



SAR EVALUATION REPORT

**FCC 47 CFR § 2.1093
IEEE Std 1528-2013**

For
SMARTPHONE

**FCC ID: BCG-E3174A
Model Name: A1897**

**Report Number: 11697707-S1V9
Issue Date: 8/31/2017**

Prepared for
**APPLE, INC.
1 INFINITE LOOP, MS 26A
CUPERTINO, CA 95014-2084**

Prepared by
**UL VERIFICATION SERVICES INC.
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888**



NVLAP LAB CODE 200065-0

Revision History

Rev.	Date	Revisions	Revised By
V1	7/16/2017	Initial Issue	--
V2	7/17/2017	Report revised based on Reviewer's comments: 1. Sec. 6.3.5.: Updated with description and updated tables 2. Sec. 9.4.: Updated with description	Kenneth Mak
V3	7/18/2017	Report revised based on Reviewer's comments: 1. Sec. 2.: Revised verbiage regarding inquiry	Ray Su
V4	7/25/2017	Report revised based on Reviewer's comments: 1. Sec. 6.3.4.: Corrected typo in 2.4 GHz table 2. Removed Sec. 6.3.5. Maximum Permissible RF Exposure 3. Sec. 6.4, 9.3, and 9.4 updated to include 64QAM information	Kenneth Mak
V5	7/26/2017	Report revised based on Reviewer's comments: 1. Added 6.3.5. Section	Kenneth Mak
V6	8/5/2017	Report revised based on Reviewer's comments: 1. Sec. 6.1: Updated description. 2. Sec. 6.3.: Updated with tolerance 3. Sec. 7: Revised description 4. Sec. 9.2: Updated 5. Sec. 9.3: Updated table for LTE Band 12, 30 6. Sec. 9.4: Updated 7. Sec. 9.9: Updated 8. Sec. 10: Updated notes. 9. Sec. 12: Reorganized subsections and tables	Kenneth Mak
V7	8/23/2017	Report revised based on Reviewer's comments: 1. Sec. 6.1: Revised note. 2. Sec. 6.3: Updated max. power table. 3. Sec. 9: Added max. power limit table, updated power measurement table, added note. 4. Sec. 10: Revised note.	Kenneth Mak
V8	8/29/2017	Report revised based on Reviewer's comments: 1. Sec. 9: Updated.	Kenneth Mak
V9	8/31/2017	Report revised based on Reviewer's comments: 1. Sec. 6.3: Updated note. 2. Sec. 7: Added Antenna diagram. 3. Sec. 9: Updated note. 4. Sec. 9.4: Updated note and table. 5. Sec. 10: Added descriptive notes.	Kenneth Mak

Table of Contents

1.	Attestation of Test Results.....	6
2.	Test Specification, Methods and Procedures.....	7
3.	Facilities and Accreditation.....	8
4.	SAR Measurement System & Test Equipment	9
4.1.	<i>SAR Measurement System</i>	<i>9</i>
4.2.	<i>SAR Scan Procedures.....</i>	<i>10</i>
4.3.	<i>Test Equipment</i>	<i>12</i>
5.	Measurement Uncertainty	14
6.	Device Under Test (DUT) Information	15
6.1.	<i>DUT Description</i>	<i>15</i>
6.2.	<i>Wireless Technologies</i>	<i>16</i>
6.3.	<i>Maximum Output Power from Tune-up Procedure</i>	<i>17</i>
6.3.1.	<i>WLAN SISO (P_{Cell_ON})</i>	<i>19</i>
6.3.2.	<i>WLAN MIMO (P_{Cell_ON})</i>	<i>23</i>
6.3.3.	<i>WLAN SISO (P_{Cell_OFF})</i>	<i>27</i>
6.3.4.	<i>WLAN MIMO (P_{Cell_OFF})</i>	<i>31</i>
6.3.5.	<i>WLAN (P_{Cell_MAX}) and Bluetooth (P_{max})</i>	<i>35</i>
6.4.	<i>General LTE SAR Test and Reporting Considerations</i>	<i>37</i>
6.5.	<i>LTE (TDD) Considerations</i>	<i>40</i>
7.	RF Exposure Conditions (Test Configurations)	41
8.	Dielectric Property Measurements & System Check	44
8.1.	<i>Dielectric Property Measurements.....</i>	<i>44</i>
8.2.	<i>System Check.....</i>	<i>53</i>
9.	Conducted Output Power Measurements.....	56
9.1.	<i>GSM</i>	<i>56</i>
9.2.	<i>W-CDMA</i>	<i>58</i>
9.3.	<i>LTE</i>	<i>65</i>
9.4.	<i>LTE Rel. 11 Carrier Aggregation</i>	<i>93</i>
9.5.	<i>WLAN SISO (P_{Cell_ON})</i>	<i>115</i>
9.6.	<i>WLAN MIMO (P_{Cell_ON})</i>	<i>116</i>
9.7.	<i>WLAN SISO (P_{Cell_OFF})</i>	<i>117</i>
9.8.	<i>WLAN MIMO (P_{Cell_OFF})</i>	<i>118</i>
9.9.	<i>Bluetooth</i>	<i>119</i>

10. Measured and Reported (Scaled) SAR Results	121
10.1. GSM850	123
10.2. GSM1900	124
10.3. W-CDMA Band V	125
10.4. W-CDMA Band IV	126
10.5. W-CDMA Band II	127
10.6. LTE Band 2 (20MHz Bandwidth).....	128
10.7. LTE Band 4 (20MHz Bandwidth).....	128
10.8. LTE Band 5 (10MHz Bandwidth).....	128
10.9. LTE Band 7 (20MHz Bandwidth).....	129
10.10. LTE Band 12 (10MHz Bandwidth).....	131
10.11. LTE Band 13 (10MHz Bandwidth).....	132
10.12. LTE Band 17 (10MHz Bandwidth).....	133
10.13. LTE Band 25 (20MHz Bandwidth).....	134
10.14. LTE Band 26 (10MHz Bandwidth).....	136
10.15. LTE Band 30 (10MHz Bandwidth).....	138
10.16. LTE Band 41 (20MHz Bandwidth).....	139
10.17. LTE Band 66 (20MHz Bandwidth).....	141
10.18. LTE-uplink 2CA Band 7 (20MHz + 20MHz BW)	143
10.19. LTE-uplink 2CA Band 41 (20MHz + 20MHz BW)	143
10.20. Wi-Fi (DTS Band).....	144
10.21. Wi-Fi (U-NII-1 and U-NII-2A Band)	146
10.22. Wi-Fi (U-NII-2C Band).....	148
10.23. Wi-Fi (U-NII-3 Band)	150
10.24. Wi-Fi Variant 2 Spot Check.....	152
10.25. Bluetooth.....	155
11. SAR Measurement Variability	157
12. Simultaneous Transmission SAR Analysis	158
12.1. Sum of the SAR for Worst Case Cell-Off (UNII & BT only)	160
12.2. Sum of the SAR for Worst Case Cell-On (Cellular UAT 1), DTS and BT.....	161
12.3. Sum of the SAR for Worst Case Cell-On (Cellular UAT 1), UNII and BT.....	161
12.4. Sum of the SAR for Worst Case Cell-On (Cellular LAT 1), DTS and BT	162
12.5. Sum of the SAR for Worst Case Cell-On (Cellular LAT 1), UNII and BT	162
Appendixes.....	164
11697707-S1V1 SAR_App A Setup Photos.....	164
11697707-S1V1 SAR_App B System Check Plots	164
11697707-S1V1 SAR_App C Highest Test Plots.....	164

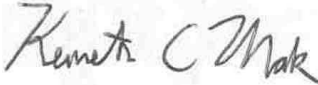
<i>11697707-S1V1 SAR_App D Tissue Ingredients.....</i>	<i>164</i>
<i>11697707-S1V1 SAR_App E Probe Cal. Certificates</i>	<i>164</i>
<i>11697707-S1V1 SAR_App F Dipole Cal. Certificates</i>	<i>164</i>

1. Attestation of Test Results

Applicant Name	APPLE, INC.			
FCC ID	BCG-E3174A			
Model Name	A1897			
Applicable Standards	FCC 47 CFR § 2.1093 Published RF exposure KDB procedures IEEE Std 1528-2013			
Exposure Category	SAR Limits (W/Kg)			
	Peak spatial-average(1g of tissue)			
General population / Uncontrolled exposure	1.6			
RF Exposure Conditions	Equipment Class - Highest Reported SAR (W/kg)			
	PCE	DTS	NII	DSS
Head	1.09	1.18	1.19	0.44
Body-worn	1.09	1.19	1.17	0.45
Hotspot	1.09	1.19	1.17	N/A
Simultaneous TX	Head	1.45	1.37	1.45
	Body-worn	1.59	1.49	1.59
	Hotspot	1.59	1.49	1.59
Date Tested	6/1/2017 to 6/27/2017			
Test Results	Pass			

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL 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 any government (NIST Handbook 150, Annex A). This report is written to support regulatory compliance of the applicable standards stated above.

Approved & Released By:	Prepared By:
	
Bobby Bayani Project Lead UL Verification Services Inc.	Kenneth C. Mak 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, the following FCC Published RF exposure [KDB](#) procedures & manufacturer KDB inquiries:

- 248227 D01 802.11 Wi-Fi SAR v02r02
- 447498 D01 General RF Exposure Guidance v06
- 447498 D03 Supplement C Cross-Reference v01
- 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

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

- [TCB workshop](#) October, 2014; Page 36, RF Exposure Procedures Update (Overlapping LTE Bands)
- [TCB workshop](#) October, 2014; Page 37, LTE Considerations (LTE Band 41 Test Channels)

Additional Guidance: Manufacturer KDB inquiry.

- Carrier Aggregation – KDB guidance to identify test cases with uplink carrier aggregation enabled in conjunction with FCC PAG Guidance for the test cases mentioned in Sec. 10.
- Detect Mode – KDB guidance related to SAR testing for proprietary detection mode used to determine proximity to head or body and set power accordingly for Wi-Fi and Cellular Transmitters.
- Cellular State Dependent Wi-Fi Power control – KDB guidance related to power control mechanism for Wi-Fi and Bluetooth transmitters based on the operational state of the Wi-Fi and Cellular Transmitters. The Wi-Fi and Bluetooth power configuration are listed as follows:
 - For Wi-Fi
 - P_{Cell_ON} : This will be used when both Cellular and Wi-Fi radios are ON.
 - P_{Cell_OFF} : This will be used when only Wi-Fi radio is ON
 - P_{Cell_MAX} : This will be used when the device is placed on the proprietary wireless charger and is therefore considered to be a mobile device. Refer to separate MPE report.
 - For Bluetooth
 - Bluetooth P_{high} is used when Wi-Fi antenna is active and Cellular antenna is inactive.
 - Bluetooth P_{low} is used with Wi-Fi and Cellular antenna is active or Wi-Fi antenna inactive and Cellular antenna is active.
 - Bluetooth $P_{standalone}$ is used with Wi-Fi and Cellular antennas are inactive.
 - Bluetooth P_{max} is used when the device is placed on a proprietary wireless charger and is therefore considered to be a mobile device. Refer to separate MPE report.

The above power configurations for Wi-Fi and Bluetooth are triggered by all of the Cellular Bands with respect to the different Antennas and Exposure Conditions – Head, Body, and Hotspot has been verified and validated by the Manufacturer. Also, all of the UL CA conditions operate correctly with the intended maximum output power levels in simulated normal operating conditions using the Base Station Simulator and has been verified and validated by the Manufacturer.

3. Facilities and Accreditation

The test sites and measurement facilities used to collect data are located at

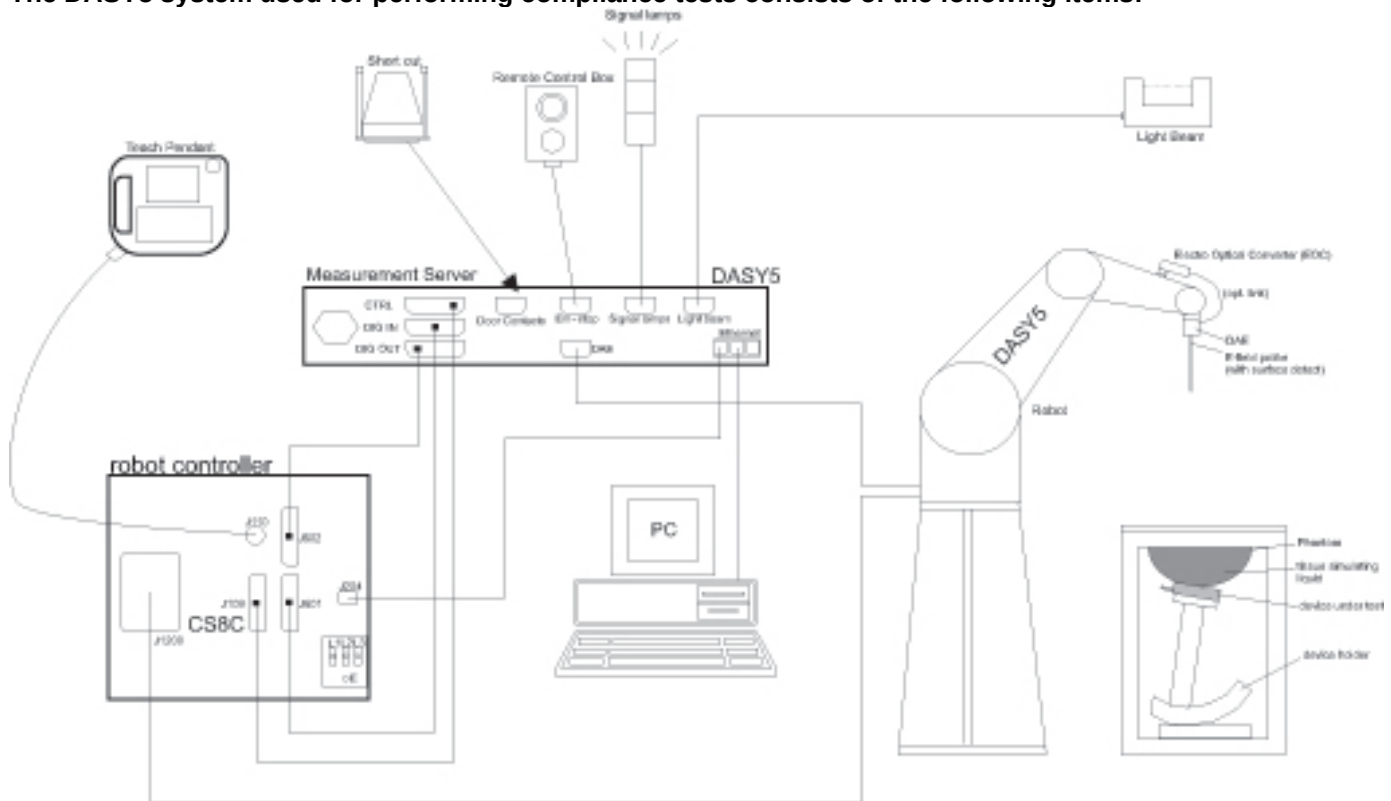
47173 Benicia Street	47266 Benicia Street
SAR Lab A	SAR Lab 1
SAR Lab B	SAR Lab 2
SAR Lab C	SAR Lab 4
SAR Lab D	
SAR Lab E	
SAR Lab F	
SAR Lab G	
SAR Lab H	

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0.

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: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$	≤ 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: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 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: $\Delta z_{\text{Zoom}}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{\text{Zoom}}(1)$: 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
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$	
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 <u>reported</u> 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
Network Analyzer	Agilent	8753ES	MY40001647	8/23/2017
Dielectric Probe kit	SPEAG	DAK-3.5	1087	11/8/2017
Shorting block	SPEAG	DAK-3.5 Short	SM DAK 200 BA	11/8/2017
Thermometer	Traceable Calibration Control Co.	4242	140493798	8/9/2017

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Synthesized Signal Generator	Agilent	N5181A	MY50140630	5/16/2018
Power Meter	Keysight	N1912A	MY50001018	10/11/2017
Power Sensor	Agilent	N1921A	MY53260001	10/17/2017
Power Sensor	Agilent	N1921A	MY53070007	3/1/2018
Amplifier	MITEQ	AMF-4D-00400600-50-30P	1795092	N/A
Directional coupler	Werlatone	C8060-102	2141	N/A
DC Power Supply	HP	1611	215-02292	N/A
Synthesized Signal Generator	HP	8665B	3546A00784	9/2/2017
Power Meter	HP	437B	3125U11347	8/30/2017
Power Meter	HP	437B	3125U09516	9/27/2017
Power Sensor	HP	8481A	1926A16917	10/7/2017
Power Sensor	HP	8481A	2702A76223	9/14/2017
Amplifier	MITEQ	AMF-4D-00400600-50-30P	1808938	N/A
Directional coupler	Werlatone	C8060-102	2710	N/A
DC Power Supply	HP	6296A	2841A-05955	N/A

Lab Equipment

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
E-Field Probe (SAR Lab A)	SPEAG	EX3DV4	3929	3/15/2018
E-Field Probe (SAR Lab B)	SPEAG	EX3DV4	7335	3/15/2018
E-Field Probe (SAR Lab C)	SPEAG	EX3DV4	3885	9/20/2017
E-Field Probe (SAR Lab D)	SPEAG	EX3DV4	7356	4/21/2018
E-Field Probe (SAR Lab E)	SPEAG	EX3DV4	3772	2/16/2018
E-Field Probe (SAR Lab F)	SPEAG	EX3DV4	3773	4/21/2018
E-Field Probe (SAR Lab G)	SPEAG	EX3DV4	3749	1/23/2018
E-Field Probe (SAR Lab H)	SPEAG	EX3DV4	3989	2/16/2018
Data Acquisition Electronics (SAR Lab A)	SPEAG	DAE4	1434	4/19/2018
Data Acquisition Electronics (SAR Lab B)	SPEAG	DAE4	1257	9/15/2017
Data Acquisition Electronics (SAR Lab C)	SPEAG	DAE4	1377	9/14/2017
Data Acquisition Electronics (SAR Lab D)	SPEAG	DAE4	1359	2/10/2018
Data Acquisition Electronics (SAR Lab E)	SPEAG	DAE4	1357	2/13/2018
Data Acquisition Electronics (SAR Lab F)	SPEAG	DAE4	1239	4/19/2018
Data Acquisition Electronics (SAR Lab G)	SPEAG	DAE4	1352	11/11/2017
Data Acquisition Electronics (SAR Lab H)	SPEAG	DAE4	1472	3/10/2018
System Validation Dipole	SPEAG	D750V3	1019	3/13/2018
System Validation Dipole	SPEAG	D750V3	1071	11/8/2017
System Validation Dipole	SPEAG	D835V2	4d002	11/8/2017
System Validation Dipole	SPEAG	D835V2	4d142	9/22/2017
System Validation Dipole	SPEAG	D1750V2	1050	4/18/2018
System Validation Dipole	SPEAG	D1750V2	1077	9/14/2017
System Validation Dipole	SPEAG	D1900V2	5d140	4/19/2018
System Validation Dipole	SPEAG	D2300V2	1002	3/10/2018
System Validation Dipole	SPEAG	D2450V2	748	2/8/2018
System Validation Dipole	SPEAG	D2450V2	899	3/10/2018
System Validation Dipole	SPEAG	D2600V2	1006	9/13/2017
System Validation Dipole	SPEAG	D2600V2	1036	3/10/2018
System Validation Dipole	SPEAG	D5GHzV2	1003	2/13/2018
System Validation Dipole	SPEAG	D5GHzV2	1138	9/22/2017
System Validation Dipole	SPEAG	D5GHzV2	1168	11/14/2017

Other

Name of Equipment	Manufacturer	Type/Model	T Number	Serial No.	Cal. Due Date
Power Meter	Agilent	N1911A	T1244	MY55196008	6/15/2018
Power Sensor	Agilent	N1921A	T309	MY52270022	12/17/2017
Power Sensor	Agilent	N1921A	T734	MY52200012	10/17/2017
Base Station Simulator	R & S	CMU200	T261	106301	11/28/2017
Base Station Simulator	R & S	CMW500	T960	135384 ¹	6/21/2017
Base Station Simulator	R & S	CMW500	T957	134852	6/6/2018
Base Station Simulator	R & S	CMW500	T948	135393	5/15/2018
Base Station Simulator	R & S	CMW500	T232	104245	2/3/2018
Base Station Simulator	R & S	CMW500	T1526	147543	5/2/2018
Base Station Simulator	R & S	CMW500	T970	137875	7/1/2017
Base Station Simulator	R & S	CMW500	N/A	145793	6/5/2018
Base Station Simulator	R & S	CMW500	N/A	112269	6/5/2018
Base Station Simulator	R & S	CMW500	N/A	157972	4/1/2018

Notes:

1. Equipment was not used after calibration due date.

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.

6. Device Under Test (DUT) Information

6.1. DUT Description

Model A1897 is a smartphone with multimedia functions (music, application support, and video), Cellular GSM/GPRS/EGPRS/WCDMA/HSPA+/DC-HSDPA/HSUPA, LTE FDD/TDD & Carrier Aggregation / TDSCDMA, VoLTE radio, IEEE 802.11a/b/g/n/ac radio 2x2 MIMO, Bluetooth radio, GPS and NFC. The rechargeable battery is not user accessible.

This device has two cellular antennas (UAT 1 and LAT 1) as well as multiple Wi-Fi/Bluetooth antennas (UAT 1 for Wi-Fi-BT 2.4GHz, UAT 2 for Wi-Fi 5GHz, and LAT 3 for Wi-Fi-BT 2.4/5GHz).

The device is capable of switching between the LAT and UAT based on signal strength.

The antenna switching is implemented with a physical, "break-before-make" switch such that only one antenna can be used for cellular transmission at a time.

In Airplay mode, the device uses the same 802.11 modes, modulation, MIMO, Channel Bandwidth, power and power control mechanism, etc. as Wi-Fi does. Therefore, Airplay usage is categorized by the Wi-Fi SAR testing contained in Section 10.

There are two vendors of the Wi-Fi/Bluetooth radio modules: Variant 1 and Variant 2 and they have the same mechanical outline, same on board antenna, matching circuit, antenna structure and same specification. Complete SAR evaluation is performed on Variant 1. The worst case configurations for each operation mode and frequency band are repeated for Variant 2. It is confirmed that Variant 1 represents the worst case.

Device Dimension	Overall (Length x Width): 158.4 mm x 78.1 mm Overall Diagonal: 166 mm Display Diagonal: 139.7 mm
Back Cover	☒ The rechargeable battery is not user accessible.
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. ☒ Mobile Hotspot (Wi-Fi 2.4 GHz) ☐ Mobile Hotspot (Wi-Fi 5 GHz)
AirPlay	AirPlay mode enabled devices transfer data directly between each other ☒ AirPlay (Wi-Fi 2.4 GHz) ☒ AirPlay (Wi-Fi 5 GHz)

6.2. Wireless Technologies

Wireless technologies	Frequency bands	Operating mode		Duty Cycle used for SAR testing
GSM	850 1900	Voice (GMSK) GPRS (GMSK) EGPRS (8PSK)	GPRS Multi-Slot Class: ☐ Class 8 - 1 Up, 4 Down ☒ Class 10 - 2 Up, 4 Down ☐ Class 12 - 4 Up, 4 Down ☐ Class 33 - 4 Up, 5 Down	GSM Voice: 12.5% (E)GPRS: 1 Slot: 12.5% 2 Slots: 25%
	Does this device support DTM (Dual Transfer Mode)? ☐ Yes ☒ No			
W-CDMA (UMTS)	Band II Band IV Band V	UMTS Rel. 99 (Voice & Data) HSDPA (Rel. 5) HSUPA (Rel. 6) DC-HSDPA (Rel. 8) 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 17 FDD Band 25 FDD Band 26 FDD Band 30 TDD Band 41 FDD Band 66	QPSK 16QAM 64QAM ☒ Rel. 11 Carrier Aggregation (2 Uplinks and 4 Downlinks), UE Category 10		100% (FDD) 63.3% (TDD) This device supports uplink-downlink configuration 0-6. The configuration with the highest duty cycle was used (config. 0 at 63.3%).
	Does this device support SV-LTE (1xRTT-LTE)? ☐ Yes ☒ No			
Wi-Fi	2.4 GHz	802.11b 802.11g 802.11n (HT20)		100%
	5 GHz	802.11a 802.11n (HT20) 802.11n (HT40) 802.11ac (VHT20) 802.11ac (VHT40) 802.11ac (VHT80)		100%
	Does this device support bands 5.60 ~ 5.65 GHz? ☒ Yes ☐ No			
	Does this device support Band gap channel(s)? ☒ Yes ☐ No			
Bluetooth	2.4 GHz	Version 5.0 LE		77.5% (DH5) ¹

Notes:

- The Bluetooth protocol is considered source-based averaging. Bluetooth EDR, GFSK (DH5) was verified to have the highest duty cycle of 77.5% and was considered and used for SAR Testing.

6.3. Maximum Output Power from Tune-up Procedure

The device utilizes three power modes; Mode A, Mode B and Mode C. Power selection is determined by the device's positioning and use case as described in Sec. 10. Mode A power is used when the device is used against the user's head, or away from the body. Mode B is used when the device is used in a body-worn configuration by the user. Mode C is used when the device is placed on a proprietary Apple wireless charger, as described in Sec. 6.3.5. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

This device has two cellular antennas (UAT 1 and LAT 1) as well as multiple Wi-Fi/Bluetooth antennas (UAT 1 for Wi-Fi-BT 2.4GHz, UAT 2 for Wi-Fi 5GHz, and LAT 3 for Wi-Fi-BT 2.4/5GHz). The selection between antennas UAT and LAT in application is based on RSSI based antenna selection. Full details of power selections are described in the KDB guidance for test cases approved through Manufacturer KDB inquiry – Detect Mode.

The maximum calibration level already includes component tolerance of ± 0.75 dB for modulations other than 8PSK, where a ± 1 dB tolerance is included. KDB 447498 sec.4.1.(d) at the maximum rated output power and within the tune-up tolerance range specified for the product, but not more than 2 dB lower than the maximum tune-up tolerance limit.

RF Air interface	Mode	Target Avg. RF Output Power (dBm)											
		MODE A						MODE B					
		UAT 1			LAT 1			UAT 1			LAT 1		
		MAX	Tolerance	Frame	MAX	Tolerance	Frame	MAX	Tolerance	Frame	MAX	Tolerance	Frame
GSM850	Voice/GPRS (1 slot)	30.8	$\pm$ 0.75	21.7	33.3	$\pm$ 0.75	24.2	30.8	$\pm$ 0.75	21.7	33.3	$\pm$ 0.75	24.2
	GPRS 2 slots	29.8	$\pm$ 0.75	23.7	32.3	$\pm$ 0.75	26.2	29.8	$\pm$ 0.75	23.7	32.3	$\pm$ 0.75	26.2
	EGPRS 1 slot	25.5	$\pm$ 1.0	16.5	28.0	$\pm$ 1.0	19.0	25.5	$\pm$ 1.0	16.5	28.0	$\pm$ 1.0	19.0
	EGPRS 2 slots	25.5	$\pm$ 1.0	19.5	28.0	$\pm$ 1.0	22.0	25.5	$\pm$ 1.0	19.5	28.0	$\pm$ 1.0	22.0
GSM1900	Voice/GPRS (1 slot)	28.0	$\pm$ 0.75	19.0	30.5	$\pm$ 0.75	21.5	28.0	$\pm$ 0.75	19.0	31.3	$\pm$ 0.75	22.2
	GPRS 2 slots	25.3	$\pm$ 0.75	19.2	27.5	$\pm$ 0.75	21.5	26.8	$\pm$ 0.75	20.7	30.3	$\pm$ 0.75	24.2
	EGPRS 1 slot	23.5	$\pm$ 1.0	14.5	27.0	$\pm$ 1.0	18.0	23.5	$\pm$ 1.0	14.5	27.0	$\pm$ 1.0	18.0
	EGPRS 2 slots	23.5	$\pm$ 1.0	17.5	27.0	$\pm$ 1.0	21.0	23.5	$\pm$ 1.0	17.5	27.0	$\pm$ 1.0	21.0

RF Air interface	Mode	Target Avg. RF Output Power (dBm)											
		MODE A					MODE B						
		UAT 1			LAT 1		UAT 1			LAT 1			
		MAX		Tolerance	MAX		Tolerance	MAX		Tolerance	MAX		Tolerance
W-CDMA Band V	R99	23.8	±	0.75	24.8	±	0.75	23.8	±	0.75	24.8	±	0.75
	HSDPA	23.8	±	0.75	24.8	±	0.75	23.8	±	0.75	24.8	±	0.75
	HSUPA	23.8	±	0.75	24.8	±	0.75	23.8	±	0.75	24.8	±	0.75
	DC-HSDPA	23.8	±	0.75	24.8	±	0.75	23.8	±	0.75	24.8	±	0.75
	HSPA+	23.8	±	0.75	24.8	±	0.75	23.8	±	0.75	24.8	±	0.75
W-CDMA Band IV	R99	19.0	±	0.75	25.3	±	0.75	21.0	±	0.75	21.0	±	0.75
	HSDPA	19.0	±	0.75	25.3	±	0.75	21.0	±	0.75	21.0	±	0.75
	HSUPA	19.0	±	0.75	25.3	±	0.75	21.0	±	0.75	21.0	±	0.75
	DC-HSDPA	19.0	±	0.75	25.3	±	0.75	21.0	±	0.75	21.0	±	0.75
	HSPA+	19.0	±	0.75	25.3	±	0.75	21.0	±	0.75	21.0	±	0.75
W-CDMA Band II	R99	18.8	±	0.75	25.3	±	0.75	20.3	±	0.75	20.8	±	0.75
	HSDPA	18.8	±	0.75	25.3	±	0.75	20.3	±	0.75	20.8	±	0.75
	HSUPA	18.8	±	0.75	25.3	±	0.75	20.3	±	0.75	20.8	±	0.75
	DC-HSDPA	18.8	±	0.75	25.3	±	0.75	20.3	±	0.75	20.8	±	0.75
	HSPA+	18.8	±	0.75	25.3	±	0.75	20.3	±	0.75	20.8	±	0.75
LTE Band 2	QPSK	18.8	±	0.75	24.8	±	0.75	20.3	±	0.75	20.8	±	0.75
LTE Band 4	QPSK	19.0	±	0.75	24.8	±	0.75	20.8	±	0.75	21.0	±	0.75
LTE Band 5	QPSK	23.3	±	0.75	24.8	±	0.75	23.3	±	0.75	24.8	±	0.75
LTE Band 7	QPSK	18.0	±	0.75	24.8	±	0.75	19.8	±	0.75	18.5	±	0.75
LTE Band 12	QPSK	23.3	±	0.75	24.8	±	0.75	23.3	±	0.75	24.8	±	0.75
LTE Band 13	QPSK	23.3	±	0.75	24.8	±	0.75	23.3	±	0.75	24.8	±	0.75
LTE Band 17	QPSK	23.3	±	0.75	24.8	±	0.75	23.3	±	0.75	24.8	±	0.75
LTE Band 25	QPSK	18.8	±	0.75	24.8	±	0.75	20.3	±	0.75	20.8	±	0.75
LTE Band 26	QPSK	23.3	±	0.75	24.8	±	0.75	23.3	±	0.75	24.8	±	0.75
LTE Band 30	QPSK	17.3	±	0.75	23.0	±	0.75	19.0	±	0.75	20.3	±	0.75
LTE Band 41	QPSK	18.3	±	0.75	24.5	±	0.75	20.8	±	0.75	20.8	±	0.75
LTE Band 66	QPSK	19.0	±	0.75	24.8	±	0.75	20.8	±	0.75	21.0	±	0.75
LTE-uplink 2CA Band 7	QPSK	18.0	±	0.75	23.8	±	0.75	19.3	±	0.75	18.5	±	0.75
LTE-uplink 2CA Band 41	QPSK	18.3	±	0.75	23.8	±	0.75	19.3	±	0.75	20.8	±	0.75

RF Air interface	Mode	Max. Avg. RF Output Power (dBm)			
		MODE A		MODE B	
		UAT 1	LAT 3	UAT 1	LAT 3
Bluetooth P _{low}	GFSK	10.0	10.0	10.0	10.0
Bluetooth P _{high}	GFSK	12.0	16.5	13.5	13.5
Bluetooth P _{standalone}	GFSK	14.5	19.5	16.5	16.5

Notes:

1. LTE QPSK configuration has the highest maximum average output power per 3GPP standard.
2. LTE-uplink 2CA are the total combined power of the UL CA.
3. Bluetooth P_{high} is used when Wi-Fi antenna is active and Cellular antenna is inactive.
4. Bluetooth P_{low} is used with Wi-Fi and Cellular antennas are active or with Wi-Fi inactive and Cellular antenna is active.
5. Bluetooth P_{standalone} is used with Wi-Fi and Cellular antennas are inactive.

6.3.1. WLAN SISO (P_{Cell_ON})

WLAN power will vary based on the state of the cellular transmitter for SISO and MIMO modes.

P_{Cell_ON}: This will be used when both Cellular and Wi-Fi radios are ON from Manufacturer KDB inquiry – Cellular State Dependent Wi-Fi Power control.

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 1	LAT 3	UAT 1	LAT 3	
2.4 DSSS	802.11b	1 Tx	1	2412	12.0	17.3	16.5	13.5	Yes
			6	2437	12.0	17.3	16.5	13.5	
			11	2462	12.0	17.3	16.5	13.5	
			12	2467	12.0	17.3	16.5	13.5	
			13	2472	12.0	15.0	15.0	13.5	
Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 1	LAT 3	UAT 1	LAT 3	
2.4 OFDM	802.11g	1 Tx	1	2412	12.0	16.0	16.0	13.5	No
			6	2437	12.0	17.3	16.5	13.5	
			11	2462	12.0	16.0	16.0	13.5	
			12	2467	12.0	13.5	13.5	13.5	
			13	2472	12.0	4.0	4.0	4.0	
	802.11n	1 Tx HT20	1	2412	12.0	16.0	16.0	13.5	No
			6	2437	12.0	17.3	16.5	13.5	
			11	2462	12.0	16.0	16.0	13.5	
			12	2467	12.0	13.5	13.5	13.5	
			13	2472	12.0	4.0	4.0	4.0	

Notes:

1. "Yes" = considered for output power measurement and SAR testing. "No" = 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 802.11a/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.
2. Sec. 5.2.2. of KDB 248227 D01 states: 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.

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 2	LAT 3	UAT 2	LAT 3	
5.2	802.11a	1 Tx	36	5180	6.0	17.5	13.8	10.0	No
			40	5200	6.0	19.0	13.8	10.0	
			44	5220	6.0	19.0	13.8	10.0	
			48	5240	6.0	19.0	13.8	10.0	
	802.11n	1 Tx HT20	36	5180	6.0	17.5	13.8	10.0	No
			40	5200	6.0	19.0	13.8	10.0	
			44	5220	6.0	19.0	13.8	10.0	
			48	5240	6.0	19.0	13.8	10.0	
		1 Tx HT40	38	5190	6.0	15.5	13.8	10.0	No
			46	5230	6.0	18.5	13.8	10.0	
	802.11ac	1 Tx VHT20	36	5180	6.0	17.5	13.8	10.0	No
			40	5200	6.0	19.0	13.8	10.0	
			44	5220	6.0	19.0	13.8	10.0	
			48	5240	6.0	19.0	13.8	10.0	
		1 Tx VHT40	38	5190	6.0	15.5	13.8	10.0	No
			46	5230	6.0	18.5	13.8	10.0	
		1 Tx VHT80	42	5210	6.0	15.0	13.8	10.0	Yes
		5.3	802.11a	1 Tx	52	5260	5.3	19.0	13.5
56	5280				5.3	19.0	13.5	9.5	
60	5300				5.3	19.0	13.5	9.5	
64	5320				5.3	17.0	13.5	9.5	
802.11n	1 Tx HT20		52	5260	5.3	19.0	13.5	9.5	No
			56	5280	5.3	19.0	13.5	9.5	
			60	5300	5.3	19.0	13.5	9.5	
			64	5320	5.3	17.0	13.5	9.5	
	1 Tx HT40		54	5270	5.3	18.5	13.5	9.5	No
			62	5310	5.3	15.5	13.5	9.5	
802.11ac	1 Tx VHT20		52	5260	5.3	19.0	13.5	9.5	No
			56	5280	5.3	19.0	13.5	9.5	
			60	5300	5.3	19.0	13.5	9.5	
			64	5320	5.3	17.0	13.5	9.5	
	1 Tx VHT40		54	5270	5.3	18.5	13.5	9.5	No
			62	5310	5.3	15.5	13.5	9.5	
	1 Tx VHT80		58	5290	5.3	15.0	13.5	9.5	No

Notes:

1. "Yes" = considered for output power measurement and SAR testing. "No" = 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 802.11a/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.

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 2	LAT 3	UAT 2	LAT 3	
5.5	802.11a	1 Tx	100	5500	5.0	17.0	13.8	11.0	No
			104	5520	5.0	18.5	13.8	11.0	
			108	5540	5.0	18.5	13.8	11.0	
			112	5560	5.0	18.5	13.8	11.0	
			116	5580	5.0	18.5	13.8	11.0	
			120	5600	5.0	18.5	13.8	11.0	
			124	5620	5.0	18.5	13.8	11.0	
			128	5640	5.0	18.5	13.8	11.0	
			132	5660	5.0	18.5	13.8	11.0	
			136	5680	5.0	18.5	13.8	11.0	
			140	5700	5.0	17.0	13.8	11.0	
			144	5720	5.0	18.5	13.8	11.0	
	802.11n	1 Tx HT20	100	5500	5.0	17.0	13.8	11.0	No
			104	5520	5.0	18.5	13.8	11.0	
			108	5540	5.0	18.5	13.8	11.0	
			112	5560	5.0	18.5	13.8	11.0	
			116	5580	5.0	18.5	13.8	11.0	
			120	5600	5.0	18.5	13.8	11.0	
			124	5620	5.0	18.5	13.8	11.0	
			128	5640	5.0	18.5	13.8	11.0	
			132	5660	5.0	18.5	13.8	11.0	
			136	5680	5.0	18.5	13.8	11.0	
			140	5700	5.0	17.0	13.8	11.0	
			144	5720	5.0	18.5	13.8	11.0	
		1 Tx HT40	102	5510	5.0	16.0	13.8	11.0	No
			110	5550	5.0	18.5	13.8	11.0	
			118	5590	5.0	18.5	13.8	11.0	
			126	5630	5.0	18.5	13.8	11.0	
			134	5670	5.0	17.5	13.8	11.0	
			142	5710	5.0	18.5	13.8	11.0	
	802.11ac	1 Tx VHT20	100	5500	5.0	17.0	13.8	11.0	No
			104	5520	5.0	18.5	13.8	11.0	
			108	5540	5.0	18.5	13.8	11.0	
			112	5560	5.0	18.5	13.8	11.0	
			116	5580	5.0	18.5	13.8	11.0	
			120	5600	5.0	18.5	13.8	11.0	
124			5620	5.0	18.5	13.8	11.0		
128			5640	5.0	18.5	13.8	11.0		
132			5660	5.0	18.5	13.8	11.0		
136			5680	5.0	18.5	13.8	11.0		
140			5700	5.0	17.0	13.8	11.0		
144			5720	5.0	18.5	13.8	11.0		
1 Tx VHT40		102	5510	5.0	16.0	13.8	11.0	No	
		110	5550	5.0	18.5	13.8	11.0		
		118	5590	5.0	18.5	13.8	11.0		
		126	5630	5.0	18.5	13.8	11.0		
		134	5670	5.0	17.5	13.8	11.0		
1 Tx VHT80		142	5710	5.0	18.5	13.8	11.0	Yes	
		106	5530	5.0	15.0	13.8	11.0		
		122	5610	5.0	18.5	13.8	11.0		
		138	5690	5.0	18.5	13.8	11.0		

Notes:

1. "Yes" = considered for output power measurement and SAR testing. "No" = 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 802.11a/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.

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 2	LAT 3	UAT 2	LAT 3	
5.8	802.11a	1 Tx	149	5745	4.5	18.5	11.8	12.0	No
			153	5765	4.5	18.5	11.8	12.0	
			157	5785	4.5	18.5	11.8	12.0	
			161	5805	4.5	18.5	11.8	12.0	
			165	5825	4.5	18.5	11.8	12.0	
	802.11n	1 Tx HT20	149	5745	4.5	18.5	11.8	12.0	No
			153	5765	4.5	18.5	11.8	12.0	
			157	5785	4.5	18.5	11.8	12.0	
			161	5805	4.5	18.5	11.8	12.0	
			165	5825	4.5	18.5	11.8	12.0	
		1 Tx HT40	151	5755	4.5	18.5	11.8	12.0	No
			159	5795	4.5	18.5	11.8	12.0	
	802.11ac	1 Tx VHT20	149	5745	4.5	18.5	11.8	12.0	No
			153	5765	4.5	18.5	11.8	12.0	
			157	5785	4.5	18.5	11.8	12.0	
			161	5805	4.5	18.5	11.8	12.0	
			165	5825	4.5	18.5	11.8	12.0	
		1 Tx VHT40	151	5755	4.5	18.5	11.8	12.0	No
			159	5795	4.5	18.5	11.8	12.0	
		1 Tx VHT80	155	5775	4.5	18.5	11.8	12.0	Yes

Notes:

1. "Yes" = considered for output power measurement and SAR testing. "No" = 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 802.11a/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.

6.3.2. WLAN MIMO (P_{Cell_ON})

WLAN power will vary based on the state of the cellular transmitter for SISO and MIMO modes.

P_{Cell_ON}: This will be used when both Cellular and Wi-Fi radios are ON from Manufacturer KDB inquiry – Cellular State Dependent Wi-Fi Power control.

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max.Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 1	LAT 3	UAT 1	LAT 3	
2.4 OFDM	802.11g	2 Tx CDD	1	2412	12.0	15.0	15.0	13.5	Yes
			2	2417	12.0	17.3	16.5	13.5	
			6	2437	12.0	17.3	16.5	13.5	
			9	2452	12.0	17.3	16.5	13.5	
			10	2457	12.0	16.5	16.5	13.5	
			11	2462	12.0	14.5	14.5	13.5	
			12	2467	12.0	13.0	13.0	13.0	
			13	2472	4.0	4.0	4.0	4.0	
	802.11n	2 Tx HT20 CDD/STBC/ SDM	1	2412	12.0	15.0	15.0	13.5	No
			2	2417	12.0	17.3	16.5	13.5	
			6	2437	12.0	17.3	16.5	13.5	
			9	2452	12.0	17.3	16.5	13.5	
			10	2457	12.0	16.5	16.5	13.5	
			11	2462	12.0	14.5	14.5	13.5	
			12	2467	12.0	13.0	13.0	13.0	
			13	2472	4.0	4.0	4.0	4.0	

Notes:

1. "Yes" = considered for output power measurement and SAR testing. "No" = 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 802.11a/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.

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 2	LAT 3	UAT 2	LAT 3	
5.2	802.11a	2 Tx CDD	36	5180	6.0	17.0	13.8	10.0	No
			40	5200	6.0	18.0	13.8	10.0	
			44	5220	6.0	18.0	13.8	10.0	
			48	5240	6.0	18.0	13.8	10.0	
	802.11n	2 Tx HT20 CDD/STBC/ SDM	36	5180	6.0	17.0	13.8	10.0	No
			40	5200	6.0	18.0	13.8	10.0	
			44	5220	6.0	18.0	13.8	10.0	
			48	5240	6.0	18.0	13.8	10.0	
		2 Tx HT40 CDD/STBC/SDM	38	5190	6.0	14.0	13.8	10.0	Yes
			46	5230	6.0	18.5	13.8	10.0	
	802.11ac	2 Tx VHT20 CDD/STBC/ SDM	36	5180	6.0	17.0	13.8	10.0	No
			40	5200	6.0	18.0	13.8	10.0	
			44	5220	6.0	18.0	13.8	10.0	
			48	5240	6.0	18.0	13.8	10.0	
		2 Tx VHT40 CDD/STBC/SDM	38	5190	6.0	14.0	13.8	10.0	No
			46	5230	6.0	18.5	13.8	10.0	
		2 Tx VHT80 CDD/STBC/SDM	42	5210	6.0	13.5	13.5	10.0	No
5.3	802.11a	2 Tx CDD	52	5260	5.3	18.0	13.5	9.5	No
			56	5280	5.3	18.0	13.5	9.5	
			60	5300	5.3	18.0	13.5	9.5	
			64	5320	5.3	17.0	13.5	9.5	
	802.11n	2 Tx HT20 CDD/STBC/ SDM	52	5260	5.3	18.0	13.5	9.5	No
			56	5280	5.3	18.0	13.5	9.5	
			60	5300	5.3	18.0	13.5	9.5	
			64	5320	5.3	17.0	13.5	9.5	
		2 Tx HT40 CDD/STBC/SDM	54	5270	5.3	18.5	13.5	9.5	No
			62	5310	5.3	15.0	13.5	9.5	
	802.11ac	2 Tx VHT20 CDD/STBC/ SDM	52	5260	5.3	18.0	13.5	9.5	No
			56	5280	5.3	18.0	13.5	9.5	
			60	5300	5.3	18.0	13.5	9.5	
			64	5320	5.3	17.0	13.5	9.5	
		2 Tx VHT40 CDD/STBC/SDM	54	5270	5.3	18.5	13.5	9.5	No
			62	5310	5.3	15.0	13.5	9.5	
		2 Tx VHT80 CDD/STBC/SDM	58	5290	5.3	14.5	13.5	9.5	No

Notes:

1. "Yes" = considered for output power measurement and SAR testing. "No" = 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 802.11a/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.

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 2	LAT 3	UAT 2	LAT 3	
5.5	802.11a	2 Tx CDD	100	5500	5.0	17.0	13.8	11.0	No
			104	5520	5.0	18.0	13.8	11.0	
			108	5540	5.0	18.0	13.8	11.0	
			112	5560	5.0	18.0	13.8	11.0	
			116	5580	5.0	18.0	13.8	11.0	
			120	5600	5.0	18.0	13.8	11.0	
			124	5620	5.0	18.0	13.8	11.0	
			128	5640	5.0	18.0	13.8	11.0	
			132	5660	5.0	18.0	13.8	11.0	
			136	5680	5.0	18.0	13.8	11.0	
			140	5700	5.0	16.5	13.8	11.0	
			144	5720	5.0	18.0	13.8	11.0	
	802.11n	2 Tx HT20 CDD/STBC/ SDM	100	5500	5.0	17.0	13.8	11.0	No
			104	5520	5.0	18.0	13.8	11.0	
			108	5540	5.0	18.0	13.8	11.0	
			112	5560	5.0	18.0	13.8	11.0	
			116	5580	5.0	18.0	13.8	11.0	
			120	5600	5.0	18.0	13.8	11.0	
			124	5620	5.0	18.0	13.8	11.0	
			128	5640	5.0	18.0	13.8	11.0	
			132	5660	5.0	18.0	13.8	11.0	
			136	5680	5.0	18.0	13.8	11.0	
			140	5700	5.0	16.5	13.8	11.0	
			144	5720	5.0	18.0	13.8	11.0	
		2 Tx HT40 CDD/STBC/ SDM	102	5510	5.0	14.5	13.8	11.0	No
			110	5550	5.0	18.5	13.8	11.0	
			118	5590	5.0	18.5	13.8	11.0	
			126	5630	5.0	18.5	13.8	11.0	
			134	5670	5.0	16.0	13.8	11.0	
			142	5710	5.0	18.5	13.8	11.0	
	802.11ac	2 Tx VHT20 CDD/STBC/ SDM	100	5500	5.0	17.0	13.8	11.0	No
			104	5520	5.0	18.0	13.8	11.0	
			108	5540	5.0	18.0	13.8	11.0	
			112	5560	5.0	18.0	13.8	11.0	
			116	5580	5.0	18.0	13.8	11.0	
			120	5600	5.0	18.0	13.8	11.0	
			124	5620	5.0	18.0	13.8	11.0	
			128	5640	5.0	18.0	13.8	11.0	
			132	5660	5.0	18.0	13.8	11.0	
			136	5680	5.0	18.0	13.8	11.0	
			140	5700	5.0	16.5	13.8	11.0	
			144	5720	5.0	18.0	13.8	11.0	
2 Tx VHT40 CDD/STBC/ SDM		102	5510	5.0	14.5	13.8	11.0	No	
		110	5550	5.0	18.5	13.8	11.0		
		118	5590	5.0	18.5	13.8	11.0		
		126	5630	5.0	18.5	13.8	11.0		
		134	5670	5.0	16.0	13.8	11.0		
		142	5710	5.0	18.5	13.8	11.0		
2 Tx VHT80 CDD/STBC/ SDM		106	5530	5.0	14.0	13.8	11.0	Yes	
		122	5610	5.0	18.5	13.8	11.0		
		138	5690	5.0	18.5	13.8	11.0		

Notes:

1. "Yes" = considered for output power measurement and SAR testing. "No" = 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 802.11a/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.

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 2	LAT 3	UAT 2	LAT 3	
5.8	802.11a	2 Tx CDD	149	5745	4.5	18.5	11.8	12.0	No
			153	5765	4.5	18.5	11.8	12.0	
			157	5785	4.5	18.5	11.8	12.0	
			161	5805	4.5	18.5	11.8	12.0	
			165	5825	4.5	18.5	11.8	12.0	
	802.11n	2 Tx HT20 CDD/STBC/ SDM	149	5745	4.5	18.5	11.8	12.0	No
			153	5765	4.5	18.5	11.8	12.0	
			157	5785	4.5	18.5	11.8	12.0	
			161	5805	4.5	18.5	11.8	12.0	
			165	5825	4.5	18.5	11.8	12.0	
		2 Tx HT40 CDD/STBC/SDM	151	5755	4.5	18.5	11.8	12.0	Yes
			159	5795	4.5	18.5	11.8	12.0	
	802.11ac	2 Tx VHT20 CDD/STBC/ SDM	149	5745	4.5	18.5	11.8	12.0	No
			153	5765	4.5	18.5	11.8	12.0	
			157	5785	4.5	18.5	11.8	12.0	
			161	5805	4.5	18.5	11.8	12.0	
			165	5825	4.5	18.5	11.8	12.0	
		2 Tx VHT40 CDD/STBC/SDM	151	5755	4.5	18.5	11.8	12.0	No
			159	5795	4.5	18.5	11.8	12.0	
		2 Tx VHT80 CDD/STBC/SDM	155	5775	4.5	17.5	11.8	12.0	Yes

Notes:

1. "Yes" = considered for output power measurement and SAR testing. "No" = 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 802.11a/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.

6.3.3. WLAN SISO (P_{Cell_OFF})

WLAN power will vary based on the state of the cellular transmitter for SISO and MIMO modes.

P_{Cell_OFF}: This will be used when only Wi-Fi radios is ON from Manufacturer KDB inquiry – Cellular State Dependent Wi-Fi Power control.

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 1	LAT 3	UAT 1	LAT 3	
2.4 DSSS	802.11b	1 Tx	1	2412	17.3	20.0	19.8	18.8	Yes
			2	2417	17.3	21.5	19.8	18.8	
			6	2437	17.3	21.5	19.8	18.8	
			10	2457	17.3	21.5	19.8	18.8	
			11	2462	17.3	21.0	19.8	18.8	
			12	2467	17.3	18.5	18.5	18.5	
			13	2472	15.0	15.0	15.0	15.0	
Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 1	LAT 3	UAT 1	LAT 3	
2.4 OFDM	802.11g	1 Tx	1	2412	16.0	16.0	16.0	16.0	No
			2	2417	17.3	18.5	18.5	18.5	
			3	2422	17.3	20.0	19.8	18.8	
			4	2427	17.3	21.0	19.8	18.8	
			6	2437	17.3	21.0	19.8	18.8	
			8	2447	17.3	21.0	19.8	18.8	
			9	2452	17.3	20.0	19.8	18.8	
			10	2457	17.3	17.5	17.5	17.5	
			11	2462	16.0	16.0	16.0	16.0	
			12	2467	13.5	13.5	13.5	13.5	
			13	2472	4.0	4.0	4.0	4.0	
	802.11n	1 Tx HT20	1	2412	16.0	16.0	16.0	16.0	No
			2	2417	17.3	18.5	18.5	18.5	
			3	2422	17.3	20.0	19.8	18.8	
			4	2427	17.3	21.0	19.8	18.8	
			6	2437	17.3	21.0	19.8	18.8	
			8	2447	17.3	21.0	19.8	18.8	
			9	2452	17.3	20.0	19.8	18.8	
			10	2457	17.3	17.5	17.5	17.5	
			11	2462	16.0	16.0	16.0	16.0	
			12	2467	13.5	13.5	13.5	13.5	
			13	2472	4.0	4.0	4.0	4.0	

Notes:

1. "Yes" = considered for output power measurement and SAR testing. "No" = 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 802.11a/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.
2. Sec. 5.2.2. of KDB 248227 D01 states: 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.

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 2	LAT 3	UAT 2	LAT 3	
5.2	802.11a	1 Tx	36	5180	13.8	17.5	17.5	16.8	No
			40	5200	13.8	19.5	18.0	16.8	
			44	5220	13.8	21.0	18.0	16.8	
			48	5240	13.8	21.0	18.0	16.8	
	802.11n	1 Tx HT20	36	5180	13.8	17.5	17.5	16.8	No
			40	5200	13.8	19.5	18.0	16.8	
			44	5220	13.8	21.0	18.0	16.8	
			48	5240	13.8	21.0	18.0	16.8	
		1 Tx HT40	38	5190	13.8	15.5	15.5	15.5	Yes
			46	5230	13.8	18.5	18.0	16.8	
	802.11ac	1 Tx VHT20	36	5180	13.8	17.5	17.5	16.8	No
			40	5200	13.8	19.5	18.0	16.8	
			44	5220	13.8	21.0	18.0	16.8	
			48	5240	13.8	21.0	18.0	16.8	
		1 Tx VHT40	38	5190	13.8	15.5	15.5	15.5	No
			46	5230	13.8	18.5	18.0	16.8	
		1 Tx VHT80	42	5210	13.8	15.0	15.0	15.0	Yes
	5.3	802.11a	1 Tx	52	5260	13.0	21.0	17.8	16.3
56				5280	13.0	21.0	17.8	16.3	
60				5300	13.0	19.5	17.8	16.3	
64				5320	13.0	17.0	17.0	16.3	
802.11n		1 Tx HT20	52	5260	13.0	21.0	17.8	16.3	No
			56	5280	13.0	21.0	17.8	16.3	
			60	5300	13.0	19.5	17.8	16.3	
			64	5320	13.0	17.0	17.0	16.3	
		1 Tx HT40	54	5270	13.0	18.5	17.8	16.3	No
			62	5310	13.0	15.5	15.5	15.5	
802.11ac		1 Tx VHT20	52	5260	13.0	21.0	17.8	16.3	No
			56	5280	13.0	21.0	17.8	16.3	
			60	5300	13.0	19.5	17.8	16.3	
			64	5320	13.0	17.0	17.0	16.3	
		1 Tx VHT40	54	5270	13.0	18.5	17.8	16.3	No
			62	5310	13.0	15.5	15.5	15.5	
		1 Tx VHT80	58	5290	13.0	15.0	15.0	15.0	No

Notes:

1. "Yes" = considered for output power measurement and SAR testing. "No" = 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 802.11a/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.

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 2	LAT 3	UAT 2	LAT 3	
5.5	802.11a	1 Tx	100	5500	12.8	17.0	17.0	17.0	Yes
			104	5520	12.8	19.5	18.0	17.8	
			108	5540	12.8	21.0	18.0	17.8	
			112	5560	12.8	21.0	18.0	17.8	
			116	5580	12.8	21.0	18.0	17.8	
			120	5600	12.8	21.0	18.0	17.8	
			124	5620	12.8	21.0	18.0	17.8	
			128	5640	12.8	21.0	18.0	17.8	
			132	5660	12.8	21.0	18.0	17.8	
			136	5680	12.8	19.5	18.0	17.8	
			140	5700	12.8	17.0	17.0	17.0	
			144	5720	12.8	21.0	18.0	17.8	
	802.11n	1 Tx HT20	100	5500	12.8	17.0	17.0	17.0	No
			104	5520	12.8	19.5	18.0	17.8	
			108	5540	12.8	21.0	18.0	17.8	
			112	5560	12.8	21.0	18.0	17.8	
			116	5580	12.8	21.0	18.0	17.8	
			120	5600	12.8	21.0	18.0	17.8	
			124	5620	12.8	21.0	18.0	17.8	
			128	5640	12.8	21.0	18.0	17.8	
			132	5660	12.8	21.0	18.0	17.8	
			136	5680	12.8	19.5	18.0	17.8	
			140	5700	12.8	17.0	17.0	17.0	
			144	5720	12.8	21.0	18.0	17.8	
		1 Tx HT40	102	5510	12.8	16.0	16.0	16.0	No
			110	5550	12.8	19.0	18.0	17.8	
			118	5590	12.8	19.5	18.0	17.8	
			126	5630	12.8	18.5	18.0	17.8	
			134	5670	12.8	17.5	17.5	17.5	
			142	5710	12.8	19.5	18.0	17.8	
	802.11ac	1 Tx VHT20	100	5500	12.8	17.0	17.0	17.0	No
			104	5520	12.8	19.5	18.0	17.8	
			108	5540	12.8	21.0	18.0	17.8	
			112	5560	12.8	21.0	18.0	17.8	
			116	5580	12.8	21.0	18.0	17.8	
			120	5600	12.8	21.0	18.0	17.8	
			124	5620	12.8	21.0	18.0	17.8	
			128	5640	12.8	21.0	18.0	17.8	
			132	5660	12.8	21.0	18.0	17.8	
			136	5680	12.8	19.5	18.0	17.8	
			140	5700	12.8	17.0	17.0	17.0	
			144	5720	12.8	21.0	18.0	17.8	
1 Tx VHT40		102	5510	12.8	16.0	16.0	16.0	No	
		110	5550	12.8	19.0	18.0	17.8		
		118	5590	12.8	19.5	18.0	17.8		
		126	5630	12.8	18.5	18.0	17.8		
		134	5670	12.8	17.5	17.5	17.5		
1 Tx VHT80		142	5710	12.8	19.5	18.0	17.8	No	
		106	5530	12.8	15.0	15.0	15.0		Yes
		122	5610	12.8	19.0	18.0	17.8		
		138	5690	12.8	19.0	18.0	17.8		

Notes:

1. "Yes" = considered for output power measurement and SAR testing. "No" = 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 802.11a/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.

