

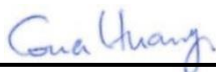
FCC SAR TEST REPORT

FCC ID : B94RM520N-GLG
Equipment : 5G Sub-6 GHz M.2 Module with WCDMA and LTE
Brand Name : HP
Model Name : RM520N-GL
Applicant : HP Inc.
1501 Page Mill Road, Palo Alto CA, 94304, USA
Standard : FCC 47 CFR Part 2 (2.1093)

The product was installed into Notebook PC (Brand Name: HP, Model Name: G2022) during test.

The product was received on Aug. 15, 2022 and testing was started from Aug. 26, 2022 and completed on Sep. 08, 2022. 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

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History of this test report

Report No.	Version	Description	Issued Date
FA272001	01	Initial issue of report	Sep. 22, 2022



1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) for HP Inc., 5G Sub-6 GHz M.2 Module with WCDMA and LTE, RM520N-GL, are as follows.

Equipment Class	Frequency Band		Highest SAR Summary		Highest Simultaneous Transmission 1g SAR (W/kg)	
			Body (Separation 0mm)			
			1g SAR (W/kg)			
Licensed	WCDMA	WCDMA II	1.18		1.593	
		WCDMA IV	1.19			
		WCDMA V	1.19			
	LTE	LTE Band 7	1.14			
		LTE Band 12 / 17	1.05			
		LTE Band 13	1.14			
		LTE Band 14	1.19			
		LTE Band 2 / 25	1.17			
		LTE Band 5 / 26	1.17			
		LTE Band 30	1.19			
		LTE Band 4 / 66	1.19			
		LTE Band 71	1.17			
		LTE Band 38 / 41	1.19			
		LTE Band 42	1.18			
		LTE Band 43	1.19			
		LTE Band 48	1.09			
		FR1	FR1 n7	1.18		
			FR1 n12	1.05		
	FR1 n13		1.17			
	FR1 n14		1.16			
	FR1 n2 / n25		1.18			
	FR1 n5 / n26		1.19			
	FR1 n30		1.18			
	FR1 n66		1.16			
	FR1 n70		1.11			
	FR1 n71		0.95			
	FR1 n38 / n41		1.14			
	FR1 n48		1.17			
	FR1 n77 / n78	1.19				
	Date of Testing:			2022/08/26 ~ 2022/09/08		

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: Paula Chen



2. Equipment Under Test (EUT) Information

2.1 General Information

Product Feature & Specification	
Equipment Name	5G Sub-6 GHz M.2 Module with WCDMA and LTE
Brand Name	HP
Model Name	RM520N-GL
FCC ID	B94RM520N-GLG
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 42: 3450 MHz ~ 3550 MHz LTE Band 43: 3700 MHz ~ 3800 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 n13: 777 MHz ~ 787 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 n70 : 1695 MHz ~ 1710 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77: 3700 MHz ~ 3980 MHz, 3450MHz ~ 3550MHz 5G NR n78: 3700 MHz ~ 3800 MHz, 3450MHz ~ 3550MHz
Mode	RMC 12.2Kbps HSDPA HSUPA LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR: DFT-s-OFDM/CP-OFDM, Pi/2 BPSK/QPSK/16QAM/64QAM/256QAM
EUT Stage	Production Unit
Remark: 1. This device has two antenna vendors, RF exposure evaluation selects Vendor 1 as the main test, and Vendor 2 spot check worst case found in Vendor 1. 2. When the EN-DC is active only operating at WWAN main and MIMO2 antenna combination and the Sim-Tx analysis include in section 14. 3. The device implements Hall and G-sensor detection lid angle, when the device into different usage mode that will limit different output power for SAR compliance.	



Host Information	
Equipment Name	Notebook PC
Brand Name	HP
Model Name	G2022
Integrated WLAN Module	Brand Name: Qualcomm Model Name: QCNFA725
Integrated WLC Module	Brand Name: HP Model Name: G2022-L0NPS
Wireless Technology and Frequency Range	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 5.8G UNII4 Band: 5850 MHz ~ 5895 MHz WLAN 6E: 5925 MHz ~ 6425 MHz, 6425 MHz ~ 6525 MHz, 6525 MHz ~ 6875 MHz, 6875 MHz ~ 7125 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz WLC: 13.56 MHz
Mode	WLAN: 802.11a/b/g/n/ac/ax HT20/HT40/VHT20/VHT40/VHT80/VHT160/HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE WLC: ASK
EUT Stage	Production Unit
Remark:	
<ol style="list-style-type: none"> The QCNFA725 WLAN/BT module is integrated into HP G2022 host and the WLAN/BT maximum output power is referenced from Sporton FCC SAR report, report no.: FA272109 (FCC ID: B94QCNFA725G) ;the SAR result is used to perform simultaneous transmission analysis in section 14. The WLC is also integrated into the host at the same time and the WLC SAR refers to the FCC ID: B94L0NPSG, Sporton Report No.: FA272109-01; the SAR result is used to perform simultaneous transmission analysis in section 14. 	

2.2 Sensor Triggering angle and power verification

General Note:

- The following additional guidance applies only to convertible laptops whose screen rotates around one axis, from 0 degrees to 360 degrees, in a clamshell style, i.e., from closed mode, to open mode, to "tent" mode, and finally to tablet mode. This process must be followed to determine the lid angle where a power reduction occurs, by taking power measurements at each step, as indicated in the step listed here below:

Step 1: From the lid in closed mode (0 degrees), open the screen in 10 degree steps until laptop mode is obtained

Step 2: Lower the screen by 5 degrees increments to verify that the "closed mode" is triggered

Step 3: From the position of the previous step, open the screen in 1 degree increments until laptop mode is triggered again

Step 4: Continue opening the screen in 1 degree increments until at least 5 degrees past where "laptop mode" was obtained, then continue opening the screen in 10 degree steps until the device switches to tablet mode

Step 5: Reverse the previous procedure to go from tablet mode back down to closed mode

Detail Sensor Triggering angle and power verification result is included in the appendix E.



2.3 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05																																																															
FCC ID	B94RM520N-GLG																																																														
Equipment Name	5G Sub-6 GHz M.2 Module with WCDMA and LTE																																																														
Operating Frequency Range of each LTE transmission band	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 42: 3450 MHz ~ 3550 MHz LTE Band 43: 3700 MHz ~ 3800 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz																																																														
Channel Bandwidth	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 42: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 43: 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																																																														
uplink modulations used	QPSK / 16QAM / 64QAM / 256QAM																																																														
LTE Voice / Data requirements	Data only																																																														
LTE MPR permanently built-in by design	<p>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3</p> <table border="1"> <thead> <tr> <th rowspan="2">Modulation</th> <th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th> <th rowspan="2">MPR (dB)</th> </tr> <tr> <th>1.4 MHz</th> <th>3.0 MHz</th> <th>5 MHz</th> <th>10 MHz</th> <th>15 MHz</th> <th>20 MHz</th> </tr> </thead> <tbody> <tr> <td>QPSK</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 1</td> </tr> <tr> <td>16 QAM</td> <td>≤ 5</td> <td>≤ 4</td> <td>≤ 8</td> <td>≤ 12</td> <td>≤ 16</td> <td>≤ 18</td> <td>≤ 1</td> </tr> <tr> <td>16 QAM</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 2</td> </tr> <tr> <td>64 QAM</td> <td>≤ 5</td> <td>≤ 4</td> <td>≤ 8</td> <td>≤ 12</td> <td>≤ 16</td> <td>≤ 18</td> <td>≤ 2</td> </tr> <tr> <td>64 QAM</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 3</td> </tr> <tr> <td>256 QAM</td> <td colspan="6">≥ 1</td> <td>≤ 5</td> </tr> </tbody> </table>	Modulation	Channel bandwidth / Transmission bandwidth (N _{RB})						MPR (dB)	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1	16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1	16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2	64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2	64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3	256 QAM	≥ 1						≤ 5
Modulation	Channel bandwidth / Transmission bandwidth (N _{RB})						MPR (dB)																																																								
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64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3																																																								
256 QAM	≥ 1						≤ 5																																																								
LTE A-MPR	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)																																																														
Spectrum plots for RB configuration	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.																																																														
Power reduction applied to satisfy SAR compliance	Yes, G-sensor																																																														
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power measurement please referred to section 11.																																																														
LTE Carrier Aggregation Additional Information	This device supports maximum of 5 carriers in the downlink and 2 carriers in the uplink. Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.																																																														



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		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	20407	824.7	20415	825.5	20425	826.5	20450	829	20450	829	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844	20600	844	20600	844
LTE Band 7												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 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	20775	2502.5	20800	2505	20825	2507.5	20850	2510	20850	2510	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560	21350	2560	21350	2560
LTE Band 12												
	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	23017	699.7	23025	700.5	23035	701.5	23060	704	23060	704	23060	704
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5	23095	707.5	23095	707.5
H	23173	715.3	23165	714.5	23155	713.5	23130	711	23130	711	23130	711
LTE Band 13												
	Bandwidth 5 MHz				Bandwidth 10 MHz				Bandwidth 10 MHz			
	Channel #		Freq.(MHz)		Channel #		Freq.(MHz)		Channel #		Freq.(MHz)	
L	23205		779.5		23230		782		23230		782	
M	23230		782		23230		782		23230		782	
H	23255		784.5		23230		782		23230		782	
LTE Band 14												
	Bandwidth 5 MHz				Bandwidth 10 MHz				Bandwidth 10 MHz			
	Channel #		Channel #		Channel #		Freq.(MHz)		Channel #		Freq.(MHz)	
L	23305		790.5		23330		793		23330		793	
M	23330		793		23330		793		23330		793	
H	23355		795.5		23330		793		23330		793	
LTE Band 17												
	Bandwidth 5 MHz				Bandwidth 10 MHz				Bandwidth 10 MHz			
	Channel #		Freq.(MHz)		Channel #		Freq.(MHz)		Channel #		Freq.(MHz)	
L	23755		706.5		23780		709		23780		709	
M	23790		710		23790		710		23790		710	
H	23825		713.5		23800		711		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		Bandwidth 20 MHz		
	Ch. #	Freq. (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	26765	821.5	
M	26865	831.5	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	26965	841.5	
LTE Band 30													
	Bandwidth 5 MHz				Bandwidth 10 MHz				Bandwidth 15 MHz				Bandwidth 20 MHz
	Channel #		Freq.(MHz)		Channel #		Freq.(MHz)		Channel #		Freq.(MHz)		Channel #
L	27685		2307.5		27710		2310		27710		2310		
M	27710		2310										
H	27735		2312.5										
LTE Band 38													
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 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	37775	2572.5	37800	2575	37825	2577.5	37850	2580	37850	2580	37850	2580	
M	38000	2595	38000	2595	38000	2595	38000	2595	38000	2595	38000	2595	
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610	38150	2610	38150	2610	
LTE Band 41													
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 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	39675	2498.5	39700	2501	39725	2503.5	39750	2506	39750	2506	39750	2506	
L	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5	40185	2549.5	40185	2549.5	
M	40620	2593	40620	2593	40620	2593	40620	2593	40620	2593	40620	2593	
H	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5	41055	2636.5	41055	2636.5	
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680	41490	2680	41490	2680	
LTE Band 42													
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 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	42115	3452.5	42140	3455	42165	3457.5	42190	3460	42190	3460	42190	3460	
M	42590	3500	42590	3500	42590	3500	42590	3500	42590	3500	42590	3500	
H	43065	3547.5	43040	3545	43015	3542.5	42990	3540	42990	3540	42990	3540	
LTE Band 43													
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 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	44615	3702.5	44640	3705	44665	3707.5	44690	3710	44690	3710	44690	3710	
M	45090	3750	45090	3750	45090	3750	45090	3750	45090	3750	45090	3750	
H	45565	3797.5	45540	3795	45515	3792.5	45490	3790	45490	3790	45490	3790	



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)	Ch. #	Freq. (MHz)		
L	55265	3552.5	55290	3555	55315	3557.5	55340	3560				
L	55810	3607	55815	3607.5	55820	3608	55830	3609				
M	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)	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				



2.4 General 5G NR SAR Test and Reporting Considerations

5G NR Information	
FCC ID	B94RM520N-GLG
Equipment Name	5G Sub-6 GHz M.2 Module with WCDMA and LTE
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 n13: 777 MHz ~ 787 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 n70 : 1695 MHz ~ 1710 MHz 5G NR n71: 663 MHz ~ 698 MHz 5G NR n77: 3700 MHz ~ 3980 MHz, 3450MHz ~ 3550MHz 5G NR n78: 3700 MHz ~ 3800 MHz, 3450MHz ~ 3550MHz
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 5G NR n12: 5MHz, 10MHz, 15MHz 5G NR n13: 5MHz, 10MHz 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: 10MHz, 15MHz, 20MHz, 30MHz, 40MHz 5G NR n41: 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 80MHz, 90MHz, 100MHz 5G NR n48: 10MHz, 20MHz, 30MHz, 40MHz 5G NR n66: 5MHz, 10MHz, 15MHz, 20MHz,30MHz, 40MHz 5G NR n70: 5MHz, 10MHz, 15MHz 5G NR n71: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n77/n78: 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 B4/5/7/12/13/14/30/66/71
LTE Anchor Bands for n5	LTE B2/7/30/48/66
LTE Anchor Bands for n7	LTE B2/4/5/12/13/66/71
LTE Anchor Bands for n12	LTE B2/7/30/48/66
LTE Anchor Bands for n14	LTE B2/30/66
LTE Anchor Bands for n25	LTE B5/7/12/13/26/48/66/71
LTE Anchor Bands for n30	LTE B2/5/12/14/66
LTE Anchor Bands for n38	LTE B2/4/5/12/66/71
LTE Anchor Bands for n41	LTE B2/4/5/12/25/26/66/71
LTE Anchor Bands for n48	LTE B2/5/13/66
LTE Anchor Bands for n66	LTE B2/5/7/12/13/14/30/48/71
LTE Anchor Bands for n71	LTE B2/7/48/66
LTE Anchor Bands for n77	LTE B2/5/7/12/13/14/25/30/41/66/71
LTE Anchor Bands for n78	LTE B2/4/5/7/12/13/25/26/38/41/66/71



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		
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
M	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
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 13														
Bandwidth 5MHz			Bandwidth 10MHz											
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)											
L	155900	779.5	156400	782										
M	156400	782												
H	156900	784.5												
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 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		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)	Ch. #	Freq. (MHz)						
L	515004	2575.02	515502	2577.51	516000	2580	517002	2585.01	518004	2590.02												
M	519000	2595	519000	2595	519000	2595	519000	2595	519000	2595												
H	522996	2614.98	522498	2612.49	522000	2610	520998	2604.99	519996	2599.98												
NR Band 41																						
	Bandwidth20MHz		Bandwidth30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth70MHz		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)				
L	501204	2506.02	502200	2511	503202	2516.01	504204	2521.02	505200	2526	506202	2531.01	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	518598	2592.99				
H	535998	2679.99	534996	2674.98	534000	2670	532998	2664.99	531996	2659.98	531000	2655	529998	2649.99	528996	2644.98	528000	2640				
NR Band 48																						
	Bandwidth10MHz		Bandwidth20MHz		Bandwidth30MHz		Bandwidth 40MHz															
	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	637000	3555	637334	3560.01	637668	3565.02	638000	3570														
M	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99														
H	646332	3694.98	646000	3690	645666	3684.99	645332	3679.98														
NR Band 66																						
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		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)	Ch. #	Freq. (MHz)						
L	342500	1712.5	343000	1715	343500	1717.5	344000	1720	345000	1725	346000	1730										
M	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745										
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770	353000	1765	352000	1760										
NR Band 70																						
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		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)	Ch. #	Freq. (MHz)						
L	339500	1697.5	340000	1700																		
M	340500	1702.5	340500	1702.5																		
H	341500	1707.5	341000	1705																		
NR Band 71																						
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz															
	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	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(3700 MHz ~ 3980 MHz)																						
	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	647000	3705	647168	3707.52	647334	3710.01	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
H	665000	3975	664832	3972.48	664666	3969.99	664332	3964.98	664000	3960	663666	3954.99	663332	3949.98	663000	3945	662666	3939.99	662332	3934.98	662000	3930
NR Band 78(3700 MHz ~ 3800 MHz)																						
	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	647000	3705	647168	3707.52	647334	3710.01	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02	650000	3750
M	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750
H	653000	3795	652832	3792.48	652666	3789.99	652332	3784.98	652000	3780	651666	3774.99	651332	3769.98	651000	3765	650666	3759.99	650332	3754.98	650000	3750
NR Band 77/78(3450MHz ~ 3550MHz)																						
	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	633332	3499.98
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	633332	3499.98



3. 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

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.



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:

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

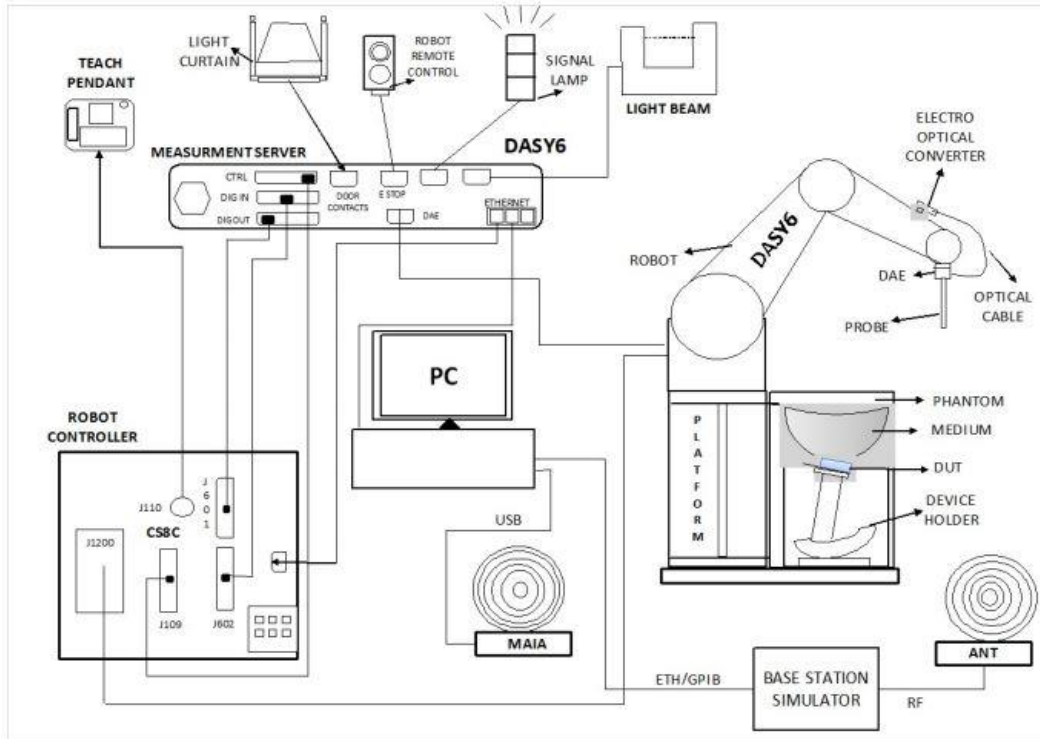
SAR is expressed in units of Watts per kilogram (W/kg)

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

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.

Test Site	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
	SAR04-HY	SAR05-HY	SAR11-HY	SAR12-HY	
	SAR06-HY	SAR10-HY	SAR13-HY	SAR14-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	10 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 μ W/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	10 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 μ W/g – >100 mW/g Linearity: ± 0.2 dB (noise: typically <1 μ W/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) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, 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 from 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 dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from 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	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: $\Delta x_{Area}, \Delta y_{Area}$	≤ 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: $\Delta x_{Zoom}, \Delta y_{Zoom}$		≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*	
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$	≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm	
	graded grid	$\Delta z_{Zoom}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z	≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm	
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details. * When zoom scan is required and the <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.				

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 ⁽²⁾	D750V3	1012	Aug. 18, 2021	Aug. 16, 2023
SPEAG	750MHz System Validation Kit	D750V3	1107	Jun. 22, 2022	Jun. 21, 2023
SPEAG	835MHz System Validation Kit ⁽²⁾	D835V2	499	Aug. 18, 2021	Aug. 16, 2023
SPEAG	835MHz System Validation Kit	D835V2	4d060	Mar. 24, 2022	Mar. 23, 2023
SPEAG	835MHz System Validation Kit ⁽²⁾	D835V2	4d167	Nov. 25, 2019	Nov. 22, 2022
SPEAG	1750MHz System Validation Kit	D1750V2	1068	Nov. 25, 2021	Nov. 24, 2022
SPEAG	1750MHz System Validation Kit	D1750V2	1112	Jun. 22, 2022	Jun. 21, 2023
SPEAG	1900MHz System Validation Kit ⁽²⁾	D1900V2	5d041	Aug. 19, 2021	Aug. 17, 2023
SPEAG	1900MHz System Validation Kit	D1900V2	5d093	Mar. 25, 2022	Mar. 24, 2023
SPEAG	2300MHz System Validation Kit	D2300V2	1006	Jan. 18, 2022	Jan. 17, 2023
SPEAG	2300MHz System Validation Kit ⁽²⁾	D2300V2	1088	Jul. 13, 2021	Jul. 11, 2023
SPEAG	2600MHz System Validation Kit ⁽²⁾	D2600V2	1008	Aug. 17, 2021	Aug. 15, 2023
SPEAG	2600MHz System Validation Kit	D2600V2	1078	Jun. 23, 2022	Jun. 22, 2023
SPEAG	2600MHz System Validation Kit	D2600V2	1089	Mar. 24, 2022	Mar. 23, 2023
SPEAG	3500MHz System Validation Kit	D3500V2	1014	Jan. 17, 2022	Jan. 16, 2023
SPEAG	3500MHz System Validation Kit	D3500V2	1036	Mar. 23, 2022	Mar. 22, 2023
SPEAG	3700MHz System Validation Kit	D3700V2	1006	Jun. 20, 2022	Jun. 19, 2023
SPEAG	3700MHz System Validation Kit ⁽²⁾	D3700V2	1022	Jul. 14, 2021	Jul. 12, 2023
SPEAG	3900MHz System Validation Kit	D3900V2	1017	Apr. 22, 2022	Apr. 21, 2023
SPEAG	Data Acquisition Electronics	DAE3	577	Sep. 15, 2021	Sep. 14, 2022
SPEAG	Data Acquisition Electronics	DAE4	699	Feb. 24, 2022	Feb. 23, 2023
SPEAG	Data Acquisition Electronics	DAE4	1424	Jan. 20, 2022	Jan. 19, 2023
SPEAG	Data Acquisition Electronics	DAE4	1696	Nov. 03, 2021	Nov. 02, 2022
SPEAG	Dosimetric E-Field Probe	EX3DV4	3931	Oct. 21, 2021	Oct. 20, 2022
SPEAG	Dosimetric E-Field Probe	EX3DV4	7625	Jan. 27, 2022	Jan. 26, 2023
SPEAG	Dosimetric E-Field Probe	EX3DV4	7694	Jan. 24, 2022	Jan. 23, 2023
SPEAG	Dosimetric E-Field Probe	EX3DV4	7695	Nov. 19, 2021	Nov. 18, 2022
RCPTWN	Thermometer	HTC-1	TM685-1	Jun. 27, 2022	Jun. 26, 2023
RCPTWN	Thermometer	HTC-1	TM560-2	Mar. 15, 2022	Mar. 14, 2023
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	Oct. 21, 2021	Oct. 20, 2022
Keysight	Wireless Communication Test Set	E5515C	MY50267236	Mar. 02, 2022	Mar. 01, 2023
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Oct. 24, 2021	Oct. 23, 2022
Keysight	ENA Network Analyzer	E5071C	MY46104758	Sep. 19, 2021	Sep. 18, 2022
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Sep. 24, 2021	Sep. 23, 2022
LINE SEIKI	Digital Thermometer	DTM3000-spezial	2942	Oct. 26, 2021	Oct. 25, 2022
Anritsu	Power Meter	ML2495A	1804003	Oct. 09, 2021	Oct. 08, 2022
Anritsu	Power Meter	ML2496A	2119003	Jun. 22, 2022	Jun. 21, 2023
Anritsu	Power Sensor	MA2411B	1726150	Oct. 09, 2021	Oct. 08, 2022
Anritsu	Power Sensor	MA2411B	1911334	Jun. 22, 2022	Jun. 21, 2023
Anritsu	Spectrum Analyzer	MS2830A	6201396378	Jul. 21, 2022	Jul. 20, 2023
Anritsu	Spectrum Analyzer	N9010A	MY53470118	Jan. 12, 2022	Jan. 11, 2023
Mini-Circuits	Power Amplifier	ZVE-8G+	6418	Oct. 12, 2021	Oct. 11, 2022
ATM	Dual Directional Coupler	C122H-10	P610410z-02		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 according to KDB 865664 D01. 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°C to 25°C, 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°C to 25°C and within ± 2°C 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.

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (ε _r)	Conductivity Target (σ)	Permittivity Target (ε _r)	Delta (σ) (%)	Delta (ε _r) (%)	Limit (%)	Date
750	22.6	0.887	41.779	0.89	41.90	-0.34	-0.29	±5	2022/8/29
750	22.1	0.869	41.302	0.89	41.90	-2.36	-1.43	±5	2022/8/29
750	22.8	0.895	41.906	0.89	41.90	0.56	0.01	±5	2022/9/2
750	22.8	0.870	40.979	0.89	41.90	-2.25	-2.20	±5	2022/9/4
835	22.6	0.921	41.483	0.90	41.50	2.33	-0.04	±5	2022/8/29
835	22.1	0.901	41.006	0.90	41.50	0.11	-1.19	±5	2022/8/29
835	22.8	0.929	41.610	0.90	41.50	3.22	0.27	±5	2022/9/2
835	22.8	0.902	40.683	0.90	41.50	0.22	-1.97	±5	2022/9/4
1750	22.9	1.353	40.568	1.37	40.10	-1.24	1.17	±5	2022/8/31
1750	22.2	1.363	40.668	1.37	40.10	-0.51	1.42	±5	2022/9/3
1750	22.3	1.384	39.688	1.37	40.10	1.02	-1.03	±5	2022/9/5
1750	22.6	1.376	40.805	1.37	40.10	0.44	1.76	±5	2022/9/6
1900	22.4	1.395	40.435	1.40	40.00	-0.36	1.09	±5	2022/8/30
1900	22.9	1.429	39.020	1.40	40.00	2.07	-2.45	±5	2022/8/31
1900	22.2	1.440	39.120	1.40	40.00	2.86	-2.20	±5	2022/9/3
1900	22.3	1.398	39.800	1.40	40.00	-0.14	-0.50	±5	2022/9/5
1900	22.6	1.454	39.257	1.40	40.00	3.86	-1.86	±5	2022/9/6
2300	22.7	1.653	39.492	1.67	39.50	-1.02	-0.02	±5	2022/9/1
2300	22.7	1.686	39.945	1.67	39.50	0.96	1.13	±5	2022/9/4
2300	22.2	1.643	39.201	1.67	39.50	-1.62	-0.76	±5	2022/9/6
2600	22.1	1.947	38.138	1.96	39.00	-0.66	-2.21	±5	2022/8/30
2600	22.5	1.985	37.687	1.96	39.00	1.28	-3.37	±5	2022/8/31
2600	22.4	1.994	37.749	1.96	39.00	1.73	-3.21	±5	2022/9/3
2600	22.7	2.008	38.758	1.96	39.00	2.45	-0.62	±5	2022/9/4
2600	22.2	1.976	38.148	1.96	39.00	0.82	-2.18	±5	2022/9/6
3500	22.3	2.994	38.503	2.91	37.90	2.89	1.59	±5	2022/9/1
3500	22.5	3.027	39.004	2.91	37.90	4.02	2.91	±5	2022/9/5
3500	22.2	3.004	38.029	2.91	37.90	3.23	0.34	±5	2022/9/7
3500	22.1	2.961	37.812	2.91	37.90	1.75	-0.23	±5	2022/9/8
3500	22.5	2.976	38.431	2.91	37.90	2.27	1.40	±5	2022/9/8
3700	22.1	3.189	38.229	3.12	37.70	2.21	1.40	±5	2022/8/26
3700	22.3	3.214	38.409	3.12	37.70	3.01	1.88	±5	2022/9/2
3700	22.5	3.243	38.802	3.12	37.70	3.94	2.92	±5	2022/9/5
3700	22.2	3.218	37.827	3.12	37.70	3.14	0.34	±5	2022/9/7
3700	22.1	3.173	37.611	3.12	37.70	1.70	-0.24	±5	2022/9/8
3900	22.5	3.458	38.614	3.33	37.51	3.84	2.94	±5	2022/9/5
3900	22.2	3.432	37.639	3.33	37.51	3.06	0.34	±5	2022/9/7
3900	22.1	3.385	37.423	3.33	37.51	1.65	-0.23	±5	2022/9/8



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.

Table with 11 columns: 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 (%). It contains 30 rows of test data.

