FCC SAR Test Report

APPLICANT	:	Lenovo(Shanghai) Electronics Technology Co., Ltd.
EQUIPMENT	:	Portable Tablet Computer
BRAND NAME	:	Lenovo
MODEL NAME	:	TB361ZU
FCC ID	:	O57TB361ZU
STANDARD	:	FCC 47 CFR Part 2 (2.1093)

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the test procedures given in 47 CFR Part 2.1093 and FCC KDB and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Approved by: Si Zhang

Sporton International Inc. (Kunshan)
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA560902	Rev. 01	Initial issue of report	Jul. 30, 2025

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Lenovo(Shanghai) Electronics Technology Co., Ltd., Portable Tablet Computer, TB361ZU,** are as follows.

Highest 1g SAR Summary				
Equipment Class	Frequency Band		Body (Separation 0mm) 1g SAR (W/kg)	Highest Simultaneous Transmission 1g SAR (W/kg)
Licensed	GSM	GSM850	0.97	1.59
		GSM1900	0.75	
	WCDMA	WCDMA II	0.98	
		WCDMA IV	1.15	
		WCDMA V	0.82	
	LTE	LTE Band 7	0.90	
		LTE Band 26/5	0.61	
		LTE Band 41/38	1.03	
	5G NR	FR1 n7	**1.19**	
		FR1 n26/5	0.40	
		FR1 n71	0.52	
		FR1 n41/38	**1.19**	
		FR1 n77/78	1.12	
DTS	WLAN	2.4GHz WLAN	0.79	1.58
NII		5GHz WLAN	0.78	1.59
DSS	Bluetooth	2.4GHz Bluetooth	0.16	1.59
Date of Testing:		2025/6/24 ~ 2025/7/30		

Remark:
1. This device supports LTE B5/38 and B26/41. Since the supported frequency span for LTE B5/38 falls completely within the supports frequency span for LTE B26/41, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B26/41.
2. This device supports 5GNR n5/n38/n78 and n26/n41/n77. Since the supported frequency span for 5GNR n5/n38/n78 falls completely within the supports frequency span for n26/n41/n77, both 5GNR bands have the same target power, and both 5GNR bands share the same transmission path; therefore, SAR was only assessed for n26/n41/n77.

Declaration of Conformity:
The test results with all measurement uncertainty excluded are 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.

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.

2. Administration Data

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Testing Laboratory			
Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	SAR07-KS	CN1257	314309

Applicant	
Company Name	Lenovo(Shanghai) Electronics Technology Co., Ltd.
Address	Section 304-305, Building No. 4, # 222, Meiyue Road, China (Shanghai) Pilot Free Trade Zone

Manufacturer	
Company Name	Lenovo PC HK Limited
Address	23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong, China

3. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- 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 248227 D01 802.11 Wi-Fi SAR v02r02
- 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
- FCC KDB 616217 D04 SAR for laptop and tablets v01r02

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Portable Tablet Computer
Brand Name	Lenovo
Model Name	TB361ZU
FCC ID	O57TB361ZU
IMEI Code	Sample 4: 867009070008738/867009070008589 Sample 1: 867009070018075
Wireless Technology and Frequency Range	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77: 3450 MHz ~ 3980 MHz 5G NR n78: 3450 MHz ~ 3800 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+(16QAM uplink is supported) LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR: DFT-s-OFDM/CP-OFDM, Pi/2 BPSK/QPSK/16QAM/64QAM/256QAM WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
HW Version	TB361ZU
SW Version	Lenovo ZUI 17.0
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype

Remark:

1. This device has voice function, but limited to speakerphone mode, no need to evaluate head SAR.
2. This device does not support DTM operation and supports GPRS/EGPRS mode up to multi-slot class 12.
3. The device implements Proximity sensors mechanism for the power management for SAR compliance at different exposure conditions (Body). The device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to appendix E. power table. The maximum power that this device transmits in the field is limited among the 3 power tables (default, sensor off, sensor on). Full power (default power) is available only in the conducted setup.
4. For 5G NR bands, using FTM to perform SAR with default 100% transmission.

5. For 5GNR EN-DC mode, standalone SAR performed for 5GNR NSA band with the maximum power, EN-DC SAR summed EN-DC mode 5GNR standalone SAR and LTE standalone SAR, the result of EN-DC SAR is more conservatively.
6. This device will be equipped with keyboard, and its working modes are laptop and tablet, for the tablet mode test is more conservatively, so no need to evaluate laptop mode separately.
7. There are four samples. The difference between them could be referred to the TB361ZU_Operational Description of Product Equality Declaration which is exhibited separately. According to the differences, sample 4 was chosen to perform full test, and the sample 1 are verified the difference with the sample 4. For sample 2/3, the differences do not affect the test, so sample 2/3 are not tested.
8. This device supports 5GNR FR1 bands as following table, including NSA mode and SA mode. NSA and SA mode performed SAR separately.

Mode	Band	Duplex	SCS(KHz)	Bandwidths(BW)
NSA	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20 25, 30, 35, 40, 50
	n41	TDD	30	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
	n77	TDD	30	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100
	n78	TDD	30	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100
SA	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20 25, 30, 35, 40, 50
	n26	FDD	15	5, 10, 15, 20
	n71	FDD	15	5, 10, 15, 20
	n38	TDD	30	10, 15, 20, 25, 30, 40
	n41	TDD	30	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
	n77	TDD	30	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100
	n78	TDD	30	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100

4.2 General LTE SAR Test and Reporting Considerations

<table>
<tr><th colspan="2">Summarized necessary items addressed in KDB 941225 D05 v02r05</th></tr>
<tr><td>FCC ID</td><td>O57TB361ZU</td></tr>
<tr><td>Equipment Name</td><td>Portable Tablet Computer</td></tr>
<tr><td>Operating Frequency Range of each LTE transmission band</td><td>LTE Band 5: 824 MHz ~ 849 MHz
LTE Band 7: 2500 MHz ~ 2570 MHz
LTE Band 26: 814 MHz ~ 849 MHz
LTE Band 38: 2570 MHz ~ 2620 MHz
LTE Band 41: 2496 MHz ~ 2690 MHz</td></tr>
<tr><td>Channel Bandwidth</td><td>LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz
LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz</td></tr>
<tr><td>Uplink Modulations used</td><td>QPSK / 16QAM / 64QAM / 256QAM</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>Voice and Data</td></tr>
<tr><td>LTE Release Version</td><td>R15</td></tr>
<tr><td>CA Support</td><td>Yes, Uplink and Downlink</td></tr>
<tr><td>LTE MPR permanently built-in by design</td><td>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr>
<tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr>
</table></td></tr>
<tr><td>LTE A-MPR</td><td>In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)</td></tr>
<tr><td>Spectrum plots for RB configuration</td><td>A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.</td></tr>
<tr><td>Power reduction applied to satisfy SAR compliance</td><td>Yes, when operating in Proximity sensors detect mechanism; body will trigger reduced power for some bands applied to satisfy SAR compliance, the detail please referred to section 13.</td></tr>
<tr><td>LTE Carrier Aggregation Combinations</td><td>Intra-Band and Inter-Band possible combinations and the detail power verification please referred to section 13.</td></tr>
<tr><td>LTE Carrier Aggregation Additional Information</td><td>(1) This device supports LTE Carrier Aggregation (CA) in the uplink for intra-band and inter-band with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance.
(2) This device supports maximum of 2 carriers in the uplink.</td></tr>
</table>

Transmission (H, M, L) channel numbers and frequencies in each LTE band								
LTE Band 5								
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844
LTE Band 7								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560

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

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

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

<For LTE Overlap Bands Description>

1) LTE Bands BW

Band	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
LTE Band 5	Yes	Yes	Yes	Yes		
LTE Band 26	Yes	Yes	Yes	Yes	Yes	
LTE Band 38			Yes	Yes	Yes	Yes
LTE Band 41			Yes	Yes	Yes	Yes

2) LTE Bands tune up:

Band	Antenna	Full Power	Sensor on	Sensor off
		Tune-up Limit	Tune-up Limit	Tune-up Limit
LTE Band 5	Ant 0	24.00	14.00	24.00
LTE Band 26	Ant 0	24.00	14.00	24.00
LTE Band 38	Ant 0	24.00	11.00	24.00
LTE Band 41	Ant 0	24.00	11.00	24.00
LTE Band 38	Ant 1	24.00	14.00	24.00
LTE Band 41	Ant 1	24.00	14.00	24.00

4.3 General 5G NR SAR Test and Reporting Considerations

5G NR Information	
Operating Frequency Range of each 5G NR transmission band	5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77: 3450MHz ~ 3980 MHz 5G NR n78: 3450 MHz ~ 3800 MHz
Channel Bandwidth	The detail please refers to section 4.1 5GNR FR1 bands table.
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 n5	LTE B7
LTE Anchor Bands for n7	LTE B5/7
LTE Anchor Bands for n41	LTE B41
LTE Anchor Bands for n77	LTE B7/41
LTE Anchor Bands for n78	LTE B5/7/26/38/41

Transmission (H, M, L) channel numbers and frequencies in each 5G NR band

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 35MHz		Bandwidth 40MHz		Bandwidth 50MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500500	2502.5	501000	2505	501500	2507.5	502000	2510	502500	2512.5	503000	2515	503500	2517.5	504000	2520	505000	2525
M	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535
H	513500	2567.5	513000	2565	512500	2562.5	512000	2560	511500	2557.5	511000	2555	510500	2552.5	510000	2550	509000	2545

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 71

	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	133100	665.5	133600	668	134100	670.5	134600	673
M	136100	680.5	136100	680.5	136100	680.5	136100	680.5
H	139100	695.5	138600	693	138100	690.5	137600	688

NR Band 38

	Bandwidth10MHz		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)
L	515004	2575.02	515502	2577.51	516000	2580	516504	2582.52	517002	2585.01	518004	2590.02
M	519000	2595	519000	2595	519000	2595	519000	2595	519000	2595	519000	2595
H	522996	2614.98	522498	2612.49	522000	2610	521496	2607.48	520998	2604.99	519996	2599.98

NR Band 41

	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz		Bandwidth 45MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500202	2501.01	500700	2503.5	501204	2506.02	501702	2508.51	502200	2511	502704	2513.52	503202	2516.01	503700	2518.5	504204	2521.02	505200	2526	500202	2501.01	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	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99
H	537000	2685	536496	2682.48	535998	2679.99	535500	2677.5	534996	2674.98	534498	2672.49	534000	2670	533496	2667.48	532998	2664.99	531996	2659.98	531000	2655	529998	2649.99	528996	2644.98	528000	2640

NR Band 77																								
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	647000	3705	647168	3707.52	647334	3710.01	647500	3712.5	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02	650000	3750
M	656000	3840	656000	3840	656000	3840	656000	3840.00	656000	3840.00	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840
H	665000	3975	664834	3972.51	664668	3970.02	664500	3967.50	664334	3965.01	664000	3960	663668	3955.02	663334	3950.01	663000	3945	662668	3940.02	662334	3935.01	662000	3930

NR Band 78																								
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	647000	3705	647168	3707.52	647334	3710.01	647500	3712.5	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02		
M	650000	3750	650000	3750	650000	3750	650000	3750.00	650000	3750.00	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750
H	653000	3795	652834	3792.51	652668	3790.02	652500	3787.5	652334	3785.01	652000	3780	651668	3775.02	651334	3770.01	651000	3765	650668	3760.02	650334	3755.01		

For Part96

NR Band 77																								
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	637000	3555	637168	3557.52	637334	3560.01	647500	3562.5	637668	3565.02	638000	3570	638334	3575.01	638668	3580.02	639000	3585	639334	3590.01	639668	3595.02	640000	3600
M	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99
H	646332	3694.98	646166	3692.49	646000	3690	645833	3687.50	645666	3684.99	645332	3624.99	645000	3675	644666	3669.99	644332	3664.98	644000	3660	643666	3654.99	643332	3649.98

NR Band 78																								
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	637000	3555	637168	3557.52	637334	3560.01	647500	3562.5	637668	3565.02	638000	3570	638334	3575.01	638668	3580.02	639000	3585	639334	3590.01	639668	3595.02	640000	3600
M	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99
H	646332	3694.98	646166	3692.49	646000	3690	645833	3687.50	645666	3684.99	645332	3624.99	645000	3675	644666	3669.99	644332	3664.98	644000	3660	643666	3654.99	643332	3649.98

For <3450 MHz ~ 3550 MHz >

NR Band 77 SCS30KHz																								
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	630334	3455.01	630500	3457.5	630668	3460.02	630834	3462.51	631000	3465	631334	3470.01	631668	3475.02	632000	3480	632334	3485.01	632668	3490.02	633000	3495		
M	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01
H	636334	3545.01	636168	3542.52	636000	3540	635834	3537.51	635668	3535.02	635334	3530.01	635000	3525	634668	3520.02	634334	3515.01	634000	3510	633668	3505.02		

NR Band 78 SCS30KHz																								
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	630334	3455.01	630500	3457.5	630668	3460.02	630834	3462.51	631000	3465	631334	3470.01	631668	3475.02	632000	3480	632334	3485.01	632668	3490.02	633000	3495		
M	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01
H	636334	3545.01	636168	3542.52	636000	3540	635834	3537.51	635668	3535.02	635334	3530.01	635000	3525	634668	3520.02	634334	3515.01	634000	3510	633668	3505.02		

<For NR Overlap Bands Description>

1) NR Bands BW

Band	5 MHz	10 MHz	15 MHz	20 MHz	25 MHz	30 MHz	35 MHz	40 MHz	45 MHz	50 MHz	60 MHz	70 MHz	80 MHz	90 MHz	100 MHz
FR1 n5	Yes	Yes	Yes	Yes											
FR1 n26	Yes	Yes	Yes	Yes											
FR1 n38		Yes	Yes	Yes	Yes	Yes		Yes							
FR1 n41		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FR1 n77		Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes
FR1 n78		Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes

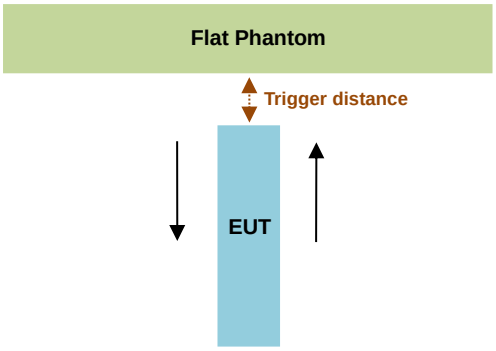
2) NR Bands Tune up:

Band	Antenna	Full Power	Sensor on	Sensor off
		Tune-up Limit	Tune-up Limit	Tune-up Limit
FR1 n5	Ant 0	24.00	15.00	24.00
FR1 n26	Ant 0	24.00	15.00	24.00
FR1 n38	Ant 0	24.00	16.00	24.00
FR1 n41	Ant 0	24.00	16.00	24.00
FR1 n38	Ant 1	24.00	12.00	24.00
FR1 n41	Ant 1	24.00	12.00	24.00
FR1 n77	Ant 0	13.00	12.00	13.00
FR1 n78	Ant 0	13.00	12.00	13.00
FR1 n77	Ant 2	24.00	10.00	24.00
FR1 n78	Ant 2	24.00	10.00	24.00
FR1 n77 Part 96	Ant 2	24.00	10.00	24.00
FR1 n78 Part 96	Ant 2	24.00	10.00	24.00
FR1 n77	Ant 3	21.00	11.00	21.00
FR1 n78	Ant 3	21.00	11.00	21.00
FR1 n77 Part 96	Ant 3	21.00	11.00	21.00
FR1 n78 Part 96	Ant 3	21.00	11.00	21.00
FR1 n77	Ant 4	13.00		11.00
FR1 n78	Ant 4	13.00		11.00

5. Proximity Sensor Triggering Test

<Proximity Sensor Triggering Distance (KDB 616217 D04 section 6.2)>:

1. Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed and the tissue-equivalent medium for highest frequency (5825MHz) and lowest frequency (750MHz) was used for proximity sensor triggering testing.
2. Capacitive proximity sensor placed coincident with antenna elements at the Bottom Face, Edge 1 and Edge 2 of the device are utilized to determine when the device comes in proximity of the user's body at the Bottom Face or Edge 1 or Edge 2 side of the device. There is no need to do sensor coverage testing for the proximity sensor is designed to support sufficient detection range and sensitivity to cover regions of the sensors in all applicable directions since the proximity sensor entirely covers the antenna.
3. When the sensor is active, all WWAN/WLAN bands reduced power will be active.
4. The sensors used to detect the proximity of the user's body at the Bottom Face for Ant6 and Bottom Face or Edge 1 or Edge 2 side for Ant0/1/2/3 of the device use a detection threshold distance. The data shown in the sections below shows the distance(s).