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 2	LAT 3	UAT 2	LAT 3	
5.8	802.11a	1 Tx	149	5745	12.3	20.0	16.0	18.8	Yes
			153	5765	12.3	21.0	16.0	18.8	
			157	5785	12.3	21.0	16.0	18.8	
			161	5805	12.3	21.0	16.0	18.8	
			165	5825	12.3	19.5	16.0	18.8	
	802.11n	1 Tx HT20	149	5745	12.3	20.0	16.0	18.8	No
			153	5765	12.3	21.0	16.0	18.8	
			157	5785	12.3	21.0	16.0	18.8	
			161	5805	12.3	21.0	16.0	18.8	
			165	5825	12.3	19.5	16.0	18.8	
		1 Tx HT40	151	5755	12.3	19.5	16.0	18.8	No
			159	5795	12.3	19.5	16.0	18.8	
	802.11ac	1 Tx VHT20	149	5745	12.3	20.0	16.0	18.8	No
			153	5765	12.3	21.0	16.0	18.8	
			157	5785	12.3	21.0	16.0	18.8	
			161	5805	12.3	21.0	16.0	18.8	
			165	5825	12.3	19.5	16.0	18.8	
		1 Tx VHT40	151	5755	12.3	19.5	16.0	18.8	No
			159	5795	12.3	19.5	16.0	18.8	
		1 Tx VHT80	155	5775	12.3	19.0	16.0	18.8	Yes

Notes:

1. "Yes" = considered for output power measurement and SAR testing. "No" = 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 802.11a/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.

6.3.4. WLAN MIMO (P_{Cell_OFF})

WLAN power will vary based on the state of the cellular transmitter for SISO and MIMO modes.

P_{Cell_OFF} : This will be used when only Wi-Fi radios is ON from Manufacturer KDB inquiry – Cellular State Dependent Wi-Fi Power control.

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 1	LAT 3	UAT 1	LAT 3	
2.4 OFDM	802.11g	2 Tx CDD	1	2412	15.0	15.0	15.0	15.0	Yes
			2	2417	17.3	18.0	18.0	18.0	
			3	2422	17.3	19.5	19.5	18.8	
			4	2427	17.3	21.0	19.8	18.8	
			6	2437	17.3	21.0	19.8	18.8	
			8	2447	17.3	21.0	19.8	18.8	
			9	2452	17.3	19.5	19.5	18.8	
			10	2457	16.5	16.5	16.5	16.5	
			11	2462	14.5	14.5	14.5	14.5	
			12	2467	13.0	13.0	13.0	13.0	
	13	2472	4.0	4.0	4.0	4.0			
	802.11n	2 Tx HT20 CDD/STBC/ SDM	1	2412	15.0	15.0	15.0	15.0	No
			2	2417	17.3	18.0	18.0	18.0	
			3	2422	17.3	19.5	19.5	18.8	
			4	2427	17.3	21.0	19.8	18.8	
			6	2437	17.3	21.0	19.8	18.8	
			8	2447	17.3	21.0	19.8	18.8	
			9	2452	17.3	19.5	19.5	18.8	
			10	2457	16.5	16.5	16.5	16.5	
			11	2462	14.5	14.5	14.5	14.5	
			12	2467	13.0	13.0	13.0	13.0	
			13	2472	4.0	4.0	4.0	4.0	

Notes:

1. "Yes" = considered for output power measurement and SAR testing. "No" = 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 802.11a/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.

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 2	LAT 3	UAT 2	LAT 3	
5.2	802.11a	2 Tx CDD	36	5180	13.8	17.0	17.0	16.8	No
			40	5200	13.8	18.0	18.0	16.8	
			44	5220	13.8	18.0	18.0	16.8	
			48	5240	13.8	18.0	18.0	16.8	
	802.11n	2 Tx HT20 CDD/STBC/ SDM	36	5180	13.8	17.0	17.0	16.8	No
			40	5200	13.8	18.0	18.0	16.8	
			44	5220	13.8	18.0	18.0	16.8	
			48	5240	13.8	18.0	18.0	16.8	
		2 Tx HT40 CDD/STBC/SDM	38	5190	13.8	14.0	14.0	14.0	Yes
			46	5230	13.8	18.5	18.0	16.8	
	802.11ac	2 Tx VHT20 CDD/STBC/ SDM	36	5180	13.8	17.0	17.0	16.8	No
			40	5200	13.8	18.0	18.0	16.8	
			44	5220	13.8	18.0	18.0	16.8	
			48	5240	13.8	18.0	18.0	16.8	
		2 Tx VHT40 CDD/STBC/SDM	38	5190	13.8	14.0	14.0	14.0	No
			46	5230	13.8	18.5	18.0	16.8	
		2 Tx VHT80 CDD/STBC/SDM	42	5210	13.5	13.5	13.5	13.5	No
			5.3	802.11a	2 Tx CDD	52	5260	13.0	18.0
56	5280	13.0				18.0	17.8	16.3	
60	5300	13.0				18.0	17.8	16.3	
64	5320	13.0				17.0	17.0	16.3	
802.11n	2 Tx HT20 CDD/STBC/ SDM	52		5260	13.0	18.0	17.8	16.3	No
		56		5280	13.0	18.0	17.8	16.3	
		60		5300	13.0	18.0	17.8	16.3	
		64		5320	13.0	17.0	17.0	16.3	
	2 Tx HT40 CDD/STBC/SDM	54		5270	13.0	18.5	17.8	16.3	No
		62		5310	13.0	15.0	15.0	15.0	
802.11ac	2 Tx VHT20 CDD/STBC/ SDM	52		5260	13.0	18.0	17.8	16.3	No
		56		5280	13.0	18.0	17.8	16.3	
		60	5300	13.0	18.0	17.8	16.3		
		64	5320	13.0	17.0	17.0	16.3		
	2 Tx VHT40 CDD/STBC/SDM	54	5270	13.0	18.5	17.8	16.3	No	
		62	5310	13.0	15.0	15.0	15.0		
	2 Tx VHT80 CDD/STBC/SDM	58	5290	13.0	14.5	14.5	14.5	No	

Notes:

1. "Yes" = considered for output power measurement and SAR testing. "No" = 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 802.11a/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.

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 2	LAT 3	UAT 2	LAT 3	
5.5	802.11a	2 Tx CDD	100	5500	12.8	17.0	17.0	17.0	No
			104	5520	12.8	18.0	18.0	17.8	
			108	5540	12.8	18.0	18.0	17.8	
			112	5560	12.8	18.0	18.0	17.8	
			116	5580	12.8	18.0	18.0	17.8	
			120	5600	12.8	18.0	18.0	17.8	
			124	5620	12.8	18.0	18.0	17.8	
			128	5640	12.8	18.0	18.0	17.8	
			132	5660	12.8	18.0	18.0	17.8	
			136	5680	12.8	18.0	18.0	17.8	
			140	5700	12.8	16.5	16.5	16.5	
			144	5720	12.8	18.0	18.0	17.8	
	802.11n	2 Tx HT20 CDD/STBC/ SDM	100	5500	12.8	17.0	17.0	17.0	No
			104	5520	12.8	18.0	18.0	17.8	
			108	5540	12.8	18.0	18.0	17.8	
			112	5560	12.8	18.0	18.0	17.8	
			116	5580	12.8	18.0	18.0	17.8	
			120	5600	12.8	18.0	18.0	17.8	
			124	5620	12.8	18.0	18.0	17.8	
			128	5640	12.8	18.0	18.0	17.8	
			132	5660	12.8	18.0	18.0	17.8	
			136	5680	12.8	18.0	18.0	17.8	
			140	5700	12.8	16.5	16.5	16.5	
			144	5720	12.8	18.0	18.0	17.8	
		2 Tx HT40 CDD/STBC/ SDM	102	5510	12.8	14.5	14.5	14.5	Yes
			110	5550	12.8	18.5	18.0	17.8	
			118	5590	12.8	19.5	18.0	17.8	
			126	5630	12.8	18.5	18.0	17.8	
			134	5670	12.8	16.0	16.0	16.0	
			142	5710	12.8	19.5	18.0	17.8	
	802.11ac	2 Tx VHT20 CDD/STBC/ SDM	100	5500	12.8	17.0	17.0	17.0	No
			104	5520	12.8	18.0	18.0	17.8	
			108	5540	12.8	18.0	18.0	17.8	
			112	5560	12.8	18.0	18.0	17.8	
			116	5580	12.8	18.0	18.0	17.8	
			120	5600	12.8	18.0	18.0	17.8	
			124	5620	12.8	18.0	18.0	17.8	
			128	5640	12.8	18.0	18.0	17.8	
			132	5660	12.8	18.0	18.0	17.8	
			136	5680	12.8	18.0	18.0	17.8	
			140	5700	12.8	16.5	16.5	16.5	
			144	5720	12.8	18.0	18.0	17.8	
2 Tx VHT40 CDD/STBC/ SDM		102	5510	12.8	14.5	14.5	14.5	No	
		110	5550	12.8	18.5	18.0	17.8		
		118	5590	12.8	19.5	18.0	17.8		
		126	5630	12.8	18.5	18.0	17.8		
		134	5670	12.8	16.0	16.0	16.0		
		142	5710	12.8	19.5	18.0	17.8		
2 Tx VHT80 CDD/STBC/ SDM		106	5530	12.8	14.0	14.0	14.0	Yes	
		122	5610	12.8	19.0	18.0	17.8		
		138	5690	12.8	19.0	18.0	17.8		

Notes:

1. "Yes" = considered for output power measurement and SAR testing. "No" = 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 802.11a/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.

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)				SAR Test (Yes/No)
					MODE A		MODE B		
					UAT 2	LAT 3	UAT 2	LAT 3	
5.8	802.11a	2 Tx CDD	149	5745	12.3	20.0	16.0	18.8	Yes
			153	5765	12.3	21.0	16.0	18.8	
			157	5785	12.3	21.0	16.0	18.8	
			161	5805	12.3	21.0	16.0	18.8	
			165	5825	12.3	19.5	16.0	18.8	
	802.11n	2 Tx HT20 CDD/STBC/ SDM	149	5745	12.3	20.0	16.0	18.8	No
			153	5765	12.3	21.0	16.0	18.8	
			157	5785	12.3	21.0	16.0	18.8	
			161	5805	12.3	21.0	16.0	18.8	
			165	5825	12.3	19.5	16.0	18.8	
		2 Tx HT40 CDD/STBC/SDM	151	5755	12.3	19.5	16.0	18.8	Yes
			159	5795	12.3	19.5	16.0	18.8	
	802.11ac	2 Tx VHT20 CDD/STBC/ SDM	149	5745	12.3	20.0	16.0	18.8	No
			153	5765	12.3	21.0	16.0	18.8	
			157	5785	12.3	21.0	16.0	18.8	
			161	5805	12.3	21.0	16.0	18.8	
			165	5825	12.3	19.5	16.0	18.8	
		2 Tx VHT40 CDD/STBC/SDM	151	5755	12.3	19.5	16.0	18.8	No
			159	5795	12.3	19.5	16.0	18.8	
		2 Tx VHT80 CDD/STBC/SDM	155	5775	12.3	17.5	16.0	17.5	No

Notes:

1. "Yes" = considered for output power measurement and SAR testing. "No" = 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 802.11a/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.

6.3.5. WLAN (P_{Cell_MAX}) and Bluetooth (P_{max})

The maximum output power listed within this Section is only applicable when the device is placed on a proprietary wireless charger. The wireless charger is a desktop device. When the DUT is placed on top of the wireless charger during charging, the DUT shall be kept at least 20cm away from the user in this configuration and is considered to be a mobile device. Refer to the separate MPE Report for evaluation in this use case.

UAT 1 and LAT 3

Band (GHz)	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)			
			802.11b (1Tx)	802.11g (1Tx)	HT20 (1Tx)	HT20 (2Tx)
2.4	1	2412	20.0	16.0	16.0	15.0
	2	2417	21.5	18.5	18.5	18.0
	3	2422	21.5	20.0	20.0	19.5
	4	2427	21.5	21.0	21.0	21.0
	5	2432	21.5	21.0	21.0	21.0
	6	2437	21.5	21.0	21.0	21.0
	7	2442	21.5	21.0	21.0	21.0
	8	2447	21.5	21.0	21.0	21.0
	9	2452	21.5	20.0	20.0	19.5
	10	2457	21.5	17.5	17.5	16.5
	11	2462	21.0	16.0	16.0	14.5
	12	2467	18.5	13.5	13.5	13.0
	13	2472	15.0	4.0	4.0	4.0

UAT 2 and LAT 3

Band (GHz)	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)		
			802.11a (1Tx)	HT20 (1Tx)	HT20 (2Tx)
5GHz	36	5180	17.5	17.5	17.0
	40	5200	19.5	19.5	18.0
	44	5220	21.0	21.0	18.0
	48	5240	21.0	21.0	18.0
	52	5260	21.0	21.0	18.0
	56	5280	21.0	21.0	18.0
	60	5300	19.5	19.5	18.0
	64	5320	17.0	17.0	17.0
	100	5500	17.0	17.0	17.0
	104	5520	19.5	19.5	18.0
	108	5540	21.0	21.0	18.0
	112	5560	21.0	21.0	18.0
	116	5580	21.0	21.0	18.0
	120	5600	21.0	21.0	18.0
	124	5620	21.0	21.0	18.0
	128	5640	21.0	21.0	18.0
	132	5660	21.0	21.0	18.0
	136	5680	19.5	19.5	18.0
	140	5700	17.0	17.0	16.5
	144	5720	21.0	21.0	18.0
	149	5745	20.0	20.0	20.0
	153	5765	21.0	21.0	21.0
	157	5785	21.0	21.0	21.0
	161	5805	21.0	21.0	21.0
	165	5825	19.5	19.5	19.5

Band (GHz)	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)	
			HT40 (1Tx)	HT40 (2Tx)
5GHz	38	5190	15.5	14.0
	46	5230	18.5	18.5
	54	5270	18.5	18.5
	62	5310	15.5	15.0
	102	5510	16.0	14.5
	110	5550	19.0	18.5
	118	5590	19.5	19.5
	126	5630	18.5	18.5
	134	5670	17.5	16.0
	142	5710	19.5	19.5
	151	5755	19.5	19.5
	159	5795	19.5	19.5

Band (GHz)	Ch #	Freq. (MHz)	Max. Avg. RF Output Power (dBm)	
			VHT80 (1Tx)	VHT80 (2Tx)
5GHz	42	5210	15.0	13.5
	58	5290	15.0	14.5
	106	5530	15.0	14.0
	122	5610	19.0	19.0
	138	5690	19.0	19.0
	155	5775	19.0	17.5

UAT 1 and LAT 3

RF Air interface	Mode	Max. Avg. RF Output Power (dBm)	
		MODE C	
		UAT 1	LAT 3
Bluetooth P _{max}	GFSK	20.0	20.0

6.4. General LTE SAR Test and Reporting Considerations

Item	Description						
Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 2	Frequency range: 1850 - 1910 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					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	20050/ 1720	20025/ 1717.5	20000/ 1715	19975/ 1712.5	19965/ 1711.5	19957/ 1710.7
	Mid	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5
	High	20300/ 1745	20325/ 1747.5	20350/ 1750	20375/ 1752.5	20385/ 1753.5	20393/ 1754.3
	Band 5	Frequency range: 824 - 849 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			20450/ 829	20425/ 826.5	20415/ 825.5	20407/ 824.7
	Mid			20525/ 836.5	20525/ 836.5	20525/ 836.5	20525/ 836.5
	High			20600/ 844	20625/ 846.5	20635/ 847.5	20643/ 848.3
	Band 7	Frequency range: 2500 - 2570 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					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low				23035/ 701.5	23025/ 700.5	23017/ 699.7
	Mid			23095/ 707.5	23095/ 707.5	23095/ 707.5	23095/ 707.5
	High				23155/ 713.5	23165/ 714.5	23173/ 715.3
	Band 13	Frequency range: 777 - 787 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low						
	Mid			23230/ 782	23230/ 782		
	High						

General LTE SAR Test and Reporting Considerations (Continued)

Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 17	Frequency range: 704 - 716 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low				23755/ 706.5		
	Mid			23790/ 710	23790/ 710		
	High				23825/ 713.5		
	Band 25	Frequency range: 1850 - 1915 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					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			26740/ 819	26715/ 816.5	26705/ 815.5	26697/ 814.7
	Mid			26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5
	High			26990/ 844	27015/ 846.5	27025/ 847.5	27033/ 848.3
	Band 30	Frequency range: 2305 - 2315 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low						
	Mid			27710/ 2310	27710/ 2310		
	High						
	Band 41	Frequency range: 2496 - 2690 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	39750 / 2506.0					
	Low-Mid	40185 / 2549.5					
	Mid	40620 / 2593.0					
	Mid-High	41055 / 2636.5					
	High	41490 / 2680.0					
	Band 66	Frequency range: 1710 - 1780 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		
	Mid	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745		
	High	132572/ 1770	132597/ 1772.5	132622/ 1775	132647/ 1777.5		
LTE transmitter and antenna implementation	LTE can transmit from either UAT 1 or LAT 1. The antenna switching is implemented with a physical, "break-before-make" switch such that only one antenna can be used for LTE transmission at a time.						

Maximum power reduction (MPR)	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
	MPR Built-in by design. The manufacturer Target 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.							
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:

1. SAR Testing for LTE was performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

6.5. 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.

SAR was tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7.

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	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$			$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-	-	-
9	$13168 \cdot T_s$			-	-	-

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	63.33
1	5 ms	D	S	U	U	D	D	S	U	U	D	43.33
2	5 ms	D	S	U	D	D	D	S	U	D	D	23.33
3	10 ms	D	S	U	U	U	D	D	D	D	D	31.67
4	10 ms	D	S	U	U	D	D	D	D	D	D	21.67
5	10 ms	D	S	U	D	D	D	D	D	D	D	11.67
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.33

Calculated Duty Cycle = Extended cyclic prefix in uplink $\times (T_s) \times \# \text{ of S} + \# \text{ of U}$

Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:

Calculated Duty Cycle = $5120 \times [1/(15000 \times 2048)] \times 2 + 6 \text{ ms} = 63.33\%$

where

$T_s = 1/(15000 \times 2048)$ seconds

Note(s):

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

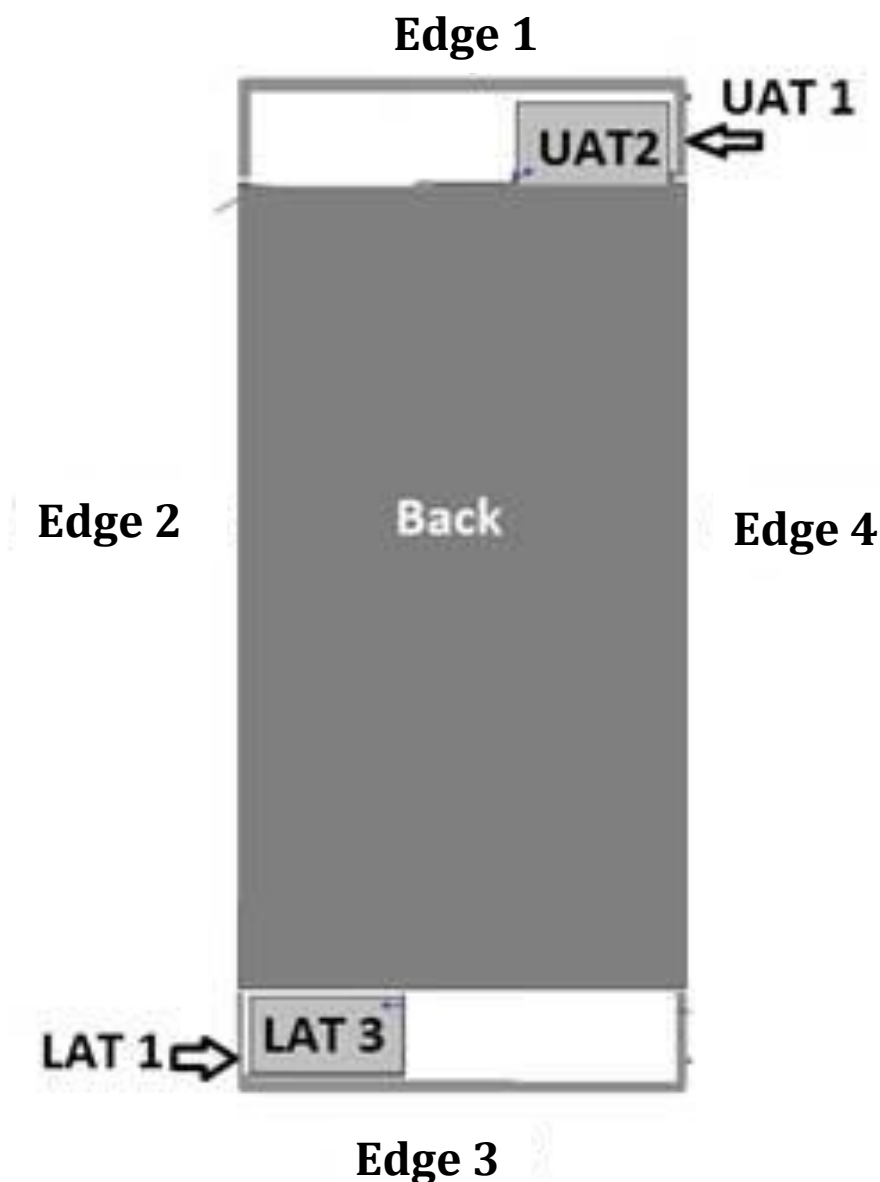
7. RF Exposure Conditions (Test Configurations)

WWAN antennas are located near the upper and lower edge of the device. The upper antenna for 2.4 GHz WLAN and Bluetooth (UAT 1) is shared and is located near the upper right corner of the device, while the upper antenna for 5 GHz WLAN (UAT 2) is located near the upper left corner of the device. All WLAN bands and Bluetooth share the same lower antenna (LAT3), and this is located near the lower right corner of the device. Refer to Antenna Diagram below:

Refer to separate filing submission document for the proprietary design details of the antenna-to-antenna and antenna-to-antenna-to-edge(s) distances.

The Body-worn accessory test configurations were tested using a conservative minimum test separation distance of 5 mm.

Antenna Diagram



Upper Antenna

Wireless technologies	RF Exposure Conditions	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
WWAN (UAT 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	5 mm	Rear	< 25 mm	Yes	2
			Front	< 25 mm	Yes	2
	Hotspot	5 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	Yes	
WLAN 2.4GHz and Bluetooth (UAT 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	5 mm	Rear	< 25 mm	Yes	2
			Front	< 25 mm	Yes	2
	Hotspot / Airplay	5 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	Yes	
WLAN 5GHz (UAT 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	5 mm	Rear	< 25 mm	Yes	2
			Front	< 25 mm	Yes	2
	Hotspot / Airplay	5 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	Yes	

Notes:

1. SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hotspot Mode.
2. The Body-worn minimum separation distance is 5 mm. To cover both body-worn and hotspot RF exposure conditions testing was performed at a separation distance of 5 mm.

Lower Antenna

Wireless technologies	RF Exposure Conditions	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
WWAN (LAT 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	5 mm	Rear	< 25 mm	Yes	2
			Front	< 25 mm	Yes	2
	Hotspot	5 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	Yes	
WLAN and Bluetooth (LAT 3)	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	5 mm	Rear	< 25 mm	Yes	2
			Front	< 25 mm	Yes	2
	Hotspot / Airplay	5 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	Yes	

Notes:

1. SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hotspot Mode.
2. The Body-worn minimum separation distance is 5 mm. To cover both body-worn and hotspot RF exposure conditions testing was performed at a separation distance of 5 mm.

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

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 (%)
A	6/1/2017	835	Body	835	54.25	55.20	-1.72	0.99	0.97	2.52
				805	54.42	55.33	-1.65	0.96	0.97	-0.47
				905	53.57	55.00	-2.60	1.06	1.05	0.90
A	6/1/2017	835	Head	835	41.67	41.50	0.41	0.93	0.90	2.91
				805	42.04	41.68	0.86	0.90	0.90	0.23
				905	40.87	41.50	-1.52	0.99	0.97	1.88
A	6/5/2017	835	Head	835	41.51	41.50	0.02	0.91	0.90	0.74
				805	41.85	41.68	0.41	0.87	0.90	-2.63
				905	40.69	41.50	-1.95	0.97	0.97	-0.60
A	6/5/2017	2300	Head	2300	38.05	39.47	-3.60	1.72	1.66	3.20
				2350	37.90	39.38	-3.77	1.77	1.71	3.71
				2400	37.72	39.30	-4.01	1.82	1.75	3.85
A	6/5/2017	2300	Body	2300	53.04	52.90	0.26	1.88	1.80	4.19
				2350	52.93	52.84	0.17	1.94	1.85	4.66
				2400	52.77	52.77	0.00	1.99	1.90	4.90
A	6/9/2017	835	Body	835	55.22	55.20	0.04	1.01	0.97	4.43
				805	55.54	55.33	0.37	0.99	0.97	1.83
				905	54.59	55.00	-0.75	1.08	1.05	2.42
A	6/10/2017	2600	Head	2600	40.51	39.01	3.84	2.04	1.96	4.07
				2495	40.88	39.14	4.44	1.92	1.85	3.81
				2690	40.19	38.90	3.32	2.14	2.06	3.91
A	6/10/2017	2600	Body	2600	53.59	52.51	2.06	2.23	2.16	3.16
				2495	53.87	52.64	2.33	2.09	2.01	3.96
				2690	53.30	52.40	1.72	2.34	2.29	2.22
A	6/13/2017	2300	Body	2300	52.64	52.90	-0.50	1.88	1.80	3.96
				2350	52.47	52.84	-0.70	1.93	1.85	4.23
				2400	52.33	52.77	-0.84	1.98	1.90	4.53
A	6/14/2017	2300	Head	2300	39.55	39.47	0.20	1.69	1.66	1.52
				2350	39.37	39.38	-0.04	1.74	1.71	2.07
				2400	39.24	39.30	-0.14	1.80	1.75	2.47
A	6/14/2017	835	Body	835	54.79	55.20	-0.74	1.01	0.97	4.54
				805	55.05	55.33	-0.51	0.98	0.97	1.56
				905	54.15	55.00	-1.55	1.08	1.05	2.61
A	6/25/2017	2600	Body	2600	50.80	52.51	-3.26	2.24	2.16	3.85
				2495	51.13	52.64	-2.87	2.10	2.01	4.51
				2690	50.53	52.40	-3.56	2.36	2.29	3.09
A	6/27/2017	2600	Head	2600	38.48	39.01	-1.36	2.04	1.96	3.81
				2495	38.87	39.14	-0.70	1.92	1.85	3.75
				2690	38.15	38.90	-1.92	2.14	2.06	3.86

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 (%)
B	6/2/2017	750	Head	750	40.97	41.96	-2.36	0.89	0.89	-0.36
				695	41.66	42.24	-1.38	0.84	0.89	-5.81
				790	40.53	41.76	-2.94	0.93	0.90	4.00
B	6/2/2017	750	Body	750	54.24	55.55	-2.35	0.95	0.96	-1.31
				695	54.73	55.76	-1.84	0.90	0.96	-6.35
				790	53.95	55.39	-2.60	1.00	0.97	3.00
B	6/4/2017	750	Head	750	40.19	41.96	-4.22	0.90	0.89	0.64
				695	40.92	42.24	-3.13	0.85	0.89	-4.87
				790	39.75	41.76	-4.81	0.93	0.90	4.09
B	6/4/2017	750	Body	750	53.62	55.55	-3.47	0.97	0.96	0.96
				695	54.17	55.76	-2.85	0.92	0.96	-4.44
				790	53.30	55.39	-3.78	1.01	0.97	4.23
B	6/5/2017	1750	Body	1750	51.99	53.44	-2.72	1.48	1.49	-0.68
				1710	52.21	53.54	-2.49	1.44	1.46	-1.75
				1755	51.98	53.43	-2.71	1.48	1.49	-0.42
B	6/6/2017	1750	Head	1750	38.49	40.08	-3.98	1.33	1.37	-3.14
				1710	38.64	40.15	-3.75	1.29	1.35	-4.41
				1755	38.49	40.08	-3.96	1.33	1.37	-3.12
B	6/9/2017	1900	Head	1900	39.24	40.00	-1.90	1.39	1.40	-0.71
				1850	39.43	40.00	-1.43	1.34	1.40	-4.00
				1920	39.19	40.00	-2.03	1.41	1.40	0.86
B	6/12/2017	1900	Head	1900	38.13	40.00	-4.67	1.45	1.40	3.43
				1850	38.34	40.00	-4.15	1.40	1.40	0.07
				1920	38.07	40.00	-4.83	1.47	1.40	4.93
B	6/12/2017	1750	Head	1750	39.77	40.08	-0.78	1.35	1.37	-1.61
				1710	39.89	40.15	-0.64	1.31	1.35	-2.85
				1755	39.77	40.08	-0.77	1.35	1.37	-1.81
B	6/13/2017	1750	Body	1750	51.76	53.44	-3.15	1.45	1.49	-2.30
				1710	51.85	53.54	-3.16	1.42	1.46	-3.12
				1755	51.75	53.43	-3.14	1.46	1.49	-2.16
B	6/15/2017	1750	Head	1750	40.55	40.08	1.16	1.32	1.37	-3.50
				1710	40.68	40.15	1.33	1.29	1.35	-4.56
				1755	40.55	40.08	1.18	1.33	1.37	-3.41
B	6/15/2017	750	Body	750	54.45	55.55	-1.97	0.97	0.96	0.42
				695	55.01	55.76	-1.34	0.91	0.96	-4.78
				790	54.12	55.39	-2.30	1.01	0.97	4.33

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 (%)
C	6/9/2017	1900	Body	1900	51.99	53.30	-2.46	1.50	1.52	-1.32
				1850	52.17	53.30	-2.12	1.45	1.52	-4.87
				1920	51.94	53.30	-2.55	1.52	1.52	0.20
C	6/14/2017	1900	Head	1900	38.15	40.00	-4.63	1.42	1.40	1.50
				1850	39.34	40.00	-1.65	1.37	1.40	-2.00
				1920	38.09	40.00	-4.77	1.44	1.40	2.79
C	6/16/2017	1900	Body	1900	54.13	53.30	1.56	1.51	1.52	-0.66
				1850	54.28	53.30	1.84	1.46	1.52	-3.68
				1920	53.99	53.30	1.29	1.56	1.52	2.43

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 (%)
D	6/1/2017	835	Head	835	41.32	41.50	-0.43	0.93	0.90	3.59
				805	41.68	41.68	0.00	0.90	0.90	0.71
				905	40.59	41.50	-2.19	1.00	0.97	2.93
D	6/1/2017	835	Body	835	53.56	55.20	-2.97	1.01	0.97	4.02
				805	53.78	55.33	-2.81	0.98	0.97	1.64
				905	52.91	55.00	-3.80	1.07	1.05	1.57
D	6/5/2017	835	Body	835	52.98	55.20	-4.02	1.00	0.97	3.30
				805	53.26	55.33	-3.75	0.97	0.97	0.10
				905	52.27	55.00	-4.96	1.07	1.05	1.38
D	6/5/2017	835	Head	835	41.88	41.50	0.92	0.93	0.90	3.07
				805	42.20	41.68	1.25	0.90	0.90	-0.06
				905	41.06	41.50	-1.06	0.99	0.97	1.82
D	6/5/2017	2600	Head	2600	38.11	39.01	-2.31	2.00	1.96	1.72
				2495	38.48	39.14	-1.69	1.88	1.85	1.48
				2690	37.78	38.90	-2.87	2.10	2.06	1.82
D	6/9/2017	2600	Head	2600	38.32	39.01	-1.77	1.98	1.96	1.01
				2495	38.69	39.14	-1.16	1.87	1.85	0.94
				2690	38.01	38.90	-2.28	2.08	2.06	1.09
D	6/9/2017	835	Head	835	42.88	41.50	3.33	0.92	0.90	1.99
				805	43.27	41.68	3.82	0.89	0.90	-0.55
				905	42.07	41.50	1.37	0.98	0.97	1.13
D	6/12/2017	2600	Head	2600	37.78	39.01	-3.16	1.98	1.96	0.86
				2495	38.12	39.14	-2.61	1.86	1.85	0.83
				2690	37.43	38.90	-3.77	2.09	2.06	1.24
D	6/14/2017	2600	Head	2600	38.36	39.01	-1.67	2.03	1.96	3.51
				2495	38.76	39.14	-0.98	1.91	1.85	3.26
				2690	38.01	38.90	-2.28	2.13	2.06	3.18
D	6/15/2017	835	Head	835	40.34	41.50	-2.80	0.88	0.90	-1.94
				805	40.68	41.68	-2.40	0.86	0.90	-4.68
				905	39.48	41.50	-4.87	0.94	0.97	-2.99

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 (%)
E	6/2/2017	5600	Head	5600	35.64	35.53	0.30	4.81	5.06	-4.97
				5500	35.86	35.65	0.59	4.73	4.96	-4.56
				5725	35.38	35.39	-0.03	4.95	5.19	-4.67
E	6/2/2017	5600	Body	5600	47.91	48.48	-1.17	5.92	5.76	2.72
				5500	48.15	48.61	-0.95	5.75	5.64	1.89
				5725	47.73	48.31	-1.20	6.08	5.91	2.98
E	6/5/2017	5600	Head	5600	36.03	35.53	1.40	5.00	5.06	-1.19
				5500	36.16	35.65	1.44	4.90	4.96	-1.13
				5725	35.89	35.39	1.41	5.15	5.19	-0.77
E	6/5/2017	5600	Body	5600	50.16	48.48	3.47	5.91	5.76	2.50
				5500	50.33	48.61	3.53	5.79	5.64	2.49
				5725	50.03	48.31	3.56	6.11	5.91	3.37
E	6/9/2017	5600	Body	5600	46.97	48.48	-3.11	6.02	5.76	4.56
				5500	47.08	48.61	-3.15	5.88	5.64	4.23
				5725	46.74	48.31	-3.25	6.20	5.91	4.88
E	6/9/2017	5600	Head	5600	37.23	35.53	4.77	5.26	5.06	4.01
				5500	37.35	35.65	4.77	5.14	4.96	3.75
				5725	37.02	35.39	4.60	5.40	5.19	4.04
E	6/12/2017	5600	Body	5600	46.60	48.48	-3.87	5.89	5.76	2.24
				5500	46.75	48.61	-3.83	5.74	5.64	1.69
				5725	46.40	48.31	-3.95	6.06	5.91	2.59
E	6/12/2017	5600	Head	5600	37.11	35.53	4.44	4.96	5.06	-2.08
				5500	37.23	35.65	4.44	4.85	4.96	-2.22
				5725	36.99	35.39	4.52	5.09	5.19	-1.81
E	6/16/2017	5600	Head	5600	36.66	35.53	3.17	5.21	5.06	3.02
				5500	36.77	35.65	3.15	5.14	4.96	3.59
				5725	36.52	35.39	3.19	5.35	5.19	3.06
E	6/16/2017	5600	Body	5600	47.49	48.48	-2.04	5.83	5.76	1.23
				5500	47.64	48.61	-2.00	5.73	5.64	1.50
				5725	47.30	48.31	-2.09	5.99	5.91	1.41

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 (%)
F	6/2/2017	2450	Head	2450	38.77	39.20	-1.10	1.80	1.80	0.00
				2400	38.97	39.30	-0.83	1.76	1.75	0.36
				2480	38.66	39.16	-1.28	1.84	1.83	0.14
F	6/2/2017	2450	Body	2450	51.10	52.70	-3.04	1.99	1.95	1.85
				2400	51.27	52.77	-2.85	1.92	1.90	1.16
				2480	50.99	52.66	-3.18	2.02	1.99	1.50
F	6/5/2017	2450	Body	2450	50.99	52.70	-3.24	1.94	1.95	-0.46
				2400	51.14	52.77	-3.09	1.87	1.90	-1.37
				2480	50.85	52.66	-3.44	1.98	1.99	-0.56
F	6/5/2017	2450	Head	2450	37.45	39.20	-4.46	1.89	1.80	4.78
				2400	37.65	39.30	-4.19	1.83	1.75	4.42
				2480	37.31	39.16	-4.73	1.92	1.83	4.62
F	6/5/2017	2600	Body	2600	50.39	52.51	-4.04	2.15	2.16	-0.50
				2495	50.82	52.64	-3.46	2.00	2.01	-0.76
				2690	50.03	52.40	-4.52	2.27	2.29	-0.63
F	6/9/2017	2600	Body	2600	50.71	52.51	-3.43	2.18	2.16	0.80
				2495	51.09	52.64	-2.95	2.03	2.01	0.83
				2690	50.34	52.40	-3.93	2.31	2.29	0.82
F	6/9/2017	2450	Body	2450	50.85	52.70	-3.51	2.02	1.95	3.33
				2400	51.07	52.77	-3.23	1.95	1.90	2.69
				2480	50.72	52.66	-3.69	2.06	1.99	3.20
F	6/9/2017	2450	Head	2450	39.65	39.20	1.15	1.87	1.80	3.72
				2400	39.88	39.30	1.48	1.81	1.75	3.45
				2480	39.52	39.16	0.91	1.91	1.83	4.01
F	6/12/2017	2600	Body	2600	50.77	52.51	-3.32	2.18	2.16	0.70
				2495	51.14	52.64	-2.86	2.02	2.01	0.53
				2690	50.38	52.40	-3.85	2.30	2.29	0.73
F	6/12/2017	2450	Body	2450	50.40	52.70	-4.36	1.96	1.95	0.36
				2400	50.56	52.77	-4.19	1.89	1.90	-0.32
				2480	50.27	52.66	-4.54	2.00	1.99	0.24
F	6/12/2017	2450	Head	2450	37.81	39.20	-3.55	1.85	1.80	2.89
				2400	38.03	39.30	-3.22	1.80	1.75	2.76
				2480	37.69	39.16	-3.76	1.89	1.83	3.03
F	6/16/2017	2450	Body	2450	50.69	52.70	-3.81	2.03	1.95	3.90
				2400	50.91	52.77	-3.53	1.96	1.90	3.42
				2480	50.60	52.66	-3.92	2.07	1.99	3.91
F	6/16/2017	2450	Head	2450	38.86	39.20	-0.87	1.85	1.80	2.78
				2400	39.07	39.30	-0.58	1.79	1.75	2.36
				2480	38.76	39.16	-1.03	1.88	1.83	2.60

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 (%)
G	6/2/2017	5800	Body	5800	46.31	48.20	-3.92	6.14	6.00	2.33
				5700	46.55	48.34	-3.71	6.00	5.88	2.10
				5850	46.20	48.20	-4.15	6.22	6.00	3.73
G	6/2/2017	5800	Head	5800	35.65	35.30	0.99	5.10	5.27	-3.23
				5700	35.78	35.42	1.02	4.99	5.16	-3.34
				5850	35.55	35.30	0.71	5.15	5.27	-2.20
G	6/5/2017	5800	Body	5800	49.44	48.20	2.57	6.00	6.00	-0.07
				5700	49.46	48.34	2.31	5.89	5.88	0.14
				5850	49.17	48.20	2.01	6.08	6.00	1.37
G	6/5/2017	5800	Head	5800	35.86	35.30	1.59	5.22	5.27	-1.02
				5700	35.93	35.42	1.44	5.12	5.16	-0.81
				5850	35.73	35.30	1.22	5.28	5.27	0.13
G	6/9/2017	5800	Head	5800	35.73	35.30	1.22	5.18	5.27	-1.78
				5700	35.87	35.42	1.27	5.06	5.16	-2.08
				5850	35.70	35.30	1.13	5.24	5.27	-0.49
G	6/9/2017	5800	Body	5800	47.24	48.20	-1.99	6.19	6.00	3.18
				5700	47.46	48.34	-1.82	6.05	5.88	2.90
				5850	47.31	48.20	-1.85	6.26	6.00	4.33
G	6/12/2017	5800	Body	5800	46.12	48.20	-4.32	6.13	6.00	2.17
				5700	46.28	48.34	-4.27	6.00	5.88	2.08
				5850	46.08	48.20	-4.40	6.23	6.00	3.83
G	6/12/2017	5800	Head	5800	36.88	35.30	4.48	5.11	5.27	-3.11
				5700	37.01	35.42	4.49	5.08	5.16	-1.66
				5850	36.87	35.30	4.45	5.16	5.27	-2.05
G	6/16/2017	5800	Head	5800	36.48	35.30	3.34	5.45	5.27	3.32
				5700	36.56	35.42	3.22	5.33	5.16	3.15
				5850	36.44	35.30	3.23	5.48	5.27	3.91
G	6/16/2017	5800	Body	5800	47.26	48.20	-1.95	6.09	6.00	1.50
				5700	47.36	48.34	-2.03	5.95	5.88	1.23
				5850	47.17	48.20	-2.14	6.14	6.00	2.33

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 (%)
H	6/2/2017	5200	Body	5200	48.14	49.02	-1.79	5.26	5.29	-0.58
				5150	48.21	49.09	-1.79	5.23	5.24	-0.12
				5350	47.84	48.82	-2.00	5.46	5.47	-0.25
H	6/2/2017	5200	Head	5200	34.98	35.99	-2.81	4.46	4.65	-4.12
				5150	35.50	36.05	-1.51	4.57	4.60	-0.57
				5350	34.49	35.82	-3.71	4.67	4.80	-2.84
H	6/5/2017	5200	Head	5200	36.59	35.99	1.67	4.60	4.65	-1.07
				5150	36.66	36.05	1.70	4.54	4.60	-1.30
				5350	36.36	35.82	1.51	4.75	4.80	-1.13
H	6/5/2017	5200	Body	5200	47.91	49.02	-2.26	5.45	5.29	2.90
				5150	47.97	49.09	-2.28	5.37	5.24	2.55
				5350	47.78	48.82	-2.12	5.66	5.47	3.52
H	6/9/2017	5200	Head	5200	35.89	35.99	-0.28	4.69	4.65	0.75
				5150	35.34	36.05	-1.96	4.60	4.60	-0.04
				5350	35.86	35.82	0.11	4.84	4.80	0.76
H	6/9/2017	5200	Body	5200	47.22	49.02	-3.67	5.51	5.29	4.12
				5150	47.26	49.09	-3.72	5.44	5.24	3.93
				5350	46.89	48.82	-3.95	5.70	5.47	4.27
H	6/12/2017	5200	Body	5200	47.50	49.02	-3.10	5.38	5.29	1.52
				5150	47.65	49.09	-2.93	5.31	5.24	1.33
				5350	47.31	48.82	-3.09	5.58	5.47	1.96
H	6/12/2017	5200	Head	5200	37.62	35.99	4.53	4.56	4.65	-1.93
				5150	37.67	36.05	4.50	4.50	4.60	-2.08
				5350	37.44	35.82	4.53	4.72	4.80	-1.86
H	6/16/2017	5200	Body	5200	48.06	49.02	-1.96	5.34	5.29	0.86
				5150	48.11	49.09	-1.99	5.30	5.24	1.21
				5350	47.82	48.82	-2.04	5.52	5.47	0.92
H	6/16/2017	5200	Head	5200	37.16	35.99	3.25	4.81	4.65	3.51
				5150	37.21	36.05	3.23	4.79	4.60	4.03
				5350	36.93	35.82	3.10	4.97	4.80	3.42

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 10% of the manufacturer calibrated dipole SAR target.

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 %	
A	6/1/2017	Body	D835V2 SN:4d142	9/22/2017	1.010	10.10	9.32	8.37	0.667	6.67	6.18	7.93	1,2
A	6/1/2017	Head	D835V2 SN:4d142	9/22/2017	0.996	9.96	9.30	7.10	0.652	6.52	6.07	7.41	
A	6/5/2017	Head	D835V2 SN:4d142	9/22/2017	0.978	9.78	9.30	5.16	0.640	6.40	6.07	5.44	
A	6/5/2017	Head	D2300V2 SN:1002	3/10/2018	4.780	47.80	49.50	-3.43	2.280	22.80	23.60	-3.39	
A	6/5/2017	Body	D2300V2 SN:1002	3/10/2018	4.900	49.00	47.90	2.30	2.340	23.40	23.10	1.30	
A	6/9/2017	Body	D835V2 SN:4d002	11/8/2017	0.956	9.56	9.55	0.10	0.632	6.32	6.33	-0.16	
A	6/10/2017	Head	D2600V2 SN:1036	3/10/2018	6.180	61.80	57.50	7.48	2.720	27.20	25.60	6.25	3,4
A	6/10/2017	Body	D2600V2 SN:1036	3/10/2018	5.650	56.50	54.60	3.48	2.510	25.10	24.50	2.45	
A	6/13/2017	Body	D2300V2 SN:1002	3/10/2018	4.980	49.80	47.90	3.97	2.360	23.60	23.10	2.16	
A	6/14/2017	Head	D2300V2 SN:1002	3/10/2018	4.650	46.50	49.50	-6.06	2.180	21.80	23.60	-7.63	5,6
A	6/14/2017	Body	D835V2 SN:4d002	11/8/2017	1.020	10.20	9.55	6.81	0.670	6.70	6.33	5.85	7,8
A	6/25/2017	Body	D2600V2 SN:1006	9/13/2017	5.470	54.70	54.20	0.92	2.390	23.90	24.30	-1.65	
A	6/27/2017	Head	D2600V2 SN:1006	9/13/2017	5.980	59.80	55.50	7.75	2.590	25.90	25.00	3.60	9,10
B	6/2/2017	Head	D750V3 SN:1071	11/8/2017	0.855	8.55	8.28	3.26	0.567	5.67	5.43	4.42	11,12
B	6/2/2017	Body	D750V3 SN:1071	11/8/2017	0.873	8.73	8.62	1.28	0.582	5.82	5.73	1.57	
B	6/4/2017	Head	D750V3 SN:1071	11/8/2017	0.842	8.42	8.28	1.69	0.556	5.56	5.43	2.39	
B	6/4/2017	Body	D750V3 SN:1071	11/8/2017	0.882	8.82	8.62	2.32	0.589	5.89	5.73	2.79	
B	6/5/2017	Body	D1750V2 SN:1050	4/18/2018	3.730	37.30	37.68	-1.01	1.980	19.80	19.92	-0.60	
B	6/6/2017	Head	D1750V2 SN:1050	4/18/2018	3.650	36.50	36.76	-0.71	1.950	19.50	19.60	-0.51	
B	6/9/2017	Head	D1900V2 SN:5d140	4/19/2018	3.780	37.80	40.80	-7.35	1.930	19.30	21.16	-8.79	13,14
B	6/12/2017	Head	D1900V2 SN:5d140	4/19/2018	4.040	40.40	40.80	-0.98	2.050	20.50	21.16	-3.12	
B	6/12/2017	Head	D1750V2 SN:1050	4/18/2018	3.520	35.20	36.76	-4.24	1.870	18.70	19.60	-4.59	15,16
B	6/13/2017	Body	D1750V2 SN:1050	4/18/2018	3.640	36.40	37.68	-3.40	1.920	19.20	19.92	-3.61	
B	6/15/2017	Head	D1750V2 SN:1077	9/14/2017	3.570	35.70	36.00	-0.83	1.840	18.40	19.10	-3.66	17,18
B	6/15/2017	Body	D750V3 SN:1019	3/13/2018	0.914	9.14	8.76	4.34	0.632	6.32	5.80	8.97	19,20
C	6/9/2017	Body	D1900V2 SN:5d140	4/19/2018	4.170	41.70	41.20	1.21	2.190	21.90	21.52	1.77	
C	6/14/2017	Head	D1900V2 SN:5d140	4/19/2018	4.020	40.20	40.80	-1.47	2.060	20.60	21.16	-2.65	21,22
C	6/16/2017	Body	D1900V2 SN:5d140	4/19/2018	4.100	41.00	41.20	-0.49	2.140	21.40	21.52	-0.56	
D	6/1/2017	Head	D835V2 SN:4d002	11/8/2017	0.950	9.50	9.46	0.42	0.624	6.24	6.15	1.46	
D	6/1/2017	Body	D835V2 SN:4d002	11/8/2017	0.927	9.27	9.55	-2.93	0.611	6.11	6.33	-3.48	
D	6/5/2017	Body	D835V2 SN:4d002	11/8/2017	0.948	9.48	9.55	-0.73	0.625	6.25	6.33	-1.26	
D	6/5/2017	Head	D835V2 SN:4d142	9/22/2017	0.983	9.83	9.30	5.70	0.645	6.45	6.07	6.26	23,24
D	6/5/2017	Head	D2600V2 SN:1006	9/13/2017	5.710	57.10	55.50	2.88	2.510	25.10	25.00	0.40	
D	6/9/2017	Head	D2600V2 SN:1036	3/10/2018	5.660	56.60	57.50	-1.57	2.480	24.80	25.60	-3.13	25,26
D	6/9/2017	Head	D835V2 SN:4d002	11/8/2017	0.979	9.79	9.46	3.49	0.642	6.42	6.15	4.39	
D	6/12/2017	Head	D2600V2 SN:1036	3/10/2018	5.670	56.70	57.50	-1.39	2.480	24.80	25.60	-3.13	
D	6/14/2017	Head	D2600V2 SN:1006	9/13/2017	5.730	57.30	55.50	3.24	2.520	25.20	25.00	0.80	27,28
D	6/15/2017	Head	D835V2 SN:4d002	11/8/2017	0.904	9.04	9.46	-4.44	0.596	5.96	6.15	-3.09	29,30

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 %	
E	6/2/2017	Head	D5GHzV2 SN:1003 (5.6 GHz)	2/13/2018	7.850	78.50	83.30	-5.76	2.210	22.10	23.80	-7.14	
E	6/2/2017	Body	D5GHzV2 SN:1003 (5.6 GHz)	2/13/2018	8.320	83.20	78.30	6.26	2.300	23.00	22.00	4.55	
E	6/5/2017	Head	D5GHzV2 SN:1003 (5.6 GHz)	2/13/2018	8.400	84.00	83.30	0.84	2.370	23.70	23.80	-0.42	
E	6/5/2017	Body	D5GHzV2 SN:1003 (5.6 GHz)	2/13/2018	8.200	82.00	78.30	4.73	2.270	22.70	22.00	3.18	
E	6/9/2017	Body	D5GHzV2 SN:1003 (5.6 GHz)	2/13/2018	8.570	85.70	78.30	9.45	2.390	23.90	22.00	8.64	31,32
E	6/9/2017	Head	D5GHzV2 SN:1003 (5.6 GHz)	2/13/2018	8.060	80.60	83.30	-3.24	2.260	22.60	23.80	-5.04	
E	6/12/2017	Body	D5GHzV2 SN:1003 (5.6 GHz)	2/13/2018	7.760	77.60	78.30	-0.89	2.140	21.40	22.00	-2.73	
E	6/12/2017	Head	D5GHzV2 SN:1003 (5.6 GHz)	2/13/2018	7.750	77.50	83.30	-6.96	2.180	21.80	23.80	-8.40	
E	6/16/2017	Head	D5GHzV2 SN:1003 (5.6 GHz)	2/13/2018	7.620	76.20	83.30	-8.52	2.150	21.50	23.80	-9.66	
E	6/16/2017	Body	D5GHzV2 SN:1003 (5.6 GHz)	2/13/2018	8.330	83.30	78.30	6.39	2.300	23.00	22.00	4.55	
F	6/2/2017	Head	D2450V2 SN:899	3/10/2018	5.430	54.30	52.60	3.23	2.450	24.50	24.60	-0.41	
F	6/2/2017	Body	D2450V2 SN:899	3/10/2018	4.800	48.00	50.30	-4.57	2.200	22.00	23.70	-7.17	33,34
F	6/5/2017	Body	D2450V2 SN:899	3/10/2018	5.070	50.70	50.30	0.80	2.300	23.00	23.70	-2.95	
F	6/5/2017	Head	D2450V2 SN:899	3/10/2018	5.410	54.10	52.60	2.85	2.410	24.10	24.60	-2.03	
F	6/5/2017	Body	D2600V2 SN:1006	9/13/2017	5.120	51.20	54.20	-5.54	2.210	22.10	24.30	-9.05	35,36
F	6/9/2017	Body	D2600V2 SN:1036	3/10/2018	5.540	55.40	54.60	1.47	2.400	24.00	24.50	-2.04	37,38
F	6/9/2017	Body	D2450V2 SN:748	2/8/2018	5.290	52.90	51.30	3.12	2.410	24.10	23.90	0.84	
F	6/9/2017	Head	D2450V2 SN:748	2/8/2018	5.340	53.40	52.10	2.50	2.410	24.10	24.20	-0.41	
F	6/12/2017	Body	D2600V2 SN:1036	3/10/2018	5.410	54.10	54.60	-0.92	2.320	23.20	24.50	-5.31	
F	6/12/2017	Body	D2450V2 SN:748	2/8/2018	5.130	51.30	51.30	0.00	2.320	23.20	23.90	-2.93	
F	6/12/2017	Head	D2450V2 SN:748	2/8/2018	5.590	55.90	52.10	7.29	2.490	24.90	24.20	2.89	39,40
F	6/16/2017	Body	D2450V2 SN:748	2/8/2018	5.040	50.40	51.30	-1.75	2.290	22.90	23.90	-4.18	
F	6/16/2017	Head	D2450V2 SN:748	2/8/2018	5.450	54.50	52.10	4.61	2.450	24.50	24.20	1.24	
G	6/2/2017	Body	D5GHzV2 SN:1003 (5.8 GHz)	2/13/2018	7.770	77.70	73.50	5.71	2.160	21.60	20.50	5.37	
G	6/2/2017	Head	D5GHzV2 SN:1003 (5.8 GHz)	2/13/2018	7.780	77.80	78.10	-0.38	2.210	22.10	22.10	0.00	
G	6/5/2017	Body	D5GHzV2 SN:1003 (5.8 GHz)	2/13/2018	7.280	72.80	73.50	-0.95	2.020	20.20	20.50	-1.46	
G	6/5/2017	Head	D5GHzV2 SN:1003 (5.8 GHz)	2/13/2018	7.330	73.30	78.10	-6.15	2.080	20.80	22.10	-5.88	
G	6/9/2017	Head	D5GHzV2 SN:1003 (5.8 GHz)	2/13/2018	7.530	75.30	78.10	-3.59	2.130	21.30	22.10	-3.62	
G	6/9/2017	Body	D5GHzV2 SN:1003 (5.8 GHz)	2/13/2018	7.770	77.70	73.50	5.71	2.120	21.20	20.50	3.41	
G	6/12/2017	Body	D5GHzV2 SN:1003 (5.8 GHz)	2/13/2018	7.970	79.70	73.50	8.44	2.180	21.80	20.50	6.34	41,42
G	6/12/2017	Head	D5GHzV2 SN:1003 (5.8 GHz)	2/13/2018	7.790	77.90	78.10	-0.26	2.230	22.30	22.10	0.90	
G	6/16/2017	Head	D5GHzV2 SN:1003 (5.8 GHz)	2/13/2018	7.790	77.90	78.10	-0.26	2.200	22.00	22.10	-0.45	
G	6/16/2017	Body	D5GHzV2 SN:1003 (5.8 GHz)	2/13/2018	7.950	79.50	73.50	8.16	2.190	21.90	20.50	6.83	
H	6/2/2017	Head	D5GHzV2 SN:1168 (5.2 GHz)	11/14/2017	7.640	76.40	76.80	-0.52	2.220	22.20	22.00	0.91	
H	6/2/2017	Body	D5GHzV2 SN:1168 (5.2 GHz)	11/14/2017	7.460	74.60	73.60	1.36	2.100	21.00	20.50	2.44	
H	6/5/2017	Head	D5GHzV2 SN:1138 (5.2 GHz)	9/22/2017	8.050	80.50	78.30	2.81	2.330	23.30	22.40	4.02	
H	6/5/2017	Body	D5GHzV2 SN:1138 (5.2 GHz)	9/22/2017	7.650	76.50	74.20	3.10	2.150	21.50	20.90	2.87	
H	6/9/2017	Head	D5GHzV2 SN:1138 (5.2 GHz)	9/22/2017	7.480	74.80	78.30	-4.47	2.160	21.60	22.40	-3.57	43,44
H	6/9/2017	Body	D5GHzV2 SN:1138 (5.2 GHz)	9/22/2017	7.110	71.10	74.20	-4.18	1.990	19.90	20.90	-4.78	
H	6/12/2017	Body	D5GHzV2 SN:1168 (5.2 GHz)	11/14/2017	7.170	71.70	73.60	-2.58	2.010	20.10	20.50	-1.95	
H	6/12/2017	Head	D5GHzV2 SN:1168 (5.2 GHz)	11/14/2017	7.370	73.70	76.80	-4.04	2.120	21.20	22.00	-3.64	
H	6/16/2017	Body	D5GHzV2 SN:1168 (5.2 GHz)	11/14/2017	7.770	77.70	73.60	5.57	2.180	21.80	20.50	6.34	45,46
H	6/16/2017	Head	D5GHzV2 SN:1168 (5.2 GHz)	11/14/2017	7.730	77.30	76.80	0.65	2.250	22.50	22.00	2.27	

9. Conducted Output Power Measurements

Power measurements were performed in accordance to the device's two power modes, Mode A and Mode B for each antenna. Mode A power is used when the device is used against the user's head or away from the body. Mode B power is used when the device is used in a Body-worn configuration by the user. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing. Refer to Sec. 6.3.5 for more information. The selection between antennas UAT and LAT in application is based on RSSI based antenna selection. Full details of power selections is described in the KDB guidance for test cases approved through Manufacturer KDB inquiry – Detect Mode. Refer to Sec. 10 for details of the testing. Test reductions have applied accordingly following the SAR KDB Procedure for the supported wireless technologies of the DUT. This is noted in detail for each technology in their respective Sections.

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.

