.000			0.343	0.329	0.329	0.329

RF Exposure conditions	Test Position	Standalone SAR (W/kg)						Σ 1-g SAR (W/kg)			
		LTE Band 14	DTS		NII		DSS	1+2+3	1+4+5	1+4+5+6	1+6
			Antenna 1	Antenna 2	Antenna 1	Antenna 2	Antenna 1				
		1	2	3	4	5	6				
Body	Rear	1.110		0.454		0.332	0.245	1.866	1.666	1.911	1.355
	Edge 1	0.000		0.380		0.112	0.000	0.380	0.112	0.112	0.000
	Edge 2	0.046		0.268		0.116	0.134	0.499	0.429	0.563	0.180
	Edge 3	0.347		0.000		0.000	0.000	0.361	0.347	0.347	0.347
Body (Hotspot ON)	Rear		0.302		0.224			1.866	1.666	1.911	1.355
	Front		0.000		0.000			0.380	0.112	0.112	0.000
	Edge 1		0.185		0.267			0.499	0.429	0.563	0.180
	Edge 2		0.014		0.000			0.361	0.347	0.347	0.347

RF Exposure conditions	Test Position	Standalone SAR (W/kg)						Σ 1-g SAR (W/kg)			
		LTE Band 25	DTS		NII		DSS	1+2+3	1+4+5	1+4+5+6	1+6
			Antenna 1	Antenna 2	Antenna 1	Antenna 2	Antenna 1				
		1	2	3	4	5	6				
Body	Rear	0.782		0.454		0.332	0.245	1.538	1.338	1.583	1.027
	Edge 1	0.000		0.380		0.112	0.000	0.380	0.112	0.112	0.000
	Edge 2	0.249		0.268		0.116	0.134	0.702	0.632	0.766	0.383
	Edge 3	0.233		0.000		0.000	0.000	0.247	0.233	0.233	0.233
Body (Hotspot ON)	Rear		0.302		0.224			1.538	1.338	1.583	1.027
	Front		0.000		0.000			0.380	0.112	0.112	0.000
	Edge 1		0.185		0.267			0.702	0.632	0.766	0.383
	Edge 2		0.014		0.000			0.247	0.233	0.233	0.233

RF Exposure conditions	Test Position	Standalone SAR (W/kg)						Σ 1-g SAR (W/kg)			
		LTE Band 26	DTS		NII		DSS	1+2+3	1+4+5	1+4+5+6	1+6
			Antenna 1	Antenna 2	Antenna 1	Antenna 2	Antenna 1				
		1	2	3	4	5	6				
Body	Rear	0.912		0.454		0.332	0.245	1.668	1.468	1.713	1.157
	Edge 1	0.000		0.380		0.112	0.000	0.380	0.112	0.112	0.000
	Edge 2	0.038		0.268		0.116	0.134	0.490	0.421	0.555	0.172
	Edge 3	0.413		0.000		0.000	0.000	0.427	0.413	0.413	0.413
Body (Hotspot ON)	Rear		0.302		0.224			1.668	1.468	1.713	1.157
	Front		0.000		0.000			0.380	0.112	0.112	0.000
	Edge 1		0.185		0.267			0.490	0.421	0.555	0.172
	Edge 2		0.014		0.000			0.427	0.413	0.413	0.413

RF Exposure conditions	Test Position	Standalone SAR (W/kg)						Σ 1-g SAR (W/kg)			
		LTE Band 30	DTS		NII		DSS	1+2+3	1+4+5	1+4+5+6	1+6
			Antenna 1	Antenna 2	Antenna 1	Antenna 2	Antenna 1				
		1	2	3	4	5	6				
Body	Rear	0.817		0.454		0.332	0.245	1.573	1.373	1.618	1.062
	Edge 1	0.000		0.380		0.112	0.000	0.380	0.112	0.112	0.000
	Edge 2	0.310		0.268		0.116	0.134	0.763	0.693	0.827	0.444
	Edge 3	0.206		0.000		0.000	0.000	0.220	0.206	0.206	0.206
Body (Hotspot ON)	Rear		0.302		0.224			1.573	1.373	1.618	1.062
	Front		0.000		0.000			0.380	0.112	0.112	0.000
	Edge 1		0.185		0.267			0.763	0.693	0.827	0.444
	Edge 2		0.014		0.000			0.220	0.206	0.206	0.206

RF Exposure conditions	Test Position	Standalone SAR (W/kg)					Σ 1-g SAR (W/kg)				
		LTE Band 41	DTS		NII		DSS	1+2+3	1+4+5	1+4+5+6	1+6
			Antenna 1	Antenna 2	Antenna 1	Antenna 2					
1	2	3	4	5	6						
Body	Rear	0.523		0.454		0.332	0.245	1.279	1.079	1.324	0.768
	Edge 1	0.000		0.380		0.112	0.000	0.380	0.112	0.112	0.000
	Edge 2	0.286		0.268		0.116	0.134	0.739	0.669	0.803	0.420
	Edge 3	0.183		0.000		0.000	0.000	0.198	0.183	0.183	0.183
Body (Hotspot ON)	Rear		0.302		0.224			1.279	1.079	1.324	0.768
	Front		0.000		0.000			0.380	0.112	0.112	0.000
	Edge 1		0.185		0.267			0.739	0.669	0.803	0.420
	Edge 2		0.014		0.000			0.198	0.183	0.183	0.183

