FCC SAR TEST REPORT

FCC ID	:	**B94HNQ38C3OMR**
Equipment	:	**Notebook PC**
Brand Name	:	**HP**
Model Name	:	**HSN-Q38C-3**
Applicant	:	**HP Inc.** **1501 Page Mill Road, Palo Alto CA 94304 USA**
Standard	:	**FCC 47 CFR Part 2 (2.1093)**

The product was received on Mar. 17, 2026 and testing was started from Apr. 15, 2026 and completed on Apr. 27, 2026. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample provide by manufacturer and the test data has been evaluated in accordance with the test procedures given in 47 CFR Part 2.1093 and FCC KDB and has been pass the FCC requirement.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Laboratory, the test report shall not be reproduced except in full.

Approved by: Cona Huang / Deputy Manager

Sporton International Inc. Wensan Laboratory
No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan

Table of Contents

1. Statement of Compliance 4
2. Guidance Applied 4
3. Equipment Under Test (EUT) Information 5
3.1 General Information 5
3.2 General LTE SAR Test and Reporting Considerations 9
3.3 General 5G NR SAR Test and Reporting Considerations 12
3.4 Sensor Triggering angle and power verification 15
4. RF Exposure Limits 18
4.1 Uncontrolled Environment 18
4.2 Controlled Environment 18
4.3 RF Exposure limit for above 6GHz 19
5. Specific Absorption Rate (SAR) 20
5.1 Introduction 20
5.2 SAR Definition 20
6. System Description and Setup 21
6.1 Test Site Location 21
6.2 E-Field Probe 22
6.3 Data Acquisition Electronics (DAE) 22
6.4 Phantom 23
6.5 Device Holder 24
7. Measurement Procedures 25
7.1 Spatial Peak SAR Evaluation 25
7.2 Power Reference Measurement 26
7.3 Area Scan 26
7.4 Zoom Scan 27
7.5 Volume Scan Procedures 27
7.6 Power Drift Monitoring 27
8. Test Equipment List 28
9. System Verification 29
9.1 Tissue Verification 29
9.2 System Performance Check Results 30
10. RF Exposure Positions 30
10.1 SAR Testing for Tablet 30
11. UL/DL Carrier aggregation 31
12. Antenna Location 35
13. SAR Test Results 39
13.1 Body SAR 40
13.2 Repeated SAR Measurement 46
13.3 Power Class 2 and Power Class 3 Linearity 46
14. Simultaneous Transmission Analysis 47
14.1 Body Exposure Conditions 47
14.2 SPLSR Evaluation and Analysis 49
15. Uncertainty Assessment 51
16. References 51
Appendix A. Plots of System Performance Check
Appendix B. Plots of High SAR Measurement
Appendix C. DASY Calibration Certificate
Appendix D. Output Power Measurement
Appendix E. Test Setup Photos

History of this test report

Report No.	Version	Description	Issued Date
FA631331-06A	01	Initial issue of report	May 22, 2026

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) for HP Inc., Notebook PC, HSN-Q38C-3, are as follows.

Equipment Class	Frequency Band	Highest SAR Summary Body (Separation 0mm) 1g SAR (W/kg)	Highest Simultaneous Transmission 1g SAR (W/kg)
Licensed	WCDMA II	0.14	1.37
	WCDMA IV	0.12	
	WCDMA V	0.42	
	LTE Band 7	0.86	
	LTE Band 12/17	0.64	
	LTE Band 13	0.58	
	LTE Band 14	0.82	
	LTE Band 2/25	0.65	
	LTE Band 5/26	0.77	
	LTE Band 30	0.82	
	LTE Band 4/66	0.53	
	LTE Band 71	0.39	
	LTE Band 38/41	0.52	
	LTE Band 48	0.54	
	FR1 n2	0.60	
	FR1 n7	0.77	
	FR1 n12	0.61	
	FR1 n14	0.66	
	FR1 n25	0.58	
	FR1 n5/n26	0.68	
	FR1 n30	0.70	
	FR1 n66	0.70	
	FR1 n71	0.64	
	FR1 n38/n41	0.75	
	FR1 n48	0.75	
	FR1 n77	1.14	
Date of Testing:		2026/04/15 ~ 2026/04/27	

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation and the FCC designation No. TW3786 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test. This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body 1g SAR) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

Reviewed by: Jason Wang
Report Producer: Carlie Tsai

2. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards, the below KDB standard may not including in the TAF code without accreditation.

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 616217 D04 SAR for laptop and tablets v01r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02

3. Equipment Under Test (EUT) Information

3.1 General Information

Product Feature & Specification	
Equipment Name	Notebook PC
Brand Name	HP
Model Name	HSN-Q38C-3
FCC ID	B94HNQ38C3OMR
Wireless Technology and Frequency Range	WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz 5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n12 : 699 MHz ~ 716 MHz 5G NR n14 : 788 MHz ~ 798 MHz 5G NR n25 : 1850 MHz ~ 1915 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n30 : 2305 MHz ~ 2315 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77: 3700 MHz ~ 3980 MHz, 3450 MHz ~ 3550 MHz WLAN 2.4 GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2 GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3 GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.6 GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8 GHz Band: 5725 MHz ~ 5850 MHz WLAN 5.9 GHz Band: 5850 MHz ~ 5895 MHz WLAN 6GHz Band: 5925 MHz ~ 6425 MHz, 6425 MHz ~ 6525 MHz, 6525 MHz ~ 6875 MHz, 6875 MHz ~ 7125 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA HSPA+ (16QAM uplink) LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR: DFT-s-OFDM/CP-OFDM, Pi/2 BPSK/QPSK/16QAM/64QAM/256QAM WLAN: 802.11a/b/g/n/ac/ax/be HT20/HT40/VHT20/VHT40/VHT80/VHT160/HE20/HE40/HE80/HE160/EHT20/EHT40/EHT80/EHT160/EHT320 Bluetooth BR/EDR/LE
EUT Stage	Production Unit

Remark:

1. The Intel BE211NGW WLAN/BT module is integrated into this host. The maximum WLAN/BT output power and evaluation results are referenced from the Intel test report (Report No.: 250916-02.TR01, FCC ID: PD9BE211NG). The SAR results are used for simultaneous transmission analysis.
2. The Intel AX211NGW WLAN/BT module is integrated into this host. The maximum WLAN/BT output power and evaluation results are referenced from the Intel test report (Report No.: 250916-01.TR01, FCC ID: PD9AX211NG). The SAR results are used for simultaneous transmission analysis.
3. This device is a convertible type notebook PC, and there are two usage ways: Laptop and Tablet. When the end user uses a different mode, the device will limit the maximum power according to the current mode.
4. There are two antenna vendors. RF exposure evaluation selects Vendor 1 as the main test sample, and Vendor 2 will be spot-checked based on the worst case found in Vendor 1.

WWAN Antenna Information:

Communication System	Band	Frequency(MHz) from low to high spectrum		1A Part Number for Antenna Assembly	1B Antenna Manufacturer Name	1C Description of Antenna Type	1D Tx Antenna Gain (dBi) Ant5
WCDMA/ LTE	2	1850	1910	Ant5 : DQ602351302 (350-23513)	Vendor 1	PIFA	2.72
WCDMA/ LTE	4	1710	1755				1.4
WCDMA/ LTE	5	824	849				-2.33
LTE	7	2500	2570				-1.94
LTE	12	699	716				-6.85
LTE	13	777	787				-1.32
LTE	14	788	798				-0.96
LTE	17	704	716				-6.85
LTE	25	1850	1915				2.72
LTE	26	814	849				-1.99
LTE	30	2305	2315				2.3
LTE	38	2570	2620				-3.3
LTE	41	2496	2690				-1.45
LTE	48	3550	3700				-0.05
LTE	66	1710	1780				1.4
LTE	71	663	698				-8.99
5G NR FR1	2	1850	1910				2.72
5G NR FR1	5	824	849				-2.33
5G NR FR1	7	2500	2570				-1.94
5G NR FR1	12	699	716				-6.85
5G NR FR1	14	788	798				-0.96
5G NR FR1	25	1850	1915				2.72
5G NR FR1	26	814	849				-1.99
5G NR FR1	30	2305	2315				2.3
5G NR FR1	38	2570	2620				-3.3
5G NR FR1	41	2496	2690				-1.45
5G NR FR1	48	3550	3700				-0.05
5G NR FR1	66	1710	1780				1.4
5G NR FR1	71	663	698				-8.99
5G NR FR1	77	3300	4200				1.19

Communication System	Band	Frequency(MHz) from low to high spectrum		1A Part Number for Antenna Assembly	1B Antenna Manufacturer Name	1C Description of Antenna Type	1D Tx Antenna Gain (dBi) Ant8
LTE	2	1850	1910	Ant8 : DQ602351302 (350-23513)	Vendor 1	PIFA	2.69
LTE	4	1710	1755				2.19
LTE	7	2500	2570				1.19
LTE	25	1850	1915				2.69
LTE	30	2305	2315				2.73
LTE	38	2570	2620				1.19
LTE	41	2496	2690				1.19
LTE	48	3550	3700				0.92
LTE	66	1710	1780				2.19
5G NR FR1	2	1850	1910				2.69
5G NR FR1	7	2500	2570				1.19
5G NR FR1	25	1850	1915				2.69
5G NR FR1	30	2305	2315				2.73
5G NR FR1	38	2570	2620				1.19
5G NR FR1	41	2496	2690				1.19
5G NR FR1	48	3550	3700				0.92
5G NR FR1	66	1710	1780				2.19
5G NR FR1	77	3300	4200				1.35

Communication System	Band	Frequency(MHz) from low to high spectrum		1A Part Number for Antenna Assembly	1B Antenna Manufacturer Name	1C Description of Antenna Type	1D Tx Antenna Gain (dBi) Ant5
WCDMA/ LTE	2	1850	1910	Ant5 : DQ6F15G6100 (81ELBF15.G61)	Vendor 2	PIFA	-2.83
WCDMA/ LTE	4	1710	1755				-2.74
WCDMA/ LTE	5	824	849				-1.71
LTE	7	2500	2570				-1.26
LTE	12	699	716				-0.84
LTE	13	777	787				-0.61
LTE	14	788	798				-2.21
LTE	17	704	716				-0.84
LTE	25	1850	1915				-2.83
LTE	26	814	849				-1.71
LTE	30	2305	2315				-0.5
LTE	38	2570	2620				-1.6
LTE	41	2496	2690				-1.17
LTE	48	3550	3700				-1.4
LTE	66	1710	1780				-2.73
LTE	71	663	698				-1.05
5G NR FR1	2	1850	1910				-2.83
5G NR FR1	5	824	849				-1.71
5G NR FR1	7	2500	2570				-1.26
5G NR FR1	12	699	716				-0.84
5G NR FR1	14	788	798				-2.21
5G NR FR1	25	1850	1915				-2.83
5G NR FR1	26	814	849				-1.71
5G NR FR1	30	2305	2315				-0.5
5G NR FR1	38	2570	2620				-1.6
5G NR FR1	41	2496	2690				-1.17
5G NR FR1	48	3550	3700				-1.4
5G NR FR1	66	1710	1780				-2.73
5G NR FR1	71	663	698				-1.05
5G NR FR1	77	3300	4200				-0.48

Communication System	Band	Frequency(MHz) from low to high spectrum		1A Part Number for Antenna Assembly	1B Antenna Manufacturer Name	1C Description of Antenna Type	1D Tx Antenna Gain (dBi) Ant8
LTE	2	1850	1910	Ant8 : DQ6F15G6100 (81ELBF15.G61)	Vendor 2	PIFA	-0.14
LTE	4	1710	1755				0.65
LTE	7	2500	2570				-1.14
LTE	25	1850	1915				-0.14
LTE	30	2305	2315				-1.01
LTE	38	2570	2620				-1.14
LTE	41	2496	2690				-1.14
LTE	48	3550	3700				0.88
LTE	66	1710	1780				0.65
5G NR FR1	2	1850	1910				-0.14
5G NR FR1	7	2500	2570				-1.14
5G NR FR1	25	1850	1915				-0.14
5G NR FR1	30	2305	2315				-1.01
5G NR FR1	38	2570	2620				-1.14
5G NR FR1	41	2496	2690				-1.14
5G NR FR1	48	3550	3700				0.88
5G NR FR1	66	1710	1780				0.65
5G NR FR1	77	3300	4200				0.88

WLAN Antenna Information:

WLAN Antenna Information									
WWAN SKU Vendor 1	Ant. Type	PIFA	connector	IPEX	WWAN SKU Vendor 1	Ant. Type	PIFA	connector	IPEX
	Model No.	DQ602351302				Model No.	DQ602351302		
	Peak Gain (dBi) Ant.2					Peak Gain (dBi) Ant.1			
	2400~2483.5MHz	-1.42	5725~5850MHz	-1.88		2400~2483.5MHz	-0.28	5725~5850MHz	-1.16
	5150~5250MHz	-1.79	5850~5895MHz	-1.88		5150~5250MHz	-1.58	5850~5895MHz	-1.65
	5250~5350MHz	-0.72	5925~6425MHz	-0.73		5250~5350MHz	-1.53	5925~6425MHz	-0.72
	5470~5725MHz	-1.92	5925~7125MHz	-0.05		5470~5725MHz	-0.89	5925~7125MHz	-0.72
WWAN SKU Vendor 2	Ant. Type	PIFA	connector	IPEX	WWAN SKU Vendor 2	Ant. Type	PIFA	connector	IPEX
	Model No.	DQ6F15G6100				Model No.	DQ6F15G6100		
	Peak Gain (dBi) Ant.2					Peak Gain (dBi) Ant.1			
	2400~2483.5MHz	-0.57	5725~5850MHz	0.92		2400~2483.5MHz	1.23	5725~5850MHz	2.13
	5150~5250MHz	1.21	5850~5895MHz	0.92		5150~5250MHz	1.56	5850~5895MHz	2.13
	5250~5350MHz	2.11	5925~6425MHz	0.34		5250~5350MHz	2.11	5925~6425MHz	2.29
	5470~5725MHz	2.48	5925~7125MHz	0.47		5470~5725MHz	1.57	5925~7125MHz	2.29

3.2 General LTE SAR Test and Reporting Considerations

<table>
<tr><th colspan="2">Summarized necessary items addressed in KDB 941225 D05 v02r05</th></tr>
<tr><td>FCC ID</td><td>B94HNQ38C3OMR</td></tr>
<tr><td>Equipment Name</td><td>Notebook PC</td></tr>
<tr><td>Operating Frequency Range of each LTE transmission band</td><td>LTE Band 2: 1850 MHz ~ 1910 MHz
LTE Band 4: 1710 MHz ~ 1755 MHz
LTE Band 5: 824 MHz ~ 849 MHz
LTE Band 7: 2500 MHz ~ 2570 MHz
LTE Band 12: 699 MHz ~ 716 MHz
LTE Band 13: 777 MHz ~ 787 MHz
LTE Band 14: 788 MHz ~ 798 MHz
LTE Band 17: 704 MHz ~ 716 MHz
LTE Band 25: 1850 MHz ~ 1915 MHz
LTE Band 26: 814 MHz ~ 849 MHz
LTE Band 30: 2305 MHz ~ 2315 MHz
LTE Band 38: 2570 MHz ~ 2620 MHz
LTE Band 41: 2496 MHz ~ 2690 MHz
LTE Band 48: 3550 MHz ~ 3700 MHz
LTE Band 66: 1710 MHz ~ 1780 MHz
LTE Band 71: 663 MHz ~ 698 MHz</td></tr>
<tr><td>Channel Bandwidth</td><td>LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 13: 5MHz, 10MHz
LTE Band 14: 5MHz, 10MHz
LTE Band 17: 5MHz, 10MHz
LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz
LTE Band 30: 5MHz, 10MHz
LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 48: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 66: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 71: 5MHz, 10MHz, 15MHz, 20MHz</td></tr>
<tr><td>uplink modulations used</td><td>QPSK / 16QAM / 64QAM / 256QAM</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>Data only</td></tr>
<tr><td>LTE MPR permanently built-in by design</td><td>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr>
<tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr>
</table></td></tr>
<tr><td>LTE A-MPR</td><td>In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)</td></tr>
<tr><td>Spectrum plots for RB configuration</td><td>A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.</td></tr>
<tr><td>Power reduction applied to satisfy SAR compliance</td><td>Yes, G-Sensor.</td></tr>
<tr><td>LTE Carrier Aggregation Combinations</td><td>Inter-Band and Intra-Band possible combinations and the detail power measurement please referred to section 11.</td></tr>
<tr><td>LTE Carrier Aggregation Additional Information</td><td>Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.</td></tr>
</table>

Transmission (H, M, L) channel numbers and frequencies in each LTE band												
LTE Band 2												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900
LTE Band 4												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745
LTE Band 5								
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844
LTE Band 7								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560
LTE Band 12								
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5
H	23173	715.3	23165	714.5	23155	713.5	23130	711
LTE Band 13				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	23205	779.5	23230	782
M	23230	782		
H	23255	784.5		
LTE Band 14				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Channel #	Channel #	Freq.(MHz)
L	23305	790.5	23330	793
M	23330	793		
H	23355	795.5		
LTE Band 17				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq. (MHz)
L	23755	706.5	23780	709
M	23790	710	23790	710
H	23825	713.5	23800	711

LTE Band 25												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905

LTE Band 26										
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5

LTE Band 30				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	27685	2307.5	27710	2310
M	27710	2310		
H	27735	2312.5		