GSM850 Measured Results

GPRS (GMSK) - Coding Scheme: CS1

Band	Ch No.	Freq. (MHz)	MODE A				MODE B			
			UAT 1		LAT 1		UAT 1		LAT 1	
			1 slot	2 slots	1 slot	2 slots	1 slot	2 slots	1 slot	2 slots
Burst Power (dBm)										
850	Max Power (dBm)		30.8	29.8	33.3	32.3	30.8	29.8	33.3	32.3
	128	824.2	30.2	29.4	32.6	32.3	30.2	29.4	32.6	32.3
	190	836.6	30.2	29.4	32.6	32.3	30.2	29.4	32.6	32.3
	251	848.8	30.2	29.4	32.6	32.3	30.2	29.4	32.6	32.3
Frame Power (dBm)										
850	Max Power (dBm)		21.7	23.7	24.2	26.2	21.7	23.7	24.2	26.2
	128	824.2	21.2	23.4	23.6	26.3	21.2	23.4	23.6	26.3
	190	836.6	21.2	23.4	23.6	26.3	21.2	23.4	23.6	26.3
	251	848.8	21.2	23.4	23.6	26.3	21.2	23.4	23.6	26.3

EGPRS (8PSK) - Coding Scheme: MCS5

Band	Ch No.	Freq. (MHz)	MODE A				MODE B			
			UAT 1		LAT 1		UAT 1		LAT 1	
			1 slot	2 slots	1 slot	2 slots	1 slot	2 slots	1 slot	2 slots
Burst Power (dBm)										
850	Max Power (dBm)		25.5	25.5	28.0	28.0	25.5	25.5	28.0	28.0
	128	824.2	25.4	25.4	28.0	28.0	25.5	25.5	28.0	28.0
	190	836.6	25.5	25.5	28.0	28.0	25.5	25.5	28.0	28.0
	251	848.8	25.5	25.5	28.0	28.0	25.5	25.5	28.0	28.0
Frame Power (dBm)										
850	Max Power (dBm)		16.5	19.5	19.0	22.0	16.5	19.5	19.0	22.0
	128	824.2	16.4	19.4	19.0	22.0	16.5	19.5	19.0	22.0
	190	836.6	16.5	19.5	19.0	22.0	16.5	19.5	19.0	22.0
	251	848.8	16.5	19.5	19.0	22.0	16.5	19.5	19.0	22.0

Notes:

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

- GMSK (GPRS) mode with 2 time slots based on the maximum output power from Tune-up Procedure.
- SAR is not required for EGPRS (8PSK) mode because its output power is less than that of GPRS Mode

GSM1900 Measured Results**GPRS (GMSK) - Coding Scheme: CS1**

Band	Ch No.	Freq. (MHz)	MODE A				MODE B			
			UAT 1		LAT 1		UAT 1		LAT 1	
			1 slot	2 slots	1 slot	2 slots	1 slot	2 slots	1 slot	2 slots
Burst Power (dBm)										
1900	Max Power (dBm)		28.0	25.3	30.5	27.5	28.0	26.8	33.3	32.3
	512	1850.2	28.0	25.1	30.5	30.3	28.0	26.7	30.5	27.5
	661	1880.0	28.0	24.8	30.5	30.3	28.0	26.7	30.5	27.5
	810	1909.8	28.0	24.8	30.5	30.3	28.0	26.6	30.5	27.5
Frame Power (dBm)										
1900	Max Power (dBm)		19.0	19.2	21.5	21.5	31.3	30.3	24.2	26.2
	512	1850.2	19.0	19.1	21.5	24.2	19.0	20.7	21.5	21.5
	661	1880.0	19.0	18.8	21.5	24.2	19.0	20.7	21.5	21.5
	810	1909.8	19.0	18.8	21.5	24.2	19.0	20.6	21.5	21.5

EGPRS (8PSK) - Coding Scheme: MCS5

Band	Ch No.	Freq. (MHz)	MODE A				MODE B			
			UAT 1		LAT 1		UAT 1		LAT 1	
			1 slot	2 slots	1 slot	2 slots	1 slot	2 slots	1 slot	2 slots
Burst Power (dBm)										
1900	Max Power (dBm)		23.5	23.5	27.0	27.0	23.5	23.5	28.0	28.0
	512	1850.2	23.5	23.5	27.0	27.0	23.5	23.5	27.0	27.0
	661	1880.0	23.4	23.4	27.0	27.0	23.4	23.5	27.0	27.0
	810	1909.8	23.5	23.5	26.9	27.0	23.5	23.5	26.9	27.0
Frame Power (dBm)										
1900	Max Power (dBm)		14.5	17.5	18.0	21.0	27.0	27.0	19.0	22.0
	512	1850.2	14.5	17.5	18.0	21.0	14.5	17.5	18.0	21.0
	661	1880.0	14.4	17.4	18.0	21.0	14.4	17.5	18.0	21.0
	810	1909.8	14.5	17.5	17.9	21.0	14.5	17.5	17.9	21.0

Notes:

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

- GMSK (GPRS) mode with 2 time slots based on the maximum output power from Tune-up Procedure.
- SAR is not required for EGPRS (8PSK) mode because its output power is less than that of GPRS Mode

9.2. W-CDMA

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 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 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 Release 5 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
W-CDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set 1			
	Power Control Algorithm	Algorithm 2			
	β_c	2/15	11/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	β_c/β_d	2/15	11/15	15/8	15/4
	β_{hs}	4/15	24/15	30/15	30/15
	MPR (dB)	0	0	0.5	0.5
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	$A_{hs}=\beta_{hs}/\beta_c$	30/15			

HSPA (HSDPA & HSUPA) Setup Procedures used to establish the test signals

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

	Mode	HSPA				
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2 kbps RMC				
	HSDPA FRC	H-Set 1				
	HSUPA Test	HSPA				
	Power Control Algorithm	Algorithm 2				Algorithm 1
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/15	0
	β_{ec}	209/225	12/15	30/15	2/15	5/15
	β_c/β_d	11/15	6/15	15/9	2/15	15/1
	β_{hs}	22/15	12/15	30/15	4/15	5/15
	β_{ed}	1309/225	94/75	47/15	56/75	47/15
	CM (dB)	1	3	2	3	1
	MPR (dB)	0	2	1	2	0
HSDPA Specific Settings	DACK	8				0
	DNAK	8				0
	DCQI	8				0
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	$A_{hs} = \beta_{hs}/\beta_c$	30/15				
HSUPA Specific Settings	E-DPDCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E-TFCIs	5	5	2	5	1
	Reference E-TFCI	11	11	11	11	67
	Reference E-TFCI PO	4	4	4	4	18
	Reference E-TFCI	67	67	92	67	67
	Reference E-TFCI PO	18	18	18	18	18
	Reference E-TFCI	71	71	71	71	71
	Reference E-TFCI PO	23	23	23	23	23
	Reference E-TFCI	75	75	75	75	75
	Reference E-TFCI PO	26	26	26	26	26
	Reference E-TFCI	81	81	81	81	81
	Reference E-TFCI PO	27	27	27	27	27
	Maximum Channelization Codes	2xSF2				SF4

DC-HSDPA Setup Procedures used to establish the test signals

The following tests were completed according to procedures in section 7.3.13 of 3GPP TS34.108 v9.5.0. A summary of these settings are illustrated below:

Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

Table E.5.0: Levels for HSDPA connection setup

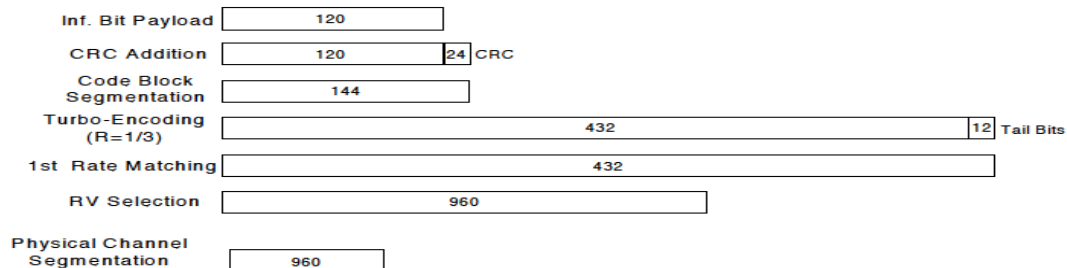
Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13

The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.

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.		

**Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)**

The following 4 Sub-tests for HSDPA were completed according to Release 8 procedures in section 5.2 of 3GPP TS34.121. A summary of subtest settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set 1			
	Power Control Algorithm	Algorithm2			
	β_c	2/15	11/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	β_d (SF)	64			
	β_c/β_d	2/15	11/15	15/8	15/4
	β_{hs}	4/15	24/15	30/15	30/15
HSDPA Specific Settings	MPR (dB)	0	0	0.5	0.5
	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack Repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	Ahs = β_{hs}/β_c	30/15			

HSPA+

The following 1 Sub-test was completed according to Release 7 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are 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: Δ_{ACK}, Δ_{NACK} and $\Delta_{CQI} = 30/15$ 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.											

W-CDMA Band V Measured Results

Band	Mode		UL Ch No.	Freq. (MHz)	MPR (dB)	Avg Pwr (dBm)				
						MODE A		MODE B		
						UAT 1	LAT 1	UAT 1	LAT 1	
W-CDMA Band V	Rel 99	Max Power (dBm)				23.8	24.8	23.8	24.8	
		RMC, 12.2 kbps	4132	826.4	N/A	23.8	24.8	23.8	24.8	
			4183	836.6	N/A	23.8	24.8	23.8	24.8	
			4233	846.6	N/A	23.8	24.8	23.8	24.8	
	HSDPA	Max Power (dBm)				23.8	24.8	23.8	24.8	
		Subtest 1	4132	826.4	0	23.7	24.8	23.7	24.8	
			4183	836.6	0	23.7	24.8	23.7	24.8	
			4233	846.6	0	23.7	24.7	23.7	24.7	
		Subtest 2	4132	826.4	0	23.8	24.8	23.8	24.8	
			4183	836.6	0	23.7	24.8	23.7	24.8	
			4233	846.6	0	23.7	24.7	23.7	24.7	
		Subtest 3	4132	826.4	0.5	23.2	24.2	23.2	24.2	
			4183	836.6	0.5	23.2	24.2	23.2	24.2	
			4233	846.6	0.5	23.3	24.3	23.3	24.3	
		Subtest 4	4132	826.4	0.5	23.3	24.2	23.3	24.2	
			4183	836.6	0.5	23.2	24.2	23.2	24.2	
			4233	846.6	0.5	23.2	24.2	23.2	24.2	
		HSUPA	Max Power (dBm)				23.8	24.8	23.8	24.8
			Subtest 1	4132	826.4	0	23.7	24.7	23.7	24.7
				4183	836.6	0	23.7	24.8	23.7	24.8
	4233			846.6	0	23.7	24.8	23.7	24.8	
	Subtest 2		4132	826.4	2	21.8	22.8	21.8	22.8	
			4183	836.6	2	21.7	22.7	21.7	22.7	
			4233	846.6	2	21.8	22.8	21.8	22.8	
	Subtest 3		4132	826.4	1	22.7	23.8	22.7	23.8	
			4183	836.6	1	22.7	23.7	22.7	23.7	
			4233	846.6	1	22.7	23.8	22.7	23.8	
	Subtest 4		4132	826.4	2	21.8	22.8	21.8	22.8	
			4183	836.6	2	21.7	22.7	21.7	22.7	
			4233	846.6	2	21.7	22.6	21.7	22.6	
	Subtest 5		4132	826.4	0	23.7	24.8	23.7	24.8	
			4183	836.6	0	23.7	24.7	23.7	24.7	
			4233	846.6	0	23.7	24.8	23.7	24.8	
	DC-HSDPA	Max Power (dBm)				23.8	24.8	23.8	24.8	
		Subtest 1	4132	826.4	0	23.7	24.8	23.7	24.8	
			4183	836.6	0	23.8	24.7	23.8	24.7	
			4233	846.6	0	23.7	24.7	23.7	24.7	
		Subtest 2	4132	826.4	0	23.7	24.7	23.7	24.7	
			4183	836.6	0	23.7	24.7	23.7	24.7	
			4233	846.6	0	23.7	24.8	23.7	24.8	
		Subtest 3	4132	826.4	0.5	23.2	24.3	23.2	24.3	
			4183	836.6	0.5	23.2	24.3	23.2	24.3	
			4233	846.6	0.5	23.2	24.2	23.2	24.2	
		Subtest 4	4132	826.4	0.5	23.2	24.1	23.2	24.1	
			4183	836.6	0.5	23.3	24.3	23.3	24.3	
			4233	846.6	0.5	23.2	24.2	23.2	24.2	
		HSPA+	Max Power (dBm)				23.8	24.8	23.8	24.8
			Subtest 1	4132	826.4	2.5	21.3	22.3	21.3	22.3
				4183	836.6	2.5	21.2	22.2	21.2	22.2
	4233			846.6	2.5	21.3	22.2	21.3	22.2	

W-CDMA Band IV Measured Results

Band	Mode		UL Ch No.	Freq. (MHz)	MPR (dB)	Avg Pwr (dBm)				
						MODE A		MODE B		
						UAT 1	LAT 1	UAT 1	LAT 1	
W-CDMA Band IV	Rel 99	Max Power (dBm)				19.0	25.3	21.0	21.0	
		RMC, 12.2 kbps	1312	1712.4	N/A	18.8	24.7	20.8	21.0	
			1413	1732.6	N/A	19.0	24.4	21.0	20.9	
			1513	1752.6	N/A	18.8	24.5	20.8	21.0	
	HSDPA	Max Power (dBm)				19.0	25.3	21.0	21.0	
		Subtest 1	1312	1712.4	0	18.9	24.4	20.9	20.9	
			1413	1732.6	0	19.0	24.4	21.0	20.7	
			1513	1752.6	0	18.9	24.4	21.0	20.9	
		Subtest 2	1312	1712.4	0	18.9	24.4	20.9	20.8	
			1413	1732.6	0	19.0	24.5	20.9	20.9	
			1513	1752.6	0	18.9	24.4	21.0	20.8	
		Subtest 3	1312	1712.4	0.5	18.4	23.9	20.4	20.3	
			1413	1732.6	0.5	18.4	23.9	20.5	20.4	
			1513	1752.6	0.5	18.4	23.9	20.5	20.3	
		Subtest 4	1312	1712.4	0.5	18.4	23.9	20.5	20.3	
			1413	1732.6	0.5	18.4	24.0	20.5	20.3	
			1513	1752.6	0.5	18.4	23.9	20.5	20.3	
		HSUPA	Max Power (dBm)				19.0	25.3	21.0	21.0
			Subtest 1	1312	1712.4	0	18.9	24.4	20.9	20.7
				1413	1732.6	0	19.0	24.4	21.0	20.7
	1513			1752.6	0	18.9	24.5	21.0	20.8	
	Subtest 2		1312	1712.4	2	17.0	22.3	19.0	18.8	
			1413	1732.6	2	17.0	22.4	19.0	18.8	
			1513	1752.6	2	16.9	22.4	18.9	18.8	
	Subtest 3		1312	1712.4	1	18.0	23.5	20.0	19.8	
			1413	1732.6	1	17.9	23.5	19.9	19.8	
			1513	1752.6	1	17.9	23.3	19.9	19.7	
	Subtest 4		1312	1712.4	2	17.0	22.4	18.9	18.8	
			1413	1732.6	2	16.9	22.4	19.0	18.8	
			1513	1752.6	2	16.9	22.4	18.9	18.8	
	Subtest 5		1312	1712.4	0	19.0	24.4	20.9	20.8	
			1413	1732.6	0	19.0	24.5	20.9	20.8	
			1513	1752.6	0	18.9	24.4	20.8	20.7	
	DC-HSDPA	Max Power (dBm)				19.0	25.3	21.0	21.0	
		Subtest 1	1312	1712.4	0	19.0	24.5	21.0	20.9	
			1413	1732.6	0	18.9	24.5	20.9	20.8	
			1513	1752.6	0	19.0	24.5	21.0	20.8	
		Subtest 2	1312	1712.4	0	18.9	24.5	20.9	20.8	
			1413	1732.6	0	18.8	24.4	20.9	20.8	
			1513	1752.6	0	18.9	24.4	21.0	20.9	
		Subtest 3	1312	1712.4	0.5	18.5	23.9	20.5	20.4	
			1413	1732.6	0.5	18.4	24.0	20.4	20.3	
			1513	1752.6	0.5	18.4	23.8	20.5	20.3	
		Subtest 4	1312	1712.4	0.5	18.5	24.0	20.4	20.3	
			1413	1732.6	0.5	18.4	23.9	20.5	20.3	
			1513	1752.6	0.5	18.4	23.9	20.4	20.3	
	HSPA+	Max Power (dBm)				19.0	25.3	21.0	21.0	
		Subtest 1	1312	1712.4	2.5	16.4	22.1	18.5	18.4	
			1413	1732.6	2.5	16.4	22.2	18.4	18.3	
			1513	1752.6	2.5	16.5	22.2	18.5	18.3	

W-CDMA Band II Measured Results

Band	Mode		UL Ch No.	Freq. (MHz)	MPR (dB)	Avg Pw r (dBm)				
						MODE A		MODE B		
						UAT 1	LAT 1	UAT 1	LAT 1	
W-CDMA Band II	Rel 99	Max Power (dBm)				18.8	25.3	20.3	20.8	
		RMC, 12.2 kbps	9262	1852.4	N/A	18.5	25.0	20.3	20.6	
			9400	1880.0	N/A	18.5	25.0	20.3	20.6	
			9538	1907.6	N/A	18.7	25.2	20.3	20.6	
	HSDPA	Max Power (dBm)				18.8	25.3	20.3	20.8	
		Subtest 1	9262	1852.4	0	18.5	24.9	20.1	20.4	
			9400	1880.0	0	18.4	24.8	20.1	20.5	
			9538	1907.6	0	18.4	24.9	20.1	20.4	
		Subtest 2	9262	1852.4	0	18.4	25.0	20.1	20.4	
			9400	1880.0	0	18.4	24.9	20.1	20.4	
			9538	1907.6	0	18.5	24.9	20.2	20.4	
		Subtest 3	9262	1852.4	0.5	17.9	24.5	19.6	20.0	
			9400	1880.0	0.5	17.9	24.5	19.6	19.8	
			9538	1907.6	0.5	17.9	24.4	19.6	19.9	
		Subtest 4	9262	1852.4	0.5	17.9	24.4	19.6	19.9	
			9400	1880.0	0.5	17.9	24.4	19.7	19.9	
			9538	1907.6	0.5	17.9	24.5	19.7	20.0	
		HSUPA	Max Power (dBm)				18.8	25.3	20.3	20.8
			Subtest 1	9262	1852.4	0	18.4	24.9	20.2	20.4
				9400	1880.0	0	18.4	24.9	20.2	20.5
	9538			1907.6	0	18.4	25.0	20.2	20.4	
	Subtest 2		9262	1852.4	2	16.4	23.0	18.1	18.5	
			9400	1880.0	2	16.3	22.9	18.1	18.5	
			9538	1907.6	2	16.5	23.0	18.0	18.4	
	Subtest 3		9262	1852.4	1	17.5	23.9	19.2	19.5	
			9400	1880.0	1	17.5	23.9	19.1	19.5	
			9538	1907.6	1	17.3	23.9	19.1	19.3	
	Subtest 4		9262	1852.4	2	16.4	23.0	18.1	18.4	
			9400	1880.0	2	16.4	22.9	18.1	18.4	
			9538	1907.6	2	16.4	23.0	18.2	18.4	
	Subtest 5		9262	1852.4	0	18.4	25.0	20.1	20.4	
			9400	1880.0	0	18.4	24.9	20.2	20.5	
			9538	1907.6	0	18.4	24.9	20.1	20.3	
	DC-HSDPA	Max Power (dBm)				18.8	25.3	20.3	20.8	
		Subtest 1	9262	1852.4	0	18.4	25.0	20.1	20.3	
			9400	1880.0	0	18.3	24.9	20.1	20.4	
			9538	1907.6	0	18.4	24.8	20.0	20.4	
		Subtest 2	9262	1852.4	0	18.4	24.9	20.1	20.5	
			9400	1880.0	0	18.4	25.0	20.1	20.5	
			9538	1907.6	0	18.4	25.0	20.1	20.4	
		Subtest 3	9262	1852.4	0.5	17.9	24.4	19.6	19.9	
			9400	1880.0	0.5	17.9	24.5	19.6	19.9	
			9538	1907.6	0.5	18.0	24.5	19.6	20.0	
		Subtest 4	9262	1852.4	0.5	17.9	24.4	19.6	19.9	
			9400	1880.0	0.5	17.9	24.4	19.6	19.9	
			953800%	190760%	50%	1790%	2440%	1970%	2000%	
	HSPA+	Max Power (dBm)				18.8	25.3	20.3	20.8	
		Subtest 1	9262	1852.4	2.5	16.0	22.7	17.7	18.0	
			9400	1880.0	2.5	16.1	22.6	17.8	18.0	
			9538	1907.6	2.5	16.1	22.7	17.8	18.1	

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
NS_03	6.6.2.2.1	2, 4, 10, 23, 25, 35, 36, 66, 70	3	>5	≤ 1
			5	>6	≤ 1
			10	>8	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2, 6.6.3.3.19	41	5, 10, 15, 20	Table 6.2.4-4, Table 6.2.4-4a	
NS_05	6.6.3.3.1	1	10, 15, 20	≥ 50 (NOTE 1)	≤ 1 (NOTE 1)
			15, 20	Table 6.2.4-18 (NOTE 2)	
		65 (NOTE 3)	10, 15, 20	≥ 50	≤ 1 (NOTE 1)
			15, 20	Table 6.2.4-18 (NOTE 2)	
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	N/A
NS_07	6.6.2.2.3	13	10	Table 6.2.4-2	
NS_08	6.6.3.3.2			Table 6.2.4-2	
NS_09	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_10	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_11	6.6.2.2.1, 6.6.3.3.13	23	1.4, 3, 5, 10, 15, 20	Table 6.2.4-3	
NS_12	6.6.3.3.5	26	1.4, 3, 5, 10, 15	Table 6.2.4-5	
NS_13	6.6.3.3.6	26	5	Table 6.2.4-6	
NS_14	6.6.3.3.7	26	10, 15	Table 6.2.4-7	
NS_15	6.6.3.3.8	26	1.4, 3, 5, 10, 15	Table 6.2.4-8	
NS_16	6.6.3.3.9	27	3, 5, 10	Table 6.2.4-9	
NS_17	6.6.3.3.10	28	5, 10	Table 6.2.4-10	
NS_18	6.6.3.3.11	28	5	Table 6.2.4-11, Table 6.2.4-12, Table 6.2.4-13	
NS_19	6.6.3.3.12	44	10, 15, 20	Table 5.6-1	N/A
NS_20	6.2.2, 6.6.2.2.1, 6.6.3.3.14	23	5, 10, 15, 20	Table 6.2.4-14	
NS_21	6.6.2.2.1, 6.6.3.3.15	30	5, 10	Table 6.2.4-15	
NS_22	6.6.3.3.16	42, 43	5, 10, 15, 20	Table 6.2.4-16	
NS_23	6.6.3.3.17	42, 43	5, 10, 15, 20	Table 6.2.4-17	
NS_24	6.6.3.3.20	65 (NOTE 4)	5, 10, 15, 20	N/A	
NS_25	6.6.3.3.21	65 (NOTE 4)	5, 10, 15, 20	Table 6.2.4-19	
NS_26	6.6.3.3.22	68	10, 15	Table 6.2.4-20	
NS_27	6.6.2.2.5, 6.6.3.3.23	48	5, 10, 15, 20	Table 6.2.4-21	
NS_28	6.2.2A, 6.6.3.3.24	46 (NOTE 5)	20	Table 6.2.4-22	
NS_29	6.2.2A, 6.6.2.3.1a, 6.6.3.3.25	46 (NOTE 5)	20	Table 6.2.4-23	
NS_30	6.2.2A, 6.6.3.3.26	46 (NOTE 5)	20	Table 6.2.4-24	
NS_31	6.2.2A, 6.6.3.3.27	46 (NOTE 5)	20	Table 6.2.4-25	
NS_32	-	-	-	-	-
NOTE 1: Applicable when the lower edge of the assigned E-UTRA UL channel bandwidth frequency is larger than or equal to the upper edge of PHS band (1915.7 MHz) + 4 MHz + the channel BW assigned, where channel BW is as defined in subclause 5.6. A-MPR for operations below this frequency is not covered in this version of specifications except for the channel assignments in NOTE2 as the emissions requirement in 6.6.3.3.1 may not be met. For 10MHz channel bandwidth whose carrier frequency is larger than or equal to 1945 MHz or 15 MHz channel bandwidth whose carrier frequency is larger than or equal to 1947.5 MHz, no A-MPR applies.					
NOTE 2: Applicable when carrier frequency is 1932.5 MHz for 15MHz channel bandwidth or 1930 MHz for 20MHz channel bandwidth case.					
NOTE 3: Applicable when the E-UTRA carrier is within 1920-1980 MHz.					
NOTE 4: Applicable when the upper edge of the channel bandwidth frequency is greater than 1980MHz.					
NOTE 5: Applicable only for an LAA SCell configured in Band 46.					

LTE Band 2 Average Power (dBm) Measured Results

SAR for LTE Band 2 (Frequency range: 1850 - 1910 MHz) is covered by LTE Band 25 (Frequency range: 1850 - 1915 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

LTE Band 4 Average Power (dBm) Measured Results

SAR for LTE Band 4 (Frequency range: 1710 - 1755 MHz) is covered by LTE Band 66 (Frequency range: 1710 - 1780 MHz) due to overlapping frequency range, same maximum tune-up limit and channel bandwidths from 20MHz to 5MHz. Therefore, LTE Band 4 at 3MHz and 1.4MHz bandwidths have been measured.

Measured Power Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A							MODE B								
					Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1		
						17115 MHz	1732.5 MHz	1753.5 MHz		17115 MHz	1732.5 MHz	1753.5 MHz		17115 MHz	1732.5 MHz	1753.5 MHz		17115 MHz	1732.5 MHz	1753.5 MHz
LTE Band 4	3	Max Power (dBm)			19.0			24.8			20.8			21.0						
		QPSK	1	0	0.0	18.8	18.9	18.8	0	24.6	24.6	24.7	0	20.6	20.5	20.6	0	20.9	20.8	21.0
			1	8	0.0	18.9	18.7	18.8	0	24.6	24.6	24.7	0	20.4	20.2	20.5	0	20.9	20.9	20.8
			1	14	0.0	18.7	18.9	18.9	0	24.7	24.7	24.7	0	20.5	20.3	20.5	0	20.9	20.8	20.9
			8	0	0.0	18.8	18.9	18.8	1	23.6	23.6	23.7	1	19.6	19.6	19.4	0	21.0	21.0	20.8
			8	4	0.0	18.9	18.9	18.7	1	23.7	23.7	23.6	1	19.7	19.3	19.6	0	20.9	20.8	20.9
			8	7	0.0	18.7	18.8	18.8	1	23.7	23.7	23.6	1	19.4	19.6	19.4	0	20.9	20.9	20.9
		15	0	0.0	18.8	18.9	18.8	1	23.6	23.7	23.7	1	19.4	19.7	19.3	0	20.9	21.0	20.8	
		16QAM	1	0	0.0	18.9	18.9	18.8	1	23.6	23.6	23.6	1	19.5	19.6	19.5	0	20.9	20.9	21.0
			1	8	0.0	18.8	18.7	18.8	1	23.7	23.7	23.7	1	19.6	19.7	19.3	0	21.0	21.0	20.9
			1	14	0.0	18.9	18.8	18.9	1	23.7	23.7	23.6	1	19.5	19.4	19.4	0	20.9	21.0	21.0
			8	0	0.3	18.7	18.6	18.7	2	22.7	22.7	22.7	2	18.6	18.4	18.5	0	20.8	21.0	20.8
			8	4	0.3	18.7	18.7	18.7	2	22.6	22.6	22.7	2	18.6	18.6	18.6	0	21.0	21.0	20.9
			8	7	0.3	18.6	18.7	18.6	2	22.6	22.7	22.7	2	18.4	18.5	18.7	0	20.9	21.0	21.0
		15	0	0.3	18.6	18.7	18.7	2	22.7	22.6	22.6	2	18.5	18.4	18.4	0	20.9	20.9	20.9	
		64QAM	1	0	0.3	18.7	18.6	18.7	2	22.7	22.6	22.7	2	18.6	18.6	18.5	0	20.9	20.9	21.0
			1	8	0.3	18.6	18.7	18.6	2	22.6	22.6	22.6	2	18.6	18.6	18.6	0	20.9	21.0	20.8
			1	14	0.3	18.7	18.7	18.6	2	22.6	22.7	22.7	2	18.7	18.6	18.5	0	21.0	20.9	21.0
			8	0	1.3	17.7	17.6	17.7	3	21.7	21.6	21.7	3	17.6	17.6	17.6	0	21.0	20.8	21.0
			8	4	1.3	17.6	17.6	17.6	3	21.6	21.7	21.6	3	17.6	17.6	17.6	0	21.0	21.0	21.0
8	7		1.3	17.7	17.7	17.6	3	21.7	21.7	21.7	3	17.5	17.6	17.6	0	21.0	20.9	20.9		
15	0	1.3	17.7	17.6	17.6	3	21.7	21.7	21.6	3	17.6	17.6	17.5	0	20.9	20.9	20.9			
Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A							MODE B								
					Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1		
						1710.7 MHz	1732.5 MHz	1754.3 MHz		1710.7 MHz	1732.5 MHz	1754.3 MHz		1710.7 MHz	1732.5 MHz	1754.3 MHz		1710.7 MHz	1732.5 MHz	1754.3 MHz
LTE Band 4	14	QPSK	1	0	0.0	18.7	18.9	18.8	0	24.6	24.6	24.7	0	20.4	20.3	20.4	0	21.0	20.9	20.9
			1	2	0.0	18.8	18.9	18.8	0	24.7	24.6	24.7	0	20.7	20.5	20.3	0	20.8	20.9	21.0
			1	5	0.0	18.8	18.7	18.9	0	24.6	24.6	24.6	0	20.6	20.4	20.5	0	20.9	20.9	20.8
			3	0	0.0	18.8	18.9	18.7	0	24.6	24.7	24.7	0	20.6	20.4	20.4	0	20.9	21.0	21.0
			3	1	0.0	18.9	18.9	18.9	0	24.7	24.7	24.6	0	20.6	20.5	20.2	0	20.8	20.9	20.9
			3	2	0.0	18.8	18.7	18.9	0	24.7	24.6	24.7	0	20.5	20.5	20.7	0	21.0	20.8	21.0
		6	0	0.0	18.8	18.9	18.9	1	23.6	23.6	23.7	1	19.4	19.5	19.6	0	21.0	20.9	20.9	
		16QAM	1	0	0.0	18.9	18.8	18.8	1	23.7	23.6	23.7	1	19.7	19.6	19.3	0	20.9	21.0	20.9
			1	2	0.0	18.9	18.8	18.7	1	23.6	23.6	23.6	1	19.7	19.4	19.4	0	20.9	21.0	21.0
			1	5	0.0	18.8	18.8	18.9	1	23.7	23.7	23.7	1	19.5	19.5	19.6	0	20.8	20.9	20.9
			3	0	0.0	18.8	18.9	18.8	1	23.7	23.7	23.7	1	19.4	19.5	19.4	0	20.9	20.8	20.8
			3	1	0.0	18.7	18.9	18.8	1	23.7	23.7	23.7	1	19.4	19.7	19.7	0	21.0	21.0	21.0
			3	2	0.0	18.8	18.7	18.8	1	23.7	23.7	23.6	1	19.4	19.4	19.5	0	21.0	20.9	21.0
		6	0	0.3	18.6	18.6	18.7	2	22.6	22.6	22.7	2	18.5	18.3	18.4	0	20.8	21.0	21.0	
		64QAM	1	0	0.3	18.6	18.6	18.6	2	22.7	22.7	22.7	2	18.7	18.6	18.6	0	20.8	21.0	21.0
			1	2	0.3	18.6	18.6	18.6	2	22.7	22.7	22.6	2	18.6	18.5	18.7	0	20.8	20.8	20.8
			1	5	0.3	18.6	18.7	18.7	2	22.7	22.7	22.7	2	18.6	18.6	18.7	0	20.9	20.9	20.8
			3	0	0.3	18.5	18.5	18.6	2	22.6	22.6	22.7	2	17.5	17.7	17.7	0	20.9	20.9	21.0
			3	1	0.3	18.6	18.7	18.5	2	22.7	22.6	22.6	2	17.6	17.5	17.7	0	20.9	21.0	20.9
			3	2	0.3	18.6	18.6	18.6	2	22.7	22.6	22.7	2	17.5	17.5	17.5	0	20.9	20.8	21.0
6	0	1.3	17.7	17.6	17.7	3	21.6	21.7	21.6	3	17.6	17.7	17.5	0	20.8	21.0	20.9			

LTE Band 5 Average Power (dBm) Measured Results

SAR for LTE Band 5 (Frequency range: 824 - 849 MHz) is covered by LTE Band 26 (Frequency range: 814 – 849 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

LTE Band 7 Average Power (dBm) Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A									MODE B										
					Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1						
						2510 MHz	2535 MHz	2560 MHz		2510 MHz	2535 MHz	2560 MHz		2510 MHz	2535 MHz	2560 MHz		2510 MHz	2535 MHz	2560 MHz				
LTE Band 7	20	Max Power (dBm)			18.0				24.8				19.8				18.5							
		QPSK	1	0	0.0	17.6	17.6	17.5	0.0	24.7	24.7	24.5	0.0	19.3	19.4	19.4	0.0	17.8	17.9	17.9				
			1	49	0.0	17.6	17.7	17.7	0.0	24.7	24.7	24.5	0.0	19.4	19.4	19.4	0.0	17.9	17.9	18.0				
			1	99	0.0	17.6	17.7	17.5	0.0	24.7	24.6	24.5	0.0	19.4	19.4	19.4	0.0	17.9	17.8	17.9				
			50	0	0.0	17.6	17.7	17.6	10	23.7	23.8	23.7	0.0	19.4	19.4	19.4	0.0	17.8	17.8	17.9				
			50	24	0.0	17.7	17.7	17.6	10	23.8	23.8	23.8	0.0	19.4	19.4	19.4	0.0	18.0	17.9	18.0				
			100	0	0.0	17.7	17.7	17.6	10	23.8	23.8	23.8	0.0	19.5	19.4	19.4	0.0	18.0	17.9	18.0				
		16QAM	1	0	0.0	17.7	17.6	17.6	10	23.7	23.8	23.7	0.0	19.3	19.4	19.3	0.0	17.9	17.9	17.8				
			1	49	0.0	17.6	17.6	17.7	10	23.7	23.7	23.7	0.0	19.3	19.4	19.4	0.0	17.9	17.9	17.9				
			1	99	0.0	17.7	17.6	17.7	10	23.7	23.7	23.7	0.0	19.4	19.3	19.3	0.0	17.9	18.0	17.9				
			50	0	0.0	17.6	17.6	17.7	2.0	22.7	22.6	22.7	0.5	19.0	18.9	18.8	0.0	18.0	17.9	18.0				
			50	24	0.0	17.7	17.7	17.7	2.0	22.6	22.8	22.7	0.5	18.9	18.9	18.8	0.0	17.9	17.9	17.9				
			100	0	0.0	17.7	17.6	17.7	2.0	22.7	22.8	22.8	0.5	19.0	18.8	18.9	0.0	18.0	17.9	17.9				
		64QAM	1	0	0.0	17.5	17.6	17.7	2.0	22.7	22.7	22.7	0.5	19.0	19.0	18.9	0.0	17.9	17.8	17.9				
			1	49	0.0	17.5	17.6	17.7	2.0	22.7	22.7	22.8	0.5	18.9	19.0	18.9	0.0	17.9	17.9	17.9				
			1	99	0.0	17.6	17.6	17.6	2.0	22.7	22.7	22.6	0.5	19.0	18.9	18.9	0.0	17.9	18.0	17.9				
			50	0	0.0	17.5	17.5	17.7	3.0	21.6	21.7	21.8	1.5	17.8	17.9	17.9	0.0	17.9	18.0	18.0				
			50	24	0.0	17.6	17.5	17.6	3.0	21.6	21.7	21.8	1.5	18.0	17.9	17.9	0.0	17.8	17.9	17.8				
			50	49	0.0	17.6	17.6	17.5	3.0	21.7	21.7	21.7	1.5	17.9	18.0	17.9	0.0	17.9	18.0	17.8				
		100	0	0.0	17.6	17.6	17.5	3.0	21.6	21.6	21.8	1.5	18.0	17.9	17.9	0.0	17.9	18.0	17.9					
		Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A									MODE B								
							Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1				
2507.5 MHz	2535 MHz							2562.5 MHz	2507.5 MHz	2535 MHz		2562.5 MHz	2507.5 MHz	2535 MHz		2562.5 MHz	2507.5 MHz	2535 MHz		2562.5 MHz				
LTE Band 7	15	QPSK	1	0	0.0	17.7	17.7	17.6	0.0	24.6	24.6	24.6	0.0	19.4	19.5	19.3	0.0	17.9	17.9	17.9				
			1	36	0.0	17.6	17.6	17.7	0.0	24.7	24.6	24.6	0.0	19.5	19.5	19.3	0.0	17.9	18.0	18.0				
			1	74	0.0	17.7	17.7	17.7	0.0	24.6	24.6	24.7	0.0	19.5	19.4	19.4	0.0	17.8	17.9	17.8				
			36	0	0.0	17.6	17.7	17.6	10	23.5	23.6	23.6	0.0	19.4	19.4	19.5	0.0	17.9	17.9	18.0				
			36	18	0.0	17.7	17.7	17.6	10	23.6	23.5	23.6	0.0	19.4	19.4	19.4	0.0	17.9	17.9	18.0				
			36	37	0.0	17.7	17.6	17.6	10	23.6	23.7	23.7	0.0	19.4	19.4	19.5	0.0	17.8	18.0	17.9				
		16QAM	75	0	0.0	17.7	17.7	17.7	10	23.6	23.6	23.6	0.0	19.5	19.5	19.3	0.0	17.9	17.9	17.8				
			1	0	0.0	17.7	17.7	17.7	10	23.6	23.6	23.7	0.0	19.4	19.4	19.4	0.0	17.9	17.9	17.9				
			1	36	0.0	17.7	17.6	17.6	10	23.6	23.6	23.7	0.0	19.4	19.4	19.4	0.0	17.8	17.9	17.9				
			1	74	0.0	17.7	17.7	17.7	10	23.6	23.7	23.6	0.0	19.5	19.4	19.4	0.0	17.9	18.0	18.0				
			36	0	0.0	17.6	17.6	17.7	2.0	22.7	22.6	22.6	0.5	19.0	19.0	18.9	0.0	17.9	18.0	17.9				
			36	18	0.0	17.7	17.6	17.6	2.0	22.6	22.6	22.6	0.5	19.0	18.9	18.9	0.0	17.8	17.9	17.9				
		64QAM	36	37	0.0	17.7	17.6	17.7	2.0	22.6	22.6	22.6	0.5	18.9	18.9	18.8	0.0	17.8	17.8	17.8				
			75	0	0.0	17.7	17.7	17.6	2.0	22.7	22.5	22.7	0.5	18.8	19.0	19.0	0.0	17.9	18.0	17.8				
			1	0	0.0	17.7	17.6	17.6	2.0	22.8	22.7	22.8	0.5	18.8	19.0	19.0	0.0	17.9	18.0	17.9				
			1	36	0.0	17.6	17.6	17.6	2.0	22.7	22.7	22.6	0.5	18.8	18.8	19.0	0.0	17.8	17.9	17.9				
			1	74	0.0	17.5	17.6	17.6	2.0	22.7	22.7	22.7	0.5	18.9	18.9	18.8	0.0	18.0	18.0	17.9				
			36	0	0.0	17.6	17.6	17.6	3.0	21.7	21.6	21.7	1.5	17.9	18.0	17.8	0.0	18.0	17.9	18.0				
	36	18	0.0	17.6	17.6	17.6	3.0	21.7	21.7	21.6	1.5	17.9	17.9	17.9	0.0	17.8	18.0	18.0						
	36	37	0.0	17.7	17.5	17.7	3.0	21.7	21.7	21.6	1.5	18.0	17.9	17.8	0.0	17.9	17.8	17.9						
	75	0	0.0	17.5	17.7	17.5	3.0	21.8	21.7	21.7	1.5	18.0	17.8	17.9	0.0	17.8	18.0	17.9						

LTE Band 7 Average Power (dBm) Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A							MODE B										
					Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1				
						2505 MHz	2535 MHz	2565 MHz		2505 MHz	2535 MHz	2565 MHz		2505 MHz	2535 MHz	2565 MHz		2505 MHz	2535 MHz	2565 MHz		
LTE Band 7	10	QPSK	1	0	0.0	17.7	17.7	17.7	0.0	24.7	24.6	24.6	0.0	19.4	19.4	19.4	0.0	17.9	17.9	17.8		
			1	24	0.0	17.7	17.7	17.7	0.0	24.6	24.7	24.6	0.0	19.4	19.4	19.4	0.0	17.9	17.9	17.9		
			1	49	0.0	17.7	17.7	17.7	0.0	24.6	24.6	24.6	0.0	19.4	19.3	19.4	0.0	17.9	17.9	18.0		
			25	0	0.0	17.6	17.7	17.7	10	23.7	23.7	23.6	0.0	19.5	19.4	19.5	0.0	17.9	17.9	17.8		
			25	12	0.0	17.6	17.6	17.7	10	23.6	23.6	23.6	0.0	19.5	19.4	19.4	0.0	18.0	18.0	17.9		
			25	24	0.0	17.7	17.6	17.6	10	23.7	23.6	23.6	0.0	19.5	19.4	19.4	0.0	17.9	17.9	18.0		
		16QAM	1	0	0.0	17.7	17.7	17.6	10	23.7	23.7	23.6	0.0	19.4	19.4	19.4	0.0	17.9	18.0	17.9		
			1	24	0.0	17.6	17.6	17.6	10	23.6	23.7	23.6	0.0	19.4	19.4	19.4	0.0	18.0	18.0	17.9		
			1	49	0.0	17.7	17.7	17.7	10	23.6	23.7	23.6	0.0	19.5	19.3	19.5	0.0	18.0	17.8	18.0		
			25	0	0.0	17.7	17.7	17.7	2.0	22.5	22.7	22.6	0.5	18.9	19.0	18.9	0.0	18.0	17.9	17.9		
			25	12	0.0	17.6	17.7	17.7	2.0	22.6	22.6	22.6	0.5	18.9	18.8	18.9	0.0	17.9	17.9	18.0		
			25	24	0.0	17.6	17.7	17.6	2.0	22.7	22.6	22.7	0.5	18.9	18.9	18.9	0.0	18.0	18.0	17.9		
		64QAM	50	0	0.0	17.7	17.6	17.7	2.0	22.5	22.6	22.6	0.5	19.0	18.9	18.8	0.0	18.0	18.0	18.0		
			1	0	0.0	17.5	17.5	17.5	2.0	22.8	22.8	22.7	0.5	18.8	18.9	18.9	0.0	17.9	17.9	17.8		
			1	24	0.0	17.6	17.6	17.5	2.0	22.8	22.6	22.7	0.5	19.0	19.0	18.9	0.0	17.9	17.9	17.9		
			1	49	0.0	17.6	17.5	17.6	2.0	22.6	22.6	22.6	0.5	18.9	18.8	19.0	0.0	17.9	17.9	17.9		
			25	0	0.0	17.6	17.7	17.7	3.0	21.7	21.7	21.7	15	17.9	17.8	17.8	0.0	17.9	17.9	18.0		
			25	12	0.0	17.5	17.6	17.7	3.0	21.6	21.7	21.7	15	17.9	18.0	17.8	0.0	18.0	17.8	17.9		
		LTE Band 7	5	QPSK	25	24	0.0	17.6	17.5	17.6	3.0	21.7	21.7	21.7	15	18.0	17.8	17.8	0.0	18.0	17.9	17.9
					50	0	0.0	17.6	17.5	17.5	3.0	21.7	21.7	21.7	15	18.0	17.9	17.8	0.0	17.8	17.8	18.0
					1	0	0.0	17.7	17.7	17.6	0.0	24.6	24.7	24.6	0.0	19.4	19.4	19.4	0.0	17.9	18.0	17.9
					1	12	0.0	17.7	17.7	17.6	0.0	24.7	24.7	24.7	0.0	19.4	19.4	19.4	0.0	17.9	17.9	17.9
					1	24	0.0	17.7	17.7	17.7	0.0	24.5	24.6	24.5	0.0	19.4	19.4	19.5	0.0	17.9	17.9	18.0
					12	0	0.0	17.7	17.7	17.7	10	23.6	23.6	23.6	0.0	19.4	19.4	19.4	0.0	17.9	18.0	17.9
16QAM	12			7	0.0	17.7	17.6	17.7	10	23.6	23.7	23.7	0.0	19.5	19.5	19.4	0.0	18.0	17.9	17.8		
	12			13	0.0	17.7	17.7	17.6	10	23.5	23.6	23.7	0.0	19.3	19.5	19.3	0.0	17.9	18.0	17.9		
	25			0	0.0	17.7	17.7	17.7	10	23.7	23.7	23.7	0.0	19.4	19.4	19.4	0.0	17.9	17.9	17.8		
	1			0	0.0	17.6	17.7	17.6	10	23.6	23.6	23.6	0.0	19.4	19.4	19.5	0.0	17.9	17.9	17.9		
	1			12	0.0	17.6	17.7	17.7	10	23.6	23.7	23.6	0.0	19.4	19.4	19.4	0.0	17.9	18.0	18.0		
	1			24	0.0	17.7	17.7	17.7	10	23.7	23.7	23.6	0.0	19.5	19.5	19.4	0.0	18.0	17.9	17.9		
64QAM	12			0	0.0	17.7	17.7	17.7	2.0	22.7	22.6	22.7	0.5	18.9	18.9	19.0	0.0	17.8	17.9	17.9		
	12			7	0.0	17.7	17.7	17.7	2.0	22.5	22.5	22.7	0.5	18.8	18.8	18.9	0.0	17.9	17.9	17.8		
	12			13	0.0	17.7	17.7	17.7	2.0	22.6	22.6	22.7	0.5	18.9	19.0	18.8	0.0	18.0	17.9	17.9		
	25			0	0.0	17.6	17.7	17.6	2.0	22.6	22.6	22.7	0.5	19.0	18.9	18.8	0.0	17.9	17.9	18.0		
	1			0	0.0	17.5	17.5	17.7	2.0	22.6	22.7	22.7	0.5	18.9	19.0	18.9	0.0	17.8	17.8	17.8		
	1			12	0.0	17.7	17.6	17.7	2.0	22.7	22.7	22.6	0.5	18.8	18.9	18.9	0.0	17.7	17.8	17.9		
64QAM	1			24	0.0	17.6	17.5	17.6	2.0	22.8	22.7	22.8	0.5	19.0	18.9	18.9	0.0	17.8	17.7	17.7		
	12			0	0.0	17.6	17.6	17.6	3.0	21.8	21.6	21.8	15	17.9	18.0	17.9	0.0	17.9	17.8	17.8		
	12			7	0.0	17.6	17.6	17.6	3.0	21.6	21.8	21.7	15	18.0	17.8	17.9	0.0	17.9	17.8	17.8		
	12			13	0.0	17.6	17.7	17.7	3.0	21.6	21.6	21.7	15	17.9	17.8	18.0	0.0	17.9	17.7	17.7		
	25			0	0.0	17.5	17.7	17.5	3.0	21.7	21.7	21.6	15	17.8	18.0	18.0	0.0	17.9	17.8	17.9		
	25			0	0.0	17.5	17.7	17.5	3.0	21.7	21.7	21.6	15	17.8	18.0	18.0	0.0	17.9	17.8	17.9		

LTE Band 12 Average Power (dBm) Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A						MODE B									
					Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1		
							707.5 MHz				707.5 MHz				707.5 MHz				707.5 MHz	
LTE Band 12	Max Power (dBm)					23.3				24.8				23.3				24.8		
	10	QPSK	1	0	0				0				0				0			
			1	24	0				0				0				0			
			1	49	0				0				0				0			
			25	0	1				1				1				1			
			25	12	1				1				1				1			
			25	24	1				1				1				1			
		16QAM	50	0	1				1				1				1			
			1	0	1				1				1				1			
			1	24	1				1				1				1			
			1	49	1				1				1				1			
			25	0	2				2				2				2			
			25	12	2				2				2				2			
		64QAM	25	24	2				2				2				2			
			50	0	2				2				2				2			
			1	0	2				2				2				2			
			1	24	2				2				2				2			
			1	49	2				2				2				2			
			25	0	3				3				3				3			
	64QAM	25	12	3				3				3				3				
		25	24	3				3				3				3				
		50	0	3				3				3				3				

Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A						MODE B									
					Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1		
						7015 MHz	7075 MHz	7135 MHz		7015 MHz	7075 MHz	7135 MHz		7015 MHz	7075 MHz	7135 MHz		7015 MHz	7075 MHz	7135 MHz
LTE Band 12	5	QPSK	1	0	0	23.2	23.1	23.1	0	24.5	24.5	24.4	0	23.2	23.1	23.1	0	24.5	24.5	24.4
			1	12	0	23.1	23.2	23.1	0	24.4	24.4	24.4	0	23.1	23.2	23.1	0	24.4	24.4	24.4
			1	24	0	23.2	23.2	23.1	0	24.4	24.4	24.5	0	23.2	23.2	23.1	0	24.4	24.4	24.5
			12	0	1	22.2	22.2	22.1	1	23.4	23.5	23.4	1	22.2	22.2	22.1	1	23.4	23.5	23.4
			12	7	1	22.0	22.2	22.0	1	23.4	23.4	23.4	1	22.0	22.2	22.0	1	23.4	23.4	23.4
			12	13	1	22.2	22.2	22.2	1	23.5	23.5	23.4	1	22.2	22.2	22.2	1	23.5	23.5	23.4
		16QAM	25	0	1	22.1	22.1	22.2	1	23.5	23.4	23.4	1	22.1	22.1	22.2	1	23.5	23.4	23.4
			1	0	1	22.2	22.2	22.1	1	23.5	23.4	23.3	1	22.2	22.2	22.1	1	23.5	23.4	23.3
			1	12	1	22.1	22.1	22.2	1	23.4	23.4	23.4	1	22.1	22.1	22.2	1	23.4	23.4	23.4
			1	24	1	22.1	22.2	22.1	1	23.4	23.5	23.4	1	22.1	22.2	22.1	1	23.4	23.5	23.4
			12	0	2	21.0	21.2	21.2	2	22.4	22.3	22.4	2	21.0	21.2	21.2	2	22.4	22.3	22.4
			12	7	2	21.1	21.0	21.1	2	22.4	22.4	22.3	2	21.1	21.0	21.1	2	22.4	22.4	22.3
		64QAM	12	13	2	21.1	21.2	21.1	2	22.4	22.4	22.4	2	21.1	21.2	21.1	2	22.4	22.4	22.4
			25	0	2	21.1	21.1	21.2	2	22.4	22.4	22.4	2	21.1	21.1	21.2	2	22.4	22.4	22.4
			1	0	2	21.2	21.0	21.1	2	22.5	22.5	22.6	2	21.2	21.0	21.1	2	22.5	22.5	22.6
			1	12	2	21.2	21.2	21.0	2	22.6	22.4	22.5	2	21.2	21.2	21.0	2	22.6	22.4	22.5
			1	24	2	21.1	21.1	21.0	2	22.5	22.5	22.4	2	21.1	21.1	21.0	2	22.5	22.5	22.4
			12	0	3	20.2	20.0	20.1	3	21.5	21.5	21.4	3	20.2	20.0	20.1	3	21.5	21.5	21.4
			12	7	3	20.2	20.1	20.0	3	21.5	21.5	21.5	3	20.2	20.1	20.0	3	21.5	21.5	21.5
			12	13	3	20.1	20.1	20.0	3	21.5	21.4	21.5	3	20.1	20.1	20.0	3	21.5	21.4	21.5
			25	0	3	20.2	20.1	20.1	3	21.5	21.6	21.6	3	20.2	20.1	20.1	3	21.5	21.6	21.6

Note(s):

10 MHz Bandwidths 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 12 Average Power (dBm) Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A								MODE B							
					Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1		
						700.5 MHz	707.5 MHz	714.5 MHz		700.5 MHz	707.5 MHz	714.5 MHz		700.5 MHz	707.5 MHz	714.5 MHz		700.5 MHz	707.5 MHz	714.5 MHz
LTE Band 12	3	QPSK	1	0	0	23.1	23.1	23.2	0	24.4	24.5	24.5	0	23.1	23.1	23.2	0	24.4	24.5	24.5
			1	8	0	23.1	23.2	23.2	0	24.4	24.4	24.5	0	23.1	23.2	23.2	0	24.4	24.4	24.5
			1	14	0	23.2	23.2	23.1	0	24.5	24.4	24.5	0	23.2	23.2	23.1	0	24.5	24.4	24.5
			8	0	1	22.2	22.1	22.1	1	23.4	23.5	23.4	1	22.2	22.1	22.1	1	23.4	23.5	23.4
			8	4	1	22.2	22.1	22.1	1	23.4	23.4	23.3	1	22.2	22.1	22.1	1	23.4	23.4	23.3
			8	7	1	22.1	22.2	22.1	1	23.4	23.5	23.5	1	22.1	22.2	22.1	1	23.4	23.5	23.5
			15	0	1	22.1	22.2	22.1	1	23.4	23.5	23.4	1	22.1	22.2	22.1	1	23.4	23.5	23.4
		16QAM	1	0	1	22.2	22.1	22.2	1	23.5	23.5	23.5	1	22.2	22.1	22.2	1	23.5	23.5	23.5
			1	8	1	22.2	22.1	22.2	1	23.4	23.4	23.4	1	22.2	22.1	22.2	1	23.4	23.4	23.4
			1	14	1	22.0	22.1	22.1	1	23.5	23.5	23.5	1	22.0	22.1	22.1	1	23.5	23.5	23.5
			8	0	2	21.1	21.1	21.1	2	22.5	22.4	22.4	2	21.1	21.1	21.1	2	22.5	22.4	22.4
			8	4	2	21.1	21.1	21.2	2	22.4	22.5	22.5	2	21.1	21.1	21.2	2	22.4	22.5	22.5
			8	7	2	21.2	21.1	21.2	2	22.5	22.4	22.4	2	21.2	21.1	21.2	2	22.5	22.4	22.4
			15	0	2	21.1	21.1	21.0	2	22.4	22.4	22.4	2	21.1	21.1	21.0	2	22.4	22.4	22.4
		64QAM	1	0	2	21.2	21.2	21.0	2	22.5	22.5	22.4	2	21.2	21.2	21.0	2	22.5	22.5	22.4
			1	8	2	21.2	21.1	21.1	2	22.6	22.5	22.5	2	21.2	21.1	21.1	2	22.6	22.5	22.5
			1	14	2	21.2	21.3	21.2	2	22.5	22.5	22.5	2	21.2	21.3	21.2	2	22.5	22.5	22.5
			8	0	3	20.1	20.1	20.1	3	21.5	21.5	21.4	3	20.1	20.1	20.1	3	21.5	21.5	21.4
			8	4	3	20.0	20.1	20.1	3	21.5	21.5	21.4	3	20.0	20.1	20.1	3	21.5	21.5	21.4
			8	7	3	20.1	20.2	20.2	3	21.5	21.5	21.5	3	20.1	20.2	20.2	3	21.5	21.5	21.5
			15	0	3	20.1	20.2	20.1	3	21.5	21.5	21.4	3	20.1	20.2	20.1	3	21.5	21.5	21.4
Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A								MODE B							
					Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1		
						699.7 MHz	707.5 MHz	715.3 MHz		699.7 MHz	707.5 MHz	715.3 MHz		699.7 MHz	707.5 MHz	715.3 MHz		699.7 MHz	707.5 MHz	715.3 MHz
LTE Band 12	14	QPSK	1	0	0	23.2	23.1	23.1	0	24.5	24.4	24.4	0	23.2	23.1	23.1	0	24.5	24.4	24.4
			1	2	0	23.1	23.1	23.1	0	24.5	24.4	24.4	0	23.1	23.1	23.1	0	24.5	24.4	24.4
			1	5	0	23.1	23.2	23.2	0	24.5	24.4	24.4	0	23.1	23.2	23.2	0	24.5	24.4	24.4
			3	0	0	23.2	23.1	23.1	0	24.4	24.5	24.4	0	23.2	23.1	23.1	0	24.4	24.5	24.4
			3	1	0	23.1	23.1	23.1	0	24.5	24.4	24.5	0	23.1	23.1	23.1	0	24.5	24.4	24.5
			3	2	0	23.2	23.2	23.2	0	24.5	24.4	24.3	0	23.2	23.2	23.2	0	24.5	24.4	24.3
			6	0	1	22.1	22.2	22.2	1	23.5	23.4	23.4	1	22.1	22.2	22.2	1	23.5	23.4	23.4
		16QAM	1	0	1	22.1	22.2	22.1	1	23.5	23.5	23.5	1	22.1	22.2	22.1	1	23.5	23.5	23.5
			1	2	1	22.2	22.1	22.2	1	23.4	23.4	23.4	1	22.2	22.1	22.2	1	23.4	23.4	23.4
			1	5	1	22.1	22.1	22.2	1	23.4	23.5	23.4	1	22.1	22.1	22.2	1	23.4	23.5	23.4
			3	0	1	22.0	22.0	22.1	1	23.5	23.4	23.5	1	22.0	22.0	22.1	1	23.5	23.4	23.5
			3	1	1	22.1	22.1	22.0	1	23.4	23.3	23.4	1	22.1	22.1	22.0	1	23.4	23.3	23.4
			3	2	1	22.1	22.2	22.1	1	23.5	23.4	23.3	1	22.1	22.2	22.1	1	23.5	23.4	23.3
			6	0	2	21.0	21.2	21.1	2	22.5	22.4	22.4	2	21.0	21.2	21.1	2	22.5	22.4	22.4
		64QAM	1	0	2	21.0	21.1	21.2	2	22.5	22.5	22.5	2	21.0	21.1	21.2	2	22.5	22.5	22.5
			1	2	2	21.1	21.0	21.1	2	22.5	22.5	22.6	2	21.1	21.0	21.1	2	22.5	22.5	22.6
			1	5	2	21.1	21.0	21.1	2	22.6	22.5	22.5	2	21.1	21.0	21.1	2	22.6	22.5	22.5
			3	0	2	21.2	21.2	21.2	2	22.4	22.5	22.5	2	21.2	21.2	21.2	2	22.4	22.5	22.5
			3	1	2	21.1	21.0	21.2	2	22.5	22.5	22.6	2	21.1	21.0	21.2	2	22.5	22.5	22.6
			3	2	2	21.0	21.2	21.1	2	22.5	22.6	22.6	2	21.0	21.2	21.1	2	22.5	22.6	22.6
			6	0	3	20.1	20.0	20.1	3	21.6	21.5	21.6	3	20.1	20.0	20.1	3	21.6	21.5	21.6