<Ant6 Frequency Bands>

Proximity Sensor Triggering Distance (mm)		
Position	Bottom Face	
	Moving towards	Moving away
Minimum	17	19

< Ant0/1 Frequency Bands>

Proximity Sensor Triggering Distance (mm)						
Position	Bottom Face		Edge 1		Edge 2	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	17	21	18	22	11	15

< Ant2/3 Frequency Bands>

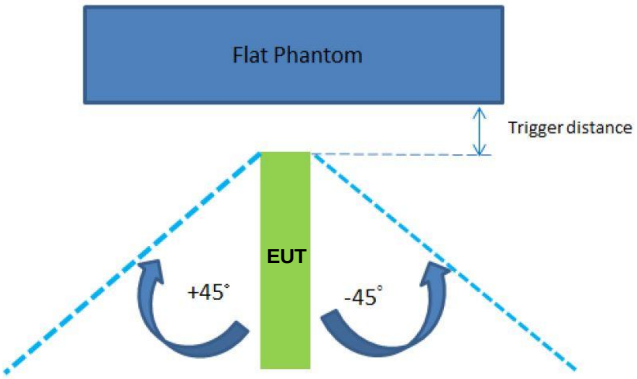
Proximity Sensor Triggering Distance (mm)						
Position	Bottom Face		Edge 1		Edge 2	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	17	21	12	16	11	15

<Proximity Sensor Triggering Coverage (KDB 616217 D04 section 6.3)>:

If a sensor is spatially offset from the antenna(s), it is necessary to verify sensor triggering for conditions where the antenna is next to the user but the sensor is laterally further away to ensure sensor coverage is sufficient for reducing the power to maintain compliance. For p-sensor coverage testing, the device is moved and “along the direction of maximum antenna and sensor offset”.
Illustrated in the internal photo exhibit, although the senor is spatially offset, there is no trigger condition where the antenna is next to the user but the sensor is laterally further away, therefore proximity sensor coverage testing is not required.
This procedure is not required because antenna and sensor are collocated and the peak SAR location is overlapping with the sensor.

<Tablet Tilt angle influences to proximity sensor triggering (KDB 616217 D04 section 6.4)>:

The influence of table tilt angles to proximity sensor triggering was determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom, the detail please refers to following tables.
Rotating the tablet around the edge next to the phantom in ≤ 10° increments until the tablet is ± 45° from the vertical position at 0°, and the maximum output power remains in the reduced mode.



<Ant0/1 Frequency Bands>

The Sensor Trigger Distance (mm)		
Position	Edge 1	Edge 2
Minimum	18	11

< Ant2/3 Frequency Bands>

The Sensor Trigger Distance (mm)		
Position	Edge 1	Edge 2
Minimum	12	11

Proximity sensor power reduction

Exposure Position / wireless mode for Ant6	Bottom Face(1)	Edge 1	Edge 2	Edge 3	Edge 4
WLAN 2.4GHz	9.5 dB	0 dB	0 dB	0 dB	0 dB
WLAN 5.2GHz	14.0 dB	0 dB	0 dB	0 dB	0 dB
WLAN 5.3GHz	14.0 dB	0 dB	0 dB	0 dB	0 dB
WLAN 5.5GHz	14.0 dB	0 dB	0 dB	0 dB	0 dB
WLAN 5.8GHz	14.0 dB	0 dB	0 dB	0 dB	0 dB

Exposure Position / wireless mode for Ant0/1/2/3	Bottom Face(1)	Edge 1(1)	Edge 2(1)	Edge 3	Edge 4
GSM850(GPRS 4 Tx slots) Ant 0	13.0 dB	13.0 dB	13.0 dB	0 dB	0 dB
GSM1900(GPRS 4 Tx slots) Ant 0	14.0 dB	14.0 dB	14.0 dB	0 dB	0 dB
WCDMA II Ant 0	15.0 dB	15.0 dB	15.0 dB	0 dB	0 dB
WCDMA IV Ant 0	14.5 dB	14.5 dB	14.5 dB	0 dB	0 dB
WCDMA V Ant 0	11.0 dB	11.0 dB	11.0 dB	0 dB	0 dB
LTE Band 7 Ant 0	14.0 dB	14.0 dB	14.0 dB	0 dB	0 dB
LTE Band 26(5) Ant 0	10.0 dB	10.0 dB	10.0 dB	0 dB	0 dB
LTE Band 41(38) Ant 0	13.0 dB	13.0 dB	13.0 dB	0 dB	0 dB
FR1 n7 Ant 0	13.0 dB	13.0 dB	13.0 dB	0 dB	0 dB
FR1 n26(5) Ant 0	9.0 dB	9.0 dB	9.0 dB	0 dB	0 dB
FR1 n71 Ant 0	7.0 dB	7.0 dB	7.0 dB	0 dB	0 dB
FR1 n41(38) Ant 0	8.0 dB	8.0 dB	8.0 dB	0 dB	0 dB
FR1 n77(78)-PC3 Ant 0	1.0 dB	1.0 dB	1.0 dB	0 dB	0 dB
LTE Band 7 Ant 1	12.0 dB	12.0 dB	12.0 dB	0 dB	0 dB
LTE Band 41(38) Ant 1	10.0 dB	10.0 dB	10.0 dB	0 dB	0 dB
FR1 n7Ant 1	11.0 dB	11.0 dB	11.0 dB	0 dB	0 dB
FR1 n41(38) Ant 1	12.0 dB	12.0 dB	12.0 dB	0 dB	0 dB
FR1 n77(78)-PC3 Ant 2	14.0 dB	14.0 dB	14.0 dB	0 dB	0 dB
FR1 n41 Ant 3	11.5 dB	11.5 dB	11.5 dB	0 dB	0 dB
FR1 n77(78)-PC3 Ant 3	10.0 dB	10.0 dB	10.0 dB	0 dB	0 dB

Remark:

1. (1): Reduced maximum limit applied by activation of proximity sensor.
2. Power reduction is not applicable for Bluetooth.
3. Tests were performed in accordance with KDB 616217 D04 section 6.1, 6.2, 6.3, 6.4 and 6.5 and compliant results are shown and described in exhibit “P-Sensor operational description
4. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance was performed:
   For Ant6:
   - Bottom Face: 16mm

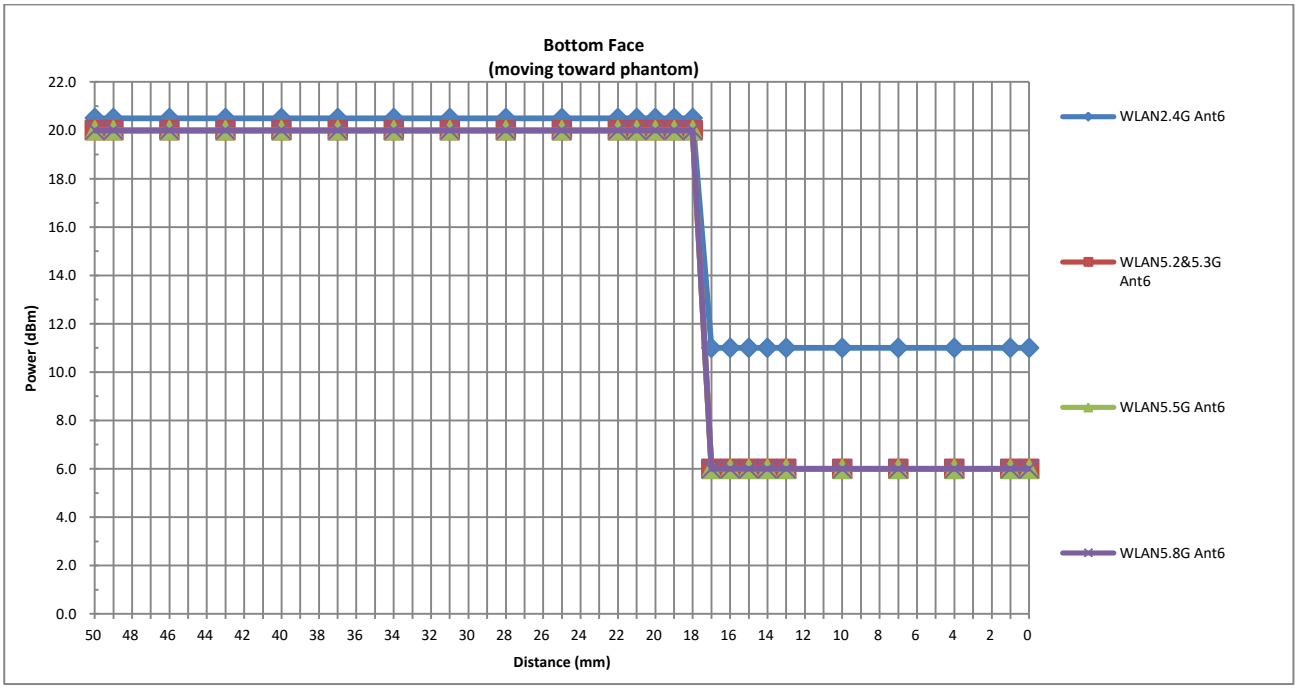
   For Ant0:
   - Bottom Face: 16mm
   - Edge 1: 17mm

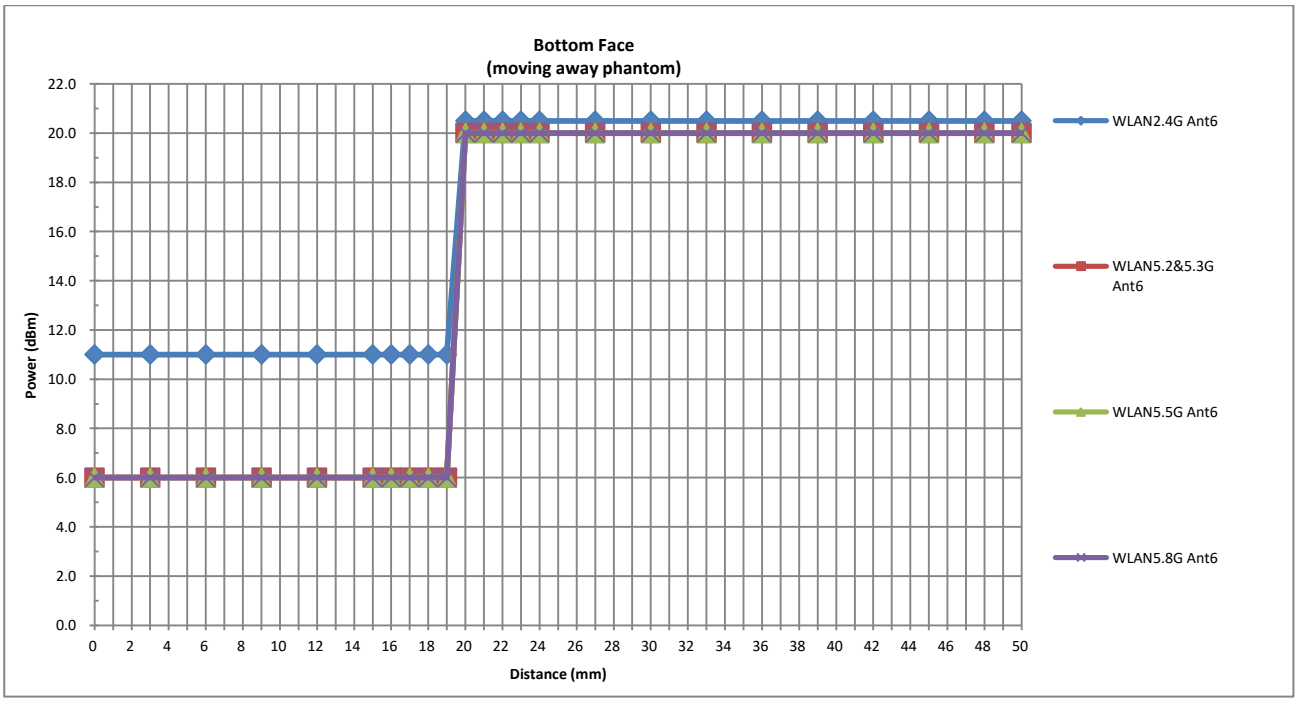
   For Ant1:
   - Bottom Face: 16mm
   - Edge 1: 17mm
   - Edge 2: 10mm

   For Ant2/3:
   - Bottom Face: 16mm
   - Edge 1: 11mm
   - Edge 2: 10mm

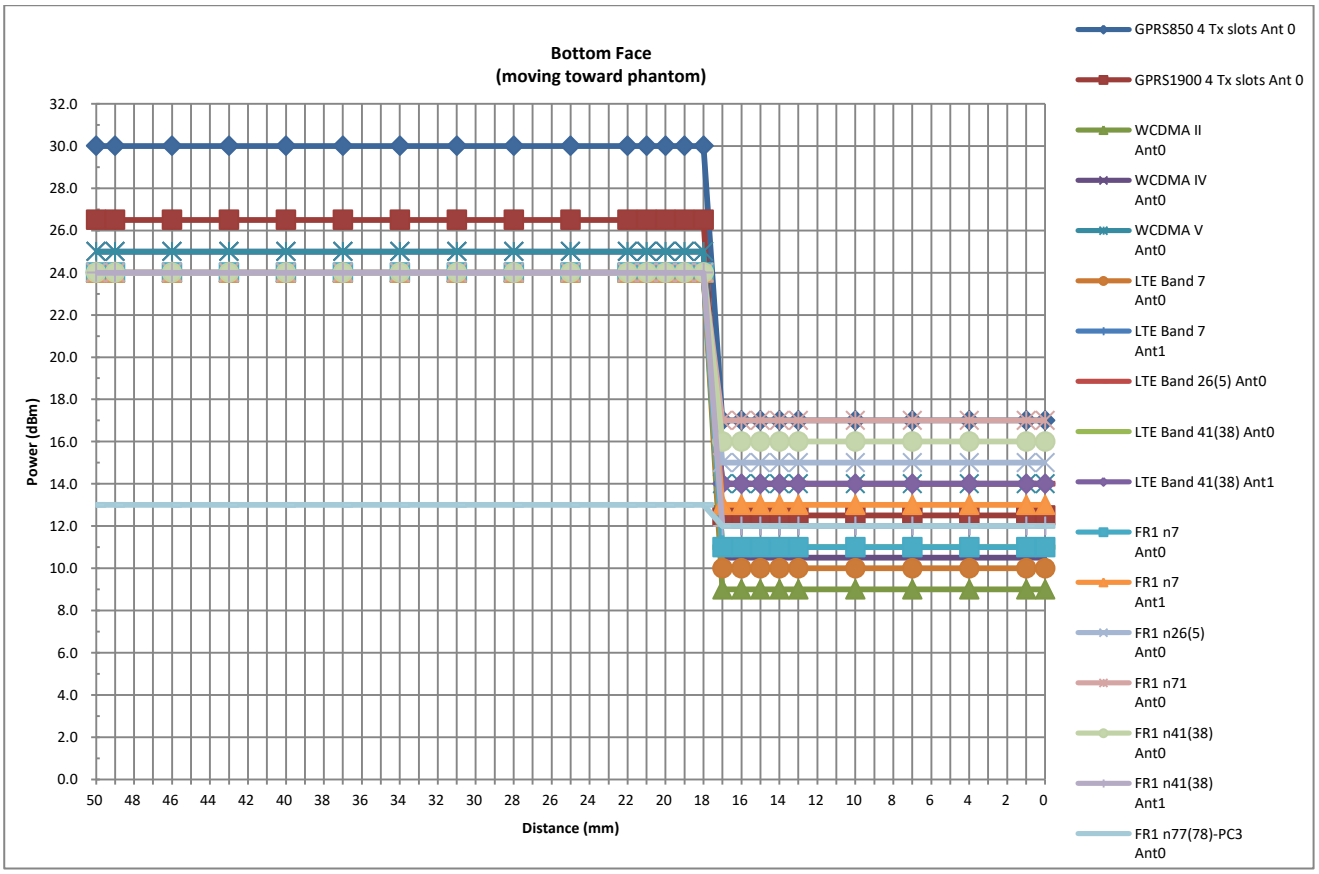
Power Measurement during Sensor Trigger distance testing