LTE Band 38								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580
M	38000	2595	38000	2595	38000	2595	38000	2595
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610

LTE Band 41								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506
LM	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5
M	40620	2593	40620	2593	40620	2593	40620	2593
HM	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680

LTE Band 48								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	55265	3552.5	55290	3555	55315	3557.5	55340	3560
LM	55810	3607	55815	3607.5	55820	3608	55830	3609
MH	56170	3643	56165	3642.5	56160	3642	56150	3641
H	56715	3697.5	56690	3695	56665	3692.5	56640	3690

LTE Band 66												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	131979	1710.7	131987	1711.5	131997	1712.5	132022	1715	132047	1717.5	132072	1720
M	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745
H	132665	1779.3	132657	1778.5	132647	1777.5	132622	1775	132597	1772.5	132572	1770

LTE Band 71								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	133147	665.5	133172	668	133197	670.5	133222	673
M	133297	680.5	133297	680.5	133297	680.5	133297	680.5
H	133447	695.5	133422	693	133397	690.5	133372	688

3.3 General 5G NR SAR Test and Reporting Considerations

5G NR Information	
FCC ID	B94HNQ38C3OMR
Equipment Name	Notebook PC
Operating Frequency Range of each 5G NR transmission band	5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n12 : 699 MHz ~ 716 MHz 5G NR n14 : 788 MHz ~ 798 MHz 5G NR n25 : 1850 MHz ~ 1915 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n30 : 2305 MHz ~ 2315 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77: 3700 MHz ~ 3980 MHz, 3450 MHz ~ 3550 MHz
Channel Bandwidth	5G NR n2: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n5: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n7: 5MHz, 10MHz, 15MHz, 20MHz, 25 MHz, 30MHz, 40MHz, 50MHz 5G NR n12: 5MHz, 10MHz, 15MHz 5G NR n14: 5MHz, 10MHz 5G NR n25: 5MHz, 10MHz, 15MHz, 20MHz, 25 MHz, 30MHz, 40MHz 5G NR n26: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n30: 5MHz, 10MHz 5G NR n38: 5MHz, 10MHz, 15MHz, 20MHz, 25 MHz, 30MHz, 40MHz 5G NR n41: 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 80MHz, 90MHz, 100MHz 5G NR n48: 10MHz, 15MHz, 20MHz, 30MHz, 40MHz 5G NR n66: 5MHz, 10MHz, 15MHz, 20MHz, 25 MHz,30MHz, 40MHz 5G NR n71: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n77: 10MHz, 15MHz, 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 80MHz, 90MHz, 100MHz
SCS	FDD: SCS15KHz, TDD: SCS30KHz
uplink modulations used	DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM CP-OFDM QPSK / 16QAM / 64QAM / 256QAM
A-MPR (Additional MPR) disabled for SAR Testing?	Yes
LTE Anchor Bands for n2	LTE B2/5/12/13/14/30/48/66
LTE Anchor Bands for n5	LTE B2/7/30/48/66
LTE Anchor Bands for n41	LTE B2/66
LTE Anchor Bands for n66	LTE B5/12/13/14/48
LTE Anchor Bands for n71	LTE B2/66
LTE Anchor Bands for n77	LTE B2/5/13/14/30/38/41/66
LTE Anchor Bands for n78	LTE B7/41

NR Band 2

	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	370500	1852.5	371000	1855	371500	1857.5	372000	1860
M	376000	1880	376000	1880	376000	1880	376000	1880
H	381500	1907.5	381000	1905	380500	1902.5	380000	1900

NR Band 5

	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	165300	826.5	165800	829	166300	831.5	166800	834
M	167300	836.5	167300	836.5	167300	836.5	167300	836.5
H	169300	846.5	168800	844	168300	841.5	167800	839

NR Band 7

	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500500	2502.5	501000	2505	501500	2507.5	502000	2510	502500	2512.5	503000	2515	504000	2520	505000	2525
M	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535
H	513500	2567.5	513000	2565	512500	2562.5	512000	2560	511500	2557.5	511000	2555	510000	2550	509000	2545

NR Band 12						
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	140300	701.5	140800	704	141300	706.5
M	141500	707.5	141500	707.5	141500	707.5
H	142700	713.5	142200	711	141700	708.5

NR Band 14				
	Bandwidth 5MHz		Bandwidth 10MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	158100	790.5	158600	793
M	158600	793		
H	159100	795.5		

NR Band 25														
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	370500	1852.5	371000	1855	371500	1857.5	372000	1860	372500	1862.5	373000	1865	374000	1870
M	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5
H	382500	1912.5	382000	1910	381500	1907.5	381000	1905	380500	1902.5	380000	1900	379000	1895

NR Band 26								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	163300	816.5	163800	819	164300	821.5	164800	824
M	166300	831.5	166300	831.5	166300	831.5	166300	831.5
H	169300	846.5	168800	844	168300	841.5	167800	839

NR Band 30				
	Bandwidth 5MHz		Bandwidth 10MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	461500	2307.5	462000	2310
M	462000	2310		
H	462500	2312.5		

NR Band 38														
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	514500	2572.5	515004	2575.02	515502	2577.51	516000	2580	516504	2582.52	517002	2585.01	518004	2590.02
M	519000	2595	519000	2595	519000	2595	519000	2595	519000	2595	519000	2595	519000	2595
H	523500	2617.5	522996	2614.98	522498	2612.49	522000	2610	521496	2607.48	520998	2604.99	519996	2599.98

NR Band 41																
	Bandwidth20MHz		Bandwidth30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	501204	2506.02	502200	2511	503202	2516.01	504204	2521.02	505200	2526	507204	2536.02	508200	2541	509202	2546.01
M	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99
H	535998	2679.99	534996	2674.98	534000	2670	532998	2664.99	531996	2659.98	529998	2649.99	528996	2644.98	528000	2640

NR Band 48										
	Bandwidth10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	637000	3555	637168	3557.52	637334	3560.01	637668	3565.02	638000	3570
M	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99
H	646332	3694.98	646166	3692.49	646000	3690	645666	3684.99	645332	3679.98

NR Band 66														
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	342500	1712.5	343000	1715	343500	1717.5	344000	1720	344500	1722.5	345000	1725	346000	1730
M	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770	353500	1767.5	353000	1765	352000	1760

NR Band 71								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	133100	665.5	133600	668	13410	670.5	134600	673
M	136100	680.5	136100	680.5	136100	680.5	136100	680.5
H	139100	695.5	138600	693	13810	690.5	137600	688

NR Band 77_Part 27O																						
	Bandwidth10MHz		Bandwidth15MHz		Bandwidth 20MHz		Bandwidth25MHz		Bandwidth30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth90MHz		Bandwidth100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	647000	3705	647168	3707.52	647334	3710.01	647500	3712.5	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02	650000	3750
M	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840
H	665000	3975	664832	3972.48	664666	3969.99	664500	3967.50	664332	3964.98	664000	3960	663666	3954.99	663332	3949.98	663000	3945	662666	3939.99	662332	3934.98	662000	3930

NR Band 77_Part 27Q																						
	Bandwidth10MHz		Bandwidth15MHz		Bandwidth 20MHz		Bandwidth30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	630334	3455.01	630500	3457.5	630668	3460.02	631000	3465	631334	3470.01	631668	3475.02	632000	3480	632334	3485.01	632668	3490.02	633000	3495		
M	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98
H	636332	3544.98	636166	3542.49	636000	3540	635666	3534.99	635332	3529.98	635000	3525	634666	3519.99	634332	3514.98	634000	3510	633666	3504.99		

3.4 Sensor Triggering angle and power verification

General Note:

1. The following guidance should be applied to laptops/tablets that use Hall Effect or gravity sensors to detect lid angle for the purpose of power reduction:

   Step 1: With the lid is in closed mode (0 degrees), open the screen in 10 degree steps until laptop mode is obtained
   Step 2: Lower the screen 5 degrees. Closed mode should be reobtained. If not keep lowering in 5 degree steps
   Step 3: Open the screen in 1 degree steps until laptop mode is reobtained
   Step 4: Continue opening the screen in 1 degree steps until at least 5 degrees past where laptop mode was obtained
   Step 5: Then continue opening the screen in 10 degree steps until tablet mode is obtained
   Step 6: Power measurements should be taken at each step
   Step 7: Reverse this procedure going from tablet mode back down to closed mode

when the screen angle is from 0 degree to 360 degree							
Screen angle (degree) v.s. power	Band		WCDMA II Ant 5	LTE B41 PC2 Ant 5	LTE n41 PC2 Ant 5	LTE B41 PC2 Ant 8	LTE n77 PC2 Ant 8
	Lid Close	0	standby	standby	standby	standby	standby
		1	standby	standby	standby	standby	standby
		2	standby	standby	standby	standby	standby
		3	standby	standby	standby	standby	standby
		4	standby	standby	standby	standby	standby
		5	standby	standby	standby	standby	standby
		10	standby	standby	standby	standby	standby
		20	standby	standby	standby	standby	standby
		30	standby	standby	standby	standby	standby
	Laptop	35	22.83	26.89	26.40	25.53	26.25
		40	22.75	26.63	25.53	25.74	25.62
		50	23.14	27.35	26.08	26.03	25.86
		60	23.08	26.79	25.73	26.34	26.16
		70	22.82	27.33	25.96	25.82	26.27
		80	22.56	27.10	26.40	25.68	25.70
		90	23.40	26.66	25.92	25.74	25.96
		100	22.58	26.54	26.08	25.62	25.77
		110	22.91	26.64	25.89	25.66	25.92
		120	23.33	27.18	25.81	25.60	25.78
		130	22.98	27.29	26.07	26.36	26.41
		140	22.74	27.29	25.55	25.74	26.19
		150	22.60	27.38	26.22	25.97	26.42
		160	22.63	27.27	26.35	26.07	25.87
		170	22.69	27.21	25.53	25.81	25.70
		180	23.26	26.86	25.80	26.45	26.09
		190	23.24	26.65	26.22	26.13	26.08
		195	22.68	26.62	25.91	25.74	26.38
		196	22.72	26.50	25.63	25.80	25.52
		197	22.74	26.69	26.25	26.41	26.43
		198	22.73	27.00	26.17	26.12	26.29
		199	23.31	27.49	26.22	26.12	25.51
		200	22.87	27.44	25.63	25.96	26.31
	Tablet	201	16.25	18.69	15.69	18.86	13.57
		202	16.23	18.69	15.85	19.40	14.44
		203	16.19	18.99	15.36	19.22	13.82
		204	15.92	19.20	15.07	18.86	14.47
		205	15.71	19.15	15.67	19.46	14.12
		210	16.27	18.50	15.17	18.57	13.92
		220	15.84	18.85	15.69	19.30	13.73
		230	16.34	19.21	15.57	18.65	14.05

		240	16.37	18.82	15.44	18.95	14.25
		250	16.08	19.21	15.76	19.46	14.08
		260	15.90	19.34	15.87	19.48	13.95
		270	15.73	19.38	15.58	19.39	13.62
		280	16.36	18.84	15.52	19.33	13.71
		290	15.91	19.05	15.46	19.31	14.20
		300	16.23	18.69	15.25	19.20	14.18
		310	15.70	18.57	15.02	18.95	13.78
		320	15.92	19.19	15.53	18.87	13.94
		330	15.81	18.87	15.78	18.91	13.50
		340	16.40	18.74	15.02	18.68	13.70
		350	15.63	18.87	15.00	19.46	13.54
		360	16.41	18.87	15.75	18.52	13.56

when the screen angle is from 0 degree to 360 degree							
Screen angle (degree) v.s. power	Wireless		WCDMA II Ant 5	LTE B41 PC2 Ant 5	LTE n41 PC2 Ant 5	LTE B41 PC2 Ant 8	LTE n77 PC2 Ant 8
	Tablet	360	16.06	19.18	15.67	19.47	13.88
		350	16.37	18.94	15.05	19.33	13.92
		340	16.25	19.44	15.61	19.28	13.64
		330	16.27	19.19	15.58	18.98	13.87
		320	16.17	19.05	15.99	18.71	14.07
		310	15.79	19.17	15.86	19.23	13.73
		300	16.16	19.17	15.01	19.47	14.32
		290	15.74	19.43	15.39	19.07	13.58
		280	15.68	19.23	15.76	19.49	13.67
		270	16.25	19.32	15.42	19.22	13.84
		260	16.42	19.48	15.25	18.50	13.59
		250	16.35	18.65	15.82	18.90	13.94
		240	16.04	18.88	15.51	19.29	14.08
		230	15.67	19.43	15.70	19.50	14.20
		220	15.68	18.80	15.13	18.82	14.40
		210	15.80	19.11	15.14	19.33	14.17
		205	15.71	18.90	15.88	19.12	14.01
		204	16.23	18.96	15.72	18.72	13.77
		203	16.08	19.09	15.42	19.20	13.99
		202	15.92	18.66	15.49	18.97	14.03
		201	16.16	18.91	15.20	19.46	14.44
	Laptop	200	23.09	27.36	26.17	25.60	26.04
		199	22.77	26.75	25.52	26.30	26.26
		198	22.55	27.34	25.77	25.71	26.18
		197	22.50	27.05	26.41	26.42	26.20
		196	23.06	26.68	25.50	26.04	26.33
		195	23.02	27.37	25.50	25.72	26.15
		190	23.32	27.44	25.69	25.57	25.86
		180	23.24	26.79	25.80	26.35	25.60
		170	23.43	27.11	25.54	25.87	25.51
		160	22.80	27.40	26.47	25.81	26.44
		150	23.13	26.56	25.77	25.54	25.87
		140	23.03	26.68	26.38	26.13	26.46
		130	23.16	27.17	25.55	26.25	26.01
		120	22.55	27.40	26.05	26.28	25.54
		110	22.50	26.83	26.17	26.31	25.74
		100	23.21	26.80	26.49	26.17	26.42
		90	23.18	26.94	26.35	26.05	25.85

		80	22.73	26.76	26.16	26.47	26.44
		70	22.52	27.32	26.00	26.04	26.30
		60	22.62	27.02	26.15	25.78	26.17
		50	23.48	27.05	26.45	26.00	25.97
		40	23.41	27.30	26.45	25.64	26.39
		35	23.27	27.47	25.85	25.56	26.07
	Lid Close	30	standby	standby	standby	standby	standby
		20	standby	standby	standby	standby	standby
		10	standby	standby	standby	standby	standby
		5	standby	standby	standby	standby	standby
		4	standby	standby	standby	standby	standby
		3	standby	standby	standby	standby	standby
		2	standby	standby	standby	standby	standby
		1	standby	standby	standby	standby	standby
		0	standby	standby	standby	standby	standby

4. RF Exposure Limits

4.1 Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

4.2 Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. The exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

1. Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

4.3 RF Exposure limit for above 6GHz

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Peak Spatially Averaged Power Density was evaluated over a circular area of 4cm^2 per interim FCC Guidance for near-field power density evaluations per October 2018 TCB Workshop notes

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

5. Specific Absorption Rate (SAR)

5.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

5.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

$$\mathbf{SAR} = \frac{\mathbf{d}}{\mathbf{dt}}\left(\frac{\mathbf{dW}}{\mathbf{dm}}\right) = \frac{\mathbf{d}}{\mathbf{dt}}\left(\frac{\mathbf{dW}}{\boldsymbol{\rho}\mathbf{dv}}\right)$$

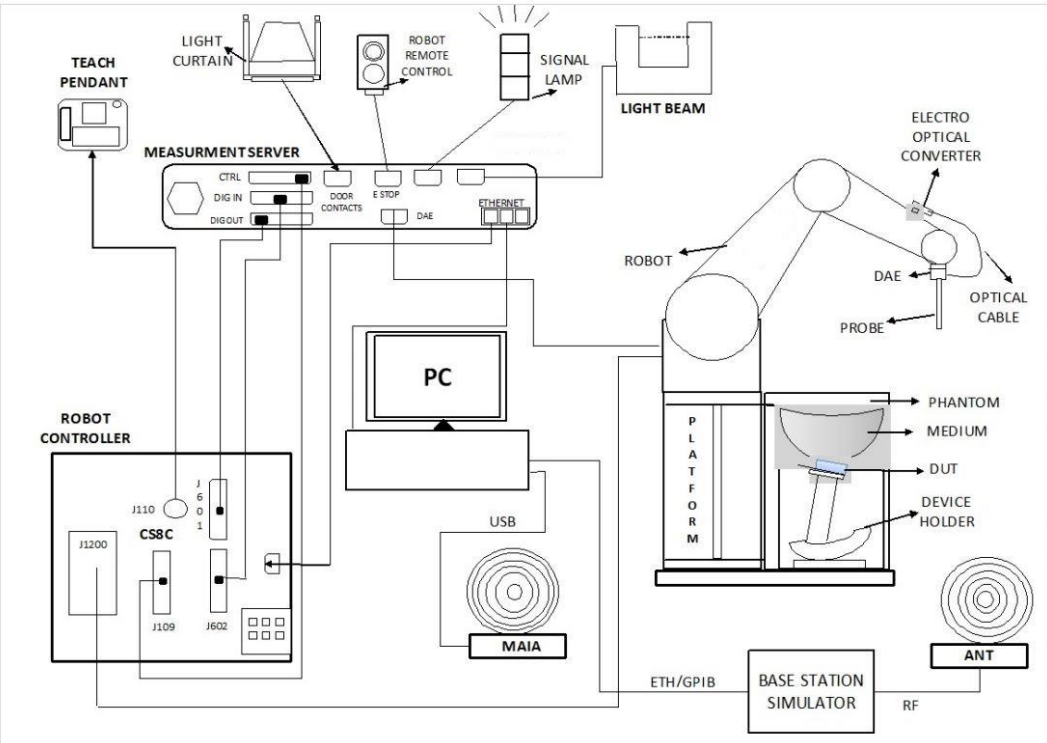
SAR is expressed in units of Watts per kilogram (W/kg)

$$\mathbf{SAR} = \frac{\boldsymbol{\sigma}|\mathbf{E}|^2}{\boldsymbol{\rho}}$$

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

6. System Description and Setup

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



- The DASY system in SAR Configuration is shown above
- 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 windows software and the DASY software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

6.1 Test Site Location

The SAR measurement facilities used to collect data are within both Sporton Lab list below test site location are accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190 and 3786) and the FCC designation No. TW1190 and TW3786 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test.