LTE Band 13 Average Power (dBm) Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A						MODE B									
					Target MPR	UAT 1		Target MPR	LAT 1		Target MPR	UAT 1		Target MPR	LAT 1					
							782 MHz			782 MHz			782 MHz			782 MHz				
LTE Band 13	10		Max Power (dBm)		23.3				24.8				23.3				24.8			
			QPSK	1	0	0		23.0	0		24.4	0		23.0	0		24.4			
				1	24	0		23.1	0		24.5	0		23.1	0		24.5			
				1	49	0		23.1	0		24.4	0		23.1	0		24.4			
				25	0	1		22.0	1		23.8	1		22.0	1		23.8			
				25	12	1		22.1	1		23.8	1		22.1	1		23.8			
				25	24	1		22.0	1		23.8	1		22.0	1		23.8			
			16QAM	50	0	1		22.1	1		23.8	1		22.1	1		23.8			
				1	0	1		22.0	1		23.8	1		22.0	1		23.8			
				1	24	1		22.1	1		23.7	1		22.1	1		23.7			
				1	49	1		22.0	1		23.7	1		22.0	1		23.7			
				25	0	2		21.0	2		22.7	2		21.0	2		22.7			
				25	12	2		21.1	2		22.8	2		21.1	2		22.8			
			64QAM	25	24	2		21.1	2		22.8	2		21.1	2		22.8			
				50	0	2		21.0	2		22.8	2		21.0	2		22.8			
				1	0	2		21.0	2		22.7	2		21.0	2		22.7			
				1	24	2		21.0	2		22.7	2		21.0	2		22.7			
				1	49	2		21.2	2		22.7	2		21.2	2		22.7			
				25	0	3		19.9	3		21.8	3		19.9	3		21.8			
				25	12	3		19.9	3		21.8	3		19.9	3		21.8			
				25	24	3		20.1	3		21.7	3		20.1	3		21.7			
				50	0	3		20.0	3		21.8	3		20.0	3		21.8			
Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A						MODE B									
					Target MPR	UAT 1		Target MPR	LAT 1		Target MPR	UAT 1		Target MPR	LAT 1					
							782 MHz		782 MHz		782 MHz		782 MHz		782 MHz		782 MHz			
LTE Band 13	5		QPSK	1	0	0		23.2	0		24.5	0		23.2	0		24.5			
				1	12	0		23.1	0		24.5	0		23.1	0		24.5			
				1	24	0		23.1	0		24.4	0		23.1	0		24.4			
				12	0	1		22.1	1		23.4	1		22.1	1		23.4			
				12	7	1		22.2	1		23.4	1		22.2	1		23.4			
				12	13	1		22.1	1		23.4	1		22.1	1		23.4			
			16QAM	25	0	1		22.1	1		23.3	1		22.1	1		23.3			
				1	0	1		22.1	1		23.5	1		22.1	1		23.5			
				1	12	1		22.1	1		23.4	1		22.1	1		23.4			
				1	24	1		22.2	1		23.5	1		22.2	1		23.5			
				12	0	2		21.1	2		22.5	2		21.1	2		22.5			
				12	7	2		21.2	2		22.5	2		21.2	2		22.5			
			64QAM	12	13	2		21.1	2		22.4	2		21.1	2		22.4			
				25	0	2		21.1	2		22.4	2		21.1	2		22.4			
				1	0	2		21.0	2		22.6	2		21.0	2		22.6			
				1	12	2		21.1	2		22.6	2		21.1	2		22.6			
				1	24	2		20.9	2		22.8	2		20.9	2		22.8			
				12	0	3		19.9	3		21.7	3		19.9	3		21.7			
				12	7	3		20.1	3		21.7	3		20.1	3		21.7			
				12	13	3		20.0	3		21.7	3		20.0	3		21.7			
				25	0	3		20.1	3		21.7	3		20.1	3		21.7			

Note(s):

10/5 MHz Bandwidths 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 17 Average Power (dBm) Measured Results

SAR for LTE Band 17 (Frequency range: 704 – 716 MHz) is covered by LTE Band 12 (Frequency range: 699 – 716 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

LTE Band 25 Average Power (dBm) Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A								MODE B									
					Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1				
						1860 MHz	1882.5 MHz	1905 MHz		1860 MHz	1882.5 MHz	1905 MHz		1860 MHz	1882.5 MHz	1905 MHz		1860 MHz	1882.5 MHz	1905 MHz		
LTE Band 25	20	Max Power (dBm)			18.8			24.8			20.3			20.8								
					1	0	0.0	18.5	18.7	18.5	0.0	24.7	24.8	24.7	0.0	19.9	20.0	20.0	0.0	19.9	20.1	20.0
		1	49	0.0	18.5	18.8	18.5	0.0	24.8	24.8	24.8	0.0	20.0	20.0	20.0	0.0	20.0	20.1	20.0			
		1	99	0.0	18.5	18.6	18.5	0.0	24.7	24.8	24.7	0.0	19.9	20.0	20.0	0.0	20.0	20.1	20.1			
		50	0	0.0	18.5	18.7	18.7	0.0	24.0	23.9	23.9	0.3	19.9	19.9	19.9	0.0	20.0	19.7	19.9			
		50	24	0.0	18.5	18.8	18.7	10	23.8	23.8	23.8	0.3	20.0	20.0	20.0	0.0	20.0	19.7	19.9			
		50	49	0.0	18.5	18.7	18.7	10	23.7	23.8	23.8	0.3	19.9	20.0	19.8	0.0	20.0	19.7	19.8			
		100	0	0.0	18.8	18.8	18.8	10	23.8	23.8	23.8	0.3	20.0	20.0	20.0	0.0	19.9	19.7	20.0			
		1	0	0.0	18.7	18.6	18.7	10	23.8	23.8	23.8	0.3	19.9	19.9	19.9	0.0	20.0	19.9	19.9			
		1	49	0.0	18.5	18.6	18.7	10	23.7	23.8	23.8	0.3	20.0	19.9	20.0	0.0	20.0	19.9	20.0			
		1	99	0.0	18.7	18.7	18.5	10	23.7	23.7	23.7	0.3	19.9	20.0	19.9	0.0	19.9	20.0	19.9			
		50	0	0.0	18.6	18.7	18.6	2.0	22.7	22.7	22.7	1.3	18.9	18.9	18.9	0.0	20.0	20.1	20.1			
		50	24	0.0	18.6	18.5	18.5	2.0	22.8	22.8	22.8	1.3	19.0	19.0	18.9	0.0	20.0	20.0	20.1			
		50	49	0.0	18.7	18.7	18.6	2.0	22.8	22.8	22.8	1.3	19.0	19.0	18.8	0.0	19.9	20.1	20.0			
		100	0	0.0	18.6	18.5	18.6	2.0	22.8	22.8	22.7	1.3	19.0	18.9	19.0	0.0	20.0	20.1	20.1			
		1	0	0.0	18.5	18.6	18.7	2.0	22.7	22.7	22.4	1.3	18.8	18.8	19.0	0.0	20.0	20.0	20.0			
		1	49	0.0	18.5	18.6	18.7	2.0	22.8	22.8	22.8	1.3	18.8	18.9	18.9	0.0	19.9	20.0	20.1			
		1	99	0.0	18.6	18.6	18.6	2.0	22.7	22.7	22.6	1.3	18.9	19.0	19.0	0.0	20.0	20.1	20.1			
		50	0	0.0	18.5	18.5	18.7	3.0	21.7	21.7	21.8	2.3	17.8	17.9	17.9	0.0	19.9	20.0	19.9			
		50	24	0.0	18.6	18.5	18.6	3.0	21.7	21.7	21.8	2.3	17.9	17.9	17.9	0.0	19.9	20.0	20.0			
		50	49	0.0	18.6	18.6	18.5	3.0	21.7	21.7	21.6	2.3	17.9	17.8	17.9	0.0	20.0	20.1	20.0			
		100	0	0.0	18.6	18.6	18.5	3.0	21.8	21.8	21.8	2.3	17.8	17.9	17.9	0.0	20.0	20.0	19.9			
		Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A								MODE B							
							Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1		
1857.5 MHz	1882.5 MHz							1907.5 MHz	1857.5 MHz	1882.5 MHz		1907.5 MHz	1857.5 MHz	1882.5 MHz		1907.5 MHz	1857.5 MHz	1882.5 MHz		1907.5 MHz		
LTE Band 25	15	QPSK	1	0	0.0	18.6	18.6	18.7	0.0	24.7	24.7	24.7	0.0	19.9	19.8	20.0	0.0	19.8	20.1	19.9		
			1	36	0.0	18.7	18.6	18.6	0.0	24.7	24.8	24.8	0.0	19.9	19.8	19.9	0.0	20.0	20.1	20.1		
			1	74	0.0	18.6	18.6	18.7	0.0	24.7	24.8	24.7	0.0	20.0	19.9	20.0	0.0	20.0	20.0	20.1		
			36	0	0.0	18.6	18.6	18.6	0.0	23.7	23.7	23.8	0.3	19.9	20.0	19.9	0.0	20.1	20.1	20.1		
			36	18	0.0	18.6	18.7	18.6	10	23.8	23.7	23.7	0.3	20.0	19.9	19.9	0.0	20.0	20.1	20.0		
			36	37	0.0	18.6	18.6	18.6	10	23.8	23.7	23.8	0.3	19.9	20.0	20.0	0.0	19.9	20.0	20.1		
		16QAM	75	0	0.0	18.6	18.6	18.5	10	23.8	23.7	23.8	0.3	19.9	19.9	19.9	0.0	20.0	19.9	19.9		
			1	0	0.0	18.6	18.7	18.6	10	23.8	23.6	23.8	0.3	19.9	19.9	20.0	0.0	20.1	20.0	20.0		
			1	36	0.0	18.7	18.6	18.6	10	23.7	23.8	23.7	0.3	19.9	20.0	19.9	0.0	20.0	20.1	20.1		
			1	74	0.0	18.6	18.6	18.6	10	23.7	23.8	23.7	0.3	19.9	19.9	20.0	0.0	19.9	20.0	20.1		
			36	0	0.0	18.6	18.7	18.6	2.0	22.8	22.7	22.7	1.3	18.9	19.0	19.0	0.0	20.0	20.0	20.0		
			36	18	0.0	18.7	18.7	18.6	2.0	22.7	22.6	22.7	1.3	18.8	18.9	19.0	0.0	20.0	20.0	19.9		
		64QAM	36	37	0.0	18.7	18.7	18.6	2.0	22.8	22.8	22.7	1.3	18.9	18.9	18.9	0.0	20.1	20.1	20.0		
			75	0	0.0	18.7	18.6	18.7	2.0	22.7	22.7	22.7	1.3	18.9	18.9	18.9	0.0	20.1	20.0	20.0		
			1	0	0.0	18.7	18.6	18.6	2.0	22.7	22.7	22.6	1.3	18.9	18.9	18.8	0.0	20.0	20.0	20.0		
			1	36	0.0	18.6	18.6	18.6	2.0	22.6	22.6	22.5	1.3	18.8	18.9	18.8	0.0	19.9	20.0	20.1		
			1	74	0.0	18.5	18.6	18.6	2.0	22.8	22.7	22.7	1.3	18.8	18.8	18.9	0.0	20.1	20.0	20.1		
			36	0	0.0	18.6	18.6	18.6	3.0	21.8	21.7	21.7	2.3	17.8	17.9	17.8	0.0	20.1	20.0	20.1		
		64QAM	36	18	0.0	18.6	18.6	18.6	3.0	21.6	21.6	21.7	2.3	17.8	17.8	17.9	0.0	20.1	20.1	20.1		
			36	37	0.0	18.7	18.5	18.7	3.0	21.6	21.7	21.7	2.3	17.8	17.8	17.8	0.0	20.0	20.0	20.0		
			75	0	0.0	18.5	18.7	18.5	3.0	21.6	21.7	21.7	2.3	17.8	17.9	17.8	0.0	20.0	20.0	19.9		

LTE Band 25 Average Power (dBm) Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A							MODE B										
					Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1				
						1855 MHz	1882.5 MHz	1910 MHz		1855 MHz	1882.5 MHz	1910 MHz		1855 MHz	1882.5 MHz	1910 MHz		1855 MHz	1882.5 MHz	1910 MHz		
LTE Band 25	10	QPSK	1	0	0.0	18.7	18.6	18.7	0.0	24.7	24.7	24.7	0.0	19.9	20.0	20.0	0.0	20.1	19.8	20.1		
			1	24	0.0	18.6	18.7	18.6	0.0	24.8	24.8	24.7	0.0	20.0	20.0	20.0	0.0	19.9	20.0	19.8		
			1	49	0.0	18.6	18.6	18.7	0.0	24.8	24.7	24.8	0.0	19.9	19.8	19.9	0.0	19.8	19.9	20.0		
			25	0	0.0	18.7	18.6	18.6	0.0	23.7	23.7	23.7	0.3	20.0	20.0	20.0	0.0	20.0	20.0	20.0		
			25	12	0.0	18.6	18.7	18.6	10	23.7	23.8	23.8	0.3	20.0	19.9	19.9	0.0	20.1	20.0	20.0		
			25	24	0.0	18.6	18.6	18.7	10	23.8	23.6	23.7	0.3	19.9	19.9	19.9	0.0	20.0	19.9	19.9		
		16QAM	50	0	0.0	18.6	18.6	18.7	10	23.7	23.7	23.7	0.3	20.0	20.0	19.9	0.0	20.0	20.0	19.9		
			1	0	0.0	18.7	18.7	18.6	10	23.7	23.7	23.8	0.3	19.9	19.9	20.0	0.0	20.0	20.0	20.0		
			1	24	0.0	18.7	18.6	18.6	10	23.7	23.6	23.7	0.3	20.0	19.9	19.9	0.0	19.9	20.0	19.9		
			1	49	0.0	18.5	18.5	18.7	10	23.7	23.7	23.8	0.3	19.9	20.0	20.0	0.0	19.9	20.0	19.9		
			25	0	0.0	18.5	18.7	18.7	2.0	22.7	22.7	22.7	13	19.0	18.9	18.9	0.0	20.0	20.0	20.1		
			25	12	0.0	18.6	18.6	18.6	2.0	22.7	22.6	22.7	13	18.9	18.9	18.8	0.0	20.0	20.1	20.1		
		64QAM	25	24	0.0	18.6	18.6	18.7	2.0	22.8	22.8	22.8	13	18.9	18.9	18.9	0.0	20.1	20.0	20.1		
			50	0	0.0	18.6	18.6	18.7	2.0	22.8	22.7	22.7	13	18.9	18.8	18.9	0.0	19.9	20.0	20.1		
			1	0	0.0	18.5	18.5	18.5	2.0	22.6	22.6	22.7	13	18.8	18.9	18.8	0.0	20.0	20.0	20.0		
			1	24	0.0	18.6	18.6	18.5	2.0	22.6	22.7	22.7	13	18.8	18.8	18.7	0.0	20.1	20.0	20.1		
			1	49	0.0	18.6	18.5	18.6	2.0	22.7	22.7	22.7	13	18.8	18.7	18.8	0.0	19.9	19.9	19.9		
			25	0	0.0	18.6	18.7	18.7	3.0	21.7	21.7	21.7	2.3	17.9	17.9	17.8	0.0	20.0	20.0	20.1		
		LTE Band 25	5	QPSK	25	12	0.0	18.5	18.6	18.7	3.0	21.8	21.5	21.8	2.3	17.8	17.7	17.7	0.0	20.1	20.1	19.9
					25	24	0.0	18.6	18.5	18.6	3.0	21.6	21.7	21.6	2.3	17.8	17.9	17.8	0.0	20.1	20.0	20.0
					50	0	0.0	18.6	18.5	18.5	3.0	21.6	21.5	21.6	2.3	17.9	17.9	17.8	0.0	20.1	20.0	20.0
					1	0	0.0	18.6	18.6	18.6	0.0	24.7	24.7	24.8	0.0	19.9	20.0	19.9	0.0	19.9	19.8	19.9
					1	12	0.0	18.6	18.6	18.7	0.0	24.7	24.8	24.7	0.0	19.9	19.9	20.0	0.0	19.9	20.1	20.1
					1	24	0.0	18.6	18.6	18.7	0.0	24.7	24.7	24.7	0.0	20.0	20.0	20.0	0.0	20.0	20.0	19.8
16QAM	12			0	0.0	18.7	18.7	18.6	0.0	23.8	23.7	23.7	0.3	19.9	20.0	19.9	0.0	19.9	20.0	19.9		
	12			7	0.0	18.6	18.6	18.6	10	23.8	23.8	23.8	0.3	19.9	19.9	20.0	0.0	20.1	20.1	20.0		
	12			13	0.0	18.7	18.6	18.6	10	23.8	23.7	23.7	0.3	19.9	20.0	20.0	0.0	19.9	20.0	20.1		
	25			0	0.0	18.7	18.7	18.6	10	23.8	23.8	23.7	0.3	20.0	19.9	19.9	0.0	20.0	20.1	20.0		
	1			0	0.0	18.6	18.6	18.7	10	23.8	23.7	23.7	0.3	19.8	20.0	19.9	0.0	20.0	20.0	20.1		
	1			12	0.0	18.6	18.6	18.7	10	23.7	23.7	23.8	0.3	20.0	19.9	19.9	0.0	20.0	19.9	20.1		
64QAM	1			24	0.0	18.7	18.5	18.7	10	23.7	23.8	23.7	0.3	19.9	19.9	19.8	0.0	19.9	20.0	20.1		
	12			0	0.0	18.6	18.7	18.7	2.0	22.7	22.8	22.7	13	18.9	18.9	19.0	0.0	20.1	20.1	19.9		
	12			7	0.0	18.6	18.6	18.6	2.0	22.8	22.7	22.7	13	18.9	18.9	18.9	0.0	20.0	19.9	19.9		
	12			13	0.0	18.7	18.7	18.6	2.0	22.7	22.7	22.8	13	18.9	18.9	18.9	0.0	20.0	19.9	19.9		
	25			0	0.0	18.6	18.7	18.7	2.0	22.7	22.7	22.7	13	19.0	18.9	19.0	0.0	20.1	20.0	20.0		
	1			0	0.0	18.5	18.5	18.7	2.0	22.7	22.7	22.7	13	18.7	18.8	18.8	0.0	20.0	19.9	20.0		
64QAM	1			12	0.0	18.7	18.6	18.7	2.0	22.8	22.6	22.8	13	18.7	18.9	18.8	0.0	20.1	20.1	20.0		
	1			24	0.0	18.6	18.5	18.6	2.0	22.6	22.7	22.6	13	18.8	18.9	18.9	0.0	19.9	19.9	20.0		
	12			0	0.0	18.6	18.6	18.6	3.0	21.7	21.7	21.6	2.3	17.7	17.8	17.7	0.0	20.0	20.0	20.1		
	12			7	0.0	18.6	18.6	18.6	3.0	21.7	21.6	21.6	2.3	17.9	17.8	17.8	0.0	19.9	19.9	19.9		
	12			13	0.0	18.6	18.7	18.7	3.0	21.7	21.8	21.7	2.3	17.8	17.8	17.9	0.0	20.0	19.9	19.9		
	25			0	0.0	18.5	18.7	18.5	3.0	21.6	21.7	21.8	2.3	17.8	17.8	17.8	0.0	20.0	20.0	20.0		

LTE Band 25 Average Power (dBm) Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A								MODE B										
					Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1					
						18515 MHz	1882.5 MHz	1913.5 MHz		18515 MHz	1882.5 MHz	1913.5 MHz		18515 MHz	1882.5 MHz	1913.5 MHz		18515 MHz	1882.5 MHz	1913.5 MHz			
LTE Band 25	3	QPSK	1	0	0.0	18.6	18.6	18.7	0.0	24.7	24.7	24.8	0.0	20.0	20.0	19.9	0.0	20.0	20.0	19.8			
			1	8	0.0	18.7	18.6	18.6	0.0	24.8	24.7	24.8	0.0	20.0	20.0	19.9	0.0	20.0	19.9	19.8			
			1	14	0.0	18.7	18.6	18.7	0.0	24.7	24.8	24.8	0.0	19.9	19.9	19.9	0.0	19.9	19.9	19.9			
			8	0	0.0	18.7	18.6	18.6	0.0	23.7	23.7	23.7	0.3	19.9	19.9	20.0	0.0	19.9	19.9	19.9			
			8	4	0.0	18.6	18.7	18.7	10	23.7	23.7	23.7	0.3	20.0	20.0	20.0	0.0	20.1	20.1	20.0			
			8	7	0.0	18.6	18.6	18.6	10	23.7	23.8	23.8	0.3	19.9	19.9	19.9	0.0	20.1	20.1	20.1			
		16QAM	15	0	0.0	18.7	18.7	18.6	10	23.7	23.8	23.7	0.3	20.0	20.0	19.9	0.0	20.0	19.9	20.0			
			1	0	0.0	18.7	18.7	18.6	10	23.7	23.7	23.7	0.3	20.0	19.9	19.9	0.0	19.9	20.0	20.1			
			1	8	0.0	18.7	18.6	18.6	10	23.7	23.8	23.7	0.3	19.9	19.9	19.9	0.0	20.1	19.9	19.9			
			1	14	0.0	18.5	18.6	18.6	10	23.7	23.7	23.7	0.3	19.9	19.9	19.9	0.0	20.0	20.1	19.9			
			8	0	0.0	18.7	18.7	18.6	2.0	22.7	22.7	22.6	1.3	18.9	18.9	18.8	0.0	19.9	20.0	20.0			
			8	4	0.0	18.7	18.6	18.6	2.0	22.7	22.8	22.7	1.3	18.9	18.8	18.9	0.0	19.9	20.0	20.0			
		64QAM	8	7	0.0	18.6	18.5	18.6	2.0	22.7	22.6	22.8	1.3	18.9	18.9	18.9	0.0	20.0	20.1	20.0			
			15	0	0.0	18.7	18.6	18.6	2.0	22.7	22.7	22.8	1.3	18.8	19.0	19.0	0.0	20.0	20.1	20.0			
			1	0	0.0	18.5	18.5	18.6	2.0	22.6	22.6	22.6	1.3	18.7	18.8	18.8	0.0	20.0	20.1	19.9			
			1	8	0.0	18.5	18.6	18.5	2.0	22.7	22.7	22.6	1.3	18.9	18.9	18.9	0.0	20.0	20.0	19.9			
			1	14	0.0	18.5	18.5	18.6	2.0	22.7	22.6	22.6	1.3	18.8	18.8	18.8	0.0	20.0	20.1	20.1			
			8	0	0.0	18.6	18.6	18.6	3.0	21.7	21.6	21.6	2.3	17.9	17.7	17.7	0.0	20.1	20.1	20.1			
		LTE Band 25	14	QPSK	8	4	0.0	18.7	18.6	18.5	3.0	21.7	21.6	21.6	2.3	17.8	17.7	17.8	0.0	19.9	19.9	20.1	
					8	7	0.0	18.7	18.6	18.6	3.0	21.6	21.5	21.8	2.3	17.7	17.7	17.8	0.0	20.0	20.0	20.0	
					15	0	0.0	18.6	18.6	18.6	3.0	21.8	21.7	21.8	2.3	17.8	17.8	17.9	0.0	20.1	20.0	20.0	
					16QAM	1	0	0.0	18.6	18.5	18.6	0.0	24.7	24.8	24.8	0.0	20.0	19.9	20.0	0.0	19.8	19.9	19.8
						1	3	0.0	18.5	18.7	18.6	0.0	24.7	24.7	24.8	0.0	20.0	19.9	19.9	0.0	19.9	20.0	20.0
						1	5	0.0	18.6	18.7	18.7	0.0	24.7	24.7	24.8	0.0	19.9	20.0	20.0	0.0	19.9	19.9	20.1
3	0			0.0		18.6	18.6	18.6	0.0	24.7	24.8	24.7	0.3	19.9	20.0	19.9	0.0	19.9	20.0	19.9			
3	1			0.0		18.7	18.6	18.6	0.0	24.6	24.7	24.7	0.3	19.9	20.0	19.9	0.0	19.9	20.1	20.1			
3	3			0.0		18.6	18.6	18.6	0.0	24.8	24.7	24.7	0.3	19.9	20.0	19.9	0.0	20.0	19.9	19.9			
64QAM	6			0	0.0	18.7	18.6	18.6	10	23.8	23.7	23.8	0.3	19.9	20.0	19.8	0.0	20.0	20.0	20.1			
	1			0	0.0	18.6	18.7	18.6	10	23.7	23.8	23.7	0.3	19.8	19.9	19.9	0.0	20.1	20.1	20.0			
	1			3	0.0	18.6	18.6	18.6	10	23.8	23.8	23.8	0.3	20.0	19.9	20.0	0.0	20.0	20.1	20.1			
	1			5	0.0	18.7	18.6	18.6	10	23.6	23.7	23.8	0.3	20.0	19.9	19.9	0.0	20.0	19.9	20.0			
	3			0	0.0	18.7	18.7	18.7	10	23.8	23.7	23.8	1.3	18.9	18.8	18.8	0.0	20.1	19.9	20.0			
	3			1	0.0	18.6	18.6	18.6	10	23.8	23.8	23.7	1.3	18.9	18.8	18.8	0.0	20.0	20.0	20.1			
64QAM	3			3	0.0	18.6	18.6	18.7	10	23.8	23.8	23.7	1.3	19.0	19.0	18.9	0.0	19.9	19.9	19.9			
	6			0	0.0	18.7	18.6	18.7	2.0	22.8	22.7	22.8	1.3	19.0	18.9	19.0	0.0	20.0	19.9	19.9			
	1			0	0.0	18.7	18.6	18.5	2.0	22.7	22.8	22.7	1.3	18.8	18.9	18.7	0.0	20.0	20.0	19.9			
	1			3	0.0	18.6	18.6	18.7	2.0	22.6	22.7	22.8	1.3	18.8	18.8	18.7	0.0	20.0	20.1	20.0			
	1			5	0.0	18.6	18.7	18.5	2.0	22.7	22.6	22.6	1.3	18.8	18.8	18.9	0.0	20.0	19.9	19.9			
	3			0	0.0	18.6	18.7	18.7	2.0	22.7	22.6	22.6	2.3	17.8	17.9	17.8	0.0	20.1	20.0	20.0			
64QAM	3			1	0.0	18.5	18.5	18.6	2.0	22.6	22.6	22.8	2.3	17.8	17.7	17.9	0.0	20.1	19.9	19.9			
	3			3	0.0	18.6	18.6	18.6	2.0	22.8	22.7	22.8	2.3	17.8	17.8	17.7	0.0	20.0	20.0	19.9			
	6			0	0.0	18.7	18.6	18.6	3.0	21.6	21.7	21.8	2.3	17.8	17.9	17.9	0.0	20.0	20.0	20.0			

LTE Band 26 (Average Power (dBm) Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A								MODE B									
					Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1				
						819 MHz	8315 MHz	844 MHz		819 MHz	8315 MHz	844 MHz		819 MHz	8315 MHz	844 MHz		819 MHz	8315 MHz	844 MHz		
LTE Band 26	10	Max Power (dBm)	1	0	23.3			24.8			23.3			24.8								
					0	23.1	23.2	0	24.8	24.8	24.8	0	23.1	23.1	23.2	0	24.8	24.8	24.8			
		QPSK	1	24	0	23.3	23.3	23.3	0	24.8	24.8	24.8	0	23.3	23.3	23.3	0	24.8	24.8	24.8		
			1	49	0	23.2	23.2	23.2	0	24.8	24.7	24.7	0	23.2	23.2	23.2	0	24.8	24.7	24.7		
			25	0	1	22.1	22.1	22.1	1	23.7	23.7	23.7	1	22.1	22.1	22.1	1	23.7	23.7	23.7		
			25	12	1	22.3	22.3	22.3	1	23.8	23.8	23.8	1	22.3	22.3	22.3	1	23.8	23.8	23.8		
			25	24	1	22.3	22.2	22.2	1	23.8	23.8	23.8	1	22.3	22.2	22.2	1	23.8	23.8	23.8		
			50	0	1	22.3	22.3	22.3	1	23.8	23.8	23.8	1	22.3	22.3	22.3	1	23.8	23.8	23.8		
		16QAM	1	0	1	22.2	22.2	22.1	1	23.6	23.7	23.6	1	22.2	22.2	22.1	1	23.6	23.7	23.6		
			1	24	1	22.1	22.3	22.2	1	23.6	23.7	23.7	1	22.1	22.3	22.2	1	23.6	23.7	23.7		
			1	49	1	22.2	22.2	22.1	1	23.7	23.6	23.6	1	22.2	22.2	22.1	1	23.7	23.6	23.6		
			25	0	2	21.1	21.2	21.1	2	22.6	22.7	22.7	2	21.1	21.2	21.1	2	22.6	22.7	22.7		
			25	12	2	21.3	21.1	21.3	2	22.7	22.7	22.7	2	21.3	21.1	21.3	2	22.7	22.7	22.7		
			25	24	2	21.0	21.1	21.1	2	22.6	22.7	22.7	2	21.0	21.1	21.1	2	22.6	22.7	22.7		
		64QAM	50	0	2	21.1	21.3	21.2	2	22.7	22.7	22.6	2	21.1	21.3	21.2	2	22.7	22.7	22.6		
			1	0	2	21.1	21.2	21.2	2	22.8	22.6	22.6	2	21.1	21.2	21.2	2	22.8	22.6	22.6		
			1	24	2	21.3	21.2	21.2	2	22.7	22.8	22.7	2	21.3	21.2	21.2	2	22.7	22.8	22.7		
			1	49	2	21.2	21.2	21.3	2	22.8	22.7	22.7	2	21.2	21.2	21.3	2	22.8	22.7	22.7		
			25	0	3	20.3	20.2	20.3	3	21.6	21.7	21.7	3	20.3	20.2	20.3	3	21.6	21.7	21.7		
			25	12	3	20.1	20.2	20.3	3	21.7	21.8	21.6	3	20.1	20.2	20.3	3	21.7	21.8	21.6		
			25	24	3	20.3	20.2	20.2	3	21.7	21.7	21.8	3	20.3	20.2	20.2	3	21.7	21.7	21.8		
			50	0	3	20.3	20.3	20.2	3	21.7	21.7	21.8	3	20.3	20.3	20.2	3	21.7	21.7	21.8		
		Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A								MODE B							
							Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1		
					816.5 MHz	8315 MHz	846.5 MHz	816.5 MHz	8315 MHz	846.5 MHz	816.5 MHz	8315 MHz	846.5 MHz	816.5 MHz	8315 MHz	846.5 MHz						
LTE Band 26	5	QPSK	1	0	0	23.1	23.2	23.2	0	24.5	24.6	24.6	0	23.1	23.2	23.2	0	24.5	24.6	24.6		
			1	12	0	23.2	23.2	23.1	0	24.7	24.7	24.7	0	23.2	23.2	23.1	0	24.7	24.7	24.7		
			1	24	0	23.1	23.3	23.2	0	24.6	24.8	24.5	0	23.1	23.3	23.2	0	24.6	24.8	24.5		
			12	0	1	22.2	22.3	22.1	1	23.7	23.8	23.7	1	22.2	22.3	22.1	1	23.7	23.8	23.7		
			12	7	1	22.3	22.2	22.1	1	23.8	23.8	23.6	1	22.3	22.2	22.1	1	23.8	23.8	23.6		
			12	13	1	22.2	22.2	22.1	1	23.7	23.7	23.8	1	22.2	22.2	22.1	1	23.7	23.7	23.8		
		16QAM	25	0	1	22.2	22.2	22.3	1	23.8	23.8	23.7	1	22.2	22.2	22.3	1	23.8	23.8	23.7		
			1	0	1	22.2	22.3	22.2	1	23.7	23.6	23.7	1	22.2	22.3	22.2	1	23.7	23.6	23.7		
			1	12	1	22.2	22.1	22.1	1	23.8	23.7	23.7	1	22.2	22.1	22.1	1	23.8	23.7	23.7		
			1	24	1	22.3	22.3	22.2	1	23.7	23.7	23.6	1	22.3	22.3	22.2	1	23.7	23.7	23.6		
			12	0	2	21.1	21.2	21.3	2	22.6	22.8	22.7	2	21.1	21.2	21.3	2	22.6	22.8	22.7		
			12	7	2	21.3	21.2	21.2	2	22.7	22.7	22.6	2	21.3	21.2	21.2	2	22.7	22.7	22.6		
			12	13	2	21.1	21.3	21.2	2	22.7	22.7	22.8	2	21.1	21.3	21.2	2	22.7	22.7	22.8		
			25	0	2	21.2	21.2	21.1	2	22.7	22.8	22.6	2	21.2	21.2	21.1	2	22.7	22.8	22.6		
		64QAM	1	0	2	21.2	21.0	21.0	2	22.7	22.7	22.6	2	21.2	21.0	21.0	2	22.7	22.7	22.6		
			1	12	2	21.1	21.2	21.1	2	22.8	22.6	22.6	2	21.1	21.2	21.1	2	22.8	22.6	22.6		
			1	24	2	21.2	21.2	21.1	2	22.7	22.7	22.7	2	21.2	21.2	21.1	2	22.7	22.7	22.7		
			12	0	3	20.1	20.0	20.0	3	21.8	21.7	21.7	3	20.1	20.0	20.0	3	21.8	21.7	21.7		
			12	7	3	20.2	20.2	20.2	3	21.7	21.7	21.7	3	20.2	20.2	20.2	3	21.7	21.7	21.7		
			12	13	3	20.1	20.2	20.0	3	21.6	21.8	21.8	3	20.1	20.2	20.0	3	21.6	21.8	21.8		
			25	0	3	20.1	20.1	20.0	3	21.8	21.8	21.7	3	20.1	20.1	20.0	3	21.8	21.8	21.7		

LTE Band 26 Average Power (dBm) Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A								MODE B							
					Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1		
						815.5 MHz	8315 MHz	847.5 MHz		815.5 MHz	8315 MHz	847.5 MHz		815.5 MHz	8315 MHz	847.5 MHz		815.5 MHz	8315 MHz	847.5 MHz
LTE Band 26	3	QPSK	1	0	0	23.2	23.3	23.2	0	24.5	24.7	24.7	0	23.2	23.3	23.2	0	24.5	24.7	24.7
			1	8	0	23.2	23.3	23.2	0	24.7	24.6	24.5	0	23.2	23.3	23.2	0	24.7	24.6	24.5
			1	14	0	23.3	23.3	23.1	0	24.5	24.8	24.7	0	23.3	23.3	23.1	0	24.5	24.8	24.7
			8	0	1	22.1	22.2	22.2	1	23.8	23.7	23.7	1	22.1	22.2	22.2	1	23.8	23.7	23.7
			8	4	1	22.2	22.2	22.2	1	23.7	23.7	23.7	1	22.2	22.2	22.2	1	23.7	23.7	23.7
			8	7	1	22.3	22.2	22.3	1	23.8	23.7	23.7	1	22.3	22.2	22.3	1	23.8	23.7	23.7
		16QAM	15	0	1	22.1	22.2	22.2	1	23.8	23.7	23.7	1	22.1	22.2	22.2	1	23.8	23.7	23.7
			1	0	1	22.1	22.1	22.2	1	23.7	23.8	23.7	1	22.1	22.1	22.2	1	23.7	23.8	23.7
			1	8	1	22.2	22.3	22.2	1	23.6	23.7	23.8	1	22.2	22.3	22.2	1	23.6	23.7	23.8
			1	14	1	22.2	22.2	22.2	1	23.8	23.6	23.7	1	22.2	22.2	22.2	1	23.8	23.6	23.7
			8	0	2	21.1	21.3	21.2	2	22.8	22.7	22.7	2	21.1	21.3	21.2	2	22.8	22.7	22.7
			8	4	2	21.1	21.2	21.1	2	22.8	22.8	22.6	2	21.1	21.2	21.1	2	22.8	22.8	22.6
		64QAM	8	7	2	21.1	21.2	21.2	2	22.7	22.8	22.8	2	21.1	21.2	21.2	2	22.7	22.8	22.8
			15	0	2	21.2	21.3	21.1	2	22.7	22.8	22.7	2	21.2	21.3	21.1	2	22.7	22.8	22.7
			1	0	2	21.1	21.1	21.1	2	22.8	22.8	22.7	2	21.1	21.1	21.1	2	22.8	22.8	22.7
			1	8	2	21.0	21.2	21.1	2	22.6	22.7	22.7	2	21.0	21.2	21.1	2	22.6	22.7	22.7
			1	14	2	21.1	21.2	21.2	2	22.8	22.6	22.7	2	21.1	21.2	21.2	2	22.8	22.6	22.7
			8	0	3	20.0	20.2	20.1	3	21.6	21.6	21.7	3	20.0	20.2	20.1	3	21.6	21.6	21.7
LTE Band 26	14	QPSK	8	4	3	20.1	20.0	20.1	3	21.8	21.7	21.7	3	20.1	20.0	20.1	3	21.8	21.7	21.7
			8	7	3	20.0	20.2	20.1	3	21.6	21.8	21.7	3	20.0	20.2	20.1	3	21.6	21.8	21.7
			15	0	3	20.1	20.1	20.2	3	21.8	21.6	21.7	3	20.1	20.1	20.2	3	21.8	21.6	21.7
		16QAM	1	0	0	23.1	23.2	23.3	0	24.6	24.8	24.6	0	23.1	23.2	23.3	0	24.6	24.8	24.6
			1	3	0	23.3	23.2	23.1	0	24.7	24.8	24.7	0	23.3	23.2	23.1	0	24.7	24.8	24.7
			1	5	0	23.2	23.1	23.2	0	24.8	24.7	24.6	0	23.2	23.1	23.2	0	24.8	24.7	24.6
			3	0	0	23.3	23.2	23.2	0	24.6	24.7	24.7	0	23.3	23.2	23.2	0	24.6	24.7	24.7
		64QAM	3	1	0	23.1	23.2	23.1	0	24.8	24.7	24.8	0	23.1	23.2	23.1	0	24.8	24.7	24.8
			3	3	0	23.2	23.2	23.1	0	24.7	24.8	24.6	0	23.2	23.2	23.1	0	24.7	24.8	24.6
		16QAM	6	0	1	22.3	22.2	22.1	1	23.7	23.7	23.8	1	22.3	22.2	22.1	1	23.7	23.7	23.8
			1	0	1	22.3	22.2	22.3	1	23.6	23.8	23.7	1	22.3	22.2	22.3	1	23.6	23.8	23.7
			1	3	1	22.3	22.3	22.1	1	23.7	23.8	23.7	1	22.3	22.3	22.1	1	23.7	23.8	23.7
			1	5	1	22.2	22.2	22.2	1	23.6	23.8	23.8	1	22.2	22.2	22.2	1	23.6	23.8	23.8
			3	0	1	22.2	22.2	22.3	1	23.7	23.7	23.7	1	22.2	22.2	22.3	1	23.7	23.7	23.7
			3	1	1	22.2	22.2	22.2	1	23.8	23.7	23.8	1	22.2	22.2	22.2	1	23.8	23.7	23.8
		64QAM	3	3	1	22.2	22.2	22.3	1	23.7	23.7	23.7	1	22.2	22.2	22.3	1	23.7	23.7	23.7
			6	0	2	21.2	21.2	21.1	2	22.7	22.8	22.7	2	21.2	21.2	21.1	2	22.7	22.8	22.7
			1	0	2	21.2	21.0	21.2	2	22.7	22.7	22.7	2	21.2	21.0	21.2	2	22.7	22.7	22.7
			1	3	2	21.1	21.2	21.1	2	22.7	22.7	22.7	2	21.1	21.2	21.1	2	22.7	22.7	22.7
			1	5	2	21.1	21.2	21.2	2	22.7	22.7	22.7	2	21.1	21.2	21.2	2	22.7	22.7	22.7
			3	0	2	21.2	21.1	21.1	2	22.7	22.6	22.7	2	21.2	21.1	21.1	2	22.7	22.6	22.7
		16QAM	3	1	2	21.1	21.2	21.0	2	22.7	22.8	22.8	2	21.1	21.2	21.0	2	22.7	22.8	22.8
			3	3	2	21.0	21.1	21.0	2	22.7	22.8	22.7	2	21.0	21.1	21.0	2	22.7	22.8	22.7
			6	0	3	20.1	20.1	20.0	3	21.6	21.6	21.7	3	20.1	20.1	20.0	3	21.6	21.6	21.7

LTE Band 30 Average Power (dBm) Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A						MODE B								
					Target MPR	UAT 1		Target MPR	LAT 1		Target MPR	UAT 1		Target MPR	LAT 1				
							2310 MHz			2310 MHz			2310 MHz			2310 MHz			
LTE Band 30	Max Power (dBm)				17.3			23.0			19.0			20.3					
	10	QPSK	1	0	0.0		16.9		0.0		23.0		0.0		18.8		0.0		20.1
			1	24	0.0		16.9		0.0		23.0		0.0		18.9		0.0		20.3
			1	49	0.0		16.9		0.0		22.8		0.0		18.8		0.0		20.1
			25	0	0.0		17.0		0.3		22.0		0.3		18.7		0.0		20.1
			25	12	0.0		17.0		0.3		22.0		0.3		18.7		0.0		20.2
			25	24	0.0		16.9		0.3		219		0.3		18.6		0.0		20.1
		50	0	0.0		16.9		0.3		22.0		0.3		18.7		0.0		20.2	
		16QAM	1	0	0.0		17.0		0.3		219		0.3		18.6		0.0		20.1
			1	24	0.0		16.9		0.3		219		0.3		18.7		0.0		20.0
			1	49	0.0		17.0		0.3		22.0		0.3		18.7		0.0		20.2
			25	0	0.0		17.0		1.3		20.8		1.3		17.7		0.0		20.2
			25	12	0.0		16.9		1.3		20.9		1.3		17.7		0.0		20.1
			25	24	0.0		16.9		1.3		20.9		1.3		17.7		0.0		20.1
		50	0	0.0		16.9		1.3		210		1.3		17.7		0.0		20.1	
		64QAM	1	0	0.0		16.9		1.3		20.9		1.3		17.7		0.0		20.0
	1		24	0.0		16.8		1.3		20.9		1.3		17.6		0.0		20.1	
	1		49	0.0		16.8		1.3		210		1.3		17.6		0.0		20.1	
	25		0	0.5		16.8		2.3		20.0		2.3		16.6		0.0		20.1	
	25		12	0.5		16.8		2.3		20.0		2.3		16.7		0.0		20.0	
	25		24	0.5		16.8		2.3		19.9		2.3		16.7		0.0		20.0	
	50		0	0.5		16.8		2.3		19.9		2.3		16.7		0.0		20.1	
	LTE Band 30	5	QPSK	1	0	0.0		17.0		0.0		22.9		0.0		18.9		0.0	
1				12	0.0		16.9		0.0		22.9		0.0		18.7		0.0		20.1
1				24	0.0		16.9		0.0		22.9		0.0		18.8		0.0		20.0
12				0	0.0		17.0		0.3		22.0		0.3		18.6		0.0		20.1
12				7	0.0		16.9		0.3		218		0.3		18.7		0.0		20.2
12				13	0.0		16.9		0.3		218		0.3		18.6		0.0		20.1
16QAM			25	0	0.0		16.9		0.3		22.0		0.3		18.7		0.0		20.1
			1	0	0.0		17.0		0.3		219		0.3		18.6		0.0		20.1
			1	12	0.0		17.0		0.3		218		0.3		18.6		0.0		20.0
			1	24	0.0		17.0		0.3		219		0.3		18.6		0.0		20.1
			12	0	0.0		16.9		1.3		20.9		1.3		17.6		0.0		20.1
			12	7	0.0		16.9		1.3		210		1.3		17.6		0.0		20.1
64QAM			12	13	0.0		16.9		1.3		20.9		1.3		17.7		0.0		20.2
			25	0	0.0		16.9		1.3		20.9		1.3		17.7		0.0		20.1
			1	0	0.0		17.0		1.3		20.8		1.3		17.7		0.0		20.0
			1	12	0.0		17.0		1.3		20.8		1.3		17.7		0.0		20.0
			1	24	0.0		16.9		1.3		210		1.3		17.6		0.0		20.0
			12	0	0.5		16.8		2.3		20.0		2.3		16.7		0.0		20.2
			12	7	0.5		16.8		2.3		20.0		2.3		16.6		0.0		20.0
			12	13	0.5		16.8		2.3		19.9		2.3		16.7		0.0		20.1
			25	0	0.5		16.8		2.3		19.9		2.3		16.6		0.0		20.2

Note(s):

10/5 MHz Bandwidths 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 66 Average Power (dBm) Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A							MODE B								
					Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1		
						1720 MHz	1745 MHz	1770 MHz		1720 MHz	1745 MHz	1770 MHz		1720 MHz	1745 MHz	1770 MHz		1720 MHz	1745 MHz	1770 MHz
LTE Band 66	20	Max Power (dBm)	1	0	19.0			24.8			20.8			21.0						
					0.0	18.5	18.7	18.4	0.0	24.7	24.8	24.8	0.0	20.2	20.6	20.1	0.0	20.7	20.8	20.9
		QPSK	1	49	0.0	18.5	18.8	18.5	0.0	24.7	24.8	24.8	0.0	20.2	20.7	20.2	0.0	20.7	20.9	210
			1	99	0.0	18.5	18.8	18.5	0.0	24.7	24.7	24.7	0.0	20.1	20.5	20.2	0.0	20.6	20.7	20.8
			50	0	0.0	18.4	18.8	18.4	10	23.7	23.7	23.7	10	19.3	19.5	19.2	0.0	20.4	20.7	20.9
			50	24	0.0	18.5	18.9	18.5	10	23.6	23.8	23.8	10	19.3	19.6	19.2	0.0	20.5	20.9	210
			50	49	0.0	18.5	18.9	18.4	10	23.6	23.7	23.7	10	19.3	19.5	19.1	0.0	20.5	20.7	20.9
			100	0	0.0	18.7	18.9	18.6	10	23.8	23.8	23.8	10	19.4	19.7	19.4	0.0	20.7	210	210
		16QAM	1	0	0.0	18.5	18.6	18.5	10	23.7	23.7	23.8	10	19.5	19.5	19.3	0.0	20.8	20.9	210
			1	49	0.0	18.5	18.4	18.5	10	23.7	23.6	23.8	10	19.5	19.4	19.5	0.0	20.9	210	20.9
			1	99	0.0	18.5	18.6	18.5	10	23.6	23.7	23.7	10	19.5	19.3	19.4	0.0	20.8	20.9	210
			50	0	0.0	18.5	18.4	18.4	2.0	22.6	22.6	22.8	2.0	18.3	18.3	18.4	0.0	20.9	20.9	20.9
			50	24	0.0	18.4	18.5	18.5	2.0	22.8	22.7	22.8	2.0	18.5	18.3	18.4	0.0	210	20.8	20.9
			50	49	0.0	18.5	18.5	18.5	2.0	22.7	22.6	22.7	2.0	18.5	18.4	18.4	0.0	210	210	20.9
		64QAM	100	0	0.0	18.6	18.4	18.5	2.0	22.7	22.7	22.7	2.0	18.4	18.4	18.3	0.0	210	20.9	20.9
			1	0	0.0	18.6	18.6	18.6	2.0	22.7	22.7	22.7	2.0	18.5	18.4	18.5	0.0	20.9	210	20.8
			1	49	0.0	18.5	18.5	18.5	2.0	22.7	22.8	22.8	2.0	18.4	18.3	18.3	0.0	210	20.9	20.9
			1	99	0.0	18.5	18.5	18.5	2.0	22.7	22.8	22.7	2.0	18.4	18.3	18.5	0.0	210	20.9	20.9
			50	0	0.0	18.6	18.4	18.5	3.0	21.6	21.6	21.7	3.0	17.5	17.3	17.4	0.0	20.9	20.8	210
			50	24	0.0	18.6	18.5	18.6	3.0	21.7	21.6	21.7	3.0	17.4	17.5	17.4	0.0	210	20.9	20.9
			50	49	0.0	18.5	18.4	18.6	3.0	21.7	21.7	21.8	3.0	17.4	17.4	17.4	0.0	20.9	20.8	20.8
			100	0	0.0	18.5	18.5	18.4	3.0	21.7	21.6	21.8	3.0	17.5	17.4	17.4	0.0	20.9	20.9	210
Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A							MODE B								
					Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1		
						1720 MHz	1745 MHz	1770 MHz		1720 MHz	1745 MHz	1770 MHz		1720 MHz	1745 MHz	1770 MHz		1720 MHz	1745 MHz	1770 MHz
LTE Band 66	15	QPSK	1	0	0.0	18.7	18.7	18.7	0.0	24.8	24.8	24.7	0.0	20.5	20.3	20.4	0.0	20.8	210	20.9
			1	36	0.0	18.7	18.7	18.7	0.0	24.7	24.8	24.8	0.0	20.5	20.4	20.5	0.0	210	20.9	20.9
			1	74	0.0	18.6	18.8	18.7	0.0	24.8	24.8	24.8	0.0	20.4	20.4	20.5	0.0	210	210	20.9
			36	0	0.0	18.6	18.8	18.7	10	23.6	23.8	23.7	10	19.3	19.4	19.4	0.0	20.8	210	20.9
			36	18	0.0	18.8	18.8	18.7	10	23.6	23.8	23.8	10	19.4	19.4	19.4	0.0	20.9	20.9	20.9
			36	37	0.0	18.7	18.6	18.7	10	23.8	23.7	23.8	10	19.5	19.4	19.5	0.0	20.9	20.9	20.9
		16QAM	75	0	0.0	18.7	18.7	18.8	10	23.8	23.8	23.8	10	19.5	19.5	19.4	0.0	20.9	20.9	20.9
			1	0	0.0	18.8	18.8	18.6	10	23.8	23.8	23.7	10	19.3	19.5	19.5	0.0	210	20.9	210
			1	36	0.0	18.7	18.7	18.7	10	23.8	23.8	23.8	10	19.4	19.3	19.3	0.0	210	20.9	20.8
			1	74	0.0	18.8	18.8	18.8	10	23.8	23.8	23.7	10	19.4	19.5	19.4	0.0	20.9	20.8	20.8
			36	0	0.0	18.6	18.7	18.8	2.0	22.8	22.8	22.8	2.0	18.4	18.4	18.3	0.0	20.9	20.9	210
			36	18	0.0	18.7	18.8	18.7	2.0	22.8	22.7	22.8	2.0	18.4	18.4	18.4	0.0	20.9	20.9	20.9
			36	37	0.0	18.8	18.7	18.8	2.0	22.7	22.7	22.8	2.0	18.5	18.4	18.4	0.0	20.9	210	20.9
			75	0	0.0	18.7	18.7	18.7	2.0	22.8	22.7	22.8	2.0	18.3	18.5	18.4	0.0	20.9	20.9	20.9
		64QAM	1	0	0.0	18.8	18.7	18.8	2.0	22.5	22.5	22.5	2.0	18.3	18.5	18.4	0.0	20.9	20.9	20.9
			1	36	0.0	18.7	18.8	18.6	2.0	22.7	22.7	22.7	2.0	18.4	18.4	18.3	0.0	210	20.9	20.9
			1	74	0.0	18.7	18.7	18.7	2.0	22.8	22.8	22.8	2.0	18.5	18.4	18.4	0.0	210	20.9	20.8
			36	0	0.0	18.7	18.7	18.8	3.0	21.8	21.8	21.8	3.0	17.5	17.4	17.4	0.0	20.8	20.9	20.9
			36	18	0.0	18.7	18.7	18.7	3.0	21.8	21.7	21.8	3.0	17.4	17.4	17.4	0.0	20.9	20.9	210
			36	37	0.0	18.7	18.7	18.8	3.0	21.6	21.7	21.7	3.0	17.5	17.4	17.4	0.0	20.9	20.9	20.9
			75	0	0.0	18.8	18.7	18.7	3.0	21.6	21.8	21.8	3.0	17.4	17.4	17.3	0.0	20.9	210	20.9

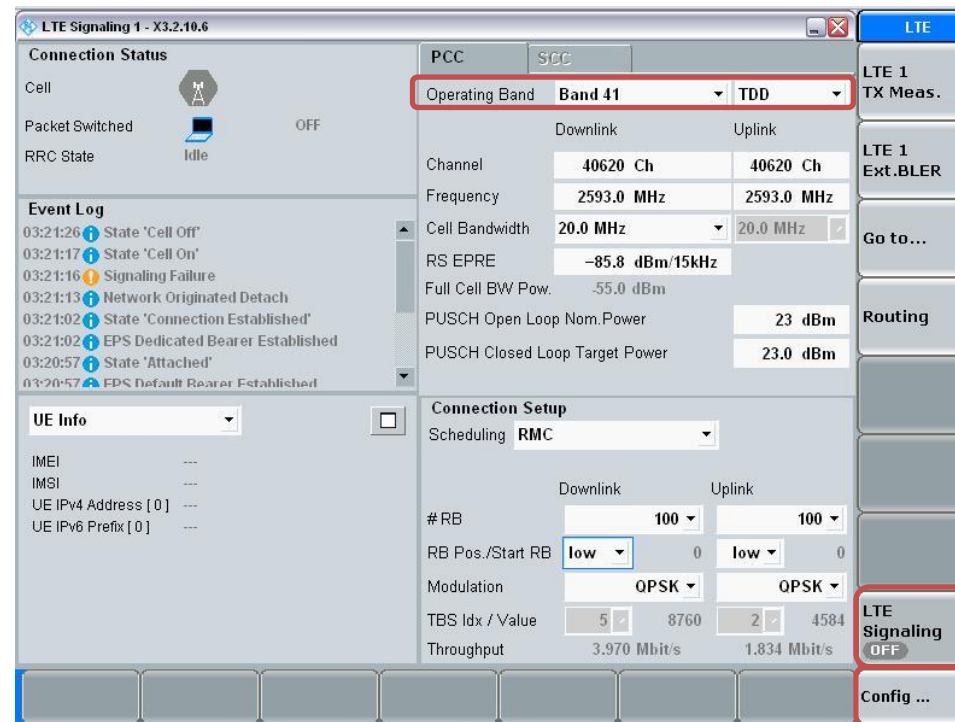
LTE Band 66 Average Power (dBm) Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A							MODE B								
					Target MPR	UAT 1			Target MPR	LAT 1			Target MPR	UAT 1			Target MPR	LAT 1		
						1720 MHz	1745 MHz	1770 MHz		1720 MHz	1745 MHz	1770 MHz		1720 MHz	1745 MHz	1770 MHz		1720 MHz	1745 MHz	1770 MHz
LTE Band 66	10	QPSK	1	0	0.0	18.8	18.7	18.8	0.0	24.7	24.7	24.8	0.0	20.4	20.5	20.4	0.0	20.9	20.8	210
			1	24	0.0	18.7	18.7	18.8	0.0	24.7	24.8	24.8	0.0	20.5	20.5	20.3	0.0	20.8	210	20.9
			1	49	0.0	18.7	18.8	18.7	0.0	24.8	24.7	24.8	0.0	20.4	20.4	20.3	0.0	20.9	210	20.9
			25	0	0.0	18.7	18.7	18.8	10	23.8	23.6	23.7	10	19.3	19.3	19.4	0.0	210	20.9	20.9
			25	12	0.0	18.6	18.7	18.7	10	23.6	23.8	23.6	10	19.5	19.5	19.3	0.0	20.9	20.9	210
			25	24	0.0	18.6	18.8	18.6	10	23.7	23.8	23.6	10	19.4	19.4	19.4	0.0	20.9	20.9	20.9
			50	0	0.0	18.7	18.7	18.8	10	23.8	23.8	23.8	10	19.3	19.5	19.4	0.0	20.9	20.8	210
		16QAM	1	0	0.0	18.7	18.8	18.7	10	23.8	23.8	23.8	10	19.3	19.5	19.4	0.0	20.9	20.9	20.9
			1	24	0.0	18.8	18.7	18.6	10	23.8	23.6	23.8	10	19.4	19.5	19.5	0.0	20.9	20.9	20.9
			1	49	0.0	18.8	18.7	18.6	10	23.8	23.5	23.7	10	19.4	19.3	19.3	0.0	20.8	20.9	20.9
			25	0	0.0	18.8	18.7	18.7	2.0	22.8	22.8	22.8	2.0	18.5	18.4	18.4	0.0	20.9	20.9	20.9
			25	12	0.0	18.7	18.7	18.8	2.0	22.7	22.8	22.8	2.0	18.3	18.4	18.5	0.0	210	20.9	20.9
			25	24	0.0	18.8	18.6	18.6	2.0	22.6	22.7	22.8	2.0	18.5	18.4	18.4	0.0	210	210	20.9
		64QAM	50	0	0.0	18.7	18.6	18.6	2.0	22.8	22.7	22.8	2.0	18.4	18.5	18.5	0.0	20.9	20.9	20.9
			1	0	0.0	18.7	18.8	18.7	2.0	22.8	22.6	22.7	2.0	18.4	18.4	18.4	0.0	20.9	210	210
			1	24	0.0	18.6	18.6	18.8	2.0	22.7	22.6	22.7	2.0	18.4	18.5	18.4	0.0	20.9	20.8	20.9
			1	49	0.0	18.6	18.8	18.8	2.0	22.8	22.8	22.6	2.0	18.5	18.5	18.5	0.0	20.9	20.9	210
			25	0	0.0	18.7	18.7	18.6	3.0	21.8	21.8	21.7	3.0	17.5	17.5	17.4	0.0	20.9	210	210
			25	12	0.0	18.7	18.6	18.8	3.0	21.8	21.8	21.8	3.0	17.4	17.4	17.3	0.0	20.9	20.9	20.9
			25	24	0.0	18.8	18.7	18.6	3.0	21.8	21.7	21.7	3.0	17.5	17.5	17.5	0.0	20.8	20.9	20.9
			50	0	0.0	18.7	18.7	18.8	3.0	21.8	21.8	21.7	3.0	17.4	17.4	17.5	0.0	20.9	210	210
LTE Band 66	5	QPSK	1	0	0.0	18.7	18.8	18.8	0.0	24.7	24.8	24.8	0.0	20.4	20.5	20.5	0.0	210	20.9	20.8
			1	12	0.0	18.8	18.7	18.8	0.0	24.8	24.8	24.8	0.0	20.3	20.5	20.4	0.0	20.9	210	210
			1	24	0.0	18.6	18.7	18.7	0.0	24.8	24.7	24.8	0.0	20.3	20.4	20.4	0.0	20.9	20.9	20.9
			12	0	0.0	18.8	18.7	18.7	10	23.8	23.6	23.8	10	19.5	19.4	19.5	0.0	210	210	20.9
			12	7	0.0	18.7	18.7	18.8	10	23.8	23.8	23.8	10	19.4	19.4	19.4	0.0	20.9	20.9	20.8
			12	13	0.0	18.8	18.7	18.7	10	23.7	23.8	23.6	10	19.4	19.4	19.4	0.0	210	210	210
			25	0	0.0	18.7	18.7	18.7	10	23.8	23.8	23.7	10	19.4	19.4	19.3	0.0	20.9	20.8	210
		16QAM	1	0	0.0	18.7	18.7	18.6	10	23.8	23.8	23.8	10	19.5	19.4	19.5	0.0	20.8	210	210
			1	12	0.0	18.7	18.7	18.7	10	23.8	22.8	23.8	10	19.4	19.4	19.4	0.0	20.8	20.8	20.9
			1	24	0.0	18.7	18.7	18.7	10	23.8	23.7	23.8	10	19.4	19.4	19.4	0.0	20.9	20.9	20.9
			12	0	0.0	18.7	18.8	18.7	2.0	22.8	22.8	22.7	2.0	18.3	18.5	18.5	0.0	20.9	20.9	210
			12	7	0.0	18.8	18.8	18.8	2.0	22.7	22.8	22.8	2.0	18.4	18.4	18.5	0.0	20.8	20.8	20.8
			12	13	0.0	18.8	18.7	18.7	2.0	22.6	22.7	22.8	2.0	18.5	18.4	18.3	0.0	20.9	20.9	210
		64QAM	25	0	0.0	18.7	18.6	18.7	2.0	22.8	22.8	22.8	2.0	18.4	18.5	18.3	0.0	20.8	20.8	210
			1	0	0.0	18.7	18.8	18.6	2.0	22.8	22.5	22.8	2.0	18.4	18.4	18.5	0.0	210	20.9	20.9
			1	12	0.0	18.7	18.7	18.6	2.0	22.7	22.7	22.7	2.0	18.3	18.5	18.3	0.0	20.9	20.9	210
			1	24	0.0	18.7	18.7	18.7	2.0	22.8	22.8	22.8	2.0	18.3	18.3	18.4	0.0	20.9	210	210
			12	0	0.0	18.8	18.7	18.7	3.0	21.7	21.8	21.7	3.0	17.4	17.4	17.4	0.0	20.9	20.9	20.8
			12	7	0.0	18.7	18.7	18.6	3.0	21.7	21.8	21.8	3.0	17.3	17.3	17.4	0.0	20.9	210	20.9
			12	13	0.0	18.6	18.7	18.7	3.0	21.8	21.8	21.8	3.0	17.5	17.4	17.4	0.0	20.9	20.9	20.9
			25	0	0.0	18.7	18.7	18.8	3.0	21.8	21.8	21.8	3.0	17.3	17.4	17.4	0.0	210	20.9	20.9

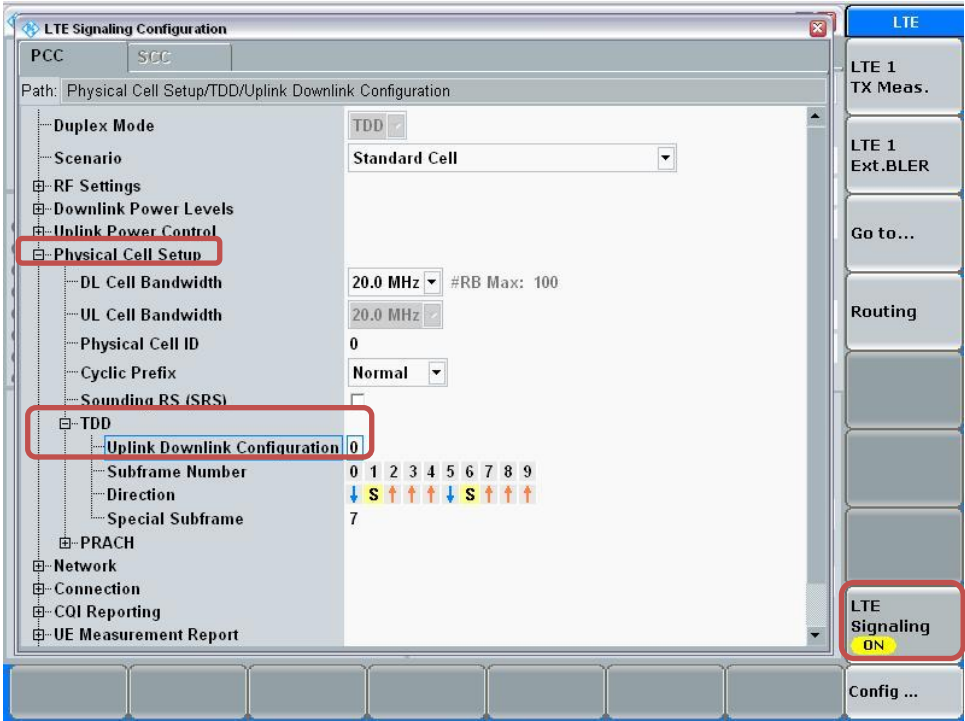
LTE TDD Band Measured Results**Procedure used to establish SAR test signal for LTE TDD Bands**

Set to CMW-500 with following parameters:

- Turn the LTE Signaling off using “ON | OFF” key
- Operating Band: Select Band and TDD
- Go to “Config....”