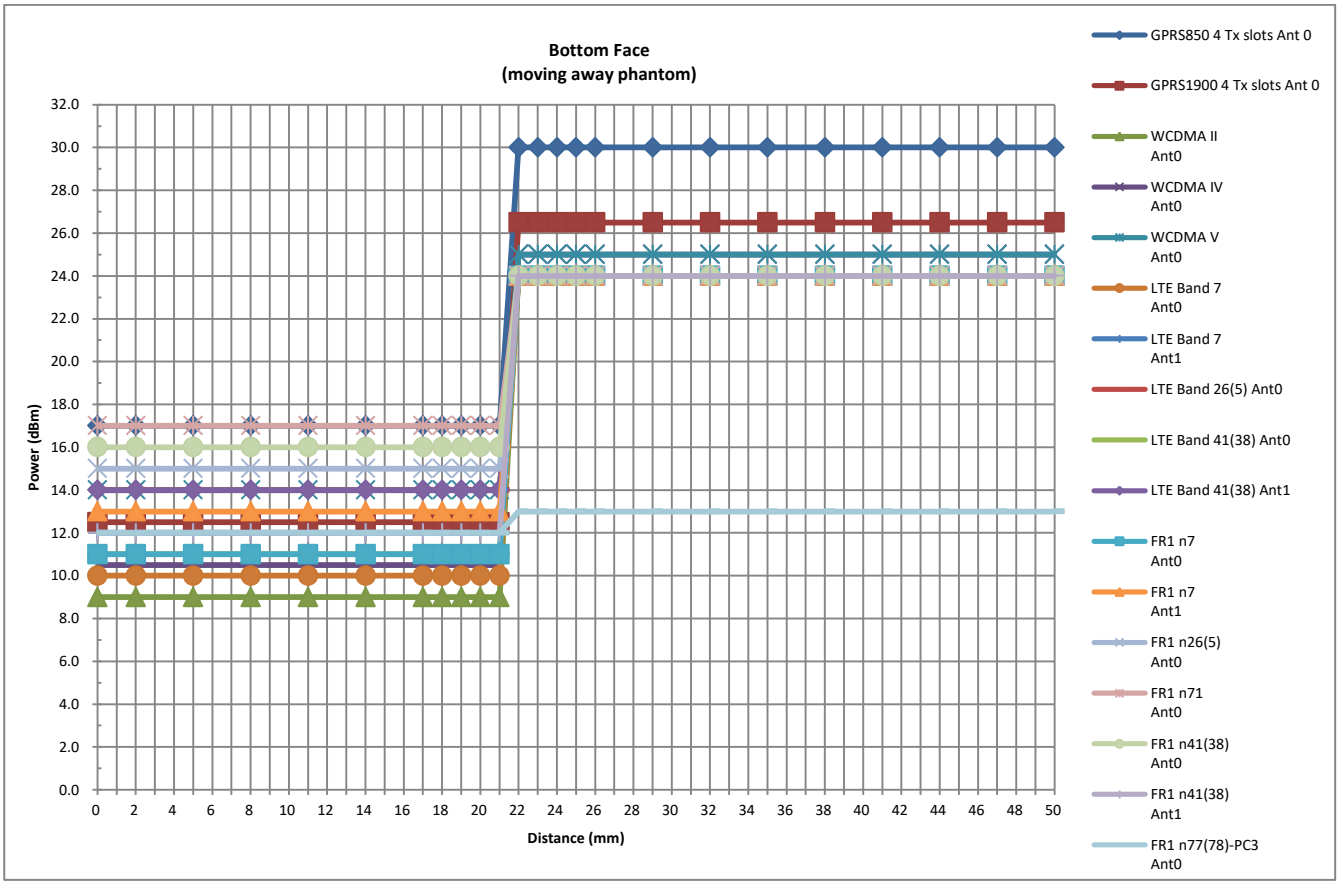
Band/Mode for Ant6	Measured power reduction (dBm)		Reduction Levels
	w/o power back-off	w/ power back-off	(dB)
WLAN 2.4GHz	20.50	11.00	9.5
WLAN 5.2GHz	20.00	6.00	14.0
WLAN 5.3GHz	20.00	6.00	14.0
WLAN 5.5GHz	20.00	6.00	14.0
WLAN 5.8GHz	20.00	6.00	14.0

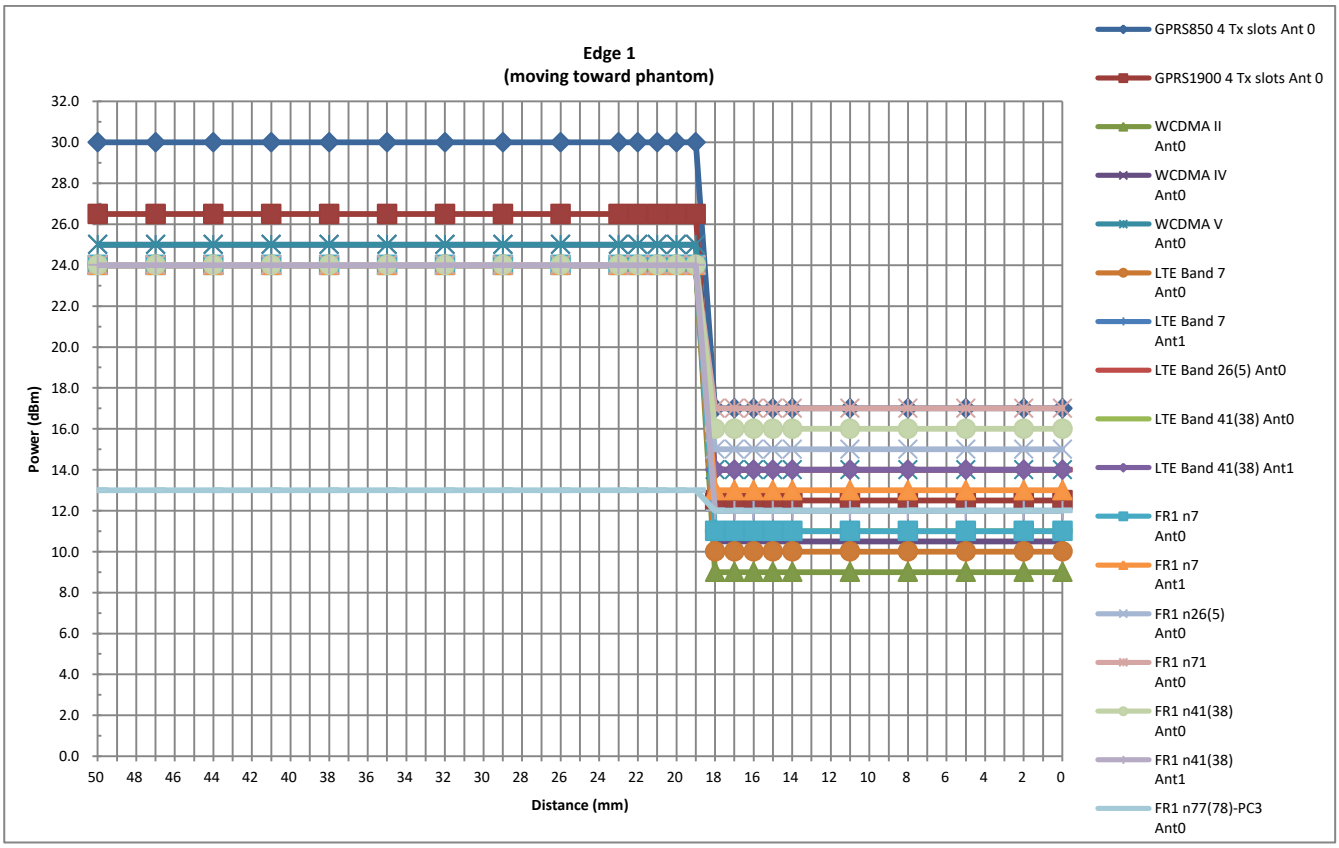


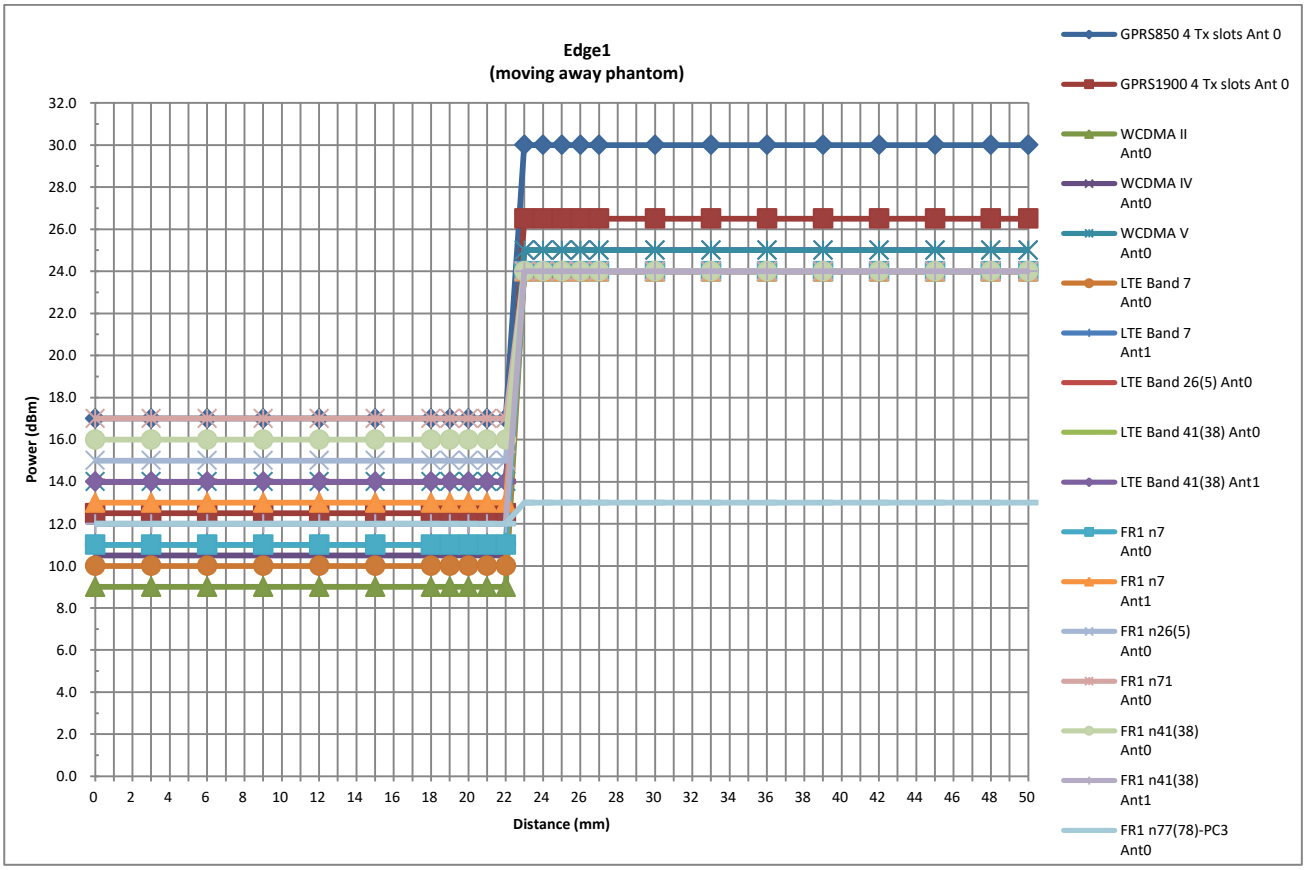


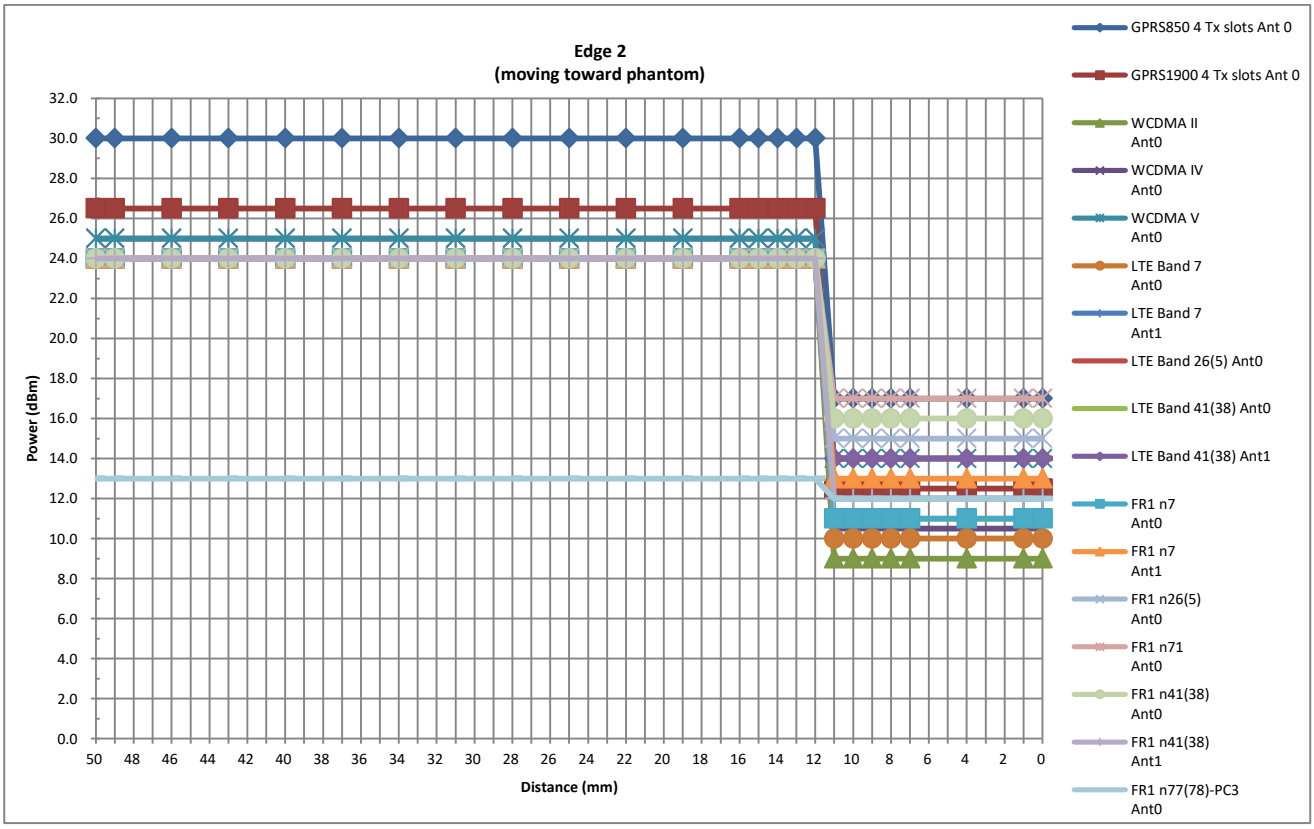
Exposure Position / wireless mode for Ant 0/1	Measured power reduction (dBm)		Reduction Levels
	w/o power back-off	w/ power back-off	(dB)
GSM850(GPRS 4 Tx slots) Ant 0	30.00	17.00	13.0
GSM1900(GPRS 4 Tx slots) Ant 0	26.50	12.50	14.0
WCDMA II Ant 0	24.00	9.00	15.0
WCDMA IV Ant 0	25.00	10.50	14.5
WCDMA V Ant 0	25.00	14.00	11.0
LTE Band 7 Ant 0	24.00	10.00	14.0
LTE Band 26(5) Ant 0	24.00	14.00	10.0
LTE Band 41(38) Ant 0	24.00	11.00	13.0
FR1 n7 Ant 0	24.00	11.00	13.0
FR1 n26(5) Ant 0	24.00	15.00	9.0
FR1 n71 Ant 0	24.00	17.00	7.0
FR1 n41(38) Ant 0	24.00	16.00	8.0
FR1 n77(78) Ant 0	13.00	12.00	1.0
LTE Band 7 Ant 1	24.00	12.00	12.0
LTE Band 41(38) Ant 1	24.00	14.00	10.0
FR1 n7Ant 1	24.00	13.00	11.0
FR1 n41(38) Ant 1	24.00	12.00	12.0

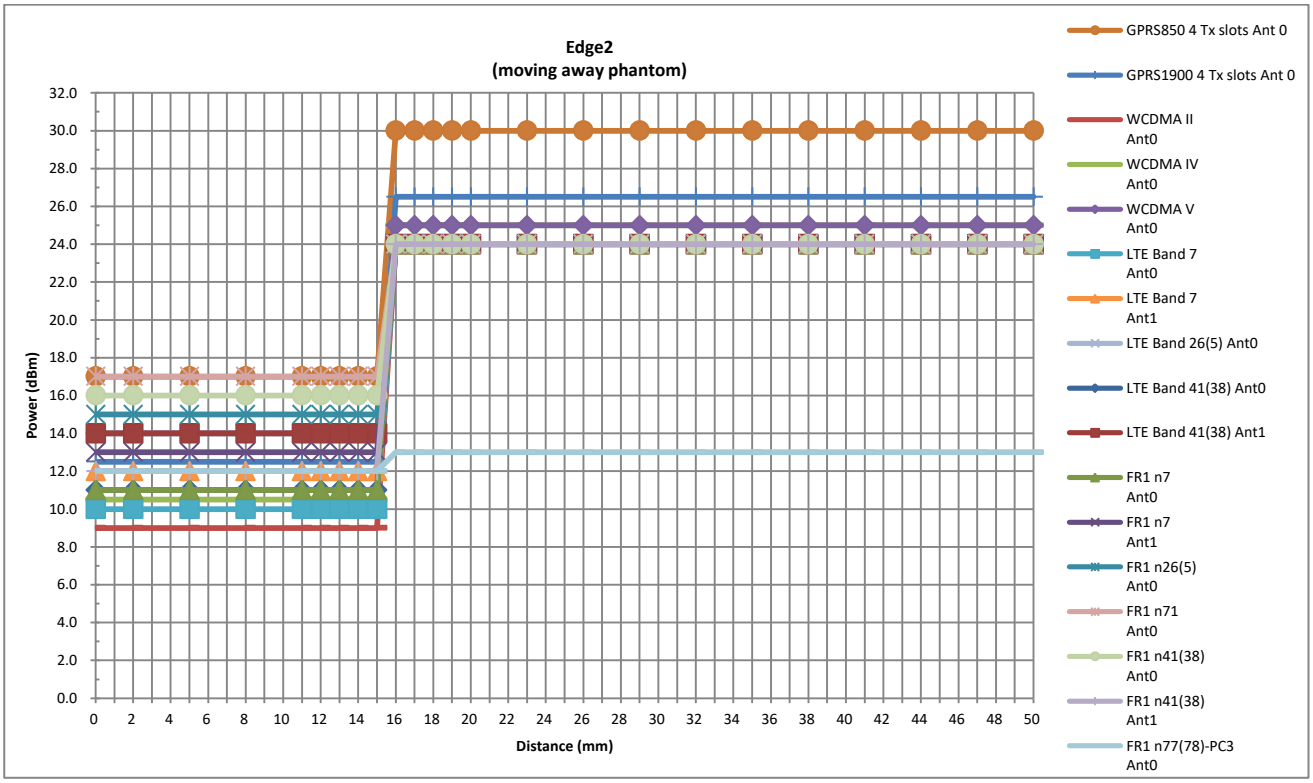



Bottom Face
(moving away phantom)
Power (dBm)
Distance (mm)
GPRS850 4 Tx slots Ant 0
GPRS1900 4 Tx slots Ant 0
WCDMA II Ant0
WCDMA IV Ant0
WCDMA V Ant0
LTE Band 7 Ant0
LTE Band 7 Ant1
LTE Band 26(5) Ant0
LTE Band 41(38) Ant0
LTE Band 41(38) Ant1
FR1 n7 Ant0
FR1 n7 Ant1
FR1 n26(5) Ant0
FR1 n71 Ant0
FR1 n41(38) Ant0
FR1 n41(38) Ant1
FR1 n77(78)-PC3 Ant0