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 (%)
SAR13	2022/9/1	3500	100	D3500V2-1036	EX3DV4 - SN7695	DAE4 Sn699	6.620	67.4	66.2	-1.78
SAR13	2022/9/5	3500	100	D3500V2-1014	EX3DV4 - SN7695	DAE4 Sn699	6.700	67.2	67	-0.30
SAR09	2022/9/7	3500	100	D3500V2-1014	EX3DV4 - SN7625	DAE4 Sn1424	6.750	67.2	67.5	0.45
SAR09	2022/9/8	3500	100	D3500V2-1014	EX3DV4 - SN7625	DAE4 Sn1424	6.650	67.2	66.5	-1.04
SAR15	2022/9/8	3500	50	D3500V2-1036	EX3DV4 - SN3931	DAE3 Sn577	3.570	67.4	71.4	5.93
SAR08	2022/8/26	3700	50	D3700V2-1006	EX3DV4 - SN7694	DAE4 Sn1696	3.260	65.6	65.2	-0.61
SAR13	2022/9/2	3700	100	D3700V2-1022	EX3DV4 - SN7695	DAE4 Sn699	6.970	68.2	69.7	2.20
SAR13	2022/9/5	3700	100	D3700V2-1022	EX3DV4 - SN7695	DAE4 Sn699	7.030	68.2	70.3	3.08
SAR09	2022/9/7	3700	50	D3700V2-1006	EX3DV4 - SN7625	DAE4 Sn1424	3.160	65.6	63.2	-3.66
SAR09	2022/9/8	3700	50	D3700V2-1006	EX3DV4 - SN7625	DAE4 Sn1424	3.120	65.6	62.4	-4.88
SAR13	2022/9/5	3900	100	D3900V2-1017-3900	EX3DV4 - SN7695	DAE4 Sn699	7.260	68.7	72.6	5.68
SAR09	2022/9/7	3900	100	D3900V2-1017-3900	EX3DV4 - SN7625	DAE4 Sn1424	7.370	68.7	73.7	7.28
SAR09	2022/9/8	3900	100	D3900V2-1017-3900	EX3DV4 - SN7625	DAE4 Sn1424	7.270	68.7	72.7	5.82

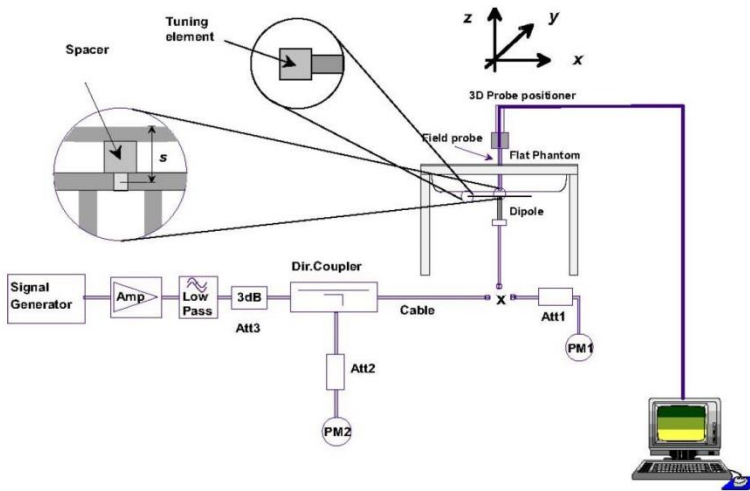


Fig 8.3.1 System Performance Check Setup



Fig 8.3.2 Setup Photo



10. Measurement procedure for output power and SAR

Detail output power measurement result is included in the appendix D.

<WCDMA Conducted Power>

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
2. The procedures in KDB 941225 D01v03r01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.
3. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
4. 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 is $\leq \frac{1}{4}$ 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 to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA, and according to the following RF output power, the output power results of the secondary modes (HSUPA, HSDPA,) are less than $\frac{1}{4}$ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

- a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
- b. The RF path losses were compensated into the measurements.
- c. A call was established between EUT and Base Station with following setting:
 - i. Set Gain Factors (β_c and β_d) and parameters were set according to each
 - ii. Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
 - iii. Set RMC 12.2Kbps + HSDPA mode.
 - iv. Set Cell Power = -86 dBm
 - v. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
 - vi. Select HSDPA Uplink Parameters
 - vii. Set Delta ACK, Delta NACK and Delta CQI = 8
 - viii. Set Ack-Nack Repetition Factor to 3
 - ix. Set CQI Feedback Cycle (k) to 4 ms
 - x. Set CQI Repetition Factor to 2
 - xi. Power Ctrl Mode = All Up bits
- d. The transmitted maximum output power was recorded.

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

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

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

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

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

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

Setup Configuration

HSUPA Setup Configuration:

- a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
- b. The RF path losses were compensated into the measurements.
- c. A call was established between EUT and Base Station with following setting * :
 - i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
 - ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
 - iii. Set Cell Power = -86 dBm
 - iv. Set Channel Type = 12.2k + HSPA
 - v. Set UE Target Power
 - vi. Power Ctrl Mode= Alternating bits
 - vii. Set and observe the E-TFCl
 - viii. Confirm that E-TFCl is equal to the target E-TFCl of 75 for sub-test 1, and other subtest's E-TFCl
- d. The transmitted maximum output power was recorded.

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

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 4) (Note 5)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	E-TFCl
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/25	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed1}: 47/15$ $\beta_{ed2}: 47/15$	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

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

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

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

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

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

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

Setup Configuration

**<LTE Note>**

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. 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.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. 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.
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ 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.
7. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ 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.
8. 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.
9. LTE band 2/4/5/17/38 SAR test was covered by Band 25/66/26/12/41; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
 - a. the maximum output power, including tolerance, for the smaller band is \leq 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

<TDD LTE SAR Measurement>

TDD LTE configuration setup for SAR measurement

SAR was tested with a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by 3GPP.

- a. 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations
- b. “special subframe S” contains both uplink and downlink transmissions, it has been taken into consideration to determine the transmission duty factor according to the worst case uplink and downlink cyclic prefix requirements for UpPTS
- c. Establishing connections with base station simulators ensure a consistent means for testing SAR and recommended for evaluating SAR. The Anritsu MT8820C (firmware: #22.52#004) was used for LTE output power measurements and SAR testing.

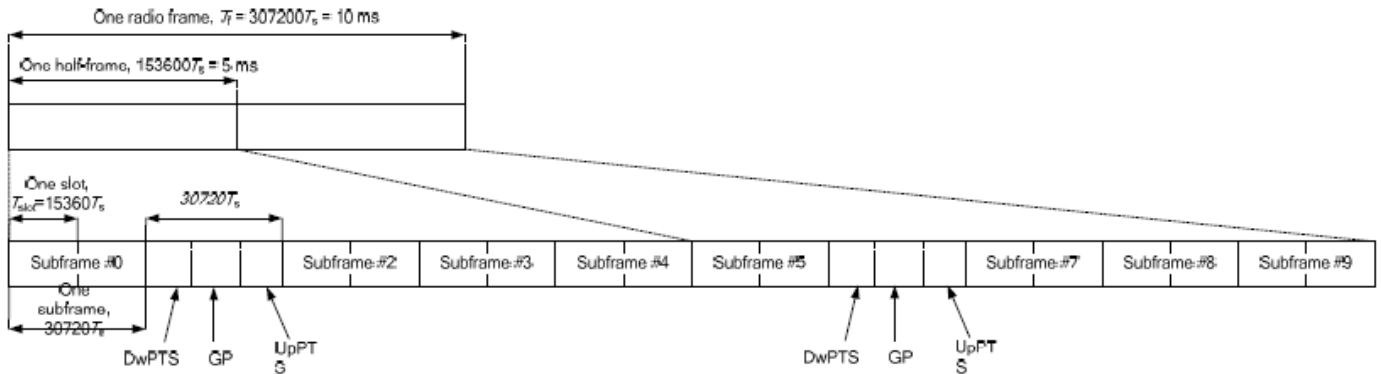


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

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

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

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	6592 · Ts	2192 · Ts	2560 · Ts	7680 · Ts	2192 · Ts	2560 · Ts
1	19760 · Ts			20480 · Ts		
2	21952 · Ts			23040 · Ts		
3	24144 · Ts			25600 · Ts		
4	26336 · Ts			7680 · Ts	4384 · Ts	5120 · Ts
5	6592 · Ts	4384 · Ts	5120 · Ts	20480 · Ts		
6	19760 · Ts			23040 · Ts		
7	21952 · Ts			12800 · Ts		
8	24144 · Ts			-	-	-
9	13168 · Ts			-	-	-

Special subframe (30720·T_s): Normal cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
Uplink duty factor in one special subframe	0~4	7.13%	8.33%
	5~9	14.3%	16.7%

Special subframe(30720·T_s): Extended cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
Uplink duty factor in one special subframe	0~3	7.13%	8.33%
	4~7	14.3%	16.7%

The highest duty factor is resulted from:

- i. Uplink-downlink configuration: 0. In a half-frame consisted of 5 subframes, uplink operation is in 3 uplink subframes and 1 special subframe.
- ii. special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink
- iii. for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is: $(3+0.167)/5 = 63.3\%$
- iv. for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: $(3+0.143)/5 = 62.9\%$
- v. 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 scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
- vi. The device supports Power Class 3 uplink-downlink configurations 0 and 6, and Power Class 2 uplink-downlink configurations 1 to 5 operations for LTE Band 41/42/43.
- vii. The highest available duty cycle for Power Class 2 operation is 43.3% using UL-DL configuration 1, for Power Class 3 operation is 63.3% using UL-DL configuration 0. Per FCC Guidance, all SAR tests were performed using Power Class 3. SAR with Power Class 2 at the available duty factor was additionally performed for the Power Class 3 configuration with the highest SAR among all exposure condition.

<5G FR1 Note>

1. Referencing the procedure in KDB 941225, the test procedures are outlined as below
 - a. For DFT-OFDM output power measurement, full measurement was done for Pi/2 BPSK and QPSK and for the largest supported bandwidth, repeat test for 16QAM/64QAM/256QAM under 1RB 1Offset configuration. For smaller bandwidth, measure conducted power for Pi/2 BPSK and 1RB 1Offset configuration.
 - b. According to the tune-up, CP-OFDM output power is not ½ dB higher than DFT-OFDM mode, and the reported SAR of DFT-OFDM mode reported SAR is ≤ 1.45 W/kg, SAR test and thus conducted power for CP-OFDM mode is not required.
 - c. 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
 - d. 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.
 - e. 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.
 - f. 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
2. 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.

<3GPP 38.101 MPR for EN-DC>

Table 6.2.2-1 Maximum power reduction (MPR) for power class 3

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	Pi/2 BPSK	≤ 3.5 ¹	≤ 1.2 ¹	≤ 0.2 ¹
		≤ 0.5 ²	≤ 0.5 ²	0 ²
	QPSK	≤ 1		0
	16 QAM	≤ 2		≤ 1
	64 QAM		≤ 2.5	
CP-OFDM	QPSK		≤ 3	≤ 1.5
		16 QAM	≤ 3	≤ 2
	64 QAM		≤ 3.5	
	256 QAM		≤ 6.5	
	NOTE 1: Applicable for UE operating in TDD mode with Pi/2 BPSK modulation and UE indicates support for UE capability <i>powerBoosting-pi2BPSK</i> and if the IE <i>powerBoostPi2BPSK</i> is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0 dB MPR is 26 dBm.			
NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 with Pi/2 BPSK modulation and if the IE <i>powerBoostPi2BPSK</i> is set to 0 and if more than 40 % of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.				

Table 6.2.2-2 Maximum power reduction (MPR) for power class 2

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	Pi/2 BPSK	≤ 3.5	≤ 0.5	0
	QPSK	≤ 3.5	≤ 1	0
	16 QAM	≤ 3.5	≤ 2	≤ 1
	64 QAM	≤ 3.5		≤ 2.5
	256 QAM		≤ 4.5	
CP-OFDM	QPSK	≤ 3.5	≤ 3	≤ 1.5
	16 QAM	≤ 3.5	≤ 3	≤ 2
	64 QAM		≤ 3.5	
	256 QAM		≤ 6.5	



11. DL/UL carrier aggregation

<LTE Carrier Aggregation combinations>

General Note:

- This device supports Carrier Aggregation on downlink only for inter and intra band, Uplink CA is not supported. For the device supports combination bands and configurations are according to 3GPP.
- In applying the existing power measurement procedure of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of the frequency band and CCs in each row need consideration, and that configurations require power measurement should be highlighted in the below table.

2CC Downlink Carrier Aggregation			3CC Downlink Carrier Aggregation			4CC Downlink Carrier Aggregation			5CC Downlink Carrier Aggregation		
Number	Combination	Covered by Measurement Superset	Number	Combination	Covered by Measurement Superset	Number	Combination	Covered by Measurement Superset	Number	Combination	Covered by Measurement Superset
1	12A-12A	4CC-87	1	12A-30A-66A	4CC-1	1	12A-30A-66A-66A		1	13A-48A-48D	5CC-4
2	12A-25A		2	12A-66A-66A	4CC-1	2	13A-48A-48C	5CC-1	2	13A-48C-48C	5CC-4
3	12A-30A	4CC-68	3	12A-66C	4CC-1	3	13A-48A-66B	5CC-3	3	13A-48D-66A	
4	12A-66A	5CC-12	4	13A-48A-48A	5CC-1	4	13A-48A-66C	5CC-3	4	13A-48E	5CC-3
5	13A-48A	5CC-1	5	13A-48A-66A	4CC-3	5	13A-48C-66A	5CC-3	5	25A-25A-26A-41C	
6	13A-66A	5CC-3	6	13A-48C	5CC-1	6	13A-48D	5CC-8	6	25A-25A-41D	5CC-5
7	14A-30A	4CC-10	7	13A-66A-66A	4CC-3	7	13A-66A-66B	5CC-9	7	25A-41E	5CC-5
8	14A-66A	4CC-10	8	13A-66B	4CC-3	8	13A-66A-66C	5CC-10	8	2A-13A-48D	
9	25A-25A	5CC-5	9	13A-66C	4CC-4	9	13A-66D	5CC-11	9	2A-13A-66A-66B	5CC-11
10	25A-26A	5CC-5	10	14A-30A-66A	4CC-10	10	14A-30A-66A-66A		10	2A-13A-66A-66C	5CC-11
11	25A-41A	5CC-7	11	14A-66A-66A	4CC-10	11	14A-66A-66A-66A	4CC-10	11	2A-13A-66D	
12	26A-41A	4CC-12	12	25A-25A-25A	4CC-12	12	25A-25A-26A-41A	5CC-5	12	2A-2A-12A-66A-66A	
13	2A-12A	5CC-12	13	25A-25A-26A	4CC-12	13	25A-25A-41C	5CC-5	13	2A-2A-13A-66A-66A	5CC-11
14	2A-13A	5CC-13	14	25A-25A-41A	4CC-12	14	25A-26A-41C	5CC-5	14	2A-2A-13A-66B	5CC-11
15	2A-14A	4CC-22	15	25A-41C	4CC-13	15	25A-41D	5CC-6	15	2A-2A-5A-66A-66A	5CC-25
16	2A-17A		16	26A-41C	4CC-14	16	2A-12A-66A-66A	5CC-12	16	2A-2A-5A-66A-66C	5CC-25
17	2A-2A	5CC-12	17	2A-12A-12A	4CC-23	17	2A-12A-66C	5CC-12	17	2A-2A-66A-66B	5CC-12
18	2A-30A	4CC-24	18	2A-12A-30A	4CC-24	18	2A-13A-48C	5CC-8	18	2A-2A-66A-66C	5CC-12
19	2A-48A	5CC-19	19	2A-12A-66A	4CC-25	19	2A-13A-66A-66A	5CC-9	19	2A-48A-48D	5CC-22
20	2A-4A	4CC-29	20	2A-13A-48A	4CC-18	20	2A-13A-66B	5CC-9	20	2A-48C-48C	5CC-22
21	2A-5A	5CC-15	21	2A-13A-66A	4CC-19	21	2A-13A-66C	5CC-10	21	2A-48D-66A	
22	2A-66A	5CC-9	22	2A-14A-30A		22	2A-14A-66A-66A		22	2A-48E	5CC-21
23	2A-71A	3CC-31	23	2A-14A-66A	4CC-22	23	2A-2A-12A-12A	4CC-24	23	2A-5B-66A-66A	5CC-25
24	2A-7A	5CC-26	24	2A-2A-12A	4CC-23	24	2A-2A-12A-30A		24	2A-5B-66B	5CC-25
25	2C	5CC-12	25	2A-2A-13A	4CC-26	25	2A-2A-12A-66A	5CC-12	25	2A-5B-66C	5CC-54
26	30A-66A	4CC-27	26	2A-2A-30A	4CC-24	26	2A-2A-13A-66A	5CC-13	26	2A-7A-7A-66A-66A	
27	38C		27	2A-2A-4A	4CC-28	27	2A-2A-30A-66A		27	2A-7C-66A-66A	5CC-26
28	41A-41A	5CC-45	28	2A-2A-5A	4CC-30	28	2A-2A-4A-12A		28	2C-5B-30A	
29	41A-48A		29	CA_25A-26A-41A	5CC-5	29	2A-2A-4A-4A	4CC-28	29	41C-41D	
30	41C	5CC-29	30	2A-2A-66A	4CC-25	30	2A-2A-4A-5A		30	48A-48C-66B	5CC-36
31	43A-43A	2CC-32	31	2A-2A-71A	4CC-35	31	2A-2A-5A-30A	5CC-28	31	48A-48C-66C	5CC-36
32	43C		32	2A-2A-7A	4CC-38	32	2A-2A-5A-66A	5CC-15	32	48A-48D-66A	5CC-36
33	48A-48A	5CC-2	33	2A-30A-66A	4CC-40	33	2A-2A-5B	4CC-32	33	48A-48E	5CC-47
34	48A-66A	5CC-3	34	2A-48A-48A	4CC-41	34	2A-2A-66A-66A	5CC-14	34	48C-48C-66A	5CC-36
35	48A-71A	3CC-67	35	2A-48A-66A	4CC-42	35	2A-2A-66A-71A		35	48C-48D	5CC-47
36	48B	5CC-37	36	2A-48C	4CC-41	36	2A-2A-66B	5CC-14	36	48E-66A	5CC-46
37	48C	5CC-2	37	2A-4A-12A	4CC-45	37	2A-2A-66C	5CC-18	37	4A-48E	
38	4A-12A	4CC-87	38	2A-4A-13A		38	2A-2A-7A-12A		38	4A-4A-5B-30A	
39	4A-13A	3CC-38	39	2A-4A-30A		39	2A-2A-7A-66A	5CC-26	39	5A-7C-66A-66A	
40	4A-17A		40	2A-4A-4A	4CC-46	40	2A-30A-66A-66A	4CC-27	40	5B-30A-66A-66A	
41	4A-30A	4CC-89	41	2A-4A-5A	4CC-47	41	2A-48A-48C	5CC-19	41	5B-66A-66B	5CC-46
42	4A-48A	5CC-37	42	2A-4A-71A	4CC-133	42	2A-48A-66A-66A		42	5B-66A-66C	5CC-46
43	4A-4A	5CC-38	43	2A-4A7A	4CC-49	43	2A-48C-66A	5CC-21	43	2A-5A-48D	
44	4A-5A	5CC-38	44	2A-5A-30A	4CC-55	44	2A-48D	5CC-22	44	41A-42C-42C	5CC-45



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45	4A-71A	3CC-82	45	2A-5A-7A	4CC-54	45	2A-4A-4A-12A	4CC-28	45	41C-42A-42C	
46	4A-7A	4CC-49	46	2A-5B	4CC-55	46	2A-4A-4A-5A	4CC-30	46	5A-48D-66A	
47	5A-25A		47	2A-5A-48A	4CC-116	47	2A-4A-5B	4CC-46	47	48F	5CC-8
48	5A-30A	5CC-38	48	2A-5A-66A	4CC-52	48	2A-4A-7A-7A		48	7A-7A-25A-25A-66A	
49	5A-38A		49	2A-66A-66A	4CC-50	49	2A-4A-7C	4CC-48	49	2A-2A-7A-7A-13A	
50	5A-41A		50	2A-66A-71A	4CC-35	50	2A-5A-66A-66A	5CC-15	50	2A-2A-7C-13A	5CC-49
51	5A-48A	5CC-46	51	2A-66B	4CC-50	51	2A-5A-66B	5CC-16	51	7C-25A-25A-66A	5CC-48
52	5A-5A	5CC-40	52	2A-66C	4CC-62	52	2A-5A-66C	5CC-16	52	2A-2A-14A-66A-66A	
53	5A-66A	5CC-40	53	2A-7A-12A	4CC-38	53	2A-5A-7A-7A		53	2A-2A-5A-66B	5CC-54
54	5A-7A	5CC39	54	2A-7A-13A	4CC-64	54	2A-5A-7C	4CC-53	54	2A-2A-5A-66C	
55	5B	5CC-40	55	2A-7A-66A	4CC-65	55	2A-5B-30A	5CC-28	55	2A-2A-5B-66A	5CC-54
56	66A-66A	5CC-9	56	2A-7A-7A	4CC-53	56	2A-5B-66A	5CC-23	56		
57	66A-71A	4CC-61	57	2A-7C	4CC-66	57	2A-66A-66A-66A	5CC-11	57		
58	66B	5CC-41	58	2C-12A	4CC-68	58	2A-66A-66A-71A		58		
59	66C	5CC-10	59	2C-30A	4CC-68	59	2A-66A-66B	5CC-10	59		
60	7A-12A	3CC-53	60	2C-5A	4CC-69	60	2A-66A-66C	5CC-10	60		
61	7A-13A	5CC-49	61	2C-66A	4CC-67	61	2A-66C-71A	4CC-58	61		
62	7A-26A	3CC-113	62	30A-66A-66A	4CC-92	62	2A-66D	5CC-11	62		
63	7A-42A		63	41A-41A-41A	4CC-71	63	2A-7A-66A-66A	5CC-26	63		
64	7A-66A	5CC-48	64	41A-41C	4CC-71	64	2A-7A-7A-13A	5CC-49	64		
65	7A-7A	5CC-48	65	41D	4CC-74	65	2A-7A-7A-66A	5CC-26	65		
66	7B	5CC-48	66	48A-48A-66A	4CC-75	66	2A-7C-13A	5CC-50	66		
67	7C	5CC-51	67	48A-48A-71A		67	2A-7C-66A	5CC-26	67		
68	2A-26A	3CC-115	68	48A-48C	4CC-85	68	2C-12A-30A	4CC-24	68		
69	25A-66A	5CC-48	69	48A-66A-66A	4CC-75	69	2C-5A-30A	5CC-28	69		
70	7A-25A	5CC-48	70	48A-66B	4CC-77	70	2C-66A-66A	5CC-27	70		
71	41A-42A	5CC-44	71	48A-66C	4CC-77	71	41A-41A-41C	4CC-74	71		
72	42A-42A	5CC-44	72	48C-66A	4CC-82	72	41A-41D	4CC-74	72		
73	42C	5CC-44	73	48C-71A	3CC-67	73	41C-41C	4CC-74	73		
74			74	48D	5CC-1	74	41E	5CC-5	74		
75			75	4A-12A-12A	4CC-87	75	48A-48A-66A-66A	5CC-30	75		
76			76	4A-12A-30A	4CC-88	76	48A-48A-66B	5CC-31	76		
77			77	4A-48C	4CC-86	77	48A-48A-66C	5CC-31	77		
78			78	4A-4A-12A	4CC-87	78	48A-48C-66A	5CC-30	78		
79			79	4A-4A-13A	3CC-38	79	48A-48D	5CC-33	79		
80			80	4A-4A-30A	4CC-89	80	48C-48C	5CC-35	80		
81			81	4A-4A-5A	4CC-89	81	48C-66A-66A	5CC-30	81		
82			82	4A-4A-71A	3CC-42	82	48C-66B	5CC-30	82		
83			83	4A-4A-7A	3CC-86	83	48C-66C	5CC-31	83		
84			84	4A-5A-30A	4CC-89	84	48D-66A	5CC-36	84		
85			85	4A-5B	4CC-90	85	48E	5CC-37	85		
86			86	4A-7A-12A		86	4A-48D	5CC-37	86		
87			87	4A-7A-7A	3CC-86	87	4A-4A-12A-12A	4CC-88	87		
88			88	4A-7C	3CC-87	88	4A-4A-12A-30A		88		
89			89	5A-30A-66A	4CC-92	89	4A-4A-5A-30A	5CC-38	89		
90			90	5A-48A-66A	4CC-110	90	4A-4A-5B	5CC-38	90		
91			91	5A-5A-66A	4CC-102	91	4A-5B-30A	5CC-38	91		
92			92	5A-66A-66A	4CC-100	92	5A-30A-66A-66A	5CC-40	92		
93			93	5A-66B	4CC-105	93	5A-48D	4CC-110	93		
94			94	5A-66C	4CC-105	94	5A-5A-66A-66A	5CC-40	94		
95			95	5A-7A-66A	4CC-100	95	5A-5A-66B	5CC-41	95		
96			96	5A-7A-7A	4CC-101	96	5A-5A-66C	5CC-42	96		
97			97	5A-7C	4CC-101	97	5A-66A-66B	5CC-42	97		
98			98	5B-30A	4CC-102	98	5A-66A-66C	5CC-42	98		
99			99	5B-66A	4CC-102	99	5A-66D	4CC-101	99		
100			100	66A-66A-66A	4CC-98	100	5A-7A-66A-66A	4CC-101	100		



101			101	66A-66A-71A	4CC-61	101	5A-7C-66A	5CC-39	101		
102			102	66A-66B	4CC-97	102	5B-30A-66A	5CC-40	102		
103			103	66A-66C	4CC-98	103	5B-66A-66A	4CC-100	103		
104			104	66C-71A	4CC-61	104	5B-66B	4CC-101	104		
105			105	66D	4CC-99	105	5B-66C	4CC-101	105		
106			106	7A-12A-66A	4CC-106	106	7A-12A-66A-66A		106		
107			107	7A-66A-66A	4CC-106	107	7A-7A-66A-66A	5CC-51	107		
108			108	7A-7A-13A	4CC-111	108	7C-66A-66A	5CC-51	108		
109			109	7A-7A-26A	3CC-114	109	13A-48A-66A-66A		109		
110			110	7A-7A-66A	4CC-107	110	5A-48A-66A-66A		110		
111			111	7C-13A	4CC-111	111	7C-13A-66A	4CC-128	111		
112			112	7C-66A	4CC-108	112	2A-2A-7A-7A	4CC-113	112		
113			113	7A-13A-66A	4CC-128	113	2A-2A-7C	4CC-125	113		
114			114	2A-7A-26A		114	7A-7A-25A-25A	5CC-48	114		
115			115	2A-26A-66A		115	7C-25A-25A	5CC-51	115		
116			116	7A-7A-25A	4CC-114	116	2A-5A-48C		116		
117			117	7C-25A	4CC-115	117	41A-42D	5CC-44	117		
118			118	41C-42A	4CC-118	118	41C-42C	5CC-45	118		
119			119	41A-42C	4CC-117	119	41D-42A	5CC-45	119		
120			120	42A-42C	4CC-120	120	42A-42D	4CC-124	120		
121			121	42D	4CC-124	121	42C-42C	5CC-44	121		
122			122	5A-48C	4CC-122	122	5A-48C-66A	4CC-110	122		
123			123	CA_2A-2A-14A	4CC-131	123	41A-42A-42C	5CC-44	123		
124			124	CA_25A-25A-66A	4CC-127	124	42E	5CC-45	124		
125			125	CA_7A-25A-25A	4CC-127	125	2A-2A-7A-13A	5CC-49	125		
126			126	CA_7A-25A-66A	4CC-130	126	5A-7A-7A-66A	5CC-39	126		
127			127			127	7A-25A-25A-66A	4CC-130	127		
128			128			128	7A-7A-13A-66A		128		
129			129			129	7A-7A-25A-66A	4CC-130	129		
130			130			130	7C-25A-66A	5CC-51	130		
131			131			131	CA_2A-2A-14A-30A		131		
132			132			132	CA_2A-2A-14A-66A	5CC-52	132		
133			133			133	CA_2A-2A-4A-71A		133		
134			134			134	CA_2A-2A-5B	4CC-116	134		

<Power verification when LTE Carrier Aggregation Active>

General Note:

- i. According to KDB941225 D05A v01r02, Uplink maximum output power measurement with downlink carrier aggregation active should be measured, using the highest output channel measured without downlink carrier aggregation, to confirm that uplink maximum output power with downlink carrier aggregation active remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output measured without downlink carrier aggregation active.
- ii. 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.
- iii. The device supports downlink two carrier aggregation. For power measurement were control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.
- iv. Selected highest measured power when downlink carrier aggregation is inactive for conducted power comparison with downlink carrier aggregation is active, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.
- v. For non-contiguous intra-band CA, the SCC selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band.
- vi. For Intra-band, contiguous CA, the downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

$$\text{Nominal channel spacing} = \left\lceil \frac{BW_{\text{Channel}(1)} + BW_{\text{Channel}(2)} - 0.1 |BW_{\text{Channel}(1)} - BW_{\text{Channel}(2)}|}{0.6} \right\rceil 0.3 \text{ [MHz]}$$

<Two Carrier power verification>

Configure	CA Configuration (BCS)	PCC							SCC				Power		
		LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)	
Inter-Band	12A-25A	12	10	707.5	23095	QPSK	1	0	25	20	1960	8340	23.66	23.69	
	2A-17A	2	10	1880	18900	QPSK	1	0	17	10	740	5790	23.35	23.45	
	41A-48A	41	20	2593	40620	QPSK	1	0	48	20	3609	55830	23.24	23.32	
	4A-17A	4	10	1775	20000	QPSK	1	0	17	10	740	5790	23.39	23.45	
	5A-25A	5	10	844	20600	QPSK	1	0	25	20	1960	8340	23.68	23.69	
	5A-38A	5	10	844	20600	QPSK	1	0	38	20	2595	38000	23.67	23.69	
	5A-41A	5	10	844	20600	QPSK	1	0	41	20	2593	40620	23.59	23.69	
Intra-Band	Contiguous	7A-42A	7	20	2560	21350	QPSK	1	0	42	20	3500	42590	23.21	23.29
		38C	38	20	2610	38150	QPSK	1	0	38	20	2590.20	37952	23.41	23.41
		43C	43	20	3710	44690	QPSK	1	0	43	20	3729.80	44888	23.87	23.96