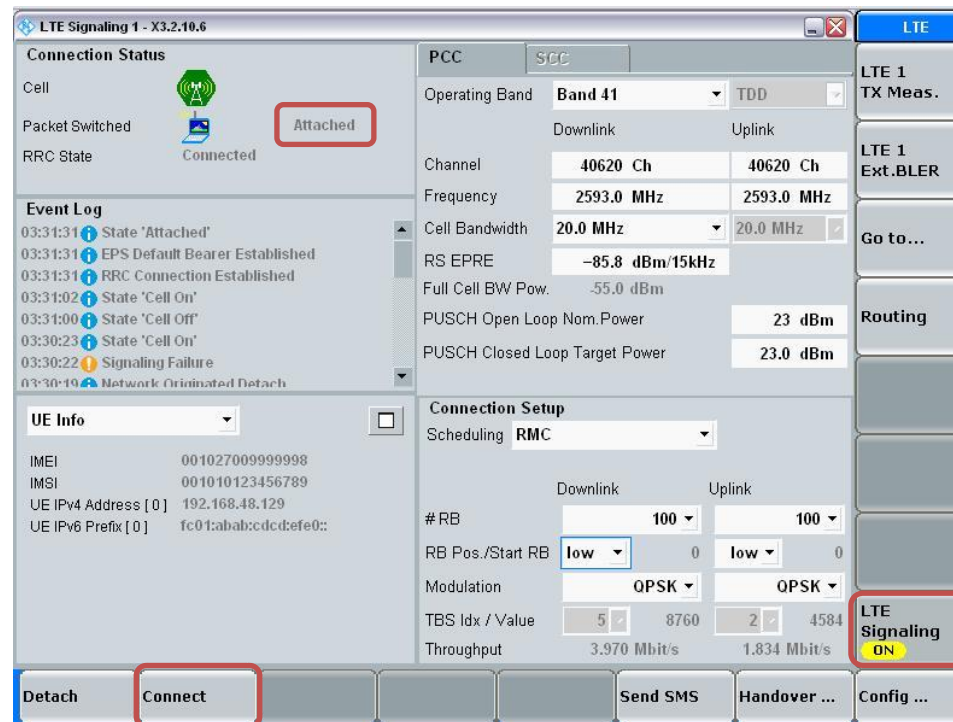


- Go to “Physical Cell Setup”
- Select “TDD” and Set “Uplink Downlink Configuration” to “0”
- Turn the cell on using “ON | OFF” key



Connect to EUT

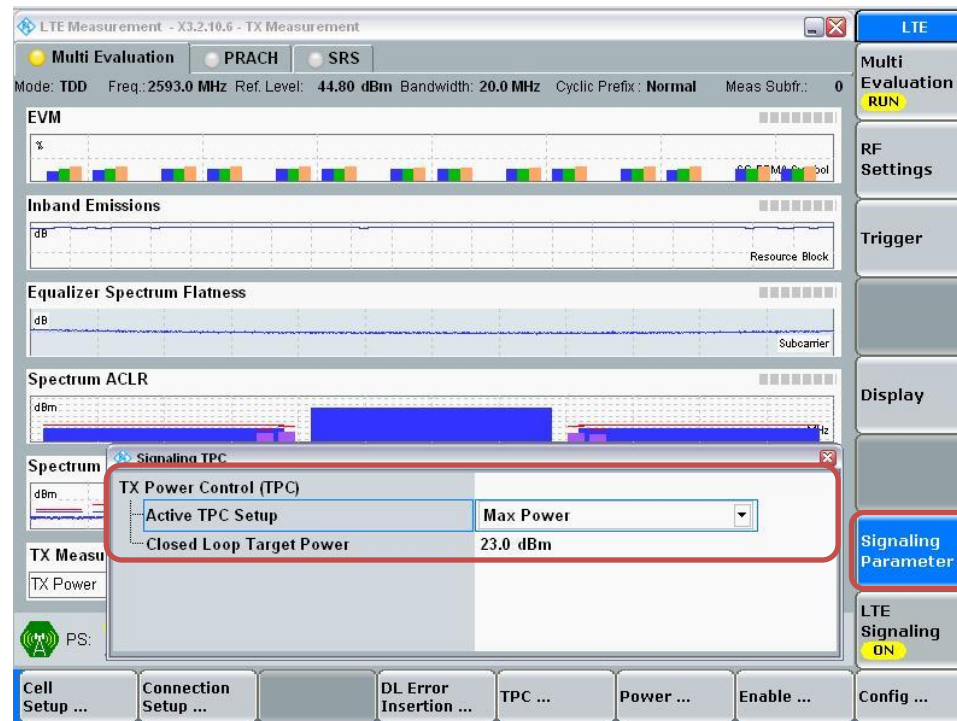
- Turn the cell on using “ON | OFF” key
- After EUT is Attached
- Select “Connect”

**Max Power Setting**

- Select “LTE 1 TX Meas.”
- Press “RESTART | STOP” Soft key

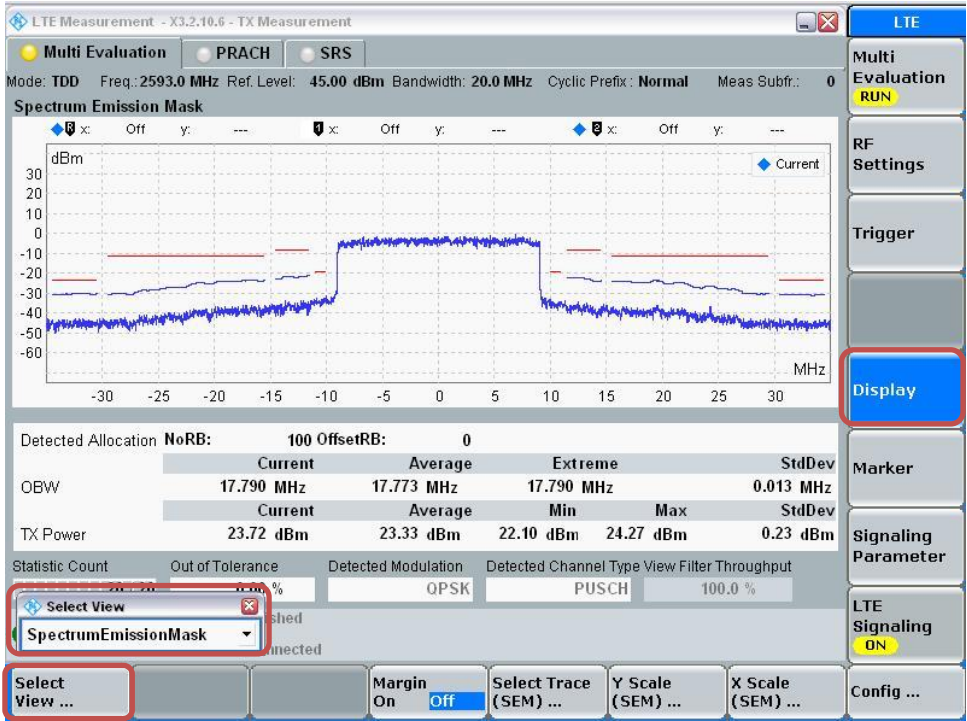
The screenshot displays the 'LTE Signaling 1 - X3.2.10.6' interface. The top section shows 'Connection Status' with a 'Cell' icon and 'Connection Established' text. Below this is the 'Event Log' showing a sequence of events from 03:33:07 to 03:30:23, including 'State 'Connection Established'', 'EPS Dedicated Bearer Established', 'State 'Attached'', 'EPS Default Bearer Established', 'RRC Connection Established', 'State 'Cell On'', 'State 'Cell Off'', and 'State 'Cell On''. The 'UE Info' section shows IMEI (001027009999998), IMSI (001010123456789), UE IPv4 Address [0] (192.168.48.129), and UE IPv6 Prefix [0] (fc01:abab:cdd:efe0::). The 'Connection Setup' section shows 'Scheduling' set to 'RMC'. The 'PCC' and 'SCC' tabs are visible, with 'PCC' selected. The 'Operating Band' is 'Band 41', 'TDD' is selected, and 'Downlink' and 'Uplink' are both '40620 Ch'. The 'Frequency' is '2593.0 MHz'. The 'Cell Bandwidth' is '20.0 MHz'. The 'RS EPRE' is '-85.8 dBm/15kHz'. The 'Full Cell BW Pow.' is '-55.0 dBm'. The 'PUSCH Open Loop Nom.Power' is '23 dBm'. The 'PUSCH Closed Loop Target Power' is '23.0 dBm'. The 'Connection Setup' section shows 'Scheduling' set to 'RMC'. The 'Downlink' and 'Uplink' sections show '#RB' set to '100', 'RB Pos./Start RB' set to 'low', 'Modulation' set to 'QPSK', 'TBS Idx / Value' set to '5 / 8760' for Downlink and '2 / 4584' for Uplink, and 'Throughput' set to '3.970 Mbit/s' for Downlink and '1.834 Mbit/s' for Uplink. The 'LTE Signaling' status is 'ON'.

- Select “Signaling Parameter”
- Select “TX Power Control (TPC)” > Select “Active TPC Setup” to “Max Power” > Set “Closed Loop Target Power” to “23 dBm”



View TX Power

- Go to “Display”
- Select “Select View...”
- Select “Spectrum Emission Mask”



LTE Band 41 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A										MODE B													
					Target MPR	UAT 1				Target MPR	LAT 1				Target MPR	UAT 1				Target MPR	LAT 1							
						2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz		2680 MHz	2506 MHz	2549.5 MHz	2593 MHz		2636.5 MHz	2680 MHz	2506 MHz	2549.5 MHz		2593 MHz	2636.5 MHz	2680 MHz	2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz
LTE Band 41	Max Power (dBm)					18.3					24.5					20.8					20.8							
	20	QPSK	1	0	0.0	18.1	18.1	18.1	18.0	18.2	0.0	24.4	24.4	24.4	24.3	24.3	0.0	20.7	20.6	20.8	20.8	20.7	0.0	20.6	20.5	20.6	20.6	20.6
			1	49	0.0	18.2	18.2	18.2	18.1	18.3	0.0	24.4	24.2	24.5	24.4	24.4	0.0	20.7	20.6	20.8	20.8	20.8	0.0	20.7	20.7	20.7	20.8	20.8
			1	99	0.0	18.1	18.1	18.1	18.1	18.1	0.0	24.4	24.3	24.3	24.4	24.3	0.0	20.6	20.5	20.7	20.7	20.8	0.0	20.5	20.6	20.7	20.7	20.5
			50	0	0.0	18.1	18.1	18.1	18.1	18.1	10	23.5	23.3	23.2	23.3	23.4	10	19.6	19.6	19.6	19.6	19.7	0.0	20.7	20.6	20.6	20.6	20.7
			50	24	0.0	18.2	18.1	18.2	18.2	18.2	10	23.4	23.2	23.5	23.4	23.4	10	19.8	19.6	19.8	19.7	19.8	0.0	20.7	20.5	20.6	20.7	20.8
			50	49	0.0	18.2	18.0	18.1	18.1	18.2	10	23.5	23.5	23.2	23.2	23.3	10	19.7	19.6	19.6	19.7	19.7	0.0	20.6	20.7	20.6	20.7	20.6
		16QAM	100	0	0.0	18.2	17.9	18.1	18.2	18.2	10	23.4	23.1	23.3	23.4	23.3	10	19.7	19.5	19.6	19.6	19.8	0.0	20.8	20.8	20.5	20.8	20.8
			1	0	0.0	18.1	18.1	18.2	18.2	18.1	10	23.3	23.3	23.5	23.3	23.3	10	19.7	19.7	19.8	19.7	19.7	0.0	20.7	20.5	20.6	20.6	20.6
			1	49	0.0	18.2	18.2	18.1	18.1	18.1	10	23.3	23.3	23.4	23.4	23.4	10	19.7	19.8	19.7	19.7	19.7	0.0	20.6	20.5	20.6	20.5	20.6
			1	99	0.0	18.2	18.2	18.0	18.1	18.1	10	23.3	23.3	23.4	23.2	23.3	10	19.7	19.7	19.8	19.6	19.7	0.0	20.5	20.6	20.6	20.6	20.6
			50	0	0.0	18.1	18.1	18.1	18.1	18.1	2.0	22.2	22.4	22.5	22.2	22.4	2.0	18.6	18.7	18.8	18.6	18.7	0.0	20.6	20.6	20.6	20.6	20.6
			50	24	0.0	18.1	18.0	18.1	18.0	18.2	2.0	22.5	22.4	22.4	22.3	22.3	2.0	18.8	18.7	18.7	18.7	18.6	0.0	20.6	20.7	20.6	20.6	20.6
		64QAM	50	49	0.0	18.0	18.1	18.2	18.2	18.1	2.0	22.3	22.5	22.4	22.2	22.3	2.0	18.6	18.8	18.7	18.6	18.7	0.0	20.5	20.6	20.7	20.6	20.6
			100	0	0.0	18.0	18.1	18.2	18.2	18.2	2.0	22.4	22.4	22.2	22.3	22.3	2.0	18.7	18.7	18.6	18.7	18.7	0.0	20.6	20.7	20.7	20.7	20.5
			1	0	0.0	17.9	18.0	18.0	18.0	18.0	2.0	22.3	22.4	22.5	22.3	22.4	2.0	18.6	18.8	18.7	18.7	18.7	0.0	20.5	20.6	20.7	20.5	20.6
			1	49	0.0	18.1	18.1	18.1	18.2	18.0	2.0	22.5	22.4	22.4	22.3	22.3	2.0	18.7	18.7	18.6	18.7	18.7	0.0	20.7	20.6	20.6	20.6	20.5
			1	99	0.0	18.0	18.2	18.0	18.1	18.1	2.0	22.3	22.5	22.4	22.3	22.3	2.0	18.7	18.7	18.7	18.7	18.7	0.0	20.5	20.7	20.6	20.5	20.6
			50	0	0.0	18.0	18.1	18.1	18.0	18.1	3.0	21.2	21.4	21.5	21.2	21.4	3.0	17.6	17.8	17.7	17.7	17.8	0.0	20.6	20.6	20.5	20.6	20.6
	LTE Band 41	15	QPSK	1	0	0.0	18.0	18.2	18.1	18.2	18.1	0.0	24.2	24.3	24.3	24.3	24.3	0.0	20.7	20.7	20.8	20.7	20.7	0.0	20.6	20.6	20.7	20.6
1				36	0.0	18.1	18.1	18.1	18.1	18.0	0.0	24.4	24.4	24.4	24.4	24.3	0.0	20.8	20.6	20.8	20.8	20.8	0.0	20.6	20.6	20.6	20.6	20.6
1				74	0.0	18.1	18.1	18.1	18.0	18.0	0.0	24.2	24.5	24.2	24.4	24.4	0.0	20.7	20.8	20.7	20.7	20.7	0.0	20.7	20.6	20.5	20.7	20.6
36				0	0.0	18.1	18.0	18.2	18.0	18.1	10	23.2	23.4	23.4	23.2	23.3	10	19.7	19.7	19.7	19.7	19.8	0.0	20.6	20.6	20.6	20.6	20.6
36				18	0.0	18.1	18.0	18.2	18.0	18.2	10	23.4	23.4	23.4	23.3	23.2	10	19.7	19.7	19.7	19.7	19.7	0.0	20.6	20.7	20.6	20.6	20.6
36				37	0.0	18.1	18.1	18.0	18.2	18.2	10	23.2	23.5	23.4	23.2	23.3	10	19.8	19.7	19.7	19.7	19.8	0.0	20.6	20.7	20.6	20.6	20.6
16QAM			75	0	0.0	18.0	18.2	18.1	18.1	18.1	10	23.4	23.4	23.2	23.3	23.3	10	19.7	19.7	19.7	19.7	19.8	0.0	20.7	20.7	20.5	20.6	20.7
			1	0	0.0	18.1	18.1	18.0	18.1	18.0	10	23.2	23.5	23.3	23.4	23.3	10	19.7	19.7	19.7	19.8	19.8	0.0	20.7	20.5	20.6	20.6	20.5
			1	36	0.0	18.1	18.2	18.1	18.1	18.1	10	23.3	23.3	23.2	23.3	23.3	10	19.7	19.8	19.8	19.7	19.8	0.0	20.6	20.6	20.7	20.6	20.6
			1	74	0.0	18.2	18.2	18.1	18.0	18.2	10	23.3	23.4	23.4	23.4	23.4	10	19.8	19.7	19.7	19.7	19.6	0.0	20.6	20.6	20.6	20.6	20.7
			36	0	0.0	18.1	18.2	18.2	18.1	18.2	2.0	22.2	22.5	22.4	22.4	22.4	2.0	18.7	18.8	18.6	18.8	18.6	0.0	20.6	20.7	20.5	20.6	20.6
			36	18	0.0	18.1	18.1	18.0	18.1	18.2	2.0	22.3	22.4	22.2	22.4	22.4	2.0	18.8	18.7	18.6	18.6	18.7	0.0	20.5	20.6	20.5	20.7	20.6
64QAM			36	37	0.0	18.1	18.2	18.2	18.0	18.1	2.0	22.3	22.4	22.4	22.4	22.4	2.0	18.7	18.7	18.6	18.8	18.7	0.0	20.7	20.7	20.5	20.6	20.6
			75	0	0.0	18.2	18.1	18.2	18.2	18.0	2.0	22.4	22.5	22.2	22.5	22.3	2.0	18.7	18.7	18.8	18.8	18.6	0.0	20.6	20.6	20.5	20.6	20.6
			1	0	0.0	18.1	18.2	18.1	18.1	18.2	2.0	22.4	22.4	22.3	22.3	22.3	2.0	18.7	18.8	18.7	18.6	18.7	0.0	20.6	20.7	20.5	20.7	20.5
			1	36	0.0	18.2	18.1	18.0	18.1	18.1	2.0	22.3	22.5	22.4	22.4	22.3	2.0	18.7	18.6	18.6	18.6	18.6	0.0	20.7	20.6	20.5	20.5	20.6
			1	74	0.0	18.0	18.1	18.1	18.0	18.1	2.0	22.4	22.4	22.3	22.4	22.4	2.0	18.8	18.8	18.7	18.8	18.7	0.0	20.6	20.6	20.5	20.7	20.6
			36	0	0.0	18.2	18.1	18.0	18.0	18.0	3.0	21.2	21.5	21.4	21.4	21.3	3.0	17.7	17.7	17.8	17.8	17.8	0.0	20.6	20.6	20.7	20.7	20.5
64QAM		36	18	0.0	18.1	18.0	18.1	18.0	18.2	3.0	21.3	21.4	21.3	21.4	21.4	3.0	17.7	17.6	17.7	17.8	17.6	0.0	20.6	20.7	20.6	20.5	20.6	
		36	37	0.0	18.1	18.0	18.0	18.0	18.1	3.0	21.4	21.4	21.4	21.4	21.4	3.0	17.7	17.6	17.6	17.7	17.6	0.0	20.6	20.5	20.5	20.5	20.5	
	75	0	0.0	18.0	18.0	18.0	18.0	18.1	3.0	21.4	21.5	21.3	21.5	21.3	3.0	17.7	17.6	17.7	17.6	17.7	0.0	20.7	20.7	20.6	20.7	20.6		

LTE Band 41 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A										MODE B														
					Target MPR	UAT 1					Target MPR	LAT 1					Target MPR	UAT 1					Target MPR	LAT 1					
						2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz	
LTE Band 41	30	QPSK	1	0	0.0	18.1	18.2	18.0	18.2	18.2	0.0	24.2	24.4	24.3	24.3	24.4	0.0	20.7	20.7	20.8	20.7	20.7	0.0	20.7	20.6	20.6	20.7	20.5	
			1	24	0.0	18.2	18.0	18.1	18.1	18.1	0.0	24.4	24.3	24.2	24.3	24.5	0.0	20.8	20.7	20.7	20.7	20.7	0.0	20.6	20.6	20.5	20.6	20.6	
			1	49	0.0	18.2	18.0	18.1	18.1	18.1	0.0	24.2	24.4	24.4	24.3	24.5	0.0	20.7	20.7	20.8	20.7	20.7	0.0	20.6	20.6	20.7	20.6	20.6	
			25	0	0.0	18.1	18.1	18.1	18.1	18.0	1.0	23.3	23.5	23.2	23.5	23.2	1.0	19.7	19.8	19.7	19.7	19.7	0.0	20.7	20.7	20.6	20.6	20.7	
			25	12	0.0	18.1	18.2	18.1	18.1	18.0	1.0	23.4	23.3	23.2	23.2	23.3	1.0	19.7	19.8	19.7	19.8	19.7	0.0	20.7	20.6	20.6	20.6	20.5	
			25	24	0.0	18.1	18.2	18.1	18.1	18.1	1.0	23.4	23.4	23.2	23.4	23.3	1.0	19.7	19.7	19.7	19.6	19.8	0.0	20.6	20.6	20.6	20.6	20.6	
			50	0	0.0	18.1	18.1	18.1	18.2	18.1	1.0	23.3	23.4	23.5	23.4	23.2	1.0	19.7	19.7	19.7	19.7	19.7	0.0	20.5	20.6	20.6	20.6	20.7	
		16QAM	1	0	0.0	18.2	18.2	18.1	18.1	18.1	1.0	23.3	23.5	23.3	23.2	23.3	1.0	19.7	19.7	19.8	19.8	19.7	0.0	20.5	20.6	20.6	20.6	20.7	
			1	24	0.0	18.0	18.0	18.0	18.1	18.1	1.0	23.3	23.2	23.3	23.2	23.2	1.0	19.8	19.6	19.6	19.6	19.7	0.0	20.7	20.7	20.7	20.6	20.7	
			1	49	0.0	18.1	18.2	18.1	18.1	18.1	1.0	23.5	23.5	23.3	23.4	23.3	1.0	19.7	19.7	19.8	19.8	19.7	0.0	20.5	20.7	20.6	20.5	20.7	
			25	0	0.0	18.2	18.2	18.1	18.1	18.1	2.0	22.4	22.3	22.3	22.2	22.3	2.0	18.6	18.7	18.7	18.7	18.7	0.0	20.5	20.5	20.7	20.6	20.6	
			25	12	0.0	18.1	18.0	18.1	18.1	18.1	2.0	22.4	22.4	22.2	22.4	22.3	2.0	18.7	18.7	18.7	18.7	18.8	0.0	20.6	20.6	20.6	20.6	20.6	
			25	24	0.0	18.1	18.2	18.1	18.2	18.1	2.0	22.3	22.4	22.5	22.4	22.3	2.0	18.8	18.7	18.8	18.7	18.7	0.0	20.7	20.7	20.5	20.5	20.7	
			50	0	0.0	18.1	18.2	18.1	18.1	18.1	2.0	22.4	22.5	22.4	22.3	22.3	2.0	18.6	18.7	18.7	18.7	18.7	0.0	20.7	20.6	20.7	20.6	20.6	
		64QAM	1	0	0.0	18.1	18.0	18.0	18.1	18.0	2.0	22.4	22.4	22.4	22.4	22.4	2.0	18.6	18.6	18.7	18.7	18.7	0.0	20.5	20.6	20.6	20.6	20.6	
			1	24	0.0	18.1	18.0	18.0	18.1	18.0	2.0	22.4	22.5	22.3	22.5	22.3	2.0	18.7	18.8	18.7	18.7	18.8	0.0	20.6	20.6	20.6	20.6	20.7	
			1	49	0.0	18.1	18.2	18.1	18.0	18.1	2.0	22.5	22.3	22.3	22.3	22.3	2.0	18.7	18.7	18.7	18.7	18.7	0.0	20.7	20.6	20.7	20.6	20.6	
			25	0	0.0	18.2	18.0	18.2	18.0	18.1	3.0	21.4	21.3	21.3	21.3	21.3	3.0	17.8	17.8	17.7	17.7	17.8	0.0	20.5	20.6	20.6	20.6	20.6	
			25	12	0.0	18.0	18.1	18.0	18.0	18.2	3.0	21.4	21.4	21.3	21.4	21.3	3.0	17.6	17.8	17.7	17.7	17.8	0.0	20.5	20.5	20.6	20.6	20.6	
			25	24	0.0	18.0	18.1	18.1	18.0	18.1	3.0	21.3	21.4	21.5	21.4	21.3	3.0	17.8	17.7	17.7	17.7	17.6	0.0	20.6	20.7	20.6	20.6	20.7	
			50	0	0.0	18.2	18.0	18.1	18.0	18.0	3.0	21.4	21.5	21.4	21.3	21.3	3.0	17.7	17.8	17.7	17.8	17.8	0.0	20.6	20.6	20.6	20.6	20.6	
			50	0	0.0	18.2	18.0	18.1	18.0	18.0	3.0	21.4	21.5	21.4	21.3	21.3	3.0	17.7	17.8	17.7	17.8	17.8	0.0	20.6	20.6	20.6	20.6	20.6	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MODE A										MODE B														
					Target MPR	UAT 1					Target MPR	LAT 1					Target MPR	UAT 1					Target MPR	LAT 1					
						2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz	
LTE Band 41	5	QPSK	1	0	0.0	18.1	18.0	18.1	18.1	18.1	0.0	24.3	24.5	24.3	24.5	24.2	0.0	20.7	20.7	20.7	20.7	20.7	0.0	20.6	20.6	20.6	20.6	20.7	
			1	12	0.0	18.2	18.1	18.2	18.2	18.1	0.0	24.4	24.5	24.4	24.4	24.5	0.0	20.7	20.8	20.7	20.7	20.7	0.0	20.6	20.5	20.6	20.6	20.7	
			1	24	0.0	18.2	18.1	18.2	18.0	18.1	0.0	24.4	24.4	24.2	24.4	24.4	0.0	20.8	20.7	20.7	20.7	20.7	0.0	20.5	20.6	20.7	20.5	20.6	
			12	0	0.0	18.1	18.1	18.1	18.1	18.1	1.0	23.2	23.4	23.3	23.3	23.4	1.0	19.7	19.7	19.7	19.8	19.8	0.0	20.6	20.6	20.7	20.5	20.6	
			12	7	0.0	18.2	18.2	18.1	18.1	18.1	1.0	23.3	23.4	23.3	23.3	23.4	1.0	19.8	19.8	19.8	19.7	19.6	0.0	20.6	20.6	20.6	20.6	20.6	
			12	13	0.0	18.2	18.2	18.2	18.1	18.2	1.0	23.5	23.3	23.5	23.3	23.3	1.0	19.7	19.7	19.7	19.7	19.6	0.0	20.6	20.6	20.5	20.7	20.6	
			25	0	0.0	18.1	18.2	18.2	18.0	18.1	1.0	23.2	23.3	23.3	23.3	23.3	1.0	19.7	19.7	19.7	19.8	19.7	0.0	20.5	20.5	20.7	20.6	20.6	
		16QAM	1	0	0.0	18.2	18.2	18.2	18.1	18.2	1.0	23.2	23.2	23.3	23.3	23.3	1.0	19.8	19.7	19.7	19.7	19.7	0.0	20.7	20.6	20.7	20.7	20.7	
			1	12	0.0	18.1	18.2	18.2	18.2	18.1	1.0	23.3	23.5	23.4	23.3	23.4	1.0	19.8	19.7	19.8	19.8	19.7	0.0	20.6	20.6	20.6	20.6	20.6	
			1	24	0.0	18.1	18.2	18.0	18.2	18.1	1.0	23.3	23.4	23.4	23.3	23.3	1.0	19.8	19.7	19.7	19.7	19.7	0.0	20.5	20.6	20.6	20.7	20.6	
			12	0	0.0	18.2	18.1	18.0	18.2	18.1	2.0	22.4	22.2	22.3	22.3	22.2	2.0	18.8	18.7	18.6	18.7	18.7	0.0	20.7	20.6	20.6	20.7	20.7	
			12	7	0.0	18.2	18.2	18.1	18.1	18.2	2.0	22.5	22.5	22.4	22.5	22.4	2.0	18.8	18.7	18.8	18.6	18.8	0.0	20.5	20.6	20.6	20.7	20.7	
			12	13	0.0	18.1	18.2	18.2	18.2	18.2	2.0	22.2	22.4	22.4	22.3	22.4	2.0	18.8	18.8	18.6	18.6	18.7	0.0	20.5	20.6	20.5	20.7	20.7	
			25	0	0.0	18.2	18.2	18.0	18.1	18.1	2.0	22.3	22.4	22.3	22.3	22.4	2.0	18.7	18.7	18.7	18.8	18.7	0.0	20.7	20.7	20.7	20.6	20.5	
		64QAM	1	0	0.0	18.0	18.1	18.1	18.2	18.1	2.0	22.4	22.4	22.3	22.4	22.3	2.0	18.7	18.7	18.8	18.7	18.7	0.0	20.7	20.6	20.5	20.6	20.6	
			1	12	0.0	18.0	18.2	18.0	18.0	18.1	2.0	22.4	22.4	22.5	22.4	22.3	2.0	18.7	18.7	18.7	18.8	18.6	18.7	0.0	20.7	20.7	20.5	20.5	20.6
			12	0	0.0	18.0	18.2	18.2	18.0	18.0	3.0	21.5	21.3	21.5	21.2	21.4	3.0	17.6	17.7	17.6	17.6	17.7	0.0	20.6	20.6	20.6	20.7	20.6	
			12	7	0.0	18.1	18.1	18.1	18.0	18.0	3.0	21.5	21.5	21.3	21.3	21.4	3.0	17.7	17.7	17.8	17.7	17.7	0.0	20.6	20.6	20.7	20.6	20.6	
			12	13	0.0	18.1	18.0	18.2	18.0	18.0	3.0	21.3	21.3	21.4	21.5	21.3	3.0	17.7	17.6	17.8	17.8	17.8	0.0	20.6	20.6	20.6	20.7	20.6	
25	0	0.0	18.0	18.1	18.1	18.1	18.1	3.0	21.3	21.4	21.5	21.4	21.4	3.0	17.7	17.8	17.7	17.7	17.6	0.0	20.6	20.6	20.7	20.5	20.6				

9.4. LTE Rel. 11 Carrier Aggregation

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

For inter-band carrier aggregation with uplink assigned to one E-UTRA band (Table 5.6A-1), the requirements in subclause 6.2.3 apply.

For inter-band carrier aggregation with one component carrier per operating band and the uplink active in two E-UTRA bands, the requirements in subclause 6.2.3 apply for each uplink component carrier.

For intra-band contiguous carrier aggregation the allowed Maximum Power Reduction (MPR) for the maximum output power applicable to the DUT in the table below. In case the modulation format is different on different component carriers then the MPR is determined by the rules applied to higher order of those modulations.

Modulation	CA bandwidth Class B and C / Smallest Component Carrier Transmission Bandwidth Configuration				MPR (dB)
	25 RB	50 RB	75 RB	100 RB	
QPSK	> 8 and $\leq$ 25	> 12 and $\leq$ 50	> 16 and $\leq$ 75	> 18 and $\leq$ 100	$\leq$ 1
QPSK	> 25	> 50	> 75	> 100	$\leq$ 2
16 QAM	$\leq$ 8	$\leq$ 12	$\leq$ 16	$\leq$ 18	$\leq$ 1
16 QAM	> 8 and $\leq$ 25	> 12 and $\leq$ 50	> 16 and $\leq$ 75	> 18 and $\leq$ 100	$\leq$ 2
16 QAM	> 25	> 50	> 75	> 100	$\leq$ 3
64 QAM	$\leq$ 8 and allocation wholly contained within a single CC	$\leq$ 12 and allocation wholly contained within a single CC	$\leq$ 16 and allocation wholly contained within a single CC	$\leq$ 18 and allocation wholly contained within a single CC	$\leq$ 2
64 QAM	> 8 or allocation extends across two CC's	> 12 or allocation extends across two CC's	> 16 or allocation extends across two CC's	> 18 or allocation extends across two CC's	$\leq$ 3

For PUCCH and SRS transmissions, the allowed MPR is according to that specified for PUSCH QPSK modulation for the corresponding transmission bandwidth.

For intra-band contiguous carrier aggregation bandwidth class C with non-contiguous resource allocation, the allowed Maximum Power Reduction (MPR) for the maximum output power in Table 6.2.2A-1 is specified as follows

$$\text{MPR} = \text{CEIL} \{ \min(M_A, M_{\text{IM5}}), 0.5 \}$$

Where M_A is defined as follows for QPSK, 16 QAM and 64 QAM

$M_A =$	8.2	; $0 \leq A < 0.025$
	$9.2 - 40A$	; $0.025 \leq A < 0.05$
	$8 - 16A$	; $0.05 \leq A < 0.25$
	$4.83 - 3.33A$	; $0.25 \leq A \leq 0.4$
	$3.83 - 0.83A$	; $0.4 \leq A \leq 1$

and M_{IM5} is defined as follows

$M_{\text{IM5}} =$	4.5	; $\Delta_{\text{IM5}} < 1.5 * \text{BW}_{\text{Channel_CA}}$
	6.0	; $1.5 * \text{BW}_{\text{Channel_CA}} \leq \Delta_{\text{IM5}} < \text{BW}_{\text{Channel_CA}}/2 + \Delta f_{\text{ooB}}$
M_A		; $\Delta_{\text{IM5}} \geq \text{BW}_{\text{Channel_CA}}/2 + \Delta f_{\text{ooB}}$

Where

$$A = N_{\text{RB_alloc}} / N_{\text{RB_agg}}$$

$$\Delta_{\text{IM5}} = \max(|F_{\text{C_agg}} - (3 * F_{\text{agg_alloc_low}} - 2 * F_{\text{agg_alloc_high}})|, |F_{\text{C_agg}} - (3 * F_{\text{agg_alloc_high}} - 2 * F_{\text{agg_alloc_low}})|)$$

$$F_{\text{C_agg}} = (F_{\text{edge_high}} + F_{\text{edge_low}})/2$$

$\text{CEIL}\{M_A, 0.5\}$ means rounding upwards to closest 0.5dB, i.e. $\text{MPR} \in [3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0, 6.5, 7.0, 7.5, 8.0, 8.5]$

For intra-band non-contiguous carrier aggregation with one uplink carrier, the requirements in subclause 6.2.3 apply.

For intra-band non-contiguous carrier aggregation with two uplink carriers MPR is specified for E-UTRA CA configurations with a maximum possible WGAP ≤ 35 MHz; the allowed MPR is

$$\text{MPR} = \text{CEIL}\{M_A, 0.5\}$$

Where M_N is defined as follows

$M_N =$	$-0.125N + 18.25$	; $2 \leq N \leq 50$
	$-0.0333 N + 13.67$	; $50 < N \leq 200$

Where $N = N_{\text{RB_alloc}}$ is the number of allocated resource blocks.

For the UE maximum output power modified by MPR, the power limits specified in subclause 6.2.5A apply.

LTE Carrier Aggregation Test Signal Set-up Procedure

(Use normal LTE set-up procedure in addition with the following steps)

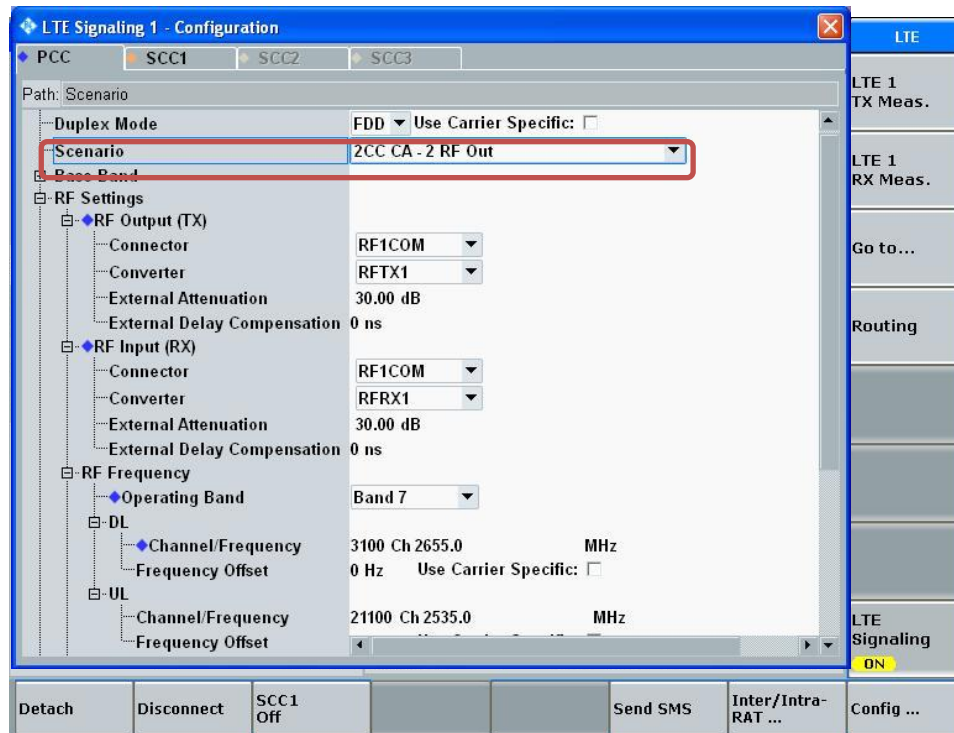
Set to CMW-500 with following parameters:

- PCC tab:
 - Select the testing Operating Band, Channel, Frequency, Cell Bandwidth, Uplink RBs

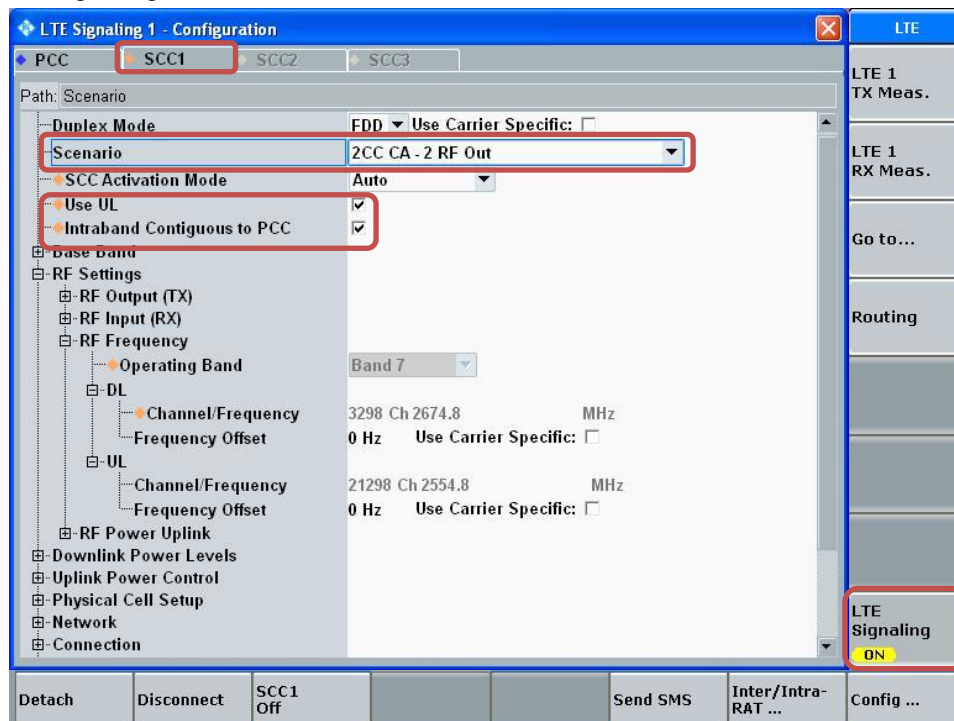
The screenshot shows the LTE Signaling 1 - V3.5.40 - Base V 3.5.90 interface. The PCC tab is selected. The 'Operating Band' is set to 'Band 7' and 'FDD'. The 'Channel' is '2850 Ch' for Downlink and '20850 Ch' for Uplink. The 'Frequency' is '2630.0 MHz' for Downlink and '2510.0 MHz' for Uplink. The 'Cell Bandwidth' is '20.0 MHz' for both. The 'RS EPRE' is '-85.0 dBm/15kHz'. The 'Full Cell BW Pow.' is '-54.2 dBm'. The 'PUSCH Open Loop Nom.Power' is '23 dBm'. The 'PUSCH Closed Loop Target Power' is '33.0 dBm'. The 'Sched.' is 'User def. Channels' and 'Multicenter UL'. The 'LTE Signaling' is 'ON'. The 'Config ...' button is highlighted.

- Go to "Config..."

- Go to "Scenario"
- Set to "2CC CA – 2 RF Out"



- Select "SCC1" tab
- Go to "Scenario"
- Set to "2CC CA – 2 RF Out"
- Enable "Use UL"
- Enable "Intraband Contiguous to PCC"
- Select "LTE Signaling" button



- Select “SCC1” tab
 - Select the testing Cell Bandwidth, Uplink RBs

LTE Signaling 1 - V3.5.40 - Base V 3.5.90

Connection Status

Cell:  Connection Established

Packet Switched:  Connected

RRC State: Connected

SCC1 State: MAC Activated

Event Log

02:17:19  Redirection Successful

02:17:18  Tracking Area Update Received

02:17:18  RRC Connection Established

02:17:17  RRC Connection Released

02:17:16  Redirection Start

02:17:12  Redirection Successful

UE Info

IMEI: 359250065123018

IMSI: 001010000150503

Voice Domain Pr... IMS PS Voice preferred CS Voic

UE's Usage Settl... Voice centric

Default Bearer **IPv4 address** **IPv6 pref**

5 (cmw500.r... 192.168.48.129fc01:abab:cdcl

Dedicated Bearer **TFT Port Range DL / UL**

6 (->5, Default) 5005 - 5008 / 5005 - 5008

Operating Band **Band 7** **FDD**

Channel **3048 Ch** **21048 Ch**

Frequency **2649.8 MHz** **2529.8 MHz**

Cell Bandwidth **20.0 MHz** **20.0 MHz**

RS EPRE **-85.8 dBm/15kHz**

Full Cell BW Pow. **-55.0 dBm**

PUSCH Open Loop Nom.Power **23 dBm**

PUSCH Closed Loop Target Power **33.0 dBm**

Intraband Contiguous to PCC ☒

PCC <-> SCC1 **Swap**

PCC -> SCC1 **Copy**

Sched. **User def. Channels** ☐ **Multicenter UL**

#RB **100** **100**

Start RB **0** **0**

Mod / TBSI **QPSK** **5** **QPSK** **10**

Code Rate / TBS **0.320 8760** **0.613 17568**

Throughput **8.760 Mbit/s** **17.568 Mbit/s**

Detach **Disconnect** **SCC1 Off** **Send SMS** **Inter/Intra-RAT ...** **Config ...**

LTE 1 TX Meas.

LTE 1 RX Meas.

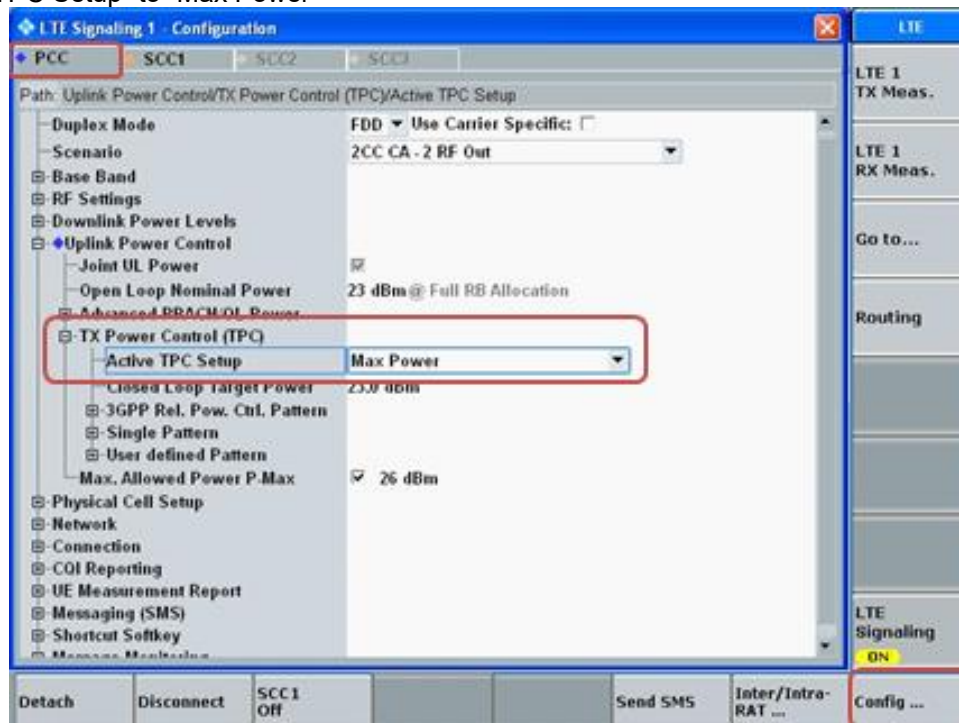
Go to...