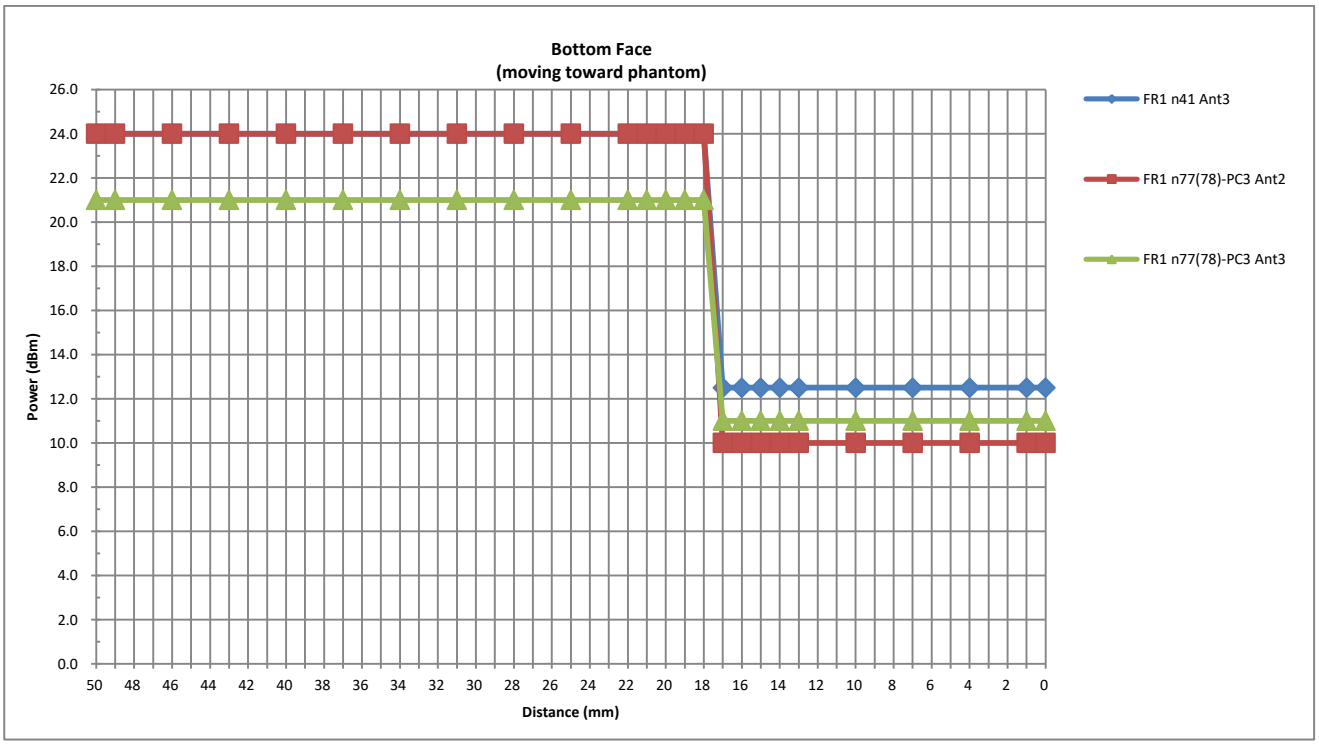

Edge 1
(moving toward phantom)
Power (dBm)
Distance (mm)
GPRS850 4 Tx slots Ant 0
GPRS1900 4 Tx slots Ant 0
WCDMA II Ant0
WCDMA IV Ant0
WCDMA V Ant0
LTE Band 7 Ant0
LTE Band 7 Ant1
LTE Band 26(5) Ant0
LTE Band 41(38) Ant0
LTE Band 41(38) Ant1
FR1 n7 Ant0
FR1 n7 Ant1
FR1 n26(5) Ant0
FR1 n71 Ant0
FR1 n41(38) Ant0
FR1 n41(38) Ant1
FR1 n77(78)-PC3 Ant0

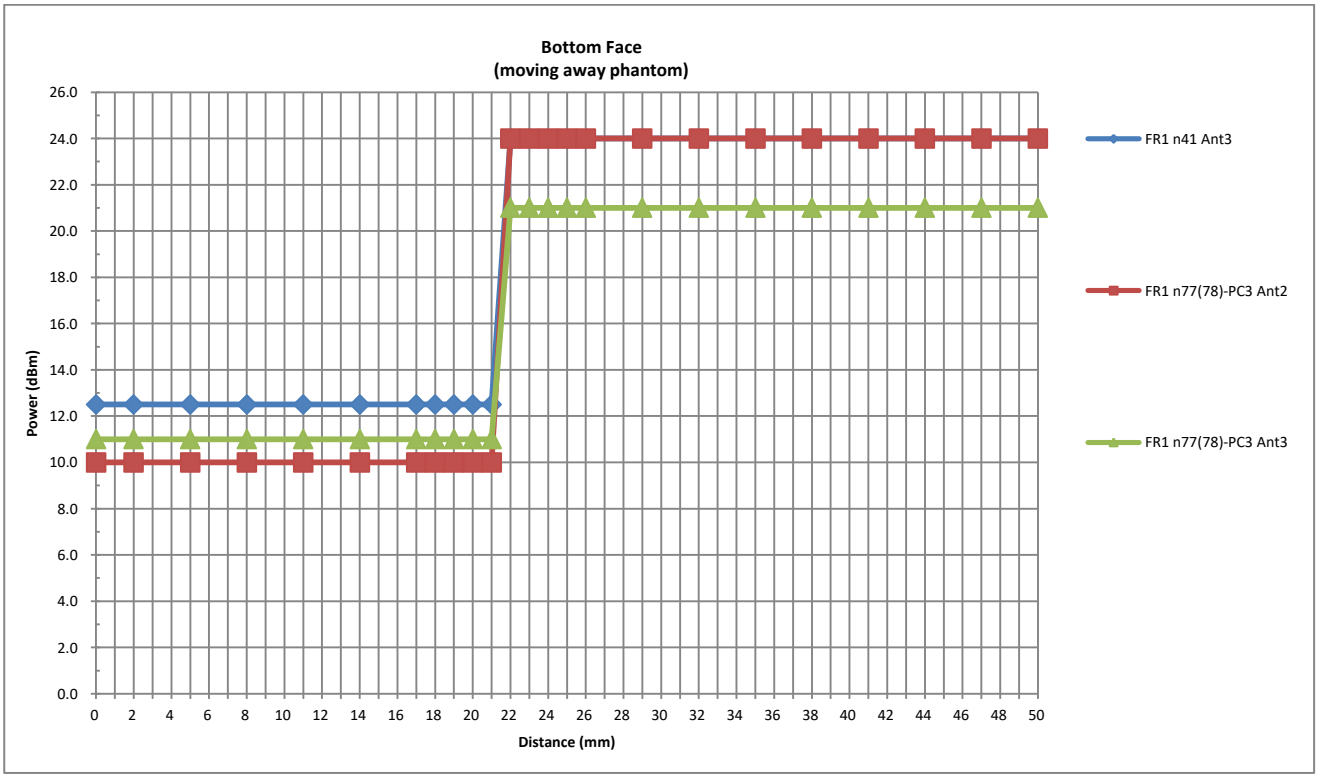

Edge1
(moving away phantom)
Power (dBm)
Distance (mm)
GPRS850 4 Tx slots Ant 0
GPRS1900 4 Tx slots Ant 0
WCDMA II Ant0
WCDMA IV Ant0
WCDMA V Ant0
LTE Band 7 Ant0
LTE Band 7 Ant1
LTE Band 26(5) Ant0
LTE Band 41(38) Ant0
LTE Band 41(38) Ant1
FR1 n7 Ant0
FR1 n7 Ant1
FR1 n26(5) Ant0
FR1 n71 Ant0
FR1 n41(38) Ant0
FR1 n41(38) Ant1
FR1 n77(78)-PC3 Ant0

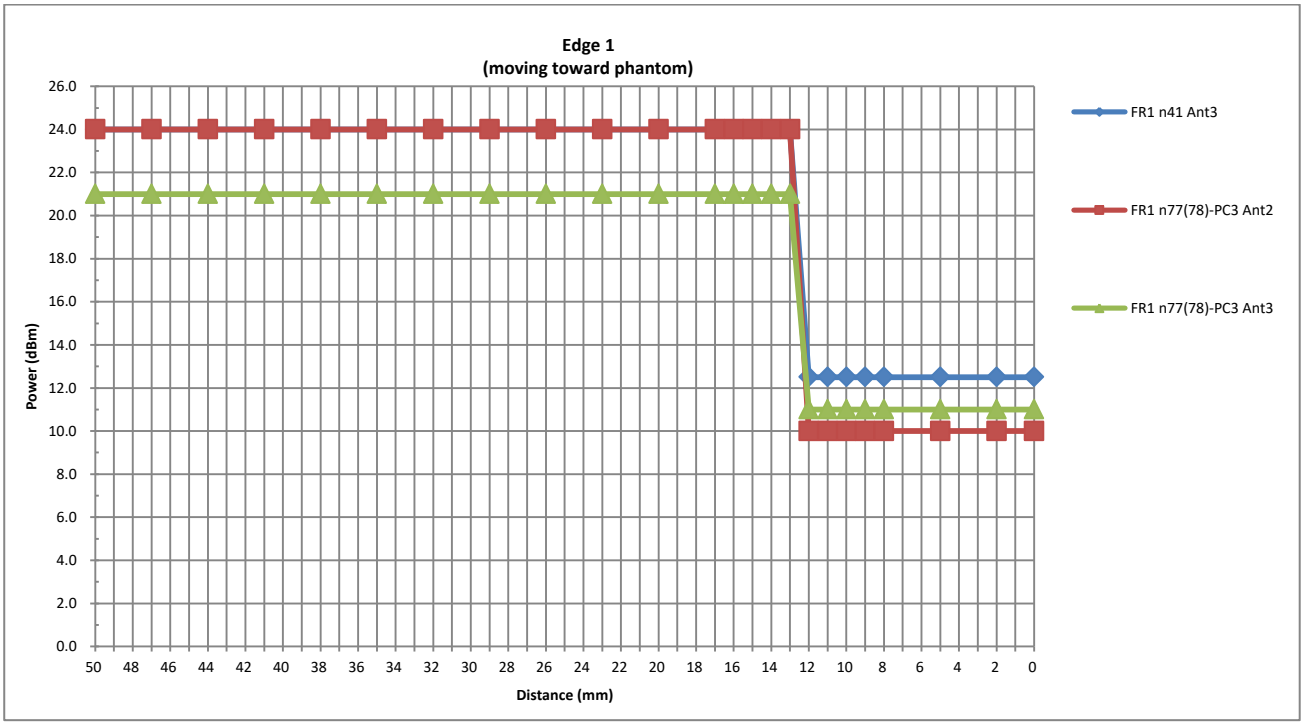

Edge 2
(moving toward phantom)
Power (dBm)
Distance (mm)
GPRS850 4 Tx slots Ant 0
GPRS1900 4 Tx slots Ant 0
WCDMA II Ant0
WCDMA IV Ant0
WCDMA V Ant0
LTE Band 7 Ant0
LTE Band 7 Ant1
LTE Band 26(5) Ant0
LTE Band 41(38) Ant0
LTE Band 41(38) Ant1
FR1 n7 Ant0
FR1 n7 Ant1
FR1 n26(5) Ant0
FR1 n71 Ant0
FR1 n41(38) Ant0
FR1 n41(38) Ant1
FR1 n77(78)-PC3 Ant0

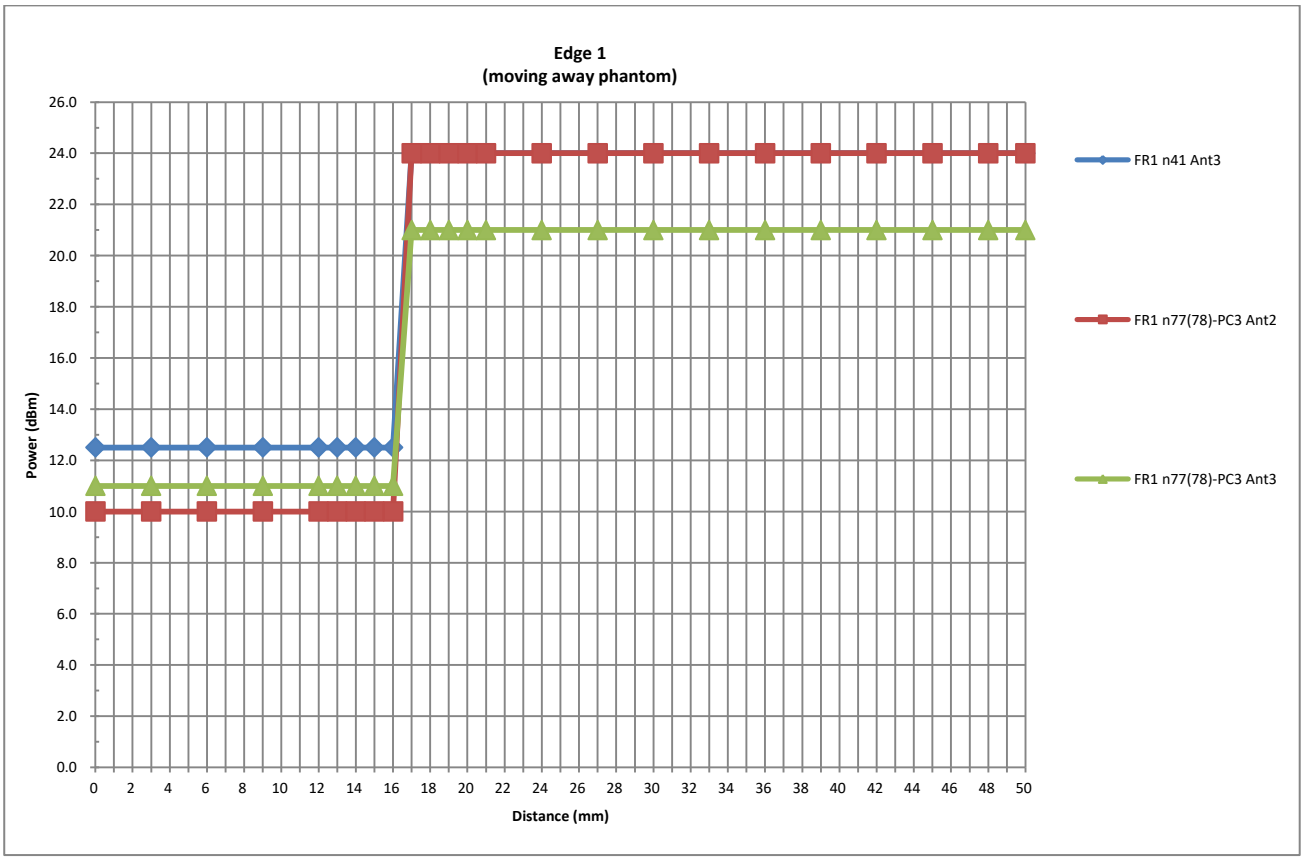

Edge2
(moving away phantom)
Power (dBm)
Distance (mm)
GPRS850 4 Tx slots Ant 0
GPRS1900 4 Tx slots Ant 0
WCDMA II Ant0
WCDMA IV Ant0
WCDMA V Ant0
LTE Band 7 Ant0
LTE Band 7 Ant1
LTE Band 26(5) Ant0
LTE Band 41(38) Ant0
LTE Band 41(38) Ant1
FR1 n7 Ant0
FR1 n7 Ant1
FR1 n26(5) Ant0
FR1 n71 Ant0
FR1 n41(38) Ant0
FR1 n41(38) Ant1
FR1 n77(78)-PC3 Ant0