Laboratory	EMC & Wireless Communications Laboratory		Wensan Laboratory				
Test Site Location	TW1190 No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan		TW3786 No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan				
Test Site No.	SAR01-HY	SAR03-HY	SAR08-HY	SAR09-HY	SAR15-HY	SAR18-HY	SAR21-HY
	SAR04-HY	SAR05-HY	SAR11-HY	SAR12-HY	SAR16-HY	SAR19-HY	SAR22-HY
	SAR06-HY	SAR10-HY	SAR13-HY	SAR14-HY	SAR17-HY	SAR20-HY	

6.2 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG).The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

< **ES3DV3 Probe** >

Construction	Symmetric design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	4 MHz – 4 GHz; Linearity: ±0.2 dB (30 MHz – 4 GHz)	
Directivity	±0.2 dB in TSL (rotation around probe axis) ±0.3 dB in TSL (rotation normal to probe axis)	
Dynamic Range	5 µW/g – > 100 mW/g; Linearity: ±0.2 dB	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 3.9 mm (body: 12 mm) Distance from probe tip to dipole centers: 3.0 mm	

< **EX3DV4 Probe** >

Construction	Symmetric design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	4 MHz – > 6 GHz Linearity: ±0.2 dB (30 MHz – 6 GHz)	
Directivity	±0.3 dB in TSL (rotation around probe axis) ±0.5 dB in TSL (rotation normal to probe axis)	
Dynamic Range	10 µW/g – > 100 mW/g Linearity: ±0.2 dB (noise: typically < 1 µW/g)	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 2.5 mm (body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

6.3 Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

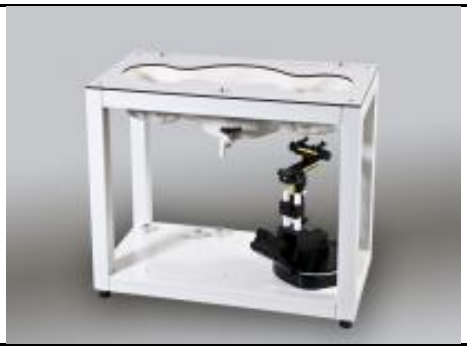
The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Fig 5.1 Photo of DAE

6.4 Phantom

< **SAM Twin Phantom** >

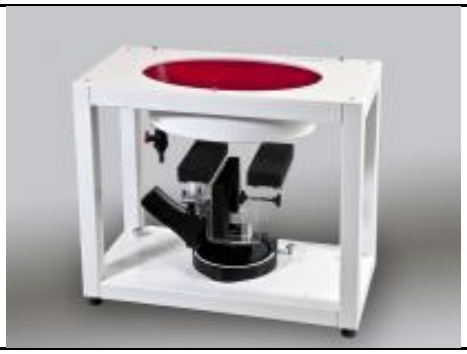
Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom



The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

< **ELI Phantom** >

Shell Thickness	2 ± 0.2 mm (sagging: < 1%)
Filling Volume	Approx. 30 liters
Dimensions	Major ellipse axis: 600 mm Minor axis: 400 mm



The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

6.5 Device Holder

< Mounting Device for Hand-Held Transmitter >

In combination with the Twin SAM V5.0/V5.0c or ELI phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat). And upgrade kit to Mounting Device to enable easy mounting of wider devices like big smart-phones, e-books, small tablets, etc. It holds devices with width up to 140 mm.

Mounting Device for Hand-Held Transmitters

Mounting Device Adaptor for Wide-Phones

< Mounting Device for Laptops and other Body-Worn Transmitters >

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.

Mounting Device for Laptops

7. Measurement Procedures

The measurement procedures are as follows:

(a) Configure the device RF transmitters to be in continuous transmission mode., at maximum RF power, in the highest power channel.
(b) Place the EUT in the positions as Appendix D demonstrates.
(c) Set scan area, grid size and other setting on the DASY software.
(d) Measure SAR results for the highest power channel on each testing position.
(e) Find out the largest SAR result on these testing positions of each band
(f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

7.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

7.2 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. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

7.3 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 found in the scanned area, within a range of the global maximum. The range (in dB0 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 FCC KDB 865664 D01v01r04 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	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

7.4 Zoom Scan

Zoom scans are used assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube shoes 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 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* 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.

7.5 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

7.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.

8. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1107	Jun. 11, 2025	Jun. 10, 2026
SPEAG	835MHz System Validation Kit	D835V2	4d167	Dec. 02, 2025	Dec. 01, 2026
SPEAG	1750MHz System Validation Kit(2)	D1750V2	1112	Feb. 20, 2025	Feb. 18, 2027
SPEAG	1900MHz System Validation Kit	D1900V2	5d185	Jun. 11, 2025	Jun. 10, 2026
SPEAG	2300MHz System Validation Kit(2)	D2300V2	1006	Jan. 14, 2025	Jan. 12, 2027
SPEAG	2600MHz System Validation Kit(2)	D2600V2	1008	Aug. 15, 2024	Aug. 13, 2026
SPEAG	3500MHz System Validation Kit(2)	D3500V2	1014	Jan. 15, 2025	Jan. 13, 2027
SPEAG	3700MHz System Validation Kit	D3700V2	1006	Jun. 12, 2025	Jun. 11, 2026
SPEAG	3900MHz System Validation Kit(2)	D3900V2	1092	May. 15, 2023	May. 12, 2026
SPEAG	Data Acquisition Electronics	DAE4	661	May. 19, 2025	May. 18, 2026
SPEAG	Dosimetric E-Field Probe	EX3DV4	7695	Jul. 01, 2025	Jun. 30, 2026
Testo	Hygro meter	608-H1	45196600	Nov. 04, 2025	Nov. 03, 2026
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	Nov. 20, 2025	Nov. 19, 2026
Keysight	5G Wireless Test Platform	E7515B	MY58300712	Sep. 09, 2025	Sep. 08, 2026
Keysight	5G Wireless Test Platform	E7515B	MY59321595	Jun. 20, 2025	Jun. 19, 2026
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Sep. 24, 2025	Sep. 23, 2026
Keysight	ENA Network Analyzer	E5071C	MY46104758	Oct. 14, 2025	Oct. 13, 2026
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Sep. 16, 2025	Sep. 15, 2026
LINE SEIKI	Digital Thermometer	DTM3000-spezial	3690	Aug. 14, 2025	Aug. 13, 2026
Anritsu	Power Meter	ML2495A	1804003	Aug. 18, 2025	Aug. 17, 2026
Anritsu	Power Sensor	MA2411B	1726150	Aug. 18, 2025	Aug. 17, 2026
Anritsu	Spectrum Analyzer	MS2830A	6201396378	Jul. 09, 2025	Jul. 08, 2026
Mini-Circuits	Power Amplifier	ZVE-3W-83+	1651	Dec. 24, 2025	Dec. 23, 2026
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1	
Warison	Directional Coupler	WCOU-10-50S-10	WR889BMC4B1	Note 1	
Woken	Attenuator 1	WK0602-XX	N/A	Note 1	
PE	Attenuator 2	PE7005-10	N/A	Note 1	
PE	Attenuator 3	PE7005- 3	N/A	Note 1	

General Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.
2. The dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval. The justification data in appendix C can be found which the return loss is＜ -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration for each dipole.

9. System Verification

9.1 Tissue Verification

The tissue dielectric parameters of tissue-equivalent media used for SAR measurements must be characterized within a temperature range of 18℃ to 25℃, measured with calibrated instruments and apparatuses, such as network analyzers and temperature probes. The temperature of the tissue-equivalent medium during SAR measurement must also be within 18℃ to 25℃ and within ± 2℃ of the temperature when the tissue parameters are characterized. The tissue dielectric measurement system must be calibrated before use. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements.
The liquid tissue depth was at least 15cm in the phantom for all SAR testing

The SPEAG Dasy Measurement system implement a SAR error compensation algorithm as documented in IEEE Std 1528-2013 to automatically compensate the measured SAR results for deviations between the measured and required tissue dielectric parameters, according to KDB 865664 D01 and IEC/IEEE 62209-1528, the tolerance for “Delta (σ)” and “Delta (εr)” can be relaxed to ± 10%

< Tissue Dielectric Parameter Check Results >

Frequency (MHz)	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	22.6	0.891	42.955	0.89	41.90	0.11	2.52	±10	2026/4/15
750	22.9	0.892	43.018	0.89	41.90	0.22	2.67	±10	2026/4/16
835	22.8	0.914	42.569	0.90	41.50	1.56	2.58	±10	2026/4/17
835	22.8	0.922	42.547	0.90	41.50	2.44	2.52	±10	2026/4/18
1750	22.8	1.381	40.205	1.37	40.10	0.80	0.26	±10	2026/4/19
1750	22.7	1.387	40.103	1.37	40.10	1.24	0.01	±10	2026/4/20
1900	22.7	1.450	39.082	1.40	40.00	3.57	-2.30	±10	2026/4/20
1900	22.8	1.443	39.206	1.40	40.00	3.07	-1.98	±10	2026/4/21
2300	22.9	1.602	39.569	1.67	39.50	-4.07	0.17	±10	2026/4/21
2300	22.6	1.615	39.573	1.67	39.50	-3.29	0.18	±10	2026/4/22
2600	22.8	1.917	38.875	1.96	39.00	-2.19	-0.32	±10	2026/4/22
2600	22.7	1.898	38.843	1.96	39.00	-3.16	-0.40	±10	2026/4/24
3500	22.7	2.964	37.645	2.91	37.90	1.86	-0.67	±10	2026/4/25
3700	22.9	3.191	37.623	3.12	37.70	2.28	-0.20	±10	2026/4/26
3900	22.9	3.399	37.428	3.33	37.51	2.07	-0.22	±10	2026/4/27

9.2 System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

Test Site	Date	Frequency (MHz)	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
SAR-11	2026/4/15	750	50	D750V3-1107	EX3DV4 - SN7695	DAE4 Sn661	0.419	8.840	8.38	-5.20	0.282	5.810	5.64	-2.93
SAR-11	2026/4/16	750	50	D750V3-1107	EX3DV4 - SN7695	DAE4 Sn661	0.420	8.840	8.4	-4.98	0.285	5.810	5.7	-1.89
SAR-11	2026/4/17	835	50	D835V2-4d167	EX3DV4 - SN7695	DAE4 Sn661	0.476	9.360	9.52	1.71	0.317	6.050	6.34	4.79
SAR-11	2026/4/18	835	50	D835V2-4d167	EX3DV4 - SN7695	DAE4 Sn661	0.473	9.360	9.46	1.07	0.316	6.050	6.32	4.46
SAR-11	2026/4/19	1750	50	D1750V2-1112	EX3DV4 - SN7695	DAE4 Sn661	1.850	36.300	37	1.93	1.010	19.300	20.2	4.66
SAR-11	2026/4/20	1750	50	D1750V2-1112	EX3DV4 - SN7695	DAE4 Sn661	1.860	36.300	37.2	2.48	1.010	19.300	20.2	4.66
SAR-11	2026/4/20	1900	50	D1900V2-5d185	EX3DV4 - SN7695	DAE4 Sn661	2.020	39.600	40.4	2.02	1.070	20.800	21.4	2.88
SAR-11	2026/4/21	1900	50	D1900V2-5d185	EX3DV4 - SN7695	DAE4 Sn661	2.010	39.600	40.2	1.52	1.060	20.800	21.2	1.92
SAR-11	2026/4/21	2300	50	D2300V2-1006	EX3DV4 - SN7695	DAE4 Sn661	2.200	48.200	44	-8.71	1.070	23.200	21.4	-7.76
SAR-11	2026/4/22	2300	50	D2300V2-1006	EX3DV4 - SN7695	DAE4 Sn661	2.350	48.200	47	-2.49	1.170	23.200	23.4	0.86
SAR-11	2026/4/22	2600	50	D2600V2-1008	EX3DV4 - SN7695	DAE4 Sn661	2.550	55.700	51	-8.44	1.160	25.300	23.2	-8.30
SAR-11	2026/4/24	2600	50	D2600V2-1008	EX3DV4 - SN7695	DAE4 Sn661	2.520	55.700	50.4	-9.52	1.140	25.300	22.8	-9.88
SAR-11	2026/4/25	3500	50	D3500V2-1014	EX3DV4 - SN7695	DAE4 Sn661	3.490	65.700	69.8	6.24	1.350	24.900	27	8.43
SAR-11	2026/4/26	3700	50	D3700V2-1006	EX3DV4 - SN7695	DAE4 Sn661	3.450	69.900	69	-1.29	1.280	25.600	25.6	0.00
SAR-11	2026/4/27	3900	50	D3900V2-1092	EX3DV4 - SN7695	DAE4 Sn661	3.250	67.000	65	-2.99	1.160	23.200	23.2	0.00

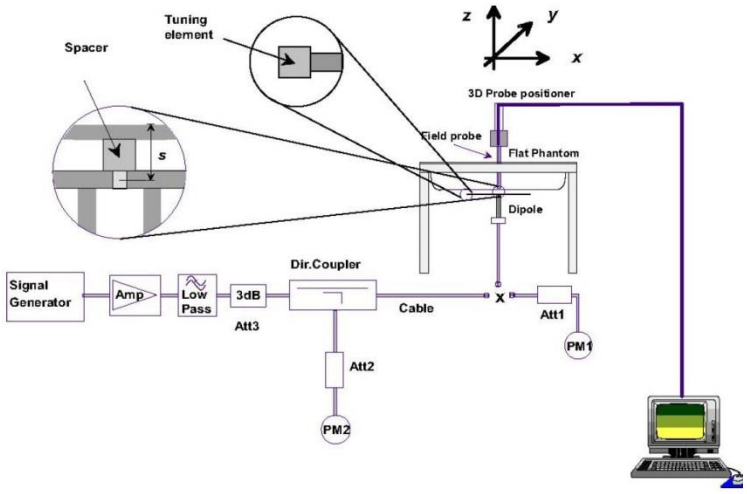


Fig 8.3.1 System Performance Check Setup

Fig 8.3.2 Setup Photo

10. RF Exposure Positions

10.1 SAR Testing for Tablet

This device can be used also in full sized tablet exposure conditions, due to its size. Per FCC KDB 616217, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom. The SAR exclusion threshold in KDB 447498 D01v06 can be applied to determine SAR test exclusion for adjacent edge configurations. The closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

11. UL/DL Carrier aggregation

＜LTE DL Carrier Aggregation＞

General Note:

1. According to 202410 TCB workshop, the downlink (DL) pertains to receiver functionality, thus it is not related to RF exposure compliance limits related to cumulative effects of different transmitters.
2. According to 202410 TCB workshop, equipment authorization applications shall refer to the worst-case UL powers resulting from all the possible modes of operations. Accordingly, CA-DL cases do not need to be analyzed separately, unless pertinent to establishing UL power setting.
3. This device supports LTE carrier aggregation in the downlink. All uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded

＜LTE UL carrier aggregation＞

General Note:

1. The device supports uplink carrier aggregation with a maximum of two component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre the 3GPP requirement.
2. According TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.
3. Additional SAR measurement for UL CA whit other DL CA combinations active were not required since the maximum output power for this configuration was not＞0.25dB higher than the maximum output power for UL CA active.