<Three Carrier power verification>

Configure	CA Configuration (BCS)	PCC							SCC1				SCC2				Power	
		LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)
Inter-Band	2A-14A-30A	2	20	1880	18900	QPSK	1	0	14	10	763	5330	30	10	2355	9820	23.39	23.49
	2A-4A-13A	2	20	1880	18900	QPSK	1	0	4	20	2132.5	2175	13	10	751	5230	23.44	23.49
	2A-4A-30A	2	20	1880	18900	QPSK	1	0	4	20	2132.5	2175	30	10	2355	9820	23.44	23.49
	2A-7A-26A	2	20	1880	18900	QPSK	1	0	7	20	2655	3100	26	15	876.5	8865	23.45	23.49
	2A-26A-66A	2	20	1880	18900	QPSK	1	0	26	15	876.5	8865	66	20	2155	66886	23.40	23.49
	48A-48A-71A	48	20	3609	55830	QPSK	1	0	48	5	3697.5	56715	71	20	634.5	68761	23.63	23.69
	4A-7A-12A	4	10	1775	20000	QPSK	1	0	7	20	2655	3100	12	10	737.5	5095	23.48	23.51



<Four Carrier power verification>

Configure	CA Configuration (BCS)	PCC								SCC1				SCC2				SCC3				Power	
		LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)	
Inter-Band	12A-30A-66A-66A	12	10	704	23060	QPSK	1	0	30	10	2355	9820	66	20	2155	66886	66	5	2197.5	67311	23.69	23.69	
	14A-30A-66A-66A	14	10	793	23330	QPSK	1	0	30	10	2355	9820	66	20	2155	66886	66	5	2197.5	67311	23.64	23.71	
	2A-14A-66A-66A	2	20	1880	18900	QPSK	1	0	14	10	763	5330	66	20	2155	66886	66	5	2197.5	67311	23.41	23.49	
	2A-2A-12A-30A	2	20	1880	18900	QPSK	1	0	2	5	1932.5	625	12	10	737.5	5095	30	10	2355	9820	23.40	23.49	
	2A-2A-30A-66A	2	20	1880	18900	QPSK	1	0	2	5	1932.5	625	30	10	2355	9820	66	20	2155	66886	23.39	23.49	
	2A-2A-4A-12A	2	20	1880	18900	QPSK	1	0	2	5	1932.5	625	4	20	2132.5	2175	12	10	737.5	5095	23.45	23.49	
	2A-2A-4A-5A	2	20	1880	18900	QPSK	1	0	2	5	1932.5	625	4	20	2132.5	2175	5	10	881.5	2525	23.40	23.49	
	2A-2A-66A-71A	2	20	1880	18900	QPSK	1	0	2	5	1932.5	625	66	20	2155	66886	71	20	634.5	68761	23.44	23.49	
	2A-2A-7A-12A	2	20	1880	18900	QPSK	1	0	2	5	1932.5	625	7	20	2655	3100	12	10	737.5	5095	23.40	23.49	
	2A-48A-66A-66A	2	20	1880	18900	QPSK	1	0	48	20	3609	55830	66	20	2155	66886	66	5	2197.5	67311	23.39	23.49	
	2A-4A-7A-7A	2	20	1880	18900	QPSK	1	0	4	20	2132.5	2175	7	20	2655	3100	7	5	2687.5	3425	23.46	23.49	
	2A-5A-7A-7A	2	20	1880	18900	QPSK	1	0	5	10	881.5	2525	7	20	2655	3100	7	5	2687.5	3425	23.40	23.49	
	2A-66A-66A-71A	2	20	1880	18900	QPSK	1	0	66	20	2155	66886	66	5	2197.5	67311	71	20	634.5	68761	23.48	23.49	
	4A-4A-12A-30A	4	20	1745	20300	QPSK	1	0	4	5	2112.5	1975	12	10	737.5	5095	30	10	2355	9820	23.41	23.51	
	7A-12A-66A-66A	7	20	2560	21350	QPSK	1	0	12	10	737.5	5095	66	20	2155	66886	66	5	2197.5	67311	23.20	23.29	
	13A-48A-66A-66A	13	10	782	23230	QPSK	1	0	48	20	55340	3560	66	20	2155	66886	66	5	2197.5	67311	23.49	23.53	
	5A-48A-66A-66A	5	10	844	20600	QPSK	1	0	48	20	3609	55830	66	20	2155	66886	66	5	2197.5	67311	23.63	23.69	
	2A-5A-48C	2	20	1880	18900	QPSK	1	0	5	10	881.5	2525	48	20	3660	56340	48	20	3679.8	56538	23.42	23.49	
	7A-7A-13A-66A	7	20	2560	21350	QPSK	1	0	7	5	2622.5	2775	13	10	751	5230	66	20	2155	66886	23.26	23.29	
	2A-2A-14A-30A	2	20	1880	18900	QPSK	1	0	2	5	1932.5	625	14	10	763	5330	30	10	2355	9820	23.39	23.49	
2A-2A-4A-71A	2	20	1880	18900	QPSK	1	0	2	5	1932.5	625	4	20	2132.5	2175	71	20	634.5	68761	23.42	23.49		

<Five Carrier power verification>

Configure	CA Configuration (BCS)	PCC								SCC1				SCC2				SCC3				SCC4				Power	
		LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)	
Inter-Band	13A-48D-66A	13	10	782	23230	QPSK	1	0	48	20	3609	55830	48	20	3628.8	56028	48	20	3648.6	56226	66	20	2155	66886	23.44	23.53	
	25A-25A-26A-41C	25	20	1905	26590	QPSK	1	0	25	5	1932.5	8065	26	15	876.5	8865	41	20	2593	40620	41	20	2612.8	40818	23.55	23.57	
	2A-13A-48D	2	20	1880	18900	QPSK	1	0	13	10	751	5230	48	20	3609	55830	48	20	3628.8	56028	48	20	3648.6	56226	23.47	23.49	
	2A-13A-66D	2	20	1880	18900	QPSK	1	0	13	10	751	5230	66	20	2155	66886	66	20	2174.8	67084	66	20	2194.6	67282	23.48	23.49	
	2A-2A-12A-66A-66A	2	20	1880	18900	QPSK	1	0	2	5	1932.5	625	12	10	737.5	5095	66	20	2155	66886	66	5	2197.5	67311	23.48	23.49	
	2A-48D-66A	2	20	1880	18900	QPSK	1	0	66	20	2155	66886	48	20	3609	55830	48	20	3628.8	56028	48	20	3648.6	56226	23.45	23.49	
	2A-7A-7A-66A-66A	2	20	1880	18900	QPSK	1	0	7	20	2655	3100	7	5	2687.5	3425	66	20	2155	66886	66	5	2197.5	67311	23.47	23.49	
	2C-5B-30A	2	20	1880	18900	QPSK	1	0	2	20	1978.8	1088	5	10	881.5	2525	5	10	891.4	2624	30	10	2355	9820	23.49	23.49	
	2A-2A-7A-7A-13A	2	20	1880	18900	QPSK	1	0	2	5	1932.5	625	7	20	2655	3100	7	5	2687.5	3425	13	10	751	5230	23.44	23.49	
	2A-2A-5A-66C	2	20	1880	18900	QPSK	1	0	2	5	1932.5	625	5	10	881.5	2525	66	20	2155	66886	66	20	2174.8	67084	23.43	23.49	
	2A-5A-48D	2	20	1880	18900	QPSK	1	0	5	10	881.5	2525	48	20	3609	55830	48	20	3628.8	56028	48	20	3648.6	56226	23.47	23.49	
	41C-41D	41	20	2593	40620	QPSK	1	0	41	20	2612.8	40818	41	20	2632.6	41016	41	5	2498.5	39675	41	5	2503.3	39723	23.32	23.32	
	4A-48E	4	20	1745	20300	QPSK	1	0	48	20	3609	55830	48	20	3628.8	56028	48	20	3648.6	56226	48	20	3668.4	56424	23.49	23.51	
	4A-4A-5B-30A	4	20	1745	20300	QPSK	1	0	4	5	2112.5	1975	5	10	881.5	2525	5	10	891.4	2624	30	10	2355	9820	23.46	23.51	
	5A-7C-66A-66A	7	20	2560	21350	QPSK	1	0	7	5	2502.5	20775	5	10	881.5	2525	66	20	2155	66886	66	5	2197.5	67311	23.64	23.69	
	5B-30A-66A-66A	5	10	829	20450	QPSK	1	0	5	10	883.9	2549	30	10	2355	9820	66	20	2155	66886	66	5	2197.5	67311	23.69	23.69	
	41C-42A-42C	41	20	2593	40620	QPSK	1	0	41	20	2612.8	40818	42	20	3500	42590	42	20	3519.8	42788	41	5	3452.5	42115	23.32	23.32	
	5A-48D-66A	5	10	844	20600	QPSK	1	0	66	20	2155	66886	48	20	3609	55830	48	20	3628.8	56028	48	20	3648.6	56226	23.59	23.69	
	7A-7A-25A-25A-66A	7	20	2560	21350	QPSK	1	0	7	5	2622.5	2775	25	20	1960	8340	25	5	1932.5	8065	66	20	2155	66886	23.28	23.29	



<LTE Uplink carrier aggregation>

2CC Uplink Carrier Aggregation	
Number	Combination
1	CA_2C
2	CA_5B
3	CA_7C
4	CA_66B
5	CA_66C
6	CA_38C
7	CA_41C
8	CA_42C
9	CA_43C
10	CA_48C

<Intra-band>

General Note:

- i. The device supports intra-band uplink carrier aggregation with a maximum of two 20MHz 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 3GPP requirement.
- ii. The device supports uplink carrier aggregation with a maximum of two 20MHz 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.
- iii. 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.
- iv. Additional SAR measurement for LTE 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.



STATE 2

CA_2C_Main Ant										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
18700	18898	QPSK	1	0	0	0	1	0	15.75	16
18801	18603	QPSK	1	0	1	99	2	0	15.56	16
18902	18704	QPSK	1	0	1	99	2	0	15.59	16

CA_5B_Main Ant										
Combination 10MHz+10MHz (50RB+50RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20450	20549	QPSK	1	0	0	0	1	0	21.54	23
20476	20575	QPSK	1	0	1	49	2	0	21.68	23
20600	20501	QPSK	1	0	1	49	2	0	21.65	23

CA_7C_Main Ant										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	0	0	0	1	0	16.05	17
21100	20902	QPSK	1	0	1	99	2	0	16	17
21350	21152	QPSK	1	0	1	99	2	0	15.85	17

CA_66B_Main Ant										
Combination 15MHz+5MHz (75RB+25RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
132047	132140	QPSK	1	0	0	0	1	0	15.57	16.5
132322	132229	QPSK	1	0	1	24	2	0	15.44	16.5
132597	132504	QPSK	1	0	1	24	2	0	15.34	16.5

CA_66C_Main Ant										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
132072	132270	QPSK	1	0	0	0	1	0	15.47	16.5
132322	132124	QPSK	1	0	1	99	2	0	15.5	16.5
132572	132374	QPSK	1	0	1	99	2	0	15.32	16.5



CA_38C_Main Ant										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	0	0	0	1	0	17.77	18
37901	38099	QPSK	1	0	0	0	1	0	17.6	18
38150	37952	QPSK	1	0	1	99	2	0	17.73	18

CA_41C_Main Ant										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
39750	39948	QPSK	1	0	0	0	1	0	17.53	18
40185	39987	QPSK	1	0	1	99	2	0	17.56	18
40620	40422	QPSK	1	0	1	99	2	0	17.65	18
41055	40857	QPSK	1	0	1	99	2	0	17.42	18
41490	41292	QPSK	1	0	1	99	2	0	17.68	18

CA_42C_MIMO 2 Ant										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
42190	42388	QPSK	1	0	0	0	1	0	20.09	20.5
42590	42788	QPSK	1	0	0	0	1	0	19.84	20.5
42990	42792	42594	1	0	1	99	2	0	19.93	20.5

CA_43C_MIMO 2 Ant										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
44690	44888	QPSK	1	0	0	0	1	0	19.79	20
44991	45189	QPSK	1	0	0	0	1	0	19.89	20
45292	45490	QPSK	1	0	1	99	2	0	19.86	20

CA_48C_MIMO 2 Ant										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
55340	55538	QPSK	1	0	0	0	1	0	18.99	20.5
55830	55632	QPSK	1	0	1	99	2	0	18.95	20.5
56150	55952	QPSK	1	0	1	99	2	0	18.89	20.5
56640	56442	QPSK	1	0	1	99	2	0	19	20.5



STATE 3

CA_2C_Main Ant										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
18700	18898	QPSK	1	0	0	0	1	0	16.19	17
18801	18999	QPSK	1	0	1	99	2	0	16.05	17
18902	18704	QPSK	1	0	1	99	2	0	16.04	17

CA_5B_Main Ant										
Combination 10MHz+10MHz (50RB+50RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20450	20549	QPSK	1	0	0	0	1	0	19.8	21.5
20476	20575	QPSK	1	0	1	49	2	0	19.82	21.5
20600	20501	QPSK	1	0	1	49	2	0	19.78	21.5

CA_7C_Main Ant										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	0	0	0	1	0	16.88	18.5
21100	20902	QPSK	1	0	1	99	2	0	16.72	18.5
21350	21152	QPSK	1	0	1	99	2	0	16.64	18.5

CA_66B_Main Ant										
Combination 15MHz+5MHz (75RB+25RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
132047	132140	QPSK	1	0	0	0	1	0	15.57	16.5
132322	132229	QPSK	1	0	1	24	2	0	15.44	16.5
132597	132504	QPSK	1	0	1	24	2	0	15.34	16.5

CA_66C_Main Ant										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
132072	132270	QPSK	1	0	0	0	1	0	15.47	16.5
132322	132124	QPSK	1	0	1	99	2	0	15.5	16.5
132572	132374	QPSK	1	0	1	99	2	0	15.32	16.5



CA_38C_Main Ant										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	0	0	0	1	0	19.04	20.5
37901	38099	QPSK	1	0	0	0	1	0	18.97	20.5
38150	37952	QPSK	1	0	1	99	2	0	19.47	20.5

CA_41C_Main Ant										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
39750	39948	QPSK	1	0	0	0	1	0	19.21	20.5
40185	39987	QPSK	1	0	1	99	2	0	19.78	20.5
40620	40422	QPSK	1	0	1	99	2	0	20.06	20.5
41055	40857	QPSK	1	0	1	99	2	0	20.05	20.5
41490	41292	QPSK	1	0	1	99	2	0	20.09	20.5

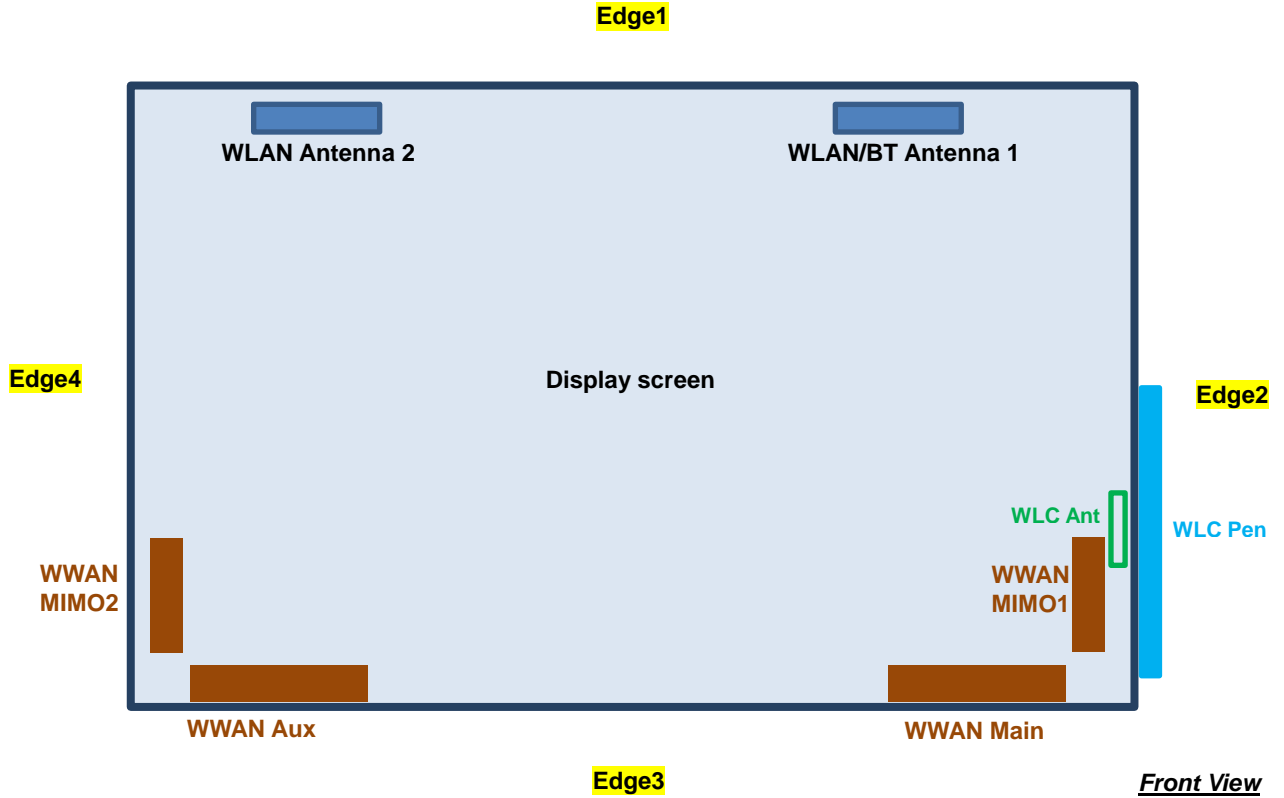
CA_42C_MIMO 2 Ant										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
42190	42388	QPSK	1	0	0	0	1	0	16.8	17
42590	42788	QPSK	1	0	0	0	1	0	16.64	17
42990	42792	QPSK	1	0	1	99	2	0	16.79	17

CA_43C_MIMO 2 Ant										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
44690	44888	QPSK	1	0	0	0	1	0	17.51	18
44991	45189	QPSK	1	0	0	0	1	0	17.62	18
45292	45490	QPSK	1	0	1	99	2	0	17.64	18

CA_48C_MIMO 2 Ant										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
55340	55538	QPSK	1	0	0	0	1	0	15.28	16.5
55830	55632	QPSK	1	0	1	99	2	0	15.38	16.5
56150	55952	QPSK	1	0	1	99	2	0	15.26	16.5
56640	56442	QPSK	1	0	1	99	2	0	15.42	16.5

12. Antenna Location

<Tablet mode>

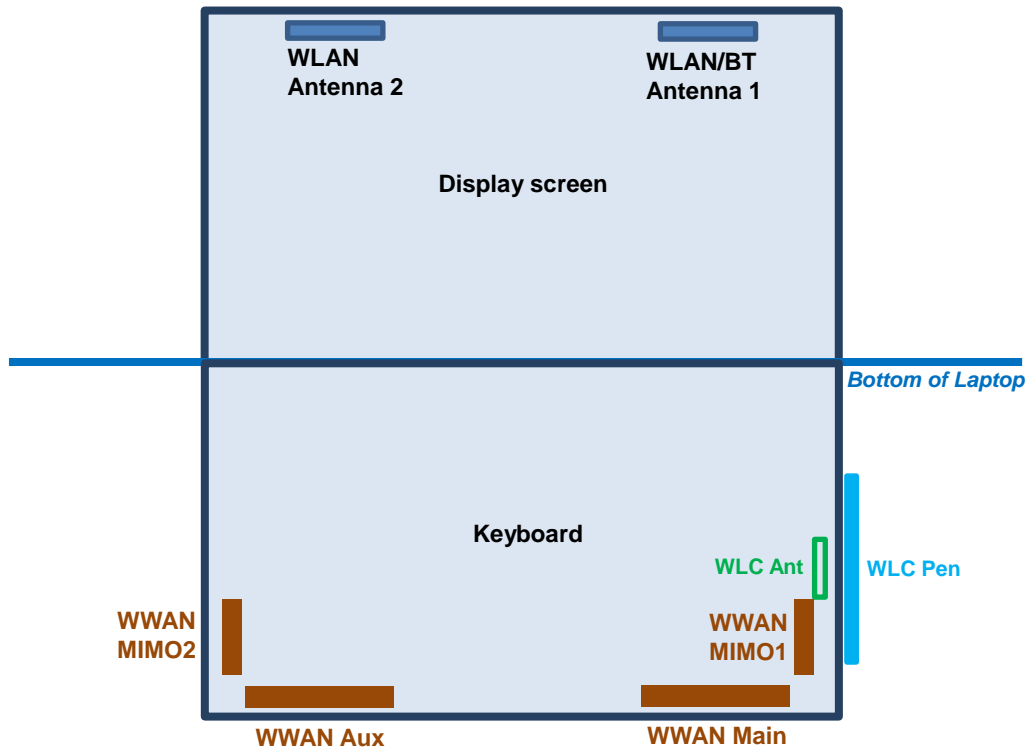


Front View

The separation distance for antenna to edge:

Antenna	To Edge1 (mm)	To Edge2 (mm)	To Edge3 (mm)	To Edge4 (mm)
WWAN Main Antenna	205	60	5	255
WWAN MIMO2 Antenna	190	285	35	5
WWAN MIMO1 Antenna	190	5	35	285
WWAN Aux Antenna	205	255	5	60
BT Antenna 1	5	24.9	220	150
WLAN Antenna 1+2	5	24.9	200.5	24.5

<Laptop mode>



The separation distance for antenna to edge :

Antenna	To Bottom of Laptop (mm)
WWAN Main Antenna	5
WWAN MIMO2 Antenna	5
WWAN MIMO1 Antenna	5
WWAN Aux Antenna	5
BT Antenna 1	200.5
WLAN Antenna 1+2	220



<SAR test exclusion table>

General Note:

- The below table, when the distance is < 50 mm exclusion threshold is "Ratio", when the distance is > 50 mm exclusion threshold is "mW"
- Maximum power is the source-based time-average power and represents the maximum RF output power among production units
- 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.
- 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.
- 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:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$$
 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
- 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
 - [Threshold at 50 mm in step 1) + (test separation distance - 50 mm) · (f(MHz)/150)] mW, at 100 MHz to 1500 MHz
 - [Threshold at 50 mm in step 1) + (test separation distance - 50 mm) · 10] mW at > 1500 MHz and ≤ 6 GHz

		Main Antenna																					
Exposure Position	Wireless Interface	WCDMA Band V	WCDMA Band IV	WCDMA Band II	LTE Band 71/n71	LTE Band 12/n12	LTE Band 13/n13	LTE Band 14/n14	LTE Band 17	LTE Band 5/n5	LTE Band 26/n26	LTE Band 4	LTE Band 66/n66	LTE Band 2/n2	LTE Band 25/n25	LTE Band 30/n30	LTE Band 7/n7	LTE Band 38/n38	LTE Band 41/n41	LTE Band 42	LTE Band 43	LTE Band 48/n48	FR1 Band n77/n78
	Calculated Frequency (MHz)	846	1750	1907	695	715	784	795	713	848	848	1754	1779	1909	1914	2312	2567	2617	2687	3547	3797	3697	3975
	Maximum power (dBm)	22.5	17.0	18.5	24.5	25.0	23.5	23.0	25.0	23.0	23.0	16.5	18.5	17.0	18.0	18.0	18.5	23.5	23.5	23.0	21.0	21.0	22.5
	Maximum rated power(mW)	177.83	50.12	70.79	281.84	316.23	223.87	199.53	316.23	199.53	199.53	44.67	70.79	50.12	63.10	63.10	70.79	223.87	223.87	199.53	125.89	125.89	177.83
Bottom Face	Separation distance(mm)	5.0																					
	exclusion threshold	32.7	13.3	19.6	47.0	53.5	39.6	35.6	37.8	36.8	36.8	11.8	18.9	13.9	17.5	19.2	22.7	72.4	73.4	75.2	49.1	48.4	70.9
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 1	Separation distance(mm)	205.0																					
	exclusion threshold	1037.0	1663.0	1659.0	898.0	916.0	980.0	990.0	914.0	1039.0	1039.0	1663.0	1662.0	1659.0	1658.0	1649.0	1644.0	1643.0	1642.0	1630.0	1627.0	1628.0	1625.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Edge 2	Separation distance(mm)	60.0																					
	exclusion threshold	219.0	213.0	209.0	226.0	225.0	222.0	221.0	225.0	219.0	219.0	213.0	212.0	209.0	208.0	199.0	194.0	193.0	192.0	180.0	177.0	178.0	175.0
	Testing required?	No	No	No	Yes	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No	No	Yes
Edge 3	Separation distance(mm)	5.0																					
	exclusion threshold	32.7	13.3	19.6	47.0	53.5	39.6	35.6	37.8	36.8	36.8	11.8	18.9	13.9	17.5	19.2	22.7	72.4	73.4	75.2	49.1	48.4	70.9
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 4	Separation distance(mm)	255.0																					
	exclusion threshold	1319.0	2163.0	2159.0	1130.0	1155.0	1241.0	1255.0	1152.0	1322.0	1322.0	2163.0	2162.0	2159.0	2158.0	2149.0	2144.0	2143.0	2142.0	2130.0	2127.0	2128.0	2125.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Bottom of Laptop	Separation distance(mm)	5.0																					
	exclusion threshold	32.7	13.3	19.6	47.0	53.5	39.6	35.6	37.8	36.8	36.8	11.8	18.9	13.9	17.5	19.2	22.7	72.4	73.4	75.2	49.1	48.4	70.9
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes



MIMO2 Antenna														
Exposure Position	Wireless Interface	FR1 Band n70	LTE Band 4	LTE Band 66/n66	LTE Band 2	LTE Band 25/n25	LTE Band 30/n30	LTE Band 7/n7	LTE Band 38/n38	LTE Band 41/n41	LTE Band 42	LTE Band 43	LTE Band 48/n48	FR1 Band n77/n78
	Calculated Frequency (MHz)	1702.5	1754	1779	1909	1914	2312	2567	2617	2687	3547	3797	3697	3975
	Maximum power (dBm)	20.5	18.5	20.0	17.5	19.0	20.5	21.0	21.5	21.5	23.5	23.0	20.5	17.5
	Maximum rated power(mW)	112.20	70.79	100.00	56.23	79.43	112.20	125.89	141.25	141.25	223.87	199.53	112.20	56.23
Bottom Face	Separation distance(mm)	5.0												
	exclusion threshold	29.3	18.8	26.7	15.5	22.0	34.1	40.3	45.7	46.3	84.3	77.8	43.2	22.4
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 1	Separation distance(mm)	190.0												
	exclusion threshold	1515.0	1513.0	1512.0	1509.0	1508.0	1499.0	1494.0	1493.0	1492.0	1480.0	1477.0	1478.0	1475.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No
Edge 2	Separation distance(mm)	285.0												
	exclusion threshold	2465.0	2463.0	2462.0	2459.0	2458.0	2449.0	2444.0	2443.0	2442.0	2430.0	2427.0	2428.0	2425.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No
Edge 3	Separation distance(mm)	35.0												
	exclusion threshold	4.2	2.7	3.8	2.2	3.1	4.9	5.8	6.5	6.6	12.1	11.1	6.2	3.2
	Testing required?	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 4	Separation distance(mm)	5.0												
	exclusion threshold	29.3	18.8	26.7	15.5	22.0	34.1	40.3	45.7	46.3	84.3	77.8	43.2	22.4
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bottom of Laptop	Separation distance(mm)	5.0												
	exclusion threshold	29.3	18.8	26.7	15.5	22.0	34.1	40.3	45.7	46.3	84.3	77.8	43.2	22.4
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

MIMO1 Antenna				
Exposure Position	Wireless Interface	FR1 Band n38/n41	FR1 Band n48	FR1 Band n77/n78
	Calculated Frequency (MHz)	2687	3697	3975
	Maximum power (dBm)	14.5	14.5	15.0
	Maximum rated power(mW)	28.18	28.18	31.62
Bottom Face	Separation distance(mm)	5.0		
	exclusion threshold	9.2	10.8	12.6
	Testing required?	Yes	Yes	Yes
Edge 1	Separation distance(mm)	190.0		
	exclusion threshold	1492.0	1478.0	1475.0
	Testing required?	No	No	No
Edge 2	Separation distance(mm)	5.0		
	exclusion threshold	9.2	10.8	12.6
	Testing required?	Yes	Yes	Yes
Edge 3	Separation distance(mm)	35.0		
	exclusion threshold	1.3	1.6	1.8
	Testing required?	No	No	No
Edge 4	Separation distance(mm)	285.0		
	exclusion threshold	2442.0	2428.0	2425.0
	Testing required?	No	No	No
Bottom of Laptop	Separation distance(mm)	5.0		
	exclusion threshold	9.2	10.8	12.6
	Testing required?	Yes	Yes	Yes



Aux Antenna				
Exposure Position	Wireless Interface	FR1 Band n38/n41	FR1 Band n48	FR1 Band n77/n78
	Calculated Frequency (MHz)	2687	3697	3975
	Maximum power (dBm)	17.5	20.5	20.5
	Maximum rated power(mW)	56.23	112.20	112.20
Bottom Face	Separation distance(mm)	5.0		
	exclusion threshold	18.4	43.2	44.7
	Testing required?	Yes	Yes	Yes
Edge 1	Separation distance(mm)	205.0		
	exclusion threshold	1642.0	1628.0	1625.0
	Testing required?	No	No	No
Edge 2	Separation distance(mm)	255.0		
	exclusion threshold	2142.0	2128.0	2125.0
	Testing required?	No	No	No
Edge 3	Separation distance(mm)	5.0		
	exclusion threshold	18.4	43.2	44.7
	Testing required?	Yes	Yes	Yes
Edge 4	Separation distance(mm)	60.0		
	exclusion threshold	192.0	178.0	175.0
	Testing required?	No	No	No
Bottom of Laptop	Separation distance(mm)	5.0		
	exclusion threshold	18.4	43.2	44.7
	Testing required?	Yes	Yes	Yes



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 SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
 - c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
 - d. 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 ≥ 0.8 W/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 is $\leq \frac{1}{4}$ 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 to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA, and according to the following RF output power, the output power results of the secondary modes (HSUPA, HSDPA, DC-HSDPA) are less than $\frac{1}{4}$ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA.