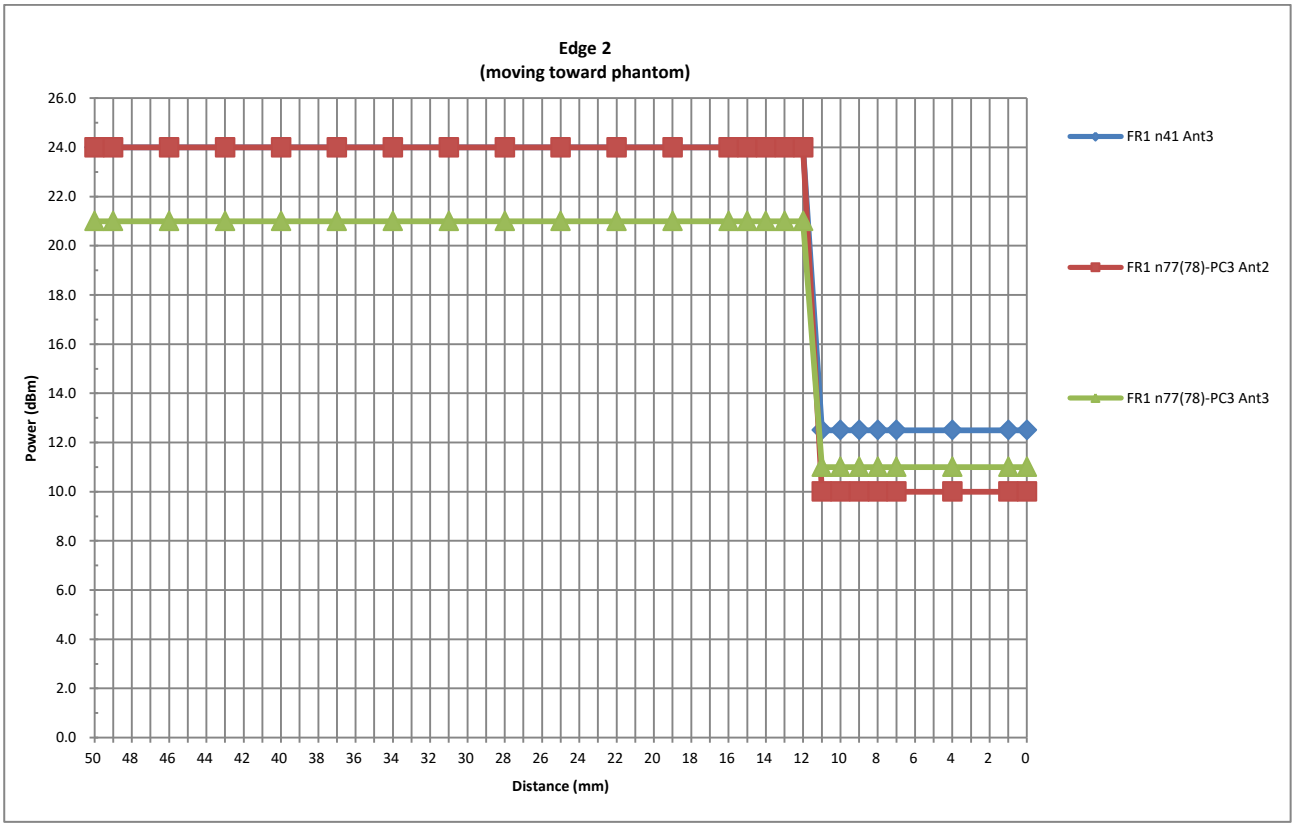
Exposure Position / wireless mode for Ant 2/3	Measured power reduction (dBm)		Reduction Levels
	w/o power back-off	w/ power back-off	(dB)
FR1 n77(78)-PC3 Ant 2	24.00	10.00	14.0
FR1 n41 Ant 3	24.00	12.50	11.5
FR1 n77(78)-PC3 Ant 3	21.00	11.00	10.0

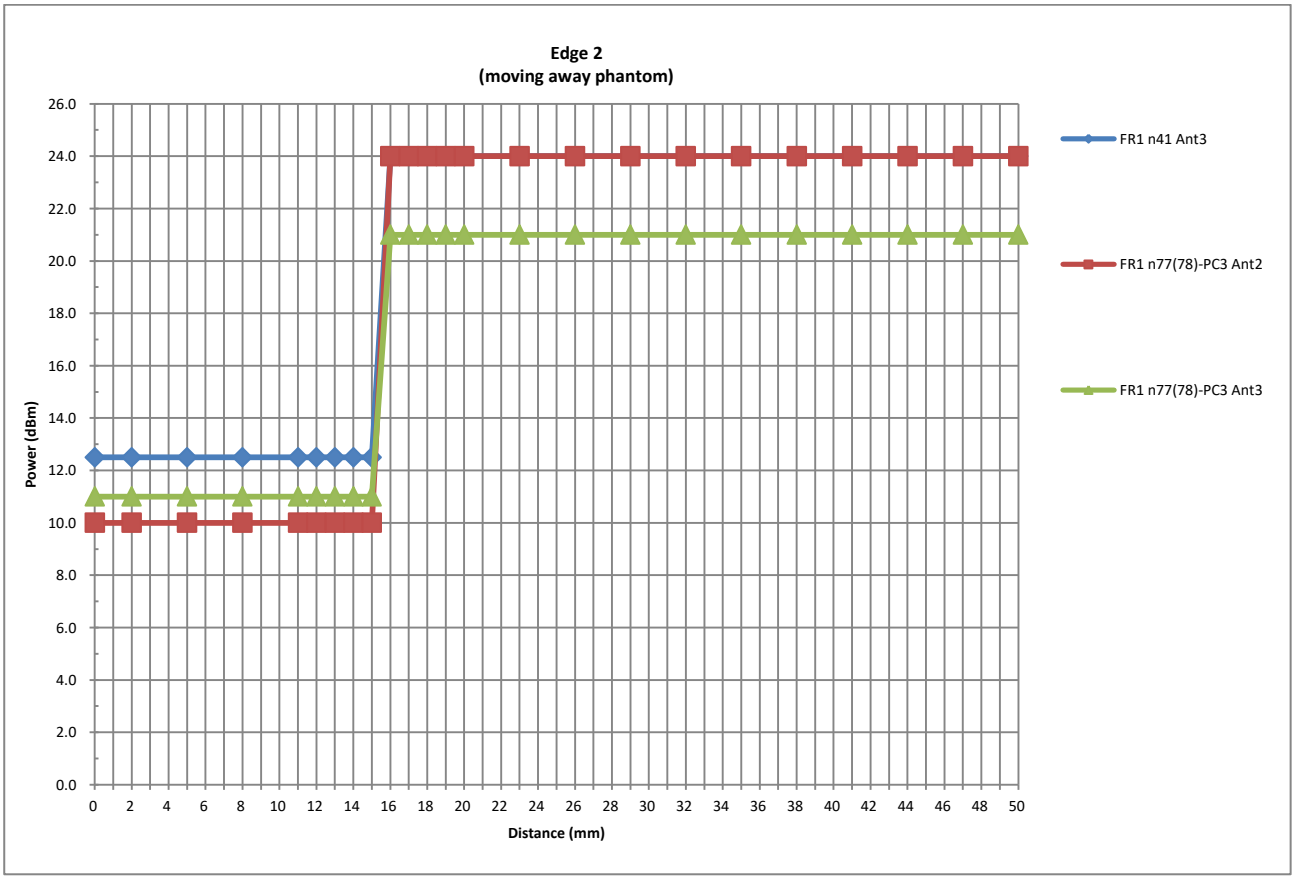





Edge 1
(moving toward phantom)
Power (dBm)
Distance (mm)
FR1 n41 Ant3
FR1 n77(78)-PC3 Ant2
FR1 n77(78)-PC3 Ant3


Edge 1
(moving away phantom)
Power (dBm)
Distance (mm)
FR1 n41 Ant3
FR1 n77(78)-PC3 Ant2
FR1 n77(78)-PC3 Ant3


Edge 2
(moving toward phantom)
Power (dBm)
Distance (mm)
FR1 n41 Ant3
FR1 n77(78)-PC3 Ant2
FR1 n77(78)-PC3 Ant3


Edge 2
(moving away phantom)
Power (dBm)
Distance (mm)
FR1 n41 Ant3
FR1 n77(78)-PC3 Ant2
FR1 n77(78)-PC3 Ant3

6. RF Exposure Limits

6.1 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.

6.2 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

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.

7. Specific Absorption Rate (SAR)

7.1 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.

7.2 SAR Definition

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

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

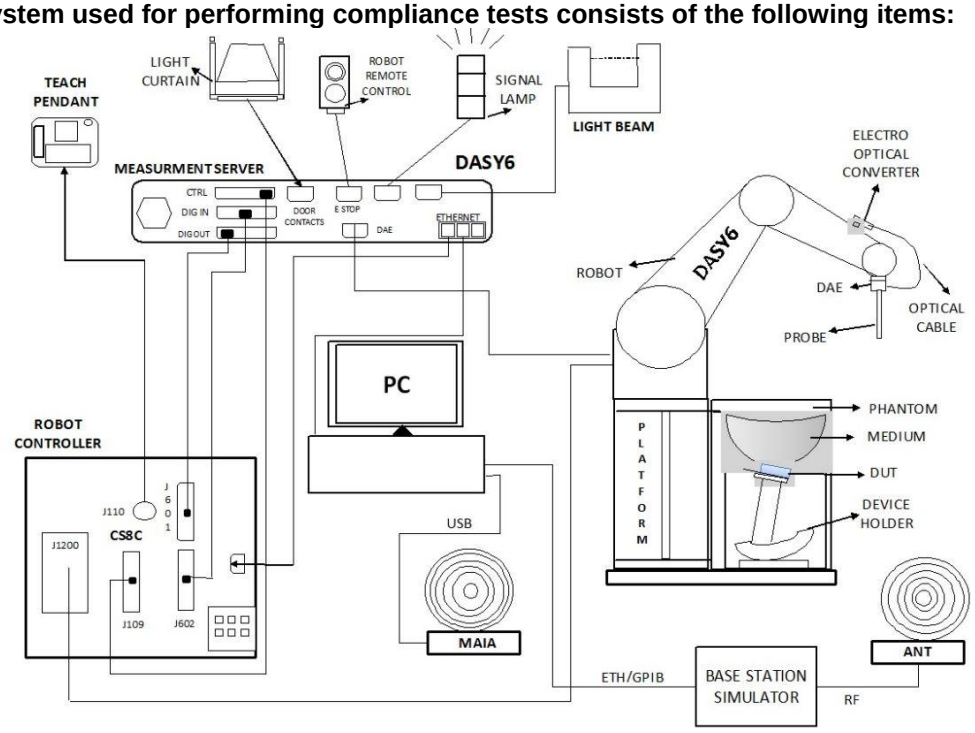
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

8. System Description and Setup

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



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win7 or Win10 and the DASY5 or DASY6/8 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.

8.1 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.

<EX3DV4 Probe>

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

8.2 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.

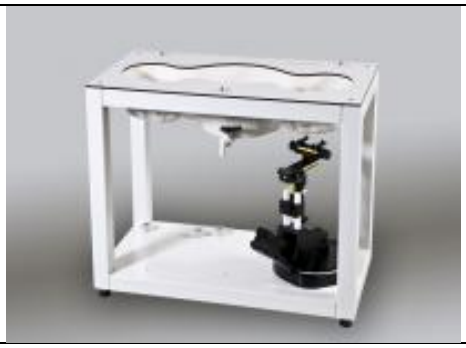
The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Photo of DAE

8.3 Phantom

<SAM Twin Phantom>

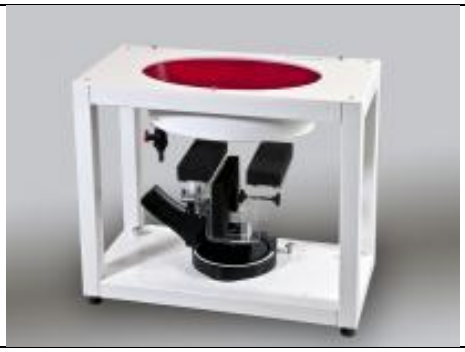
Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom



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 or for evaluating transmitters operating at low frequencies. ELI is fully compatible with standard and all known tissue simulating liquids.

8.4 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

9. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

(a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
(b) Read the WWAN RF power level from the base station simulator.
(c) For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band
(d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/BT output power

<SAR measurement>

(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

9.1 Spatial Peak SAR Evaluation

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

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

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

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

9.2 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.

9.3 Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB0 is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

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

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

9.4 Zoom Scan

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

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

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

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

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

9.5 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.

9.6 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.

10. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1087	Mar. 12, 2025	Mar. 11, 2026
SPEAG	835MHz System Validation Kit	D835V2	4d298	Jan. 26, 2024	Jan. 24, 2026
SPEAG	1750MHz System Validation Kit	D1750V2	1090	Mar. 12, 2025	Mar. 11, 2026
SPEAG	1900MHz System Validation Kit	D1900V2	5d170	Mar. 13, 2025	Mar. 12, 2026
SPEAG	2450MHz System Validation Kit	D2450V2	1095	Feb. 08, 2024	Feb. 06, 2026
SPEAG	2600MHz System Validation Kit	D2600V2	1112	Dec. 18, 2023	Dec. 16, 2025
SPEAG	3500MHz System Validation Kit	D3500V2	1037	Nov. 20, 2023	Nov. 18, 2025
SPEAG	3700MHz System Validation Kit	D3700V2	1008	Nov. 20, 2023	Nov. 18, 2025
SPEAG	3900MHz System Validation Kit	D3900V2	1048	Mar. 09, 2023	Mar. 06, 2026
SPEAG	5000MHz System Validation Kit	D5GHzV2	1113	Sep. 23, 2022	Sep. 21, 2025
SPEAG	Data Acquisition Electronics	DAE4	1650	Nov. 25, 2024	Nov. 24, 2025
SPEAG	Dosimetric E-Field Probe	EX3DV4	7918	Mar. 24, 2025	Mar. 23, 2026
SPEAG	ELI Phantom	ELI V8.0	TP-2135	NCR	NCR
Beichuang	Thermo-Hygrometer	HTC-1	1959634	May. 27, 2025	May. 26, 2026
SPEAG	Phone Positioner	N/A	N/A	None	None
Anritsu	Radio Communication Analyzer	MT8820C	6201563900	Jul. 02, 2025	Jul. 01, 2026
Agilent	ENA Series Network Analyzer	E5071C	MY46112129	Jul. 02, 2025	Jul. 01, 2026
SPEAG	Dielectric Probe Kit	DAK-3.5	1144	Aug. 20, 2024	Aug. 19, 2025
Anritsu	Vector Signal Generator	MG3710A	6201682672	Jan. 03, 2025	Jan. 02, 2026
Rohde & Schwarz	Power Sensor	NRV-Z5	100538	Jul. 02, 2025	Jul. 01, 2026
Rohde & Schwarz	Power Meter	NRVD	102081	Jul. 04, 2024	Jul. 03, 2025
Rohde & Schwarz	Power Meter	NRVD	102081	Jul. 02, 2025	Jul. 01, 2026
Rohde & Schwarz	Power Sensor	NRV-Z5	100538	Jul. 04, 2024	Jul. 03, 2025
Rohde & Schwarz	Power Sensor	NRV-Z5	100539	Jul. 02, 2025	Jul. 01, 2026
R&S	BLUETOOTH TESTER	CBT	101246	Jul. 03, 2025	Jul. 02, 2026
Rohde & Schwarz	Spectrum Analyzer	FSV7	101631	Oct. 11, 2024	Oct. 10, 2025
TES	DIGITAC THERMOMETER	TYPE-K	220305411	Jan. 02, 2025	Jan. 01, 2026
BONN	POWER AMPLIFIER	BLMA 0830-3	087193A	Note 1	
BONN	POWER AMPLIFIER	BLMA 2060-2	087193B	Note 1	
Agilent	Dual Directional Coupler	778D	20500	Note 1	
Agilent	Dual Directional Coupler	778D	20500	Note 1	
Agilent	Dual Directional Coupler	11691D	MY48151020	Note 1	
ARRA	Power Divider	A3200-2	N/A	Note 1	
MCL	Attenuation1	BW-S10W5+	N/A	Note 1	
MCL	Attenuation2	BW-S10W5+	N/A	Note 1	
MCL	Attenuation3	BW-S10W5+	N/A	Note 1	

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.

11. System Verification

11.1 Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid.. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 10.1.

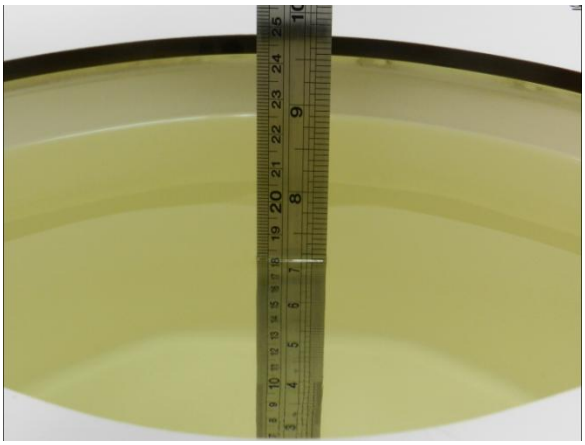


Fig 10.1 Photo of Liquid Height for Body SAR

11.2 Tissue Verification

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
For Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
900	40.3	57.9	0.2	1.4	0.2	0	0.97	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0

Simulating Liquid for 5GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	64~78%
Mineral oil	11~18%
Emulsifiers	9~15%
Additives and Salt	2~3%

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	Head	22.6	0.885	42.8	0.89	41.9	-0.56	2.15	±5.0	2025/6/24
835	Head	22.6	0.923	42.5	0.9	41.5	2.56	2.41	±5.0	2025/6/25
1750	Head	22.6	1.4	40.3	1.37	40.1	2.19	0.5	±5.0	2025/6/27
1900	Head	22.8	1.45	39.2	1.4	40	3.57	-2	±5.0	2025/6/29
2450	Head	22.8	1.77	39.2	1.8	39.2	-1.67	0	±5.0	2025/7/9
2600	Head	22.8	1.9	38.9	1.96	39	-3.06	-0.26	±5.0	2025/7/1
3500	Head	22.7	2.98	37.7	2.91	37.9	2.41	-0.53	±5.0	2025/7/3
3700	Head	22.7	3.16	37.5	3.12	37.7	1.28	-0.53	±5.0	2025/7/5
3900	Head	22.7	3.38	37.3	3.33	37.5	1.59	-0.56	±5.0	2025/7/7
5250	Head	22.7	4.7	36.1	4.71	36	-0.21	0.42	±5.0	2025/7/11
5600	Head	22.7	5.01	35.7	5.07	35.5	-1.18	0.56	±5.0	2025/7/13
5750	Head	22.7	5.16	35.4	5.22	35.4	-1.15	0.14	±5.0	2025/7/15
5600	Head	22.7	5.01	35.8	5.07	35.5	-1.18	0.85	±5.0	2025/7/30

11.3 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.