2CC Uplink Carrier Aggregation	
Number	Combination
1	2C
2	7C
3	66B
4	66C
5	38C
6	41C

CA_2C_Ant 5_Laptop								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB Offset	RB Size	RB Offset		
18700	18898	QPSK	1.00	99.00	1.00	0.00	22.89	24.00
18900	19098	QPSK	1.00	99.00	1.00	0.00	22.99	24.00
19100	18902	QPSK	1.00	0.00	1.00	99.00	22.86	24.00

CA_7C_Ant 5_Laptop								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB Offset	RB Size	RB Offset		
20850	21048	QPSK	1.00	99.00	1.00	0.00	22.82	24.00
21100	21298	QPSK	1.00	99.00	1.00	0.00	22.89	24.00
21350	21152	QPSK	1.00	0.00	1.00	99.00	22.79	24.00

CA_66B_Ant 5_Laptop								
Combination 15MHz+5MHz (75RB+25RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB Offset	RB Size	RB Offset		
132047	132140	QPSK	1.00	74.00	1.00	0.00	22.81	24.00
132322	132415	QPSK	1.00	74.00	1.00	0.00	22.89	24.00
132597	132504	QPSK	1.00	0.00	1.00	24.00	22.85	24.00

CA_66C_Ant 5_Laptop								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB Offset	RB Size	RB Offset		
132072	132270	QPSK	1.00	99.00	1.00	0.00	22.73	24.00
132322	132520	QPSK	1.00	99.00	1.00	0.00	22.86	24.00
132572	132374	QPSK	1.00	0.00	1.00	99.00	22.81	24.00

CA_38C_Ant 5_Laptop								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB Offset	RB Size	RB Offset		
37850	38048	QPSK	1.00	99.00	1.00	0.00	23.02	24.00
37901	38099	QPSK	1.00	99.00	1.00	0.00	23.11	24.00
38150	37952	QPSK	1.00	0.00	1.00	99.00	23.05	24.00

CA_41C_Ant 5_Laptop								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB Offset	RB Size	RB Offset		
39790	39988	QPSK	1.00	99.00	1.00	0.00	23.01	24.00
40185	40383	QPSK	1.00	99.00	1.00	0.00	22.95	24.00
40620	40818	QPSK	1.00	99.00	1.00	0.00	23.13	24.00
41055	41253	QPSK	1.00	99.00	1.00	0.00	23.01	24.00
41490	41292	QPSK	1.00	0.00	1.00	99.00	22.99	24.00

CA_41C_HPUE_Ant 5_Laptop								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB Offset	RB Size	RB Offset		
39790	39988	QPSK	1.00	99.00	1.00	0.00	26.29	28.00
40185	40383	QPSK	1.00	99.00	1.00	0.00	26.25	28.00
40620	40818	QPSK	1.00	99.00	1.00	0.00	26.37	28.00
41055	41253	QPSK	1.00	99.00	1.00	0.00	26.18	28.00
41490	41292	QPSK	1.00	0.00	1.00	99.00	26.21	28.00

CA_2C_Ant 5_Tablet								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB Offset	RB Size	RB Offset		
18700	18898	QPSK	1.00	99.00	1.00	0.00	16.15	17.00
18900	19098	QPSK	1.00	99.00	1.00	0.00	16.17	17.00
19100	18902	QPSK	1.00	0.00	1.00	99.00	16.11	17.00

CA_7C_Ant 5_Tablet								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB Offset	RB Size	RB Offset		
20850	21048	QPSK	1.00	99.00	1.00	0.00	18.16	19.00
21100	21298	QPSK	1.00	99.00	1.00	0.00	18.26	19.00
21350	21152	QPSK	1.00	0.00	1.00	99.00	18.15	19.00

CA_66B_Ant 5_Tablet								
Combination 15MHz+5MHz (75RB+25RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB Offset	RB Size	RB Offset		
132047	132140	QPSK	1.00	74.00	1.00	0.00	16.02	17.00
132322	132415	QPSK	1.00	74.00	1.00	0.00	16.07	17.00
132597	132504	QPSK	1.00	0.00	1.00	24.00	16.02	17.00

CA_66C_Ant 5_Tablet								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB Offset	RB Size	RB Offset		
132072	132270	QPSK	1.00	99.00	1.00	0.00	16.01	17.00
132322	132520	QPSK	1.00	99.00	1.00	0.00	16.09	17.00
132572	132374	QPSK	1.00	0.00	1.00	99.00	16.04	17.00

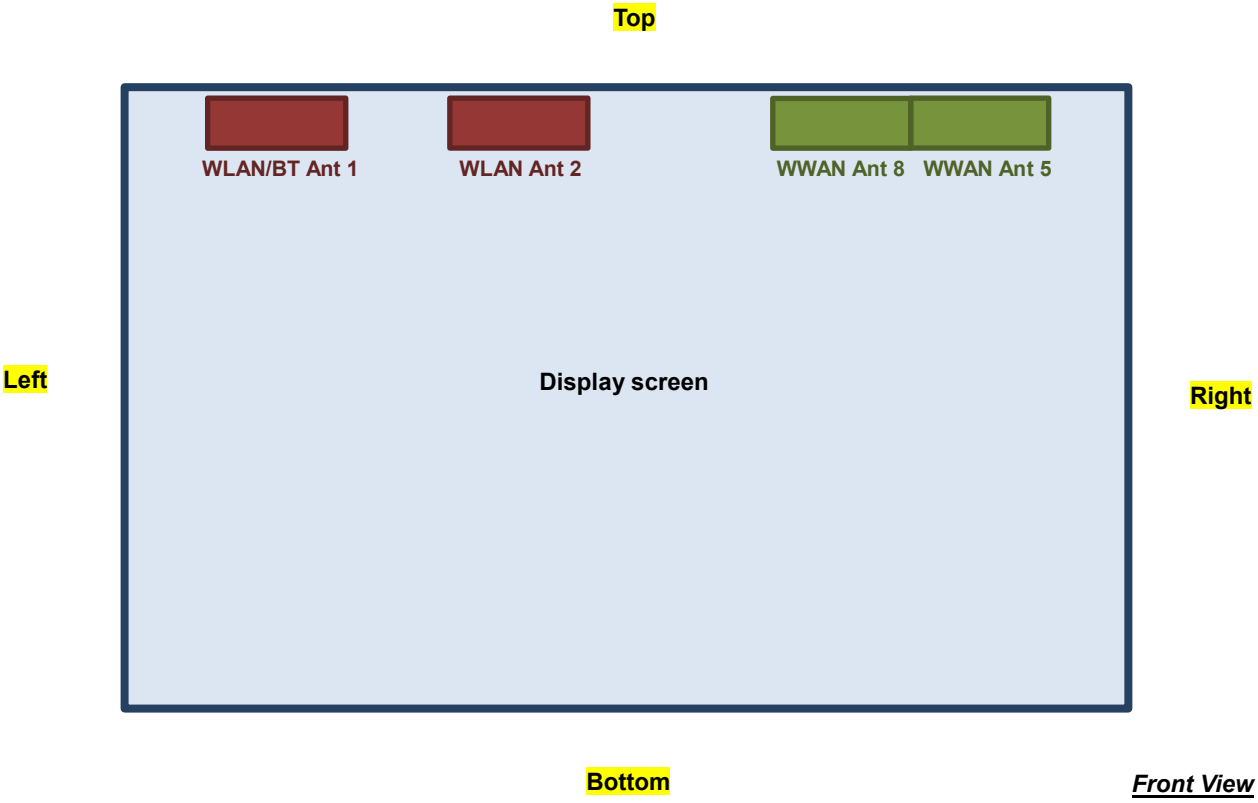
CA_38C_Ant 5_Tablet								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB Offset	RB Size	RB Offset		
37850	38048	QPSK	1.00	99.00	1.00	0.00	19.05	20.00
37901	38099	QPSK	1.00	99.00	1.00	0.00	19.11	20.00
38150	37952	QPSK	1.00	0.00	1.00	99.00	19.07	20.00

CA_41C & HPUE_Ant 5_Tablet								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB Offset	RB Size	RB Offset		
39790	39988	QPSK	1.00	99.00	1.00	0.00	18.89	20.00
40185	40383	QPSK	1.00	99.00	1.00	0.00	19.07	20.00
40620	40818	QPSK	1.00	99.00	1.00	0.00	19.18	20.00
41055	41253	QPSK	1.00	99.00	1.00	0.00	19.02	20.00
41490	41292	QPSK	1.00	0.00	1.00	99.00	18.95	20.00

CA_41C & HPUE_Ant 5_Tablet								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB Offset	RB Size	RB Offset		
39790	39988	QPSK	1.00	99.00	1.00	0.00	18.89	20.00
40185	40383	QPSK	1.00	99.00	1.00	0.00	19.07	20.00
40620	40818	QPSK	1.00	99.00	1.00	0.00	19.18	20.00
41055	41253	QPSK	1.00	99.00	1.00	0.00	19.02	20.00
41490	41292	QPSK	1.00	0.00	1.00	99.00	18.95	20.00

12. Antenna Location

<For Tablet>

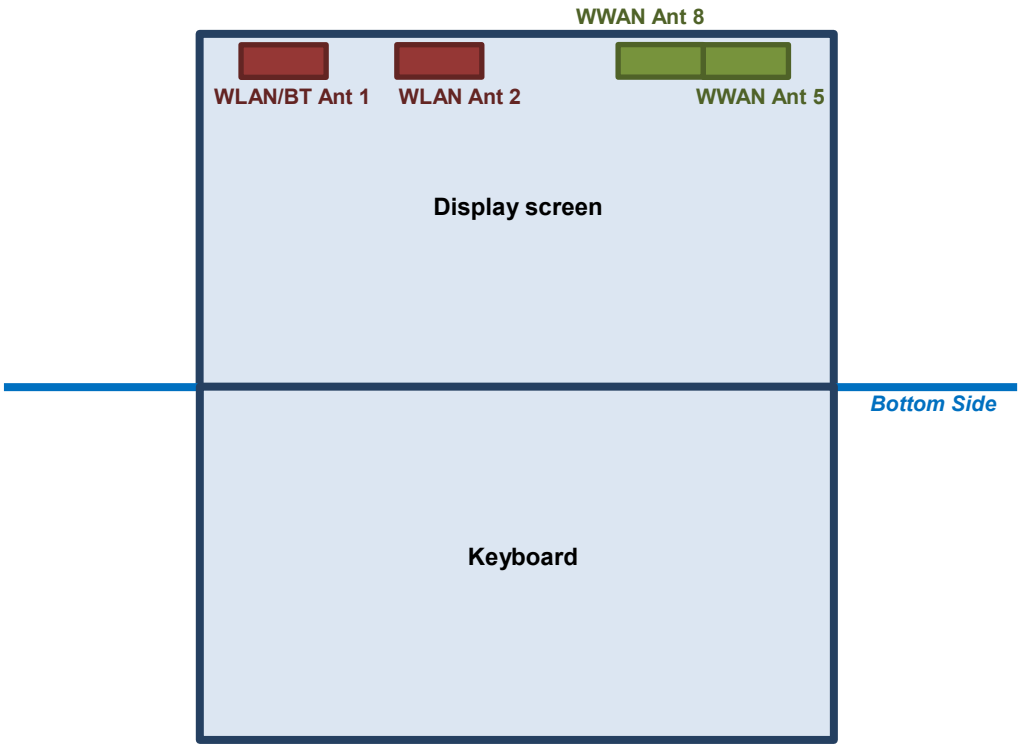


Front View

The separation distance for antenna to edge :

Antenna	To Top (mm)	To Right (mm)	To Bottom (mm)	To Left (mm)
WWAN Antenna 5	< 5	15.7	207.9	243.6
WWAN Antenna 8	< 5	87	207.9	193.7
WLAN/BT Antenna 1	< 5	273.6	207.9	15.7
WLAN Antenna 2	< 5	195.1	207.9	92.7

<For Laptop>



The separation distance for antenna to edge :

Antenna	To Bottom Side (mm)
WWAN Antenna 5	227.1
WWAN Antenna 8	227.1
WLAN/BT Antenna 1	227.1
WLAN Antenna 2	227.1

< SAR test exclusion table >

General Note:

1. The below table, when the distance is < 50 mm exclusion threshold is "Ratio", when the distance is > 50 mm exclusion threshold is "mW"
2. Maximum power is the source-based time-average power and represents the maximum RF output power among production units
3. Per KDB 447498 D01v06, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
4. Per KDB 447498 D01v06, standalone SAR test exclusion threshold is applied; If the test separation distance is < 5mm, 5mm is used to determine SAR exclusion threshold.
5. Per KDB 447498 D01v06, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:
   [(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR
   - f(GHz) is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation
   - The result is rounded to one decimal place for comparison
6. Per KDB 447498 D01v06, at 100 MHz to 6 GHz and for test separation distances > 50 mm, the SAR test exclusion threshold is determined according to the following
   a) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·(f(MHz)/150)] mW, at 100 MHz to 1500 MHz
   b) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·10] mW at > 1500 MHz and ≤ 6 GHz

<Laptop Mode>

Ant 5

	Wireless Interface	WCDMA Band II	WCDMA Band IV	WCDMA Band V	LTE Band 71	LTE Band 12	LTE Band 13	LTE Band 14	LTE Band 17	LTE Band 5	LTE Band 26	LTE Band 25	LTE Band 66	LTE Band 30	LTE Band 7	LTE Band 38	LTE Band 41	LTE Band 2	LTE Band 4	NR Band n2	NR Band n5	NR Band n7	NR Band n12	NR Band n14	NR Band n25	NR Band n26	NR Band n30	NR Band n66	NR Band n71	NR Band n38	NR Band n41	NR Band n77
Exposure Position	Calculated Frequency (MHz)	1907.6	1752.6	846.6	688	711	782	793	711	844	841.5	1905	1770	2310	2560	2610	2680	1900	1745	1900	839	2545	708.5	793	1895	839	2310	1760	688	2600	2640	3930
	Maximum power (dBm)	24.0	24.0	24.0	25.0	25.0	25.0	25.0	24.0	25.0	25.0	24.0	24.0	23.0	24.0	24.0	28.0	24.0	24.0	24.0	25.0	24.0	24.0	24.0	24.0	24.0	23.0	24.0	25.0	24.0	28.0	27.0
	Maximum rated power(mW)	251.19	251.19	251.19	316.23	316.23	316.23	316.23	251.19	316.23	316.23	251.19	251.19	199.53	251.19	251.19	630.96	251.2	251.19	251.19	316.23	251.19	251.19	251.19	251.19	251.19	199.53	251.19	316.23	251.19	630.96	501.19
Bottom Side	Separation distance(mm)	227.1																														
	exclusion threshold	1880.0	1884.0	1163.0	993.0	1017.0	1093.0	1105.0	1017.0	1160.0	1157.0	1880.0	1884.0	1870.0	1865.0	1864.0	1863.0	1880.0	1885.0	1880.0	1154.0	1865.0	1015.0	1105.0	1880.0	1154.0	1870.0	1884.0	993.0	1864.0	1863.0	1847.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

Ant 8

	Wireless Interface	LTE Band 25	LTE Band 66	LTE Band 30	LTE Band 7	LTE Band 48	LTE Band 41	LTE Band 2	LTE Band 4	NR Band n2	NR Band n7	NR Band n30	NR Band n66	NR Band n48	NR Band n41	NR Band n77
Exposure Position	Calculated Frequency (MHz)	1905	1770	2310	2560	3690	2680	1900	1745	1900	2545	2310	1760	3649.98	2640	3930
	Maximum power (dBm)	24.0	24.0	23.0	24.0	22.0	27.0	24.0	24.0	24.0	24.0	23.0	24.0	22.0	28.0	27.0
	Maximum rated power(mW)	251.19	251.19	199.53	251.19	158.49	501.19	251.2	251.19	251.19	251.19	199.53	251.19	158.49	630.96	501.19
Bottom Side	Separation distance(mm)	227.1														
	exclusion threshold	1880.0	1884.0	1870.0	1865.0	1849.0	1863.0	1880.0	1885.0	1880.0	1865.0	1870.0	1884.0	4388.0	1863.0	1847.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

<Tablet Mode>

Ant 5

	Wireless Interface	WCDMA Band II	WCDMA Band IV	WCDMA Band V	LTE Band 71	LTE Band 12	LTE Band 13	LTE Band 14	LTE Band 17	LTE Band 5	LTE Band 26	LTE Band 25	LTE Band 66	LTE Band 30	LTE Band 7	LTE Band 38	LTE Band 41	LTE Band 2	LTE Band 4	NR Band n2	NR Band n5	NR Band n7	NR Band n12	NR Band n14	NR Band n25	NR Band n26	NR Band n30	NR Band n66	NR Band n71	NR Band n38	NR Band n41	NR Band n77
Exposure Position	Calculated Frequency (MHz)	1907.6	1752.6	846.6	688	711	782	793	711	844	841.5	1905	1770	2310	2560	2610	2680	1900	1745	1900	839	2545	708.5	793	1895	839	2310	1760	688	2600	2640	3930
	Maximum power (dBm)	17.0	17.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	17.0	17.0	19.0	19.0	20.0	20.0	17.0	17.0	17.0	20.0	19.0	20.0	20.0	17.0	20.0	19.0	17.0	20.0	19.0	19.0	16.5
	Maximum rated power(mW)	50.12	50.12	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	50.12	50.12	79.43	79.43	100.00	100.00	50.1	50.12	50.12	100.00	79.43	100.00	100.00	50.12	100.00	79.43	50.12	100.00	79.43	79.43	44.67
Back	Separation distance(mm)	15.8																														
	exclusion threshold	4.4	4.2	5.8	5.3	5.3	5.6	5.6	5.3	5.8	5.8	4.4	4.2	7.6	8.0	10.2	10.4	4.4	4.2	4.4	5.8	8.0	5.3	5.6	4.4	5.8	7.6	4.2	5.3	8.1	8.2	5.6
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Top	Separation distance(mm)	5.0																														
	exclusion threshold	13.8	13.3	18.4	16.6	16.9	17.7	17.8	16.9	18.4	18.4	13.8	13.3	24.1	25.4	32.3	32.7	13.8	13.2	13.8	18.3	25.3	16.8	17.8	13.8	18.3	24.1	13.3	16.6	25.6	25.8	17.7
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Right	Separation distance(mm)	15.7																														
	exclusion threshold	4.4	4.2	5.9	5.3	5.4	5.7	5.7	5.4	5.9	5.9	4.4	4.3	7.7	8.1	10.3	10.5	4.4	4.2	4.4	5.9	8.1	5.4	5.7	4.4	5.9	7.7	4.3	5.3	8.2	8.3	5.7
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bottom	Separation distance(mm)	207.9																														
	exclusion threshold	1688.0	1692.0	1742.0	905.0	926.0	993.0	1003.0	926.0	1052.0	1049.0	1688.0	1692.0	1678.0	1673.0	1672.0	1671.0	1688.0	1692.0	1688.0	1047.0	1673.0	924.0	1003.0	1688.0	1047.0	1678.0	1692.0	905.0	1672.0	1671.0	1655.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Left	Separation distance(mm)	243.6																														
	exclusion threshold	2044.0	2049.0	2099.0	1069.0	1095.0	1179.0	1192.0	1095.0	1252.0	1249.0	2044.0	2048.0	2034.0	2029.0	2028.0	2027.0	2044.0	2049.0	2044.0	1246.0	2030.0	1092.0	1192.0	2044.0	1246.0	2034.0	2049.0	1069.0	2029.0	2028.0	2011.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