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 $\frac{1}{2}$ 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 $\frac{1}{2}$ 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 \leq 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 $\frac{1}{2}$ 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 $\frac{1}{2}$ 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.
 - g. NR n2/n5/n38/n78 SAR test was covered by NR n25/n26/n41/n77; SAR test for overlapping bands can be reduced if the maximum output power, including tolerance, for the smaller band is \leq the larger band and the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band to qualify for the SAR test exclusion.



13.1 Body SAR

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	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_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 1	State 2	9262	1852.4	15.91	16.00	1.021	-0.08	0.846	0.864
	WCDMA II_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 1	State 2	9400	1880	15.86	16.00	1.033	0.02	0.884	0.913
	WCDMA II_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 1	State 2	9538	1907.6	15.84	16.00	1.038	0.03	0.870	0.903
	WCDMA II_Main	RMC 12.2Kbps	Bottom Face	0mm	Vendor 1	State 3	9400	1880	18.11	18.50	1.094	-0.18	0.399	0.436
	WCDMA II_Main	RMC 12.2Kbps	Edge 3	0mm	Vendor 1	State 3	9400	1880	18.11	18.50	1.094	-0.13	0.861	0.942
	WCDMA II_Main	RMC 12.2Kbps	Edge 3	0mm	Vendor 1	State 3	9262	1852.4	18.06	18.50	1.107	-0.01	0.921	1.019
	WCDMA II_Main	RMC 12.2Kbps	Edge 3	0mm	Vendor 1	State 3	9538	1907.6	18.09	18.50	1.099	0.1	0.886	0.974
	WCDMA II_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 2	State 2	9400	1880	15.86	16.00	1.033	-0.03	1.030	1.064
	WCDMA II_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 2	State 2	9262	1852.4	15.91	16.00	1.021	-0.07	0.950	0.970
01	WCDMA II_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 2	State 2	9538	1907.6	15.84	16.00	1.038	-0.01	1.140	1.183
	WCDMA II_Main	RMC 12.2Kbps	Edge 3	0mm	Vendor 2	State 3	9262	1852.4	18.06	18.50	1.107	0.01	0.836	0.925
	WCDMA IV_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 1	State 2	1413	1732.6	15.72	16.00	1.067	-0.04	0.791	0.844
	WCDMA IV_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 1	State 2	1312	1712.4	15.52	16.00	1.117	0.01	0.798	0.891
	WCDMA IV_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 1	State 2	1513	1752.6	15.58	16.00	1.102	0.03	0.744	0.820
	WCDMA IV_Main	RMC 12.2Kbps	Bottom Face	0mm	Vendor 1	State 3	1413	1732.6	16.46	17.00	1.132	-0.19	0.505	0.572
	WCDMA IV_Main	RMC 12.2Kbps	Edge 3	0mm	Vendor 1	State 3	1413	1732.6	16.46	17.00	1.132	0.17	1.010	1.144
	WCDMA IV_Main	RMC 12.2Kbps	Edge 3	0mm	Vendor 1	State 3	1312	1712.4	16.34	17.00	1.164	0.06	0.975	1.135
	WCDMA IV_Main	RMC 12.2Kbps	Edge 3	0mm	Vendor 1	State 3	1513	1752.6	16.39	17.00	1.151	0.08	0.993	1.143
	WCDMA IV_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 2	State 2	1312	1712.4	15.52	16.00	1.117	-0.06	0.978	1.092
	WCDMA IV_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 2	State 2	1413	1732.6	15.72	16.00	1.067	-0.01	1.030	1.099
	WCDMA IV_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 2	State 2	1513	1752.6	15.58	16.00	1.102	-0.04	0.979	1.078
02	WCDMA IV_Main	RMC 12.2Kbps	Edge 3	0mm	Vendor 2	State 3	1413	1732.6	16.46	17.00	1.132	-0.07	1.050	1.189
	WCDMA IV_Main	RMC 12.2Kbps	Edge 3	0mm	Vendor 2	State 3	1312	1712.4	16.34	17.00	1.164	-0.06	1.000	1.164
	WCDMA IV_Main	RMC 12.2Kbps	Edge 3	0mm	Vendor 2	State 3	1513	1752.6	16.39	17.00	1.151	-0.01	1.030	1.185
	WCDMA V_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 1	State 2	4182	836.4	22.06	22.50	1.107	-0.06	0.901	0.997
	WCDMA V_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 1	State 2	4132	826.4	22.03	22.50	1.114	-0.09	0.910	1.014
	WCDMA V_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 1	State 2	4233	846.6	21.95	22.50	1.135	-0.18	0.861	0.977
	WCDMA V_Main	RMC 12.2Kbps	Bottom Face	0mm	Vendor 1	State 3	4182	836.4	21.11	21.50	1.094	0.01	0.401	0.439
03	WCDMA V_Main	RMC 12.2Kbps	Edge 3	0mm	Vendor 1	State 3	4182	836.4	21.11	21.50	1.094	-0.03	1.090	1.192
	WCDMA V_Main	RMC 12.2Kbps	Edge 3	0mm	Vendor 1	State 3	4132	826.4	21.05	21.50	1.109	0.12	1.050	1.165
	WCDMA V_Main	RMC 12.2Kbps	Edge 3	0mm	Vendor 1	State 3	4233	846.6	21.03	21.50	1.114	0.14	1.060	1.181
	WCDMA V_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 2	State 2	4132	826.4	22.03	22.50	1.114	-0.06	0.482	0.537
	WCDMA V_Main	RMC 12.2Kbps	Edge 3	0mm	Vendor 2	State 3	4182	836.4	21.11	21.50	1.094	0.07	0.654	0.715



<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 7_Main	20M	QPSK	1	99	Bottom of Laptop	0mm	Vendor 1	State 2	20850	2510	16.12	17.00	1.225	-0.16	0.741	0.907
	LTE Band 7_Main	20M	QPSK	1	99	Bottom of Laptop	0mm	Vendor 1	State 2	21100	2535	16.06	17.00	1.242	0.16	0.728	0.904
	LTE Band 7_Main	20M	QPSK	1	99	Bottom of Laptop	0mm	Vendor 1	State 2	21350	2560	16.09	17.00	1.233	0.17	0.680	0.839
	LTE Band 7_Main	20M	QPSK	50	50	Bottom of Laptop	0mm	Vendor 1	State 2	20850	2510	15.14	16.00	1.219	-0.18	0.613	0.747
	LTE Band 7_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 1	State 2	20850	2510	15.09	16.00	1.233	0.08	0.562	0.693
	LTE Band 7_Main	20M	QPSK	1	99	Bottom Face	0mm	Vendor 1	State 3	21350	2560	17.02	18.50	1.406	0.08	0.351	0.494
	LTE Band 7_Main	20M	QPSK	50	50	Bottom Face	0mm	Vendor 1	State 3	21350	2560	16.09	17.50	1.384	-0.18	0.281	0.389
	LTE Band 7_Main	20M	QPSK	1	99	Edge 3	0mm	Vendor 1	State 3	21350	2560	17.02	18.50	1.406	-0.04	0.714	1.004
	LTE Band 7_Main	20M	QPSK	1	99	Edge 3	0mm	Vendor 1	State 3	20850	2510	16.84	18.50	1.466	0.08	0.606	0.888
	LTE Band 7_Main	20M	QPSK	1	99	Edge 3	0mm	Vendor 1	State 3	21100	2535	16.97	18.50	1.422	-0.06	0.679	0.966
	LTE Band 7_Main	20M	QPSK	50	50	Edge 3	0mm	Vendor 1	State 3	21350	2560	16.09	17.50	1.384	0.06	0.591	0.818
	LTE Band 7_Main	20M	QPSK	50	50	Edge 3	0mm	Vendor 1	State 3	20850	2510	15.92	17.50	1.439	-0.19	0.498	0.717
	LTE Band 7_Main	20M	QPSK	50	50	Edge 3	0mm	Vendor 1	State 3	21100	2535	16.02	17.50	1.406	-0.05	0.543	0.763
	LTE Band 7_Main	20M	QPSK	100	0	Edge 3	0mm	Vendor 1	State 3	21350	2560	15.99	17.50	1.416	-0.09	0.588	0.832
	LTE Band 7C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	20850	2510	16.88	18.50	1.452	0.15	0.589	0.855
	LTE Band 7C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	21100	2535	16.72	18.50	1.507	-0.07	0.655	0.987
	LTE Band 7C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	21350	2560	16.64	18.50	1.535	-0.03	0.696	1.068
	LTE Band 7_Main	20M	QPSK	1	99	Bottom of Laptop	0mm	Vendor 2	State 2	20850	2510	16.12	17.00	1.225	-0.07	0.918	1.124
	LTE Band 7_Main	20M	QPSK	1	99	Bottom of Laptop	0mm	Vendor 2	State 2	21100	2535	16.06	17.00	1.242	-0.16	0.885	1.099
	LTE Band 7_Main	20M	QPSK	1	99	Bottom of Laptop	0mm	Vendor 2	State 2	21350	2560	16.09	17.00	1.233	0.17	0.700	0.863
	LTE Band 7_Main	20M	QPSK	50	50	Bottom of Laptop	0mm	Vendor 2	State 2	20850	2510	15.14	16.00	1.219	-0.18	0.763	0.930
	LTE Band 7_Main	20M	QPSK	50	50	Bottom of Laptop	0mm	Vendor 2	State 2	21100	2535	14.97	16.00	1.268	0.07	0.744	0.943
	LTE Band 7_Main	20M	QPSK	50	50	Bottom of Laptop	0mm	Vendor 2	State 2	21350	2560	14.90	16.00	1.288	0.17	0.621	0.800
	LTE Band 7_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 2	State 2	20850	2510	15.09	16.00	1.233	0.08	0.657	0.810
	LTE Band 7_Main	20M	QPSK	1	99	Edge 3	0mm	Vendor 2	State 3	21350	2560	17.02	18.50	1.406	0.17	0.436	0.613
	LTE Band 7C_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	20850	2510	16.05	17.00	1.245	-0.05	0.894	1.113
	LTE Band 7C_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	21100	2535	16.00	17.00	1.259	-0.09	0.870	1.095
	LTE Band 7C_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	21350	2560	15.85	17.00	1.303	0.16	0.745	0.971
	LTE Band 7_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	21350	2560	18.15	19.00	1.216	0.19	0.821	0.998
	LTE Band 7_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	20850	2510	18.00	19.00	1.259	-0.11	0.798	1.005
	LTE Band 7_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	21100	2535	18.07	19.00	1.239	0.18	0.845	1.047
	LTE Band 7_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	21350	2560	17.98	19.00	1.265	0.07	0.820	1.037
	LTE Band 7_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	20850	2510	17.95	19.00	1.274	-0.18	0.791	1.007
	LTE Band 7_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	21100	2535	17.95	19.00	1.274	0.16	0.819	1.043
	LTE Band 7_MIMO2	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 1	State 2	21350	2560	17.97	19.00	1.268	0.08	0.812	1.029
	LTE Band 7_MIMO2	20M	QPSK	1	0	Bottom Face	0mm	Vendor 1	State 3	21350	2560	14.87	15.00	1.030	0.15	0.302	0.311
	LTE Band 7_MIMO2	20M	QPSK	50	0	Bottom Face	0mm	Vendor 1	State 3	21350	2560	14.80	15.00	1.047	-0.12	0.297	0.311
	LTE Band 7_MIMO2	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	21350	2560	14.87	15.00	1.030	-0.1	0.261	0.269
	LTE Band 7_MIMO2	20M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	21350	2560	14.80	15.00	1.047	0.01	0.270	0.283
	LTE Band 7_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	21350	2560	14.87	15.00	1.030	-0.18	1.050	1.082
	LTE Band 7_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	20850	2510	14.72	15.00	1.067	0.1	1.040	1.109
	LTE Band 7_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	21100	2535	14.76	15.00	1.057	0.05	1.050	1.110
	LTE Band 7_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	21350	2560	14.80	15.00	1.047	-0.12	1.070	1.120
	LTE Band 7_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	20850	2510	14.75	15.00	1.059	0.15	1.060	1.123
04	LTE Band 7_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	21100	2535	14.76	15.00	1.057	-0.01	1.080	1.141
	LTE Band 7_MIMO2	20M	QPSK	100	0	Edge 4	0mm	Vendor 1	State 3	21350	2560	14.80	15.00	1.047	0.12	1.070	1.120
	LTE Band 7_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	21100	2535	18.07	19.00	1.239	-0.07	0.859	1.064
	LTE Band 7_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	20850	2510	18.00	19.00	1.259	-0.15	0.898	1.131
	LTE Band 7_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	21350	2560	18.15	19.00	1.216	0.08	0.797	0.969
	LTE Band 7_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 2	State 3	21100	2535	14.76	15.00	1.057	-0.04	1.040	1.099



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
05	LTE Band 12_Main	10M	QPSK	1	25	Bottom of Laptop	0mm	Vendor 1	State 2	23095	707.5	22.30	23.50	1.318	-0.04	0.799	1.053
	LTE Band 12_Main	10M	QPSK	25	12	Bottom of Laptop	0mm	Vendor 1	State 2	23095	707.5	21.33	22.50	1.309	0.14	0.642	0.840
	LTE Band 12_Main	10M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	23095	707.5	21.32	22.50	1.312	-0.15	0.647	0.849
	LTE Band 12_Main	10M	QPSK	1	0	Bottom Face	0mm	Vendor 1	State 3	23095	707.5	23.69	25.00	1.352	-0.16	0.345	0.466
	LTE Band 12_Main	10M	QPSK	25	0	Bottom Face	0mm	Vendor 1	State 3	23095	707.5	22.77	24.00	1.327	-0.19	0.246	0.327
	LTE Band 12_Main	10M	QPSK	1	0	Edge 2	0mm	Vendor 1	State 3	23095	707.5	23.69	25.00	1.352	0.09	0.387	0.523
	LTE Band 12_Main	10M	QPSK	25	0	Edge 2	0mm	Vendor 1	State 3	23095	707.5	22.77	24.00	1.327	0.19	0.309	0.410
	LTE Band 12_Main	10M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	23095	707.5	23.69	25.00	1.352	-0.04	0.629	0.850
	LTE Band 12_Main	10M	QPSK	25	0	Edge 3	0mm	Vendor 1	State 3	23095	707.5	22.77	24.00	1.327	-0.07	0.506	0.672
	LTE Band 12_Main	10M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	23095	707.5	22.73	24.00	1.340	0.13	0.515	0.690
	LTE Band 12_Main	10M	QPSK	1	25	Bottom of Laptop	0mm	Vendor 2	State 2	23095	707.5	22.30	23.50	1.318	0.01	0.491	0.647
	LTE Band 12_Main	10M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	23095	707.5	23.69	25.00	1.352	0.09	0.263	0.356
	LTE Band 13_Main	10M	QPSK	1	25	Bottom of Laptop	0mm	Vendor 1	State 2	23230	782	21.81	23.00	1.315	-0.08	0.841	1.106
	LTE Band 13_Main	10M	QPSK	25	0	Bottom of Laptop	0mm	Vendor 1	State 2	23230	782	20.86	22.00	1.300	0.08	0.672	0.874
	LTE Band 13_Main	10M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	23230	782	20.85	22.00	1.303	0.06	0.685	0.893
	LTE Band 13_Main	10M	QPSK	1	25	Bottom Face	0mm	Vendor 1	State 3	23230	782	21.81	22.00	1.045	0.15	0.523	0.546
	LTE Band 13_Main	10M	QPSK	25	0	Bottom Face	0mm	Vendor 1	State 3	23230	782	20.86	21.00	1.033	-0.08	0.434	0.448
	LTE Band 13_Main	10M	QPSK	1	25	Edge 2	0mm	Vendor 1	State 3	23230	782	21.81	22.00	1.045	-0.06	0.421	0.440
	LTE Band 13_Main	10M	QPSK	25	0	Edge 2	0mm	Vendor 1	State 3	23230	782	20.86	21.00	1.033	0.17	0.353	0.365
06	LTE Band 13_Main	10M	QPSK	1	25	Edge 3	0mm	Vendor 1	State 3	23230	782	21.81	22.00	1.045	-0.02	1.090	1.139
	LTE Band 13_Main	10M	QPSK	25	0	Edge 3	0mm	Vendor 1	State 3	23230	782	20.86	21.00	1.033	-0.15	0.903	0.933
	LTE Band 13_Main	10M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	23230	782	20.85	21.00	1.035	0.16	0.925	0.958
	LTE Band 13_Main	10M	QPSK	1	25	Bottom of Laptop	0mm	Vendor 2	State 2	23230	782	21.81	23.00	1.315	0.1	0.791	1.040
	LTE Band 13_Main	10M	QPSK	1	25	Edge 3	0mm	Vendor 2	State 3	23230	782	21.81	22.00	1.045	0.07	0.815	0.851
	LTE Band 14_Main	10M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	23330	793	21.96	23.00	1.271	-0.06	0.844	1.072
	LTE Band 14_Main	10M	QPSK	25	0	Bottom of Laptop	0mm	Vendor 1	State 2	23330	793	20.93	22.00	1.279	-0.01	0.677	0.866
	LTE Band 14_Main	10M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	23330	793	20.86	22.00	1.300	0.11	0.678	0.882
	LTE Band 14_Main	10M	QPSK	1	0	Bottom Face	0mm	Vendor 1	State 3	23330	793	21.96	22.00	1.009	-0.02	0.571	0.576
	LTE Band 14_Main	10M	QPSK	25	0	Bottom Face	0mm	Vendor 1	State 3	23330	793	20.93	21.00	1.016	0.17	0.455	0.462
	LTE Band 14_Main	10M	QPSK	1	0	Edge 2	0mm	Vendor 1	State 3	23330	793	21.96	22.00	1.009	-0.14	0.457	0.461
	LTE Band 14_Main	10M	QPSK	25	0	Edge 2	0mm	Vendor 1	State 3	23330	793	20.93	21.00	1.016	0.05	0.377	0.383
07	LTE Band 14_Main	10M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	23330	793	21.96	22.00	1.009	-0.04	1.180	1.191
	LTE Band 14_Main	10M	QPSK	25	0	Edge 3	0mm	Vendor 1	State 3	23330	793	20.93	21.00	1.016	0.13	0.969	0.985
	LTE Band 14_Main	10M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	23330	793	20.86	21.00	1.033	0.02	0.981	1.013
	LTE Band 14_Main	10M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	23330	793	21.96	23.00	1.271	0.18	0.609	0.774
	LTE Band 14_Main	10M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	23330	793	21.96	22.00	1.009	-0.16	0.977	0.986



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 25_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	26340	1880	15.81	16.00	1.045	-0.13	0.818	0.855
	LTE Band 25_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	26140	1860	15.77	16.00	1.054	-0.04	0.807	0.851
	LTE Band 25_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	26590	1905	15.79	16.00	1.050	0.11	0.791	0.830
	LTE Band 25_Main	20M	QPSK	50	24	Bottom of Laptop	0mm	Vendor 1	State 2	26340	1880	14.81	15.00	1.045	0.17	0.677	0.707
	LTE Band 25_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 1	State 2	26340	1880	14.74	15.00	1.062	0.12	0.668	0.709
	LTE Band 25_Main	20M	QPSK	1	0	Bottom Face	0mm	Vendor 1	State 3	26340	1880	16.31	17.00	1.172	-0.03	0.473	0.554
	LTE Band 25_Main	20M	QPSK	50	24	Bottom Face	0mm	Vendor 1	State 3	26340	1880	15.37	16.00	1.156	0.15	0.386	0.446
	LTE Band 25_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	26340	1880	16.31	17.00	1.172	-0.11	0.842	0.987
	LTE Band 25_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	26140	1860	16.28	17.00	1.180	-0.08	0.847	1.000
	LTE Band 25_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	26590	1905	16.14	17.00	1.219	0.14	0.815	0.993
	LTE Band 25_Main	20M	QPSK	50	24	Edge 3	0mm	Vendor 1	State 3	26340	1880	15.37	16.00	1.156	-0.19	0.697	0.806
	LTE Band 25_Main	20M	QPSK	50	24	Edge 3	0mm	Vendor 1	State 3	26140	1860	15.35	16.00	1.161	0.12	0.689	0.800
	LTE Band 25_Main	20M	QPSK	50	24	Edge 3	0mm	Vendor 1	State 3	26590	1905	15.31	16.00	1.172	-0.08	0.665	0.780
	LTE Band 25_Main	20M	QPSK	100	0	Edge 3	0mm	Vendor 1	State 3	26340	1880	15.36	16.00	1.159	0.05	0.696	0.807
	LTE Band 2C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	18700	1860	16.19	17.00	1.205	0.02	0.823	0.992
	LTE Band 2C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	18801	1870.1	16.05	17.00	1.245	-0.07	0.766	0.953
	LTE Band 2C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	18902	1880.2	16.04	17.00	1.247	0.05	0.774	0.965
	LTE Band 25_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	26340	1880	15.81	16.00	1.045	-0.02	0.943	0.985
	LTE Band 25_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	26140	1860	15.77	16.00	1.054	-0.02	0.889	0.937
	LTE Band 25_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	26590	1905	15.79	16.00	1.050	-0.16	1.000	1.050
	LTE Band 25_Main	20M	QPSK	50	24	Bottom of Laptop	0mm	Vendor 2	State 2	26340	1880	14.81	15.00	1.045	-0.18	0.830	0.867
	LTE Band 25_Main	20M	QPSK	50	24	Bottom of Laptop	0mm	Vendor 2	State 2	26140	1860	14.79	15.00	1.050	-0.12	0.800	0.840
	LTE Band 25_Main	20M	QPSK	50	24	Bottom of Laptop	0mm	Vendor 2	State 2	26590	1905	14.68	15.00	1.076	-0.05	0.822	0.885
	LTE Band 25_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 2	State 2	26340	1880	14.74	15.00	1.062	0.15	0.820	0.871
08	LTE Band 25_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	26140	1860	16.28	17.00	1.180	-0.17	0.987	1.165
	LTE Band 25_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	26340	1880	16.31	17.00	1.172	-0.18	0.933	1.094
	LTE Band 25_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	26590	1905	16.14	17.00	1.219	0.09	0.917	1.118
	LTE Band 2C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	18700	1860	16.19	17.00	1.205	0.13	0.923	1.112
	LTE Band 2C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	18801	1870.1	16.05	17.00	1.245	-0.05	0.859	1.069
	LTE Band 2C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	18902	1880.2	16.04	17.00	1.247	0.05	0.876	1.093
	LTE Band 25_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	26340	1880	17.47	17.50	1.007	0.09	0.953	0.960
	LTE Band 25_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	26140	1860	17.27	17.50	1.054	0.16	0.941	0.992
	LTE Band 25_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	26590	1905	17.36	17.50	1.033	0.04	0.966	0.998
	LTE Band 25_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	26340	1880	17.44	17.50	1.014	-0.07	0.934	0.947
	LTE Band 25_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	26140	1860	17.36	17.50	1.033	0.1	0.929	0.959
	LTE Band 25_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	26590	1905	17.39	17.50	1.026	0.11	0.968	0.993
	LTE Band 25_MIMO2	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 1	State 2	26340	1880	17.45	17.50	1.012	-0.03	0.951	0.962
	LTE Band 25_MIMO2	20M	QPSK	1	0	Bottom Face	0mm	Vendor 1	State 3	26140	1860	13.63	14.00	1.089	0.12	0.385	0.419
	LTE Band 25_MIMO2	20M	QPSK	50	0	Bottom Face	0mm	Vendor 1	State 3	26140	1860	13.48	14.00	1.127	0.07	0.351	0.396
	LTE Band 25_MIMO2	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	26140	1860	13.63	14.00	1.089	-0.19	0.168	0.183
	LTE Band 25_MIMO2	20M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	26140	1860	13.48	14.00	1.127	-0.11	0.164	0.185
	LTE Band 25_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	26140	1860	13.63	14.00	1.089	-0.13	0.820	0.893
	LTE Band 25_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	26340	1880	13.14	14.00	1.219	-0.19	0.864	1.053
	LTE Band 25_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	26590	1905	13.37	14.00	1.156	-0.17	0.898	1.038
	LTE Band 25_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	26140	1860	13.48	14.00	1.127	0.15	0.817	0.921
	LTE Band 25_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	26340	1880	13.10	14.00	1.230	0.12	0.848	1.043
	LTE Band 25_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	26590	1905	13.39	14.00	1.151	0.11	0.896	1.031
	LTE Band 25_MIMO2	20M	QPSK	100	0	Edge 4	0mm	Vendor 1	State 3	26140	1860	13.42	14.00	1.143	0.19	0.853	0.975
	LTE Band 25_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	26590	1905	17.36	17.50	1.033	-0.04	1.100	1.136
	LTE Band 25_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	26140	1860	17.27	17.50	1.054	-0.12	1.040	1.097
	LTE Band 25_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	26340	1880	17.47	17.50	1.007	0.07	1.070	1.077
	LTE Band 25_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 2	State 3	26340	1880	13.14	14.00	1.219	0.07	0.919	1.120
	LTE Band 25_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 2	State 3	26140	1860	13.63	14.00	1.089	-0.12	0.975	1.062
	LTE Band 25_MIMO2	20m	QPSK	1	0	Edge 4	0mm	Vendor 2	State 3	26590	1905	13.37	14.00	1.156	-0.03	0.986	1.140



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
09	LTE Band 26_Main	15M	QPSK	1	37	Bottom of Laptop	0mm	Vendor 1	State 2	26865	831.5	22.08	23.00	1.236	-0.16	0.947	1.170
	LTE Band 26_Main	15M	QPSK	36	20	Bottom of Laptop	0mm	Vendor 1	State 2	26865	831.5	21.16	22.00	1.213	-0.13	0.784	0.951
	LTE Band 26_Main	15M	QPSK	75	0	Bottom of Laptop	0mm	Vendor 1	State 2	26865	831.5	21.13	22.00	1.222	-0.03	0.775	0.947
	LTE Band 26_Main	15M	QPSK	1	37	Bottom Face	0mm	Vendor 1	State 3	26865	831.5	20.06	21.50	1.393	-0.16	0.348	0.485
	LTE Band 26_Main	15M	QPSK	36	20	Bottom Face	0mm	Vendor 1	State 3	26865	831.5	19.19	20.50	1.352	-0.19	0.281	0.380
	LTE Band 26_Main	15M	QPSK	1	37	Edge 3	0mm	Vendor 1	State 3	26865	831.5	20.06	21.50	1.393	-0.15	0.790	1.101
	LTE Band 26_Main	15M	QPSK	36	20	Edge 3	0mm	Vendor 1	State 3	26865	831.5	19.19	20.50	1.352	-0.15	0.640	0.865
	LTE Band 26_Main	15M	QPSK	75	0	Edge 3	0mm	Vendor 1	State 3	26865	831.5	19.10	20.50	1.380	-0.17	0.641	0.885
	LTE Band 5B_Main	10M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	20476	831.6	21.68	23.00	1.355	-0.02	0.801	1.086
	LTE Band 26_Main	15M	QPSK	1	37	Bottom of Laptop	0mm	Vendor 2	State 2	26865	831.5	22.08	23.00	1.236	0.06	0.615	0.760
	LTE Band 26_Main	15M	QPSK	1	37	Edge 3	0mm	Vendor 2	State 3	26865	831.5	20.06	21.50	1.393	0.13	0.625	0.871
	LTE Band 5B_Main	10M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	20476	831.6	19.82	21.50	1.472	-0.07	0.581	0.855
	LTE Band 30_Main	10M	QPSK	1	25	Bottom of Laptop	0mm	Vendor 1	State 2	27710	2310	16.23	17.50	1.340	0.07	0.612	0.820
	LTE Band 30_Main	10M	QPSK	25	12	Bottom of Laptop	0mm	Vendor 1	State 2	27710	2310	15.14	16.50	1.368	-0.15	0.499	0.682
	LTE Band 30_Main	10M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	27710	2310	15.03	16.50	1.403	0.05	0.493	0.692
	LTE Band 30_Main	10M	QPSK	1	25	Bottom Face	0mm	Vendor 1	State 3	27710	2310	16.61	17.00	1.094	0.05	0.569	0.622
	LTE Band 30_Main	10M	QPSK	25	12	Bottom Face	0mm	Vendor 1	State 3	27710	2310	15.61	16.00	1.094	0.08	0.445	0.487
	LTE Band 30_Main	10M	QPSK	1	25	Edge 3	0mm	Vendor 1	State 3	27710	2310	16.61	17.00	1.094	0.02	1.000	1.094
	LTE Band 30_Main	10M	QPSK	25	12	Edge 3	0mm	Vendor 1	State 3	27710	2310	15.61	16.00	1.094	-0.17	0.822	0.899
	LTE Band 30_Main	10M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	27710	2310	15.57	16.00	1.104	0.01	0.819	0.904
10	LTE Band 30_Main	10M	QPSK	1	25	Bottom of Laptop	0mm	Vendor 2	State 2	27710	2310	16.23	17.50	1.340	-0.03	0.890	1.192
	LTE Band 30_Main	10M	QPSK	1	25	Edge 3	0mm	Vendor 2	State 3	27710	2310	16.61	17.00	1.094	-0.14	1.040	1.138
	LTE Band 30_MIMO2	10M	QPSK	1	25	Bottom of Laptop	0mm	Vendor 1	State 2	27710	2310	18.70	19.00	1.072	-0.03	0.898	0.962
	LTE Band 30_MIMO2	10M	QPSK	25	12	Bottom of Laptop	0mm	Vendor 1	State 2	27710	2310	18.49	19.00	1.125	-0.01	0.847	0.953
	LTE Band 30_MIMO2	10M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	27710	2310	18.46	19.00	1.132	-0.15	0.849	0.961
	LTE Band 30_MIMO2	10M	QPSK	1	25	Bottom Face	0mm	Vendor 1	State 3	27710	2310	15.23	15.50	1.064	0.07	0.353	0.376
	LTE Band 30_MIMO2	10M	QPSK	25	12	Bottom Face	0mm	Vendor 1	State 3	27710	2310	14.96	15.50	1.132	0.06	0.351	0.397
	LTE Band 30_MIMO2	10M	QPSK	1	25	Edge 3	0mm	Vendor 1	State 3	27710	2310	15.23	15.50	1.064	-0.09	0.350	0.372
	LTE Band 30_MIMO2	10M	QPSK	25	12	Edge 3	0mm	Vendor 1	State 3	27710	2310	14.96	15.50	1.132	0.15	0.319	0.361
	LTE Band 30_MIMO2	10M	QPSK	1	25	Edge 4	0mm	Vendor 1	State 3	27710	2310	15.23	15.50	1.064	0	1.035	1.101
	LTE Band 30_MIMO2	10M	QPSK	25	12	Edge 4	0mm	Vendor 1	State 3	27710	2310	14.96	15.50	1.132	-0.05	0.975	1.104
	LTE Band 30_MIMO2	10M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	27710	2310	14.90	15.50	1.148	0.02	0.955	1.096
	LTE Band 30_MIMO2	10M	QPSK	1	25	Bottom of Laptop	0mm	Vendor 2	State 2	27710	2310	18.70	19.00	1.072	-0.03	1.010	1.082
	LTE Band 30_MIMO2	10M	QPSK	25	12	Edge 4	0mm	Vendor 2	State 3	27710	2310	14.96	15.50	1.132	-0.01	1.050	1.189