Routing

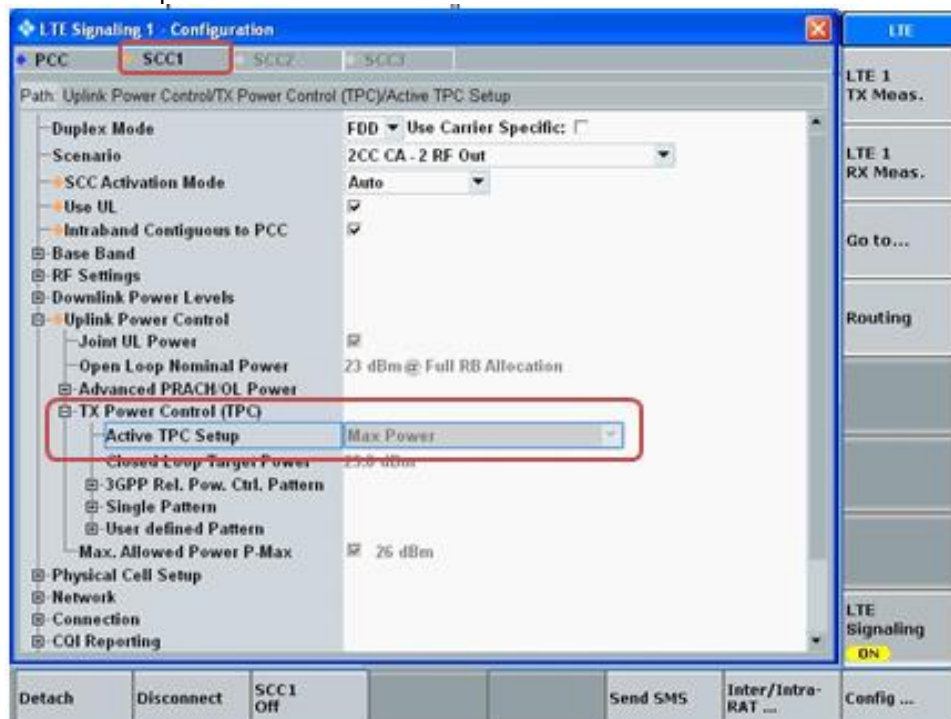
LTE Signaling **ON**

Max Power Setting

- Select “Config ...” button
- Select PCC tab
- Set “Active TPC Setup” to “Max Power”

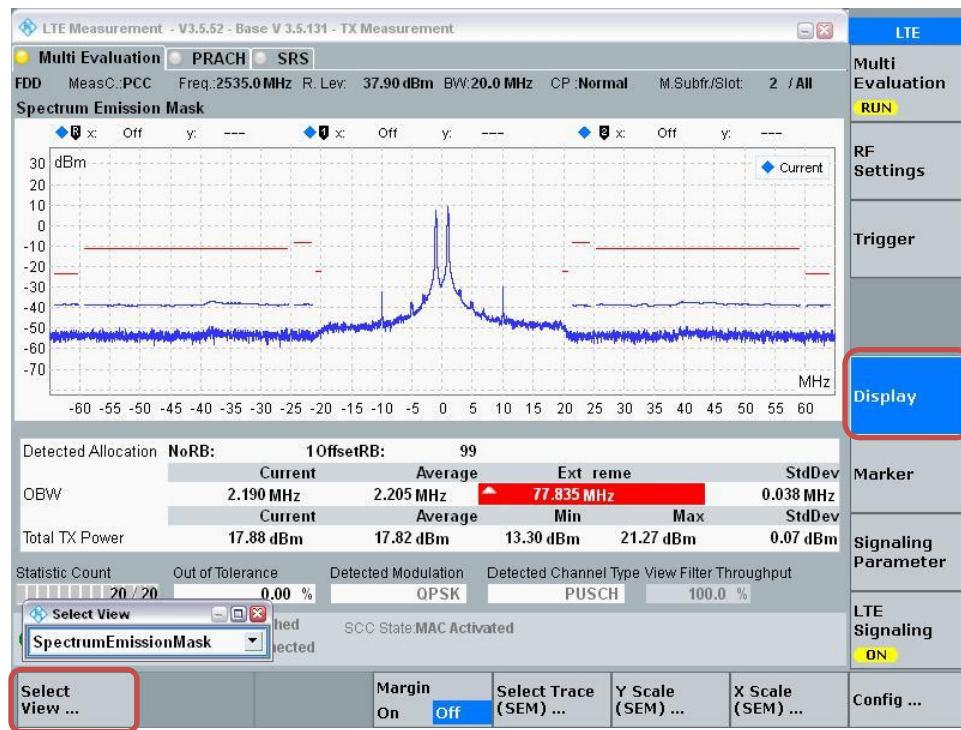


- Select SCC1 tab
- Verify that “Active TPC Setup” is set to “Max Power”



View TX Power

- Go to “Display”
- Select “Select View...”
- Select “Spectrum Emission Mask”



LTE Carrier Aggregation Combinations:

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

DL Inter-Band (2 Bands, 3CC Max)

E-UTRA CA configuration (BCS)	E-UTRA Band	Bandwidth						Max Aggregated BW
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
CA_2A-2A-5A (0)	Band 2	See CA_2A-2A (0)						50 MHz
	Band 5			Yes	Yes			
CA_2A-2A-12A (0)	Band 2	See CA_2A-2A (0)						50 MHz
	Band 12			Yes	Yes			
CA_2A-2A-13A (0)	Band 2	See CA_2A-2A (0)						50 MHz
	Band 13				Yes			
CA_2A-2A-29A (0)	Band 2	See CA_2A-2A (0)						50 MHz
	Band 29			Yes	Yes			
CA_2A-2A-30A (0)	Band 2	See CA_2A-2A (0)						50 MHz
	Band 30			Yes	Yes			
CA-2A-4A (0) (1) (2)	Band 2	Yes	Yes	Yes	Yes	Yes	Yes	40 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 2			Yes	Yes			20 MHz
	Band 4			Yes	Yes			
	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 4			Yes	Yes	Yes	Yes	
CA_2A-5A (0) (1)	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 5			Yes	Yes			
	Band 2			Yes	Yes			20 MHz
	Band 5			Yes	Yes			
CA_2C-5A (0)	Band 2	See CA_2C (0)						50 MHz
	Band 5			Yes	Yes			
CA_2A-12A (0) (1) (2)	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 12			Yes	Yes			
	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 12		Yes	Yes	Yes			
	Band 2			Yes	Yes			20 MHz
	Band 12			Yes	Yes			
CA_2C-12A (0)	Band 2	See CA_2C (0)						50 MHz
	Band 12			Yes	Yes			
CA-2A-12B (0)	Band 2			Yes	Yes	Yes	Yes	35 MHz

	Band 12	See CA_12B (0)						
CA_2A-13A (0) (1)	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 13				Yes			
	Band 2			Yes	Yes			20 MHz
	Band 13				Yes			
CA_2A-17A (0)	Band 2			Yes	Yes			20 MHz
	Band 17			Yes	Yes			
CA-2A-29A (0) (1) (2)	Band 2			Yes	Yes			20 MHz
	Band 29		Yes	Yes	Yes			
	Band 2			Yes	Yes			20 MHz
	Band 29			Yes	Yes			
	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 29			Yes	Yes			
CA-2C-29A (0)	Band 2	See CA_2C (0)						50 MHz
	Band 29			Yes	Yes			
CA_2A-30A (0)	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 30			Yes	Yes			
CA_2C-30A (0)	Band 2	See CA_2C (0)						50 MHz
	Band 30			Yes	Yes			
CA_2A-66A (0) (1) (2)	Band 2	Yes	Yes	Yes	Yes	Yes	Yes	40 MHz
	Band 66			Yes	Yes	Yes	Yes	
	Band 2			Yes	Yes			20 MHz
	Band 66			Yes	Yes			
	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 66			Yes	Yes	Yes	Yes	
CA_2A-66B (0)	Band 2			Yes	Yes	Yes	Yes	60 MHz
	Band 66	See CA_66B (0)						
CA-2A-66C (0)	Band 2			Yes	Yes	Yes	Yes	60 MHz
	Band 66	See CA_66C (0)						
CA_4A-4A-5A (0)	Band 4	See CA_4A-4A (0)						50 MHz
	Band 5			Yes	Yes			
CA_4A-4A-7A (0) (1)	Band 4			Yes	Yes			40 MHz
	Band 4			Yes	Yes			
	Band 7			Yes	Yes	Yes	Yes	
	Band 4			Yes	Yes	Yes	Yes	60 MHz
	Band 4			Yes	Yes	Yes	Yes	

	Band 7			Yes	Yes	Yes	Yes	
CA_4A-4A-12A (0)	Band 4	See CA_4A-4A (0)						50 MHz
	Band 12			Yes	Yes			
CA_4A-4A_13A (0)	Band 4	See CA_4A-4A (0)						50 MHz
	Band 13				Yes			
CA_4A-4A-29A (0)	Band 4	See CA_4A-4A (0)						50 MHz
	Band 29			Yes	Yes			
CA_4A-4A-30A (0)	Band 4	See CA_4A-4A (0)						50 MHz
	Band 30			Yes	Yes			
CA_4A-5A (0) (1)	Band 4			Yes	Yes			20 MHz
	Band 5			Yes	Yes			
	Band 4			Yes	Yes	Yes	Yes	30 MHz
	Band 5			Yes	Yes			
CA_4A-7A (0) (1)	Band 4			Yes	Yes			30 MHz
	Band 7			Yes	Yes	Yes	Yes	
	Band 4			Yes	Yes	Yes	Yes	40 MHz
	Band 7			Yes	Yes	Yes	Yes	
CA_4A-12A (0) (1) (2) (3) (4) (5)	Band 4	Yes	Yes	Yes	Yes			20 MHz
	Band 12			Yes	Yes			
	Band 4	Yes	Yes	Yes	Yes	Yes	Yes	30 MHz
	Band 12			Yes	Yes			
	Band 4			Yes	Yes	Yes	Yes	30 MHz
	Band 12		Yes	Yes	Yes			
	Band 4			Yes	Yes			20 MHz
	Band 12			Yes	Yes			
	Band 4			Yes	Yes	Yes	Yes	30 MHz
	Band 12			Yes	Yes			
	Band 4			Yes	Yes	Yes		20 MHz
	Band 12			Yes				
CA_4A-12B (0)	Band 4			Yes	Yes	Yes	Yes	35 MHz
	Band 12	See CA_12B (0)						
CA_4A-13A (0) (1)	Band 4			Yes	Yes	Yes	Yes	30 MHz
	Band 13				Yes			
	Band 4			Yes	Yes			20 MHz
	Band 13				Yes			
CA_4A-17A (0)	Band 4			Yes	Yes			20 MHz

	Band 17			Yes	Yes			
CA_4A-29A (0) (1) (2)	Band 4			Yes	Yes			20 MHz
	Band 29		Yes	Yes	Yes			
	Band 4			Yes	Yes			20 MHz
	Band 29			Yes	Yes			
	Band 4			Yes	Yes	Yes	Yes	30 MHz
	Band 29			Yes	Yes			
CA_4A-30A (0)	Band 4			Yes	Yes	Yes	Yes	20 MHz
	Band 30			Yes	Yes			
CA_5A-7A (0) (1)	Band 5	Yes	Yes	Yes	Yes			30 MHz
	Band 7				Yes	Yes	Yes	
	Band 5			Yes	Yes			30 MHz
	Band 7				Yes	Yes	Yes	
CA_5A-25A (0)	Band 5			Yes	Yes			30 MHz
	Band 25			Yes	Yes	Yes	Yes	
CA_5A-30A (0)	Band 5			Yes	Yes			20 MHz
	Band 30			Yes	Yes			
CA_5A-66A (0)	Band 5			Yes	Yes			30 MHz
	Band 66			Yes	Yes	Yes	Yes	
CA_7A-12A (0)	Band 7			Yes	Yes	Yes	Yes	30 MHz
	Band 12			Yes	Yes			
CA_12A-30A (0)	Band 12			Yes	Yes			20 MHz
	Band 30			Yes	Yes			
CA_12A-66A (0) (1) (2) (3) (4) (5)	Band 12			Yes	Yes			20 MHz
	Band 66	Yes	Yes	Yes	Yes			
	Band 12			Yes	Yes			30 MHz
	Band 66	Yes	Yes	Yes	Yes	Yes	Yes	
	Band 12		Yes	Yes	Yes			30 MHz
	Band 66			Yes	Yes	Yes	Yes	
	Band 12			Yes	Yes			20 MHz
	Band 66			Yes	Yes			
	Band 12			Yes	Yes			30 MHz
	Band 66			Yes	Yes	Yes	Yes	
	Band 12			Yes				20 MHz
	Band 66			Yes	Yes	Yes		
CA_12A-66A-66A (0)	Band 12			Yes	Yes			50 MHz

	Band 66	See CA_66A-66A (0)						
CA_12A-66C (0)	Band 12			Yes	Yes			50 MHz
	Band 66	See CA_66C (0)						
CA_13A-66A (0)	Band 13			Yes	Yes			30 MHz
	Band 66			Yes	Yes	Yes	Yes	
CA_25A-26A (0) (1) (2)	Band 25		Yes	Yes	Yes	Yes	Yes	35 MHz
	Band 26	Yes	Yes	Yes	Yes	Yes		
	Band 25		Yes	Yes	Yes			20 MHz
	Band 26		Yes	Yes	Yes			
	Band 25			Yes	Yes			20 MHz
	Band 26			Yes	Yes			
CA_29A-30A (0)	Band 29			Yes	Yes			20 MHz
	Band 30			Yes	Yes			
CA_30A-66A (0)	Band 30			Yes	Yes			30 MHz
	Band 66			Yes	Yes	Yes	Yes	

DL Inter-Band (3 Bands, 4CC Max)

E-UTRA CA configuration (BCS)	E-UTRA Band	Bandwidth						Max Aggregated BW
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
CA_2A-2A-5A-30A (0)	Band 2	See CA_2A-2A (0)						60 MHz
	Band 5			Yes	Yes			
	Band 30			Yes	Yes			
CA_2A-2A-12A-30A (0)	Band 2	See CA_2A-2A (0)						60 MHz
	Band 12			Yes	Yes			
	Band 30			Yes	Yes			
CA_2A-2A-29A-30A (0)	Band 2	See CA_2A-2A (0)						60 MHz
	Band 29			Yes	Yes			
	Band 30			Yes	Yes			
CA_2C-29A-30A (0)	Band 2	See CA_2C (0)						60 MHz
	Band 29			Yes	Yes			
	Band 30			Yes	Yes			
CA_2A-4A-5A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 5			Yes	Yes			
CA_2A-4A-12A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 4			Yes	Yes	Yes	Yes	

	Band 12			Yes	Yes			
CA_2A-4A-13A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 13				Yes			
CA-2A-4A-29A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 29			Yes	Yes			
CA_2A-4A-30A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 30			Yes	Yes			
CA_2A-5A-30A (0)	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 5			Yes	Yes			
	Band 30			Yes	Yes			
CA_2C-5A-30A (0)	Band 2	See CA_2C (0)						60 MHz
	Band 5			Yes	Yes			
	Band 30			Yes	Yes			
CA_2A-5A-66A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 5			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	
CA_2A-12A-30A (0)	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 12			Yes	Yes			
	Band 30			Yes	Yes			
CA_2C-12A-30A (0)	Band 2	See CA_2C (0)						60 MHz
	Band 12			Yes	Yes			
	Band 30			Yes	Yes			
CA_2A-12A-66A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 12			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	
CA_2A-13A-66A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 13			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	
CA-2A-29A-30A (0)	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 29			Yes	Yes			
	Band 30			Yes	Yes			
CA_2A-30A-66A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 30			Yes	Yes			

	Band 66			Yes	Yes	Yes	Yes	
CA_2C_29A-30A (0)	Band 2	See CA_2C (0)						60 MHz
	Band 29			Yes	Yes			
	Band 30			Yes	Yes			
CA_4A-4A-5A-30A (0)	Band 4	See CA_4A_4A (0)						60 MHz
	Band 5			Yes	Yes			
	Band 30			Yes	Yes			
CA_4A-4A-12A-30A (0)	Band 4	See CA_4A_4A (0)						60 MHz
	Band 12			Yes	Yes			
	Band 30			Yes	Yes			
CA_4A-4A-29A-30A (0)	Band 4	See CA_4A_4A (0)						60 MHz
	Band 29			Yes	Yes			
	Band 30			Yes	Yes			
CA_4A-5A-30A (0)	Band 4			Yes	Yes	Yes	Yes	40 MHz
	Band 5			Yes	Yes			
	Band 30			Yes	Yes			
CA_4A-7A-12A (0) (1)	Band 4			Yes	Yes			40 MHz
	Band 7			Yes	Yes	Yes	Yes	
	Band 12			Yes	Yes			
	Band 4			Yes	Yes	Yes	Yes	50 MHz
	Band 7			Yes	Yes	Yes	Yes	
	Band 12			Yes	Yes			
CA_4A-12A-30A (0)	Band 4			Yes	Yes	Yes	Yes	40 MHz
	Band 12			Yes	Yes			
	Band 30			Yes	Yes			
CA_4A-29A-30A (0)	Band 4			Yes	Yes	Yes	Yes	40 MHz
	Band 29			Yes	Yes			
	Band 30			Yes	Yes			
CA_5A-30A-66A (0)	Band 5			Yes	Yes			40 MHz
	Band 30			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	
CA_12A-30A-66A (0)	Band 12			Yes	Yes			40 MHz
	Band 30			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	

DL Inter-Band (4 Bands, 4CC Max)

E-UTRA CA configuration (BCS)	E-UTRA Band	Bandwidth						Max Aggregated BW
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
CA_2A-4A-5A-30A (0)	Band 2			Yes	Yes	Yes	Yes	60 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 5			Yes	Yes			
	Band 30			Yes	Yes			
CA2A-4A-12A-30A (0)	Band 2			Yes	Yes	Yes	Yes	60 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 12			Yes	Yes			
	Band 30			Yes	Yes			
CA_2A-4A-29A-30A (0)	Band 2			Yes	Yes	Yes	Yes	60 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 29			Yes	Yes			
	Band 30			Yes	Yes			
CA_2A-5A-30A-66A (0)	Band 2			Yes	Yes	Yes	Yes	60 MHz
	Band 5			Yes	Yes			
	Band 30			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	
CA_2A-12A-30A-66A (0)	Band 2			Yes	Yes	Yes	Yes	60 MHz
	Band 12			Yes	Yes			
	Band 30			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	

DL Intra-Band Non-Contiguous

E-UTRA CA configuration (BCS)	E-UTRA Band	Allowed Channel BW Per Carrier (MHz)			Max Aggregated BW
		1st Carrier	2nd Carrier	3rd Carrier	
CA_2A-2A (0)	Band 2	5, 10, 15, 20	5, 10, 15, 20		40 MHz
CA_4A-4A (0) (1)	Band 4	5, 10, 15, 20	5, 10, 15, 20		40 MHz
		5, 10	5, 10		20 MHz
CA_7A-7A (0) (1) (2) (3)	Band 7	5	15		40 MHz
		10	10, 15		
		15	15, 20		
		20	20		
		5, 10, 15, 20	5, 10, 15, 20		40 MHz
		5, 10, 15, 20	5, 10		30 MHz

		10, 15, 20	10, 15, 20		40 MHz
CA_25A-25A (0) (1)	Band 25	5, 10	5, 10		20 MHz
		5, 10, 15, 20	5, 10, 15, 20		40 MHz
CA_41A-41A (0) (1)	Band 41	10, 15, 20	10, 15, 20		40 MHz
		5, 10, 15, 20	5, 10, 15, 20		40 MHz
CA_41A-41C (0)	Band 41	5, 10, 15, 20	See CA_41C (1)		60 MHz
CA_41C_41A (0)	Band 41	See CA_41C (1)	5, 10, 15, 20		60 MHz
CA_66A-66A (0)	Band 66	5, 10, 15, 20	5, 10, 15, 20		40 MHz

DL Intra-Band Contiguous

E-UTRA CA configuration (BCS)	E-UTRA Band	Allowed Channel BW Per Carrier (MHz)			Max Aggregated BW
		1st Carrier	2nd Carrier	3rd Carrier	
CA_2C (0)	Band 2	5	20		40 MHz
		10	15, 20		
		15	10, 15, 20		
		20	5, 10, 15, 20		
CA_7B (0)	Band 7	15	5		20 MHz
CA_7C (0) (1) (2)	Band 7	15	15		40 MHz
		20	20		
		10	20		40 MHz
		15	15, 20		
		20	10, 15, 20		
		15	10, 15		40 MHz
		20	15, 20		
CA_12B (0)	Band 12	5	5, 10		15 MHz
CA_41C (0) (1) (2) (3)	Band 41	10	20		40 MHz
		15	15, 20		
		20	10, 15, 20		
		5, 10	20		40 MHz
		15	15, 20		
		20	5, 10, 15, 20		
		10	15, 20		40 MHz
		15	10, 15, 20		
		20	10, 15, 20		
		10	20		40 MHz
		20	20		

CA_41D (0)	Band 41	10	20	15	40 MHz
		10	15, 20	20	
		15	20	10, 15	
		15	10, 15, 20	20	
		20	15, 20	10	
		20	10, 15, 20	15, 20	
CA_66B (0)	Band 66	5	5, 10, 15		20 MHz
		10	5, 10		
		15	5		
CA_66C (0)	Band 66	10	15, 20		40 MHz
		15	10, 15, 20		
		20	5, 10, 15, 20		

UL Intra-Band Contiguous

E-UTRA CA configuration (BCS)	E-UTRA Band	Allowed Channel BW Per Carrier (MHz)			Max Aggregated BW
		1st Carrier	2nd Carrier	3rd Carrier	
CA_7C (0) (1) (2)	Band 7	15	15		40 MHz
		20	20		
		10	20		40 MHz
		15	15, 20		
		20	10, 15, 20		
		15	10, 15		40 MHz
		20	15, 20		
CA_41C (0) (1) (2) (3)	Band 41	10	20		40 MHz
		15	15, 20		
		20	10, 15, 20		
		5, 10	20		40 MHz
		15	15, 20		
		20	5, 10, 15, 20		
		10	15, 20		40 MHz
		15	10, 15, 20		
		20	10, 15, 20		
		10	20		40 MHz
		20	20		

Carrier Aggregation Power Measurements:

Power measurements were performed on the channel with the highest maximum output power from Tune-up Procedure on LAT antenna, Mode A power table on QPSK modulation following the Manufacturer KDB inquiry - Carrier Aggregation.

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 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).

E-UTRA CA configuration (BCS)				
DL Inter-Band (2 Bands, 2CC)	DL Inter-Band (2 Bands, 3CC)	DL Inter-Band (3 Bands, 3CC)	DL Inter-Band (3 Bands, 4CC)	DL Inter-Band (4 Bands, 4CC)
CA_2A-4A (0) (1) (2)				CA_2A-4A-5A-30A (0)
CA_2A-5A (0) (1)	CA_2A-2A-5A (0)	CA_2A-4A-5A (0)		CA_2A-4A-5A-30A (0)
	CA_2C-5A (0)			
	CA_2C-30A (0)			
		CA_2A-5A-30A (0)	CA_2A-2A-5A-30A (0)	CA_2A-4A-5A-30A (0)
			CA_2C-5A-30A (0)	
CA_4A-5A (0) (1)	CA_4A-4A-5A (0)			CA_2A-4A-5A-30A (0)
CA_4A-30A (0)	CA_4A-4A-30A (0)	CA_4A-5A-30A (0)	CA_4A-4A-5A-30A (0)	CA_2A-4A-5A-30A (0)
CA_5A-30A (0)				CA_2A-4A-5A-30A (0)
CA_2A-12A (0) (1) (2)	CA_2A-2A-12A (0)	CA_2A-4A-12A (0)		CA_2A-4A-12A-30A (0)
		CA_2A-12A-30A (0)	CA_2A-2A-12A-30A (0)	CA_2A-4A-12A-30A (0)
			CA_2C-12A-30A (0)	
	CA_2A-12B (0)			
	CA_2C-12A (0)			
		CA_4A-12A-30A (0)	CA_4A-4A-12A-30A (0)	CA_2A-4A-12A-30A (0)
CA_4A-12A (0) (1) (2) (3) (4) (5)	CA_4A-4A-12A (0)	CA_4A-7A-12A (0) (1)		
	CA_4A-12B (0)			
CA_12A-30A (0)				CA_2A-4A-12A-30A (0)
CA_2A-29A (0) (1) (2)	CA_2A-2A-29A (0)	CA_2A-4A-29A (0)		CA_2A-4A-29A-30A (0)
CA_2A-30A (0)	CA_2A-2A-30A (0)	CA_2A-4A-30A (0)		CA_2A-4A-29A-30A (0)
CA_2C-29A (0)			CA_2C_29A-30A (0)	
		CA_2A-29A-30A (0)	CA_2A-2A-29A-30A (0)	CA_2A-4A-29A-30A (0)
CA_4A-29A (0) (1) (2)	CA_4A-4A-29A (0)			CA_2A-4A-29A-30A (0)
		CA_4A-29A-30A (0)	CA_4A-4A-29A-30A (0)	CA_2A-4A-29A-30A (0)
CA_29A-30A (0)				CA_2A-4A-29A-30A (0)
CA_2A-66A (0) (1) (2)		CA_2A-5A-66A (0)		CA_2A-5A-30A-66A (0)
		CA_2A_30A-66A (0)		CA_2A-5A-30A-66A (0)
	CA_2A-66B (0)			
	CA_2A-66C (0)			
CA_5A-66A (0)		CA_5A-30A-66A (0)		
		CA_2A-12A-66A (0)		CA_2A-12A-30A-66A (0)
CA_12A-66A (0) (1) (2) (3) (4) (5)	CA_12A-66A-66A (0)	CA_12A-30A-66A (0)		CA_2A-12A-30A-66A (0)
CA_30A-66A (0)				CA_2A-12A-30A-66A (0)
	CA_12A-66C (0)			
CA_2A-13A (0) (1)	CA_2A-2A-13A (0)	CA_2A-4A-13A (0)		
		CA_2A-13A-66A (0)		
CA_2A-17A (0)				
CA_4A-7A (0) (1)	CA_4A-4A-7A (0) (1)			
CA_4A-13A (0) (1)	CA_4A-4A-13A (0)			
CA_4A-17A (0)				
CA_7A-12A (0)				
CA_5A-7A (0) (1)				
CA_5A-25A (0)				
CA_13A-66A (0)				
CA_25A-26A (0) (1) (2)				

DL Inter-Band (2 Bands, 2CC and 3CC)

E-UTRA CA configuration (BCS)	Bands				DL												UL											
	PCC	SCC	TCC	QCC	PCC			SCC			TCC			QCC			PCC											
	1st	2nd	3rd	4th	BW	Freq	Ch	BW	Freq	Ch	BW	Freq	Ch	BW	Freq	Ch	Modulation	RB	Offset	BW	Freq	Ch	Aggregated BW	MPR	CA Inactive	CA Active	Delta	3GPP Rel. #
CA_2C-5A (0)	2C	2C	5A		20	1960	900	20	1980	1100	10	881.5	2525				QPSK	1	49	20	1880	18900	50	0	24.8	24.1	-0.7	13
	5A	2C	2C		10	881.5	2525	20	1960	900	20	1980	1100				QPSK	1	24	10	836.5	20525	50	0	24.8	24.0	-0.8	13
CA_2C-12A (0)	2C	2C	12A		20	1960	900	20	1980	1100	10	737.5	5095				QPSK	1	49	20	1880	18900	50	0	24.8	24.0	-0.8	13
	12A	2C	2C		10	737.5	5095	20	1960	900	20	1980	1100				QPSK	1	24	10	707.5	23095	50	0	24.7	24.7	0.0	13
CA-2A-12B (0)	2A	12B	12B		20	1960	900	10	737.5	5095	5	745	5170				QPSK	1	49	20	1880	18900	35	0	24.8	24.0	-0.8	12
	12B	12B	2A		10	737.5	5095	5	745	5170	20	1960	900				QPSK	1	24	10	707.5	23095	35	0	24.7	24.7	0.0	12
CA_2A-17A (0)	2A	17A			20	1960	900	10	740	5790							QPSK	1	49	20	1880	18900	20	0	24.8	23.8	-1.0	11
	17A	2A			10	740	5790	20	1960	900							QPSK	1	24	10	710	23790	20	0	24.7	24.0	-0.7	11
CA_2C-30A (0)	2C	2C	30A		20	1960	900	20	1980	1100	10	2355	9820				QPSK	1	49	20	1880	18900	50	0	24.8	24.0	-0.8	13
	30A	2C	2C		10	2355	9820	20	1960	900	20	1980	1100				QPSK	1	24	10	2310	27710	50	0	23.0	23.0	0.0	13
CA_2A-66B (0)	2A	66B	66B		20	1960	900	15	2145	66786	5	2155	66866				QPSK	1	49	20	1880	18900	40	0	24.8	24.0	-0.8	14
	66B	66B	2A		15	2145	66786	5	2155	66866	20	1960	900				QPSK	1	49	15	1745	132322	40	0	24.8	24.4	-0.4	14
CA-2A-66C (0)	2A	66C	66C		20	1960	900	20	2145	66786	20	2165	66986				QPSK	1	49	20	1880	18900	60	0	24.8	24.0	-0.8	14
	66C	66C	2A		20	2145	66786	20	2165	66986	20	1960	900				QPSK	1	49	20	1745	132322	60	0	24.8	24.6	-0.2	14
CA_4A-4A-7A (0) (1)	4A	4A	7A		20	2132.5	2175	20	2132.5	2175	20	2655	3100				QPSK	1	49	20	1732.5	20175	40	0	24.8	24.6	-0.2	13
	7A	4A	4A		20	2655	3100	20	2132.5	2175	20	2132.5	2175				QPSK	1	49	20	2535	21100	40	0	24.7	23.9	-0.8	13
CA_4A-4A-13A (0)	4A	4A	13A		20	2132.5	2175	20	2132.5	2175	10	751	5230				QPSK	1	49	20	1732.5	20175	50	0	24.8	24.6	-0.2	12
	13A	4A	4A		10	751	5230	20	2132.5	2175	20	2132.5	2175				QPSK	1	24	10	782	23230	50	0	24.5	24.4	-0.1	12
CA_4A-12B (0)	4A	12B	12B		20	2132.5	2175	10	737.5	5095	5A	745	5170				QPSK	1	49	20	1732.5	20175	35	0	24.8	24.5	-0.3	12
	12B	12B	4A		10	737.5	5095	5	745	5170	20	2132.5	2175				QPSK	1	24	10	707.5	23095	35	0	24.7	24.7	0.0	12
CA_4A-17A (0)	4A	17A			20	2132.5	2175	10	740	5790							QPSK	1	49	20	1732.5	20175	20	0	24.8	24.5	-0.3	11
	17A	4A			10	740	5790	20	2132.5	2175							QPSK	1	24	10	710	23790	20	0	24.7	24.0	-0.7	11
CA_5A-7A (0) (1)	5A	7A			10	881.5	2525	20	2655	3100							QPSK	1	24	10	836.5	20525	30	0	24.8	24.0	-0.8	13
	7A	5A			20	2655	3100	10	881.5	2525							QPSK	1	49	20	2535	21100	30	0	24.7	23.9	-0.8	13
CA_5A-25A (0)	5A	25A			10	881.5	2525	20	1962.5	8365							QPSK	1	24	10	836.5	20525	30	0	24.8	24.0	-0.8	12
	25A	5A			20	1962.5	8365	10	881.5	2525							QPSK	1	49	20	1882.5	26365	30	0	24.8	24.0	-0.8	12
CA_7A-12A (0)	7A	12A			20	2655	3100	10	737.5	5095							QPSK	1	49	20	2535	21100	30	0	24.7	24.0	-0.7	12
	12A	7A			10	737.5	5095	20	2655	3100							QPSK	1	24	10	707.5	23095	30	0	24.7	24.1	-0.6	12
CA_12A-66C (0)	12A	66C	66C		10	737.5	5095	20	2145	66786	20	2165	66986				QPSK	1	24	10	707.5	23095	50	0	24.7	24.7	0.0	14
	66C	66C	12A		20	2145	66786	20	2165	66986	10	737.5	5095				QPSK	1	49	20	1745	132322	50	0	24.8	24.6	-0.2	14
CA_13A-66A (0)	13A	66A			10	751	5230	20	2145	66786							QPSK	1	24	10	782	23230	30	0	24.5	24.0	-0.5	14
	66A	13A			20	2145	66786	10	751	5230							QPSK	1	49	20	1745	132322	30	0	24.8	24.5	-0.3	14
CA_25A-26A (0) (1) (2)	25A	26A			20	1962.5	8365	10	876.5	8865							QPSK	1	49	20	1882.5	26365	35	0	24.8	24.0	-0.8	13
	26A	25A			10	876.5	8865	20	1962.5	8365							QPSK	1	24	10	831.5	26865	35	0	24.8	24.3	-0.4	13

DL Inter-Band (3 Bands, 3 CC and 4 CC)

E-UTRA CA configuration (BCS)	Bands				DL												UL											
	PCC	SCC	TCC	QCC	PCC			SCC			TCC			QCC			PCC											
	1st	2nd	3rd	4th	BW	Freq	Ch	BW	Freq	Ch	BW	Freq	Ch	BW	Freq	Ch	Modulatio	RB	Offset	BW	Freq	Ch	Aggregated BW	MPR	CA Inactive	CA Active	Delta	3GPP Rel. #
CA_2A-4A-13A (0)	2A	4A	13A		20	1960	900	20	2132.5	2175	10	751	5230				QPSK	1	49	20	1880	18900	50	0	24.8	23.9	-0.9	12
	4A	13A	2A		20	2132.5	2175	10	751	5230	20	1960	900				QPSK	1	49	20	1732.5	20175	50	0	24.8	24.3	-0.5	12
	13A	2A	4A		10	751	5230	20	1960	900	20	2132.5	2175				QPSK	1	24	10	782	23230	50	0	24.5	24.6	0.1	12
CA_2C-5A-30A (0)	2C	2C	5A	30A	20	1960	900	20	1980	1100	10	881.5	2525	10	2355	9820	QPSK	1	49	20	1880	18900	60	0	24.8	23.8	-1.0	13
	5A	30A	2C	2C	10	881.5	2525	10	2355	9820	20	1960	900	20	1980	1100	QPSK	1	24	10	836.5	20525	60	0	24.8	24.6	-0.2	13
	30A	2C	2C	5A	10	2355	9820	20	1960	900	20	1980	1100	10	881.5	2525	QPSK	1	24	10	2310	27710	60	0	23.0	23.0	0.0	13
CA_2C-12A-30A (0)	2C	2C	12A	30A	20	1960	900	20	1980	1100	10	737.5	5095	10	2355	9820	QPSK	1	49	20	1880	18900	60	0	24.8	23.8	-1.0	13
	12A	30A	2C	2C	10	737.5	5095	10	2355	9820	20	1960	900	20	1980	1100	QPSK	1	24	10	707.5	23095	60	0	24.7	24.6	-0.1	13
	30A	2C	2C	12A	10	2355	9820	20	1960	900	20	1980	1100	10	737.5	5095	QPSK	1	24	10	2310	27710	60	0	23.0	23.0	0.0	13
CA_2A-13A-66A (0)	2A	13A	66A		20	1960	900	10	751	5230	20	2145	66786				QPSK	1	49	20	1880	18900	50	0	24.8	23.9	-0.9	14
	13A	66A	2A		10	751	5230	20	2145	66786	20	1960	900				QPSK	1	24	10	782	23230	50	0	24.5	24.6	0.1	14
	66A	2A	13A		20	2145	66786	20	1960	900	10	751	5230				QPSK	1	49	20	1745	132322	50	0	24.8	24.5	-0.3	14
CA_2C-29A-30A (0)	2C	2C	29A	30A	20	1960	900	20	1980	1100	10	722.5	9715	10	2355	9820	QPSK	1	49	20	1880	18900	60	0	24.8	23.9	-0.9	13
	29A	30A	2C	2C	10	722.5	9715	10	2355	9820	20	1960	900	20	1980	1100	QPSK	1	24	10	DL Only	DL Only	60	0	DL Only	DL Only	DL Only	13
	30A	2C	2C	29A	10	2355	9820	20	1960	900	20	1980	1100	10	722.5	9715	QPSK	1	24	10	2310	27710	60	0	23.0	23.0	0.0	13
CA_4A-7A-12A (0) (1)	4A	7A	12A		20	2132.5	2175	20	2655	3100	10	737.5	5095				QPSK	1	49	20	1732.5	20175	50	0	24.8	24.4	-0.4	13
	7A	12A	4A		20	2655	3100	10	737.5	5095	20	2132.5	2175				QPSK	1	49	20	2535	21100	50	0	24.7	23.7	-1.0	13
	12A	4A	7A		10	737.5	5095	20	2132.5	2175	20	2655	3100				QPSK	1	24	10	707.5	23095	50	0	24.7	24.6	-0.1	13
CA_5A-30A-66A (0)	5A	30A	66A		10	881.5	2525	10	2355	9820	20	2145	66786				QPSK	1	24	10	836.5	20525	40	0	24.8	24.6	-0.2	14
	30A	66A	5A		10	2355	9820	20	2145	66786	10	881.5	2525				QPSK	1	24	10	2310	27710	40	0	23.0	23.0	0.0	14
	66A	5A	30A		20	2145	66786	10	881.5	2525	10	2355	9820				QPSK	1	49	20	1745	132322	40	0	24.8	24.5	-0.3	14

DL Inter-Band (4 Bands, 4CC)

E-UTRA CA configuration (BCS)	Bands				DL												UL														
	PCC	SCC	TCC	QCC	PCC			SCC			TCC			QCC			PCC														
	1st	2nd	3rd	4th	BW	Freq	Ch	BW	Freq	Ch	BW	Freq	Ch	BW	Freq	Ch	Modulation	RB	Offset	BW	Freq	Ch	Aggregated BW	MPR	CA Inactive	CA Active	Delta	3GPP Rel. #			
CA_2A-4A-5A-30A (0)	2A	4A	5A	30A	20	1960	900	20	2132.5	2175	10	881.5	2525	10	2355	9820	20	1960	900	QPSK	1	49	20	1880	18900	60	0	24.8	23.8	-1.0	13
	4A	5A	30A	2A	20	2132.5	2175	10	881.5	2525	10	2355	9820	20	1960	900	QPSK	1	49	20	1732.5	20175	60	0	24.8	24.4	-0.4	13			
	5A	30A	2A	4A	10	881.5	2525	10	2355	9820	20	1960	900	20	2132.5	2175	QPSK	1	24	10	836.5	20525	60	0	24.8	24.7	-0.1	13			
	30A	2A	4A	5A	10	2355	9820	20	1960	900	20	2132.5	2175	10	881.5	2525	QPSK	1	24	10	2310	27710	60	0	23.0	23.0	0.0	13			
CA2A-4A-12A-30A (0)	2A	4A	12A	30A	20	1960	900	20	2132.5	2175	10	737.5	5095	10	2355	9820	20	1960	900	QPSK	1	49	20	1880	18900	60	0	24.8	23.8	-1.0	13
	4A	12A	30A	2A	20	2132.5	2175	10	737.5	5095	10	2355	9820	20	1960	900	QPSK	1	49	20	1732.5	20175	60	0	24.8	24.4	-0.4	13			
	12A	30A	2A	4A	10	737.5	5095	10	2355	9820	20	1960	900	20	2132.5	2175	QPSK	1	24	10	707.5	23095	60	0	24.7	24.7	0.0	13			
	30A	2A	4A	12A	10	2355	9820	20	1960	900	20	2132.5	2175	10	737.5	5095	QPSK	1	24	10	2310	27710	60	0	23.0	23.0	0.0	13			
CA_2A-4A-29A-30A (0)	2A	4A	29A	30A	20	1960	900	20	2132.5	2175	10	722.5	9715	10	2355	9820	20	1960	900	QPSK	1	49	20	1880	18900	60	0	24.8	23.8	-1.0	13
	4A	29A	30A	2A	20	2132.5	2175	10	722.5	9715	10	2355	9820	20	1960	900	QPSK	1	49	20	1732.5	20175	60	0	24.8	24.4	-0.4	13			
	29A	30A	2A	4A	10	722.5	9715	10	2355	9820	20	1960	900	20	2132.5	2175	QPSK	1	24	10	DL Only	DL Only	60	0	DL Only	DL Only	DL Only	13			
	30A	2A	4A	29A	10	2355	9820	20	1960	900	20	2132.5	2175	10	722.5	9715	QPSK	1	24	10	2310	27710	60	0	23.0	23.0	0.0	13			
CA_2A-5A-30A-66A (0)	2A	5A	30A	66A	20	1960	900	10	881.5	2525	10	2355	9820	20	2145	66786	20	1960	900	QPSK	1	49	20	1880	18900	60	0	24.8	23.8	-1.0	14
	5A	30A	66A	2A	10	881.5	2525	10	2355	9820	20	2145	66786	20	1960	900	QPSK	1	24	10	836.5	20525	60	0	24.8	23.8	-1.0	14			
	30A	66A	2A	5A	10	2355	9820	20	2145	66786	20	1960	900	10	881.5	2525	QPSK	1	24	10	2310	27710	60	0	23.0	23.0	0.0	14			
	66A	2A	5A	30A	20	2145	66786	20	1960	900	10	881.5	2525	10	2355	9820	QPSK	1	49	20	1745	132322	60	0	24.8	24.3	-0.5	14			
CA_2A-12A-30A-66A (0)	2A	12A	30A	66A	20	1960	900	10	737.5	5095	10	2355	9820	20	2145	66786	20	1960	900	QPSK	1	49	20	1880	18900	60	0	24.8	23.8	-1.0	14
	12A	30A	66A	2A	10	737.5	5095	10	2355	9820	20	2145	66786	20	1960	900	QPSK	1	24	10	707.5	23095	60	0	24.7	24.7	0.0	14			
	30A	66A	2A	12A	10	2355	9820	20	2145	66786	20	1960	900	10	737.5	5095	QPSK	1	24	10	2310	27710	60	0	23.0	23.0	0.0	14			
	66A	2A	12A	30A	20	2145	66786	20	1960	900	10	737.5	5095	10	2355	9820	QPSK	1	49	20	1745	132322	60	0	24.8	24.3	-0.5	14			

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.

E-UTRA CA configuration (BCS)		
DL Intra-Band Non-Contiguous	DL Intra-Band Contiguous	UL Intra-Band Contiguous
CA_2A-2A (0)	CA_2C (0)	CA_7C (0) (1) (2)
CA_4A_4A (0) (1)	CA_7B (0)	CA_41C (0) (1) (2) (3)
CA_7A_7A (0) (1) (2) (3)	CA_7C (0) (1) (2)	
CA_25A_25A (0) (1)	CA_12B (0)	
CA_41A-41A (0) (1)	CA_41C (0) (1) (2) (3)	
CA_41A-41C (0)	CA_41D (0)	
CA_41C_41A (0)	CA_66B (0)	
CA_66A-66A (0)	CA_66C (0)	

DL Intra-Band Non-Contiguous

E-UTRA CA configuration (BCS)	Bands				DL												UL											
	PCC	SCC	TCC	QCC	PCC			SCC			TCC			QCC			PCC											
	1st	2nd	3rd	4th	BW	Freq	Ch	BW	Freq	Ch	BW	Freq	Ch	BW	Freq	Ch	Modulatio	RB	Offset	BW	Freq	Ch	Aggregated BW	MPR	CA Inactive	CA Active	Delta	3GPP Rel. #
CA_2A-2A(0)	2A	2A			20	1940	700	20	1980	1100							QPSK	1	49	20	1860	18700	40	0	24.8	24.1	-0.7	12
CA_4A_4A(0)(1)	4A	4A			20	2120	2050	20	2145	2300							QPSK	1	49	20	1720	20050	40	0	24.8	24.1	-0.7	12
CA_7A_7A(0)(1)(2)(3)	7A	7A			20	2630	2850	20	2680	3350							QPSK	1	49	20	2510	20850	40	0	24.7	23.7	-1.0	12
CA_25A_25A(0)(1)	25A	25A			20	1940	8140	20	1985	8590							QPSK	1	49	20	1860	26140	40	0	24.7	24.1	-0.6	12
CA_41A-41A(0)(1)	41A	41A			20	2506	39750	20	2680	41490							QPSK	1	49	20	2506	39750	40	0	24.5	24.0	-0.5	12
CA_41A-41C(0)	41A	41C	41C		20	2506	39750	20	2660	41290	20	2680	41490				QPSK	1	49	20	2506	39750	60	0	24.5	24.0	-0.5	12
CA_41C_41A(0)	41C	41C	41A		20	2506	39750	20	2526	39950	20	2680	41490				QPSK	1	49	20	2506	39750	60	0	24.5	24.0	-0.5	12
CA_66A-66A(0)	66A	66A			20	2120	66536	20	2170	67035							QPSK	1	49	20	1720	132072	40	0	24.7	24.3	-0.4	13

DL Intra-Band Contiguous

E-UTRA CA configuration (BCS)	Bands				DL												UL											
	PCC	SCC	TCC	QCC	PCC			SCC			TCC			QCC			PCC											
	1st	2nd	3rd	4th	BW	Freq	Ch	BW	Freq	Ch	BW	Freq	Ch	BW	Freq	Ch	Modulation	RB	Offset	BW	Freq	Ch	Aggregated BW	MPR	CA Inactive	CA Active	Delta	3GPP Rel. #
CA_2C (0)	2C	2C			20	1960	900	20	1980	1100							QPSK	1	49	20	1880	18900	40	0	24.8	24.1	-0.7	12
CA_7B (0)	7B	7B			15	2655	3100	5	2665	3200							QPSK	1	36	15	2535	21100	20	0	24.7	23.8	-0.9	13
CA_7C (0) (1) (2)	7C	7C			20	2655	3100	20	2675	3300							QPSK	1	49	20	2535	21100	40	0	24.7	23.7	-1.0	13
CA_12B (0)	12B	12B			10	737.5	5095	5	745	5170							QPSK	1	24	10	707.5	23095	15	0	24.7	24.0	-0.7	12
CA_41C (0) (1) (2) (3)	41C	41C			20	2593	40620	20	2613	40820							QPSK	1	49	20	2593	40620	40	0	24.5	24.0	-0.5	13
CA_41D (0)	41D	41D	41D		20	2593	40620	20	2613	40820	20	2633	41020				QPSK	1	49	20	2593	40620	60	0	24.5	24.0	-0.5	12
CA_66B (0)	66B	66B			15	2145	66786	5	2155	66886							QPSK	1	49	20	1745	132322	20	0	24.8	24.3	-0.5	13
CA_66C (0)	66C	66C			20	2145	66786	20	2165	66986							QPSK	1	49	20	1745	132322	40	0	24.8	24.3	-0.5	13

Uplink CA shall be tested based on the worst-case SAR configuration determined from non-CA SAR testing result. The channel BW, channel number, RB allocation, etc. would be selected to allow contiguous CA of PCC and SCC. One SAR configuration will be selected for UAT and one SAR configuration will be selected for LAT for each supported CA configuration. Uplink output power for UL CA is the total power measured across the PCC and SCC.

UL CA power measurements were performed for both antennas (UAT 1 and LAT 1) at with QPSK modulation based on the worst-case standalone SAR. The tune-up limits are provided in Section 6.3 of this report.

The UL CA mode power measurements represent the total power across both carriers. Measurements were made for all supported PCC bandwidths using the channel/RB combination resulting in the highest standalone output power at the least MPR (0 dB). SCCs were set to use configurations similar to the PCC to establish conservative or worst case equivalent SAR test conditions (highest maximum power with MPR of 0 dB).

The standalone power measurement is the power for the PCC in the non-CA mode (i.e. single carrier power). In all cases the UL CA power is less than or equal to the standalone power, which is in accordance with the tune-up limits in Section 6.3 of this report.

LTE-uplink 2CA Band 7 Measured Power Results for SAR testing (Refer to Section. 10.18.)

RF Exposure Conditions	Antenna	E-UTRA CA configuration (BCS)	Bands		DL						UL																						
			PCC	SCC	PCC			SCC			PCC						SCC						MPR	Standalone		PCC+SCC							
					1st	2nd	BW	Freq	Ch	BW	Freq	Ch	Modulation	RB	Offset	BW	Freq	Ch	Modulation	RB	Offset	BW		Freq	Ch	PCC CA Inactive	SCC CA Inactive	Aggregated BW	MPR	Tune-Up Limit	CA Power (Total PCC+SCC)	Delta	3GPP Rel. #
Head	UAT1	CA 7C (0) (1) (2)	7C	7C	20	2630	2850	20	2649.8	3048	QPSK	1	99	20	2510	20850	QPSK	1	0	20	2529.8	21048	0	17.6	17.6	40	0	18.0	17.3	-0.3	13		
Head	UAT1	CA 7C (0) (1) (2)	7C	7C	20	2655	3100	20	2674.8	3298	QPSK	1	99	20	2535	21100	QPSK	1	0	20	2554.8	21298	0	17.7	17.7	40	0	18.0	17.3	-0.4	13		
Head	UAT1	CA 7C (0) (1) (2)	7C	7C	20	2680	3350	20	2660.2	3152	QPSK	1	0	20	2560	21350	QPSK	1	99	20	2540.2	21152	0	17.5	17.5	40	0	18.0	17.4	-0.1	13		
Body-worn	LAT1	CA 7C (0) (1) (2)	7C	7C	20	2630	2850	20	2649.8	3048	QPSK	1	99	20	2510	20850	QPSK	1	0	20	2529.8	21048	0	17.9	17.9	40	0	18.5	17.7	-0.2	13		
Body-worn	LAT1	CA 7C (0) (1) (2)	7C	7C	20	2655	3100	20	2674.8	3298	QPSK	1	99	20	2535	21100	QPSK	1	0	20	2554.8	21298	0	17.8	17.8	40	0	18.5	17.8	0.0	13		
Body-worn	LAT1	CA 7C (0) (1) (2)	7C	7C	20	2680	3350	20	2660.2	3152	QPSK	1	0	20	2560	21350	QPSK	1	99	20	2540.2	21152	0	17.9	17.9	40	0	18.5	17.7	-0.2	13		

LTE-uplink 2CA Band 41 Measured Power Results for SAR testing (Refer to Section. 10.19.)

RF Exposure Conditions	Antenna	E-UTRA CA configuration (BCS)	Bands		DL						UL																				
			PCC	SCC	PCC			SCC			PCC						SCC						MPR	Standalone		PCC+SCC					
1st	2nd	BW	Freq	Ch	BW	Freq	Ch	Modulation	RB	Offset	BW	Freq	Ch	Modulation	RB	Offset	BW	Freq	Ch	PCC CA Inactive	SCC CA Inactive	Aggregated BW	MPR	Tune-Up Limit	CA Power (Total PCC+SCC)	Delta	3GPP Rel. #				
Head	UAT 1	CA 41C (0) (1) (2) (3)	41C	41C	20	2506	39750	20	2525.8	39948	QPSK	1	99	20	2506	39750	QPSK	1	0	20	2525.8	39948	0	18.1	18.1	40	0	18.3	18.0	-0.1	13
Head	UAT 1	CA 41C (0) (1) (2) (3)	41C	41C	20	2550	40185	20	2569.3	40383	QPSK	1	99	20	2550	40185	QPSK	1	0	20	2569.3	40383	0	18.1	18.1	40	0	18.3	18.1	0.0	13
Head	UAT 1	CA 41C (0) (1) (2) (3)	41C	41C	20	2593	40620	20	2612.8	40818	QPSK	1	99	20	2593	40620	QPSK	1	0	20	2612.8	40818	0	18.1	18.1	40	0	18.3	18.0	-0.1	13
Head	UAT 1	CA 41C (0) (1) (2) (3)	41C	41C	20	2637	41055	20	2656.3	41253	QPSK	1	99	20	2637	41055	QPSK	1	0	20	2656.3	41253	0	18.1	18.1	40	0	18.3	18.1	0.0	13
Head	UAT 1	CA 41C (0) (1) (2) (3)	41C	41C	20	2680	41490	20	2660.2	41292	QPSK	1	0	20	2680	41490	QPSK	1	99	20	2660.2	41292	0	18.2	18.2	40	0	18.3	18.2	0.0	13
Body-worn	LAT 1	CA 41C (0) (1) (2) (3)	41C	41C	20	2506	39750	20	2525.8	39948	QPSK	1	99	20	2506	39750	QPSK	1	0	20	2525.8	39948	0	20.5	20.5	40	0	20.8	20.4	-0.1	13
Body-worn	LAT 1	CA 41C (0) (1) (2) (3)	41C	41C	20	2550	40185	20	2569.3	40383	QPSK	1	99	20	2550	40185	QPSK	1	0	20	2569.3	40383	0	20.6	20.6	40	0	20.8	20.4	-0.2	13
Body-worn	LAT 1	CA 41C (0) (1) (2) (3)	41C	41C	20	2593	40620	20	2612.8	40818	QPSK	1	99	20	2593	40620	QPSK	1	0	20	2612.8	40818	0	20.6	20.6	40	0	20.8	20.5	-0.1	13
Body-worn	LAT 1	CA 41C (0) (1) (2) (3)	41C	41C	20	2637	41055	20	2656.3	41253	QPSK	1	0	20	2637	41055	QPSK	1	99	20	2616.7	40857	0	20.6	20.6	40	0	20.8	20.4	-0.2	13
Body-worn	LAT 1	CA 41C (0) (1) (2) (3)	41C	41C	20	2680	41490	20	2660.2	41292	QPSK	1	0	20	2680	41490	QPSK	1	99	20	2660.2	41292	0	20.6	20.6	40	0	20.8	20.3	-0.3	13

9.5. WLAN SISO (P_{Cell_ON})

Power measurements were performed in accordance to the device's two power modes, Mode A and Mode B for each antenna. Mode A power is used when the device is used against the user's head or away from the body. Mode B power is used when the device is used in a Body-Worn configuration by the user. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing. Test reductions have applied accordingly following the SAR KDB Procedure for the supported wireless technologies of the DUT. This is noted for the Wi-Fi technology in their respective Sections.

For 2.4 & 5GHz band, there are two use cases:

- P_{Cell_ON}: This will be used when both Cellular and Wi-Fi radios are ON.
- P_{Cell_OFF}: This will be used when only Wi-Fi radio is ON

Measured Results

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	MODE A				MODE B			
					UAT 1		LAT 3		UAT 1		LAT 3	
					Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)
2.4	802.11b	1 Tx	1	2412	12.0	11.8	17.3	17.3	16.5	16.4	13.5	13.5
			6	2437	12.0	11.8	17.3	17.3	16.5	16.5	13.5	13.5
			11	2462	12.0	11.8	17.3	17.3	16.5	16.4	13.5	13.5
Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	MODE A				MODE B			
					UAT 2		LAT 3		UAT 2		LAT 3	
					Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)
5.2	802.11ac	1 Tx VHT80	42	5210	6.0	5.8	Not required	Not required	13.8	13.8	10.0	10.0
5.3	802.11a	1 Tx	52	5260	Not required	Not required	19.0	19.0	Not required	Not required	Not required	Not required
			56	5280			19.0	19.0				
			60	5300			19.0	19.0				
			64	5320			17.0	17.0				
5.5	802.11ac	1 Tx VHT80	106	5530	5.0	5.0	15.0	15.0	13.8	13.8	11.0	11.0
			122	5610	5.0	5.0	18.5	18.5	13.8	13.8	11.0	11.0
			138	5690	5.0	5.0	18.5	18.5	13.8	13.8	11.0	11.0
5.8	802.11ac	1 Tx VHT80	155	5775	4.5	4.5	18.5	18.5	11.8	11.8	12.0	12.0

Note(s):

1. 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 802.11a/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.

9.6. WLAN MIMO (P_{Cell_ON})

Power measurements were performed in accordance to the device's two power modes, Mode A and Mode B for each antenna. Mode A power is used when the device is used against the user's head or away from the body. Mode B power is used when the device is used in a Body-Worn configuration by the user. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing. Test reductions have applied accordingly following the SAR KDB Procedure for the supported wireless technologies of the DUT. This is noted for the Wi-Fi technology in their respective Sections.

For 2.4 & 5GHz band, there are two use cases:

- P_{Cell_ON}: This will be used when both Cellular and Wi-Fi radios are ON.
- P_{Cell_OFF}: This will be used when only Wi-Fi radio is ON

Measured Results

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	MODE A				MODE B			
					UAT 1		LAT 3		UAT 1		LAT 3	
					Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)
2.4	802.11g	2 Tx CDD	2	2417	12.0	12.0	17.0	17.0	16.5	16.5	13.5	13.5
			6	2437	12.0	12.0	17.0	17.0	16.5	16.5	13.5	13.5
			9	2452	12.0	12.0	17.0	17.0	16.5	16.5	13.5	13.5
			10	2457	12.0	12.0	16.5	16.5	16.5	16.5	13.5	13.5
Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	MODE A				MODE B			
					UAT 2		LAT 3		UAT 2		LAT 3	
					Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)
5.2	802.11n	2 Tx HT40 CDD/STBC/SDM	38	5190	6.0	5.9	14.0	14.0	13.8	13.7	10.0	10.0
			46	5230	6.0	6.0	18.5	17.5	13.8	13.8	10.0	10.0
5.5	802.11ac	2 Tx VHT80 CDD/STBC/SDM	106	5530	5.0	5.0	14.0	14.0	13.8	13.8	11.0	11.0
			122	5610	5.0	5.0	18.5	18.0	13.8	13.8	11.0	11.0
			138	5690	5.0	5.0	18.5	18.0	13.8	13.8	11.0	11.0
5.8	802.11a	2 Tx HT 40 CDD/STBC/SDM	151	5755	4.5	4.5	18.5	18.3	Not required	Not required	Not required	Not required
			159	5795	4.5	4.5	18.5	18.3				
	802.11ac	2 Tx VHT80 CDD/STBC/SDM	155	5775	Not required	Not required	Not required	Not required	11.8	11.7	12.0	12.0

Note(s):

1. 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 802.11a/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.

9.7. WLAN SISO (P_{Cell_OFF})

Power measurements were performed in accordance to the device's two power modes, Mode A and Mode B for each antenna. Mode A power is used when the device is used against the user's head or away from the body. Mode B power is used when the device is used in a Body-Worn configuration by the user. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing. Test reductions have applied accordingly following the SAR KDB Procedure for the supported wireless technologies of the DUT. This is noted for the Wi-Fi technology in their respective Sections.

For 2.4 & 5GHz band, there are two use cases:

- P_{Cell_ON}: This will be used when both Cellular and Wi-Fi radios are ON.
- P_{Cell_OFF}: This will be used when only Wi-Fi radio is ON

Measured Results

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	MODE A				MODE B			
					UAT 1		LAT 3		UAT 1		LAT 3	
					Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)
2.4	802.11b	1 Tx	1	2412	17.3	17.3	20.0	20.0	19.8	19.8	18.8	18.8
			2	2417	17.3	17.3	21.5	21.5	19.8	19.8	18.8	18.8
			6	2437	17.3	17.3	21.5	21.5	19.8	19.8	18.8	18.8
			10	2457	17.3	17.3	21.5	21.5	19.8	19.8	18.8	18.8
			11	2462	17.3	17.3	21.0	21.0	19.8	19.7	18.8	18.8
Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	MODE A				MODE B			
					UAT 2		LAT 3		UAT 2		LAT 3	
					Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)
5.2	802.11n	1 Tx HT40	38	5190	Not required	Not required	Not required	Not required	15.5	15.5	15.5	15.5
	802.11ac	1 Tx VHT80	42	5210	13.8	13.8	Not required	Not required	18.0	18.0	16.8	16.4
5.3	802.11a	1 Tx	52	5260	Not required	Not required	21.0	21.0	Not required	Not required	Not required	Not required
			56	5280			21.0	21.0				
			60	5300			19.5	19.5				
			64	5320			17.0	17.0				
5.5	802.11a	1 Tx	108	5540	Not required	Not required	21.0	21.0	Not required	Not required	Not required	Not required
			120	5600			21.0	21.0				
			132	5660			21.0	21.0				
	802.11ac	1 Tx VHT80	106	5530	12.8	12.6	Not required	Not required	15.0	15.0	15.0	15.0
			122	5610	12.8	12.6			18.0	17.8	18.0	17.7
			138	5690	12.8	12.6			18.0	17.8	18.0	17.8
5.8	802.11a	1 Tx	153	5765	Not required	Not required	21.0	20.0	Not required	Not required	Not required	Not required
			157	5785			21.0	20.0				
			161	5805			21.0	19.8				
	802.11ac	1 Tx VHT80	155	5775	12.3	12.3	Not required	Not required	16.0	15.8	18.8	18.7

Note(s):

- 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 802.11a/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.

9.8. WLAN MIMO (P_{Cell_OFF})

Power measurements were performed in accordance to the device's two power modes, Mode A and Mode B for each antenna. Mode A power is used when the device is used against the user's head or away from the body. Mode B power is used when the device is used in a Body-Worn configuration by the user. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing. Test reductions have applied accordingly following the SAR KDB Procedure for the supported wireless technologies of the DUT. This is noted for the Wi-Fi technology in their respective Sections.

For 2.4 & 5GHz band, there are two use cases:

- P_{Cell_ON}: This will be used when both Cellular and Wi-Fi radios are ON.
- P_{Cell_OFF}: This will be used when only Wi-Fi radio is ON

Measured Results

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	MODE A				MODE B			
					UAT 1		LAT 3		UAT 1		LAT 3	
					Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)
2.4	802.11g	2 Tx CDD	4	2427	17.3	17.3	21.0	20.0	19.8	19.0	18.8	18.8
			6	2437	17.3	17.3	21.0	20.0	19.8	19.0	18.8	18.8
			8	2447	17.3	17.3	21.0	20.0	19.8	19.0	18.8	18.8
Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	MODE A				MODE B			
					UAT 2		LAT 3		UAT 2		LAT 3	
					Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)
5.2	802.11n	2 Tx HT40 CDD/STBC/SDM	38	5190	13.8	13.8	14.0	14.0	14.0	14.0	14.0	14.0
			46	5230	13.8	13.8	18.5	18.5	18.0	17.7	16.8	16.8
5.5	802.11n	2 Tx HT40 CDD/STBC/SDM	110	5550	12.8	12.7	18.5	18.5	Not required	Not required	Not required	Not required
			118	5590	12.8	12.7	19.5	19.4				
			142	5710	12.8	12.7	19.5	19.5				
	802.11ac	2 Tx VHT80 CDD/STBC/SDM	106	5530	Not required	Not required	Not required	Not required	14.0	14.0	14.0	14.0
			122	5610					18.0	18.0	17.8	17.7
			138	5690					18.0	18.0	17.8	17.8
5.8	802.11a	2 Tx CDD	153	5765	12.3	12.3	21.0	21.0	Not required	Not Required	Not required	Not Required
			157	5785	12.3	12.3	21.0	21.0				
			161	5805	12.3	12.3	21.0	21.0				
	802.11n	2 Tx HT40 CDD/STBC/SDM	151	5755	Not required	Not Required	Not required	Not Required	16.0	16.0	18.8	18.8
			159	5795					16.0	16.0	18.8	18.8

Note(s):

1. 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 802.11a/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.