Ant 8

	Wireless Interface	LTE Band 25	LTE Band 66	LTE Band 30	LTE Band 7	LTE Band 48	LTE Band 41	LTE Band 2	LTE Band 4	NR Band n2	NR Band n7	NR Band n30	NR Band n66	NR Band n48	NR Band n41	NR Band n77
Exposure Position	Calculated Frequency (MHz)	1905	1770	2310	2560	3690	2680	1900	1745	1900	2545	2310	1760	3649.98	2640	3930
	Maximum power (dBm)	20.0	20.0	18.5	19.0	15.5	20.0	20.0	20.0	20.0	19.0	18.5	20.0	15.5	20.0	15.0
	Maximum rated power(mW)	100.00	100.00	70.79	79.43	35.48	100.00	100.0	100.00	100.00	79.43	70.79	100.00	35.48	100.00	31.62
Back	Separation distance(mm)	15.8														
	exclusion threshold	8.7	8.4	6.8	8.0	4.3	10.4	8.7	8.4	8.7	8.0	6.8	8.4	4.3	10.3	4.0
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Top	Separation distance(mm)	5.0														
	exclusion threshold	27.6	26.6	21.5	25.4	13.6	32.7	27.6	26.4	27.6	25.3	21.5	26.5	13.6	32.5	12.5
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Right	Separation distance(mm)	87.0														
	exclusion threshold	479.0	483.0	469.0	464.0	448.0	462.0	479.0	484.0	479.0	464.0	469.0	483.0	979.0	462.0	446.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Bottom	Separation distance(mm)	207.9														
	exclusion threshold	1688.0	1692.0	1678.0	1673.0	1657.0	1671.0	1688.0	1692.0	1688.0	1673.0	1678.0	1692.0	3920.0	1671.0	1655.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Left	Separation distance(mm)	193.7														
	exclusion threshold	1546.0	1550.0	1536.0	1531.0	1515.0	1529.0	1546.0	1551.0	1546.0	1531.0	1536.0	1550.0	3575.0	1529.0	1513.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

13. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   c. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, 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
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.

UMTS Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

LTE Note:

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4/B5/B12/B17/B26/B38/B71 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, 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.
7. LTE band 2/4/5/17/38 SAR test was covered by Band 25/66/26/12/41; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. The maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion.
   b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

5G NR Note:

1. Referencing the procedure in KDB 941225, the test procedures are outlined as below:
   a. To start SAR test for the largest channel bandwidth for PI/2 BPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. Also do SAR test for 50% RB allocation for PI/2 BPSK SAR testing using 1RB PI/2 BPSK allocation procedure
   b. For PI/2 BPSK with 100% RB allocation, SAR test is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
   c. For higher modulation QPSK/16QAM/64QAM/256QAM, according to tune-up document the power level is not ½ dB higher than the same configuration in PI/2 BPSK, also reported SAR for the PI/2 BPSK configuration is less than 1.45 W/kg, QPSK/16QAM/64QAM/256QAM SAR testing are not required.
   d. Smaller bandwidth output power for each RB allocation configuration for this device is not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
   e. For 5G FR1 n5/n12/n41/n71/n77, the maximum channel bandwidth does not support three non-overlapping channels in the frequency band, the middle channel of the group of overlapping channels were selected for testing.
   f. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% transmission. And only for TDD power class2 was performed using Factory Test Mode software to establish the connection and perform SAR with 50% transmission.
   g. For NR FDD was establishing connections via a base station simulator to use for output power measurement and SAR testing.
   h. When the EN-DC is active the LTE and NR max power is into low level, for Sim-Tx analysis was using non-EN-DC active standalone evaluation, if over required Sim-Tx requirement, additional EN-DC active power level is required.

13.1 Body SAR

< WCDMA SAR >

Plot No	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Antenna Vendor	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA II	RMC 12.2Kbps	Back	0mm	Ant 5	Tablet	9400	1880	Vendor 1	15.58	17.00	1.387	-0.18	0.001	0.001
01	WCDMA II	RMC 12.2Kbps	Top	0mm	Ant 5	Tablet	9400	1880	Vendor 1	15.58	17.00	1.387	0.01	0.097	0.135
	WCDMA II	RMC 12.2Kbps	Right	0mm	Ant 5	Tablet	9400	1880	Vendor 1	15.58	17.00	1.387	0.13	0.060	0.083
	WCDMA II	RMC 12.2Kbps	Top	0mm	Ant 5	Tablet	9400	1880	Vendor 2	15.58	17.00	1.387	-0.02	0.091	0.126
	WCDMA IV	RMC 12.2Kbps	Back	0mm	Ant 5	Tablet	1413	1732.6	Vendor 1	15.25	17.00	1.496	0.1	0.001	0.001
02	WCDMA IV	RMC 12.2Kbps	Top	0mm	Ant 5	Tablet	1413	1732.6	Vendor 1	15.25	17.00	1.496	-0.01	0.079	0.118
	WCDMA IV	RMC 12.2Kbps	Right	0mm	Ant 5	Tablet	1413	1732.6	Vendor 1	15.25	17.00	1.496	0.15	0.061	0.091
	WCDMA IV	RMC 12.2Kbps	Top	0mm	Ant 5	Tablet	1413	1732.6	Vendor 2	15.25	17.00	1.496	-0.01	0.071	0.106
	WCDMA V	RMC 12.2Kbps	Back	0mm	Ant 5	Tablet	4182	836.4	Vendor 1	18.79	20.00	1.321	0.17	0.001	0.001
03	WCDMA V	RMC 12.2Kbps	Top	0mm	Ant 5	Tablet	4182	836.4	Vendor 1	18.79	20.00	1.321	0.04	0.320	0.423
	WCDMA V	RMC 12.2Kbps	Right	0mm	Ant 5	Tablet	4182	836.4	Vendor 1	18.79	20.00	1.321	-0.12	0.117	0.155
	WCDMA V	RMC 12.2Kbps	Top	0mm	Ant 5	Tablet	4182	836.4	Vendor 2	18.79	20.00	1.321	-0.09	0.278	0.367

< LTE SAR >

Plot No	Band	BW	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Antenna Vendor	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 7	20M	QPSK	1	0	Back	0mm	Ant 5	ENDC_TB	21100	2535	Vendor 1	15.32	17.00	1.472			0.01	0.022	0.032
	LTE Band 7	20M	QPSK	50	0	Back	0mm	Ant 5	ENDC_TB	21100	2535	Vendor 1	15.31	17.00	1.476			-0.07	0.021	0.031
	LTE Band 7	20M	QPSK	1	0	Back	0mm	Ant 5	Tablet	21100	2535	Vendor 1	18.31	19.00	1.172			-0.11	0.070	0.082
	LTE Band 7	20M	QPSK	50	0	Back	0mm	Ant 5	Tablet	21100	2535	Vendor 1	18.27	19.00	1.183			0.14	0.070	0.083
	LTE Band 7	20M	QPSK	1	0	Top	0mm	Ant 5	ENDC_TB	21100	2535	Vendor 1	15.32	17.00	1.472			0.08	0.352	0.518
	LTE Band 7	20M	QPSK	50	0	Top	0mm	Ant 5	ENDC_TB	21100	2535	Vendor 1	15.31	17.00	1.476			0.08	0.334	0.493
04	LTE Band 7	20M	QPSK	1	0	Top	0mm	Ant 5	Tablet	21100	2535	Vendor 1	18.31	19.00	1.172			0.05	0.733	0.859
	LTE Band 7	20M	QPSK	1	0	Top	0mm	Ant 5	Tablet	20850	2510	Vendor 1	18.25	19.00	1.189			-0.12	0.710	0.844
	LTE Band 7	20M	QPSK	1	0	Top	0mm	Ant 5	Tablet	21350	2560	Vendor 1	18.20	19.00	1.202			0.04	0.698	0.839
	LTE Band 7	20M	QPSK	50	0	Top	0mm	Ant 5	Tablet	21100	2535	Vendor 1	18.27	19.00	1.183			-0.02	0.708	0.838
	LTE Band 7	20M	QPSK	50	0	Top	0mm	Ant 5	Tablet	20850	2510	Vendor 1	18.09	19.00	1.233			0.03	0.682	0.841
	LTE Band 7	20M	QPSK	50	0	Top	0mm	Ant 5	Tablet	21350	2560	Vendor 1	18.09	19.00	1.233			-0.07	0.679	0.837
	LTE Band 7	20M	QPSK	100	0	Top	0mm	Ant 5	Tablet	21100	2535	Vendor 1	18.13	19.00	1.222			-0.15	0.664	0.811
	LTE Band 7	20M	QPSK	1	0	Right	0mm	Ant 5	ENDC_TB	21100	2535	Vendor 1	15.32	17.00	1.472			0.01	0.050	0.074
	LTE Band 7	20M	QPSK	50	0	Right	0mm	Ant 5	ENDC_TB	21100	2535	Vendor 1	15.31	17.00	1.476			0.07	0.044	0.065
	LTE Band 7	20M	QPSK	1	0	Right	0mm	Ant 5	Tablet	21100	2535	Vendor 1	18.31	19.00	1.172			0	0.103	0.121
	LTE Band 7	20M	QPSK	50	0	Right	0mm	Ant 5	Tablet	21100	2535	Vendor 1	18.27	19.00	1.183			-0.07	0.110	0.130
	LTE Band 7	20M	QPSK	1	0	Top	0mm	Ant 5	Tablet	21100	2535	Vendor 2	18.31	19.00	1.172			-0.01	0.579	0.679
	LTE Band 7C	20M	QPSK	1	99	Top	0mm	Ant 5	Tablet	21100+21298	2535+2554.8	Vendor 1	18.26	19.00	1.186			0.07	0.657	0.779
	LTE Band 7	20M	QPSK	1	0	Back	0mm	Ant 8	Tablet	21100	2535	Vendor 1	18.45	19.00	1.135			-0.19	0.165	0.187
	LTE Band 7	20M	QPSK	50	0	Back	0mm	Ant 8	Tablet	21100	2535	Vendor 1	18.42	19.00	1.143			0.07	0.168	0.192
	LTE Band 7	20M	QPSK	1	0	Top	0mm	Ant 8	Tablet	21100	2535	Vendor 1	18.45	19.00	1.135			-0.11	0.429	0.487
	LTE Band 7	20M	QPSK	50	0	Top	0mm	Ant 8	Tablet	21100	2535	Vendor 1	18.42	19.00	1.143			-0.09	0.441	0.504
	LTE Band 7	20M	QPSK	50	0	Top	0mm	Ant 8	Tablet	21100	2535	Vendor 2	18.42	19.00	1.143			0.02	0.387	0.442
	LTE Band 12	10M	QPSK	1	0	Back	0mm	Ant 5	Tablet	23095	707.5	Vendor 1	19.23	20.00	1.194			0.13	0.089	0.106
	LTE Band 12	10M	QPSK	25	0	Back	0mm	Ant 5	Tablet	23095	707.5	Vendor 1	19.22	20.00	1.197			-0.06	0.089	0.107
05	LTE Band 12	10M	QPSK	1	0	Top	0mm	Ant 5	Tablet	23095	707.5	Vendor 1	19.23	20.00	1.194			0.07	0.532	0.635
	LTE Band 12	10M	QPSK	25	0	Top	0mm	Ant 5	Tablet	23095	707.5	Vendor 1	19.22	20.00	1.197			0.14	0.522	0.625
	LTE Band 12	10M	QPSK	1	0	Right	0mm	Ant 5	Tablet	23095	707.5	Vendor 1	19.23	20.00	1.194			0.05	0.134	0.160
	LTE Band 12	10M	QPSK	25	0	Right	0mm	Ant 5	Tablet	23095	707.5	Vendor 1	19.22	20.00	1.197			0.06	0.133	0.159
	LTE Band 12	10M	QPSK	1	0	Top	0mm	Ant 5	Tablet	23095	707.5	Vendor 2	19.23	20.00	1.194			-0.04	0.502	0.599
	LTE Band 13	10M	QPSK	1	0	Back	0mm	Ant 5	Tablet	23230	782	Vendor 1	19.12	20.00	1.225			-0.12	0.001	0.001
	LTE Band 13	10M	QPSK	25	0	Back	0mm	Ant 5	Tablet	23230	782	Vendor 1	19.10	20.00	1.230			-0.01	0.001	0.001
06	LTE Band 13	10M	QPSK	1	0	Top	0mm	Ant 5	Tablet	23230	782	Vendor 1	19.12	20.00	1.225			0.05	0.470	0.576
	LTE Band 13	10M	QPSK	25	0	Top	0mm	Ant 5	Tablet	23230	782	Vendor 1	19.10	20.00	1.230			0.11	0.448	0.551
	LTE Band 13	10M	QPSK	1	0	Right	0mm	Ant 5	Tablet	23230	782	Vendor 1	19.12	20.00	1.225			-0.12	0.115	0.141
	LTE Band 13	10M	QPSK	25	0	Right	0mm	Ant 5	Tablet	23230	782	Vendor 1	19.10	20.00	1.230			0.06	0.105	0.129
	LTE Band 13	10M	QPSK	1	0	Top	0mm	Ant 5	Tablet	23230	782	Vendor 2	19.12	20.00	1.225			-0.01	0.423	0.518
	LTE Band 14	10M	QPSK	1	0	Back	0mm	Ant 5	Tablet	23330	793	Vendor 1	19.13	20.00	1.222			-0.09	0.002	0.002
	LTE Band 14	10M	QPSK	25	0	Back	0mm	Ant 5	Tablet	23330	793	Vendor 1	19.09	20.00	1.233			-0.09	0.002	0.002
07	LTE Band 14	10M	QPSK	1	0	Top	0mm	Ant 5	Tablet	23330	793	Vendor 1	19.13	20.00	1.222			0.1	0.674	0.824
	LTE Band 14	10M	QPSK	25	0	Top	0mm	Ant 5	Tablet	23330	793	Vendor 1	19.09	20.00	1.233			0.09	0.661	0.815
	LTE Band 14	10M	QPSK	50	0	Top	0mm	Ant 5	Tablet	23330	793	Vendor 1	19.07	20.00	1.239			-0.14	0.645	0.799
	LTE Band 14	10M	QPSK	1	0	Right	0mm	Ant 5	Tablet	23330	793	Vendor 1	19.13	20.00	1.222			-0.18	0.162	0.198
	LTE Band 14	10M	QPSK	25	0	Right	0mm	Ant 5	Tablet	23330	793	Vendor 1	19.09	20.00	1.233			-0.06	0.171	0.211
	LTE Band 14	10M	QPSK	1	0	Top	0mm	Ant 5	Tablet	23330	793	Vendor 2	19.13	20.00	1.222			-0.09	0.648	0.792
	LTE Band 25	20M	QPSK	1	0	Back	0mm	Ant 5	Tablet	26340	1880	Vendor 1	16.28	17.00	1.180			-0.15	0.001	0.001
	LTE Band 25	20M	QPSK	50	0	Back	0mm	Ant 5	Tablet	26340	1880	Vendor 1	16.21	17.00	1.199			0.09	0.001	0.001
	LTE Band 25	20M	QPSK	1	0	Top	0mm	Ant 5	Tablet	26340	1880	Vendor 1	16.28	17.00	1.180			0.1	0.457	0.539
	LTE Band 25	20M	QPSK	50	0	Top	0mm	Ant 5	Tablet	26340	1880	Vendor 1	16.21	17.00	1.199			0.16	0.473	0.567
	LTE Band 25	20M	QPSK	1	0	Right	0mm	Ant 5	Tablet	26340	1880	Vendor 1	16.28	17.00	1.180			0.14	0.051	0.060
	LTE Band 25	20M	QPSK	50	0	Right	0mm	Ant 5	Tablet	26340	1880	Vendor 1	16.21	17.00	1.199			0.11	0.053	0.064