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 66_Main	20M	QPSK	1	49	Bottom of Laptop	0mm	Vendor 1	State 2	132072	1720	15.67	16.50	1.211	-0.09	0.783	0.948
	LTE Band 66_Main	20M	QPSK	1	49	Bottom of Laptop	0mm	Vendor 1	State 2	132322	1745	15.54	16.50	1.247	0.17	0.719	0.897
	LTE Band 66_Main	20M	QPSK	1	49	Bottom of Laptop	0mm	Vendor 1	State 2	132572	1770	15.52	16.50	1.253	0.17	0.701	0.878
	LTE Band 66_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	132072	1720	14.74	15.50	1.191	-0.16	0.620	0.739
	LTE Band 66_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 1	State 2	132072	1720	14.68	15.50	1.208	0.19	0.600	0.725
	LTE Band 66_Main	20M	QPSK	1	49	Bottom Face	0mm	Vendor 1	State 3	132072	1720	15.67	16.50	1.211	-0.1	0.471	0.570
	LTE Band 66_Main	20M	QPSK	50	0	Bottom Face	0mm	Vendor 1	State 3	132072	1720	14.74	15.50	1.191	0.19	0.374	0.446
	LTE Band 66_Main	20M	QPSK	1	49	Edge 3	0mm	Vendor 1	State 3	132072	1720	15.67	16.50	1.211	-0.02	0.794	0.961
	LTE Band 66_Main	20M	QPSK	1	49	Edge 3	0mm	Vendor 1	State 3	132322	1745	15.54	16.50	1.247	0.07	0.760	0.948
	LTE Band 66_Main	20M	QPSK	1	49	Edge 3	0mm	Vendor 1	State 3	132572	1770	15.52	16.50	1.253	-0.07	0.786	0.985
	LTE Band 66_Main	20M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	132072	1720	14.74	15.50	1.191	0.17	0.649	0.773
	LTE Band 66_Main	20M	QPSK	100	0	Edge 3	0mm	Vendor 1	State 3	132072	1720	14.68	15.50	1.208	-0.1	0.632	0.763
	LTE Band 66B_Main	15M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	132047	1717.5	15.57	16.50	1.239	-0.02	0.710	0.880
	LTE Band 66B_Main	15M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	132322	1745	15.44	16.50	1.276	-0.14	0.746	0.952
	LTE Band 66B_Main	15M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	132597	1772.5	15.34	16.50	1.306	0.13	0.722	0.943
	LTE Band 66C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	132322	1745	15.50	16.50	1.259	0.02	0.718	0.904
	LTE Band 66C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	132072	1720	15.47	16.50	1.268	0.07	0.692	0.877
	LTE Band 66C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	132572	1770	15.32	16.50	1.312	0.11	0.691	0.907
	LTE Band 66_Main	20M	QPSK	1	49	Bottom of Laptop	0mm	Vendor 2	State 2	132072	1720	15.67	16.50	1.211	-0.02	0.954	1.155
	LTE Band 66_Main	20M	QPSK	1	49	Bottom of Laptop	0mm	Vendor 2	State 2	132322	1745	15.54	16.50	1.247	-0.13	0.913	1.139
	LTE Band 66_Main	20M	QPSK	1	49	Bottom of Laptop	0mm	Vendor 2	State 2	132572	1770	15.52	16.50	1.253	-0.17	0.905	1.134
	LTE Band 66_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	132072	1720	14.74	15.50	1.191	-0.16	0.766	0.912
	LTE Band 66_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	132322	1745	14.58	15.50	1.236	0.13	0.739	0.913
	LTE Band 66_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	132572	1770	14.62	15.50	1.225	0.19	0.707	0.866
	LTE Band 66_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 2	State 2	132072	1720	14.68	15.50	1.208	0.19	0.756	0.913
11	LTE Band 66_Main	20M	QPSK	1	49	Edge 3	0mm	Vendor 2	State 3	132572	1770	15.52	16.50	1.253	-0.16	0.952	1.193
	LTE Band 66_Main	20M	QPSK	1	49	Edge 3	0mm	Vendor 2	State 3	132072	1720	15.67	16.50	1.211	-0.12	0.954	1.155
	LTE Band 66_Main	20M	QPSK	1	49	Edge 3	0mm	Vendor 2	State 3	132322	1745	15.54	16.50	1.247	-0.16	0.935	1.166
	LTE Band 66_Main	20M	QPSK	50	0	Edge 3	0mm	Vendor 2	State 3	132572	1770	14.62	15.50	1.225	0.01	0.731	0.895
	LTE Band 66_Main	20M	QPSK	50	0	Edge 3	0mm	Vendor 2	State 3	132072	1720	14.74	15.50	1.191	-0.02	0.785	0.935
	LTE Band 66_Main	20M	QPSK	50	0	Edge 3	0mm	Vendor 2	State 3	132322	1745	14.58	15.50	1.236	0.07	0.762	0.942
	LTE Band 66_Main	20M	QPSK	100	0	Edge 3	0mm	Vendor 2	State 3	132572	1770	14.58	15.50	1.236	0.01	0.724	0.895
	LTE Band 66B_Main	15M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	132047	1717.5	15.57	16.50	1.239	0.01	0.870	1.078
	LTE Band 66B_Main	15M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	132322	1745	15.44	16.50	1.276	0.11	0.853	1.089
	LTE Band 66B_Main	15M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	132597	1772.5	15.34	16.50	1.306	-0.14	0.852	1.113
	LTE Band 66C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	132322	1745	15.50	16.50	1.259	-0.13	0.865	1.089
	LTE Band 66C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	132072	1720	15.47	16.50	1.268	0.17	0.850	1.078
	LTE Band 66C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	132572	1770	15.32	16.50	1.312	0.08	0.848	1.113



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 66_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	132072	1720	18.26	18.50	1.057	0.17	0.724	0.765
	LTE Band 66_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	132072	1720	18.17	18.50	1.079	-0.14	0.729	0.787
	LTE Band 66_MIMO2	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 1	State 2	132072	1720	18.14	18.50	1.086	0.06	0.733	0.796
	LTE Band 66_MIMO2	20M	QPSK	1	0	Bottom Face	0mm	Vendor 1	State 3	132072	1720	15.40	15.50	1.023	0.09	0.425	0.435
	LTE Band 66_MIMO2	20M	QPSK	50	0	Bottom Face	0mm	Vendor 1	State 3	132072	1720	15.37	15.50	1.030	-0.01	0.407	0.419
	LTE Band 66_MIMO2	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	132072	1720	15.40	15.50	1.023	0.03	0.150	0.153
	LTE Band 66_MIMO2	20M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	132072	1720	15.37	15.50	1.030	0.02	0.185	0.191
	LTE Band 66_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	132072	1720	15.40	15.50	1.023	0.17	0.860	0.880
	LTE Band 66_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	132322	1745	15.15	15.50	1.084	0.07	0.837	0.907
	LTE Band 66_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	132572	1770	15.22	15.50	1.067	0.06	0.847	0.903
	LTE Band 66_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	132072	1720	15.37	15.50	1.030	0.07	0.859	0.885
	LTE Band 66_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	132322	1745	15.36	15.50	1.033	0.08	0.840	0.868
	LTE Band 66_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	132572	1770	15.25	15.50	1.059	0.08	0.861	0.912
	LTE Band 66_MIMO2	20M	QPSK	100	0	Edge 4	0mm	Vendor 1	State 3	132072	1720	15.35	15.50	1.035	-0.15	0.874	0.905
	LTE Band 66_MIMO2	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 2	State 2	132072	1720	18.14	18.50	1.086	-0.16	1.040	1.130
	LTE Band 66_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	132072	1720	18.26	18.50	1.057	-0.06	0.966	1.021
	LTE Band 66_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	132322	1745	17.95	18.50	1.135	0.14	1.010	1.146
	LTE Band 66_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	132572	1770	18.01	18.50	1.119	-0.02	1.050	1.175
	LTE Band 66_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	132072	1720	18.17	18.50	1.079	0.02	0.946	1.021
	LTE Band 66_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	132322	1745	18.10	18.50	1.096	0.07	1.010	1.107
	LTE Band 66_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	132572	1770	18.03	18.50	1.114	-0.12	1.030	1.148
	LTE Band 66_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 2	State 3	132572	1770	15.25	15.50	1.059	0.12	1.050	1.112
	LTE Band 66_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 2	State 3	132072	1720	15.37	15.50	1.030	-0.07	0.917	0.945
	LTE Band 66_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 2	State 3	132322	1745	15.36	15.50	1.033	0.14	0.973	1.005
12	LTE Band 71_Main	20M	QPSK	1	99	Bottom of Laptop	0mm	Vendor 1	State 2	133297	680.5	22.39	23.50	1.291	-0.15	0.905	1.169
	LTE Band 71_Main	20M	QPSK	50	50	Bottom of Laptop	0mm	Vendor 1	State 2	133297	680.5	21.36	22.50	1.300	-0.11	0.731	0.950
	LTE Band 71_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 1	State 2	133297	680.5	21.31	22.50	1.315	-0.09	0.758	0.997
	LTE Band 71_Main	20M	QPSK	1	0	Bottom Face	0mm	Vendor 1	State 3	133297	680.5	23.85	24.50	1.161	0.03	0.431	0.501
	LTE Band 71_Main	20M	QPSK	50	0	Bottom Face	0mm	Vendor 1	State 3	133297	680.5	22.84	23.50	1.164	-0.12	0.344	0.400
	LTE Band 71_Main	20M	QPSK	1	0	Edge 2	0mm	Vendor 1	State 3	133297	680.5	23.85	24.50	1.161	0.08	0.388	0.451
	LTE Band 71_Main	20M	QPSK	50	0	Edge 2	0mm	Vendor 1	State 3	133297	680.5	22.84	23.50	1.164	0.14	0.321	0.374
	LTE Band 71_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	133297	680.5	23.85	24.50	1.161	-0.09	0.829	0.963
	LTE Band 71_Main	20M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	133297	680.5	22.84	23.50	1.164	0.17	0.683	0.795
	LTE Band 71_Main	20M	QPSK	100	0	Edge 3	0mm	Vendor 1	State 3	133297	680.5	22.77	23.50	1.183	0.16	0.631	0.746
	LTE Band 71_Main	20M	QPSK	1	99	Bottom of Laptop	0mm	Vendor 2	State 2	133297	680.5	22.39	23.50	1.291	-0.14	0.887	1.145
	LTE Band 71_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	133297	680.5	23.85	24.50	1.161	0.09	0.507	0.589



<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	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 41_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	40620	2593	17.72	18.00	1.067	62.9	1.006	-0.05	0.574	0.616
	LTE Band 41_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	39750	2506	17.59	18.00	1.099	62.9	1.006	0.01	0.638	0.705
	LTE Band 41_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	40185	2549.5	17.58	18.00	1.102	62.9	1.006	-0.17	0.607	0.673
	LTE Band 41_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	41055	2636.5	17.54	18.00	1.112	62.9	1.006	0.04	0.485	0.542
	LTE Band 41_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	41490	2680	17.70	18.00	1.072	62.9	1.006	-0.16	0.484	0.522
	LTE Band 41_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	40620	2593	16.73	17.00	1.064	62.9	1.006	0.05	0.439	0.470
	LTE Band 41_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 1	State 2	39750	2506	16.63	17.00	1.089	62.9	1.006	0.06	0.411	0.450
	LTE Band 41_Main	20M	QPSK	1	0	Bottom Face	0mm	Vendor 1	State 3	40620	2593	20.36	20.50	1.033	62.9	1.006	0.07	0.375	0.390
	LTE Band 41_Main	20M	QPSK	50	50	Bottom Face	0mm	Vendor 1	State 3	40620	2593	19.41	19.50	1.021	62.9	1.006	0.02	0.295	0.303
	LTE Band 41_Main	20M	QPSK	1	0	Edge 2	0mm	Vendor 1	State 3	40620	2593	20.36	20.50	1.033	62.9	1.006	0.05	0.273	0.284
	LTE Band 41_Main	20M	QPSK	50	50	Edge 2	0mm	Vendor 1	State 3	40620	2593	19.41	19.50	1.021	62.9	1.006	-0.18	0.213	0.219
	LTE Band 41_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	40620	2593	20.36	20.50	1.033	62.9	1.006	-0.07	0.762	0.792
	LTE Band 41_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	39750	2506	20.13	20.50	1.089	62.9	1.006	0.14	0.642	0.703
	LTE Band 41_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	40185	2549.5	19.86	20.50	1.159	62.9	1.006	-0.05	0.710	0.828
	LTE Band 41_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	41055	2636.5	20.07	20.50	1.104	62.9	1.006	-0.07	0.753	0.836
	LTE Band 41_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	41490	2680	20.12	20.50	1.091	62.9	1.006	0	0.667	0.732
	LTE Band 41_Main	20M	QPSK	50	50	Edge 3	0mm	Vendor 1	State 3	40620	2593	19.41	19.50	1.021	62.9	1.006	-0.16	0.599	0.615
	LTE Band 41_Main	20M	QPSK	50	50	Edge 3	0mm	Vendor 1	State 3	39750	2506	19.24	19.50	1.062	62.9	1.006	-0.08	0.525	0.561
	LTE Band 41_Main	20M	QPSK	50	50	Edge 3	0mm	Vendor 1	State 3	40185	2549.5	18.84	19.50	1.164	62.9	1.006	0.17	0.567	0.664
	LTE Band 41_Main	20M	QPSK	50	50	Edge 3	0mm	Vendor 1	State 3	41055	2636.5	19.08	19.50	1.102	62.9	1.006	-0.09	0.632	0.700
	LTE Band 41_Main	20M	QPSK	50	50	Edge 3	0mm	Vendor 1	State 3	41490	2680	19.13	19.50	1.089	62.9	1.006	-0.05	0.271	0.297
	LTE Band 41_Main	20M	QPSK	100	0	Edge 3	0mm	Vendor 1	State 3	40620	2593	19.39	19.50	1.026	62.9	1.006	-0.18	0.604	0.623
	LTE Band 41_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	41055	2636.5	20.07	20.50	1.104	62.9	1.006	-0.11	0.751	0.834
	LTE Band 41C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	41490	2680	20.09	20.50	1.099	62.9	1.006	0.17	0.636	0.703
	LTE Band 41C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	39750	2506	19.21	20.50	1.346	62.9	1.006	-0.16	0.575	0.779
	LTE Band 41C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	40185	2549.5	19.78	20.50	1.180	62.9	1.006	-0.14	0.582	0.691
	LTE Band 41C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	40620	2593	20.06	20.50	1.107	62.9	1.006	0.07	0.714	0.795
	LTE Band 41C_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	41055	2636.5	20.05	20.50	1.109	62.9	1.006	0.05	0.720	0.803
	LTE Band 41_HPUE_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	39750	2506	22.40	23.50	1.288	42.9	1.009	0.14	0.663	0.862
	LTE Band 41_HPUE_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	41055	2636.5	22.07	23.50	1.390	42.9	1.009	-0.04	0.788	1.105
	LTE Band 41_HPUE_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	40185	2549.5	21.76	23.50	1.493	42.9	1.009	-0.05	0.724	1.091
	LTE Band 41_HPUE_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	40620	2593	22.10	23.50	1.380	42.9	1.009	-0.07	0.777	1.082
	LTE Band 41_HPUE_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	41490	2680	22.08	23.50	1.387	42.9	1.009	0.03	0.689	0.964



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	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 41_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	39750	2506	17.59	18.00	1.099	62.9	1.006	-0.05	0.807	0.892
	LTE Band 41_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	40620	2593	17.72	18.00	1.067	62.9	1.006	-0.05	0.742	0.796
	LTE Band 41_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	40185	2549.5	17.58	18.00	1.102	62.9	1.006	-0.17	0.764	0.847
	LTE Band 41_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	41055	2636.5	17.54	18.00	1.112	62.9	1.006	0.04	0.502	0.561
	LTE Band 41_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	41490	2680	17.70	18.00	1.072	62.9	1.006	-0.16	0.586	0.632
	LTE Band 41_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	39750	2506	16.71	17.00	1.069	62.9	1.006	-0.13	0.658	0.708
	LTE Band 41_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	40620	2593	16.73	17.00	1.064	62.9	1.006	0.05	0.405	0.434
	LTE Band 41_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	40185	2549.5	16.72	17.00	1.067	62.9	1.006	0.11	0.601	0.645
	LTE Band 41_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	41055	2636.5	16.70	17.00	1.072	62.9	1.006	-0.11	0.428	0.461
	LTE Band 41_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	41490	2680	16.71	17.00	1.069	62.9	1.006	-0.06	0.497	0.535
	LTE Band 41_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 2	State 2	39750	2506	16.63	17.00	1.089	62.9	1.006	0.03	0.665	0.728
	LTE Band 41_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	41055	2636.5	20.07	20.50	1.104	62.9	1.006	-0.01	0.710	0.789
	LTE Band 41C_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	41490	2680	17.68	18.00	1.076	62.9	1.006	0.19	0.572	0.619
	LTE Band 41C_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	39750	2506	17.53	18.00	1.114	62.9	1.006	0.08	0.765	0.858
	LTE Band 41C_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	40185	2549.5	17.56	18.00	1.107	62.9	1.006	0.16	0.731	0.814
	LTE Band 41C_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	40620	2593	17.65	18.00	1.084	62.9	1.006	0.05	0.701	0.764
	LTE Band 41C_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	41055	2636.5	17.42	18.00	1.143	62.9	1.006	0.18	0.469	0.539
	LTE Band 41_HPUE_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	39750	2506	19.65	21.00	1.365	42.9	1.009	-0.07	0.842	1.159
	LTE Band 41_HPUE_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	40620	2593	19.77	21.00	1.327	42.9	1.009	-0.05	0.579	0.775
	LTE Band 41_HPUE_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	40185	2549.5	19.68	21.00	1.355	42.9	1.009	-0.17	0.811	1.109
	LTE Band 41_HPUE_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	41055	2636.5	19.64	21.00	1.368	42.9	1.009	0.04	0.566	0.781
	LTE Band 41_HPUE_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	41490	2680	19.84	21.00	1.306	42.9	1.009	-0.16	0.608	0.801
	LTE Band 41_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	41055	2636.5	18.70	19.00	1.072			0.02	0.498	0.534
	LTE Band 41_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	41055	2636.5	18.58	19.00	1.102			0.07	0.489	0.539
	LTE Band 41_MIMO2	20M	QPSK	1	0	Bottom Face	0mm	Vendor 1	State 3	41055	2636.5	13.88	14.00	1.028			0.19	0.150	0.154
	LTE Band 41_MIMO2	20M	QPSK	50	0	Bottom Face	0mm	Vendor 1	State 3	41055	2636.5	13.86	14.00	1.033			-0.18	0.159	0.164
	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	41055	2636.5	13.88	14.00	1.028			-0.16	0.158	0.162
	LTE Band 41_MIMO2	20M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	41055	2636.5	13.86	14.00	1.033			0.03	0.147	0.152
	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	41055	2636.5	13.88	14.00	1.028			0.14	0.661	0.680
	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	39750	2506	13.76	14.00	1.057			0.14	1.100	1.162
	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	40185	2549.5	13.60	14.00	1.096			0	1.040	1.140
	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	40620	2593	13.76	14.00	1.057			-0.15	0.790	0.835
	LTE Band 41_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	41490	2680	13.40	14.00	1.148			-0.09	0.580	0.666
	LTE Band 41_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	41055	2636.5	13.86	14.00	1.033			-0.06	0.674	0.696
13	LTE Band 41_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	39750	2506	13.85	14.00	1.035			0.06	1.150	1.190
	LTE Band 41_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	40185	2549.5	13.83	14.00	1.040			0.14	1.060	1.102
	LTE Band 41_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	40620	2593	13.77	14.00	1.054			0.18	0.788	0.831
	LTE Band 41_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	41490	2680	13.45	14.00	1.135			0.1	0.624	0.708
	LTE Band 41_MIMO2	20M	QPSK	100	0	Edge 4	0mm	Vendor 1	State 3	41055	2636.5	13.78	14.00	1.052			-0.09	0.668	0.703
	LTE Band 41_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	41055	2636.5	18.58	19.00	1.102			0.07	0.551	0.607
	LTE Band 41_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	39750	2506	18.51	19.00	1.119			0.11	0.894	1.001
	LTE Band 41_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	40185	2549.5	18.50	19.00	1.122			0.06	0.688	0.772
	LTE Band 41_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	40620	2593	18.47	19.00	1.130			-0.13	0.499	0.564
	LTE Band 41_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	41490	2680	18.38	19.00	1.153			0.14	0.595	0.686
	LTE Band 41_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 2	State 3	39750	2506	13.85	14.00	1.035			-0.13	1.040	1.077



FCC SAR TEST REPORT

Report No. : FA272001

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	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 42_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	42190	3460	19.33	20.00	1.167			0.02	0.775	0.904
	LTE Band 42_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	42590	3500	19.00	20.00	1.259			-0.11	0.631	0.794
	LTE Band 42_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	42990	3540	19.02	20.00	1.253			0.09	0.542	0.679
	LTE Band 42_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	42190	3460	19.23	20.00	1.194			-0.18	0.747	0.892
	LTE Band 42_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	42590	3500	18.94	20.00	1.276			0.15	0.622	0.794
	LTE Band 42_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	42990	3540	18.95	20.00	1.274			-0.09	0.523	0.666
	LTE Band 42_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 1	State 2	42190	3460	19.31	20.00	1.172			-0.08	0.733	0.859
	LTE Band 42_Main	20M	QPSK	1	0	Bottom Face	0mm	Vendor 1	State 3	42990	3540	22.40	23.00	1.148			-0.17	0.365	0.419
	LTE Band 42_Main	20M	QPSK	50	0	Bottom Face	0mm	Vendor 1	State 3	42990	3540	22.28	23.00	1.180			-0.04	0.372	0.439
	LTE Band 42_Main	20M	QPSK	1	0	Edge 2	0mm	Vendor 1	State 3	42990	3540	22.40	23.00	1.148			0.12	0.520	0.597
	LTE Band 42_Main	20M	QPSK	50	0	Edge 2	0mm	Vendor 1	State 3	42990	3540	22.28	23.00	1.180			-0.04	0.467	0.551
	LTE Band 42_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	42990	3540	22.40	23.00	1.148			0.17	0.778	0.893
	LTE Band 42_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	42190	3460	22.26	23.00	1.186			-0.14	0.871	1.033
	LTE Band 42_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	42590	3500	22.29	23.00	1.178			-0.14	0.838	0.987
	LTE Band 42_Main	20M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	42190	3460	22.25	23.00	1.189			0.06	0.938	1.115
	LTE Band 42_Main	20M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	42590	3500	22.26	23.00	1.186			0.1	0.850	1.008
	LTE Band 42_Main	20M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	42990	3540	22.28	23.00	1.180			-0.1	0.845	0.997
	LTE Band 42_Main	20M	QPSK	100	0	Edge 3	0mm	Vendor 1	State 3	42990	3540	22.33	23.00	1.167			0.04	0.909	1.061
	LTE Band 42_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	42190	3460	19.33	20.00	1.167			-0.08	0.974	1.136
	LTE Band 42_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	42590	3500	19.00	20.00	1.259			-0.05	0.706	0.889
	LTE Band 42_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	42990	3540	19.02	20.00	1.253			-0.07	0.657	0.823
	LTE Band 42_Main	20M	QPSK	50	0	Edge 3	0mm	Vendor 2	State 3	42190	3460	22.25	23.00	1.189			0.14	0.462	0.549
	LTE Band 42_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	42190	3460	20.23	20.50	1.064	62.9	1.006	0.11	0.603	0.646
	LTE Band 42_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	42590	3500	19.99	20.50	1.125	62.9	1.006	-0.04	0.640	0.724
	LTE Band 42_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	42990	3540	20.07	20.50	1.104	62.9	1.006	0.08	0.781	0.867
	LTE Band 42_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	42190	3460	19.29	19.50	1.050	62.9	1.006	-0.12	0.495	0.523
	LTE Band 42_MIMO2	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 1	State 2	42190	3460	19.25	19.50	1.059	62.9	1.006	0	0.493	0.525
	LTE Band 42_MIMO2	20M	QPSK	1	0	Bottom Face	0mm	Vendor 1	State 3	42990	3540	16.93	17.00	1.016	62.9	1.006	-0.09	0.165	0.169
	LTE Band 42_MIMO2	20M	QPSK	50	0	Bottom Face	0mm	Vendor 1	State 3	42990	3540	16.01	16.00	0.998	62.9	1.006	-0.17	0.136	0.137
	LTE Band 42_MIMO2	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	42990	3540	16.93	17.00	1.016	62.9	1.006	0.18	0.055	0.056
	LTE Band 42_MIMO2	20M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	42990	3540	16.01	16.00	0.998	62.9	1.006	-0.07	0.043	0.043
	LTE Band 42_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	42990	3540	16.93	17.00	1.016	62.9	1.006	0.07	0.845	0.864
	LTE Band 42_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	42190	3460	16.92	17.00	1.019	62.9	1.006	-0.09	0.751	0.770
	LTE Band 42_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	42590	3500	16.77	17.00	1.054	62.9	1.006	0.01	0.757	0.803
	LTE Band 42_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	42990	3540	16.01	16.00	0.998	62.9	1.006	-0.18	0.703	0.706
	LTE Band 42_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	42190	3460	15.99	16.00	1.002	62.9	1.006	-0.09	0.629	0.634
	LTE Band 42_MIMO2	20M	QPSK	50	0	Edge 4	0mm	Vendor 1	State 3	42590	3500	15.89	16.00	1.026	62.9	1.006	0.19	0.633	0.653
	LTE Band 42_MIMO2	20M	QPSK	100	0	Edge 4	0mm	Vendor 1	State 3	42990	3540	15.97	16.00	1.007	62.9	1.006	-0.02	0.622	0.630
	LTE Band 42_HPUE_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	42990	3540	23.11	23.50	1.094	42.9	1.009	-0.15	0.795	0.878
	LTE Band 42_HPUE_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	42190	3460	22.39	23.50	1.291	42.9	1.009	-0.05	0.715	0.932
	LTE Band 42_HPUE_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	42590	3500	22.19	23.50	1.352	42.9	1.009	-0.1	0.768	1.048
	LTE Band 42C_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	42190	3460	20.09	20.50	1.099	62.9	1.006	0.12	0.731	0.808
	LTE Band 42C_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	42590	3500	19.84	20.50	1.164	62.9	1.006	-0.04	0.606	0.710
	LTE Band 42C_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	42990	3540	19.93	20.50	1.140	62.9	1.006	0.02	0.722	0.828
	LTE Band 42_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	42990	3540	20.07	19.73	0.925	62.9	1.006	-0.03	0.816	0.759
	LTE Band 42_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 2	State 3	42990	3540	16.93	17.00	1.016	62.9	1.006	-0.14	0.926	0.947
	LTE Band 42_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 2	State 3	42190	3460	16.92	17.00	1.019	62.9	1.006	-0.09	0.778	0.797
	LTE Band 42_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 2	State 3	42590	3500	16.77	17.00	1.054	62.9	1.006	0.01	0.845	0.896
	LTE Band 42C_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 2	State 3	42190	3460	16.80	17.00	1.047	62.9	1.006	0.17	0.766	0.807
	LTE Band 42C_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 2	State 3	42590	3500	16.64	17.00	1.086	62.9	1.006	0.16	0.788	0.861
	LTE Band 42C_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 2	State 3	42990	3540	16.79	17.00	1.050	62.9	1.006	-0.04	0.870	0.919
14	LTE Band 42_HPUE_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 2	State 3	42990	3540	19.30	20.00	1.175	42.9	1.009	-0.04	0.996	1.181
	LTE Band 42_HPUE_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 2	State 3	42190	3460	19.38	20.00	1.153	42.9	1.009	0.07	0.864	1.006
	LTE Band 42_HPUE_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 2	State 3	42590	3500	19.12	20.00	1.225	42.9	1.009	-0.14	0.915	1.131