9.9. Bluetooth

Power measurements were performed in accordance to the device's two power modes, Mode A and Mode B for each antenna. Mode A power is used when the device is used against the user's head or away from the body. Mode B power is used when the device is used in a Body-Worn configuration by the user. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

Measured Results

P_{low}

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	MODE A				MODE B			
					UAT 1		LAT 3		UAT 1		LAT 3	
					Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)
2.4	V 5.0 + EDR, GFSK	1 Tx	0	2402	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
			39	2441	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
			78	2480	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

P_{high}

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	MODE A				MODE B			
					UAT 1		LAT 3		UAT 1		LAT 3	
					Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)
2.4	V 5.0 + EDR, GFSK	1 Tx	0	2402	12.0	12.0	16.5	16.5	13.5	13.0	13.5	12.5
			39	2441	12.0	12.0	16.5	16.5	13.5	13.0	13.5	12.5
			78	2480	12.0	12.0	16.5	16.5	13.5	13.0	13.5	12.5

$P_{standalone}$

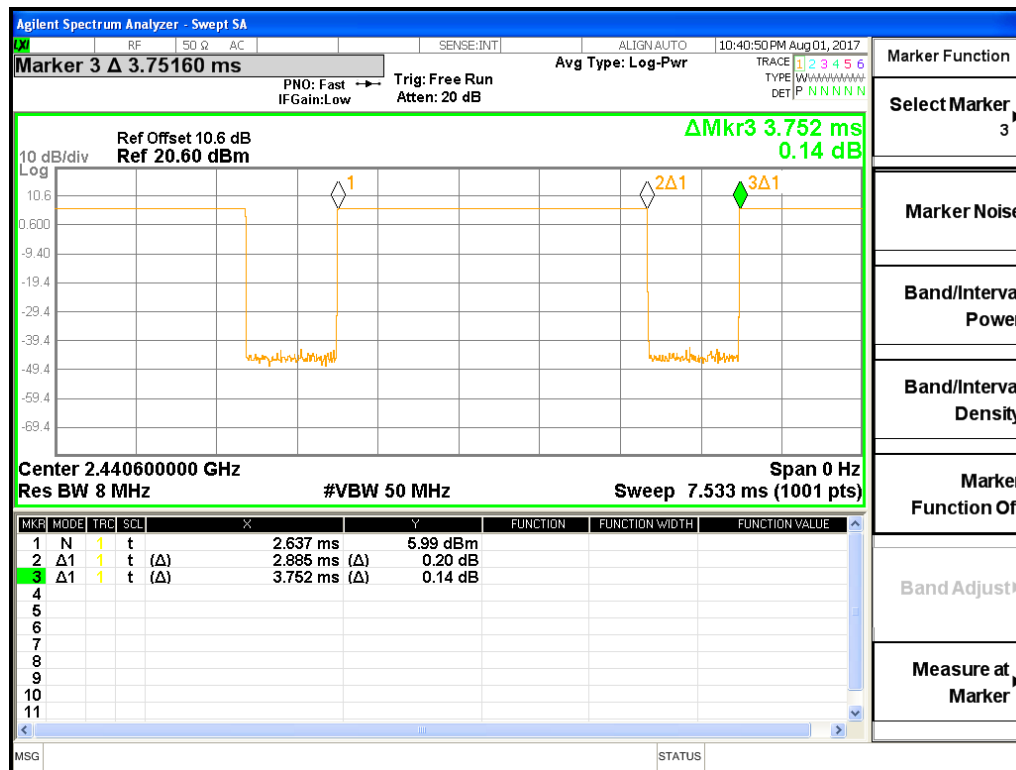
Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	MODE A				MODE B			
					UAT 1		LAT 3		UAT 1		LAT 3	
					Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)	Max. Power Limit (dBm)	Measured Results (dBm)
2.4	V 5.0 + EDR, GFSK	1 Tx	0	2402	14.5	14.5	19.5	19.5	16.5	16.0	16.5	16.0
			39	2441	14.5	14.5	19.5	19.5	16.5	16.0	16.5	16.1
			78	2480	14.5	14.5	19.5	19.5	16.5	16.0	16.5	16.0

Notes:

1. Bluetooth P_{high} is used when Wi-Fi antenna is active and Cellular antenna is inactive.
2. Bluetooth P_{low} is used with Wi-Fi and Cellular antennas are active or with Wi-Fi inactive and Cellular antenna is active.
3. Bluetooth $P_{standalone}$ is used with Wi-Fi and Cellular antennas are inactive.

Duty Factor Measured Results

Mode	Type	T on (ms)	Period (ms)	Duty Cycle	Crest Factor (1/duty cycle)
GFSK	DH5	2.885	3.752	76.89%	1.30

GFSK Duty Cycle plot

10. Measured and Reported (Scaled) SAR Results

SAR Testing was performed based on the power measurement results from Sec. 9. Output power from both power modes: Mode A and Mode B were applied for each respective antenna. Mode A power is used when the device is used against the user's head, or away from the body. Mode B is used when the device is used in a body-worn configuration by the user. Mode C is used when the device is placed on a proprietary Apple wireless charger, as described in Sec. 6.3.5. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

Test Tables were organized and labeled by antenna, UAT 1 and LAT 1 for cellular technologies. And for Wi-Fi/Bluetooth technologies, Test Tables were organized and labeled by power configuration and antenna (UAT 1 (Wi-Fi 2.4 GHz), UAT 2 (Wi-Fi 5 GHz), and LAT 3 (Wi-Fi-BT 2.4/5 GHz). Applicable SAR Test Reductions have been applied accordingly following the SAR KDB Procedure as follows:

GENERAL:

1. Reference from 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

2. Reference from 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.

3. Reference from KDB 648474 D04 Handset SAR (Phablet Only):

This device qualifies as a phablet (display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm as applicable), and phablet procedures have been applied. Extremity SAR (10g SAR) is not required as the 1 g SAR values at 5 mm for hotspot mode are all less than 1.2 W/kg.

WIRELESS TECHNOLOGY:

4. Reference 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

5. Reference from KDB 941225 D05 SAR for LTE Devices:

SAR test reduction is applied using the following criteria:

- a) 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.
- b) 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.
- c) 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.
- d) 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.
- e) 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.
- f) 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.

6. Reference from 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 closest/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

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed on each antenna – UAT 1 and LAT 1 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

UAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	GPRS 2 Slots	0	Left Touch	190	836.6	29.8	29.4	0.667	0.723	0.497	0.539	
			Left Tilt	190	836.6	29.8	29.4	0.468	0.507	0.278	0.301	
			Right Touch	128	824.2	29.8	29.4	0.731	0.792	0.492	0.533	
				190	836.6	29.8	29.4	0.752	0.815	0.506	0.548	1
			251	848.8	29.8	29.4	0.745	0.808	0.500	0.542		
			Right Tilt	190	836.6	29.8	29.4	0.538	0.583	0.315	0.341	
Body-worn & Hotspot	GPRS 2 Slots	5	Rear	190	836.6	29.8	29.4	0.670	0.726	0.445	0.482	
			Front	190	836.6	29.8	29.4	0.680	0.737	0.446	0.483	
Hotspot			Edge 1	190	836.6	29.8	29.4	0.220	0.238	0.108	0.117	
			Edge 2	190	836.6	29.8	29.4	0.429	0.465	0.283	0.307	
			Edge 4	190	836.6	29.8	29.4	0.353	0.383	0.228	0.247	

LAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	GPRS 2 Slots	0	Left Touch	190	836.6	32.3	32.3	0.247	0.244	0.190	0.188	
			Left Tilt	190	836.6	32.3	32.3	0.099	0.098	0.078	0.077	
			Right Touch	190	836.6	32.3	32.3	0.191	0.189	0.148	0.146	
			Right Tilt	190	836.6	32.3	32.3	0.099	0.098	0.078	0.077	
Body-worn & Hotspot	GPRS 2 Slots	5	Rear	128	824.2	32.3	32.3	0.865	0.865	0.473	0.473	
				190	836.6	32.3	32.3	1.060	1.060	0.583	0.583	
				251	848.8	32.3	32.3	1.070	1.070	0.582	0.582	2
			Front	128	824.2	32.3	32.3	0.803	0.803	0.448	0.448	
				190	836.6	32.3	32.3	0.893	0.893	0.493	0.493	
				251	848.8	32.3	32.3	0.981	0.981	0.540	0.540	
Hotspot			Edge 2	190	836.6	32.3	32.3	0.287	0.287	0.187	0.187	
			Edge 3	190	836.6	32.3	32.3	0.647	0.647	0.301	0.301	
			Edge 4	190	836.6	32.3	32.3	0.740	0.740	0.487	0.487	

10.2. GSM1900

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed on each antenna – UAT 1 and LAT 1 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

UAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head VoIP	GPRS 2 Slots	0	Left Touch	661	1880.0	25.3	24.8	0.406	0.450	0.224	0.248	
			Left Tilt	661	1880.0	25.3	24.8	0.487	0.540	0.254	0.282	
			Right Touch	512	1850.2	25.3	25.1	0.815	0.844	0.451	0.467	
				661	1880.0	25.3	24.8	0.914	1.014	0.507	0.562	3
			Right Tilt	810	1909.8	25.3	24.8	0.805	0.893	0.450	0.499	
				512	1850.2	25.3	25.1	0.861	0.891	0.427	0.442	
				661	1880.0	25.3	24.8	0.884	0.981	0.441	0.489	
Body-worn(VoIP) & Hotspot	GPRS 2 Slots	5	Rear	661	1880.0	26.8	26.7	0.665	0.673	0.363	0.367	
			Front	512	1850.2	26.8	26.7	0.796	0.805	0.420	0.425	
				661	1880.0	26.8	26.7	0.811	0.820	0.433	0.438	
				810	1909.8	26.8	26.6	0.783	0.811	0.419	0.434	
Hotspot	GPRS 2 Slots	5	Edge 1	661	1880.0	26.8	26.7	0.460	0.465	0.253	0.256	
			Edge 2	661	1880.0	26.8	26.7	0.032	0.032	0.018	0.018	
			Edge 4	661	1880.0	26.8	26.7	0.573	0.580	0.319	0.323	

LAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head VoIP	GPRS 2 Slots	0	Left Touch	661	1880.0	30.3	30.3	0.147	0.147	0.097	0.097	
			Left Tilt	661	1880.0	30.3	30.3	0.078	0.078	0.046	0.046	
			Right Touch	661	1880.0	30.3	30.3	0.299	0.299	0.184	0.184	
			Right Tilt	661	1880.0	30.3	30.3	0.088	0.088	0.050	0.050	
Body-worn(VoIP) & Hotspot	GPRS 2 Slots	5	Rear	512	1850.2	27.5	27.5	1.070	1.070	0.558	0.558	4
				661	1880.0	27.5	27.5	1.050	1.050	0.547	0.547	
				810	1909.8	27.5	27.5	1.040	1.040	0.538	0.538	
			Front	512	1850.2	27.5	27.5	1.070	1.070	0.577	0.577	
				661	1880.0	27.5	27.5	1.050	1.050	0.565	0.565	
				810	1909.8	27.5	27.5	0.912	0.912	0.492	0.492	
Hotspot	GPRS 2 Slots	5	Edge 2	661	1880.0	27.5	27.5	0.708	0.708	0.396	0.396	
			Edge 3	512	1850.2	27.5	27.5	0.948	0.948	0.435	0.435	
				661	1880.0	27.5	27.5	0.808	0.808	0.362	0.362	
				810	1909.8	27.5	27.5	0.826	0.826	0.352	0.352	
			Edge 4	661	1880.0	27.5	27.5	0.081	0.081	0.045	0.045	

10.3. W-CDMA Band V

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed on each antenna – UAT 1 and LAT 1 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

UAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	Rel 99 RMC	0	Left Touch	4132	826.4	23.8	23.8	0.932	0.932	0.688	0.688	
				4183	836.6	23.8	23.8	1.030	1.030	0.744	0.744	
				4233	846.6	23.8	23.8	0.996	0.996	0.731	0.731	
			Left Tilt	4183	836.6	23.8	23.8	0.659	0.659	0.361	0.361	
				4132	826.4	23.8	23.8	1.050	1.050	0.714	0.714	
				4183	836.6	23.8	23.8	1.060	1.060	0.704	0.704	
				4233	846.6	23.8	23.8	1.090	1.090	0.734	0.734	5
Body-worn & Hotspot	Rel 99 RMC	5	Rear	4183	836.6	23.8	23.8	0.429	0.429	0.292	0.292	
			Front	4183	836.6	23.8	23.8	0.531	0.531	0.349	0.349	
Hotspot	Rel 99 RMC	5	Edge 1	4183	836.6	23.8	23.8	0.184	0.184	0.090	0.090	
			Edge 2	4183	836.6	23.8	23.8	0.357	0.357	0.234	0.234	
			Edge 4	4183	836.6	23.8	23.8	0.247	0.247	0.162	0.162	

LAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	Rel 99 RMC	0	Left Touch	4183	836.6	24.8	24.8	0.433	0.433	0.332	0.332	
			Left Tilt	4183	836.6	24.8	24.8	0.179	0.179	0.140	0.140	
			Right Touch	4183	836.6	24.8	24.8	0.357	0.357	0.276	0.276	
			Right Tilt	4183	836.6	24.8	24.8	0.160	0.160	0.125	0.125	
Body-worn & Hotspot	Rel 99 RMC	5	Rear	4132	826.4	24.8	24.8	0.880	0.880	0.472	0.472	
				4183	836.6	24.8	24.8	0.969	0.969	0.516	0.516	
				4233	846.6	24.8	24.8	1.020	1.020	0.545	0.545	6
			Front	4132	826.4	24.8	24.8	0.803	0.803	0.422	0.422	
				4183	836.6	24.8	24.8	0.867	0.867	0.454	0.454	
				4233	846.6	24.8	24.8	0.908	0.908	0.475	0.475	
Hotspot	Rel 99 RMC	5	Edge 2	4183	836.6	24.8	24.8	0.224	0.224	0.146	0.146	
			Edge 3	4183	836.6	24.8	24.8	0.533	0.533	0.246	0.246	
			Edge 4	4183	836.6	24.8	24.8	0.630	0.630	0.409	0.409	

10.4. W-CDMA Band IV

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed on each antenna – UAT 1 and LAT 1 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

UAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	Rel 99 RMC	0	Left Touch	1413	1732.6	19.0	19.0	0.703	0.703	0.381	0.381	7
			Left Tilt	1413	1732.6	19.0	19.0	0.634	0.634	0.338	0.338	
			Right Touch	1312	1712.4	19.0	18.8	0.923	0.966	0.488	0.511	
				1413	1732.6	19.0	19.0	1.010	1.010	0.538	0.538	
			Right Tilt	1513	1752.6	19.0	18.8	0.976	1.022	0.525	0.550	
Body-worn & Hotspot	Rel 99 RMC	5	Rear	1413	1732.6	19.0	19.0	0.763	0.763	0.380	0.380	
				1312	1712.4	21.0	20.8	0.751	0.786	0.402	0.421	
				1413	1732.6	21.0	21.0	0.848	0.848	0.450	0.450	
			Front	1513	1752.6	21.0	20.8	0.802	0.840	0.426	0.446	
				1413	1732.6	21.0	21.0	0.798	0.798	0.412	0.412	
Hotspot	Rel 99 RMC	5	Edge 1	1413	1732.6	21.0	21.0	0.700	0.700	0.359	0.359	
			Edge 2	1413	1732.6	21.0	21.0	0.031	0.031	0.018	0.018	
			Edge 4	1413	1732.6	21.0	21.0	0.545	0.545	0.300	0.300	

LAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	Rel 99 RMC	0	Left Touch	1413	1732.6	25.3	24.4	0.525	0.638	0.340	0.414	
			Left Tilt	1413	1732.6	25.3	24.4	0.190	0.231	0.113	0.137	
			Right Touch	1413	1732.6	25.3	24.4	0.349	0.424	0.232	0.282	
			Right Tilt	1413	1732.6	25.3	24.4	0.228	0.277	0.141	0.171	
Body-worn & Hotspot	Rel 99 RMC	5	Rear	1312	1712.4	21.0	21.0	0.646	0.646	0.371	0.371	
				1413	1732.6	21.0	20.9	0.793	0.811	0.404	0.413	
				1513	1752.6	21.0	21.0	0.838	0.838	0.421	0.421	
			Front	1312	1712.4	21.0	21.0	0.721	0.721	0.387	0.387	
				1413	1732.6	21.0	20.9	0.784	0.802	0.411	0.421	
				1513	1752.6	21.0	21.0	0.854	0.854	0.438	0.438	
Hotspot	Rel 99 RMC	5	Edge 2	1413	1732.6	21.0	20.9	0.691	0.707	0.371	0.380	8
			Edge 3	1312	1712.4	21.0	21.0	0.959	0.959	0.480	0.480	
				1413	1732.6	21.0	20.9	1.020	1.044	0.507	0.519	
				1513	1752.6	21.0	21.0	1.050	1.050	0.519	0.519	
			Edge 4	1413	1732.6	21.0	20.9	0.289	0.296	0.166	0.170	

10.5. W-CDMA Band II

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed on each antenna – UAT 1 and LAT 1 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

UAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	Rel 99 RMC	0	Left Touch	9400	1880.0	18.8	18.5	0.479	0.507	0.260	0.275	
			Left Tilt	9400	1880.0	18.8	18.5	0.526	0.557	0.270	0.286	
			Right Touch	9262	1852.4	18.8	18.5	0.943	0.999	0.520	0.551	
				9400	1880.0	18.8	18.5	0.977	1.035	0.546	0.578	9
				9538	1907.6	18.8	18.7	0.994	1.006	0.557	0.563	
			Right Tilt	9262	1852.4	18.8	18.5	0.873	0.925	0.435	0.461	
				9400	1880.0	18.8	18.5	0.925	0.980	0.464	0.491	
				9538	1907.6	18.8	18.7	0.953	0.964	0.479	0.485	
Body-worn & Hotspot	Rel 99 RMC	5	Rear	9400	1880.0	20.3	20.3	0.698	0.698	0.375	0.375	
			Front	9262	1852.4	20.3	20.3	0.719	0.719	0.378	0.378	
				9400	1880.0	20.3	20.3	0.800	0.800	0.425	0.425	
				9538	1907.6	20.3	20.3	0.881	0.881	0.467	0.467	
Hotspot	Rel 99 RMC	5	Edge 1	9400	1880.0	20.3	20.3	0.518	0.518	0.270	0.270	
			Edge 2	9400	1880.0	20.3	20.3	0.037	0.037	0.021	0.021	
			Edge 4	9400	1880.0	20.3	20.3	0.601	0.601	0.328	0.328	

LAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	Rel 99 RMC	0	Left Touch	9400	1880.0	25.3	25.0	0.422	0.447	0.278	0.294	
			Left Tilt	9400	1880.0	25.3	25.0	0.225	0.238	0.131	0.139	
			Right Touch	9262	1852.4	25.3	25.0	0.653	0.692	0.412	0.436	
				9400	1880.0	25.3	25.0	0.765	0.810	0.476	0.504	
			Right Tilt	9538	1907.6	25.3	25.2	0.836	0.846	0.518	0.524	
				9400	1880.0	25.3	25.0	0.226	0.239	0.131	0.139	
Body-worn & Hotspot	Rel 99 RMC	5	Rear	9262	1852.4	20.8	20.6	0.944	0.977	0.488	0.505	
				9400	1880.0	20.8	20.6	0.856	0.886	0.447	0.463	
				9538	1907.6	20.8	20.6	1.040	1.077	0.532	0.551	10
			Front	9262	1852.4	20.8	20.6	0.775	0.802	0.420	0.435	
				9400	1880.0	20.8	20.6	0.773	0.800	0.421	0.436	
				9538	1907.6	20.8	20.6	0.780	0.807	0.422	0.437	
Hotspot	Rel 99 RMC	5	Edge 2	9400	1880.0	20.8	20.6	0.617	0.639	0.341	0.353	
			Edge 3	9262	1852.4	20.8	20.6	0.789	0.817	0.351	0.363	
				9400	1880.0	20.8	20.6	0.724	0.749	0.323	0.334	
				9538	1907.6	20.8	20.6	0.730	0.756	0.322	0.333	
			Edge 4	9400	1880.0	20.8	20.6	0.096	0.099	0.052	0.054	

10.6. LTE Band 2 (20MHz Bandwidth)

SAR for LTE Band 2 (Frequency range: 1850 - 1910 MHz) is covered by LTE Band 25 (Frequency range: 1850 - 1915 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

10.7. LTE Band 4 (20MHz Bandwidth)

SAR for LTE Band 4 (Frequency range: 1710 - 1755 MHz) is covered by LTE Band 66 (Frequency range: 1710 - 1780 MHz) due to overlapping frequency range, same maximum tune-up limit and similar channel bandwidth.

10.8. LTE Band 5 (10MHz Bandwidth)

SAR for LTE Band 5 (Frequency range: 824 - 849 MHz) is covered by LTE Band 26 (Frequency range: 814 – 849 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel

10.9. LTE Band 7 (20MHz Bandwidth)

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed on each antenna – UAT 1 and LAT 1 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

UAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	QPSK	0	Left Touch	21100	2535.0	1	49	18.0	17.7	0.287	0.308	0.127	0.136	
						50	24	18.0	17.7	0.286	0.306	0.131	0.140	
			Left Tilt	21100	2535.0	1	49	18.0	17.7	0.286	0.306	0.128	0.137	
						50	24	18.0	17.7	0.278	0.298	0.124	0.133	
			Right Touch	20850	2510.0	1	49	18.0	17.6	0.878	0.963	0.398	0.436	
						50	24	18.0	17.7	0.920	0.986	0.417	0.447	
				21100	2535.0	1	49	18.0	17.7	0.827	0.886	0.367	0.393	
						50	24	18.0	17.7	0.936	1.003	0.414	0.444	
						100	24	18.0	17.7	0.920	0.986	0.409	0.438	
				21350	2560.0	1	49	18.0	17.7	0.922	0.988	0.398	0.426	
						50	24	18.0	17.6	0.985	1.080	0.422	0.463	11
			Right Tilt	20850	2510.0	1	49	18.0	17.6	0.834	0.914	0.337	0.370	
						50	24	18.0	17.7	0.868	0.930	0.351	0.376	
				21100	2535.0	1	49	18.0	17.7	0.882	0.945	0.348	0.373	
						50	24	18.0	17.7	0.893	0.957	0.356	0.381	
						100	24	18.0	17.7	0.875	0.938	0.357	0.383	
				21350	2560.0	1	49	18.0	17.7	0.910	0.975	0.355	0.380	
						50	24	18.0	17.6	0.901	0.988	0.361	0.396	
Body-worn & Hotspot	QPSK	5	Rear	21100	2535.0	1	49	19.8	19.4	0.683	0.740	0.317	0.344	
						50	24	19.8	19.4	0.724	0.785	0.334	0.362	
			Front	21100	2535.0	1	49	19.8	19.4	0.620	0.672	0.288	0.312	
						50	24	19.8	19.4	0.593	0.643	0.275	0.298	
Hotspot	QPSK	5	Edge 1	21100	2535.0	1	49	19.8	19.4	0.348	0.377	0.118	0.128	
						50	24	19.8	19.4	0.322	0.349	0.110	0.119	
			Edge 2	21100	2535.0	1	49	19.8	19.4	0.089	0.096	0.042	0.046	
						50	24	19.8	19.4	0.091	0.099	0.042	0.046	
			Edge 4	21100	2535.0	1	49	19.8	19.4	0.517	0.560	0.248	0.269	
						50	24	19.8	19.4	0.516	0.559	0.248	0.269	

LAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	QPSK	0	Left Touch	20850	2510.0	1	49	24.8	24.7	0.880	0.890	0.489	0.495	
						50	24	23.8	23.8	0.751	0.751	0.417	0.417	
				21100	2535.0	1	49	24.8	24.7	0.769	0.778	0.415	0.420	
						50	24	23.8	23.8	0.657	0.657	0.355	0.355	
						100	0	23.8	23.8	0.656	0.656	0.353	0.353	
				21350	2560.0	1	49	24.8	24.5	0.886	0.938	0.485	0.514	
						50	24	23.8	23.8	0.761	0.761	0.417	0.417	
			Left Tilt	21100	2535.0	1	49	24.8	24.7	0.204	0.206	0.122	0.123	
						50	24	23.8	23.8	0.174	0.174	0.104	0.104	
			Right Touch	21100	2535.0	1	49	24.8	24.7	0.320	0.324	0.182	0.184	
						50	24	23.8	23.8	0.297	0.297	0.169	0.169	
			Right Tilt	21100	2535.0	1	49	24.8	24.7	0.249	0.252	0.135	0.137	
						50	24	23.8	23.8	0.287	0.287	0.151	0.151	
Body-worn & Hotspot	QPSK	5	Rear	20850	2510.0	1	49	18.5	17.9	0.831	0.954	0.348	0.400	
						50	24	18.5	18.0	0.853	0.957	0.355	0.398	
				21100	2535.0	1	49	18.5	17.9	0.768	0.882	0.323	0.371	
						50	24	18.5	17.9	0.841	0.966	0.351	0.403	
						100	0	18.5	17.9	0.846	0.971	0.352	0.404	
				21350	2560.0	1	49	18.5	18.0	0.829	0.930	0.350	0.393	
						50	24	18.5	18.0	0.853	0.957	0.338	0.379	
			Front	20850	2510.0	1	49	18.5	17.9	0.823	0.945	0.339	0.389	
						50	24	18.5	18.0	0.876	0.983	0.351	0.394	
				21100	2535.0	1	49	18.5	17.9	0.826	0.948	0.339	0.389	
						50	24	18.5	17.9	0.873	1.002	0.347	0.398	12
						100	0	18.5	17.9	0.768	0.882	0.315	0.362	
				21350	2560.0	1	49	18.5	18.0	0.842	0.945	0.347	0.389	
						50	24	18.5	18.0	0.889	0.997	0.353	0.396	
Hotspot	QPSK	5	Edge 2	21100	2535.0	1	49	18.5	17.9	0.073	0.083	0.033	0.038	
						50	24	18.5	17.9	0.023	0.026	0.009	0.011	
			Edge 3	21100	2535.0	1	49	18.5	17.9	0.445	0.511	0.179	0.206	
						50	24	18.5	17.9	0.541	0.621	0.216	0.248	
			Edge 4	21100	2535.0	1	49	18.5	17.9	0.393	0.451	0.168	0.193	
						50	24	18.5	17.9	0.438	0.503	0.186	0.214	

10.10. LTE Band 12 (10MHz Bandwidth)

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed on each antenna – UAT 1 and LAT 1 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

UAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	QPSK	0	Left Touch	23095	707.5	1	24	23.3	23.3	0.617	0.617	0.467	0.467	13
						25	12	22.3	22.3	0.513	0.513	0.387	0.387	
			Left Tilt	23095	707.5	1	24	23.3	23.3	0.539	0.539	0.306	0.306	
						25	12	22.3	22.3	0.436	0.436	0.248	0.248	
			Right Touch	23095	707.5	1	24	23.3	23.3	0.715	0.715	0.465	0.465	
						25	12	22.3	22.3	0.593	0.593	0.385	0.385	
			Right Tilt	23095	707.5	1	24	23.3	23.3	0.530	0.530	0.299	0.299	
						25	12	22.3	22.3	0.440	0.440	0.248	0.248	
Body-worn & Hotspot	QPSK	5	Rear	23095	707.5	1	24	23.3	23.3	0.278	0.278	0.177	0.177	
						25	12	22.3	22.3	0.232	0.232	0.149	0.149	
			Front	23095	707.5	1	24	23.3	23.3	0.311	0.311	0.202	0.202	
						25	12	22.3	22.3	0.252	0.252	0.163	0.163	
Hotspot	QPSK	5	Edge 1	23095	707.5	1	24	23.3	23.3	0.164	0.164	0.079	0.079	
						25	12	22.3	22.3	0.133	0.133	0.064	0.064	
			Edge 2	23095	707.5	1	24	23.3	23.3	0.337	0.337	0.229	0.229	
						25	12	22.3	22.3	0.290	0.290	0.196	0.196	
			Edge 4	23095	707.5	1	24	23.3	23.3	0.173	0.173	0.117	0.117	
						25	12	22.3	22.3	0.143	0.143	0.097	0.097	

LAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	QPSK	0	Left Touch	23095	707.5	1	24	24.8	24.7	0.268	0.271	0.212	0.214	
						25	12	23.8	23.8	0.239	0.239	0.189	0.189	
			Left Tilt	23095	707.5	1	24	24.8	24.7	0.124	0.125	0.101	0.102	
						25	12	23.8	23.8	0.110	0.110	0.090	0.090	
			Right Touch	23095	707.5	1	24	24.8	24.7	0.246	0.249	0.196	0.198	
						25	12	23.8	23.8	0.216	0.216	0.172	0.172	
			Right Tilt	23095	707.5	1	24	24.8	24.7	0.130	0.132	0.106	0.107	
						25	12	23.8	23.8	0.117	0.117	0.095	0.095	
Body-worn & Hotspot	QPSK	5	Rear	23095	707.5	1	24	24.8	24.7	0.721	0.729	0.422	0.427	14
						25	12	23.8	23.8	0.646	0.646	0.377	0.377	
			Front	23095	707.5	1	24	24.8	24.7	0.643	0.650	0.371	0.375	
						25	12	23.8	23.8	0.552	0.552	0.326	0.326	
Hotspot	QPSK	5	Edge 2	23095	707.5	1	24	24.8	24.7	0.374	0.378	0.251	0.254	
						25	12	23.8	23.8	0.334	0.334	0.225	0.225	
			Edge 3	23095	707.5	1	24	24.8	24.7	0.403	0.408	0.197	0.199	
						25	12	23.8	23.8	0.318	0.318	0.159	0.159	
			Edge 4	23095	707.5	1	24	24.8	24.7	0.667	0.675	0.454	0.459	
						25	12	23.8	23.8	0.599	0.599	0.407	0.407	

10.11. LTE Band 13 (10MHz Bandwidth)

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed on each antenna – UAT 1 and LAT 1 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

UAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	QPSK	0	Left Touch	23230	782.0	1	24	23.3	23.1	0.661	0.684	0.482	0.499	15
						25	12	22.3	22.1	0.540	0.559	0.387	0.401	
			Left Tilt	23230	782.0	1	24	23.3	23.1	0.591	0.612	0.328	0.340	
						25	12	22.3	22.1	0.474	0.491	0.262	0.271	
			Right Touch	23230	782.0	1	24	23.3	23.1	0.767	0.794	0.486	0.503	
						25	12	22.3	22.1	0.618	0.640	0.391	0.405	
			Right Tilt	23230	782.0	1	24	23.3	23.1	0.620	0.642	0.347	0.359	
						25	12	22.3	22.1	0.488	0.505	0.273	0.283	
Body-worn & Hotspot	QPSK	5	Rear	23230	782.0	1	24	23.3	23.1	0.484	0.501	0.313	0.324	
						25	12	22.3	22.1	0.407	0.421	0.247	0.256	
			Front	23230	782.0	1	24	23.3	23.1	0.366	0.379	0.261	0.270	
						25	12	22.3	22.1	0.374	0.387	0.237	0.245	
Hotspot	QPSK	5	Edge 1	23230	782.0	1	24	23.3	23.1	0.282	0.292	0.134	0.139	
						25	12	22.3	22.1	0.207	0.214	0.097	0.100	
			Edge 2	23230	782.0	1	24	23.3	23.1	0.377	0.390	0.252	0.261	
						25	12	22.3	22.1	0.311	0.322	0.207	0.214	
			Edge 4	23230	782.0	1	24	23.3	23.1	0.270	0.279	0.178	0.184	
						25	12	22.3	22.1	0.218	0.226	0.144	0.149	

LAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	QPSK	0	Left Touch	23230	782.0	1	24	24.8	24.5	0.334	0.354	0.263	0.279	
						25	12	23.8	23.8	0.274	0.274	0.216	0.216	
			Left Tilt	23230	782.0	1	24	24.8	24.5	0.198	0.210	0.159	0.168	
						25	12	23.8	23.8	0.166	0.166	0.133	0.133	
			Right Touch	23230	782.0	1	24	24.8	24.5	0.301	0.319	0.234	0.248	
						25	12	23.8	23.8	0.249	0.249	0.193	0.193	
			Right Tilt	23230	782.0	1	24	24.8	24.5	0.118	0.125	0.093	0.099	
						25	12	23.8	23.8	0.127	0.127	0.101	0.101	
Body-worn & Hotspot	QPSK	5	Rear	23230	782.0	1	24	24.8	24.5	0.927	0.982	0.514	0.544	16
						25	12	23.8	23.8	0.816	0.816	0.450	0.450	
						50	0	23.8	23.8	0.875	0.875	0.491	0.491	
			Front	23230	782.0	1	24	24.8	24.5	0.829	0.878	0.466	0.494	
Hotspot	QPSK	5				1	24	24.8	24.5	0.722	0.722	0.405	0.405	
						25	12	23.8	23.8	0.284	0.301	0.187	0.198	
			Edge 2	23230	782.0	1	24	24.8	24.5	0.284	0.301	0.187	0.198	
						25	12	23.8	23.8	0.248	0.248	0.163	0.163	
			Edge 3	23230	782.0	1	24	24.8	24.5	0.660	0.699	0.310	0.328	
						25	12	23.8	23.8	0.587	0.587	0.274	0.274	
			Edge 4	23230	782.0	1	24	24.8	24.5	0.696	0.737	0.462	0.489	
						25	12	23.8	23.8	0.603	0.603	0.401	0.401	

10.12. LTE Band 17 (10MHz Bandwidth)

SAR for LTE Band 17 (Frequency range: 704 – 716 MHz) is covered by LTE Band 12 (Frequency range: 699 – 716 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

10.13. LTE Band 25 (20MHz Bandwidth)

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed on each antenna – UAT 1 and LAT 1 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

UAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	QPSK	0	Left Touch	26365	1882.5	1	49	18.8	18.8	0.559	0.559	0.302	0.302	
						50	24	18.8	18.8	0.504	0.504	0.272	0.272	
			Left Tilt	26365	1882.5	1	49	18.8	18.8	0.525	0.525	0.275	0.275	
						50	24	18.8	18.8	0.558	0.558	0.290	0.290	
			Right Touch	26140	1860.0	1	49	18.8	18.5	0.983	1.041	0.540	0.572	
						50	24	18.8	18.5	0.916	0.970	0.508	0.538	
				26365	1882.5	1	49	18.8	18.8	1.060	1.060	0.600	0.600	17
						50	24	18.8	18.8	0.877	0.877	0.487	0.487	
						100	0	18.8	18.8	0.916	0.916	0.512	0.512	
				26590	1905.0	1	49	18.8	18.5	0.991	1.050	0.538	0.570	
						50	24	18.8	18.7	0.935	0.946	0.522	0.528	
			Right Tilt	26140	1860.0	1	49	18.8	18.5	0.986	1.044	0.494	0.523	
						50	24	18.8	18.5	0.953	1.009	0.482	0.511	
				26365	1882.5	1	49	18.8	18.8	0.932	0.932	0.469	0.469	
						50	24	18.8	18.8	0.904	0.904	0.458	0.458	
						100	0	18.8	18.8	0.960	0.960	0.487	0.487	
				26590	1905.0	1	49	18.8	18.5	0.998	1.057	0.502	0.532	
						50	24	18.8	18.7	0.958	0.969	0.486	0.492	
Body-worn & Hotspot	QPSK	5	Rear	26365	1882.5	1	49	20.3	20.0	0.730	0.782	0.392	0.420	
						50	24	20.0	20.0	0.618	0.618	0.332	0.332	
			Front	26140	1860.0	1	49	20.3	20.0	0.807	0.865	0.431	0.462	
				26365	1882.5	1	49	20.3	20.0	0.772	0.827	0.837	0.897	
				26590	1905.0	1	49	20.3	20.0	0.804	0.862	0.431	0.462	
Hotspot	QPSK	5	Edge 1	26365	1882.5	1	49	20.3	20.0	0.489	0.524	0.259	0.278	
						50	24	20.0	20.0	0.439	0.439	0.238	0.238	
			Edge 2	26365	1882.5	1	49	20.3	20.0	0.040	0.043	0.022	0.024	
						50	24	20.0	20.0	0.041	0.041	0.023	0.023	
			Edge 4	26365	1882.5	1	49	20.3	20.0	0.651	0.698	0.356	0.381	
						50	24	20.0	20.0	0.546	0.546	0.300	0.300	

LAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	QPSK	0	Left Touch	26365	1882.5	1	49	24.8	24.8	0.265	0.265	0.177	0.177	
						50	24	23.8	23.8	0.211	0.211	0.142	0.142	
			Left Tilt	26365	1882.5	1	49	24.8	24.8	0.176	0.176	0.106	0.106	
						50	24	23.8	23.8	0.141	0.141	0.085	0.085	
			Right Touch	26365	1882.5	1	49	24.8	24.8	0.670	0.670	0.422	0.422	
						50	24	23.8	23.8	0.545	0.545	0.343	0.343	
			Right Tilt	26365	1882.5	1	49	24.8	24.8	0.199	0.199	0.112	0.112	
						50	24	23.8	23.8	0.161	0.161	0.092	0.092	
Body-worn & Hotspot	QPSK	5	Rear	26140	1860.0	1	49	20.8	20.0	0.865	1.028	0.455	0.541	
						50	24	20.8	20.0	0.848	1.008	0.436	0.518	
				26365	1882.5	1	49	20.8	20.0	0.888	1.055	0.462	0.549	
						50	24	20.8	19.7	0.820	1.044	0.423	0.539	
						100	0	20.8	19.7	0.790	1.006	0.404	0.514	
				26590	1905.0	1	49	20.8	20.0	0.790	0.939	0.415	0.493	
						50	24	20.8	19.9	0.799	0.972	0.411	0.500	
						100	0	20.8	19.7	0.799	0.972	0.411	0.500	
			Front	26140	1860.0	1	49	20.8	20.0	0.901	1.071	0.478	0.568	18
						50	24	20.8	20.0	0.657	0.781	0.355	0.422	
				26365	1882.5	1	49	20.8	20.0	0.827	0.983	0.443	0.527	
						50	24	20.8	19.7	0.745	0.949	0.398	0.507	
						100	0	20.8	19.7	0.656	0.835	0.348	0.443	
				26590	1905.0	1	49	20.8	20.0	0.841	1.000	0.446	0.530	
						50	24	20.8	19.9	0.613	0.746	0.326	0.396	
						100	0	20.8	19.7	0.613	0.746	0.326	0.396	
Hotspot	QPSK	5	Edge 2	26365	1882.5	1	49	20.8	20.0	0.640	0.761	0.359	0.427	
						50	24	20.8	19.7	0.537	0.684	0.300	0.382	
			Edge 3	26365	1882.5	1	49	20.8	20.0	0.638	0.758	0.288	0.342	
						50	24	20.8	19.7	0.615	0.783	0.274	0.349	
			Edge 4	26365	1882.5	1	49	20.8	20.0	0.081	0.096	0.044	0.052	
						50	24	20.8	19.7	0.072	0.091	0.039	0.050	

10.14. LTE Band 26 (10MHz Bandwidth)

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed on each antenna – UAT 1 and LAT 1 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

UAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	QPSK	0	Left Touch	26740	819.0	1	24	23.3	23.3	0.786	0.786	0.590	0.590	
				26865	831.5	1	24	23.3	23.3	0.876	0.876	0.655	0.655	
						25	12	22.3	22.3	0.760	0.760	0.568	0.568	
				26990	844.0	1	24	23.3	23.3	0.914	0.914	0.682	0.682	
			Left Tilt	26865	831.5	1	24	23.3	23.3	0.602	0.602	0.334	0.334	
						25	12	22.3	22.3	0.487	0.487	0.272	0.272	
			Right Touch	26740	819.0	1	24	23.3	23.3	0.810	0.810	0.546	0.546	
						25	12	22.3	22.3	0.810	0.810	0.545	0.545	
				26865	831.5	1	24	23.3	23.3	1.080	1.080	0.730	0.730	19
						25	12	22.3	22.3	0.903	0.903	0.604	0.604	
						50	0	22.3	22.3	0.903	0.903	0.608	0.608	
				26990	844.0	1	24	23.3	23.3	1.080	1.080	0.719	0.719	
						25	12	22.3	22.3	0.926	0.926	0.623	0.623	
			Right Tilt	26865	831.5	1	24	23.3	23.3	0.618	0.618	0.379	0.379	
						25	12	22.3	22.3	0.510	0.510	0.312	0.312	
Body-worn & Hotspot	QPSK	5	Rear	26865	831.5	1	24	23.3	23.3	0.425	0.425	0.289	0.289	
						25	12	22.3	22.3	0.350	0.350	0.229	0.229	
			Front	26865	831.5	1	24	23.3	23.3	0.487	0.487	0.325	0.325	
						25	12	22.3	22.3	0.395	0.395	0.262	0.262	
Hotspot	QPSK	5	Edge 1	26865	831.5	1	24	23.3	23.3	0.155	0.155	0.077	0.077	
						25	12	22.3	22.3	0.132	0.132	0.064	0.064	
			Edge 2	26865	831.5	1	24	23.3	23.3	0.321	0.321	0.212	0.212	
						25	12	22.3	22.3	0.263	0.263	0.174	0.174	
			Edge 4	26865	831.5	1	24	23.3	23.3	0.198	0.198	0.130	0.130	
						25	12	22.3	22.3	0.162	0.162	0.106	0.106	

LAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	QPSK	0	Left Touch	26865	831.5	1	24	24.8	24.8	0.433	0.433	0.323	0.323	
						25	12	23.8	23.8	0.370	0.370	0.281	0.281	
			Left Tilt	26865	831.5	1	24	24.8	24.8	0.185	0.185	0.145	0.145	
						25	12	23.8	23.8	0.157	0.157	0.124	0.124	
			Right Touch	26865	831.5	1	24	24.8	24.8	0.322	0.322	0.252	0.252	
						25	12	23.8	23.8	0.274	0.274	0.215	0.215	
			Right Tilt	26865	831.5	1	24	24.8	24.8	0.210	0.210	0.161	0.161	
						25	12	23.8	23.8	0.180	0.180	0.138	0.138	
Body-worn & Hotspot	QPSK	5	Rear	26740	819.0	1	24	24.8	24.8	0.870	0.870	0.508	0.508	
						25	12	23.8	23.8	0.760	0.760	0.442	0.442	
				26865	831.5	1	24	24.8	24.8	1.070	1.070	0.597	0.597	
						25	12	23.8	23.8	0.913	0.913	0.507	0.507	
				26990	844.0	50	0	23.8	23.8	0.928	0.928	0.514	0.514	
						1	24	24.8	24.8	1.090	1.090	0.593	0.593	20
			Front	26740	819.0	1	24	24.8	24.8	0.789	0.789	0.450	0.450	
						25	12	23.8	23.8	0.955	0.955	0.527	0.527	
				26865	831.5	1	24	24.8	24.8	0.916	0.916	0.515	0.515	
						25	12	23.8	23.8	0.768	0.768	0.430	0.430	
				26990	844.0	1	24	24.8	24.8	0.860	0.860	0.482	0.482	
						25	12	23.8	23.8	0.768	0.768	0.430	0.430	
Hotspot	QPSK	5	Edge 2	26865	831.5	1	24	24.8	24.8	0.242	0.242	0.159	0.159	
						25	12	23.8	23.8	0.208	0.208	0.136	0.136	
			Edge 3	26865	831.5	1	24	24.8	24.8	0.583	0.583	0.275	0.275	
						25	12	23.8	23.8	0.446	0.446	0.213	0.213	
			Edge 4	26740	819.0	1	24	24.8	24.6	0.575	0.595	0.380	0.393	
						1	24	24.8	24.8	0.801	0.801	0.527	0.527	
				26865	831.5	25	12	23.8	23.8	0.689	0.689	0.453	0.453	
						1	24	24.8	24.8	0.671	0.671	0.441	0.441	
				26990	844.0	1	24	24.8	24.8	0.671	0.671	0.441	0.441	

10.15. LTE Band 30 (10MHz Bandwidth)

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed on each antenna – UAT 1 and LAT 1 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

UAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	QPSK	0	Left Touch	27710	2310.0	1	24	17.3	16.9	0.381	0.413	0.194	0.210	21
						25	12	17.3	17.0	0.305	0.323	0.155	0.164	
			Left Tilt	27710	2310.0	1	24	17.3	16.9	0.384	0.416	0.187	0.203	
						25	12	17.3	17.0	0.304	0.322	0.144	0.153	
			Right Touch	27710	2310.0	1	24	17.3	16.9	0.897	0.972	0.443	0.480	
						25	12	17.3	17.0	0.730	0.773	0.348	0.369	
			Right Tilt	27710	2310.0	1	24	17.3	16.9	0.867	0.940	0.387	0.419	
						25	12	17.3	17.0	0.674	0.714	0.305	0.323	
Body-worn & Hotspot	QPSK	5	Rear	27710	2310.0	1	24	19.0	18.9	0.870	0.890	0.441	0.451	
						25	12	18.8	18.7	0.867	0.887	0.429	0.439	
						50	0	18.8	18.7	0.761	0.779	0.387	0.396	
			Front	27710	2310.0	1	24	19.0	18.9	0.697	0.713	0.382	0.391	
						25	12	18.8	18.7	0.660	0.675	0.342	0.350	
						50	0	18.8	18.7	0.660	0.675	0.342	0.350	
Hotspot	QPSK	5	Edge 1	27710	2310.0	1	24	19.0	18.9	0.504	0.516	0.203	0.208	
						25	12	18.8	18.7	0.456	0.467	0.182	0.186	
			Edge 2	27710	2310.0	1	24	19.0	18.9	0.019	0.019	0.010	0.010	
						25	12	18.8	18.7	0.012	0.012	0.005	0.005	
			Edge 4	27710	2310.0	1	24	19.0	18.9	0.851	0.871	0.418	0.428	
						25	12	18.8	18.7	0.710	0.727	0.345	0.353	
						1	24	19.0	18.9	0.851	0.871	0.418	0.428	
						25	12	18.8	18.7	0.710	0.727	0.345	0.353	

LAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	QPSK	0	Left Touch	27710	2310.0	1	24	23.0	23.0	0.287	0.287	0.167	0.167	
						25	12	22.8	22.0	0.232	0.279	0.134	0.161	
			Left Tilt	27710	2310.0	1	24	23.0	23.0	0.110	0.110	0.060	0.060	
						25	12	22.8	22.0	0.088	0.106	0.047	0.057	
			Right Touch	27710	2310.0	1	24	23.0	23.0	0.283	0.283	0.167	0.167	
						25	12	22.8	22.0	0.224	0.269	0.132	0.159	
			Right Tilt	27710	2310.0	1	24	23.0	23.0	0.188	0.188	0.089	0.089	
						25	12	22.8	22.0	0.151	0.182	0.072	0.087	
Body-worn & Hotspot	QPSK	5	Rear	27710	2310.0	1	24	20.3	20.3	1.070	1.070	0.416	0.416	22
						25	12	20.3	20.2	1.020	1.032	0.394	0.399	
						50	0	20.3	20.2	0.962	0.973	0.379	0.383	
			Front	27710	2310.0	1	24	20.3	20.3	1.040	1.040	0.434	0.434	
						25	12	20.3	20.2	0.992	1.003	0.409	0.414	
						50	0	20.3	20.2	1.040	1.052	0.429	0.434	
Hotspot	QPSK	5	Edge 2	27710	2310.0	1	24	20.3	20.3	0.317	0.317	0.149	0.149	
						25	12	20.3	20.2	0.329	0.333	0.152	0.154	
			Edge 3	27710	2310.0	1	24	20.3	20.3	0.925	0.925	0.335	0.335	
						25	12	20.3	20.2	0.887	0.897	0.320	0.324	
			Edge 4	27710	2310.0	1	24	20.3	20.3	0.340	0.340	0.170	0.170	
						25	12	20.3	20.2	0.308	0.312	0.153	0.155	
						1	24	20.3	20.3	0.340	0.340	0.170	0.170	
						25	12	20.3	20.2	0.308	0.312	0.153	0.155	

10.16. LTE Band 41 (20MHz Bandwidth)

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed on each antenna – UAT 1 and LAT 1 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

UAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	QPSK	0	Left Touch	40620	2593.0	1	49	18.3	18.2	0.224	0.227	0.096	0.097	
						50	24	18.3	18.2	0.205	0.207	0.089	0.090	
			Left Tilt	40620	2593.0	1	49	18.3	18.2	0.163	0.165	0.069	0.070	
						50	24	18.3	18.2	0.217	0.220	0.093	0.094	
			Right Touch	39750	2506.0	1	49	18.3	18.2	0.808	0.817	0.349	0.353	
				40185	2549.5	1	49	18.3	18.2	0.843	0.853	0.347	0.351	
				40620	2593.0	1	49	18.3	18.2	0.863	0.873	0.346	0.350	
						50	24	18.3	18.2	0.770	0.779	0.305	0.309	
				41055	2636.5	1	49	18.3	18.1	0.894	0.925	0.354	0.366	
				41490	2680.0	1	49	18.3	18.3	1.080	1.080	0.412	0.412	23
Body-worn & Hotspot	QPSK	5	Rear	40620	2593.0	1	49	20.8	20.8	0.478	0.478	0.224	0.224	
						50	24	19.8	19.8	0.488	0.488	0.226	0.226	
			Front	40620	2593.0	1	49	20.8	20.8	0.520	0.520	0.231	0.231	
						50	24	19.8	19.8	0.409	0.409	0.182	0.182	
Hotspot	QPSK	5	Edge 1	40620	2593.0	1	49	20.8	20.8	0.258	0.258	0.084	0.084	
						50	24	19.8	19.8	0.200	0.200	0.065	0.065	
			Edge 2	40620	2593.0	1	49	20.8	20.8	0.134	0.134	0.061	0.061	
						50	24	19.8	19.8	0.102	0.102	0.046	0.046	
			Edge 4	40620	2593.0	1	49	20.8	20.8	0.410	0.410	0.194	0.194	
						50	24	19.8	19.8	0.327	0.327	0.157	0.157	

LAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	QPSK	0	Left Touch	40620	2593.0	1	49	24.5	24.5	0.561	0.561	0.296	0.296	
						50	24	23.5	23.5	0.441	0.441	0.234	0.234	
			Left Tilt	40620	2593.0	1	49	24.5	24.5	0.099	0.099	0.047	0.047	
						50	24	23.5	23.5	0.079	0.079	0.047	0.047	
			Right Touch	40620	2593.0	1	49	24.5	24.5	0.263	0.263	0.149	0.149	
						50	24	23.5	23.5	0.208	0.208	0.117	0.117	
			Right Tilt	40620	2593.0	1	49	24.5	24.5	0.215	0.215	0.109	0.109	
						50	24	23.5	23.5	0.166	0.166	0.084	0.084	
Body-worn & Hotspot	QPSK	5	Rear	39750	2506.0	1	49	20.7	20.7	0.858	0.858	0.357	0.357	
				40185	2549.5	1	49	20.8	20.5	0.794	0.841	0.319	0.338	
				40620	2593.0	1	49	20.8	20.7	0.811	0.820	0.336	0.340	
						50	24	20.8	20.6	0.662	0.685	0.342	0.354	
				41055	2636.5	1	49	20.8	20.8	0.744	0.744	0.286	0.286	
			Front	41490	2680.0	1	49	20.8	20.8	0.709	0.709	0.256	0.256	
				39750	2506.0	1	49	20.8	20.7	0.965	0.976	0.393	0.398	
						50	24	20.8	20.7	0.921	0.932	0.380	0.384	
				40185	2549.5	1	49	20.8	20.7	0.786	0.795	0.328	0.332	
						50	24	20.8	20.5	0.887	0.940	0.361	0.382	
				40620	2593.0	1	49	20.8	20.7	0.992	1.003	0.399	0.404	24
						50	24	20.8	20.6	0.868	0.899	0.357	0.370	
						100	0	20.8	20.5	0.833	0.882	0.344	0.364	
				41055	2636.5	1	49	20.8	20.8	0.727	0.727	0.296	0.296	
						50	24	20.8	20.7	0.842	0.852	0.347	0.351	
				41490	2680.0	1	49	20.8	20.8	0.574	0.574	0.241	0.241	
						50	24	20.8	20.8	0.582	0.582	0.239	0.239	
Hotspot	QPSK	5	Edge 2	40620	2593.0	1	49	20.8	20.7	0.080	0.081	0.038	0.038	
						50	24	20.8	20.6	0.071	0.073	0.034	0.035	
			Edge 3	40620	2593.0	1	49	20.8	20.7	0.441	0.446	0.175	0.177	
						50	24	20.8	20.6	0.351	0.363	0.139	0.144	
			Edge 4	40620	2593.0	1	49	20.8	20.7	0.373	0.377	0.158	0.160	
						50	24	20.8	20.6	0.406	0.420	0.170	0.176	

10.17. LTE Band 66 (20MHz Bandwidth)

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed on each antenna – UAT 1 and LAT 1 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

UAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	QPSK	0	Left Touch	132322	1745.0	1	49	19.0	18.8	0.458	0.480	0.248	0.260	
						50	24	19.0	18.9	0.401	0.410	0.215	0.220	
			Left Tilt	132322	1745.0	1	49	19.0	18.8	0.410	0.429	0.217	0.227	
						50	24	19.0	18.9	0.377	0.386	0.199	0.204	
			Right Touch	132072	1720.0	1	49	19.0	18.5	0.837	0.939	0.441	0.495	
						50	24	19.0	18.5	0.920	1.032	0.487	0.546	
				132322	1745.0	1	49	19.0	18.8	0.931	0.975	0.495	0.518	
						50	24	19.0	18.9	0.911	0.932	0.474	0.485	
						100	0	19.0	18.9	0.919	0.940	0.481	0.492	
				132572	1770.0	1	49	19.0	18.5	0.930	1.043	0.503	0.564	25
						50	24	19.0	18.5	0.943	1.058	0.505	0.567	
			Right Tilt	132072	1720.0	1	49	19.0	18.5	0.807	0.905	0.407	0.457	
				132322	1745.0	1	49	19.0	18.8	0.834	0.873	0.415	0.435	
						50	24	19.0	18.9	0.770	0.788	0.381	0.390	
				132572	1770.0	1	49	19.0	18.5	0.755	0.847	0.374	0.420	
Body-worn & Hotspot	QPSK	5	Rear	132322	1745.0	1	49	20.8	20.7	0.629	0.636	0.339	0.343	
						50	24	19.8	19.6	0.503	0.521	0.272	0.282	
			Front	132322	1745.0	1	49	20.8	20.7	0.700	0.708	0.362	0.366	
Hotspot	QPSK	5	Edge 1	132322	1745.0	1	49	20.8	20.7	0.674	0.682	0.353	0.357	
						50	24	19.8	19.6	0.536	0.555	0.280	0.290	
			Edge 2	132322	1745.0	1	49	20.8	20.7	0.030	0.030	0.017	0.017	
						50	24	19.8	19.6	0.025	0.026	0.014	0.014	
			Edge 4	132322	1745.0	1	49	20.8	20.7	0.684	0.692	0.371	0.375	
						50	24	19.8	19.6	0.544	0.563	0.293	0.303	

LAT 1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	QPSK	0	Left Touch	132322	1745.0	1	49	24.8	24.8	0.611	0.611	0.395	0.395	
						50	24	23.8	23.8	0.489	0.489	0.317	0.317	
			Left Tilt	132322	1745.0	1	49	24.8	24.8	0.215	0.215	0.127	0.127	
						50	24	23.8	23.8	0.171	0.171	0.101	0.101	
			Right Touch	132322	1745.0	1	49	24.8	24.8	0.429	0.429	0.284	0.284	
						50	24	23.8	23.8	0.340	0.340	0.225	0.225	
			Right Tilt	132322	1745.0	1	49	24.8	24.8	0.278	0.278	0.174	0.174	
						50	24	23.8	23.8	0.223	0.223	0.139	0.139	
Body-worn & Hotspot	QPSK	5	Rear	132322	1745.0	1	49	21.0	20.9	0.755	0.773	0.388	0.397	
			Front	132072	1720.0	1	49	21.0	20.7	0.772	0.827	0.410	0.439	
				132322	1745.0	1	49	21.0	20.9	0.888	0.909	0.462	0.473	
						50	24	21.0	20.9	0.716	0.733	0.378	0.387	
				132572	1770.0	1	49	21.0	21.0	0.722	0.722	0.376	0.376	
			Edge 2	132322	1745.0	1	49	21.0	20.9	0.371	0.380	0.210	0.215	
Hotspot	QPSK	5	Edge 3	132072	1720.0	1	49	21.0	20.7	0.940	1.007	0.469	0.503	
						50	24	21.0	20.5	0.931	1.045	0.467	0.524	
				132322	1745.0	1	49	21.0	20.9	1.020	1.044	0.501	0.513	
						50	24	21.0	20.9	1.030	1.054	0.510	0.522	26
						100	0	21.0	21.0	1.020	1.020	0.495	0.495	
				132572	1770.0	1	49	21.0	21.0	1.050	1.050	0.506	0.506	
						50	24	21.0	21.0	1.010	1.010	0.488	0.488	
			Edge 4	132322	1745.0	1	49	21.0	20.9	0.294	0.301	0.165	0.169	
						50	24	21.0	20.9	0.294	0.301	0.169	0.173	

10.18. LTE-uplink 2CA Band 7 (20MHz + 20MHz BW)

SAR Testing was performed on each antenna – UAT 1 and LAT 1 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

RF Exposure Conditions	Power Mode	Mode	Antenna	Dist. (mm)	Test Position	PCC				SCC				Power (dBm)			1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Ch #.	Freq. (MHz)	RB Allocation	RB offset	Ch #.	Freq. (MHz)	RB Allocation	RB offset	MPR	Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	A	QPSK	UAT 1	0	Right Touch	21350	2560.0	1	0	21152	2540.2	1	99	0	18.0	17.4	0.918	1.054	0.375	0.431	27
Body-worn	B	QPSK	LAT 1	0	Front	21100	2535.0	1	99	21298	2554.8	1	0	0	18.5	17.8	0.781	0.918	0.256	0.301	

Notes:

- From FCC PAG Guidance and Manufacturer KDB inquiry - Carrier Aggregation: PCC channel was determined and selected closest to the worst case SAR configuration from standalone reported SAR result. PCC and SCC channels were determined and selected to allow contiguous CA. RB allocations and offsets were selected to allow maximum measured output power. Output power was measured and verified for these test cases.

10.19. LTE-uplink 2CA Band 41 (20MHz + 20MHz BW)

SAR Testing was performed on each antenna – UAT 1 and LAT 1 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

RF Exposure Conditions	Power Mode	Mode	Antenna	Dist. (mm)	Test Position	PCC				SCC				Power (dBm)			1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Ch #.	Freq. (MHz)	RB Allocation	RB offset	Ch #.	Freq. (MHz)	RB Allocation	RB offset	MPR	Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Head	A	QPSK	UAT 1	0	Right Touch	41490	2680.0	1	0	41292	2660.2	1	99	0	18.3	18.2	0.956	0.978	0.358	0.366	28
Body-worn	B	QPSK	LAT 1	0	Front	40620	2593.0	1	0	40422	2573.2	1	99	0	20.8	20.7	0.968	0.991	0.392	0.401	

Notes:

- From FCC PAG Guidance and Manufacturer KDB inquiry - Carrier Aggregation: PCC channel was determined and selected closest to the worst case SAR configuration from standalone reported SAR result. PCC and SCC channels were determined and selected to allow contiguous CA. RB allocations and offsets were selected to allow maximum measured output power. Output power was measured and verified for these test cases.