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2025/6/24	750	Head	50	1087	7918	1650	0.41	8.68	8.2	-5.53	0.28	5.61	5.6	-0.18
2025/6/25	835	Head	50	4d298	7918	1650	0.474	9.89	9.48	-4.15	0.315	6.45	6.3	-2.33
2025/6/27	1750	Head	50	1090	7918	1650	1.92	36.6	38.4	4.92	1.06	19.5	21.2	8.72
2025/6/29	1900	Head	50	5d170	7918	1650	1.86	39.1	37.2	-4.86	1.03	20.6	20.6	0
2025/7/9	2450	Head	50	1095	7918	1650	2.76	52.6	55.2	4.94	1.34	24.7	26.8	8.5
2025/7/1	2600	Head	50	1112	7918	1650	2.87	55.1	57.4	4.17	1.34	24.8	26.8	8.06
2025/7/3	3500	Head	50	1037	7918	1650	3.55	65.4	71	8.56	1.35	24.7	27	9.31
2025/7/5	3700	Head	50	1008	7918	1650	3.41	67.2	68.2	1.49	1.27	24.4	25.4	4.1
2025/7/7	3900	Head	50	1048	7918	1650	3.57	69.1	71.4	3.33	1.24	24.1	24.8	2.9
2025/7/11	5250	Head	50	1113	7918	1650	4.13	81.5	82.6	1.35	1.23	23.3	24.6	5.58
2025/7/13	5600	Head	50	1113	7918	1650	4.43	82.6	88.6	7.26	1.21	23.7	24.2	2.11
2025/7/15	5750	Head	50	1113	7918	1650	3.98	80.8	79.6	-1.49	1.16	23	23.2	0.87
2025/7/30	5600	Head	50	1113	7918	1650	4.30	82.6	86.0	4.12	1.27	23.7	25.4	7.17

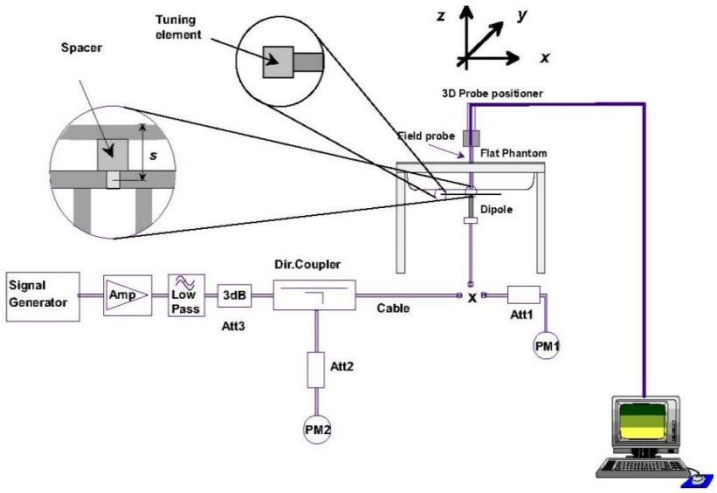


Fig 10.3.1 System Performance Check Setup

Fig 10.3.2 Setup Photo

12. RF Exposure Positions

12.1 SAR Testing for Tablet

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

<EUT Setup Photos>

Please refer to Appendix D for the test setup photos.

13. Conducted RF Output Power (Unit: dBm)

The detailed conducted power table can refer to Appendix E.

<GSM Conducted Power>

General Note:

1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.
3. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

<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. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

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} (Note1, 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 Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_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 Δ_{NACK} = 30/15 with β_{hs} = 30/15 * β_c, and Δ_{CQI} = 24/15 with β_{hs} = 24/15 * β_c.

Note 3: CM = 1 for β_c/β_d =12/15, β_{hs}/β_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 β_c = 11/15 and β_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-TFCI
   viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
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-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	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	β_{ed}1: 47/15 β_{ed}2: 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 Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c. For sub-test 5, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 5/15 with β_{hs} = 5/15 * β_c.

Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_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 β_c = 10/15 and β_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

DC-HSDPA 3GPP release 8 Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration below
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 RMC 12.2Kbps + HSDPA mode.
   ii. Set Cell Power = -25 dBm
   iii. Set HS-DSCH Configuration Type to FRC (H-set 12, QPSK)
   iv. Select HSDPA Uplink Parameters
   v. Set Gain Factors (β_c and β_d) and parameters were set according to each Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
      a). Subtest 1: β_c/β_d=2/15
      b). Subtest 2: β_c/β_d=12/15
      c). Subtest 3: β_c/β_d=15/8
      d). Subtest 4: β_c/β_d=15/4
   vi. Set Delta ACK, Delta NACK and Delta CQI = 8
   vii. Set Ack-Nack Repetition Factor to 3
   viii. Set CQI Feedback Cycle (k) to 4 ms
   ix. Set CQI Repetition Factor to 2
   x. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
A summary of these settings are illustrated below:

C.8.1.12 Fixed Reference Channel Definition H-Set 12

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

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

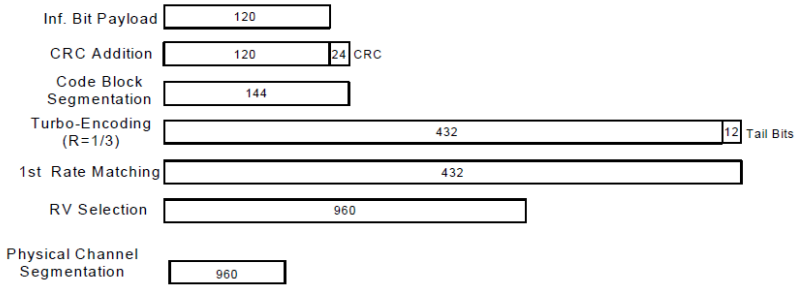


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

HSPA+ 3GPP release 7 (uplink category 7) 16QAM, 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 = 5.2E:HSPA+:UL with 16QAM
   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, C11.1.4, quoted from the TS 34.121-1 s5.2E
   iii. Set Channel Parms
   iv. Set Cell Power = -86 dBm
   v. Set Channel Type = HSPA
   vi. Set UE Target Power =21 dBm
   vii. Power Ctrl Mode= All Up Bits
   viii. Set Manual Uplink DPCH Bc/Bd = Manual
   ix. Set Manual Uplink DPCH Bc and Bd=15,15(for 34.121-1 v8.10.0 table C11.1.4 sub-test 1)
   x. Set HSPA Conn DL Channel Levels
   xi. Set HS-SCCH Configs
   xii. Set RB Test Mode Setup
   xiii. Set Common HSUPA Parameters
   xiv. Set Serving Grant
   xv. Confirm that E-TFCI is equal to the target E-TFCI of 105 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

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

Sub-test	β_c (Note3)	β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed}1: 30/15 β_{ed}2: 30/15	β_{ed}3: 24/15 β_{ed}4: 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.
Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).
Note 3: DPDCH is not configured, therefore the β_c is set to 1 and β_d = 0 by default.
Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.
Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signaled to use the extrapolation algorithm.

Setup Configuration

<WCDMA Conducted Power>

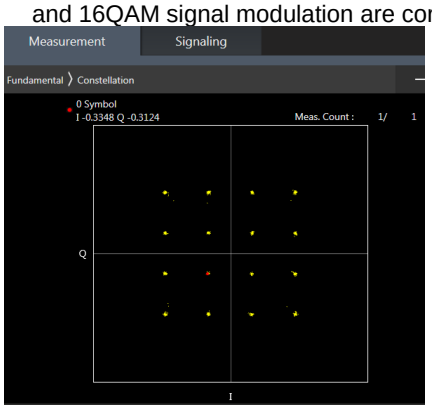
General Note:

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

<LTE Conducted Power>

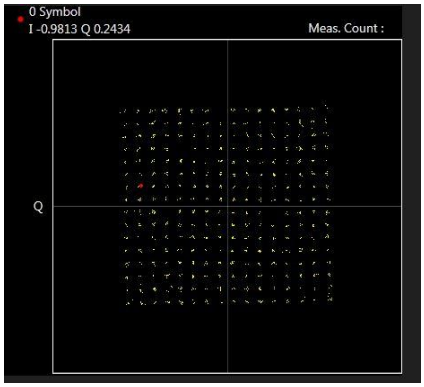
General Note:

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/64QAM/256QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B5 / B26 / B38 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 B5/38 SAR test was covered by B26/41; 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 ≤ 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
10. According to May 2017 TCB workshop, for 16QAM and 64QAM, 256QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 256QAM, 64QAM and 16QAM signal modulation are correct.



16QAM

64QAM



256QAM

<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.

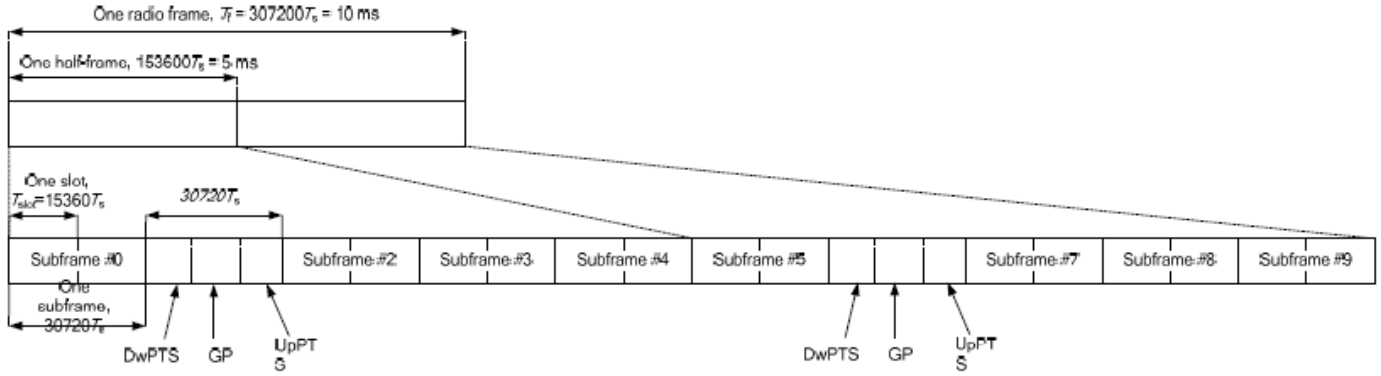


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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

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 subfames, 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.

<LTE Carrier Aggregation>

The detailed LTE Carrier Aggregation conducted power table can refer to Appendix F.

General Note:

1. Per Oct. 2024 TCB workshop, the downlink (DL) pertains to receiver functionality, thus it is not related to RF exposure compliance limits related to cumulative effects of different transmitters.
2. Per Oct. 2024 TCB workshop, equipment authorization applications shall refer to the worst-case UL powers resulting from all the possible modes of operations. Accordingly, CA-DL cases do not need to be analyzed separately, unless pertinent to establishing UL power setting.
3. Per Oct. 2024 TCB workshop, Manufacturer declares that TX power measurement for multiple DL CA configurations is deemed not required as the DL CA has no impact on the TX power according to preliminary scan. TX power measured in LTE standalone operation represents the worst case.
4. This device supports LTE carrier aggregation in the downlink. All uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded.

LTE Carrier Aggregation Conducted Power (Uplink)

LTE Uplink CA	2CC Uplink Carrier Aggregation
Intra-band	Antenna Tx
CA_7C	Ant0
CA_38C	Ant0
CA_41C	Ant0

<Intra-band>

General Note:

i. The device supports intra-band uplink carrier aggregation for LTE B7/38/41 with a maximum of two uplink 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. According Nov. 2017 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.

iii. 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.

<Inter-band uplink carrier aggregation consideration>

LTE Uplink CA	2CC Uplink Carrier Aggregation
Inter-band	Main Antenna Tx
CA_5A-7A	Ant 0 + Ant 1

General Note:

1. The inter band uplink total power level is the same as standalone LTE power level.
2. For Inter-band CA co-located SAR analysis is performed using standalone SAR summed together and they are more conservatively for inter band CA.

5G NR Output Power (Unit: dBm)

General Note:

1. 5G NR n5/n7/n77/n41/n78 is NSA mode.
2. 5G NR n5/n7/n26/n38/n41/n77/n78/n71 is SA mode.
3. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
   a. For DFT-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KDB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-s QPSK and the reported SAR for the DFT-s QPSK configuration is ≤ 1.45 W/kg; CP-OFDM testing is not required.
   b. For DFT-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, for 16QAM/64QAM/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the 16QAM/64QAM/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.
   c. SAR testing 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
   d. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
   e. 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
   f. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK /16QAM/64QAM/256QAM SAR testing are not required.
   g. Smaller bandwidth output power for each RB allocation configuration for this device will 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
4. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
5. NSA and SA mode should perform SAR separately. For the maximum power of NSA mode is the same as SA total power level, so SA SAR can represent NSA mode SAR.
6. 5GNR NSA mode, the power level is the same as 5GNR SA mode, so 5GNR NSA mode and SA mode power table only show one time.
7. 5G NR supports CP-OFDM and DFT-s-OFDM modulation, for DFT-s-OFDM power is higher than CP-OFDM, so only show DFT-s-OFDM power table and chose DFT-s-OFDM to perform SAR testing.
8. For DFT-s-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for the CP-OFDM mode will not higher than DFT-s-OFDM mode, therefore, CP-OFDM measurement is unnecessary.
9. For 5GNR EN-DC mode, standalone SAR performed for 5GNR NSA band with the maximum power, EN-DC SAR summed EN-DC mode 5GNR standalone SAR and LTE standalone SAR, the result of EN-DC SAR is more conservatively.

<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		
	256 QAM	≤ 4.5		
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 *powerBoosting-pi2BPSK* and if the IE *powerBoostPi2BPSK* 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 *powerBoostPi2BPSK* 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		

<EN-DC combination>

ENDC	LTE TX	NR TX
DC_5A_n7A	Ant 0	Ant 1
DC_5A_n78A	Ant 0	Ant 2
DC_7A_n5A	Ant 1	Ant 0
DC_7A_n7A	Ant 1	Ant 0
DC_7A_n77A	Ant 0	Ant 2
DC_7A_n78A	Ant 0	Ant 2
DC_26A_n78A	Ant 0	Ant 2
DC_38A_n78A	Ant 0	Ant 2
DC_41A_n41A	Ant 1	Ant 0
DC_41A_n77A	Ant 0	Ant 2
DC_41A_n78A	Ant 0	Ant 2

<WLAN Conducted Power>

General Note:

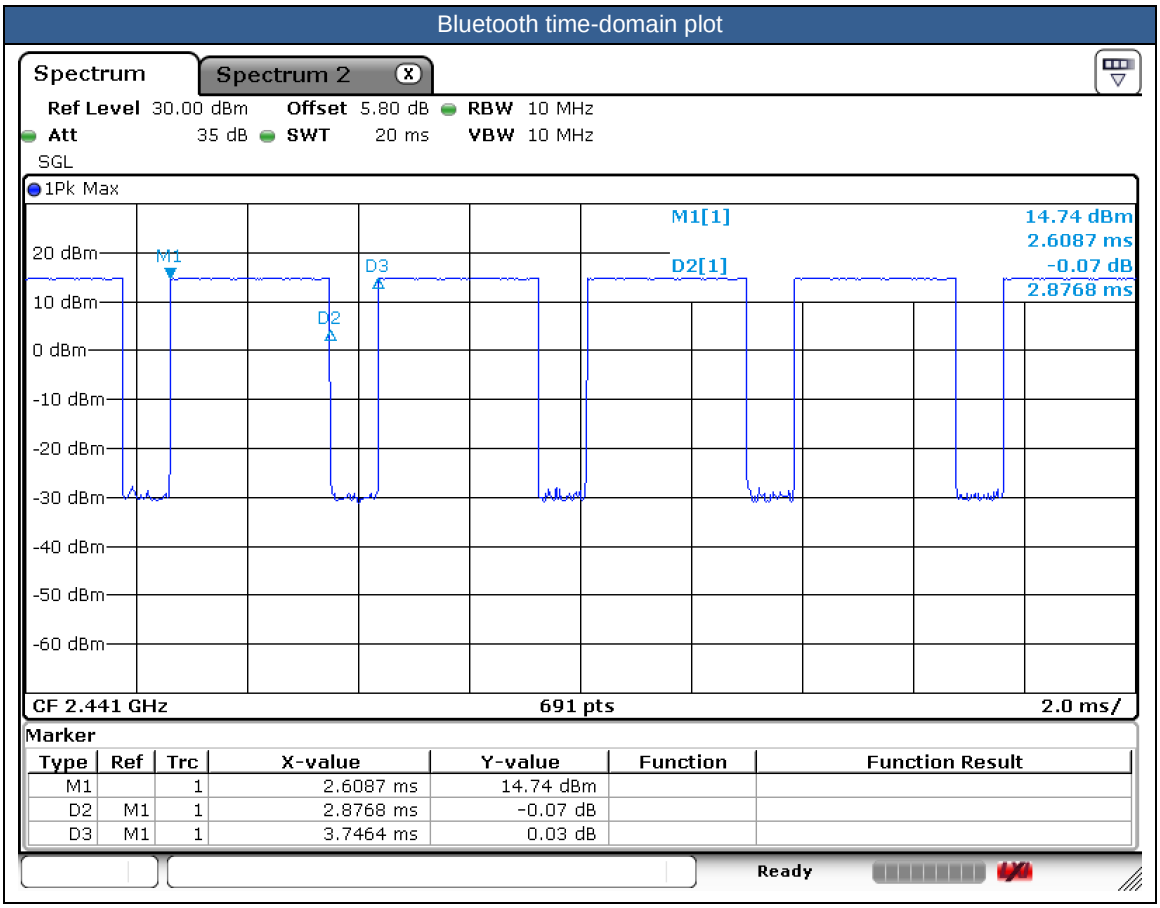
1. The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures. For “Not required”, SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration. Additional output power measurements were not necessary.
2. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration must be determined for each standalone and aggregated frequency band, according to the transmission mode configuration with the highest maximum output power specified for production units to perform SAR measurements. If the same highest maximum output power applies to different combinations of channel bandwidths, modulations and data rates, additional procedures are applied to determine which test configurations require SAR measurement. When applicable, an initial test position may be applied to reduce the number of SAR measurements required for next to the ear, UMPC mini-tablet or hotspot mode configurations with multiple test positions.
3. For 2.4 GHz 802.11b DSSS, either the initial test position procedure for multiple exposure test positions or the DSSS procedure for fixed exposure position is applied; these are mutually exclusive. For 2.4 GHz and 5 GHz OFDM configurations, the initial test configuration is applied to measure SAR using either the initial test position procedure for multiple exposure test position configurations or the initial test configuration procedures for fixed exposure test conditions. Based on the reported SAR of the measured configurations and maximum output power of the transmission mode configurations that are not included in the initial test configuration, the subsequent test configuration and initial test position procedures are applied to determine if SAR measurements are required for the remaining OFDM transmission configurations. In general, the number of test channels that require SAR measurement is minimized based on maximum output power measured for the test sample(s).
4. For OFDM transmission configurations in the 2.4 GHz and 5 GHz bands, When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel for each frequency band.
5. DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures.18 The initial test position procedure is described in the following:
   a. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band.
   b. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
   c. For all positions/configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

<2.4GHz Bluetooth>

General Note:

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps, due to its highest average power.
2. The Bluetooth duty cycle is 76.79 % as following figure, Bluetooth SAR scaling need further consideration and the theoretical duty cycle is 83.3%, therefore the actual duty cycle will be scaled up to the theoretical value of Bluetooth reported SAR calculation.

Bluetooth time-domain plot



14. Antenna Location

The detailed antenna location information can refer to SAR Test Setup Photos.

<SAR test exclusion table>

General Note:

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

For Ant 0

Wireless Interface	GPRS 850	GPRS 1900	WCDMA Band V	WCDMA Band IV	WCDMA Band II	LTE Band 5	LTE Band 7	LTE Band 26	LTE Band 38	LTE Band 41	FR1 n26/5	FR1 n7	FR1 n71	FR1 n38/41	FR1 n77/78
Calculated Frequency (MHz)	848	1909	846	1750	1907	848	2567	848	2617	2687	839	2545	688	2640	3930
Maximum power (dBm)	27.00	23.50	25.00	25.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	13.00
Maximum rated power(mW)	501.19	223.87	316.23	316.23	251.19	251.19	251.19	251.19	251.19	251.19	251.19	251.19	251.19	251.19	19.95
Separation distance(mm)	5.0														
exclusion threshold	92.3	61.9	58.2	83.7	69.4	46.3	80.5	46.3	81.3	82.4	46.0	80.1	41.7	81.6	7.9
Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Separation distance(mm)	5.0														
exclusion threshold	92.3	61.9	58.2	83.7	69.4	46.3	80.5	46.3	81.3	82.4	46.0	80.1	41.7	81.6	7.9
Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Separation distance(mm)	147.0														
exclusion threshold	711.0	1079.0	710.0	1083.0	1079.0	711.0	1754.0	1133.0	1063.0	1829.0	706.0	1740.0	626.0	1800.0	2617.0
Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Separation distance(mm)	171.0														
exclusion threshold	847.0	1319.0	846.0	1323.0	1319.0	847.0	2164.0	1373.0	1303.0	2259.0	841.0	2147.0	736.0	2222.0	3246.0
Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Separation distance(mm)	58.6														
exclusion threshold	212.0	195.0	212.0	199.0	195.0	212.0	241.0	249.0	179.0	246.0	212.0	240.0	220.0	244.0	301.0
Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No

For Ant 1

Exposure Position	Wireless Interface	LTE Band 7 Ant 1	LTE Band 38 Ant 1	LTE Band 41 Ant 1	FR1 n7 Ant 1	FR1 n38/41 Ant 1
	Calculated Frequency (MHz)	2567	2617	2687	2545	2640
	Maximum power (dBm)	24.00	24.00	24.00	24.00	24.00
	Maximum rated power(mW)	251.19	251.19	251.19	251.19	251.19
Bottom Face	Separation distance(mm)	5.0				
	exclusion threshold	80.5	81.3	82.4	80.1	81.6
	Testing required?	Yes	Yes	Yes	Yes	Yes
Edge 1	Separation distance(mm)	5.0				
	exclusion threshold	80.5	81.3	82.4	80.1	81.6
	Testing required?	Yes	Yes	Yes	Yes	Yes
Edge 2	Separation distance(mm)	58.6				
	exclusion threshold	241.0	179.0	246.0	180.0	178.0
	Testing required?	Yes	Yes	Yes	Yes	Yes
Edge 3	Separation distance(mm)	171.0				
	exclusion threshold	2164.0	1303.0	2259.0	1304.0	1302.0
	Testing required?	No	No	No	No	No
Edge 4	Separation distance(mm)	131.8				
	exclusion threshold	1493.0	911.0	1557.0	912.0	910.0
	Testing required?	No	No	No	No	No

For Ant 2

Exposure Position	Wireless Interface	FR1 n77/78
	Calculated Frequency (MHz)	3930
	Maximum power (dBm)	24.0
	Maximum rated power(mW)	251.19
Bottom Face	Separation distance(mm)	5.0
	exclusion threshold	99.6
	Testing required?	Yes
Edge 1	Separation distance(mm)	5.0
	exclusion threshold	99.6
	Testing required?	Yes
Edge 2	Separation distance(mm)	38.7
	exclusion threshold	12.9
	Testing required?	Yes
Edge 3	Separation distance(mm)	171.0
	exclusion threshold	3246.0
	Testing required?	No
Edge 4	Separation distance(mm)	216.6
	exclusion threshold	4441.0
	Testing required?	No

For Ant 3

Exposure Position	Wireless Interface	FR1 n41	FR1 n77/78
	Calculated Frequency (MHz)	2640	3930
	Maximum power (dBm)	24.0	21.0
	Maximum rated power(mW)	251.19	125.89
Bottom Face	Separation distance(mm)	5.0	
	exclusion threshold	81.6	49.9
	Testing required?	Yes	Yes
Edge 1	Separation distance(mm)	5.0	
	exclusion threshold	81.6	49.9
	Testing required?	Yes	Yes
Edge 2	Separation distance(mm)	5.0	
	exclusion threshold	81.6	49.9
	Testing required?	Yes	Yes
Edge 3	Separation distance(mm)	146.0	
	exclusion threshold	1782.0	1036.0
	Testing required?	No	No
Edge 4	Separation distance(mm)	278.8	
	exclusion threshold	4119.0	2364.0
	Testing required?	No	No

For Ant 4

Exposure Position	Wireless Interface	FR1 n41	FR1 n77/78
	Calculated Frequency (MHz)	2640	3930
	Maximum power (dBm)	15.0	11.0
	Maximum rated power(mW)	31.62	12.59
Bottom Face	Separation distance(mm)	5.0	
	exclusion threshold	10.3	5.0
	Testing required?	Yes	Yes
Edge 1	Separation distance(mm)	5.0	
	exclusion threshold	10.3	5.0
	Testing required?	Yes	Yes
Edge 2	Separation distance(mm)	147.0	
	exclusion threshold	1800.0	1046.0
	Testing required?	No	No
Edge 3	Separation distance(mm)	146.0	
	exclusion threshold	1782.0	1036.0
	Testing required?	No	No
Edge 4	Separation distance(mm)	5.0	
	exclusion threshold	10.3	5.0
	Testing required?	Yes	Yes

For Ant 6

Exposure Position	Wireless Interface	BT	2.4GHz WLAN	5GHz WLAN
	Calculated Frequency (MHz)	2480	2462	5825
	Maximum power (dBm)	7.5	20.5	20.0
	Maximum rated power(mW)	5.62	112.20	100.00
Bottom Face	Separation distance(mm)	5.0	5.0	5.0
	exclusion threshold	1.8	35.2	48.3
	Testing required?	No	Yes	Yes
Edge 1	Separation distance(mm)	11.1	11.1	11.1
	exclusion threshold	0.8	15.9	21.7
	Testing required?	No	Yes	Yes
Edge 2	Separation distance(mm)	216.6	216.6	216.6
	exclusion threshold	1761.0	1762.0	1728.0
	Testing required?	No	No	No
Edge 3	Separation distance(mm)	146.0	146.0	146.0
	exclusion threshold	1055.0	1056.0	1022.0
	Testing required?	No	No	No
Edge 4	Separation distance(mm)	30.0	30.0	30.0
	exclusion threshold	0.3	5.9	8.1
	Testing required?	No	Yes	Yes

15. 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 SAR testing of Bluetooth signal with 83.3% theoretical duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle) *83.3%".
   d. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   e. For WLAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
   f. 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 (W/kg) = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   · ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   · ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   · ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
4. According to Nov. 2017 TCB workshop, when the reported 1gSAR for UL CA configuration is <1.2 W/kg, UL CA 1gSAR is not required for all required test channels (PCC based).
5. The device implements Proximity sensors mechanism for the power management for SAR compliance at different exposure conditions (Body). The device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to appendix E. power table.

GSM Note:

1. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.
2. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

WCDMA Note:

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

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/64QAM/256QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B5 / B26 / B38 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 B5/38 SAR test was covered by B26/41; 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 ≤ 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. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
   a. SAR testing 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.
   b. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
   c. 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.
   d. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK /16QAM/64QAM/256QAM SAR testing are not required.
   e. Smaller bandwidth output power for each RB allocation configuration for this device will 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
   f. For 5G FR1 n5/n7/n26/n38/n41/n77 the maximum bandwidth does not support three non-overlapping channels, 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.

WLAN/Bluetooth Note:

1. Per KDB 248227 D01v02r02, for 2.4GHz 802.11g/n SAR testing is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
2. Per KDB 248227 D01v02r02, U-NII-1 SAR testing is not required when the U-NII-2A band highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band.
3. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
4. For all positions / configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions / configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.
5. During SAR testing the WLAN transmission was verified using a spectrum analyzer.

15.1 Body SAR

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	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)
	GSM850	GPRS 4 Tx slots	Bottom Face	0mm	Ant 0	Sensor on	189	836.4	4	15.48	17.00	1.419	100	1.000	0.08	0.305	0.433
	GSM850	GPRS 4 Tx slots	Edge 1	0mm	Ant 0	Sensor on	189	836.4	4	15.48	17.00	1.419	100	1.000	-0.04	0.352	0.499
	GSM850	GPRS 4 Tx slots	Edge 2	0mm	Ant 0	Full Power	189	836.4	4	28.42	30.00	1.439	100	1.000	0.05	0.167	0.240
	GSM850	GPRS 4 Tx slots	Edge 3	0mm	Ant 0	Full Power	189	836.4	4	28.42	30.00	1.439	100	1.000	0.05	0.053	0.076
	GSM850	GPRS 4 Tx slots	Edge 4	0mm	Ant 0	Full Power	189	836.4	4	28.42	30.00	1.439	100	1.000	0.01	0.316	0.455
01	GSM850	GPRS 4 Tx slots	Bottom Face	16mm	Ant 0	Sensor off	189	836.4	4	28.42	30.00	1.439	100	1.000	0.1	0.673	**0.968**
	GSM850	GPRS 4 Tx slots	Bottom Face	16mm	Ant 0	Sensor off	189	836.4	1	28.42	30.00	1.439	100	1.000	0.03	0.651	0.937
	GSM850	GPRS 4 Tx slots	Bottom Face	16mm	Ant 0	Sensor off	128	824.2	4	28.37	30.00	1.455	100	1.000	0.01	0.631	0.918
	GSM850	GPRS 4 Tx slots	Bottom Face	16mm	Ant 0	Sensor off	251	848.8	4	28.35	30.00	1.462	100	1.000	0.05	0.643	0.940
	GSM850	GPRS 4 Tx slots	Edge 1	17mm	Ant 0	Sensor off	189	836.4	4	28.42	30.00	1.439	100	1.000	-0.11	0.593	0.853
	GSM850	GPRS 4 Tx slots	Edge 1	17mm	Ant 0	Sensor off	128	824.2	4	28.37	30.00	1.455	100	1.000	0.01	0.546	0.794
	GSM850	GPRS 4 Tx slots	Edge 1	17mm	Ant 0	Sensor off	251	848.8	4	28.35	30.00	1.462	100	1.000	0.06	0.563	0.823
	GSM1900	GPRS 4 Tx slots	Bottom Face	0mm	Ant 0	Sensor on	661	1880	4	11.70	12.50	1.202	100	1.000	0.01	0.444	0.534
	GSM1900	GPRS 4 Tx slots	Edge 1	0mm	Ant 0	Sensor on	661	1880	4	11.70	12.50	1.202	100	1.000	0.09	0.422	0.507
	GSM1900	GPRS 4 Tx slots	Edge 2	0mm	Ant 0	Full Power	661	1880	4	25.68	26.50	1.208	100	1.000	0.01	0.056	0.068
	GSM1900	GPRS 4 Tx slots	Edge 3	0mm	Ant 0	Full Power	661	1880	4	25.68	26.50	1.208	100	1.000	0.03	0.010	0.012
02	GSM1900	GPRS 4 Tx slots	Edge 4	0mm	Ant 0	Full Power	661	1880	4	25.68	26.50	1.208	100	1.000	0.18	0.621	**0.750**
	GSM1900	GPRS 4 Tx slots	Bottom Face	16mm	Ant 0	Sensor off	661	1880	4	25.68	26.50	1.208	100	1.000	0.06	0.571	0.690
	GSM1900	GPRS 4 Tx slots	Edge 1	17mm	Ant 0	Sensor off	661	1880	4	25.68	26.50	1.208	100	1.000	0.05	0.454	0.548
	WCDMA II	RMC 12.2Kbps	Bottom Face	0mm	Ant 0	Sensor on	9400	1880	4	7.95	9.00	1.274	100	1.000	0.06	0.418	0.533
	WCDMA II	RMC 12.2Kbps	Edge 1	0mm	Ant 0	Sensor on	9400	1880	4	7.95	9.00	1.274	100	1.000	0.06	0.362	0.461
	WCDMA II	RMC 12.2Kbps	Edge 2	0mm	Ant 0	Full Power	9400	1880	4	22.90	24.00	1.288	100	1.000	0.06	0.224	0.289
	WCDMA II	RMC 12.2Kbps	Edge 3	0mm	Ant 0	Full Power	9400	1880	4	22.90	24.00	1.288	100	1.000	0.07	0.016	0.021
03	WCDMA II	RMC 12.2Kbps	Edge 4	0mm	Ant 0	Full Power	9400	1880	4	22.90	24.00	1.288	100	1.000	-0.16	0.764	**0.984**
	WCDMA II	RMC 12.2Kbps	Edge 4	0mm	Ant 0	Full Power	9262	1852.4	4	22.85	24.00	1.303	100	1.000	0.01	0.731	0.952
	WCDMA II	RMC 12.2Kbps	Edge 4	0mm	Ant 0	Full Power	9538	1907.6	4	22.83	24.00	1.309	100	1.000	0.03	0.719	0.941
	WCDMA II	RMC 12.2Kbps	Bottom Face	16mm	Ant 0	Sensor off	9400	1880	4	22.90	24.00	1.288	100	1.000	0.01	0.712	0.917
	WCDMA II	RMC 12.2Kbps	Bottom Face	16mm	Ant 0	Sensor off	9262	1852.4	4	22.85	24.00	1.303	100	1.000	0.09	0.680	0.886
	WCDMA II	RMC 12.2Kbps	Bottom Face	16mm	Ant 0	Sensor off	9538	1907.6	4	22.83	24.00	1.309	100	1.000	0.07	0.669	0.876
	WCDMA II	RMC 12.2Kbps	Edge 1	17mm	Ant 0	Sensor off	9400	1880	4	22.90	24.00	1.288	100	1.000	0.01	0.699	0.900
	WCDMA II	RMC 12.2Kbps	Edge 1	17mm	Ant 0	Sensor off	9262	1852.4	4	22.85	24.00	1.303	100	1.000	0.09	0.624	0.813
	WCDMA II	RMC 12.2Kbps	Edge 1	17mm	Ant 0	Sensor off	9538	1907.6	4	22.83	24.00	1.309	100	1.000	0.03	0.653	0.855
	WCDMA IV	RMC 12.2Kbps	Bottom Face	0mm	Ant 0	Sensor on	1413	1732.6	4	9.32	10.50	1.312	100	1.000	-0.01	0.341	0.447
	WCDMA IV	RMC 12.2Kbps	Edge 1	0mm	Ant 0	Sensor on	1413	1732.6	4	9.32	10.50	1.312	100	1.000	0.06	0.361	0.474
	WCDMA IV	RMC 12.2Kbps	Edge 2	0mm	Ant 0	Full Power	1413	1732.6	4	23.76	25.00	1.330	100	1.000	0.02	0.220	0.293
	WCDMA IV	RMC 12.2Kbps	Edge 3	0mm	Ant 0	Full Power	1413	1732.6	4	23.76	25.00	1.330	100	1.000	-0.01	0.011	0.015
04	WCDMA IV	RMC 12.2Kbps	Edge 4	0mm	Ant 0	Full Power	1413	1732.6	4	23.76	25.00	1.330	100	1.000	0.12	0.865	**1.150**
	WCDMA IV	RMC 12.2Kbps	Edge 4	0mm	Ant 0	Full Power	1413	1732.6	1	23.76	25.00	1.330	100	1.000	0.03	0.812	1.080
	WCDMA IV	RMC 12.2Kbps	Edge 4	0mm	Ant 0	Full Power	1312	1712.4	4	23.75	25.00	1.334	100	1.000	0.01	0.823	1.098
	WCDMA IV	RMC 12.2Kbps	Edge 4	0mm	Ant 0	Full Power	1513	1752.6	4	23.71	25.00	1.346	100	1.000	-0.06	0.841	1.132
	WCDMA IV	RMC 12.2Kbps	Bottom Face	16mm	Ant 0	Sensor off	1413	1732.6	4	23.76	25.00	1.330	100	1.000	0.03	0.529	0.704
	WCDMA IV	RMC 12.2Kbps	Edge 1	17mm	Ant 0	Sensor off	1413	1732.6	4	23.76	25.00	1.330	100	1.000	0.03	0.575	0.765
	WCDMA V	RMC 12.2Kbps	Bottom Face	0mm	Ant 0	Sensor on	4182	836.4	4	12.98	14.00	1.265	100	1.000	0.01	0.376	0.476
	WCDMA V	RMC 12.2Kbps	Edge 1	0mm	Ant 0	Sensor on	4182	836.4	4	12.98	14.00	1.265	100	1.000	-0.03	0.490	0.620
	WCDMA V	RMC 12.2Kbps	Edge 2	0mm	Ant 0	Full Power	4182	836.4	4	23.94	25.00	1.276	100	1.000	0.06	0.108	0.138
	WCDMA V	RMC 12.2Kbps	Edge 3	0mm	Ant 0	Full Power	4182	836.4	4	23.94	25.00	1.276	100	1.000	0.06	0.010	0.013
	WCDMA V	RMC 12.2Kbps	Edge 4	0mm	Ant 0	Full Power	4182	836.4	4	23.94	25.00	1.276	100	1.000	0.01	0.313	0.399
	WCDMA V	RMC 12.2Kbps	Bottom Face	16mm	Ant 0	Sensor off	4182	836.4	4	23.94	25.00	1.276	100	1.000	0.14	0.614	0.783
05	WCDMA V	RMC 12.2Kbps	Edge 1	17mm	Ant 0	Sensor off	4182	836.4	4	23.94	25.00	1.276	100	1.000	0.03	0.641	**0.818**
	WCDMA V	RMC 12.2Kbps	Edge 1	17mm	Ant 0	Sensor off	4132	826.4	4	23.88	25.00	1.294	100	1.000	-0.05	0.611	0.791
	WCDMA V	RMC 12.2Kbps	Edge 1	17mm	Ant 0	Sensor off	4233	846.6	4	23.93	25.00	1.279	100	1.000	0.09	0.630	0.806