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	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 43_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	45490	3790	19.57	20.00	1.104			-0.12	0.505	0.558
	LTE Band 43_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	45490	3790	19.51	20.00	1.119			0.18	0.482	0.540
	LTE Band 43_Main	20M	QPSK	1	0	Bottom Face	0mm	Vendor 1	State 3	45090	3750	20.85	21.00	1.035			-0.12	0.441	0.456
	LTE Band 43_Main	20M	QPSK	50	0	Bottom Face	0mm	Vendor 1	State 3	45090	3750	20.76	21.00	1.057			-0.14	0.428	0.452
	LTE Band 43_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	45090	3750	20.85	21.00	1.035			0.06	1.140	1.180
	LTE Band 43_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	44690	3710	20.71	21.00	1.069			0.19	1.000	1.069
	LTE Band 43_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	45490	3790	20.73	21.00	1.064			-0.1	1.080	1.149
	LTE Band 43_Main	20M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	45090	3750	20.76	21.00	1.057			0.01	1.030	1.089
	LTE Band 43_Main	20M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	44690	3710	20.59	21.00	1.099			-0.05	0.990	1.088
	LTE Band 43_Main	20M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	45490	3790	20.67	21.00	1.079			-0.07	1.070	1.154
	LTE Band 43_Main	20M	QPSK	100	0	Edge 3	0mm	Vendor 1	State 3	45090	3750	20.73	21.00	1.064			0.02	0.824	0.877
	LTE Band 43_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	45490	3790	19.57	20.00	1.104			-0.07	1.000	1.104
	LTE Band 43_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	44690	3710	19.46	20.00	1.132			0.07	0.806	0.913
	LTE Band 43_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	45090	3750	19.54	20.00	1.112			-0.12	0.942	1.047
	LTE Band 43_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	45490	3790	19.51	20.00	1.119			0.01	0.958	1.072
	LTE Band 43_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	44690	3710	19.37	20.00	1.156			0.18	0.827	0.956
	LTE Band 43_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	45090	3750	19.50	20.00	1.122			0.17	0.968	1.086
	LTE Band 43_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 2	State 2	45490	3790	19.46	20.00	1.132			0.09	0.869	0.984
	LTE Band 43_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	45090	3750	20.85	21.00	1.035			-0.09	0.936	0.969
	LTE Band 43_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	45090	3750	19.99	20.00	1.002	62.9	1.006	0.19	0.679	0.685
	LTE Band 43_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	45090	3750	18.95	19.00	1.012	62.9	1.006	-0.04	0.534	0.543
	LTE Band 43_MIMO2	20M	QPSK	1	0	Bottom Face	0mm	Vendor 1	State 3	45090	3750	17.80	18.00	1.047	62.9	1.006	0.19	0.186	0.196
	LTE Band 43_MIMO2	20M	QPSK	50	24	Bottom Face	0mm	Vendor 1	State 3	45090	3750	16.78	17.00	1.052	62.9	1.006	0.18	0.145	0.153
	LTE Band 43_MIMO2	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	45090	3750	17.80	18.00	1.047	62.9	1.006	-0.06	0.135	0.142
	LTE Band 43_MIMO2	20M	QPSK	50	24	Edge 3	0mm	Vendor 1	State 3	45090	3750	16.78	17.00	1.052	62.9	1.006	-0.07	0.109	0.115
	LTE Band 43_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	45090	3750	17.80	18.00	1.047	62.9	1.006	-0.03	0.726	0.765
	LTE Band 43_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	44690	3710	17.78	18.00	1.052	62.9	1.006	-0.14	0.874	0.925
	LTE Band 43_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	45490	3790	17.77	18.00	1.054	62.9	1.006	-0.1	0.718	0.762
	LTE Band 43_MIMO2	20M	QPSK	50	24	Edge 4	0mm	Vendor 1	State 3	45090	3750	16.78	17.00	1.052	62.9	1.006	0.03	0.571	0.604
	LTE Band 43_MIMO2	20M	QPSK	50	24	Edge 4	0mm	Vendor 1	State 3	44690	3710	16.77	17.00	1.054	62.9	1.006	0.16	0.671	0.712
	LTE Band 43_MIMO2	20M	QPSK	50	24	Edge 4	0mm	Vendor 1	State 3	45490	3790	16.76	17.00	1.057	62.9	1.006	-0.12	0.571	0.607
	LTE Band 43_MIMO2	20M	QPSK	100	0	Edge 4	0mm	Vendor 1	State 3	45090	3750	16.77	17.00	1.054	62.9	1.006	0.13	0.577	0.612
15	LTE Band 43_HPUE_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	44690	3710	19.84	21.00	1.306	42.9	1.009	-0.15	0.904	1.191
	LTE Band 43_HPUE_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	45090	3750	19.82	21.00	1.312	42.9	1.009	-0.01	0.769	1.018
	LTE Band 43_HPUE_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	45490	3790	19.82	21.00	1.312	42.9	1.009	0.17	0.782	1.035
	LTE Band 43C_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	45292	3770.2	17.64	18.00	1.086	62.9	1.006	0.11	0.741	0.810
	LTE Band 43C_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	44690	3710	17.51	18.00	1.119	62.9	1.006	-0.06	0.789	0.889
	LTE Band 43C_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	44991	3740.1	17.62	18.00	1.091	62.9	1.006	0.04	0.666	0.731
	LTE Band 43_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	45490	3790	19.95	20.00	1.012	62.9	1.006	-0.16	0.908	0.924
	LTE Band 43_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	44690	3710	19.98	20.00	1.005	62.9	1.006	-0.05	0.813	0.822
	LTE Band 43_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	45090	3750	19.99	20.00	1.002	62.9	1.006	0.19	0.829	0.836
	LTE Band 43_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	44690	3710	18.88	19.00	1.028	62.9	1.006	0.01	0.586	0.606
	LTE Band 43_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	45090	3750	18.95	19.00	1.012	62.9	1.006	-0.04	0.651	0.662
	LTE Band 43_MIMO2	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	45490	3790	18.81	19.00	1.045	62.9	1.006	-0.04	0.763	0.802
	LTE Band 43_MIMO2	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 2	State 2	44690	3710	18.77	19.00	1.054	62.9	1.006	0.19	0.594	0.630
	LTE Band 43_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 2	State 3	44690	3710	17.78	18.00	1.052	62.9	1.006	0.09	0.739	0.782
	LTE Band 43C_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	44991	3740.1	19.89	20.00	1.026	62.9	1.006	0.14	0.779	0.804
	LTE Band 43C_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	44690	3710	19.79	20.00	1.050	62.9	1.006	0.18	0.748	0.790
	LTE Band 43C_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	45292	3770.2	19.86	20.00	1.033	62.9	1.006	0.06	0.888	0.923
	LTE Band 43_HPUE_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	45490	3790	22.15	23.00	1.216	42.9	1.009	-0.12	0.961	1.179
	LTE Band 43_HPUE_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	44690	3710	22.33	23.00	1.167	42.9	1.009	0.04	0.936	1.102
	LTE Band 43_HPUE_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	45090	3750	22.48	23.00	1.127	42.9	1.009	-0.12	0.859	0.977



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	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 48_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	56640	3690	19.40	20.00	1.148			0.03	0.626	0.719
	LTE Band 48_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	55340	3560	18.99	20.00	1.262			-0.13	0.485	0.612
	LTE Band 48_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	55830	3609	19.16	20.00	1.213			-0.17	0.492	0.597
	LTE Band 48_Main	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	56150	3641	19.34	20.00	1.164			-0.11	0.536	0.624
	LTE Band 48_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	56640	3690	19.25	20.00	1.189			-0.06	0.615	0.731
	LTE Band 48_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	55340	3560	18.82	20.00	1.312			-0.07	0.476	0.625
	LTE Band 48_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	55830	3609	19.04	20.00	1.247			0.02	0.494	0.616
	LTE Band 48_Main	20M	QPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	56150	3641	19.23	20.00	1.194			-0.08	0.540	0.645
	LTE Band 48_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 1	State 2	56640	3690	19.26	20.00	1.186			-0.15	0.617	0.732
	LTE Band 48_Main	20M	QPSK	1	0	Bottom Face	0mm	Vendor 1	State 3	56640	3690	19.40	20.50	1.288			0.16	0.292	0.376
	LTE Band 48_Main	20M	QPSK	50	0	Bottom Face	0mm	Vendor 1	State 3	56640	3690	19.25	20.50	1.334			-0.05	0.237	0.316
	LTE Band 48_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	56640	3690	19.40	20.50	1.288			0.14	0.788	1.015
	LTE Band 48_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	55340	3560	19.09	20.50	1.384			-0.01	0.719	0.995
	LTE Band 48_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	55830	3609	19.16	20.50	1.361			-0.14	0.487	0.663
	LTE Band 48_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	56150	3641	19.34	20.50	1.306			0.06	0.587	0.767
	LTE Band 48_Main	20M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	56640	3690	19.25	20.50	1.334			0.01	0.636	0.848
	LTE Band 48_Main	20M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	55340	3560	19.02	20.50	1.406			0.06	0.620	0.872
	LTE Band 48_Main	20M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	55830	3609	19.09	20.50	1.384			-0.17	0.389	0.538
	LTE Band 48_Main	20M	QPSK	50	0	Edge 3	0mm	Vendor 1	State 3	56150	3641	19.23	20.50	1.340			-0.07	0.473	0.634
	LTE Band 48_Main	20M	QPSK	100	0	Edge 3	0mm	Vendor 1	State 3	56640	3690	19.26	20.50	1.330			-0.13	0.655	0.871
16	LTE Band 48_Main	20M	QPSK	100	0	Bottom of Laptop	0mm	Vendor 2	State 2	56640	3690	19.26	20.00	1.186			-0.02	0.923	1.094
	LTE Band 48_Main	20M	QPSK	1	0	Edge 3	0mm	Vendor 2	State 3	56640	3690	19.40	20.50	1.288			-0.11	0.281	0.362
	LTE Band 48_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 1	State 2	56640	3690	19.15	20.50	1.365	62.9	1.006	0.11	0.435	0.597
	LTE Band 48_MIMO2	20M	QPSK	50	50	Bottom of Laptop	0mm	Vendor 1	State 2	56640	3690	18.14	19.50	1.368	62.9	1.006	0.15	0.336	0.462
	LTE Band 48_MIMO2	20M	QPSK	1	0	Bottom Face	0mm	Vendor 1	State 3	56640	3690	15.45	16.50	1.274	62.9	1.006	0.16	0.153	0.196
	LTE Band 48_MIMO2	20M	QPSK	50	50	Bottom Face	0mm	Vendor 1	State 3	56640	3690	14.72	15.50	1.197	62.9	1.006	-0.19	0.114	0.137
	LTE Band 48_MIMO2	20M	QPSK	1	0	Edge 3	0mm	Vendor 1	State 3	56640	3690	15.45	16.50	1.274	62.9	1.006	0.17	0.064	0.082
	LTE Band 48_MIMO2	20M	QPSK	50	50	Edge 3	0mm	Vendor 1	State 3	56640	3690	14.72	15.50	1.197	62.9	1.006	-0.16	0.051	0.061
	LTE Band 48_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	56640	3690	15.45	16.50	1.274	62.9	1.006	0.04	0.633	0.811
	LTE Band 48_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	55340	3560	15.43	16.50	1.279	62.9	1.006	-0.1	0.599	0.771
	LTE Band 48_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	55830	3609	15.38	16.50	1.294	62.9	1.006	0.14	0.758	0.987
	LTE Band 48_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	56150	3641	15.39	16.50	1.291	62.9	1.006	0.06	0.809	1.051
	LTE Band 48_MIMO2	20M	QPSK	50	50	Edge 4	0mm	Vendor 1	State 3	56640	3690	14.72	15.50	1.197	62.9	1.006	0.07	0.501	0.603
	LTE Band 48_MIMO2	20M	QPSK	50	50	Edge 4	0mm	Vendor 1	State 3	55340	3560	14.64	15.50	1.219	62.9	1.006	0.02	0.495	0.607
	LTE Band 48_MIMO2	20M	QPSK	50	50	Edge 4	0mm	Vendor 1	State 3	55830	3609	14.55	15.50	1.245	62.9	1.006	0.07	0.615	0.770
	LTE Band 48_MIMO2	20M	QPSK	50	50	Edge 4	0mm	Vendor 1	State 3	56150	3641	14.70	15.50	1.202	62.9	1.006	0.08	0.640	0.774
	LTE Band 48C_MIMO2	20M	QPSK	100	0	Edge 4	0mm	Vendor 1	State 3	56640	3690	14.68	15.50	1.208	62.9	1.006	-0.02	0.480	0.583
	LTE Band 48C_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	56640	3690	15.42	16.50	1.282	62.9	1.006	-0.04	0.634	0.818
	LTE Band 48C_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	55340	3560	15.28	16.50	1.324	62.9	1.006	0.11	0.605	0.806
	LTE Band 48C_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	55830	3609	15.38	16.50	1.294	62.9	1.006	0.05	0.728	0.948
	LTE Band 48C_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 1	State 3	56150	3641	15.26	16.50	1.330	62.9	1.006	0.06	0.754	1.009
	LTE Band 48_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	56640	3690	19.15	20.50	1.365	62.9	1.006	-0.04	0.432	0.593
	LTE Band 48_MIMO2	20M	QPSK	1	0	Edge 4	0mm	Vendor 2	State 3	56150	3641	15.39	16.50	1.291	62.9	1.006	0.19	0.760	0.987
	LTE Band 48C_MIMO2	20M	QPSK	1	0	Bottom of Laptop	0mm	Vendor 2	State 2	56640	3690	19.00	20.50	1.413	62.9	1.006	-0.08	0.409	0.581



<5G NR SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	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 n7_Main	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	507000	2535	17.24	17.50	1.062	-0.1	0.644	0.684
	FR1 n7_Main	40M	BPSK	108	0	Bottom of Laptop	0mm	Vendor 1	State 2	507000	2535	17.13	17.50	1.089	0.04	0.600	0.653
	FR1 n7_Main	40M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	507000	2535	18.25	18.50	1.059	0.12	0.432	0.458
	FR1 n7_Main	40M	BPSK	108	0	Bottom Face	0mm	Vendor 1	State 3	507000	2535	18.17	18.50	1.079	-0.08	0.439	0.474
	FR1 n7_Main	40M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	507000	2535	18.25	18.50	1.059	-0.17	0.969	1.026
	FR1 n7_Main	40M	BPSK	108	0	Edge 3	0mm	Vendor 1	State 3	507000	2535	18.17	18.50	1.079	-0.04	0.861	0.929
	FR1 n7_Main	40M	BPSK	216	0	Edge 3	0mm	Vendor 1	State 3	507000	2535	18.02	18.50	1.117	0.15	1.050	1.173
	FR1 n7_Main	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 2	State 2	507000	2535	17.24	17.50	1.062	-0.13	1.050	1.115
	FR1 n7_Main	40M	BPSK	108	0	Bottom of Laptop	0mm	Vendor 2	State 2	507000	2535	17.13	17.50	1.089	-0.13	1.020	1.111
	FR1 n7_Main	40M	BPSK	216	0	Bottom of Laptop	0mm	Vendor 2	State 2	507000	2535	17.15	17.50	1.084	-0.16	0.980	1.062
	FR1 n7_Main	40M	BPSK	216	0	Edge 3	0mm	Vendor 2	State 3	507000	2535	18.02	18.50	1.117	0.1	0.909	1.015
	FR1 n7_MIMO2	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	507000	2535	20.79	21.00	1.050	-0.04	1.020	1.071
	FR1 n7_MIMO2	40M	BPSK	108	0	Bottom of Laptop	0mm	Vendor 1	State 2	507000	2535	20.77	21.00	1.054	0.11	1.090	1.149
17	FR1 n7_MIMO2	40M	BPSK	216	0	Bottom of Laptop	0mm	Vendor 1	State 2	507000	2535	20.71	21.00	1.069	-0.14	1.100	1.176
	FR1 n7_MIMO2	40M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	507000	2535	13.96	15.00	1.271	0.08	0.193	0.245
	FR1 n7_MIMO2	40M	BPSK	108	0	Bottom Face	0mm	Vendor 1	State 3	507000	2535	13.92	15.00	1.282	0.13	0.190	0.244
	FR1 n7_MIMO2	40M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	507000	2535	13.96	15.00	1.271	0.15	0.155	0.197
	FR1 n7_MIMO2	40M	BPSK	108	0	Edge 3	0mm	Vendor 1	State 3	507000	2535	13.92	15.00	1.282	-0.04	0.153	0.196
	FR1 n7_MIMO2	40M	BPSK	1	1	Edge 4	0mm	Vendor 1	State 3	507000	2535	13.96	15.00	1.271	-0.03	0.788	1.001
	FR1 n7_MIMO2	40M	BPSK	108	0	Edge 4	0mm	Vendor 1	State 3	507000	2535	13.92	15.00	1.282	0.01	0.841	1.078
	FR1 n7_MIMO2	40M	BPSK	216	0	Edge 4	0mm	Vendor 1	State 3	507000	2535	13.86	15.00	1.300	0.1	0.828	1.077
	FR1 n7_MIMO2	40M	BPSK	216	0	Bottom of Laptop	0mm	Vendor 2	State 2	507000	2535	20.71	21.00	1.069	-0.04	0.971	1.038
	FR1 n7_MIMO2	40M	BPSK	108	0	Edge 4	0mm	Vendor 2	State 3	507000	2535	13.92	15.00	1.282	0.14	0.711	0.912
	FR1 n12_Main	15M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	141500	707.5	22.70	23.50	1.202	-0.18	0.838	1.007
18	FR1 n12_Main	15M	BPSK	36	0	Bottom of Laptop	0mm	Vendor 1	State 2	141500	707.5	22.58	23.50	1.236	0.06	0.847	1.047
	FR1 n12_Main	15M	BPSK	75	0	Bottom of Laptop	0mm	Vendor 1	State 2	141500	707.5	22.54	23.50	1.247	0.11	0.812	1.013
	FR1 n12_Main	15M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	141500	707.5	22.70	23.50	1.202	0.17	0.370	0.445
	FR1 n12_Main	15M	BPSK	36	0	Bottom Face	0mm	Vendor 1	State 3	141500	707.5	22.58	23.50	1.236	0.14	0.359	0.444
	FR1 n12_Main	15M	BPSK	1	1	Edge 2	0mm	Vendor 1	State 3	141500	707.5	22.70	23.50	1.202	0.11	0.214	0.257
	FR1 n12_Main	15M	BPSK	36	0	Edge 2	0mm	Vendor 1	State 3	141500	707.5	22.58	23.50	1.236	0.13	0.254	0.314
	FR1 n12_Main	15M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	141500	707.5	22.70	23.50	1.202	-0.18	0.560	0.673
	FR1 n12_Main	15M	BPSK	36	0	Edge 3	0mm	Vendor 1	State 3	141500	707.5	22.58	23.50	1.236	0.16	0.591	0.730
	FR1 n12_Main	15M	BPSK	75	0	Edge 3	0mm	Vendor 1	State 3	141500	707.5	22.54	23.50	1.247	0.04	0.482	0.601
	FR1 n12_Main	15M	BPSK	36	0	Bottom of Laptop	0mm	Vendor 2	State 2	141500	707.5	22.58	23.50	1.236	0	0.739	0.913
	FR1 n12_Main	15M	BPSK	36	0	Edge 3	0mm	Vendor 2	State 3	141500	707.5	22.58	23.50	1.236	-0.05	0.341	0.421
	FR1 n13_Main	10M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	156400	782	22.62	23.00	1.091	-0.06	0.881	0.962
	FR1 n13_Main	10M	BPSK	25	0	Bottom of Laptop	0mm	Vendor 1	State 2	156400	782	22.60	23.00	1.096	0.14	0.977	1.071
	FR1 n13_Main	10M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	156400	782	22.59	23.00	1.099	0.05	1.020	1.121
	FR1 n13_Main	10M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	156400	782	22.62	23.50	1.225	0.04	0.420	0.514
	FR1 n13_Main	10M	BPSK	25	0	Bottom Face	0mm	Vendor 1	State 3	156400	782	22.60	23.50	1.230	0.06	0.490	0.603
	FR1 n13_Main	10M	BPSK	1	1	Edge 2	0mm	Vendor 1	State 3	156400	782	22.62	23.50	1.225	-0.03	0.296	0.362
	FR1 n13_Main	10M	BPSK	25	0	Edge 2	0mm	Vendor 1	State 3	156400	782	22.60	23.50	1.230	0.01	0.259	0.319
	FR1 n13_Main	10M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	156400	782	22.62	23.50	1.225	0.01	0.690	0.845
	FR1 n13_Main	10M	BPSK	25	0	Edge 3	0mm	Vendor 1	State 3	156400	782	22.60	23.50	1.230	-0.18	0.772	0.950
	FR1 n13_Main	10M	BPSK	50	0	Edge 3	0mm	Vendor 1	State 3	156400	782	22.59	23.50	1.233	0.08	0.778	0.959
	FR1 n13_Main	10M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	156400	782	22.59	23.00	1.099	0.17	0.853	0.937
19	FR1 n13_Main	10M	BPSK	50	0	Edge 3	0mm	Vendor 2	State 3	156400	782	22.59	23.50	1.233	-0.18	0.947	1.168



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
20	FR1 n14_Main	10M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	158600	793	22.80	23.00	1.047	-0.11	1.010	1.058	
	FR1 n14_Main	10M	BPSK	25	0	Bottom of Laptop	0mm	Vendor 1	State 2	158600	793	22.65	23.00	1.084	0.07	1.070	1.160	
	FR1 n14_Main	10M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	158600	793	22.67	23.00	1.079	0.09	1.030	1.111	
	FR1 n14_Main	10M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	158600	793	21.86	22.50	1.159	0.08	0.401	0.465	
	FR1 n14_Main	10M	BPSK	25	0	Bottom Face	0mm	Vendor 1	State 3	158600	793	21.73	22.50	1.194	-0.17	0.388	0.463	
	FR1 n14_Main	10M	BPSK	1	1	Edge 2	0mm	Vendor 1	State 3	158600	793	21.86	22.50	1.159	0.07	0.204	0.236	
	FR1 n14_Main	10M	BPSK	25	0	Edge 2	0mm	Vendor 1	State 3	158600	793	21.73	22.50	1.194	-0.14	0.170	0.203	
	FR1 n14_Main	10M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	158600	793	21.86	22.50	1.159	0.18	0.740	0.857	
	FR1 n14_Main	10M	BPSK	25	0	Edge 3	0mm	Vendor 1	State 3	158600	793	21.73	22.50	1.194	-0.05	0.610	0.728	
	FR1 n14_Main	10M	BPSK	50	0	Edge 3	0mm	Vendor 1	State 3	158600	793	21.65	22.50	1.216	0.06	0.631	0.767	
	FR1 n14_Main	10M	BPSK	25	0	Bottom of Laptop	0mm	Vendor 2	State 2	158600	793	22.65	23.00	1.084	-0.03	0.927	1.005	
	FR1 n14_Main	10M	BPSK	1	1	Edge 3	0mm	Vendor 2	State 3	158600	793	21.86	22.50	1.159	-0.05	0.874	1.013	
	21	FR1 n25_Main	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	376500	1882.5	16.46	17.50	1.271	-0.19	0.703	0.893
		FR1 n25_Main	40M	BPSK	108	0	Bottom of Laptop	0mm	Vendor 1	State 2	376500	1882.5	16.45	17.50	1.274	0.06	0.705	0.898
FR1 n25_Main		40M	BPSK	216	0	Bottom of Laptop	0mm	Vendor 1	State 2	376500	1882.5	16.36	17.50	1.300	-0.02	0.695	0.904	
FR1 n25_Main		40M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	376500	1882.5	17.76	18.00	1.057	0.14	0.425	0.449	
FR1 n25_Main		40M	BPSK	108	0	Bottom Face	0mm	Vendor 1	State 3	376500	1882.5	17.60	18.00	1.096	-0.12	0.461	0.505	
FR1 n25_Main		40M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	376500	1882.5	17.76	18.00	1.057	-0.16	0.806	0.852	
FR1 n25_Main		40M	BPSK	108	0	Edge 3	0mm	Vendor 1	State 3	376500	1882.5	17.60	18.00	1.096	-0.04	0.963	1.056	
FR1 n25_Main		40M	BPSK	216	0	Edge 3	0mm	Vendor 1	State 3	376500	1882.5	17.56	18.00	1.107	0.19	0.934	1.034	
FR1 n25_Main		40M	BPSK	216	0	Bottom of Laptop	0mm	Vendor 2	State 2	376500	1882.5	16.36	17.50	1.300	-0.01	0.901	1.171	
FR1 n25_Main		40M	BPSK	108	0	Edge 3	0mm	Vendor 2	State 3	376500	1882.5	17.60	18.00	1.096	-0.01	1.080	1.184	
FR1 n25_MIMO2		40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	376500	1882.5	18.64	19.00	1.086	0.17	0.936	1.017	
FR1 n25_MIMO2		40M	BPSK	108	0	Bottom of Laptop	0mm	Vendor 1	State 2	376500	1882.5	18.57	19.00	1.104	0.05	0.946	1.044	
FR1 n25_MIMO2		40M	BPSK	216	0	Bottom of Laptop	0mm	Vendor 1	State 2	376500	1882.5	18.62	19.00	1.091	-0.18	0.959	1.047	
FR1 n25_MIMO2		40M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	376500	1882.5	14.72	15.50	1.197	-0.03	0.319	0.382	
FR1 n25_MIMO2	40M	BPSK	108	0	Bottom Face	0mm	Vendor 1	State 3	376500	1882.5	14.64	15.50	1.219	-0.11	0.307	0.374		
FR1 n25_MIMO2	40M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	376500	1882.5	14.72	15.50	1.197	0.16	0.158	0.189		
FR1 n25_MIMO2	40M	BPSK	108	0	Edge 3	0mm	Vendor 1	State 3	376500	1882.5	14.64	15.50	1.219	0.05	0.145	0.177		
FR1 n25_MIMO2	40M	BPSK	1	1	Edge 4	0mm	Vendor 1	State 3	376500	1882.5	14.72	15.50	1.197	-0.18	0.917	1.097		
FR1 n25_MIMO2	40M	BPSK	108	0	Edge 4	0mm	Vendor 1	State 3	376500	1882.5	14.64	15.50	1.219	-0.03	0.813	0.991		
FR1 n25_MIMO2	40M	BPSK	216	0	Edge 4	0mm	Vendor 1	State 3	376500	1882.5	14.71	15.50	1.199	-0.11	0.932	1.118		
FR1 n25_MIMO2	40M	BPSK	216	0	Bottom of Laptop	0mm	Vendor 2	State 2	376500	1882.5	18.62	19.00	1.091	-0.16	0.987	1.077		
FR1 n25_MIMO2	40M	BPSK	216	0	Edge 4	0mm	Vendor 2	State 3	376500	1882.5	14.71	15.50	1.199	0.12	0.956	1.147		
22	FR1 n26_Main	20M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	166300	831.5	22.65	23.00	1.084	0	1.100	1.192	
	FR1 n26_Main	20M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	166300	831.5	22.59	23.00	1.099	0.19	1.020	1.121	
	FR1 n26_Main	20M	BPSK	100	0	Bottom of Laptop	0mm	Vendor 1	State 2	166300	831.5	22.54	23.00	1.112	0.08	1.010	1.123	
	FR1 n26_Main	20M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	166300	831.5	20.20	21.00	1.202	0.01	0.408	0.491	
	FR1 n26_Main	20M	BPSK	50	0	Bottom Face	0mm	Vendor 1	State 3	166300	831.5	20.09	21.00	1.233	0	0.410	0.506	
	FR1 n26_Main	20M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	166300	831.5	20.20	21.00	1.202	-0.01	0.880	1.058	
	FR1 n26_Main	20M	BPSK	50	0	Edge 3	0mm	Vendor 1	State 3	166300	831.5	20.09	21.00	1.233	-0.02	0.884	1.090	
	FR1 n26_Main	20M	BPSK	100	0	Edge 3	0mm	Vendor 1	State 3	166300	831.5	20.12	21.00	1.225	-0.14	0.879	1.076	
	FR1 n26_Main	20M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 2	State 2	166300	831.5	22.65	23.00	1.084	0.15	0.655	0.710	
	FR1 n26_Main	20M	BPSK	50	0	Edge 3	0mm	Vendor 2	State 3	166300	831.5	20.09	21.00	1.233	-0.05	0.779	0.961	