	LTE Band 2C	20M	QPSK	1	99	Top	0mm	Ant 5	Tablet	18900+19098	1880+1899.8	Vendor 1	16.17	17.00	1.211			-0.06	0.450	0.545
	LTE Band 25	20M	QPSK	50	0	Top	0mm	Ant 5	Tablet	26340	1880	Vendor 2	16.21	17.00	1.199			-0.02	0.441	0.529
	LTE Band 25	20M	QPSK	1	0	Back	0mm	Ant 8	Tablet	26340	1880	Vendor 1	19.51	20.00	1.119			-0.05	0.235	0.263
	LTE Band 25	20M	QPSK	50	0	Back	0mm	Ant 8	Tablet	26340	1880	Vendor 1	19.45	20.00	1.135			-0.17	0.251	0.285
	LTE Band 25	20M	QPSK	1	0	Top	0mm	Ant 8	Tablet	26340	1880	Vendor 1	19.51	20.00	1.119			0.1	0.564	0.631
08	LTE Band 25	20M	QPSK	50	0	Top	0mm	Ant 8	Tablet	26340	1880	Vendor 1	19.45	20.00	1.135			-0.02	0.575	0.653
	LTE Band 25	20M	QPSK	50	0	Top	0mm	Ant 8	Tablet	26340	1880	Vendor 2	19.45	20.00	1.135			-0.09	0.515	0.585
	LTE Band 26	15M	QPSK	1	0	Back	0mm	Ant 5	Tablet	26865	831.5	Vendor 1	19.03	20.00	1.250			-0.05	0.079	0.099
	LTE Band 26	15M	QPSK	36	0	Back	0mm	Ant 5	Tablet	26865	831.5	Vendor 1	18.96	20.00	1.271			0.11	0.080	0.102
09	LTE Band 26	15M	QPSK	1	0	Top	0mm	Ant 5	Tablet	26865	831.5	Vendor 1	19.03	20.00	1.250			0.05	0.618	0.773
	LTE Band 26	15M	QPSK	36	0	Top	0mm	Ant 5	Tablet	26865	831.5	Vendor 1	18.96	20.00	1.271			-0.11	0.601	0.764
	LTE Band 26	15M	QPSK	1	0	Right	0mm	Ant 5	Tablet	26865	831.5	Vendor 1	19.03	20.00	1.250			0.01	0.319	0.399
	LTE Band 26	15M	QPSK	36	0	Right	0mm	Ant 5	Tablet	26865	831.5	Vendor 1	18.96	20.00	1.271			-0.11	0.339	0.431
	LTE Band 26	15M	QPSK	1	0	Top	0mm	Ant 5	Tablet	26865	831.5	Vendor 2	19.03	20.00	1.250			0.01	0.578	0.723
	LTE Band 30	10M	QPSK	1	0	Back	0mm	Ant 5	Tablet	27710	2310	Vendor 1	17.41	19.00	1.442			-0.17	0.088	0.127
	LTE Band 30	10M	QPSK	25	0	Back	0mm	Ant 5	Tablet	27710	2310	Vendor 1	17.33	19.00	1.469			0.12	0.089	0.131
10	LTE Band 30	10M	QPSK	1	0	Top	0mm	Ant 5	Tablet	27710	2310	Vendor 1	17.41	19.00	1.442			0.06	0.568	0.819
	LTE Band 30	10M	QPSK	25	0	Top	0mm	Ant 5	Tablet	27710	2310	Vendor 1	17.33	19.00	1.469			0.19	0.556	0.817
	LTE Band 30	10M	QPSK	50	0	Top	0mm	Ant 5	Tablet	27710	2310	Vendor 1	17.29	19.00	1.483			0.08	0.524	0.777
	LTE Band 30	10M	QPSK	1	0	Right	0mm	Ant 5	Tablet	27710	2310	Vendor 1	17.41	19.00	1.442			0.01	0.073	0.105
	LTE Band 30	10M	QPSK	25	0	Right	0mm	Ant 5	Tablet	27710	2310	Vendor 1	17.33	19.00	1.469			0.18	0.070	0.103
	LTE Band 30	10M	QPSK	1	0	Top	0mm	Ant 5	Tablet	27710	2310	Vendor 2	17.41	19.00	1.442			0.02	0.501	0.722
	LTE Band 30	10M	QPSK	1	0	Back	0mm	Ant 8	Tablet	27710	2310	Vendor 1	17.45	18.50	1.274			-0.18	0.068	0.087
	LTE Band 30	10M	QPSK	25	0	Back	0mm	Ant 8	Tablet	27710	2310	Vendor 1	17.35	18.50	1.303			-0.16	0.063	0.082
	LTE Band 30	10M	QPSK	1	0	Top	0mm	Ant 8	Tablet	27710	2310	Vendor 1	17.45	18.50	1.274			-0.03	0.298	0.380
	LTE Band 30	10M	QPSK	25	0	Top	0mm	Ant 8	Tablet	27710	2310	Vendor 1	17.35	18.50	1.303			0.02	0.262	0.341
	LTE Band 30	10M	QPSK	1	0	Top	0mm	Ant 8	Tablet	27710	2310	Vendor 2	17.45	18.50	1.274			0.07	0.211	0.269
	LTE Band 66	20M	QPSK	1	0	Back	0mm	Ant 5	Tablet	132322	1745	Vendor 1	16.22	17.00	1.197			0.15	0.001	0.001
	LTE Band 66	20M	QPSK	50	0	Back	0mm	Ant 5	Tablet	132322	1745	Vendor 1	16.18	17.00	1.208			0.08	0.001	0.001
	LTE Band 66	20M	QPSK	1	0	Top	0mm	Ant 5	Tablet	132322	1745	Vendor 1	16.22	17.00	1.197			0.04	0.409	0.490
	LTE Band 66	20M	QPSK	50	0	Top	0mm	Ant 5	Tablet	132322	1745	Vendor 1	16.18	17.00	1.208			-0.13	0.378	0.457
	LTE Band 66	20M	QPSK	1	0	Right	0mm	Ant 5	Tablet	132322	1745	Vendor 1	16.22	17.00	1.197			0.12	0.048	0.057
	LTE Band 66	20M	QPSK	50	0	Right	0mm	Ant 5	Tablet	132322	1745	Vendor 1	16.18	17.00	1.208			0.05	0.053	0.064
	LTE Band 66B	20M	QPSK	1	74	Top	0mm	Ant 5	Tablet	132322+132415	1745+1754.3	Vendor 1	16.07	17.00	1.239			0.05	0.365	0.452
	LTE Band 66C	20M	QPSK	1	99	Top	0mm	Ant 5	Tablet	132322+132520	1745+1764.8	Vendor 1	16.09	17.00	1.233			-0.07	0.371	0.457
	LTE Band 66	20M	QPSK	1	0	Top	0mm	Ant 5	Tablet	132322	1745	Vendor 2	16.22	17.00	1.197			0.01	0.335	0.401
	LTE Band 66	20M	QPSK	1	0	Back	0mm	Ant 8	Tablet	132322	1745	Vendor 1	19.62	20.00	1.091			0.02	0.061	0.067
	LTE Band 66	20M	QPSK	50	0	Back	0mm	Ant 8	Tablet	132322	1745	Vendor 1	19.55	20.00	1.109			0.04	0.061	0.068
11	LTE Band 66	20M	QPSK	1	0	Top	0mm	Ant 8	Tablet	132322	1745	Vendor 1	19.62	20.00	1.091			-0.03	0.484	0.528
	LTE Band 66	20M	QPSK	50	0	Top	0mm	Ant 8	Tablet	132322	1745	Vendor 1	19.55	20.00	1.109			-0.14	0.476	0.528
	LTE Band 66	20M	QPSK	1	0	Top	0mm	Ant 8	Tablet	132322	1745	Vendor 2	19.62	20.00	1.091			-0.09	0.456	0.497
	LTE Band 71	20M	QPSK	1	0	Back	0mm	Ant 5	Tablet	133297	680.5	Vendor 1	19.11	20.00	1.227			-0.08	0.001	0.001
	LTE Band 71	20M	QPSK	50	0	Back	0mm	Ant 5	Tablet	133297	680.5	Vendor 1	19.09	20.00	1.233			-0.11	0.001	0.001
12	LTE Band 71	20M	QPSK	1	0	Top	0mm	Ant 5	Tablet	133297	680.5	Vendor 1	19.11	20.00	1.227			0.02	0.320	0.393
	LTE Band 71	20M	QPSK	50	0	Top	0mm	Ant 5	Tablet	133297	680.5	Vendor 1	19.09	20.00	1.233			0.18	0.284	0.350
	LTE Band 71	20M	QPSK	1	0	Right	0mm	Ant 5	Tablet	133297	680.5	Vendor 1	19.11	20.00	1.227			-0.13	0.118	0.145
	LTE Band 71	20M	QPSK	50	0	Right	0mm	Ant 5	Tablet	133297	680.5	Vendor 1	19.09	20.00	1.233			-0.03	0.103	0.127
	LTE Band 71	20M	QPSK	1	0	Top	0mm	Ant 5	Tablet	133297	680.5	Vendor 2	19.11	20.00	1.227			0.01	0.235	0.288
	LTE Band 41	20M	QPSK	1	0	Back	0mm	Ant 5	Tablet	40620	2593	Vendor 1	19.29	20.00	1.178	62.9	1.006	0.02	0.001	0.001
	LTE Band 41	20M	QPSK	50	0	Back	0mm	Ant 5	Tablet	40620	2593	Vendor 1	19.20	20.00	1.202	62.9	1.006	0	0.001	0.001
	LTE Band 41	20M	QPSK	1	0	Top	0mm	Ant 5	Tablet	40620	2593	Vendor 1	19.29	20.00	1.178	62.9	1.006	0.07	0.212	0.251
	LTE Band 41	20M	QPSK	50	0	Top	0mm	Ant 5	Tablet	40620	2593	Vendor 1	19.20	20.00	1.202	62.9	1.006	-0.1	0.196	0.237
	LTE Band 41	20M	QPSK	1	0	Right	0mm	Ant 5	Tablet	40620	2593	Vendor 1	19.29	20.00	1.178	62.9	1.006	-0.05	0.001	0.001
	LTE Band 41	20M	QPSK	50	0	Right	0mm	Ant 5	Tablet	40620	2593	Vendor 1	19.20	20.00	1.202	62.9	1.006	-0.17	0.031	0.037
	LTE Band 41C	20M	QPSK	1	99	Top	0mm	Ant 5	Tablet	40620+40818	2593+2612.8	Vendor 1	19.18	20.00	1.208	42.9	1.009	0.17	0.198	0.241

	LTE Band 41_HPUE	20M	QPSK	1	0	Top	0mm	Ant 5	Tablet	40620	2593	Vendor 1	19.29	20.00	1.178	42.9	1.009	0.05	0.151	0.179
	LTE Band 41	20M	QPSK	1	0	Top	0mm	Ant 5	Tablet	40620	2593	Vendor 2	19.29	20.00	1.178	42.9	1.009	0.03	0.177	0.210
	LTE Band 41	20M	QPSK	1	0	Back	0mm	Ant 8	Tablet	40620	2593	Vendor 1	19.57	20.00	1.104	62.9	1.006	-0.18	0.166	0.184
	LTE Band 41	20M	QPSK	50	0	Back	0mm	Ant 8	Tablet	40620	2593	Vendor 1	19.56	20.00	1.107	62.9	1.006	0.14	0.170	0.189
13	LTE Band 41	20M	QPSK	1	0	Top	0mm	Ant 8	Tablet	40620	2593	Vendor 1	19.57	20.00	1.104	62.9	1.006	-0.04	0.471	0.523
	LTE Band 41	20M	QPSK	50	0	Top	0mm	Ant 8	Tablet	40620	2593	Vendor 1	19.56	20.00	1.107	62.9	1.006	0.08	0.461	0.513
	LTE Band 41_HPUE	20M	QPSK	1	0	Top	0mm	Ant 8	Tablet	40620	2593	Vendor 1	19.57	20.00	1.104	42.9	1.009	0.01	0.347	0.387
	LTE Band 41	20M	QPSK	1	0	Top	0mm	Ant 8	Tablet	40620	2593	Vendor 2	19.57	20.00	1.104	62.9	1.006	0.09	0.411	0.456
	LTE Band 48	20M	QPSK	1	0	Back	0mm	Ant 8	Tablet	55830	3609	Vendor 1	14.48	15.50	1.265	62.9	1.006	0.16	0.002	0.003
	LTE Band 48	20M	QPSK	50	0	Back	0mm	Ant 8	Tablet	55830	3609	Vendor 1	14.42	15.50	1.282	62.9	1.006	0.12	0.065	0.084
14	LTE Band 48	20M	QPSK	1	0	Top	0mm	Ant 8	Tablet	55830	3609	Vendor 1	14.48	15.50	1.265	62.9	1.006	-0.13	0.421	0.536
	LTE Band 48	20M	QPSK	50	0	Top	0mm	Ant 8	Tablet	55830	3609	Vendor 1	14.42	15.50	1.282	62.9	1.006	0.01	0.411	0.530
	LTE Band 48	20M	QPSK	1	0	Top	0mm	Ant 8	Tablet	55830	3609	Vendor 2	14.48	15.50	1.265	62.9	1.006	-0.01	0.401	0.510

< 5G NR SAR >

Plot No	Band	BW	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Antenna Vendor	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	FR1 n2	20M	BPSK	1	1	Back	0mm	Ant 8	Tablet	376000	1880	Vendor 1	19.45	20.00	1.135	0.12	0.191	0.217
	FR1 n2	20M	BPSK	50	28	Back	0mm	Ant 8	Tablet	376000	1880	Vendor 1	19.41	20.00	1.146	-0.09	0.225	0.258
	FR1 n2	20M	BPSK	1	1	Top	0mm	Ant 8	Tablet	376000	1880	Vendor 1	19.45	20.00	1.135	-0.06	0.445	0.505
15	FR1 n2	20M	BPSK	50	28	Top	0mm	Ant 8	Tablet	376000	1880	Vendor 1	19.41	20.00	1.146	0.05	0.524	0.601
	FR1 n2	20M	BPSK	50	28	Top	0mm	Ant 8	Tablet	376000	1880	Vendor 2	19.41	20.00	1.146	0.02	0.489	0.560
	FR1 n7	50M	BPSK	1	1	Back	0mm	Ant 5	Tablet	507000	2535	Vendor 1	18.36	19.00	1.159	-0.07	0.067	0.078
	FR1 n7	50M	BPSK	135	68	Back	0mm	Ant 5	Tablet	507000	2535	Vendor 1	18.41	19.00	1.146	0	0.066	0.076
16	FR1 n7	50M	BPSK	1	1	Top	0mm	Ant 5	Tablet	507000	2535	Vendor 1	18.36	19.00	1.159	0.09	0.663	0.768
	FR1 n7	50M	BPSK	135	68	Top	0mm	Ant 5	Tablet	507000	2535	Vendor 1	18.41	19.00	1.146	0	0.589	0.675
	FR1 n7	50M	BPSK	1	1	Right	0mm	Ant 5	Tablet	507000	2535	Vendor 1	18.36	19.00	1.159	-0.03	0.243	0.282
	FR1 n7	50M	BPSK	135	68	Right	0mm	Ant 5	Tablet	507000	2535	Vendor 1	18.41	19.00	1.146	0.13	0.245	0.281
	FR1 n7	50M	BPSK	1	1	Top	0mm	Ant 5	Tablet	507000	2535	Vendor 2	18.36	19.00	1.159	-0.05	0.589	0.683
	FR1 n7	50M	BPSK	1	1	Back	0mm	Ant 8	Tablet	507000	2535	Vendor 1	18.66	19.00	1.081	-0.09	0.213	0.230
	FR1 n7	50M	BPSK	135	68	Back	0mm	Ant 8	Tablet	507000	2535	Vendor 1	18.54	19.00	1.112	-0.14	0.247	0.275
	FR1 n7	50M	BPSK	1	1	Top	0mm	Ant 8	Tablet	507000	2535	Vendor 1	18.66	19.00	1.081	0.08	0.528	0.571
	FR1 n7	50M	BPSK	135	68	Top	0mm	Ant 8	Tablet	507000	2535	Vendor 1	18.54	19.00	1.112	-0.07	0.554	0.616
	FR1 n7	50M	BPSK	135	68	Top	0mm	Ant 8	Tablet	507000	2535	Vendor 2	18.54	19.00	1.112	0.02	0.501	0.557
	FR1 n12	15M	BPSK	1	1	Back	0mm	Ant 5	Tablet	141500	707.5	Vendor 1	19.40	20.00	1.148	0.19	0.001	0.001
	FR1 n12	15M	BPSK	36	22	Back	0mm	Ant 5	Tablet	141500	707.5	Vendor 1	19.34	20.00	1.164	0.17	0.001	0.001
17	FR1 n12	15M	BPSK	1	1	Top	0mm	Ant 5	Tablet	141500	707.5	Vendor 1	19.40	20.00	1.148	-0.02	0.532	0.611
	FR1 n12	15M	BPSK	36	22	Top	0mm	Ant 5	Tablet	141500	707.5	Vendor 1	19.34	20.00	1.164	-0.19	0.464	0.540
	FR1 n12	15M	BPSK	1	1	Right	0mm	Ant 5	Tablet	141500	707.5	Vendor 1	19.40	20.00	1.148	-0.03	0.072	0.083
	FR1 n12	15M	BPSK	36	22	Right	0mm	Ant 5	Tablet	141500	707.5	Vendor 1	19.34	20.00	1.164	-0.1	0.075	0.087
	FR1 n12	15M	BPSK	1	1	Top	0mm	Ant 5	Tablet	141500	707.5	Vendor 2	19.40	20.00	1.148	0.05	0.467	0.536
	FR1 n14	10M	BPSK	1	1	Back	0mm	Ant 5	Tablet	158600	793	Vendor 1	19.37	20.00	1.156	-0.1	0.069	0.080
	FR1 n14	10M	BPSK	25	14	Back	0mm	Ant 5	Tablet	158600	793	Vendor 1	19.33	20.00	1.167	0.09	0.071	0.083
18	FR1 n14	10M	BPSK	1	1	Top	0mm	Ant 5	Tablet	158600	793	Vendor 1	19.37	20.00	1.156	0.12	0.573	0.662
	FR1 n14	10M	BPSK	25	14	Top	0mm	Ant 5	Tablet	158600	793	Vendor 1	19.33	20.00	1.167	0.05	0.549	0.641
	FR1 n14	10M	BPSK	1	1	Right	0mm	Ant 5	Tablet	158600	793	Vendor 1	19.37	20.00	1.156	-0.15	0.178	0.206
	FR1 n14	10M	BPSK	25	14	Right	0mm	Ant 5	Tablet	158600	793	Vendor 1	19.33	20.00	1.167	-0.15	0.174	0.203
	FR1 n14	10M	BPSK	1	1	Top	0mm	Ant 5	Tablet	158600	793	Vendor 2	19.37	20.00	1.156	0.03	0.504	0.583
	FR1 n25	40M	BPSK	1	1	Back	0mm	Ant 5	Tablet	376500	1882.5	Vendor 1	16.58	17.00	1.102	-0.06	0.001	0.001
	FR1 n25	40M	BPSK	108	54	Back	0mm	Ant 5	Tablet	376500	1882.5	Vendor 1	16.53	17.00	1.114	0.04	0.049	0.055
	FR1 n25	40M	BPSK	1	1	Top	0mm	Ant 5	Tablet	376500	1882.5	Vendor 1	16.58	17.00	1.102	0.14	0.459	0.506
19	FR1 n25	40M	BPSK	108	54	Top	0mm	Ant 5	Tablet	376500	1882.5	Vendor 1	16.53	17.00	1.114	0.07	0.516	0.575
	FR1 n25	40M	BPSK	1	1	Right	0mm	Ant 5	Tablet	376500	1882.5	Vendor 1	16.58	17.00	1.102	-0.03	0.198	0.218
	FR1 n25	40M	BPSK	108	54	Right	0mm	Ant 5	Tablet	376500	1882.5	Vendor 1	16.53	17.00	1.114	0.02	0.236	0.263