RF Exposure conditions	Test Position	Standalone SAR (W/kg)					Σ 1-g SAR (W/kg)				
		LTE Band 66	DTS		NII		DSS	1+2+3	1+4+5	1+4+5+6	1+6
			Antenna 1	Antenna 2	Antenna 1	Antenna 2					
1	2	3	4	5	6						
Body	Rear	0.752		0.454		0.332	0.245	1.508	1.308	1.552	0.996
	Edge 1	0.000		0.380		0.112	0.000	0.380	0.112	0.112	0.000
	Edge 2	0.205		0.268		0.116	0.134	0.658	0.588	0.722	0.339
	Edge 3	0.159		0.000		0.000	0.000	0.173	0.159	0.159	0.159
Body (Hotspot ON)	Rear		0.302		0.224			1.508	1.308	1.552	0.996
	Front		0.000		0.000			0.380	0.112	0.112	0.000
	Edge 1		0.185		0.267			0.658	0.588	0.722	0.339
	Edge 2		0.014		0.000			0.173	0.159	0.159	0.159

12.4.1. Worst Case SPLSR for WWAN & Wi-Fi & BT for 180° (Body)

RF Exposure Conditions	Test Position	Standalone SAR (W/kg)			Σ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)	
		WWAN	DTS	DTS					
		1	Antenna 1 2	Antenna 2 3					
Body	Rear	1.110	0.302	0.454	1 + 2 + 3	1.866			
					1 + 2	1.412	48.9	0.03	No
					1 + 3	1.564	134.9	0.01	No
					2 + 3	0.756	89.0	0.01	No

RF Exposure Conditions	Test Position	Mode		Peak SAR	X	Y	Z	d: Calculated distance (mm)	
				W/kg	m	m	m		
Body	Rear	LTE B13	N/A	2.530	-0.061	-0.071	-0.183	1 + 2	48.9
		DTS	Antenna 1	0.511	-0.082	-0.026	-0.184		
		LTE B13	N/A	2.530	-0.061	-0.071	-0.183	1 + 3	134.9
		DTS	Antenna 2	0.779	-0.082	0.063	-0.183		
		DTS	Antenna 1	0.511	-0.082	-0.026	-0.184	2 + 3	89.0
		DTS	Antenna 2	0.779	-0.082	0.063	-0.183		

Conclusion:

1. The worst case Sum of SAR and the most conservative distance across all bands that required SPLSR was used to determine the SPLSR value. Since this value is ≤ 0.04, further SPLSR evaluations are not required.
2. Simultaneous transmission SAR measurement (Volume Scan) is not required because the SPLSR is ≤ 0.04.

RF Exposure Conditions	Test Position	Standalone SAR (W/kg)				Σ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)	
		WWAN	UNII	UNII	BT					
		1	Antenna 1 4	Antenna 2 5	Antenna 1 6					
Body	Rear	1.110	0.224	0.332	0.245	1 + 4 + 5 + 6	1.911			
						1 + 4	1.334	52.2	0.03	No
						1 + 5	1.442	131.0	0.01	No
						1 + 6	1.355	51.6	0.03	No
						4 + 5	0.556	79.1	0.01	No
						5 + 6	0.577	80.0	0.01	No
						1 + 4 + 6	1.579	51.6	0.04	No
						4 + 5 + 6	0.801	79.1	0.01	No

RF Exposure Conditions	Test Position	Mode		Peak SAR	X	Y	Z	d: Calculated distance (mm)	
				W/kg	m	m	m		
Body	Rear	W-CDMA B2	N/A	1.300	-0.082	-0.065	-0.182	1 + 4	52.2
		UNII	Antenna 1	0.690	-0.085	-0.013	-0.184		
		W-CDMA B2	N/A	1.300	-0.082	-0.065	-0.182	1 + 5	131.0
		UNII	Antenna 2	0.704	-0.083	0.066	-0.182		
		W-CDMA B2	N/A	1.300	-0.082	-0.065	-0.182	1 + 6	51.6
		BT	Antenna 1	0.322	-0.088	-0.014	-0.183		
		UNII	Antenna 1	0.690	-0.085	-0.013	-0.184	4 + 5	79.1
		UNII	Antenna 2	0.704	-0.083	0.066	-0.182		
		UNII	Antenna 2	0.704	-0.083	0.066	-0.182	5 + 6	80.0
		BT	Antenna 1	0.322	-0.088	-0.014	-0.183		

Conclusion:

1. The worst case Sum of SAR and the most conservative distance across all bands that required SPLSR was used to determine the SPLSR value. Since this value is ≤ 0.04, further SPLSR evaluations are not required.
2. Simultaneous transmission SAR measurement (Volume Scan) is not required because the SPLSR is ≤ 0.04.

Appendixes

Refer to separated files for the following appendixes.

Appendix A: SAR Setup Photos

Appendix B: SAR System Check Plots

Appendix C: SAR Highest Test Plots

Appendix D: SAR Tissue Ingredients

Appendix E: SAR Probe Certificates

Appendix F: SAR Dipole Certificates

END OF REPORT