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	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 n30_Main	10M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	462000	2310	17.58	18.00	1.102	0.1	0.593	0.653
	FR1 n30_Main	10M	BPSK	25	0	Bottom of Laptop	0mm	Vendor 1	State 2	462000	2310	17.47	18.00	1.130	-0.17	0.590	0.667
	FR1 n30_Main	10M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	462000	2310	17.16	18.00	1.213	0.06	0.479	0.581
	FR1 n30_Main	10M	BPSK	25	0	Bottom Face	0mm	Vendor 1	State 3	462000	2310	17.14	18.00	1.219	0.15	0.454	0.553
	FR1 n30_Main	10M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	462000	2310	17.16	18.00	1.213	-0.03	0.786	0.954
	FR1 n30_Main	10M	BPSK	25	0	Edge 3	0mm	Vendor 1	State 3	462000	2310	17.14	18.00	1.219	-0.16	0.709	0.864
	FR1 n30_Main	10M	BPSK	50	0	Edge 3	0mm	Vendor 1	State 3	462000	2310	17.05	18.00	1.245	-0.11	0.710	0.884
	FR1 n30_Main	10M	BPSK	25	0	Bottom of Laptop	0mm	Vendor 2	State 2	462000	2310	17.47	18.00	1.130	-0.17	0.955	1.079
	FR1 n30_Main	10M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 2	State 2	462000	2310	17.58	18.00	1.102	0.12	0.939	1.034
	FR1 n30_Main	10M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	462000	2310	17.48	18.00	1.127	-0.14	0.962	1.084
	FR1 n30_Main	10M	BPSK	1	1	Edge 3	0mm	Vendor 2	State 3	462000	2310	17.16	18.00	1.213	-0.18	0.944	1.145
	FR1 n30_MIMO2	10M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	462000	2310	19.68	20.50	1.208	0.09	0.848	1.024
	FR1 n30_MIMO2	10M	BPSK	25	0	Bottom of Laptop	0mm	Vendor 1	State 2	462000	2310	19.59	20.50	1.233	0.12	0.802	0.989
	FR1 n30_MIMO2	10M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	462000	2310	19.58	20.50	1.236	0.08	0.814	1.006
	FR1 n30_MIMO2	10M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	462000	2310	15.12	16.50	1.374	0.12	0.308	0.423
	FR1 n30_MIMO2	10M	BPSK	25	0	Bottom Face	0mm	Vendor 1	State 3	462000	2310	15.04	16.50	1.400	0.12	0.284	0.397
	FR1 n30_MIMO2	10M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	462000	2310	15.12	16.50	1.374	0.06	0.254	0.349
	FR1 n30_MIMO2	10M	BPSK	25	0	Edge 3	0mm	Vendor 1	State 3	462000	2310	15.04	16.50	1.400	-0.04	0.245	0.343
23	FR1 n30_MIMO2	10M	BPSK	1	1	Edge 4	0mm	Vendor 1	State 3	462000	2310	15.12	16.50	1.374	0.06	0.858	1.179
	FR1 n30_MIMO2	10M	BPSK	25	0	Edge 4	0mm	Vendor 1	State 3	462000	2310	15.04	16.50	1.400	0.05	0.833	1.166
	FR1 n30_MIMO2	10M	BPSK	50	0	Edge 4	0mm	Vendor 1	State 3	462000	2310	15.09	16.50	1.384	0.11	0.798	1.104
	FR1 n30_MIMO2	10M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 2	State 2	462000	2310	19.68	20.50	1.208	-0.18	0.950	1.147
	FR1 n30_MIMO2	10M	BPSK	1	1	Edge 4	0mm	Vendor 2	State 3	462000	2310	15.12	16.50	1.374	0.18	0.752	1.033
	FR1 n66_Main	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	349000	1745	17.87	18.50	1.156	0.01	0.694	0.802
	FR1 n66_Main	40M	BPSK	108	0	Bottom of Laptop	0mm	Vendor 1	State 2	349000	1745	17.81	18.50	1.172	0.14	0.668	0.783
	FR1 n66_Main	40M	BPSK	216	0	Bottom of Laptop	0mm	Vendor 1	State 2	349000	1745	17.84	18.50	1.164	0.13	0.654	0.761
	FR1 n66_Main	40M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	349000	1745	16.45	17.00	1.135	0.11	0.422	0.479
	FR1 n66_Main	40M	BPSK	108	0	Bottom Face	0mm	Vendor 1	State 3	349000	1745	16.39	17.00	1.151	0	0.414	0.476
	FR1 n66_Main	40M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	349000	1745	16.45	17.00	1.135	-0.11	0.753	0.855
	FR1 n66_Main	40M	BPSK	108	0	Edge 3	0mm	Vendor 1	State 3	349000	1745	16.39	17.00	1.151	0.13	0.714	0.822
	FR1 n66_Main	40M	BPSK	216	0	Edge 3	0mm	Vendor 1	State 3	349000	1745	16.39	17.00	1.151	0.13	0.781	0.899
	FR1 n66_Main	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 2	State 2	349000	1745	17.87	18.50	1.156	-0.19	0.970	1.121
24	FR1 n66_Main	40M	BPSK	216	0	Edge 3	0mm	Vendor 2	State 3	349000	1745	16.39	17.00	1.151	-0.16	1.010	1.162
	FR1 n66_MIMO2	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	349000	1745	19.66	20.00	1.081	0.13	0.884	0.956
	FR1 n66_MIMO2	40M	BPSK	108	0	Bottom of Laptop	0mm	Vendor 1	State 2	349000	1745	19.64	20.00	1.086	0.01	0.874	0.950
	FR1 n66_MIMO2	40M	BPSK	216	0	Bottom of Laptop	0mm	Vendor 1	State 2	349000	1745	19.57	20.00	1.104	0.17	0.952	1.051
	FR1 n66_MIMO2	40M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	349000	1745	16.40	17.00	1.148	0.01	0.327	0.375
	FR1 n66_MIMO2	40M	BPSK	108	0	Bottom Face	0mm	Vendor 1	State 3	349000	1745	16.38	17.00	1.153	0.11	0.373	0.430
	FR1 n66_MIMO2	40M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	349000	1745	16.40	17.00	1.148	-0.12	0.181	0.208
	FR1 n66_MIMO2	40M	BPSK	108	0	Edge 3	0mm	Vendor 1	State 3	349000	1745	16.38	17.00	1.153	-0.15	0.177	0.204
	FR1 n66_MIMO2	40M	BPSK	1	1	Edge 4	0mm	Vendor 1	State 3	349000	1745	16.40	17.00	1.148	0.02	0.683	0.784
	FR1 n66_MIMO2	40M	BPSK	108	0	Edge 4	0mm	Vendor 1	State 3	349000	1745	16.38	17.00	1.153	-0.02	0.688	0.794
	FR1 n66_MIMO2	40M	BPSK	216	0	Bottom of Laptop	0mm	Vendor 2	State 2	349000	1745	19.57	20.00	1.104	-0.14	1.040	1.148
	FR1 n66_MIMO2	40M	BPSK	108	0	Edge 4	0mm	Vendor 2	State 3	349000	1745	16.38	17.00	1.153	-0.16	0.947	1.092
	FR1 n66_MIMO2	40M	BPSK	1	1	Edge 4	0mm	Vendor 2	State 3	349000	1745	16.40	17.00	1.148	-0.02	0.938	1.077
	FR1 n66_MIMO2	40M	BPSK	216	0	Edge 4	0mm	Vendor 2	State 3	349000	1745	16.29	17.00	1.178	-0.17	0.944	1.112



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	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 n70_MIMO2	15M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	340500	1702.5	20.50	20.50	1.000	-0.14	0.836	0.836
	FR1 n70_MIMO2	15M	BPSK	36	0	Bottom of Laptop	0mm	Vendor 1	State 2	340500	1702.5	20.46	20.50	1.009	-0.03	0.844	0.852
	FR1 n70_MIMO2	15M	BPSK	75	0	Bottom of Laptop	0mm	Vendor 1	State 2	340500	1702.5	20.39	20.50	1.026	-0.07	0.884	0.907
	FR1 n70_MIMO2	15M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	340500	1702.5	16.50	18.00	1.413	0.05	0.282	0.398
	FR1 n70_MIMO2	15M	BPSK	36	0	Bottom Face	0mm	Vendor 1	State 3	340500	1702.5	16.43	18.00	1.435	0.05	0.307	0.441
	FR1 n70_MIMO2	15M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	340500	1702.5	16.50	18.00	1.413	0.15	0.123	0.174
	FR1 n70_MIMO2	15M	BPSK	36	0	Edge 3	0mm	Vendor 1	State 3	340500	1702.5	16.43	18.00	1.435	0.17	0.109	0.156
	FR1 n70_MIMO2	15M	BPSK	1	1	Edge 4	0mm	Vendor 1	State 3	340500	1702.5	16.50	18.00	1.413	0.03	0.742	1.048
	FR1 n70_MIMO2	15M	BPSK	36	0	Edge 4	0mm	Vendor 1	State 3	340500	1702.5	16.43	18.00	1.435	-0.12	0.714	1.025
	FR1 n70_MIMO2	15M	BPSK	75	0	Edge 4	0mm	Vendor 1	State 3	340500	1702.5	16.42	18.00	1.439	0.03	0.664	0.955
	FR1 n70_MIMO2	15M	BPSK	75	0	Bottom of Laptop	0mm	Vendor 2	State 2	340500	1702.5	20.39	20.50	1.026	-0.09	1.070	1.097
25	FR1 n70_MIMO2	15M	BPSK	1	1	Edge 4	0mm	Vendor 2	State 3	340500	1702.5	16.50	18.00	1.413	-0.18	0.783	1.106
	FR1 n71_Main	20M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	136100	680.5	22.49	23.00	1.125	0.12	0.809	0.910
26	FR1 n71_Main	20M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	136100	680.5	22.36	23.00	1.159	0.04	0.817	0.947
	FR1 n71_Main	20M	BPSK	100	0	Bottom of Laptop	0mm	Vendor 1	State 2	136100	680.5	22.35	23.00	1.161	-0.05	0.801	0.930
	FR1 n71_Main	20M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	136100	680.5	22.49	23.50	1.262	-0.15	0.260	0.328
	FR1 n71_Main	20M	BPSK	50	0	Bottom Face	0mm	Vendor 1	State 3	136100	680.5	22.36	23.00	1.159	0.1	0.230	0.267
	FR1 n71_Main	20M	BPSK	1	1	Edge 2	0mm	Vendor 1	State 3	136100	680.5	22.49	23.50	1.262	-0.05	0.301	0.380
	FR1 n71_Main	20M	BPSK	50	0	Edge 2	0mm	Vendor 1	State 3	136100	680.5	22.36	23.00	1.159	0	0.227	0.263
	FR1 n71_Main	20M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	136100	680.5	22.49	23.50	1.262	0.19	0.570	0.719
	FR1 n71_Main	20M	BPSK	50	0	Edge 3	0mm	Vendor 1	State 3	136100	680.5	22.36	23.00	1.159	0.11	0.446	0.517
	FR1 n71_Main	20M	BPSK	100	0	Edge 3	0mm	Vendor 1	State 3	136100	680.5	22.35	23.00	1.161	-0.1	0.535	0.621
	FR1 n71_Main	20M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2	136100	680.5	22.36	23.00	1.159	0.11	0.574	0.665
	FR1 n71_Main	20M	BPSK	1	1	Edge 3	0mm	Vendor 2	State 3	136100	680.5	22.49	23.50	1.262	-0.15	0.396	0.500



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	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 n41_Main	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	518598	2592.99	17.18	18.00	1.208	-0.09	0.825	0.996
	FR1 n41_Main	100M	BPSK	135	0	Bottom of Laptop	0mm	Vendor 1	State 2	518598	2592.99	16.98	18.00	1.265	0.04	0.766	0.969
	FR1 n41_Main	100M	BPSK	270	0	Bottom of Laptop	0mm	Vendor 1	State 2	518598	2592.99	16.94	18.00	1.276	0.04	0.744	0.950
	FR1 n41_Main	100M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	518598	2592.99	17.18	18.50	1.355	0.19	0.331	0.449
	FR1 n41_Main	100M	BPSK	135	0	Bottom Face	0mm	Vendor 1	State 3	518598	2592.99	16.98	18.50	1.419	0.18	0.327	0.464
	FR1 n41_Main	100M	BPSK	270	0	Bottom Face	0mm	Vendor 1	State 3	518598	2592.99	16.94	18.50	1.432	-0.12	0.295	0.422
	FR1 n41_Main	100M	BPSK	1	1	Edge 2	0mm	Vendor 1	State 3	518598	2592.99	17.18	18.50	1.355	0.19	0.183	0.248
	FR1 n41_Main	100M	BPSK	135	0	Edge 2	0mm	Vendor 1	State 3	518598	2592.99	16.98	18.50	1.419	-0.09	0.216	0.307
	FR1 n41_Main	100M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	518598	2592.99	17.18	18.50	1.355	0.09	0.768	1.041
	FR1 n41_Main	100M	BPSK	135	0	Edge 3	0mm	Vendor 1	State 3	518598	2592.99	16.98	18.50	1.419	0.04	0.742	1.053
	FR1 n41_Main	100M	BPSK	270	0	Edge 3	0mm	Vendor 1	State 3	518598	2592.99	16.94	18.50	1.432	-0.03	0.624	0.894
27	FR1 n41_Main	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 2	State 2	518598	2592.99	17.18	18.00	1.208	-0.01	0.945	1.141
	FR1 n41_Main	100M	BPSK	135	0	Edge 3	0mm	Vendor 2	State 3	518598	2592.99	16.98	18.50	1.419	-0.06	0.492	0.698
	FR1 n41_MIMO2	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	518598	2592.99	21.19	21.50	1.074	-0.02	1.010	1.085
	FR1 n41_MIMO2	100M	BPSK	135	0	Bottom of Laptop	0mm	Vendor 1	State 2	518598	2592.99	21.13	21.50	1.089	0.04	0.935	1.018
	FR1 n41_MIMO2	100M	BPSK	270	0	Bottom of Laptop	0mm	Vendor 1	State 2	518598	2592.99	21.04	21.50	1.112	0.07	0.939	1.044
	FR1 n41_MIMO2	100M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	518598	2592.99	14.23	15.00	1.194	0.02	0.253	0.302
	FR1 n41_MIMO2	100M	BPSK	135	0	Bottom Face	0mm	Vendor 1	State 3	518598	2592.99	14.17	15.00	1.211	-0.01	0.249	0.301
	FR1 n41_MIMO2	100M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	518598	2592.99	14.23	15.00	1.194	0.03	0.209	0.250
	FR1 n41_MIMO2	100M	BPSK	135	0	Edge 3	0mm	Vendor 1	State 3	518598	2592.99	14.17	15.00	1.211	-0.03	0.242	0.293
	FR1 n41_MIMO2	100M	BPSK	1	1	Edge 4	0mm	Vendor 1	State 3	518598	2592.99	14.23	15.00	1.194	-0.03	0.905	1.081
	FR1 n41_MIMO2	100M	BPSK	135	0	Edge 4	0mm	Vendor 1	State 3	518598	2592.99	14.17	15.00	1.211	0.04	0.929	1.125
	FR1 n41_MIMO2	100M	BPSK	270	0	Edge 4	0mm	Vendor 1	State 3	518598	2592.99	14.13	15.00	1.222	0.09	0.869	1.062
	FR1 n41_MIMO2	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 2	State 2	518598	2592.99	21.19	21.50	1.074	-0.04	0.847	0.910
	FR1 n41_MIMO2	100M	BPSK	135	0	Edge 4	0mm	Vendor 2	State 3	518598	2592.99	14.17	15.00	1.211	-0.18	0.768	0.930
	FR1 n41_MIMO1	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2/3	518598	2592.99	14.14	14.50	1.086	0.17	0.324	0.352
	FR1 n41_MIMO1	100M	BPSK	135	0	Bottom of Laptop	0mm	Vendor 1	State 2/3	518598	2592.99	14.09	14.50	1.099	-0.04	0.316	0.347
	FR1 n41_MIMO1	100M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 2/3	518598	2592.99	14.14	14.50	1.086	-0.08	0.222	0.241
	FR1 n41_MIMO1	100M	BPSK	135	0	Bottom Face	0mm	Vendor 1	State 2/3	518598	2592.99	14.09	14.50	1.099	0.05	0.247	0.271
	FR1 n41_MIMO1	100M	BPSK	1	1	Edge 2	0mm	Vendor 1	State 2/3	518598	2592.99	14.14	14.50	1.086	-0.01	1.020	1.108
	FR1 n41_MIMO1	100M	BPSK	135	0	Edge 2	0mm	Vendor 1	State 2/3	518598	2592.99	14.09	14.50	1.099	-0.01	0.921	1.012
	FR1 n41_MIMO1	100M	BPSK	270	0	Edge 2	0mm	Vendor 1	State 2/3	518598	2592.99	14.09	14.50	1.099	0.1	0.796	0.875
	FR1 n41_MIMO1	100M	BPSK	1	1	Edge 2	0mm	Vendor 2	State 2/3	518598	2592.99	14.14	14.50	1.086	-0.17	0.752	0.817
	FR1 n41_Aux	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2/3	518598	2592.99	16.93	17.50	1.140	0.12	0.854	0.974
	FR1 n41_Aux	100M	BPSK	135	0	Bottom of Laptop	0mm	Vendor 1	State 2/3	518598	2592.99	16.81	17.50	1.172	-0.1	0.814	0.954
	FR1 n41_Aux	100M	BPSK	270	0	Bottom of Laptop	0mm	Vendor 1	State 2/3	518598	2592.99	16.71	17.50	1.199	-0.04	0.764	0.916
	FR1 n41_Aux	100M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 2/3	518598	2592.99	16.93	17.50	1.140	-0.18	0.459	0.523
	FR1 n41_Aux	100M	BPSK	135	0	Bottom Face	0mm	Vendor 1	State 2/3	518598	2592.99	16.81	17.50	1.172	0.08	0.439	0.515
	FR1 n41_Aux	100M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 2/3	518598	2592.99	16.93	17.50	1.140	0.05	0.847	0.966
	FR1 n41_Aux	100M	BPSK	135	0	Edge 3	0mm	Vendor 1	State 2/3	518598	2592.99	16.81	17.50	1.172	-0.06	0.727	0.852
	FR1 n41_Aux	100M	BPSK	270	0	Edge 3	0mm	Vendor 1	State 2/3	518598	2592.99	16.71	17.50	1.199	-0.14	0.801	0.961
	FR1 n41_Aux	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 2	State 2/3	518598	2592.99	16.93	17.50	1.140	-0.12	0.959	1.093



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	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 n48_Main	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	641666	3624.99	19.12	20.00	1.225	0.1	0.699	0.856
	FR1 n48_Main	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	638000	3570	19.04	20.00	1.247	-0.02	0.657	0.820
	FR1 n48_Main	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	645332	3679.98	19.07	20.00	1.239	-0.17	0.840	1.041
	FR1 n48_Main	40M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	641666	3624.99	18.96	20.00	1.271	0.19	0.718	0.912
	FR1 n48_Main	40M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	638000	3570	18.91	20.00	1.285	-0.16	0.680	0.874
	FR1 n48_Main	40M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	645332	3679.98	18.93	20.00	1.279	0.19	0.787	1.007
	FR1 n48_Main	40M	BPSK	100	0	Bottom of Laptop	0mm	Vendor 1	State 2	641666	3624.99	18.96	20.00	1.271	-0.16	0.749	0.952
	FR1 n48_Main	40M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	641666	3624.99	20.28	21.00	1.180	0.17	0.185	0.218
	FR1 n48_Main	40M	BPSK	50	0	Bottom Face	0mm	Vendor 1	State 3	641666	3624.99	20.06	21.00	1.242	-0.01	0.188	0.233
	FR1 n48_Main	40M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	641666	3624.99	20.28	21.00	1.180	0.18	0.247	0.292
	FR1 n48_Main	40M	BPSK	50	0	Edge 3	0mm	Vendor 1	State 3	641666	3624.99	20.06	21.00	1.242	-0.07	0.269	0.334
	FR1 n48_Main	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 2	State 2	645332	3679.98	19.07	20.00	1.239	-0.15	0.890	1.103
	FR1 n48_Main	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 2	State 2	638000	3570	19.04	20.00	1.247	0.05	0.650	0.811
	FR1 n48_Main	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 2	State 2	641666	3624.99	19.12	20.00	1.225	-0.12	0.715	0.876
	FR1 n48_Main	40M	BPSK	1	1	Edge 3	0mm	Vendor 2	State 3	641666	3624.99	20.28	21.00	1.180	0.14	0.338	0.399
	FR1 n48_Main	40M	BPSK	1	1	Edge 3	0mm	Vendor 2	State 3	638000	3570	20.23	21.00	1.194	-0.06	0.384	0.458
	FR1 n48_Main	40M	BPSK	1	1	Edge 3	0mm	Vendor 2	State 3	645332	3679.98	20.18	21.00	1.208	-0.12	0.332	0.401
	FR1 n48_Main	40M	BPSK	50	0	Edge 3	0mm	Vendor 2	State 3	641666	3624.99	20.06	21.00	1.242	-0.19	0.317	0.394
	FR1 n48_Main	40M	BPSK	50	0	Edge 3	0mm	Vendor 2	State 3	638000	3570	20.02	21.00	1.253	-0.11	0.346	0.434
	FR1 n48_Main	40M	BPSK	50	0	Edge 3	0mm	Vendor 2	State 3	645332	3679.98	19.97	21.00	1.268	-0.17	0.323	0.409
	FR1 n48_Main	40M	BPSK	100	0	Edge 3	0mm	Vendor 2	State 3	641666	3624.99	20.04	21.00	1.247	-0.12	0.328	0.409
	FR1 n48_MIMO2	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	641666	3624.99	18.12	18.50	1.091	-0.02	1.010	1.102
	FR1 n48_MIMO2	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	638000	3570	18.06	18.50	1.107	0.03	0.634	0.702
	FR1 n48_MIMO2	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	645332	3679.98	17.99	18.50	1.125	-0.09	0.779	0.876
	FR1 n48_MIMO2	40M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	641666	3624.99	17.94	18.50	1.138	-0.18	0.905	1.030
	FR1 n48_MIMO2	40M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	638000	3570	17.87	18.50	1.156	-0.15	0.608	0.703
	FR1 n48_MIMO2	40M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2	645332	3679.98	17.83	18.50	1.167	-0.08	0.621	0.725
	FR1 n48_MIMO2	40M	BPSK	100	0	Bottom of Laptop	0mm	Vendor 1	State 2	641666	3624.99	17.93	18.50	1.140	0.01	0.947	1.080
	FR1 n48_MIMO2	40M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	641666	3624.99	15.66	16.00	1.081	-0.03	0.231	0.250
	FR1 n48_MIMO2	40M	BPSK	50	0	Bottom Face	0mm	Vendor 1	State 3	641666	3624.99	15.42	16.00	1.143	0.07	0.219	0.250
	FR1 n48_MIMO2	40M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	641666	3624.99	15.66	16.00	1.081	0.04	0.078	0.084
	FR1 n48_MIMO2	40M	BPSK	50	0	Edge 3	0mm	Vendor 1	State 3	641666	3624.99	15.42	16.00	1.143	0	0.083	0.095
28	FR1 n48_MIMO2	40M	BPSK	1	1	Edge 4	0mm	Vendor 1	State 3	641666	3624.99	15.66	16.00	1.081	0.12	1.080	1.168
	FR1 n48_MIMO2	40M	BPSK	1	1	Edge 4	0mm	Vendor 1	State 3	638000	3570	15.61	16.00	1.094	0.18	0.582	0.637
	FR1 n48_MIMO2	40M	BPSK	1	1	Edge 4	0mm	Vendor 1	State 3	645332	3679.98	15.48	16.00	1.127	0.13	0.895	1.009
	FR1 n48_MIMO2	40M	BPSK	50	0	Edge 4	0mm	Vendor 1	State 3	641666	3624.99	15.42	16.00	1.143	-0.01	0.841	0.961
	FR1 n48_MIMO2	40M	BPSK	50	0	Edge 4	0mm	Vendor 1	State 3	638000	3570	15.38	16.00	1.153	0.19	0.618	0.713
	FR1 n48_MIMO2	40M	BPSK	50	0	Edge 4	0mm	Vendor 1	State 3	645332	3679.98	15.39	16.00	1.151	-0.08	0.739	0.850
	FR1 n48_MIMO2	40M	BPSK	100	0	Edge 4	0mm	Vendor 1	State 3	641666	3624.99	15.44	16.00	1.138	0.18	1.000	1.138
	FR1 n48_MIMO2	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 2	State 2	641666	3624.99	18.12	18.50	1.091	-0.08	0.907	0.990
	FR1 n48_MIMO2	40M	BPSK	1	1	Edge 4	0mm	Vendor 2	State 3	641666	3624.99	15.66	16.00	1.081	0.03	0.854	0.924



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	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 n48_MIMO1	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2/3	645332	3679.98	13.29	14.50	1.321	-0.09	0.258	0.341
	FR1 n48_MIMO1	40M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2/3	645332	3679.98	13.24	14.50	1.337	0.15	0.272	0.364
	FR1 n48_MIMO1	40M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 2/3	645332	3679.98	13.29	14.50	1.321	0.04	0.157	0.207
	FR1 n48_MIMO1	40M	BPSK	50	0	Bottom Face	0mm	Vendor 1	State 2/3	645332	3679.98	13.24	14.50	1.337	-0.04	0.181	0.242
	FR1 n48_MIMO1	40M	BPSK	1	1	Edge 2	0mm	Vendor 1	State 2/3	645332	3679.98	13.29	14.50	1.321	-0.04	0.503	0.665
	FR1 n48_MIMO1	40M	BPSK	1	1	Edge 2	0mm	Vendor 1	State 2/3	638000	3570	12.82	14.50	1.472	0.08	0.451	0.664
	FR1 n48_MIMO1	40M	BPSK	1	1	Edge 2	0mm	Vendor 1	State 2/3	641666	3624.99	13.23	14.50	1.340	0.1	0.593	0.794
	FR1 n48_MIMO1	40M	BPSK	50	0	Edge 2	0mm	Vendor 1	State 2/3	645332	3679.98	13.24	14.50	1.337	-0.09	0.669	0.894
	FR1 n48_MIMO1	40M	BPSK	50	0	Edge 2	0mm	Vendor 1	State 2/3	638000	3570	12.75	14.50	1.496	-0.04	0.687	1.028
	FR1 n48_MIMO1	40M	BPSK	50	0	Edge 2	0mm	Vendor 1	State 2/3	641666	3624.99	13.18	14.50	1.355	-0.13	0.832	1.128
	FR1 n48_MIMO1	40M	BPSK	100	0	Edge 2	0mm	Vendor 1	State 2/3	645332	3679.98	13.21	14.50	1.346	-0.11	0.652	0.878
	FR1 n48_MIMO1	40M	BPSK	50	0	Edge 2	0mm	Vendor 2	State 2/3	641666	3624.99	13.18	14.50	1.355	-0.15	0.794	1.076
	FR1 n48_Aux	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2/3	641666	3624.99	19.58	20.50	1.236	0.09	0.512	0.633
	FR1 n48_Aux	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2/3	638000	3570	19.50	20.50	1.259	-0.02	0.640	0.806
	FR1 n48_Aux	40M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2/3	645332	3679.98	19.52	20.50	1.253	-0.07	0.450	0.564
	FR1 n48_Aux	40M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2/3	641666	3624.99	19.48	20.50	1.265	0.04	0.631	0.798
	FR1 n48_Aux	40M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2/3	638000	3570	19.46	20.50	1.271	0.07	0.836	1.062
	FR1 n48_Aux	40M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 1	State 2/3	645332	3679.98	19.42	20.50	1.282	0.14	0.565	0.725
	FR1 n48_Aux	40M	BPSK	100	0	Bottom of Laptop	0mm	Vendor 1	State 2/3	641666	3624.99	19.46	20.50	1.271	-0.04	0.606	0.770
	FR1 n48_Aux	40M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 2/3	641666	3624.99	19.58	20.50	1.236	0.05	0.151	0.187
	FR1 n48_Aux	40M	BPSK	50	0	Bottom Face	0mm	Vendor 1	State 2/3	641666	3624.99	19.48	20.50	1.265	0.14	0.214	0.271
	FR1 n48_Aux	40M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 2/3	641666	3624.99	19.58	20.50	1.236	-0.16	0.252	0.311
	FR1 n48_Aux	40M	BPSK	50	0	Edge 3	0mm	Vendor 1	State 2/3	641666	3624.99	19.48	20.50	1.265	-0.07	0.336	0.425
	FR1 n48_Aux	40M	BPSK	50	0	Bottom of Laptop	0mm	Vendor 2	State 2/3	638000	3570	19.46	20.50	1.271	-0.1	0.622	0.790