	FR1 n25	40M	BPSK	108	54	Top	0mm	Ant 5	Tablet	376500	1882.5	Vendor 2	16.53	17.00	1.114	0.07	0.423	0.471
	FR1 n26	20M	BPSK	1	1	Back	0mm	Ant 5	Tablet	166300	831.5	Vendor 1	19.29	20.00	1.178	0.11	0.063	0.074
	FR1 n26	20M	BPSK	50	28	Back	0mm	Ant 5	Tablet	166300	831.5	Vendor 1	19.36	20.00	1.159	0.06	0.066	0.076
20	FR1 n26	20M	BPSK	1	1	Top	0mm	Ant 5	Tablet	166300	831.5	Vendor 1	19.29	20.00	1.178	0.03	0.576	0.679
	FR1 n26	20M	BPSK	50	28	Top	0mm	Ant 5	Tablet	166300	831.5	Vendor 1	19.36	20.00	1.159	-0.15	0.545	0.632
	FR1 n26	20M	BPSK	1	1	Right	0mm	Ant 5	Tablet	166300	831.5	Vendor 1	19.29	20.00	1.178	0.13	0.215	0.253
	FR1 n26	20M	BPSK	50	28	Right	0mm	Ant 5	Tablet	166300	831.5	Vendor 1	19.36	20.00	1.159	-0.13	0.259	0.300
	FR1 n26	20M	BPSK	1	1	Top	0mm	Ant 5	Tablet	166300	831.5	Vendor 2	19.29	20.00	1.178	0.01	0.514	0.605
	FR1 n30	10M	BPSK	1	26	Back	0mm	Ant 5	Tablet	462000	2310	Vendor 1	18.31	19.00	1.172	-0.11	0.042	0.049
	FR1 n30	10M	BPSK	25	14	Back	0mm	Ant 5	Tablet	462000	2310	Vendor 1	18.02	19.00	1.253	-0.05	0.042	0.053
	FR1 n30	10M	BPSK	1	26	Top	0mm	Ant 5	Tablet	462000	2310	Vendor 1	18.31	19.00	1.172	0.1	0.533	0.625
21	FR1 n30	10M	BPSK	25	14	Top	0mm	Ant 5	Tablet	462000	2310	Vendor 1	18.02	19.00	1.253	-0.04	0.560	0.702
	FR1 n30	10M	BPSK	1	26	Right	0mm	Ant 5	Tablet	462000	2310	Vendor 1	18.31	19.00	1.172	0	0.292	0.342
	FR1 n30	10M	BPSK	25	14	Right	0mm	Ant 5	Tablet	462000	2310	Vendor 1	18.02	19.00	1.253	-0.08	0.285	0.357
	FR1 n30	10M	BPSK	25	14	Top	0mm	Ant 5	Tablet	462000	2310	Vendor 2	18.02	19.00	1.253	0.09	0.451	0.565
	FR1 n30	10M	BPSK	1	1	Back	0mm	Ant 8	Tablet	462000	2310	Vendor 1	17.51	18.50	1.256	-0.17	0.061	0.077
	FR1 n30	10M	BPSK	25	14	Back	0mm	Ant 8	Tablet	462000	2310	Vendor 1	17.50	18.50	1.259	-0.1	0.066	0.083
	FR1 n30	10M	BPSK	1	1	Top	0mm	Ant 8	Tablet	462000	2310	Vendor 1	17.51	18.50	1.256	-0.01	0.281	0.353
	FR1 n30	10M	BPSK	25	14	Top	0mm	Ant 8	Tablet	462000	2310	Vendor 1	17.50	18.50	1.259	-0.07	0.259	0.326
	FR1 n30	10M	BPSK	1	1	Top	0mm	Ant 8	Tablet	462000	2310	Vendor 2	17.51	18.50	1.256	0.01	0.234	0.294
	FR1 n66	40M	BPSK	1	108	Back	0mm	Ant 5	Tablet	349000	1745	Vendor 1	16.67	17.00	1.079	0.02	0.044	0.047
	FR1 n66	40M	BPSK	108	54	Back	0mm	Ant 5	Tablet	349000	1745	Vendor 1	16.68	17.00	1.076	-0.07	0.046	0.049
	FR1 n66	40M	BPSK	1	108	Top	0mm	Ant 5	Tablet	349000	1745	Vendor 1	16.67	17.00	1.079	0.18	0.364	0.393
	FR1 n66	40M	BPSK	108	54	Top	0mm	Ant 5	Tablet	349000	1745	Vendor 1	16.68	17.00	1.076	-0.07	0.418	0.450
	FR1 n66	40M	BPSK	1	108	Right	0mm	Ant 5	Tablet	349000	1745	Vendor 1	16.67	17.00	1.079	0.12	0.226	0.244
	FR1 n66	40M	BPSK	108	54	Right	0mm	Ant 5	Tablet	349000	1745	Vendor 1	16.68	17.00	1.076	0.03	0.243	0.261
	FR1 n66	40M	BPSK	108	54	Top	0mm	Ant 5	Tablet	349000	1745	Vendor 2	16.68	17.00	1.076	0.09	0.381	0.410
	FR1 n66	40M	BPSK	1	1	Back	0mm	Ant 8	Tablet	349000	1745	Vendor 1	19.20	20.00	1.202	-0.12	0.078	0.094
	FR1 n66	40M	BPSK	108	54	Back	0mm	Ant 8	Tablet	349000	1745	Vendor 1	19.52	20.00	1.117	0.14	0.081	0.090
	FR1 n66	40M	BPSK	1	1	Top	0mm	Ant 8	Tablet	349000	1745	Vendor 1	19.20	20.00	1.202	-0.13	0.547	0.657
22	FR1 n66	40M	BPSK	108	54	Top	0mm	Ant 8	Tablet	349000	1745	Vendor 1	19.52	20.00	1.117	-0.11	0.622	0.695
	FR1 n66	40M	BPSK	108	54	Top	0mm	Ant 8	Tablet	349000	1745	Vendor 2	19.52	20.00	1.117	0.01	0.581	0.649
	FR1 n71	20M	BPSK	1	53	Back	0mm	Ant 5	Tablet	136100	680.5	Vendor 1	19.88	20.00	1.028	0.11	0.062	0.064
	FR1 n71	20M	BPSK	50	28	Back	0mm	Ant 5	Tablet	136100	680.5	Vendor 1	19.47	20.00	1.130	-0.11	0.063	0.071
	FR1 n71	20M	BPSK	1	53	Top	0mm	Ant 5	Tablet	136100	680.5	Vendor 1	19.88	20.00	1.028	0.13	0.562	0.578
23	FR1 n71	20M	BPSK	50	28	Top	0mm	Ant 5	Tablet	136100	680.5	Vendor 1	19.47	20.00	1.130	0.13	0.562	0.635
	FR1 n71	20M	BPSK	1	53	Right	0mm	Ant 5	Tablet	136100	680.5	Vendor 1	19.88	20.00	1.028	-0.07	0.144	0.148
	FR1 n71	20M	BPSK	50	28	Right	0mm	Ant 5	Tablet	136100	680.5	Vendor 1	19.47	20.00	1.130	-0.17	0.138	0.156
	FR1 n71	20M	BPSK	50	28	Top	0mm	Ant 5	Tablet	136100	680.5	Vendor 2	19.47	20.00	1.130	-0.09	0.513	0.580
	FR1 n41_HPUE	100M	BPSK	1	137	Back	0mm	Ant 5	Tablet	518598	2592.99	Vendor 1	18.03	19.00	1.250	-0.08	0.079	0.099
	FR1 n41_HPUE	100M	BPSK	135	69	Back	0mm	Ant 5	Tablet	518598	2592.99	Vendor 1	18.43	19.00	1.140	0.01	0.068	0.078
24	FR1 n41_HPUE	100M	BPSK	1	137	Top	0mm	Ant 5	Tablet	518598	2592.99	Vendor 1	18.03	19.00	1.250	-0.09	0.602	0.753
	FR1 n41_HPUE	100M	BPSK	135	69	Top	0mm	Ant 5	Tablet	518598	2592.99	Vendor 1	18.43	19.00	1.140	-0.01	0.575	0.656
	FR1 n41_HPUE	100M	BPSK	1	137	Right	0mm	Ant 5	Tablet	518598	2592.99	Vendor 1	18.03	19.00	1.250	0.1	0.293	0.366
	FR1 n41_HPUE	100M	BPSK	135	69	Right	0mm	Ant 5	Tablet	518598	2592.99	Vendor 1	18.43	19.00	1.140	-0.1	0.279	0.318
	FR1 n41_HPUE	100M	BPSK	1	137	Top	0mm	Ant 5	Tablet	518598	2592.99	Vendor 2	18.03	19.00	1.250	0.01	0.469	0.586
	FR1 n41_HPUE	100M	BPSK	1	137	Back	0mm	Ant 8	Tablet	518598	2592.99	Vendor 1	19.21	20.00	1.199	0.14	0.171	0.205
	FR1 n41_HPUE	100M	BPSK	135	69	Back	0mm	Ant 8	Tablet	518598	2592.99	Vendor 1	19.35	20.00	1.161	-0.15	0.196	0.228
	FR1 n41_HPUE	100M	BPSK	1	137	Top	0mm	Ant 8	Tablet	518598	2592.99	Vendor 1	19.21	20.00	1.199	0.13	0.362	0.434
	FR1 n41_HPUE	100M	BPSK	135	69	Top	0mm	Ant 8	Tablet	518598	2592.99	Vendor 1	19.35	20.00	1.161	0.08	0.466	0.541
	FR1 n41_HPUE	100M	BPSK	135	69	Top	0mm	Ant 8	Tablet	518598	2592.99	Vendor 2	19.35	20.00	1.161	0.09	0.401	0.466
	FR1 n48	40M	BPSK	1	53	Back	0mm	Ant 8	Tablet	641666	3624.99	Vendor 1	14.37	15.50	1.297	-0.19	0.064	0.083
	FR1 n48	40M	BPSK	50	28	Back	0mm	Ant 8	Tablet	641666	3624.99	Vendor 1	14.33	15.50	1.309	0.16	0.073	0.096
	FR1 n48	40M	BPSK	1	53	Top	0mm	Ant 8	Tablet	641666	3624.99	Vendor 1	14.37	15.50	1.297	0.1	0.523	0.678
	FR1 n48	40M	BPSK	1	53	Top	0mm	Ant 8	Tablet	638000	3570	Vendor 1	14.27	15.50	1.327	0.08	0.482	0.640

	FR1 n48	40M	BPSK	1	53	Top	0mm	Ant 8	Tablet	645332	3679.98	Vendor 1	14.31	15.50	1.315	0.01	0.468	0.615
25	FR1 n48	40M	BPSK	50	28	Top	0mm	Ant 8	Tablet	641666	3624.99	Vendor 1	14.53	15.50	1.250	0.05	0.596	0.745
	FR1 n48	40M	BPSK	50	56	Top	0mm	Ant 8	Tablet	638000	3570	Vendor 1	14.25	15.50	1.334	0.03	0.549	0.732
	FR1 n48	40M	BPSK	50	28	Top	0mm	Ant 8	Tablet	645332	3679.98	Vendor 1	14.29	15.50	1.321	-0.08	0.533	0.704
	FR1 n48	40M	BPSK	50	28	Top	0mm	Ant 8	Tablet	641666	3624.99	Vendor 2	14.33	15.50	1.309	0.09	0.511	0.669
	FR1 n48	40M	BPSK	50	56	Top	0mm	Ant 8	Tablet	638000	3570	Vendor 2	14.25	15.50	1.334	-0.08	0.471	0.628
	FR1 n48	40M	BPSK	50	28	Top	0mm	Ant 8	Tablet	645332	3679.98	Vendor 2	14.29	15.50	1.321	0.1	0.457	0.604
	FR1 n77_HPUE	100M	BPSK	1	137	Back	0mm	Ant 5	Tablet	633332	3499.98	Vendor 1	15.01	16.50	1.409	-0.13	0.037	0.052
	FR1 n77_HPUE	100M	BPSK	135	69	Back	0mm	Ant 5	Tablet	633332	3499.98	Vendor 1	15.06	16.50	1.393	-0.1	0.039	0.054
	FR1 n77_HPUE	100M	BPSK	1	137	Top	0mm	Ant 5	Tablet	633332	3499.98	Vendor 1	15.01	16.50	1.409	0.17	0.310	0.437
	FR1 n77_HPUE	100M	BPSK	135	69	Top	0mm	Ant 5	Tablet	633332	3499.98	Vendor 1	15.06	16.50	1.393	0.01	0.344	0.479
	FR1 n77_HPUE	100M	BPSK	1	137	Right	0mm	Ant 5	Tablet	633332	3499.98	Vendor 1	15.01	16.50	1.409	-0.04	0.188	0.265
	FR1 n77_HPUE	100M	BPSK	135	69	Right	0mm	Ant 5	Tablet	633332	3499.98	Vendor 1	15.06	16.50	1.393	0.08	0.253	0.352
	FR1 n77_HPUE	100M	BPSK	135	69	Top	0mm	Ant 5	Tablet	633332	3499.98	Vendor 2	15.06	16.50	1.393	-0.09	0.323	0.450
	FR1 n77_HPUE	100M	BPSK	1	137	Back	0mm	Ant 8	Tablet	633332	3499.98	Vendor 1	14.06	15.00	1.242	0.09	0.036	0.045
	FR1 n77_HPUE	100M	BPSK	135	69	Back	0mm	Ant 8	Tablet	633332	3499.98	Vendor 1	14.25	15.00	1.189	0.16	0.046	0.055
	FR1 n77_HPUE	100M	BPSK	1	137	Top	0mm	Ant 8	Tablet	633332	3499.98	Vendor 1	14.06	15.00	1.242	0.16	0.230	0.286
	FR1 n77_HPUE	100M	BPSK	135	69	Top	0mm	Ant 8	Tablet	633332	3499.98	Vendor 1	14.25	15.00	1.189	0.06	0.335	0.398
	FR1 n77_HPUE	100M	BPSK	1	137	Back	0mm	Ant 8	ENDC_TB	633332	3499.98	Vendor 1	11.10	12.00	1.230	0.03	0.026	0.032
	FR1 n77_HPUE	100M	BPSK	135	69	Back	0mm	Ant 8	ENDC_TB	633332	3499.98	Vendor 1	11.17	12.00	1.211	-0.11	0.033	0.040
	FR1 n77_HPUE	100M	BPSK	1	137	Top	0mm	Ant 8	ENDC_TB	633332	3499.98	Vendor 1	11.10	12.00	1.230	0.07	0.166	0.204
	FR1 n77_HPUE	100M	BPSK	135	69	Top	0mm	Ant 8	ENDC_TB	633332	3499.98	Vendor 1	11.17	12.00	1.211	0.04	0.242	0.293
	FR1 n77_HPUE	100M	BPSK	135	69	Top	0mm	Ant 8	Tablet	633332	3499.98	Vendor 2	14.25	15.00	1.189	-0.09	0.321	0.382
	FR1 n77_HPUE	100M	BPSK	1	137	Back	0mm	Ant 5	Tablet	656000	3840	Vendor 1	14.88	16.50	1.452	0	0.038	0.055
	FR1 n77_HPUE	100M	BPSK	135	69	Back	0mm	Ant 5	Tablet	656000	3840	Vendor 1	14.76	16.50	1.493	0.07	0.001	0.001
	FR1 n77_HPUE	100M	BPSK	1	137	Top	0mm	Ant 5	Tablet	656000	3840	Vendor 1	14.88	16.50	1.452	-0.04	0.419	0.608
	FR1 n77_HPUE	100M	BPSK	135	69	Top	0mm	Ant 5	Tablet	656000	3840	Vendor 1	14.76	16.50	1.493	0.07	0.458	0.684
	FR1 n77_HPUE	100M	BPSK	1	137	Right	0mm	Ant 5	Tablet	656000	3840	Vendor 1	14.88	16.50	1.452	-0.08	0.426	0.619
	FR1 n77_HPUE	100M	BPSK	135	69	Right	0mm	Ant 5	Tablet	656000	3840	Vendor 1	14.76	16.50	1.493	0.18	0.409	0.611
	FR1 n77_HPUE	100M	BPSK	135	69	Top	0mm	Ant 5	Tablet	656000	3840	Vendor 2	14.76	16.50	1.493	-0.03	0.413	0.617
	FR1 n77_HPUE	100M	BPSK	1	137	Back	0mm	Ant 8	Tablet	656000	3840	Vendor 1	14.07	15.00	1.239	0.16	0.041	0.051
	FR1 n77_HPUE	100M	BPSK	135	69	Back	0mm	Ant 8	Tablet	656000	3840	Vendor 1	14.34	15.00	1.164	0.09	0.042	0.049
26	FR1 n77_HPUE	100M	BPSK	1	137	Top	0mm	Ant 8	Tablet	656000	3840	Vendor 1	14.07	15.00	1.239	0.07	0.921	1.141
	FR1 n77_HPUE	100M	BPSK	135	69	Top	0mm	Ant 8	Tablet	656000	3840	Vendor 1	14.34	15.00	1.164	-0.02	0.939	1.093
	FR1 n77_HPUE	100M	BPSK	270	0	Top	0mm	Ant 8	Tablet	656000	3840	Vendor 1	14.15	15.00	1.216	-0.08	0.877	1.066
	FR1 n77_HPUE	100M	BPSK	1	137	Back	0mm	Ant 8	ENDC_TB	656000	3840	Vendor 1	11.13	12.00	1.222	0.16	0.018	0.022
	FR1 n77_HPUE	100M	BPSK	135	69	Back	0mm	Ant 8	ENDC_TB	656000	3840	Vendor 1	11.32	12.00	1.169	-0.07	0.020	0.023
	FR1 n77_HPUE	100M	BPSK	1	137	Top	0mm	Ant 8	ENDC_TB	656000	3840	Vendor 1	11.13	12.00	1.222	-0.04	0.499	0.610
	FR1 n77_HPUE	100M	BPSK	135	69	Top	0mm	Ant 8	ENDC_TB	656000	3840	Vendor 1	11.32	12.00	1.169	-0.15	0.512	0.599
	FR1 n77_HPUE	100M	BPSK	1	137	Top	0mm	Ant 8	Tablet	656000	3840	Vendor 2	14.07	15.00	1.239	0.01	0.891	1.104