10.20. Wi-Fi (DTS Band)

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed for each power configuration for Wi-Fi: Cell On and Cell Off and for each Antenna – UAT 1 and LAT 3 –using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

Cell On

Band	RF Exposure Condition	Mode	Dist. (mm)	No. of Transmitters	Position	Ch #.	Freq. (MHz)	Pow er (dBm)				Area Scan Measured Peak	SAR (W/kg)								Plots	
								UAT 1		LAT 3			UAT 1				LAT 3					
								Tune-up Limit	Measured	Tune-up Limit	Measured		Measured	Measured		Scaled		Measured		Scaled		
														1-g	10-g	1-g	10-g	1-g	10-g	1-g		10-g
2.4 GHz	Head	802.11b 20MHz	0	1 Tx	Left Touch	6	2437	12.0	11.8			0.201										
					Left Tilt	6	2437	12.0	11.8			0.244										
					Right Touch	6	2437	12.0	11.8			0.385	0.270	0.114	0.283	0.119						
					Right Tilt	6	2437	12.0	11.8			0.359										
					Left Touch	6	2437			17.3	17.3	0.121										
					Left Tilt	6	2437			17.3	17.3	0.102										
					Right Touch	6	2437			17.3	17.3	0.225				0.177	0.097	0.177	0.097			
					Right Tilt	6	2437			17.3	17.3	0.075										
		802.11g 20MHz	0	2 Tx	Left Touch	6	2437	12.0	12.0	17.3	17.0	0.171										
					Left Tilt	6	2437	12.0	12.0	17.3	17.0	0.204										
					Right Touch	6	2437	12.0	12.0	17.3	17.0	0.428	0.284	0.132	0.284	0.132	0.171	0.093	0.183	0.100		
					Right Tilt	6	2437	12.0	12.0	17.3	17.0	0.377										
	Body-worn & Hotspot	802.11b 20MHz	5	1 Tx	Rear	6	2437	16.5	16.5			0.726	0.532	0.246	0.532	0.246						
					Front	6	2437	16.5	16.5			0.642	0.311	0.147	0.311	0.147						
					Edge 1	6	2437	16.5	16.5			0.408										
					Edge 2	6	2437	16.5	16.5			0.055										
					Edge 4	6	2437	16.5	16.5			0.404										
					Rear	6	2437			13.5	13.5	0.169										
					Front	6	2437			13.5	13.5	0.474				0.333	0.144	0.333	0.144			
					Edge 2	6	2437			13.5	13.5	0.191										
					Edge 3	6	2437			13.5	13.5	0.124										
					Edge 4	6	2437			13.5	13.5	0.085										
		802.11g 20MHz	5	2 Tx	Rear	6	2437	16.5	16.5	13.5	13.5	0.746	0.401	0.187	0.401	0.187	0.123	0.064	0.123	0.064		
					Front	6	2437	16.5	16.5	13.5	13.5	0.692	0.412	0.180	0.412	0.180	0.331	0.134	0.331	0.134		
					Edge 1	6	2437	16.5	16.5	13.5	13.5	0.155										
					Edge 2	6	2437	16.5	16.5	13.5	13.5	0.160										
					Edge 3	6	2437	16.5	16.5	13.5	13.5	0.120										
					Edge 4	6	2437	16.5	16.5	13.5	13.5	0.343										

Notes:

For SAR results with “-“, there is no additional zoom scans due to secondary peak not being within 2dB of maximum peak.

Cell Off

Band	RF Exposure Condition	Mode	Dist. (mm)	No. of Transmitters	Position	Ch #.	Freq. (MHz)	Pow er (dBm)				Area Scan Measured Peak	SAR (W/kg)								Plots
								UAT 1		LAT 3			UAT 1				LAT 3				
								Tune-up Limit	Measured	Tune-up Limit	Measured		Measured		Scaled		Measured		Scaled		
													1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	
2.4 GHz	Head	802.11b 20MHz	0	1 Tx	Left Touch	6	2437	17.3	17.3			0.499									
					Left Tilt	6	2437	17.3	17.3			0.541	0.393	0.163	0.393	0.163					
					Right Touch	6	2437	17.3	17.3			1.300	1.030	0.437	1.030	0.437					
						11	2462	17.3	17.3			1.230	1.050	0.470	1.050	0.470					
					Right Tilt	6	2437	17.3	17.3			1.270	1.030	0.392	1.030	0.392					
						11	2462	17.3	17.3			0.757	1.140	0.448	1.140	0.448					
					Left Touch	6	2437			21.5	21.5	0.119									
					Left Tilt	6	2437			21.5	21.5	0.089									
					Right Touch	6	2437			21.5	21.5	0.177				0.145	0.078	0.145	0.078		
					Right Tilt	6	2437			21.5	21.5	0.108									
		802.11g 20MHz	0	2 Tx	Left Touch	6	2437	17.3	17.3	21.0	20.0	0.496	0.498	0.201	0.498	0.201	-	-	-	-	
					Left Tilt	6	2437	17.3	17.3	21.0	20.0	0.277									
					Right Touch	6	2437	17.3	17.3	21.0	20.0	1.090	0.987	0.434	0.987	0.434	0.196	0.109	0.247	0.137	
						8	2447	17.3	17.3	21.0	20.0	1.480	1.180	0.502	1.180	0.502	0.311	0.170	0.392	0.214	29
					Right Tilt	6	2437	17.3	17.3	21.0	20.0	1.400	0.959	0.381	0.959	0.381	-	-	-	-	
						8	2447	17.3	17.3	21.0	20.0	1.780	1.070	0.400	1.070	0.400	0.053	0.031	0.067	0.039	
	Body-worn & Hotspot	802.11b 20MHz	5	1 Tx	Rear	6	2437	19.8	19.8			1.110	0.918	0.433	0.918	0.433					
						11	2462	19.8	19.7			1.520	1.050	0.496	1.074	0.496					
					Front	6	2437	19.8	19.8			1.070	0.817	0.382	0.817	0.382					
						11	2462	19.8	19.7			0.672	0.530	0.237	0.542	0.243					
					Edge 1	6	2437	19.8	19.8			0.488	0.343	0.120	0.343	0.120					
						6	2437	19.8	19.8			0.152									
					Edge 4	6	2437	19.8	19.8			0.941	0.944	0.383	0.944	0.383					
						11	2462	19.8	19.7			0.914	0.795	0.383	0.814	0.392					
					Rear	6	2437			18.8	18.8	0.628					0.490	0.252	0.490	0.252	
						6	2437			18.8	18.8	1.670					1.050	0.454	1.050	0.454	
					Front	11	2462			18.8	18.8	1.410					1.150	0.480	1.150	0.480	
						6	2437			18.8	18.8	0.912					0.729	0.343	0.729	0.343	
					Edge 2	6	2437			18.8	18.8	0.350									
					Edge 3	6	2437			18.8	18.8	0.027									
					Edge 4	6	2437			18.8	18.8										
		802.11g 20MHz	5	2 Tx	Rear	6	2437	19.8	19.0	18.8	18.8	1.200	0.860	0.412	1.034	0.495	0.324	0.170	0.324	0.170	
						8	2447	19.8	19.0	18.8	18.8	1.020	0.839	0.376	1.009	0.452	0.441	0.230	0.441	0.230	
					Front	6	2437	19.8	19.0	18.8	18.8	1.090	0.669	0.306	0.804	0.368	1.190	0.492	1.190	0.492	30
						8	2447	19.8	19.0	18.8	18.8	1.120	0.870	0.371	1.046	0.446	1.130	0.451	1.130	0.451	
					Edge 1	6	2437	19.8	19.0	18.8	18.8	0.724									
					Edge 2	6	2437	19.8	19.0	18.8	18.8	0.652									
					Edge 3	6	2437	19.8	19.0	18.8	18.8	0.472									
					Edge 4	6	2437	19.8	19.0	18.8	18.8	0.872	0.290	0.143	0.349	0.172	-	-	-	-	

Notes:

For SAR results with "-", there is no additional zoom scans due to secondary peak not being within 2dB of maximum peak.

10.21. Wi-Fi (U-NII-1 and U-NII-2A Band)

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed for each power configuration for Wi-Fi: Cell On and Cell Off and for each Antenna – UAT 2 and LAT 3 –using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

Cell On

Band	RF Exposure Condition	Mode	Dist. (mm)	No. of Transmitters	Position	Ch #.	Freq. (MHz)	Power (dBm)				Area Scan Measured Peak	SAR (W/kg)								Plots
								UAT 2		LAT 3			UAT 2				LAT 3				
								Tune-up Limit	Measured	Tune-up Limit	Measured		Measured		Scaled		Measured		Scaled		
													1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	
5.2 GHz	Head	802.11ac VHT80	0	1 Tx	Left Touch	42	5210	6.0	5.8			0.147									
					Left Tilt	42	5210	6.0	5.8			0.118									
					Right Touch	42	5210	6.0	5.8			0.238	0.130	0.037	0.136	0.039					
					Right Tilt	42	5210	6.0	5.8			0.087									
5.3 GHz		802.11a	0	1 Tx	Left Touch	60	5300			19.0	19.0	0.265									
					Left Tilt	60	5300			19.0	19.0	0.097									
					Right Touch	60	5300			19.0	19.0	0.392					0.233	0.097	0.233	0.097	
					Right Tilt	60	5300			19.0	19.0	0.099									
5.2 GHz		802.11n HT40	0	2 Tx	Left Touch	46	5230	6.0	6.0	18.5	17.5	0.225									
					Left Tilt	46	5230	6.0	6.0	18.5	17.5	0.095									
					Right Touch	46	5230	6.0	6.0	18.5	17.5	0.294	0.117	0.031	0.117	0.031	0.173	0.063	0.218	0.079	
					Right Tilt	46	5230	6.0	6.0	18.5	17.5	0.205									
5.2 GHz	Body-worn & Hotspot	802.11ac VHT80	5	1 Tx	Rear	42	5210	13.8	13.8			0.922	0.416	0.118	0.416	0.118					
					Front	42	5210	13.8	13.8			0.411	0.208	0.067	0.208	0.067					
					Edge 1	42	5210	13.8	13.8			0.326									
					Edge 2	42	5210	13.8	13.8			0.075									
					Edge 4	42	5210	13.8	13.8			0.153									
5.2 GHz		802.11ac VHT80	5	1 Tx	Rear	42	5210			10.0	10.0	0.116									
					Front	42	5210			10.0	10.0	0.509					0.247	0.063	0.247	0.063	
					Edge 2	42	5210			10.0	10.0	0.063									
					Edge 3	42	5210			10.0	10.0	0.070									
					Edge 4	42	5210			10.0	10.0	0.046									
5.2 GHz		802.11n HT40	5	2 Tx	Rear	46	5230	13.8	13.8	10.0	10.0	0.834	0.405	0.108	0.405	0.108	0.039	0.009	0.039	0.009	
					Front	46	5230	13.8	13.8	10.0	10.0	0.468	0.236	0.069	0.236	0.069	0.234	0.054	0.234	0.054	
					Edge 1	46	5230	13.8	13.8	10.0	10.0	0.314									
					Edge 2	46	5230	13.8	13.8	10.0	10.0	0.061									
					Edge 3	46	5230	13.8	13.8	10.0	10.0	0.056									

Notes:

- For SAR results with “-”, there is no additional zoom scans due to secondary peak not being within 2dB of maximum peak.
- Hotspot mode SAR Testing was performed to justify SAR Test Reduction from KDB 648474 D04 (Phablet only)

Cell Off

Band	RF Exposure Condition	Mode	Dist. (mm)	No. of Transmitters	Position	Ch #.	Freq. (MHz)	Pow er (dBm)				Area Scan Measured Peak	SAR (W/kg)								Plots	
								UAT 2		LAT 3			UAT 2				LAT 3					
								Tune-up Limit	Measured	Tune-up Limit	Measured		Measured		Scaled		Measured		Scaled			
													1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g		
5.2 GHz	Head	802.11ac VHT80	0	1 Tx	Left Touch	42	5210	13.8	13.8			0.803								31		
					Left Tilt	42	5210	13.8	13.8			0.684										
					Right Touch	42	5210	13.8	13.8			1.660	1.170	0.345	1.170	0.345						
					Right Tilt	42	5210	13.8	13.8			1.220	0.597	0.183	0.597	0.183						
5.3 GHz		802.11a	0	1 Tx	Left Touch	56	5280			21.0	21.0	0.397										
					Left Tilt	56	5280			21.0	21.0	0.169										
					Right Touch	56	5280			21.0	21.0	0.565					0.340	0.145	0.340	0.145		
					Right Tilt	56	5280			21.0	21.0	0.182										
5.2 GHz		802.11n HT40	0	2 Tx	Left Touch	46	5230	13.8	13.8	18.5	18.5	0.502										
					Left Tilt	46	5230	13.8	13.8	18.5	18.5	0.421										
					Right Touch	38	5190	13.8	13.8	14.0	14.0	1.350	0.767	0.210	0.767	0.210	0.393	0.089	0.393	0.089		
						46	5230	13.8	13.8	18.5	18.5	1.060	1.160	0.331	1.160	0.331	0.161	0.072	0.161	0.072		
		Right Tilt	46	5230	13.8	13.8	18.5	18.5	0.780	0.694	0.186	0.694	0.186	0.034	0.012	0.034	0.012					
5.2 GHz	Body-worn & Hotspot	802.11n HT40	5	1 Tx	Rear	38	5190	15.5	15.5			0.847	0.441	0.124	0.441	0.124						
						46	5230	18.0	18.0			1.850	0.946	0.280	0.946	0.280						
					Front	46	5230	18.0	18.0			0.853	0.554	0.172	0.554	0.172						
						Edge 1	46	5230	18.0	18.0			0.576									
						Edge 2	46	5230	18.0	18.0			0.287									
						Edge 4	46	5230	18.0	18.0			0.137									
5.2 GHz		802.11n HT40	5	1 Tx	Rear	46	5230			16.8	16.4	0.349					0.159	0.049	0.172	0.053		
						38	5190			15.5	15.5	1.100					0.680	0.187	0.680	0.187		
					Front	46	5230			16.8	16.4	2.010					0.966	0.248	1.047	0.269		
						Edge 2	46	5230			16.8	16.4	0.210									
						Edge 3	46	5230			16.8	16.4	0.272									
						Edge 4	46	5230			16.8	16.4	0.062									
5.2 GHz		802.11n HT40	5	2 Tx	Rear	38	5190	14.0	14.0	14.0	14.0	0.485	0.398	0.111	0.398	0.111	0.099	0.030	0.099	0.030		
						46	5230	18.0	17.7	16.8	16.8	2.100	0.970	0.260	1.039	0.279	0.189	0.054	0.189	0.054		
					Front	38	5190	14.0	14.0	14.0	14.0	0.993	0.345	0.092	0.345	0.092	0.337	0.092	0.337	0.092		
						46	5230	18.0	17.7	16.8	16.8	1.980	0.538	0.165	0.576	0.177	0.928	0.253	0.928	0.253		
					Edge 1	46	5230	18.0	17.7	16.8	16.8	0.547	0.266	0.090	0.285	0.096	-	-	-	-		
					Edge 2	46	5230	18.0	17.7	16.8	16.8	0.290										
					Edge 3	46	5230	18.0	17.7	16.8	16.8	0.314										
					Edge 4	46	5230	18.0	17.7	16.8	16.8	0.287										

Notes:

- For SAR results with "-", there is no additional zoom scans due to secondary peak not being within 2dB of maximum peak.
- Hotspot mode SAR Testing was performed to justify SAR Test Reduction from KDB 648474 D04 (Phablet only)

10.22. Wi-Fi (U-NII-2C Band)

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed for each power configuration for Wi-Fi: Cell On and Cell Off and for each Antenna – UAT 2 and LAT 3 –using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

Cell On

Band	RF Exposure Condition	Mode	Dist. (mm)	No. of Transmitters	Position	Ch #.	Freq. (MHz)	Power (dBm)				Area Scan Measured Peak	SAR (W/kg)								Plots
								UAT 2		LAT 3			UAT 2				LAT 3				
								Tune-up Limit	Measured	Tune-up Limit	Measured		Measured		Scaled		Measured		Scaled		
													1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	
5.6 GHz	Head	802.11ac VHT80	0	1 Tx	Left Touch	138	5690	5.0	5.0			0.238									
					Left Tilt	138	5690	5.0	5.0			0.190									
					Right Touch	138	5690	5.0	5.0			0.339	0.175	0.043	0.175	0.043					
					Right Tilt	138	5690	5.0	5.0			0.289									
		802.11n HT40	0	1 Tx	Left Touch	122	5610			18.5	18.5	0.185									
					Left Tilt	122	5610			18.5	18.5	0.087									
					Right Touch	122	5610			18.5	18.5	0.279				0.143	0.061	0.143	0.061		
					Right Tilt	122	5610			18.5	18.5	0.126									
		802.11n HT40	0	2 Tx	Left Touch	138	5690	5.0	5.0	18.5	18.0	0.148									
					Left Tilt	138	5690	5.0	5.0	18.5	18.0	0.119									
					Right Touch	138	5690	5.0	5.0	18.5	18.0	0.225	0.121	0.031	0.121	0.031	0.115	0.044	0.129	0.049	
					Right Tilt	138	5690	5.0	5.0	18.5	18.0	0.090									
5.6 GHz	Body-worn & Hotspot	802.11ac VHT80	5	1 Tx	Rear	138	5690	13.8	13.8			0.362									
					Front	138	5690	13.8	13.8			0.702	0.433	0.136	0.433	0.136					
					Edge 1	138	5690	13.8	13.8			0.625	0.220	0.075	0.220	0.075					
					Edge 2	138	5690	13.8	13.8			0.024									
					Edge 4	138	5690	13.8	13.8			0.234									
		802.11ac VHT80	5	1 Tx	Rear	138	5690			11.0	11.0	0.055									
					Front	138	5690			11.0	11.0	0.319					0.205	0.055	0.205	0.055	
					Edge 2	138	5690			11.0	11.0	0.021									
					Edge 3	138	5690			11.0	11.0	0.013									
					Edge 4	138	5690			11.0	11.0	0.006									
		802.11ac VHT80	5	2 Tx	Rear	138	5690	13.8	13.8	11.0	11.0	0.170									
					Front	138	5690	13.8	13.8	11.0	11.0	1.090	0.431	0.129	0.431	0.129	0.178	0.050	0.178	0.050	
					Edge 1	138	5690	13.8	13.8	11.0	11.0	0.409	0.231	0.078	0.231	0.078	-	-	-	-	
					Edge 2	138	5690	13.8	13.8	11.0	11.0	0.049									
					Edge 3	138	5690	13.8	13.8	11.0	11.0	0.046									
					Edge 4	138	5690	13.8	13.8	11.0	11.0	0.099									

Notes:

- For SAR results with “-“, there is no additional zoom scans due to secondary peak not being within 2dB of maximum peak.
- Hotspot mode SAR Testing was performed to justify SAR Test Reduction from KDB 648474 D04 (Phablet only)

Cell Off

Band	RF Exposure Condition	Mode	Dist. (mm)	No. of Transmitters	Position	Ch #.	Freq. (MHz)	Power (dBm)				Area Scan Measured Peak	SAR (W/kg)								Plots
								UAT 2		LAT 3			UAT 2				LAT 3				
								Tune-up Limit	Measured	Tune-up Limit	Measured		Measured		Scaled		Measured		Scaled		
													1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	
5.6 GHz	Head	802.11ac VHT80	0	1 Tx	Left Touch	138	5690	12.8	12.6			0.805	0.454	0.158	0.475	0.165					33
					Left Tilt	122	5610	12.8	12.6			1.340	0.761	0.254	0.797	0.266					
						138	5690	12.8	12.6			1.410	0.803	0.266	0.841	0.279					
					Right Touch	122	5610	12.8	12.6			1.480	0.880	0.246	0.921	0.258					
						138	5690	12.8	12.6			2.190	1.140	0.300	1.194	0.314					
					Right Tilt	122	5610	12.8	12.6			1.730	0.934	0.255	0.978	0.267					
		138	5690	12.8		12.6			2.030	0.872	0.240	0.913	0.251								
		802.11a	0	1 Tx	Left Touch	144	5720			21.0	21.0	0.417									
					Left Tilt	144	5720			21.0	21.0	0.140									
					Right Touch	144	5720			21.0	21.0	0.474					0.268	0.113	0.268	0.113	
					Right Tilt	144	5720			21.0	21.0	0.141									
		802.11n HT40	0	2 Tx	Left Touch	118	5590	12.8	12.7	19.5	19.4	1.200	0.681	0.234	0.697	0.239					
						142	5710	12.8	12.7	19.5	19.5	1.520	0.785	0.271	0.803	0.277					
					Left Tilt	118	5590	12.8	12.7	19.5	19.4	1.340	0.721	0.246	0.738	0.252					
						142	5710	12.8	12.7	19.5	19.5	1.410	0.786	0.261	0.804	0.267					
					Right Touch	118	5590	12.8	12.7	19.5	19.4	1.640	0.988	0.255	1.011	0.261	0.177	0.076	0.181	0.077	
						142	5710	12.8	12.7	19.5	19.5	1.690	1.090	0.271	1.115	0.277	0.177	0.074	0.177	0.074	
					Right Tilt	118	5590	12.8	12.7	19.5	19.4	1.350	0.806	0.215	0.825	0.220	0.045	0.017	0.046	0.017	
						142	5710	12.8	12.7	19.5	19.5	1.940	0.937	0.260	0.959	0.266	0.057	0.023	0.057	0.023	
5.6 GHz	Body-worn & Hotspot	802.11ac VHT80	5	1 Tx	Rear	138	5690	18.0	17.8			1.080								34	
					Front	122	5610	18.0	17.8			2.190	1.110	0.354	1.162	0.371					
						138	5690	18.0	17.8			2.750	1.100	0.358	1.152	0.375					
					Edge 1	138	5690	18.0	17.8			1.130	0.627	0.224	0.657	0.235					
					Edge 2	138	5690	18.0	17.8			0.082									
		802.11ac VHT80	5	1 Tx	Edge 4	138	5690	18.0	17.8			0.562									
					Rear	138	5690			17.8	17.8	0.623					0.353	0.093	0.353	0.093	
					Front	122	5610			17.8	17.7	2.120					1.120	0.330	1.133	0.334	
						138	5690			17.8	17.8	2.030					0.853	0.248	0.853	0.248	
					Edge 2	138	5690			17.8	17.8	0.348									
					Edge 3	138	5690			17.8	17.8	0.353									
					Edge 4	138	5690			17.8	17.8	0.082									
		802.11ac VHT80	5	2 Tx	Rear	138	5690	18.0	18.0	17.8	17.8	0.900									
					Front	122	5610	18.0	18.0	17.8	17.7	1.880	0.920	0.298	0.920	0.298	1.110	0.322	1.123	0.326	
						138	5690	18.0	18.0	17.8	17.8	2.400	1.130	0.353	1.130	0.353	0.665	0.204	0.665	0.204	
					Edge 1	138	5690	18.0	18.0	17.8	17.8	1.120	0.643	0.225	0.643	0.225	-	-	-	-	
					Edge 2	138	5690	18.0	18.0	17.8	17.8	0.294									
					Edge 3	138	5690	18.0	18.0	17.8	17.8	0.211									
					Edge 4	138	5690	18.0	18.0	17.8	17.8	0.297									

Notes:

- For SAR results with "-", there is no additional zoom scans due to secondary peak not being within 2dB of maximum peak.
- Hotspot mode SAR Testing was performed to justify SAR Test Reduction from KDB 648474 D04 (Phablet only)

10.23. Wi-Fi (U-NII-3 Band)

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed for each power configuration for Wi-Fi: Cell On and Cell Off and for each Antenna – UAT 2 and LAT 3 –using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

Cell On

Band	RF Exposure Condition	Mode	Dist. (mm)	No. of Transmitters	Position	Ch #.	Freq. (MHz)	Power (dBm)				Area Scan Measured Peak	SAR (W/kg)								Plots
								UAT 2		LAT 3			UAT 2				LAT 3				
								Tune-up Limit	Measured	Tune-up Limit	Measured		Measured		Scaled		Measured		Scaled		
													1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	
5.8 GHz	Head	802.11ac VHT80	0	1 Tx	Left Touch	155	5775	4.5	4.5			0.223									
					Left Tilt	155	5775	4.5	4.5			0.212									
					Right Touch	155	5775	4.5	4.5			0.495	0.183	0.044	0.183	0.044					
					Right Tilt	155	5775	4.5	4.5			0.301									
		802.11ac VHT80	0	1 Tx	Left Touch	155	5775			18.5	18.5	0.083									
					Left Tilt	155	5775			18.5	18.5	0.047									
					Right Touch	155	5775			18.5	18.5	0.351				0.190	0.067	0.190	0.067		
					Right Tilt	155	5775			18.5	18.5	0.041									
		802.11n HT40	0	2 Tx	Left Touch	159	5795	4.5	4.5	18.5	18.3	0.192									
					Left Tilt	159	5795	4.5	4.5	18.5	18.3	0.153									
					Right Touch	159	5795	4.5	4.5	18.5	18.3	0.296	0.139	0.036	0.139	0.036	0.120	0.043	0.126	0.045	
					Right Tilt	159	5795	4.5	4.5	18.5	18.3	0.220									
5.8 GHz	Body-worn & Hotspot	802.11ac VHT80	5	1 Tx	Rear	155	5775	11.8	11.8			0.419	0.192	0.061	0.192	0.061					
					Front	155	5775	11.8	11.8			0.717	0.446	0.134	0.446	0.134					
					Edge 1	155	5775	11.8	11.8			0.299									
					Edge 2	155	5775	11.8	11.8			0.040									
					Edge 4	155	5775	11.8	11.8			0.287									
		802.11ac VHT80	5	1 Tx	Rear	155	5775			12.0	12.0	0.102						0.188	0.053	0.188	0.053
					Front	155	5775			12.0	12.0	0.437									
					Edge 2	155	5775			12.0	12.0	0.051									
					Edge 3	155	5775			12.0	12.0	0.042									
					Edge 4	155	5775			12.0	12.0	0.013									
		802.11ac VHT80	5	2 Tx	Rear	155	5775	11.8	11.7	12.0	12.0	0.203									
					Front	155	5775	11.8	11.7	12.0	12.0	0.759	0.363	0.103	0.371	0.105	0.200	0.054	0.200	0.054	
					Edge 1	155	5775	11.8	11.7	12.0	12.0	0.152									
					Edge 2	155	5775	11.8	11.7	12.0	12.0	0.071									
					Edge 3	155	5775	11.8	11.7	12.0	12.0	0.034									
					Edge 4	155	5775	11.8	11.7	12.0	12.0	0.115									

Notes:

- For SAR results with “-”, there is no additional zoom scans due to secondary peak not being within 2dB of maximum peak.
- Hotspot mode SAR Testing was performed to justify SAR Test Reduction from KDB 648474 D04 (Phablet only)

Cell Off

Band	RF Exposure Condition	Mode	Dist. (mm)	No. of Transmitters	Position	Ch #.	Freq. (MHz)	Power (dBm)				Area Scan Measured Peak	SAR (W/kg)								Plots
								UAT 2		LAT 3			UAT 2				LAT 3				
								Tune-up Limit	Measured	Tune-up Limit	Measured		Measured		Scaled		Measured		Scaled		
													1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	
5.8 GHz	Head	802.11ac VHT80	0	1 Tx	Left Touch	155	5775	12.3	12.3			0.841	0.901	0.311	0.901	0.311					35
					Left Tilt	155	5775	12.3	12.3			0.725	0.862	0.282	0.862	0.282					
					Right Touch	155	5775	12.3	12.3			2.270	1.130	0.301	1.130	0.301					
					Right Tilt	155	5775	12.3	12.3			2.340	1.100	0.294	1.100	0.294					
		802.11a	0	1 Tx	Left Touch	157	5785			21.0	20.0	0.383									
					Left Tilt	157	5785			21.0	20.0	0.132									
					Right Touch	157	5785			21.0	20.0	0.383					0.208	0.088	0.262	0.111	
					Right Tilt	157	5785			21.0	20.0	0.114									
		802.11a	0	2 Tx	Left Touch	153	5765	12.3	12.3	21.0	21.0	1.240	0.772	0.262	0.772	0.262	-	-	-	-	
						157	5785	12.3	12.3	21.0	21.0	1.320	0.801	0.282	0.801	0.282	-	-	-	-	
					Left Tilt	153	5765	12.3	12.3	21.0	21.0	1.290	0.829	0.280	0.829	0.280	-	-	-	-	
						157	5785	12.3	12.3	21.0	21.0	1.290	0.867	0.272	0.867	0.272	-	-	-	-	
					Right Touch	153	5765	12.3	12.3	21.0	21.0	1.920	1.030	0.219	1.030	0.219	0.331	0.133	0.331	0.133	
						157	5785	12.3	12.3	21.0	21.0	2.260	1.070	0.289	1.070	0.289	0.291	0.122	0.291	0.122	
					Right Tilt	153	5765	12.3	12.3	21.0	21.0	1.480	0.821	0.226	0.821	0.226	0.084	0.034	0.084	0.034	
						157	5785	12.3	12.3	21.0	21.0	2.030	1.080	0.290	1.080	0.290	0.073	0.025	0.073	0.025	
5.8 GHz	Body-worn & Hotspot	802.11ac VHT80	5	1 Tx	Rear	155	5775	16.0	15.8			1.290	0.692	0.225	0.725	0.236					36
					Front	155	5775	16.0	15.8			2.910	1.120	0.368	1.173	0.385					
					Edge 1	155	5775	16.0	15.8			1.200									
					Edge 2	155	5775	16.0	15.8			0.108									
					Edge 4	155	5775	16.0	15.8			0.557									
		802.11ac VHT80	5	1 Tx	Rear	155	5775			18.8	18.7	0.510					0.228	0.062	0.231	0.063	
					Front	155	5775			18.8	18.7	1.300					0.735	0.224	0.744	0.227	
					Edge 2	155	5775			18.8	18.7	0.216									
					Edge 3	155	5775			18.8	18.7	0.122									
					Edge 4	155	5775			18.8	18.7	0.026									
		802.11n HT40	5	2 Tx	Rear	159	5795	16.0	16.0	18.8	18.8	0.798									
					Front	151	5755	16.0	16.0	18.8	18.8	1.970	1.160	0.344	1.160	0.344	1.060	0.315	1.060	0.315	
						159	5795	16.0	16.0	18.8	18.8	2.270	1.140	0.325	1.140	0.325	1.140	3.370	1.140	3.370	
					Edge 1	159	5795	16.0	16.0	18.8	18.8	0.802	0.442	0.160	0.442	0.160	-	-	-	-	
					Edge 2	159	5795	16.0	16.0	18.8	18.8	0.319									
					Edge 3	159	5795	16.0	16.0	18.8	18.8	0.283									
Edge 4	159	5795	16.0	16.0	18.8	18.8	0.346														

Notes:

1. For SAR results with "-", there is no additional zoom scans due to secondary peak not being within 2dB of maximum peak.
2. Hotspot mode SAR Testing was performed to justify SAR Test Reduction from KDB 648474 D04 (Phablet only)

10.24. Wi-Fi Variant 2 Spot Check

SAR Testing (Spot Check) was performed based on the worst case SAR result from Sec. 10.21 – Sec. 10.23. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

Wi-Fi (DTS Band)

Vendor	Band	RF Exposure Conditions	Mode	Dist. (mm)	No. of Transmitters	Position	Ch #.	Freq. (MHz)	Power (dBm)				SAR (W/kg)							
									UAT 1		LAT 3		UAT 1				LAT 3			
									Tune-up Limit	Measured	Tune-up Limit	Measured	Measured		Scaled		Measured		Scaled	
									1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g
Variant 1 Highest Report SAR	2.4 GHz	Head	802.11g CDD	0	2 Tx	Right Touch	8	2447	17.3	17.3	21.0	20.0	1.180	0.502	1.180	0.502	0.311	0.170	0.392	0.214
		Body-worn & Hotspot	802.11g CDD	5	2 Tx	Front	6	2437	19.8	19.0	18.8	18.8	0.669	0.306	0.804	0.368	1.190	0.492	1.190	0.492
Variant 2 Spot Check	2.4 GHz	Head	802.11g CDD	0	2 Tx	Right Touch	8	2447	17.3	17.3	21.0	20.0	1.120	0.516	1.120	0.516	0.253	0.141	0.319	0.178
		Body-worn & Hotspot	802.11g CDD	5	2 Tx	Front	6	2437	19.8	19.0	18.8	18.7	0.623	0.295	0.749	0.355	1.020	0.433	1.044	0.443

Notes:

For SAR results with “-”, there is no additional zoom scans due to secondary peak not being within 2dB of maximum peak.

Wi-Fi (U-NII-1 and U-NII-2A Band)

Vendor	Band	RF Exposure Conditions	Mode	Dist. (mm)	No. of Transmitters	Position	Ch #.	Freq. (MHz)	Power (dBm)				SAR (W/kg)							
									UAT 2		LAT 3		UAT 2				LAT 3			
									Tune-up Limit	Measured	Tune-up Limit	Measured	Measured		Scaled		Measured		Scaled	
									1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g
Variant 1 Highest Report SAR	5.2 & 5.3 GHz	Head	802.11ac VHT80	0	1 Tx	Right Touch	42	5210	13.8	13.8			1.170	0.345	1.170	0.345				
		Body-worn & Hotspot	802.11n HT40	5	1 Tx	Front	46	5230			16.8	16.4					0.966	0.248	1.047	0.269
Variant 2 Spot Check	5.2 & 5.3 GHz	Head	802.11ac VHT80	0	1 Tx	Right Touch	42	5210	13.8	13.4			0.985	0.289	1.080	0.317				
		Body-worn & Hotspot	802.11n HT40	5	1 Tx	Front	46	5230			16.8	16.8					0.966	0.266	0.966	0.266

Notes:

1. For SAR results with “-”, there is no additional zoom scans due to secondary peak not being within 2dB of maximum peak.
2. Hotspot mode SAR Testing was performed to justify SAR Test Reduction from KDB 648474 D04 (Phablet only)

Wi-Fi (U-NII-2C Band)

Vendor	Band	RF Exposure Conditions	Mode	Dist. (mm)	No. of Transmitters	Position	Ch #.	Freq. (MHz)	Power (dBm)				SAR (W/kg)							
									UAT 2		LAT 3		UAT 2				LAT 3			
									Tune-up Limit	Measured	Tune-up Limit	Measured	Measured		Scaled		Measured		Scaled	
													1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g
Variant 1 Highest Report SAR	5.6 GHz	Head	802.11ac VHT80	0	1 Tx	Right Touch	138	5690	12.8	12.6			1.140	0.300	1.194	0.314				
		Body-worn & Hotspot	802.11ac VHT80	5	1 Tx	Front	122	5610	18.0	17.8			1.110	0.354	1.162	0.371				
Variant 2 Spot Check	5.6 GHz	Head	802.11ac VHT80	0	1 Tx	Right Touch	138	5690	12.8	12.8			1.140	0.309	1.140	0.309				
		Body-worn & Hotspot	802.11ac VHT80	5	1 Tx	Front	122	5610	18.0	18.0			1.110	0.343	1.110	0.343				

Notes:

- For SAR results with “-”, there is no additional zoom scans due to secondary peak not being within 2dB of maximum peak.
- Hotspot mode SAR Testing was performed to justify SAR Test Reduction from KDB 648474 D04 (Phablet only)

Wi-Fi (U-NII-3 Band)

Vendor	Band	RF Exposure Conditions	Mode	Dist. (mm)	No. of Transmitters	Position	Ch #.	Freq. (MHz)	Power (dBm)				SAR (W/kg)							
									UAT 2		LAT 3		UAT 2				LAT 3			
									Tune-up Limit	Measured	Tune-up Limit	Measured	Measured		Scaled		Measured		Scaled	
													1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g
Variant 1 Highest Report SAR	5.8 GHz	Head	802.11ac VHT80	0	1 Tx	Right Touch	155	5775	12.3	12.3			1.130	0.294	1.130	0.294				
		Body-worn & Hotspot	802.11a	5	1 Tx	Front	155	5775	16.0	15.8			1.120	0.368	1.173	0.385				
Variant 2 Spot Check	5.8 GHz	Head	802.11ac VHT80	0	1 Tx	Right Touch	155	5775	12.3	12.3			1.070	0.295	1.070	0.295				
		Body-worn & Hotspot	802.11a	5	1 Tx	Front	155	5775	16.0	16.0			1.060	0.308	1.060	0.308				

Notes:

- For SAR results with “-”, there is no additional zoom scans due to secondary peak not being within 2dB of maximum peak.
- Hotspot mode SAR Testing was performed to justify SAR Test Reduction from KDB 648474 D04 (Phablet only)

10.25. Bluetooth

SAR Testing was performed based on the power measurement results from Sec. 9. Testing was performed for each power configuration for Bluetooth: P_{low} , P_{High} , $P_{\text{standalone}}$ and for each Antenna – UAT 1 and LAT 3 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn exposure condition. Mode C power configuration is not used for distances less than 20cm from the body and therefore not applicable for SAR testing.

UAT 1

P_{low}

Frequency Band	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
2.4 GHz	Head	GFSK	0	Left Touch	39	2441.0	10.0	10.0	0.059	0.059	0.025	0.025	
				Left Tilt	39	2441.0	10.0	10.0	0.060	0.060	0.022	0.022	
				Right Touch	39	2441.0	10.0	10.0	0.126	0.126	0.055	0.055	
				Right Tilt	39	2441.0	10.0	10.0	0.129	0.129	0.051	0.051	
	Body-worn	GFSK	5	Rear	39	2441.0	10.0	10.0	0.069	0.069	0.031	0.031	
				Front	39	2441.0	10.0	10.0	0.039	0.039	0.018	0.018	

P_{High}

Frequency Band	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
2.4 GHz	Head	GFSK	0	Left Touch	39	2441.0	12.0	12.0	0.060	0.060	0.027	0.027	
				Left Tilt	39	2441.0	12.0	12.0	0.055	0.055	0.024	0.024	
				Right Touch	39	2441.0	12.0	12.0	0.228	0.228	0.093	0.093	
				Right Tilt	39	2441.0	12.0	12.0	0.161	0.161	0.067	0.067	
	Body-worn	GFSK	5	Rear	39	2441.0	13.5	13.0	0.204	0.229	0.091	0.102	
				Front	39	2441.0	13.5	13.0	0.161	0.181	0.073	0.082	

$P_{\text{standalone}}$

Frequency Band	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
2.4 GHz	Head	GFSK	0	Left Touch	39	2441.0	14.5	14.5	0.151	0.151	0.059	0.059	
				Left Tilt	39	2441.0	14.5	14.5	0.127	0.127	0.055	0.055	
				Right Touch	39	2441.0	14.5	14.5	0.439	0.439	0.208	0.208	37
				Right Tilt	39	2441.0	14.5	14.5	0.297	0.297	0.125	0.125	
	Body-worn	GFSK	5	Rear	39	2441.0	16.5	16.0	0.356	0.399	0.168	0.188	
				Front	39	2441.0	16.5	16.0	0.275	0.309	0.123	0.138	

LAT 3

P_{low}

Frequency Band	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
2.4 GHz	Head	GFSK	0	Left Touch	39	2441.0	10.0	10.0	0.011	0.011	0.005	0.005	
				Left Tilt	39	2441.0	10.0	10.0	0.012	0.012	0.005	0.005	
				Right Touch	39	2441.0	10.0	10.0	0.035	0.035	0.018	0.018	
				Right Tilt	39	2441.0	10.0	10.0	0.009	0.009	0.004	0.004	
	Body-worn	GFSK	5	Rear	39	2441.0	10.0	10.0	0.036	0.036	0.018	0.018	
				Front	39	2441.0	10.0	10.0	0.076	0.076	0.033	0.033	

P_{high}

Frequency Band	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
2.4 GHz	Head	GFSK	0	Left Touch	39	2441.0	16.5	16.5	0.053	0.053	0.029	0.029	
				Left Tilt	39	2441.0	16.5	16.5	0.045	0.045	0.023	0.023	
				Right Touch	39	2441.0	16.5	16.5	0.189	0.189	0.103	0.103	
				Right Tilt	39	2441.0	16.5	16.5	0.032	0.032	0.016	0.016	
	Body-worn	GFSK	5	Rear	39	2441.0	13.5	12.5	0.158	0.199	0.071	0.089	
				Front	39	2441.0	13.5	12.5	0.190	0.239	0.080	0.101	

P_{standalone}

Frequency Band	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
2.4 GHz	Head	GFSK	0	Left Touch	39	2441.0	19.5	19.5	0.242	0.242	0.136	0.136	
				Left Tilt	39	2441.0	19.5	19.5	0.183	0.183	0.092	0.092	
				Right Touch	39	2441.0	19.5	19.5	0.401	0.401	0.214	0.214	
				Right Tilt	39	2441.0	19.5	19.5	0.105	0.105	0.055	0.055	
	Body-worn	GFSK	5	Rear	39	2441.0	16.5	16.1	0.161	0.177	0.084	0.092	
				Front	39	2441.0	16.5	16.1	0.407	0.446	0.179	0.196	38

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 .

Frequency Band (MHz)	Air Interface	RF Exposure Conditions	Test Position	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	First Repeated		Second Repeated	
						Measured SAR (W/kg)	Largest to Smallest SAR Ratio	Measured SAR (W/kg)	Largest to Smallest SAR Ratio
700	LTE Band 12	Body & Hotspot	Rear	No	0.721	N/A	N/A	N/A	N/A
	LTE Band 13	Body & Hotspot	Rear	Yes	0.942	0.927	1.02	N/A	N/A
850	GSM 850	Body & Hotspot	Rear	No	1.070	N/A	N/A		
	WCDMA Band V	Head	Right Touch	Yes	1.090	1.050	1.04	N/A	N/A
	LTE Band 26	Body & Hotspot	Rear	No	1.090	N/A	N/A		
1700	WCDMA Band IV	Hotspot	Edge 3	Yes	1.050	1.050	1.00	N/A	N/A
	LTE Band 66	Hotspot	Edge 3	No	1.050	N/A	N/A		
1900	GSM 1900	Body & Hotspot	Rear	Yes	1.070	1.050	1.02	N/A	N/A
	WCDMA Band II	Body & Hotspot	Rear	No	1.040	N/A	N/A		
	LTE Band 25	Head	Right Touch	No	1.060	N/A	N/A		
2300	LTE Band 30	Body & Hotspot	Front	Yes	1.070	1.090	1.02	N/A	N/A
2400	Wi-Fi 802.11b/g/n	Body & Hotspot	Front	Yes	1.190	1.090	1.09	N/A	N/A
	BT	Head	Right Touch	No	0.439	N/A	N/A	N/A	N/A
2500	LTE Band 7	Head	Right Touch	Yes	0.985	0.938	1.05	N/A	N/A
2600	LTE Band 41	Head	Right Touch	Yes	1.080	1.010	1.07	N/A	N/A
5200	Wi-Fi 802.11a/n/ac	Head	Right Touch	Yes	1.170	1.160	1.01	N/A	N/A
5500	Wi-Fi 802.11a/n/ac	Head	Right Touch	Yes	1.14	1.06	1.08	N/A	N/A
5800	Wi-Fi 802.11a/n/ac	Body & Hotspot	Front	Yes	1.16	1.11	1.05	N/A	N/A

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 SAR Analysis

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:

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

Simultaneous Transmission Condition

RF Exposure Condition	Item	Capable Transmit Configurations	
Head Body Worn Accessory Hotspot	1	WWAN OFF (CELLULAR ANTENNAS OFF)	+ (UAT 2) Wi-Fi 5 GHz SISO + (UAT 1) Bluetooth (P _{High})
	2		+ (LAT 3) Wi-Fi 5 GHz SISO + (UAT 1) Bluetooth (P _{High})
	3		+ Wi-Fi 5 GHz MIMO + (UAT 1) Bluetooth (P _{High})
	4		+ (UAT 2) Wi-Fi 5 GHz SISO + (LAT 3) Bluetooth (P _{High})
	5		+ (LAT 3) Wi-Fi 5 GHz SISO + (LAT 3) Bluetooth (P _{High})
	6		+ Wi-Fi 5 GHz MIMO + (LAT 3) Bluetooth (P _{High})
	7	WWAN ON (CELLULAR ANTENNAS ON)	+ (UAT 1) Wi-Fi 2.4 GHz SISO
	8		+ (LAT 3) Wi-Fi 2.4 GHz SISO
	9		+ Wi-Fi 2.4 GHz MIMO
	10		+ (UAT 1) Bluetooth (P _{High})
	11		+ (LAT 3) Bluetooth (P _{High})
	12		+ (UAT 2) Wi-Fi 5 GHz SISO
	13		+ (LAT 3) Wi-Fi 5 GHz SISO
	14		+ Wi-Fi 5 GHz MIMO
	15		+ (UAT 2) Wi-Fi 5 GHz SISO + (UAT 1) Bluetooth (P _{low})
	16		+ (LAT 3) Wi-Fi 5 GHz SISO + (UAT 1) Bluetooth (P _{low})
	17		+ Wi-Fi 5 GHz MIMO + (UAT 1) Bluetooth (P _{low})
	18		+ (UAT 2) Wi-Fi 5 GHz SISO + (LAT 3) Bluetooth (P _{low})
	19		+ (LAT 3) Wi-Fi 5 GHz SISO + (LAT 3) Bluetooth (P _{low})
	20		+ Wi-Fi 5 GHz MIMO + (LAT 3) Bluetooth (P _{low})
Notes:			
1. Wi-Fi 2.4GHz & Bluetooth cannot transmit simultaneously.			
2. Conditions 12, 13, and 14 are covered by conditions 15, 16, and 17, respectively.			

12.1. Sum of the SAR for Worst Case Cell-Off (UNII & BT only)

RF Exposure Condition	Test Position	Standalone SAR (W/kg)					Σ 1-g SAR (W/g)					
		(E)	(F)	(G)	(H)	(J)	(E) + (H)	(F) + (H)	(G) + (H)	(E) + (J)	(F) + (J)	(G) + (J)
		U-NII UAT2	U-NII LAT3	U-NII MIMO	BT UAT1P-high	BT LAT3 P-high	U-NII+BT UAT2+UAT1P-high	U-NII+BT LAT3+UAT1P-high	U-NII+BT MIMO+UAT1P-high	U-NII+BT UAT2+LAT3 P-high	U-NII+BT LAT3+LAT3 P-high	U-NII+BT MIMO+LAT3 P-high
Head	Left Touch	0.901	0.340	0.803	0.060	0.053	0.961	0.400	0.863	0.954	0.393	0.856
	Left Tilt	0.862	0.340	0.867	0.055	0.045	0.917	0.395	0.922	0.907	0.385	0.912
	Right Touch	1.184	0.340	1.160	0.228	0.189	1.422	0.568	1.388	1.383	0.529	1.349
	Right Tilt	1.100	0.340	1.080	0.161	0.032	1.261	0.501	1.241	1.132	0.372	1.112
Body-worn Accessory & Airplay	Rear	0.946	0.353	1.088	0.229	0.199	1.175	0.582	1.317	1.145	0.552	1.287
	Front	1.162	1.133	1.160	0.181	0.239	1.343	1.314	1.341	1.401	1.372	1.399
Airplay	Edge 1	0.657	1.133	0.643			0.657	1.133	0.643	0.657	1.133	0.643
	Edge 2	1.162	1.133	1.160			1.162	1.133	1.160	1.162	1.133	1.160
	Edge 3	1.162	1.133	1.160			1.162	1.133	1.160	1.162	1.133	1.160
	Edge 4	1.162	1.133	1.160			1.162	1.133	1.160	1.162	1.133	1.160

12.2. Sum of the SAR for Worst Case Cell-On (Cellular UAT 1), DTS and BT

RF Exposure Condition	Test Position	Standalone SAR (W/kg)						Σ 1g SAR (W/g)				
		(A)	(B)	(C)	(D)	(H)	(J)	(A)+(B)	(A)+(C)	(A)+(D)	(A)+(H)	(A)+(J)
		WWAN UAT1	DTS UAT1	DTS LAT3	DTS MIMO	BT UAT1P-high	BT LAT3 P-high	WWAN+DTS UAT1+UAT1	WWAN+DTS UAT1+LAT3	WWAN+DTS UAT1+MIMO	WWAN+BT UAT1+UAT1P-high	WWAN+BT UAT1+LAT3 P-high
Head	Left Touch	1030	0.283	0.177	0.284	0.060	0.053	1313	1207	1314	1090	1083
	Left Tilt	0.659	0.283	0.177	0.284	0.055	0.045	0.942	0.836	0.943	0.714	0.704
	Right Touch	1090	0.283	0.177	0.284	0.228	0.189	1373	1267	1374	1318	1279
	Right Tilt	1057	0.283	0.177	0.284	0.161	0.032	1340	1234	1341	1218	1089
Body-worn Accessory & Airplay	Rear	0.890	0.532	0.333	0.401	0.229	0.199	1422	1223	1291	1119	1089
	Front	0.881	0.311	0.333	0.412	0.181	0.239	1192	1214	1293	1062	1120
Airplay	Edge 1	0.700	0.532	0.333	0.412			1232	1033	1112	0.700	0.700
	Edge 2	0.465	0.532	0.333	0.412			0.997	0.798	0.877	0.465	0.465
	Edge 4	0.871	0.532	0.333	0.412			1403	1204	1283	0.871	0.871

12.3. Sum of the SAR for Worst Case Cell-On (Cellular UAT 1), UNII and BT

RF Exposure Condition	Test Position	Standalone SAR (W/kg)						Σ 1g SAR (W/g)					
		(A)	(E)	(F)	(G)	(I)	(K)	(A)+(E)+(I)	(A)+(F)+(I)	(A)+(G)+(I)	(A)+(E)+(K)	(A)+(F)+(K)	(A)+(G)+(K)
		WWAN UAT1	U-NII UAT2	U-NII LAT3	U-NII MIMO	BT UAT1P-low	BT LAT3 P-low	WWAN+U-NII+BT UAT1+UAT2+UAT1 P-low	WWAN+U-NII+BT UAT1+LAT3+UAT1 P-low	WWAN+U-NII+BT UAT1+MIMO+UAT1P-low	WWAN+U-NII+BT UAT1+UAT2+LAT3 P-low	WWAN+U-NII+BT UAT1+LAT3+LAT3 P-low	WWAN+U-NII+BT UAT1+MIMO+LAT3 P-low
Head	Left Touch	1030	0.183	0.233	0.218	0.059	0.011	1272	1322	1307	1224	1274	1259
	Left Tilt	0.659	0.183	0.233	0.218	0.060	0.012	0.902	0.952	0.937	0.854	0.904	0.889
	Right Touch	1090	0.183	0.233	0.218	0.126	0.035	1399	1449	1434	1308	1358	1343
	Right Tilt	1057	0.183	0.233	0.218	0.129	0.009	1369	1419	1404	1249	1299	1284
Body-worn Accessory & Airplay	Rear	0.890	0.416	0.247	0.405	0.069	0.036	1375	1206	1364	1342	1173	1331
	Front	0.881	0.446	0.247	0.431	0.039	0.076	1366	1167	1351	1403	1204	1388
Airplay	Edge 1	0.700	0.220	0.247	0.231			0.920	0.947	0.931	0.920	0.947	0.931
	Edge 2	0.465	0.446	0.247	0.431			0.911	0.712	0.896	0.911	0.712	0.896
	Edge 4	0.871	0.446	0.247	0.431			1317	1118	1302	1317	1118	1302

12.4. Sum of the SAR for Worst Case Cell-On (Cellular LAT 1), DTS and BT

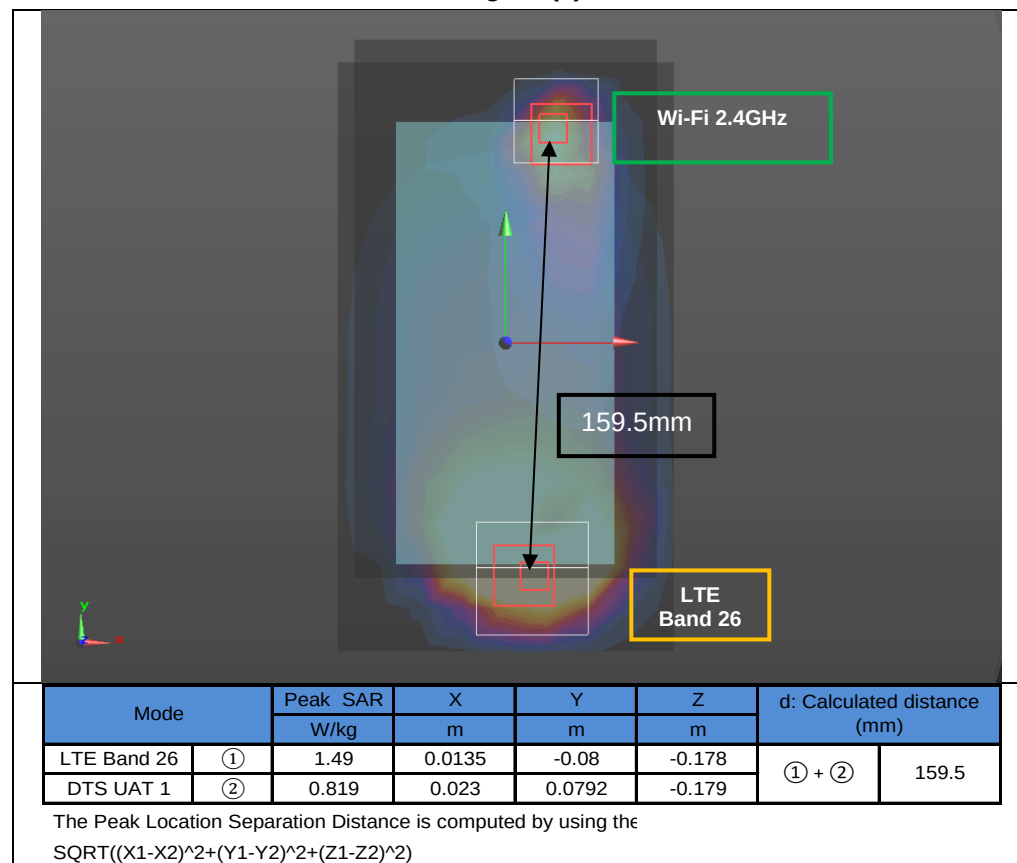
RF Exposure Condition	Test Position	Standalone SAR (W/kg)						Σ 1g SAR (W/g)				
		(A)	(B)	(C)	(D)	(H)	(J)	(A)+(B)	(A)+(C)	(A)+(D)	(A)+(H)	(A)+(J)
		WWAN LAT1	DTS UAT1	DTS LAT3	DTS MIMO	BT UAT1P-high	BT LAT3 P-high	WWAN+DTS LAT1+UAT1	WWAN+DTS LAT1+LAT3	WWAN+DTS LAT1+MIMO	WWAN+BT LAT1+UAT1P-high	WWAN+BT LAT1+LAT3 P-high
Head	Left Touch	0.938	0.283	0.177	0.284	0.060	0.053	1221	1115	1222	0.998	0.991
	Left Tilt	0.238	0.283	0.177	0.284	0.055	0.045	0.521	0.415	0.522	0.293	0.283
	Right Touch	0.846	0.283	0.177	0.284	0.228	0.189	1129	1023	1130	1074	1035
	Right Tilt	0.287	0.283	0.177	0.284	0.161	0.032	0.570	0.464	0.571	0.448	0.319
Body-worn Accessory & Airplay	Rear	1090	0.532	0.333	0.401	0.229	0.199	1622	1423	1491	1319	1289
	Front	1071	0.311	0.333	0.412	0.181	0.239	1382	1404	1483	1252	1310
Airplay	Edge 2	0.761	0.532	0.333	0.412			1293	1094	1173	0.761	0.761
	Edge 3	1054	0.532	0.333	0.412			1586	1387	1466	1054	1054
	Edge 4	0.801	0.532	0.333	0.412			1333	1134	1213	0.801	0.801

12.5. Sum of the SAR for Worst Case Cell-On (Cellular LAT 1), UNII and BT

RF Exposure Condition	Test Position	Standalone SAR (W/kg)						Σ 1g SAR (W/g)					
		(A)	(E)	(F)	(G)	(I)	(K)	(A)+(E)+(I)	(A)+(F)+(I)	(A)+(G)+(I)	(A)+(E)+(K)	(A)+(F)+(K)	(A)+(G)+(K)
		WWAN LAT1	U-NII UAT2	U-NII LAT3	U-NII MIMO	BT UAT1P-low	BT LAT3 P-low	WWAN+U-NII+BT LAT1+UAT2+UAT1 P-low	WWAN+U-NII+BT LAT1+LAT3+UAT1 P-low	WWAN+U-NII+BT LAT1+MIMO+UAT1P-low	WWAN+U-NII+BT LAT1+UAT2+LAT3 P-low	WWAN+U-NII+BT LAT1+LAT3+LAT3 P-low	WWAN+U-NII+BT LAT1+MIMO+LAT3 P-low
Head	Left Touch	0.938	0.183	0.233	0.213	0.059	0.011	1180	1230	1215	1132	1182	1167
	Left Tilt	0.238	0.183	0.233	0.213	0.060	0.012	0.481	0.531	0.516	0.433	0.483	0.468
	Right Touch	0.846	0.183	0.233	0.213	0.126	0.035	1155	1205	1190	1064	1114	1099
	Right Tilt	0.287	0.183	0.233	0.213	0.129	0.009	0.599	0.649	0.634	0.479	0.529	0.514
Body-worn Accessory & Airplay	Rear	1090	0.416	0.247	0.405	0.069	0.036	1575	1406	1564	1542	1373	1531
	Front	1071	0.446	0.247	0.431	0.039	0.076	1556	1357	1541	1593	1394	1578
Airplay	Edge 2	0.761	0.446	0.247	0.431			1207	1008	1192	1207	1008	1192
	Edge 3	1054	0.446	0.247	0.431			1500	1301	1485	1500	1301	1485
	Edge 4	0.801	0.446	0.247	0.431			1247	1048	1232	1247	1048	1232

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Standalone SAR (W/kg)		Σ 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)	Figure
	① WWAN LAT 1	② DTS UAT 1						
Rear	1.090	0.532	① + ②	1.622	159.5	0.01	No	1

Figure (1)

Appendixes

Refer to separated files for the following appendixes.

11697707-S1V1 SAR_App A Setup Photos

11697707-S1V1 SAR_App B System Check Plots

11697707-S1V1 SAR_App C Highest Test Plots

11697707-S1V1 SAR_App D Tissue Ingredients

11697707-S1V1 SAR_App E Probe Cal. Certificates

11697707-S1V1 SAR_App F Dipole Cal. Certificates

END OF REPORT