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	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 n77_Main	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	656000	3840	17.78	18.00	1.052	-0.16	0.552	0.581
	FR1 n77_Main	100M	BPSK	135	0	Bottom of Laptop	0mm	Vendor 1	State 2	656000	3840	17.75	18.00	1.059	-0.14	0.515	0.546
	FR1 n77_Main	100M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	656000	3840	22.24	22.50	1.062	0.1	0.418	0.444
	FR1 n77_Main	100M	BPSK	135	0	Bottom Face	0mm	Vendor 1	State 3	656000	3840	22.05	22.50	1.109	-0.07	0.396	0.439
	FR1 n77_Main	100M	BPSK	1	1	Edge 2	0mm	Vendor 1	State 3	656000	3840	22.24	22.50	1.062	-0.03	0.722	0.767
	FR1 n77_Main	100M	BPSK	135	0	Edge 2	0mm	Vendor 1	State 3	656000	3840	22.05	22.50	1.109	-0.11	0.627	0.695
	FR1 n77_Main	100M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	656000	3840	22.24	22.50	1.062	-0.07	1.010	1.072
	FR1 n77_Main	100M	BPSK	135	0	Edge 3	0mm	Vendor 1	State 3	656000	3840	22.05	22.50	1.109	-0.12	0.853	0.946
	FR1 n77_Main	100M	BPSK	270	0	Edge 3	0mm	Vendor 1	State 3	656000	3840	21.99	22.50	1.125	0.04	0.867	0.975
	FR1 n77_Main	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 2	State 2	656000	3840	17.78	18.00	1.052	-0.03	0.952	1.001
	FR1 n77_Main	100M	BPSK	135	0	Bottom of Laptop	0mm	Vendor 2	State 2	656000	3840	17.75	18.00	1.059	-0.14	0.922	0.977
	FR1 n77_Main	100M	BPSK	270	0	Bottom of Laptop	0mm	Vendor 2	State 2	656000	3840	17.74	18.00	1.062	-0.08	0.832	0.883
29	FR1 n77_Main	100M	BPSK	1	1	Edge 3	0mm	Vendor 2	State 3	656000	3840	22.24	22.50	1.062	-0.12	1.120	1.189
	FR1 n77_Main	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	633332	3499.98	17.25	18.00	1.189	0.12	0.867	1.030
	FR1 n77_Main	100M	BPSK	135	0	Bottom of Laptop	0mm	Vendor 1	State 2	633332	3499.98	17.13	18.00	1.222	-0.08	0.784	0.958
	FR1 n77_Main	100M	BPSK	270	0	Bottom of Laptop	0mm	Vendor 1	State 2	633332	3499.98	17.14	18.00	1.219	0.02	0.706	0.861
	FR1 n77_Main	100M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	633332	3499.98	22.15	22.50	1.084	0.04	0.246	0.267
	FR1 n77_Main	100M	BPSK	135	0	Bottom Face	0mm	Vendor 1	State 3	633332	3499.98	22.10	22.50	1.096	-0.14	0.233	0.255
	FR1 n77_Main	100M	BPSK	1	1	Edge 2	0mm	Vendor 1	State 3	633332	3499.98	22.15	22.50	1.084	-0.18	0.425	0.461
	FR1 n77_Main	100M	BPSK	135	0	Edge 2	0mm	Vendor 1	State 3	633332	3499.98	22.10	22.50	1.096	-0.19	0.369	0.405
	FR1 n77_Main	100M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	633332	3499.98	22.15	22.50	1.084	-0.11	0.497	0.539
	FR1 n77_Main	100M	BPSK	135	0	Edge 3	0mm	Vendor 1	State 3	633332	3499.98	22.10	22.50	1.096	0.03	0.595	0.652
	FR1 n77_Main	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 2	State 2	633332	3499.98	17.25	18.00	1.189	-0.05	0.879	1.045
	FR1 n77_Main	100M	BPSK	135	0	Edge 3	0mm	Vendor 2	State 3	633332	3499.98	22.10	22.50	1.096	-0.05	0.513	0.562
	FR1 n77_MIMO2	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	656000	3840	16.62	17.50	1.225	-0.08	0.379	0.464
	FR1 n77_MIMO2	100M	BPSK	135	0	Bottom of Laptop	0mm	Vendor 1	State 2	656000	3840	16.55	17.50	1.245	0.19	0.484	0.602
	FR1 n77_MIMO2	100M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	656000	3840	14.48	15.50	1.265	-0.16	0.145	0.183
	FR1 n77_MIMO2	100M	BPSK	135	0	Bottom Face	0mm	Vendor 1	State 3	656000	3840	14.41	15.50	1.285	0.1	0.159	0.204
	FR1 n77_MIMO2	100M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	656000	3840	14.48	15.50	1.265	0.14	0.137	0.173
	FR1 n77_MIMO2	100M	BPSK	135	0	Edge 3	0mm	Vendor 1	State 3	656000	3840	14.41	15.50	1.285	-0.12	0.155	0.199
	FR1 n77_MIMO2	100M	BPSK	1	1	Edge 4	0mm	Vendor 1	State 3	656000	3840	14.48	15.50	1.265	0.02	0.567	0.717
	FR1 n77_MIMO2	100M	BPSK	135	0	Edge 4	0mm	Vendor 1	State 3	656000	3840	14.41	15.50	1.285	-0.18	0.627	0.806
	FR1 n77_MIMO2	100M	BPSK	270	0	Edge 4	0mm	Vendor 1	State 3	656000	3840	14.42	15.50	1.282	0.04	0.670	0.859
	FR1 n77_MIMO2	100M	BPSK	135	0	Bottom of Laptop	0mm	Vendor 2	State 2	656000	3840	16.55	17.50	1.245	0.19	0.669	0.833
	FR1 n77_MIMO2	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 2	State 2	656000	3840	16.62	17.50	1.225	-0.08	0.531	0.650
	FR1 n77_MIMO2	100M	BPSK	270	0	Bottom of Laptop	0mm	Vendor 2	State 2	656000	3840	16.52	17.50	1.253	-0.18	0.853	1.069
	FR1 n77_MIMO2	100M	BPSK	270	0	Edge 4	0mm	Vendor 2	State 3	656000	3840	14.42	15.50	1.282	-0.18	0.923	1.184
	FR1 n77_MIMO2	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2	633332	3499.98	16.70	17.50	1.202	-0.03	0.376	0.452
	FR1 n77_MIMO2	100M	BPSK	135	0	Bottom of Laptop	0mm	Vendor 1	State 2	633332	3499.98	16.66	17.50	1.213	-0.16	0.340	0.413
	FR1 n77_MIMO2	100M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 3	633332	3499.98	14.59	15.50	1.233	-0.08	0.189	0.233
	FR1 n77_MIMO2	100M	BPSK	135	0	Bottom Face	0mm	Vendor 1	State 3	633332	3499.98	14.51	15.50	1.256	-0.04	0.158	0.198
	FR1 n77_MIMO2	100M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 3	633332	3499.98	14.59	15.50	1.233	-0.04	0.060	0.074
	FR1 n77_MIMO2	100M	BPSK	135	0	Edge 3	0mm	Vendor 1	State 3	633332	3499.98	14.51	15.50	1.256	0.09	0.065	0.082
	FR1 n77_MIMO2	100M	BPSK	1	1	Edge 4	0mm	Vendor 1	State 3	633332	3499.98	14.59	15.50	1.233	0.06	0.813	1.003
	FR1 n77_MIMO2	100M	BPSK	135	0	Edge 4	0mm	Vendor 1	State 3	633332	3499.98	14.51	15.50	1.256	0.11	0.585	0.735
	FR1 n77_MIMO2	100M	BPSK	270	0	Edge 4	0mm	Vendor 1	State 3	633332	3499.98	14.39	15.50	1.291	0	0.569	0.735
	FR1 n77_MIMO2	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 2	State 2	633332	3499.98	16.70	17.50	1.202	0.06	0.335	0.403
	FR1 n77_MIMO2	100M	BPSK	1	1	Edge 4	0mm	Vendor 2	State 3	633332	3499.98	14.59	15.50	1.233	-0.03	0.721	0.889



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	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 n77_MIMO1	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2/3	656000	3840	14.17	15.00	1.211	0.19	0.250	0.303
	FR1 n77_MIMO1	100M	BPSK	135	0	Bottom of Laptop	0mm	Vendor 1	State 2/3	656000	3840	14.13	15.00	1.222	0.03	0.243	0.297
	FR1 n77_MIMO1	100M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 2/3	656000	3840	14.17	15.00	1.211	0.16	0.192	0.232
	FR1 n77_MIMO1	100M	BPSK	135	0	Bottom Face	0mm	Vendor 1	State 2/3	656000	3840	14.13	15.00	1.222	-0.01	0.193	0.236
	FR1 n77_MIMO1	100M	BPSK	1	1	Edge 2	0mm	Vendor 1	State 2/3	656000	3840	14.17	15.00	1.211	0.16	0.577	0.699
	FR1 n77_MIMO1	100M	BPSK	135	0	Edge 2	0mm	Vendor 1	State 2/3	656000	3840	14.13	15.00	1.222	-0.08	0.615	0.751
	FR1 n77_MIMO1	100M	BPSK	135	0	Edge 2	0mm	Vendor 2	State 2/3	656000	3840	14.13	15.00	1.222	0.19	0.439	0.536
	FR1 n77_MIMO1	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2/3	633332	3499.98	14.63	15.00	1.089	-0.18	0.241	0.262
	FR1 n77_MIMO1	100M	BPSK	135	0	Bottom of Laptop	0mm	Vendor 1	State 2/3	633332	3499.98	14.45	15.00	1.135	0.12	0.282	0.320
	FR1 n77_MIMO1	100M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 2/3	633332	3499.98	14.63	15.00	1.089	0.11	0.139	0.151
	FR1 n77_MIMO1	100M	BPSK	135	0	Bottom Face	0mm	Vendor 1	State 2/3	633332	3499.98	14.45	15.00	1.135	0.03	0.152	0.173
	FR1 n77_MIMO1	100M	BPSK	1	1	Edge 2	0mm	Vendor 1	State 2/3	633332	3499.98	14.63	15.00	1.089	-0.16	0.705	0.768
	FR1 n77_MIMO1	100M	BPSK	135	0	Edge 2	0mm	Vendor 1	State 2/3	633332	3499.98	14.45	15.00	1.135	-0.07	0.537	0.610
	FR1 n77_MIMO1	100M	BPSK	1	1	Edge 2	0mm	Vendor 2	State 2/3	633332	3499.98	14.63	15.00	1.089	0.13	0.717	0.781
	FR1 n77_MIMO1	100M	BPSK	135	0	Edge 2	0mm	Vendor 2	State 2/3	633332	3499.98	14.45	15.00	1.135	-0.07	0.763	0.866
	FR1 n77_MIMO1	100M	BPSK	270	0	Edge 2	0mm	Vendor 2	State 2/3	633332	3499.98	14.42	15.00	1.143	-0.12	0.832	0.951
	FR1 n77_Aux	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2/3	656000	3840	19.86	20.50	1.159	-0.14	0.635	0.736
	FR1 n77_Aux	100M	BPSK	135	0	Bottom of Laptop	0mm	Vendor 1	State 2/3	656000	3840	19.68	20.50	1.208	-0.09	0.560	0.676
	FR1 n77_Aux	100M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 2/3	656000	3840	19.86	20.50	1.159	0.08	0.111	0.129
	FR1 n77_Aux	100M	BPSK	135	0	Bottom Face	0mm	Vendor 1	State 2/3	656000	3840	19.68	20.50	1.208	-0.19	0.102	0.123
	FR1 n77_Aux	100M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 2/3	656000	3840	19.86	20.50	1.159	-0.16	0.487	0.564
	FR1 n77_Aux	100M	BPSK	135	0	Edge 3	0mm	Vendor 1	State 2/3	656000	3840	19.68	20.50	1.208	-0.09	0.323	0.390
	FR1 n77_Aux	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 2	State 2/3	656000	3840	19.86	20.50	1.159	-0.13	0.910	1.054
	FR1 n77_Aux	100M	BPSK	135	0	Bottom of Laptop	0mm	Vendor 2	State 2/3	656000	3840	19.68	20.50	1.208	-0.09	0.819	0.989
	FR1 n77_Aux	100M	BPSK	270	0	Bottom of Laptop	0mm	Vendor 2	State 2/3	656000	3840	19.71	20.50	1.199	0.12	0.782	0.938
	FR1 n77_Aux	100M	BPSK	1	1	Bottom of Laptop	0mm	Vendor 1	State 2/3	633332	3499.98	20.18	20.50	1.076	0.01	0.843	0.907
	FR1 n77_Aux	100M	BPSK	135	0	Bottom of Laptop	0mm	Vendor 1	State 2/3	633332	3499.98	19.97	20.50	1.130	0.15	0.938	1.060
	FR1 n77_Aux	100M	BPSK	270	0	Bottom of Laptop	0mm	Vendor 1	State 2/3	633332	3499.98	19.85	20.50	1.161	-0.1	0.968	1.124
	FR1 n77_Aux	100M	BPSK	1	1	Bottom Face	0mm	Vendor 1	State 2/3	633332	3499.98	20.18	20.50	1.076	-0.09	0.246	0.265
	FR1 n77_Aux	100M	BPSK	135	0	Bottom Face	0mm	Vendor 1	State 2/3	633332	3499.98	19.97	20.50	1.130	0.15	0.299	0.338
	FR1 n77_Aux	100M	BPSK	1	1	Edge 3	0mm	Vendor 1	State 2/3	633332	3499.98	20.18	20.50	1.076	0.14	0.518	0.558
	FR1 n77_Aux	100M	BPSK	135	0	Edge 3	0mm	Vendor 1	State 2/3	633332	3499.98	19.97	20.50	1.130	-0.1	0.523	0.591
	FR1 n77_Aux	100M	BPSK	270	0	Bottom of Laptop	0mm	Vendor 2	State 2/3	633332	3499.98	19.85	20.50	1.161	0.09	0.677	0.786



13.2 Repeated SAR Measurement

No.	Band	Mode	Test Position	Gap (mm)	Antenna Vendor	Output Power State	Ch.	Freq. (MHz)	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)	Ratio	Reported 1g SAR (W/kg)
1st	WCDMA II_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 2	State 2	9538	1907.6	15.84	16.00	1.038			-0.01	1.140	-	1.183
2nd	WCDMA II_Main	RMC 12.2Kbps	Bottom of Laptop	0mm	Vendor 2	State 2	9538	1907.6	15.84	16.00	1.038			0.07	1.080	1.055	1.121
1st	LTE Band 14_Main	10M_QPSK_1_0	Edge 3	0mm	Vendor 1	State 3	23330	793	21.96	22.00	1.009			-0.04	1.180	-	1.191
2nd	LTE Band 14_Main	10MQPSK10	Edge 3	0mm	Vendor 1	State 3	23330	793	21.96	22.00	1.009			0.02	1.110	1.063	1.120
1st	LTE Band 30_MIMO2	10M_QPSK_25_12	Edge 4	0mm	Vendor 2	State 3	27710	2310	14.96	15.50	1.132			-0.01	1.050	-	1.189
2nd	LTE Band 30_MIMO2	10M_QPSK_25_12	Edge 4	0mm	Vendor 2	State 3	27710	2310	14.96	15.50	1.132			-0.09	1.040	1.009	1.178
1st	LTE Band 41_MIMO2	20M_QPSK_50_0	Edge 4	0mm	Vendor 1	State 3	39750	2506	13.85	14.00	1.035			0.06	1.150	-	1.190
2nd	LTE Band 41_MIMO2	20M_QPSK_50_0	Edge 4	0mm	Vendor 1	State 3	39750	2506	13.85	14.00	1.035			0.03	1.090	1.055	1.128
1st	LTE Band 42_HPUE_MIMO2	20M_QPSK_1_0	Edge 4	0mm	Vendor 2	State 3	42990	3540	19.30	20.00	1.175	42.9	1.009	-0.04	0.996	-	1.181
2nd	LTE Band 42_HPUE_MIMO2	20M_QPSK_1_0	Edge 4	0mm	Vendor 2	State 3	42990	3540	19.30	20.00	1.175	42.9	1.009	0.06	0.971	1.026	1.151
1st	LTE Band 43_Main	20M_QPSK_1_0	Edge 3	0mm	Vendor 1	State 3	45090	3750	20.85	21.00	1.035			0.06	1.140	-	1.180
2nd	LTE Band 43_Main	20M_QPSK_1_0	Edge 3	0mm	Vendor 1	State 3	45090	3750	20.85	21.00	1.035			-0.09	1.080	1.055	1.118
1st	FR1 n26_Main	20M_BPSK_1_1	Bottom of Laptop	0mm	Vendor 1	State 2	166300	831.5	22.65	23.00	1.084			0	1.100	-	1.192
2nd	FR1 n26_Main	20M_BPSK_1_1	Bottom of Laptop	0mm	Vendor 1	State 2	166300	831.5	22.65	23.00	1.084			0.14	1.070	1.028	1.160
1st	FR1 n70_MIMO2	15M_BPSK_75_0	Bottom of Laptop	0mm	Vendor 2	State 2	340500	1702.5	20.39	20.50	1.026			-0.09	1.070	-	1.097
2nd	FR1 n70_MIMO2	15M_BPSK_75_0	Bottom of Laptop	0mm	Vendor 2	State 2	340500	1702.5	20.39	20.50	1.026			-0.07	1.040	1.028	1.067
1st	FR1 n77_Main	100M_BPSK_1_1	Edge 3	0mm	Vendor 2	State 3	656000	3840	22.24	22.50	1.062			-0.12	1.120	-	1.189
2nd	FR1 n77_Main	100M_BPSK_1_1	Edge 3	0mm	Vendor 2	State 3	656000	3840	22.24	22.50	1.062			-0.09	1.060	1.057	1.125

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is $\geq 0.8W/kg$.
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. The ratio is the difference in percentage between original and repeated *measured* SAR.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.



13.3 LTE Band 41/42/43 Power Class 2 and Power Class 3 Linearity

This device support Power Class 2 and Power Class 3 operations for LTE Band 41 , 42 and 43. The highest available duty cycle for Power Class 2 operation is 43.3% using UL-DL configuration 1. 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 configuration and exposure condition combination, according to the highest time averaged power for all applicable uplink-downlink configurations in 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%

	LTE Band 41_ Main Ant	LTE Band 41_ Main Ant
	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	18	21
Reported 1g SAR (W/kg)	0.892	1.159
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	39.94	54.51
Linearity SAR(W/kg)	1.22	
% deviation from expected linearity		-4.80%

	LTE Band 42_ MIMO2 Ant	LTE Band 42_ MIMO2 Ant
	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	17	20
Reported 1g SAR (W/kg)	0.947	1.181
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	31.73	43.30
Linearity SAR(W/kg)	1.29	
% deviation from expected linearity		-8.63%

	LTE Band 43_ MIMO2 Ant	LTE Band 43_ MIMO2 Ant
	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	18	21
Reported 1g SAR (W/kg)	0.925	1.191
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	39.94	54.51
Linearity SAR(W/kg)	1.26	
% deviation from expected linearity		-5.66%

14. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Body
Non-DBS		
1.	WWAN Main + WWAN MIMO2 + WLAN 2.4GHz ANT 1+2 + WLC	Yes
2.	WWAN Main + WWAN MIMO2 + WLAN 5GHz ANT 1+2 + BT ANT 1 + WLC	Yes
3.	WWAN Main + WWAN MIMO2 + WLAN 6GHz ANT 1+2 + BT ANT 1 + WLC	Yes
4.	WWAN MIMO1 + WLAN 2.4GHz ANT 1+2 + WLC	Yes
5.	WWAN MIMO1+ WLAN 5GHz ANT 1+2 + BT ANT 1 + WLC	Yes
6.	WWAN MIMO1 + WLAN 6GHz ANT 1+2 + BT ANT 1 + WLC	Yes
7.	WWAN Aux + WLAN 2.4GHz ANT 1+2 + WLC	Yes
8.	WWAN Aux + WLAN 5GHz ANT 1+2 + BT ANT 1 + WLC	Yes
9.	WWAN Aux + WLAN 6GHz ANT 1+2 + BT ANT 1 + WLC	Yes
DBS		
10.	WWAN Main + WWAN MIMO2 + WLAN 2.4GHz ANT 1+2 + WLAN 5GHz ANT 1+2 + WLC	Yes
11.	WWAN Main + WWAN MIMO2 + WLAN 2.4GHz ANT 1+2 + WLAN 6GHz ANT 1+2 + WLC	Yes
12.	WWAN MIMO1 + WLAN 2.4GHz ANT 1+2 + WLAN 5GHz ANT 1+2 + WLC	Yes
13.	WWAN MIMO1+ WLAN 2.4GHz ANT 1+2 + WLAN 6GHz ANT 1+2 + WLC	Yes
14.	WWAN Aux + WLAN 2.4GHz ANT 1+2 + WLAN 5GHz ANT 1+2 + WLC	Yes
15.	WWAN Aux + WLAN 2.4GHz ANT 1+2 + WLAN 6GHz ANT 1+2 + WLC	Yes

General Note:

1. The QCNFA725 WLAN/BT module is integrated into HP G2022 host and the WLAN/BT maximum output power is referenced from Sporton FCC SAR report, report no.: FA272109 (FCC ID: B94QCNFA725G).
2. The WLC is also integrated into the host at the same time and the WLC SAR refers to the FCC ID: B94L0NPSG, Sporton Report No.: FA272109-01.
3. The worst case SAR from each WWAN transmit antenna is used for Sim-Tx analysis. Therefore, the following summations represent the absolute worst cases for simultaneous transmission for this device and it is conservative.
4. The Sim-Tx analysis for EN-DC active is choose the worst case standalone SAR from the WWAN main and MIMO2 antenna within the exposure positions, regardless of whether the EN-DC combinations. Therefore, the following summations represent the absolute worst cases for simultaneous transmission for this device and it is conservative.
5. The Scaled SAR summation is calculated based on the same configuration and test position.
6. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
 - i) Scalar SAR summation < 1.6W/kg.
 - ii) $SPLSR = (SAR1 + SAR2)^{1.5} / (\text{min. separation distance, mm})$, 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 $SPLSR \leq 0.04$, simultaneously transmission SAR measurement is not necessary.
 - iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.
 - v) The SPLSR calculated results please refer to section 14.2.



14.1 Body Exposure Conditions

<Non-DBS>

Exposure Position	0	1	2	3	4	5	6	0+1+2+6 Summed 1g SAR (W/kg)	0+1+3+5+6 Summed 1g SAR (W/kg)	0+1+4+5+6 Summed 1g SAR (W/kg)	SPLSR	Case No
	Maximum WWAN Main Ant 1g SAR (W/kg)	Maximum WWAN MIMO2 Ant 1g SAR (W/kg)	WLAN2.4GHz Ant 1+2 1g SAR (W/kg)	WLAN5GHz Ant 1+2 1g SAR (W/kg)	WLAN6GHz Ant 1+2 1g SAR (W/kg)	Bluetooth Ant 1 1g SAR (W/kg)	WLC 1g SAR (W/kg)					
Bottom of Laptop at 0mm	1.192	1.176					0.001	2.369	2.369	2.369	0.01	Case 1
Bottom Face at 0mm	0.622	0.441	0.001	0.196	0.013	0.001		1.064	1.260	1.077		
Edge 1 at 0mm			0.558	1.035	0.429	0.173	0.001	0.559	1.209	0.603		
Edge 2 at 0mm	0.767		0.038	0.057	0.001		0.001	0.806	0.825	0.769		
Edge 3 at 0mm	1.193	0.372					0.001	1.566	1.566	1.566		
Edge 4 at 0mm		1.190	0.001	0.188	0.001			1.191	1.378	1.191		

Exposure Position	1	2	3	4	5	6	1+2+6 Summed 1g SAR (W/kg)	1+3+5+6 Summed 1g SAR (W/kg)	1+4+5+6 Summed 1g SAR (W/kg)
	Maximum WWAN MIMO1 Ant 1g SAR (W/kg)	WLAN2.4GHz Ant 1+2 1g SAR (W/kg)	WLAN5GHz Ant 1+2 1g SAR (W/kg)	WLAN6GHz Ant 1+2 1g SAR (W/kg)	Bluetooth Ant 1 1g SAR (W/kg)	WLC 1g SAR (W/kg)			
Bottom of Laptop at 0mm	0.364					0.001	0.365	0.365	0.365
Bottom Face at 0mm	0.271	0.001	0.196	0.013	0.001		0.272	0.468	0.285
Edge 1 at 0mm		0.558	1.035	0.429	0.173	0.001	0.559	1.209	0.603
Edge 2 at 0mm	1.128	0.038	0.057	0.001		0.001	1.167	1.186	1.130
Edge 3 at 0mm						0.001	0.001	0.001	0.001
Edge 4 at 0mm		0.001	0.188	0.001			0.001	0.188	0.001

Exposure Position	1	2	3	4	5	6	1+2+6 Summed 1g SAR (W/kg)	1+3+5+6 Summed 1g SAR (W/kg)	1+4+5+6 Summed 1g SAR (W/kg)
	Maximum WWAN Aux Ant 1g SAR (W/kg)	WLAN2.4GHz Ant 1+2 1g SAR (W/kg)	WLAN5GHz Ant 1+2 1g SAR (W/kg)	WLAN6GHz Ant 1+2 1g SAR (W/kg)	Bluetooth Ant 1 1g SAR (W/kg)	WLC 1g SAR (W/kg)			
Bottom of Laptop at 0mm	1.124					0.001	1.125	1.125	1.125
Bottom Face at 0mm	0.523	0.001	0.196	0.013	0.001		0.524	0.720	0.537
Edge 1 at 0mm		0.558	1.035	0.429	0.173	0.001	0.559	1.209	0.603
Edge 2 at 0mm		0.038	0.057	0.001		0.001	0.039	0.058	0.002
Edge 3 at 0mm	0.966					0.001	0.967	0.967	0.967
Edge 4 at 0mm		0.001	0.188	0.001			0.001	0.188	0.001

<DBS>

Exposure Position	0	1	2	3	4	6	0+1+2+3+6 Summed 1g SAR (W/kg)	0+1+2+4+6 Summed 1g SAR (W/kg)	SPLSR	Case No
	Maximum WWAN Main Ant	Maximum WWAN MIMO2 Ant	WLAN2.4GHz Ant 1+2	WLAN5GHz Ant 1+2	WLAN6GHz Ant 1+2	WLC				
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)				
Bottom of Laptop at 0mm	1.192	1.176				0.001	2.369	2.369	0.01	Case 1
Bottom Face at 0mm	0.622	0.441	0.001	0.196	0.013		1.260	1.077		
Edge 1 at 0mm			0.558	1.035	0.429	0.001	1.594	0.988		
Edge 2 at 0mm	0.767		0.038	0.057	0.001	0.001	0.863	0.807		
Edge 3 at 0mm	1.193	0.372				0.001	1.566	1.566		
Edge 4 at 0mm		1.190	0.001	0.188	0.001		1.379	1.192		

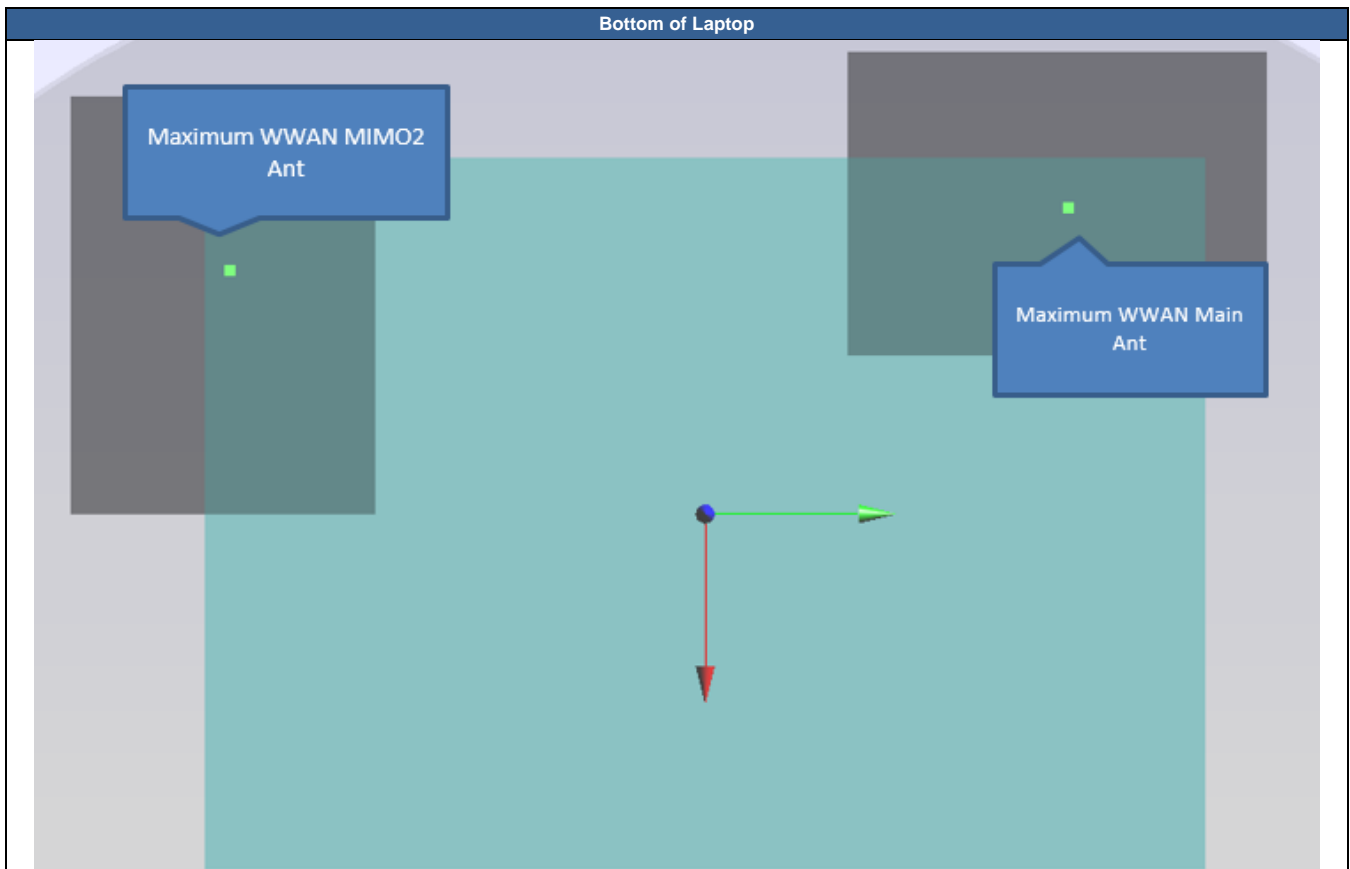
Exposure Position	1	2	3	4	6	1+2+3+6 Summed 1g SAR (W/kg)	1+2+4+6 Summed 1g SAR (W/kg)
	Maximum WWAN MIMO1 Ant	WLAN2.4GHz Ant 1+2	WLAN5GHz Ant 1+2	WLAN6GHz Ant 1+2	WLC		
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
Bottom of Laptop at 0mm	0.364				0.001	0.365	0.365
Bottom Face at 0mm	0.271	0.001	0.196	0.013		0.468	0.285
Edge 1 at 0mm		0.558	1.035	0.429	0.001	1.594	0.988
Edge 2 at 0mm	1.128	0.038	0.057	0.001	0.001	1.224	1.168
Edge 3 at 0mm					0.001	0.001	0.001
Edge 4 at 0mm		0.001	0.188	0.001		0.189	0.002

Exposure Position	1	2	3	4	6	1+2+3+6 Summed 1g SAR (W/kg)	1+2+4+6 Summed 1g SAR (W/kg)
	Maximum WWAN Aux Ant	WLAN2.4GHz Ant 1+2	WLAN5GHz Ant 1+2	WLAN6GHz Ant 1+2	WLC		
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
Bottom of Laptop at 0mm	1.124				0.001	1.125	1.125
Bottom Face at 0mm	0.523	0.001	0.196	0.013		0.720	0.537
Edge 1 at 0mm		0.558	1.035	0.429	0.001	1.594	0.988
Edge 2 at 0mm		0.038	0.057	0.001	0.001	0.096	0.040
Edge 3 at 0mm	0.966				0.001	0.967	0.967
Edge 4 at 0mm		0.001	0.188	0.001		0.189	0.002

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. $SPLSR = (SAR_1 + SAR_2)^{1.5} / (min. \text{ separation distance, mm})$. If $SPLSR \leq 0.04$, 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.



Case 1	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
	Maximum WWAN Main Ant + WLC	Bottom of Laptop	1.193	0mm	-94.8	113.6	1.61	266.8	2.37	0.01	Not required
	Maximum WWAN MIMO2 Ant		1.176	0mm	-76.8	-152.6	-1.1				

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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 $\leq 30\%$, for a confidence interval of $k = 2$. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kgTherefore, 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.