13.2 Repeated SAR Measurement

No	Band	BW	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Antenna Vendor	Average Power (dBm)	Tune-Up Limit (dBm)	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	FR1 n77_HPUE	100M	BPSK	135	69	Top	0mm	Ant 8	Tablet	656000	3840	Vendor 1	14.34	15.00	1.164	-0.02	0.939	-	1.093
2nd	FR1 n77_HPUE	100M	BPSK	135	69	Top	0mm	Ant 8	Tablet	656000	3840	Vendor 1	14.34	15.00	1.164	0.01	0.912	1.03	1.062

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR < 1.45W/kg, only one repeated measurement is required.
3. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. = > 10g SAR used
4. The ratio is the difference in percentage between original and repeated *measured SAR*.
5. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

13.3 Power Class 2 and Power Class 3 Linearity

General Note:

This device support Power Class 2 and Power Class 3 operations. Per FCC Guidance based on the device behavior, all SAR tests were performed using Power Class 3. Power Class 2 is tested using the highest SAR test configuration in Power Class 3 for each LTE and FR1 configuration and exposure condition combination, according to the highest time averaged power for Power Class 2. When the reported SAR vs. output power is linearly scaled with＜10% discrepancy between power classes and all reported SAR are＜1.4 W/kg, Separate SAR testing for Power Class 2 is not required. Use PC3 power level and SAR to estimated PC2 SAR linearly, and check if the deviation from the measured PC2 SAR is ＜ 10%

＜**Body condition**＞

LTE Band 41_Ant 5	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	20	20
Reported 1g SAR (W/kg)	0.251	0.179
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	63.30	43.30
Linearity SAR(W/kg)	0.17	
% deviation from expected linearity		4.25%

LTE Band 41_Ant 8	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	20	20
Reported 1g SAR (W/kg)	0.523	0.387
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	63.30	43.30
Linearity SAR(W/kg)	0.36	
% deviation from expected linearity		8.17%

14. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Body
ENDC		
1.	WWAN Ant 5 + WWAN Ant 8 + WLAN+BT Ant 1	Yes
2.	WWAN Ant 5 + WWAN Ant 8 + WLAN Ant 2	Yes
Standalone		
3.	WWAN + WLAN+BT Ant 1	Yes
4.	WWAN + WLAN Ant 2	Yes

General Note:

1. The worst case WLAN reported SAR for each configuration was used for SAR summation. Therefore, the following summations represent the absolute worst cases for simultaneous transmission with WLAN.
2. The Scaled SAR summation is calculated based on the same configuration and test position.
3. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
   i) Scalar SAR summation < 1g 1.6W/kg or 10g 4.0W/kg.
   ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$, where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
   iii) If SPLSR ≤ 0.04 for 1g SAR, ≤ 0.1 for 10g SAR, simultaneously transmission SAR measurement is not necessary.
   iv) Simultaneously transmission SAR measurement, and the reported multi-band 1g SAR < 1.6W/kg or 10g SAR < 4.0W/kg.
   v) Simultaneously transmission SAR measurement, and the reported multi-band SAR＜1.6W/kg.
   vi) The SPLSR calculated results please refer to section 14.2.

14.1 Body Exposure Conditions

<WWAN + BE211NGW>
(EN-DC)

Exposure Position	1 Maximum WWAN Ant 5 1g SAR (W/kg)	2 Maximum WWAN Ant 8 1g SAR (W/kg)	3 Max WLAN+BT Ant 1 1g SAR (W/kg)	4 Max WLAN Ant 2 1g SAR (W/kg)	1+2+3 Summed 1g SAR (W/kg)	1+2+4 Summed 1g SAR (W/kg)	1+2+3 Case No	1+2+3 SPLSR	1+2+4 Case No	1+2+4 SPLSR
Back at 0mm	0.131	0.285	0.600	0.790	1.016	1.206				
Top at 0mm	0.824	0.745	1.250	1.370	2.819	2.939	Case 1	0.02	Case 2	0.04
Right at 0mm	0.431				0.431	0.431				
Left at 0mm			0.790	0.400	0.790	0.400				

(Standalone)

WWAN Ant	Exposure Position	1 Maximum WWAN 1g SAR (W/kg)	2 Max WLAN+BT Ant 1 1g SAR (W/kg)	3 Max WLAN Ant 2 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+2 Case No	1+2 SPLSR	1+3 Case No	1+3 SPLSR
Ant 5	Back at 0mm	0.131	0.600	0.790	0.731	0.921				
	Top at 0mm	0.859	1.250	1.370	2.109	2.229	Case 3	0.02	Case 4	0.03
	Right at 0mm	0.619			0.619	0.619				
	Left at 0mm		0.790	0.400	0.790	0.400				
Ant 8	Back at 0mm	0.285	0.600	0.790	0.885	1.075				
	Top at 0mm	1.141	1.250	1.370	2.391	2.511	Case 5	0.03	Case 6	0.03
	Left at 0mm		0.790	0.400	0.790	0.400				

<WWAN+AX211NGW>
(EN-DC)

Exposure Position	1	2	3	4	1+2+3 Summed 1g SAR (W/kg)	1+2+4 Summed 1g SAR (W/kg)	1+2+3 Case No	1+2+3 SPLSR	1+2+4 Case No	1+2+4 SPLSR
	Maximum WWAN Ant 5	Maximum WWAN Ant 8	Max WLAN+BT Ant 1	Max WLAN Ant 2						
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)						
Back at 0mm	0.131	0.285	0.850	0.750	1.266	1.166				
Top at 0mm	0.824	0.745	1.200	1.050	2.769	2.619	Case 7	0.02	Case 8	0.03
Right at 0mm	0.431				0.431	0.431				
Left at 0mm			0.850	0.750	0.850	0.750				

(Standalone)

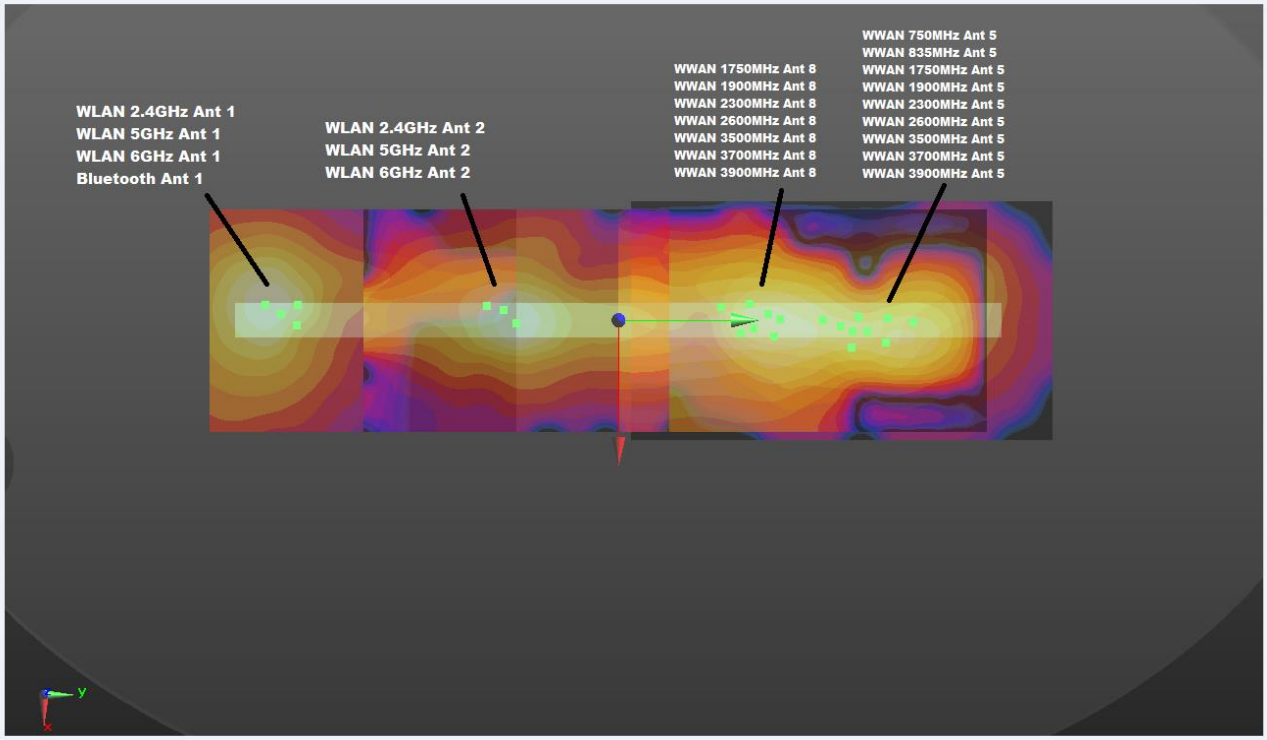
WWAN Ant	Exposure Position	1	2	3	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+2 Case No	1+2 SPLSR	1+3 Case No	1+3 SPLSR
		Maximum WWAN	Max WLAN+BT Ant 1	Max WLAN Ant 2						
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)						
Ant 5	Back at 0mm	0.131	0.850	0.750	0.981	0.881				
	Top at 0mm	0.859	1.200	1.050	2.059	1.909	Case 9	0.02	Case 10	0.02
	Right at 0mm	0.619			0.619	0.619				
	Left at 0mm		0.850	0.750	0.850	0.750				
Ant 8	Back at 0mm	0.285	0.850	0.750	1.135	1.035				
	Top at 0mm	1.141	1.200	1.050	2.341	2.191	Case 11	0.03	Case 12	0.03
	Left at 0mm		0.850	0.750	0.850	0.750				

14.2 SPLSR Evaluation and Analysis

General Note:

1. Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneously transmitting antenna. When the sum of 1-g or 10-g SAR of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit, SAR test exclusion applies to that simultaneous transmission configuration. Therefore, the adjacent transmit antennas will be summed first, and then the SPLSR calculation will be evaluated with the farther transmitted antennas.
2. SPLSR = $(SAR_1 + SAR_2)^{1.5}$ / (*min. separation distance, mm*). If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary
3. The detail hotspot point for each transmitter in each exposure condition are showing as below figure and the minimum 3D distance for each sum combination is used for SPLSR analysis.

Top hotspot point



	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 1	WWAN Ant 5+WWAN Ant 8	Top	1.569	0mm	1.6	86.9	-2.08	216.6	2.82	0.02	Not required
	Max WLAN+BT Ant 1		1.250	0mm	-5.8	-129.6	-2.01				
Case 2	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	WWAN Ant 5+WWAN Ant 8	Top	1.569	0mm	1.6	86.9	-2.08	133.6	2.94	0.04	Not required
	Max WLAN Ant 2		1.370	0mm	2.1	-46.7	-2.41				
Case 3	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	WWAN Ant 5	Top	0.859	0mm	0.01	85.6	-2.32	132.3	2.11	0.02	Not required
	Max WLAN Ant 2		1.250	0mm	2.1	-46.7	-2.41				
Case 4	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	WWAN Ant 5	Top	0.859	0mm	0.01	85.6	-2.32	132.3	2.23	0.03	Not required
	Max WLAN Ant 2		1.370	0mm	2.1	-46.7	-2.41				

	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 5				(mm)	X	Y	Z				
	WWAN Ant 8	Top	1.141	0mm	8.2	68.8	-2.27	115.7	2.39	0.03	Not required
	Max WLAN Ant 2		1.250	0mm	2.1	-46.7	-2.41				
Case 6	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	WWAN Ant 8	Top	1.141	0mm	8.2	68.8	-2.27	115.7	2.51	0.03	Not required
	Max WLAN Ant 2		1.370	0mm	2.1	-46.7	-2.41				
Case 7	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	WWAN Ant 5+WWAN Ant 8	Top	1.569	0mm	1.6	86.9	-2.08	216.6	2.77	0.02	Not required
	Max WLAN+BT Ant 1		1.200	0mm	-5.8	-129.6	-2.01				
Case 8	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	WWAN Ant 5+WWAN Ant 8	Top	1.569	0mm	1.6	86.9	-2.08	133.6	2.62	0.03	Not required
	Max WLAN Ant 2		1.050	0mm	2.1	-46.7	-2.41				
Case 9	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	WWAN Ant 5	Top	0.859	0mm	0.01	85.6	-2.32	132.3	2.06	0.02	Not required
	Max WLAN Ant 2		1.200	0mm	2.1	-46.7	-2.41				
Case 10	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	WWAN Ant 5	Top	0.859	0mm	0.01	85.6	-2.32	132.3	1.91	0.02	Not required
	Max WLAN Ant 2		1.050	0mm	2.1	-46.7	-2.41				
Case 11	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	WWAN Ant 8	Top	1.141	0mm	8.2	68.8	-2.27	115.7	2.34	0.03	Not required
	Max WLAN Ant 2		1.200	0mm	2.1	-46.7	-2.41				
Case 12	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	WWAN Ant 8	Top	1.141	0mm	8.2	68.8	-2.27	115.7	2.19	0.03	Not required
	Max WLAN Ant 2		1.050	0mm	2.1	-46.7	-2.41				

Test Engineer： Barry Huang and Howard Zhao

15. Uncertainty Assessment

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, 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 ≤ 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. For this device, the highest measured 1-g SAR is less 1.5W/kg. Therefore, the measurement uncertainty table is not required in this report.

Declaration of Conformity:
The test results with all measurement uncertainty excluded is presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

16. References

[1] FCC 47 CFR Part 2 “Frequency Allocations and Radio Treaty Matters; General Rules and Regulations”

[2] ANSI/IEEE Std. C95.1-1992, “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz”, September 1992

[3] IEEE Std. 1528-2013, “IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”, Sep 2013

[4] SPEAG DASY System Handbook

[5] FCC KDB 447498 D01 v06, “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”, Oct 2015

[6] FCC KDB 941225 D01 v03r01, “3G SAR MEAUREMENT PROCEDURES”, Oct 2015

[7] FCC KDB 941225 D05 v02r05, “SAR Evaluation Considerations for LTE Devices”, Dec 2015

[8] FCC KDB 941225 D05A v01r02, “Rel. 10 LTE SAR Test Guidance and KDB Inquiries”, Oct 2015

[9] FCC KDB 616217 D04 v01r02, “SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers”, Oct 2015

[10] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.

[11] FCC KDB 865664 D02 v01r02, “RF Exposure Compliance Reporting and Documentation Considerations” Oct 2015.