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 7	20M	QPSK	1	0	Bottom Face	0mm	Ant 0	Sensor on	21100	2535	4	9.26	10.00	1.186	100	1.000	0.09	0.454	0.538
	LTE Band 7C	20M	QPSK	1	0	Bottom Face	0mm	Ant 0	Sensor on	21100+ 20902	2535+ 2515.2	4	9.13	10.00	1.222	100	1.000	0.04	0.426	0.521
	LTE Band 7	20M	QPSK	50	0	Bottom Face	0mm	Ant 0	Sensor on	21100	2535	4	9.18	10.00	1.208	100	1.000	0.07	0.347	0.419
	LTE Band 7	20M	QPSK	1	0	Edge 1	0mm	Ant 0	Sensor on	21100	2535	4	9.26	10.00	1.186	100	1.000	0.03	0.285	0.338
	LTE Band 7	20M	QPSK	50	0	Edge 1	0mm	Ant 0	Sensor on	21100	2535	4	9.18	10.00	1.208	100	1.000	0.01	0.226	0.273
	LTE Band 7	20M	QPSK	1	0	Edge 2	0mm	Ant 0	Full Power	21100	2535	4	23.23	24.00	1.194	100	1.000	0.06	0.082	0.098
	LTE Band 7	20M	QPSK	50	0	Edge 2	0mm	Ant 0	Full Power	21100	2535	4	22.34	23.00	1.164	100	1.000	0.01	0.066	0.077
	LTE Band 7	20M	QPSK	1	0	Edge 3	0mm	Ant 0	Full Power	21100	2535	4	23.23	24.00	1.194	100	1.000	0.09	0.096	0.115
	LTE Band 7	20M	QPSK	50	0	Edge 3	0mm	Ant 0	Full Power	21100	2535	4	22.34	23.00	1.164	100	1.000	0.05	0.059	0.069
	LTE Band 7	20M	QPSK	1	0	Edge 4	0mm	Ant 0	Full Power	21100	2535	4	23.23	24.00	1.194	100	1.000	0.01	0.395	0.472
	LTE Band 7	20M	QPSK	50	0	Edge 4	0mm	Ant 0	Full Power	21100	2535	4	22.34	23.00	1.164	100	1.000	0.09	0.312	0.363
	LTE Band 7	20M	QPSK	1	0	Bottom Face	16mm	Ant 0	Sensor off	21100	2535	4	23.23	24.00	1.194	100	1.000	0.16	0.474	0.566
	LTE Band 7	20M	QPSK	1	0	Bottom Face	16mm	Ant 0	Sensor off	21100	2535	1	23.23	24.00	1.194	100	1.000	0.03	0.504	0.602
	LTE Band 7	20M	QPSK	1	0	Edge 1	17mm	Ant 0	Sensor off	21100	2535	4	23.23	24.00	1.194	100	1.000	0.03	0.398	0.475
06	LTE Band 7	20M	QPSK	1	0	Bottom Face	0mm	Ant 1	Sensor on	21100	2535	4	11.50	12.00	1.122	100	1.000	0.05	0.806	**0.904**
	LTE Band 7	20M	QPSK	1	0	Bottom Face	0mm	Ant 1	Sensor on	20850	2510	4	11.45	12.00	1.135	100	1.000	0.06	0.783	0.889
	LTE Band 7	20M	QPSK	1	0	Bottom Face	0mm	Ant 1	Sensor on	21350	2560	4	11.48	12.00	1.127	100	1.000	-0.03	0.759	0.855
	LTE Band 7	20M	QPSK	50	0	Bottom Face	0mm	Ant 1	Sensor on	21100	2535	4	11.48	12.00	1.127	100	1.000	-0.03	0.647	0.729
	LTE Band 7	20M	QPSK	100	0	Bottom Face	0mm	Ant 1	Sensor on	21100	2535	4	11.38	12.00	1.153	100	1.000	0.08	0.582	0.671
	LTE Band 7	20M	QPSK	1	0	Edge 1	0mm	Ant 1	Sensor on	21100	2535	4	11.50	12.00	1.122	100	1.000	-0.03	0.365	0.410
	LTE Band 7	20M	QPSK	50	0	Edge 1	0mm	Ant 1	Sensor on	21100	2535	4	11.48	12.00	1.127	100	1.000	-0.03	0.324	0.365
	LTE Band 7	20M	QPSK	1	0	Edge 2	0mm	Ant 1	Sensor on	21100	2535	4	11.50	12.00	1.122	100	1.000	-0.11	0.140	0.157
	LTE Band 7	20M	QPSK	50	0	Edge 2	0mm	Ant 1	Sensor on	21100	2535	4	11.48	12.00	1.127	100	1.000	-0.16	0.114	0.128
	LTE Band 7	20M	QPSK	1	0	Edge 3	0mm	Ant 1	Full Power	21100	2535	4	23.45	24.00	1.135	100	1.000	-0.02	0.010	0.011
	LTE Band 7	20M	QPSK	50	0	Edge 3	0mm	Ant 1	Full Power	21100	2535	4	22.42	23.00	1.143	100	1.000	0.15	0.006	0.007
	LTE Band 7	20M	QPSK	1	0	Edge 4	0mm	Ant 1	Full Power	21100	2535	4	23.45	24.00	1.135	100	1.000	-0.09	0.042	0.048
	LTE Band 7	20M	QPSK	50	0	Edge 4	0mm	Ant 1	Full Power	21100	2535	4	22.42	23.00	1.143	100	1.000	0.11	0.043	0.049
	LTE Band 7	20M	QPSK	1	0	Bottom Face	16mm	Ant 1	Sensor off	21100	2535	4	23.45	24.00	1.135	100	1.000	0.01	0.355	0.403
	LTE Band 7	20M	QPSK	1	0	Edge 1	17mm	Ant 1	Sensor off	21100	2535	4	23.45	24.00	1.135	100	1.000	0.08	0.314	0.356
	LTE Band 7	20M	QPSK	1	0	Edge 2	10mm	Ant 1	Sensor off	21100	2535	4	23.45	24.00	1.135	100	1.000	0.08	0.428	0.486
	LTE Band 26	15M	QPSK	1	0	Bottom Face	0mm	Ant 0	Sensor on	26865	831.5	4	12.88	14.00	1.294	100	1.000	-0.05	0.380	0.492
	LTE Band 26	15M	QPSK	36	0	Bottom Face	0mm	Ant 0	Sensor on	26865	831.5	4	12.79	14.00	1.321	100	1.000	0.05	0.296	0.391
07	LTE Band 26	15M	QPSK	1	0	Edge 1	0mm	Ant 0	Sensor on	26865	831.5	4	12.88	14.00	1.294	100	1.000	0.16	0.473	**0.612**
	LTE Band 26	15M	QPSK	36	0	Edge 1	0mm	Ant 0	Sensor on	26865	831.5	4	12.79	14.00	1.321	100	1.000	0.16	0.365	0.482
	LTE Band 26	15M	QPSK	1	0	Edge 2	0mm	Ant 0	Full Power	26865	831.5	4	22.84	24.00	1.306	100	1.000	0.16	0.089	0.116
	LTE Band 26	15M	QPSK	36	0	Edge 2	0mm	Ant 0	Full Power	26865	831.5	4	21.80	23.00	1.318	100	1.000	-0.03	0.066	0.087
	LTE Band 26	15M	QPSK	1	0	Edge 3	0mm	Ant 0	Full Power	26865	831.5	4	22.84	24.00	1.306	100	1.000	0.07	0.021	0.027
	LTE Band 26	15M	QPSK	36	0	Edge 3	0mm	Ant 0	Full Power	26865	831.5	4	21.80	23.00	1.318	100	1.000	-0.06	0.016	0.021
	LTE Band 26	15M	QPSK	1	0	Edge 4	0mm	Ant 0	Full Power	26865	831.5	4	22.84	24.00	1.306	100	1.000	0.01	0.230	0.300
	LTE Band 26	15M	QPSK	36	0	Edge 4	0mm	Ant 0	Full Power	26865	831.5	4	21.80	23.00	1.318	100	1.000	-0.01	0.177	0.233
	LTE Band 26	15M	QPSK	1	0	Bottom Face	16mm	Ant 0	Sensor off	26865	831.5	4	22.84	24.00	1.306	100	1.000	0.02	0.436	0.569
	LTE Band 26	15M	QPSK	1	0	Edge 1	17mm	Ant 0	Sensor off	26865	831.5	4	22.84	24.00	1.306	100	1.000	-0.03	0.422	0.551
	LTE Band 41	20M	QPSK	1	0	Bottom Face	0mm	Ant 0	Sensor on	40620	2593	4	10.45	11.00	1.135	62.9	1.006	0.07	0.464	0.530
	LTE Band 41C	20M	QPSK	1	0	Bottom Face	0mm	Ant 0	Sensor on	40620+ 40422	2593+ 2573.2	4	10.33	11.00	1.167	62.9	1.006	0.03	0.432	0.507
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0mm	Ant 0	Sensor on	40620	2593	4	10.39	11.00	1.151	62.9	1.006	-0.17	0.327	0.379
	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	Ant 0	Sensor on	40620	2593	4	10.45	11.00	1.135	62.9	1.006	-0.14	0.330	0.377
	LTE Band 41	20M	QPSK	50	0	Edge 1	0mm	Ant 0	Sensor on	40620	2593	4	10.39	11.00	1.151	62.9	1.006	-0.12	0.257	0.298
	LTE Band 41	20M	QPSK	1	0	Edge 2	0mm	Ant 0	Full Power	40620	2593	4	23.42	24.00	1.143	62.9	1.006	-0.18	0.082	0.094
	LTE Band 41	20M	QPSK	50	0	Edge 2	0mm	Ant 0	Full Power	40620	2593	4	22.42	23.00	1.143	62.9	1.006	-0.11	0.057	0.066
	LTE Band 41	20M	QPSK	1	0	Edge 3	0mm	Ant 0	Full Power	40620	2593	4	23.42	24.00	1.143	62.9	1.006	-0.16	0.057	0.066
	LTE Band 41	20M	QPSK	50	0	Edge 3	0mm	Ant 0	Full Power	40620	2593	4	22.42	23.00	1.143	62.9	1.006	-0.15	0.038	0.044

	LTE Band 41	20M	QPSK	1	0	Edge 4	0mm	Ant 0	Full Power	40620	2593	4	23.42	24.00	1.143	62.9	1.006	-0.06	0.166	0.191
	LTE Band 41	20M	QPSK	50	0	Edge 4	0mm	Ant 0	Full Power	40620	2593	4	22.42	23.00	1.143	62.9	1.006	-0.14	0.127	0.146
	LTE Band 41	20M	QPSK	1	0	Bottom Face	16mm	Ant 0	Sensor off	40620	2593	4	23.42	24.00	1.143	62.9	1.006	0.05	0.306	0.352
	LTE Band 41	20M	QPSK	1	0	Edge 1	17mm	Ant 0	Sensor off	40620	2593	4	23.42	24.00	1.143	62.9	1.006	-0.06	0.255	0.293
08	LTE Band 41	20M	QPSK	1	0	Bottom Face	0mm	Ant 1	Sensor on	40620	2593	4	12.93	14.00	1.279	62.9	1.006	0.06	0.802	**1.032**
	LTE Band 41	20M	QPSK	1	0	Bottom Face	0mm	Ant 1	Sensor on	39750	2506	4	12.90	14.00	1.288	62.9	1.006	0.06	0.687	0.890
	LTE Band 41	20M	QPSK	1	0	Bottom Face	0mm	Ant 1	Sensor on	40185	2549.5	4	12.85	14.00	1.303	62.9	1.006	0.02	0.687	0.901
	LTE Band 41	20M	QPSK	1	0	Bottom Face	0mm	Ant 1	Sensor on	41055	2636.5	4	12.87	14.00	1.297	62.9	1.006	0.12	0.584	0.762
	LTE Band 41	20M	QPSK	1	0	Bottom Face	0mm	Ant 1	Sensor on	41490	2680	4	12.91	14.00	1.285	62.9	1.006	-0.16	0.509	0.658
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0mm	Ant 1	Sensor on	40620	2593	4	12.90	14.00	1.288	62.9	1.006	-0.12	0.498	0.645
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0mm	Ant 1	Sensor on	39750	2506	4	12.84	14.00	1.306	62.9	1.006	-0.02	0.552	0.725
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0mm	Ant 1	Sensor on	40185	2549.5	4	12.77	14.00	1.327	62.9	1.006	-0.05	0.542	0.724
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0mm	Ant 1	Sensor on	41055	2636.5	4	12.78	14.00	1.324	62.9	1.006	0.03	0.465	0.619
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0mm	Ant 1	Sensor on	41490	2680	4	12.86	14.00	1.300	62.9	1.006	0.01	0.404	0.528
	LTE Band 41	20M	QPSK	100	0	Bottom Face	0mm	Ant 1	Sensor on	40620	2593	4	12.81	14.00	1.315	62.9	1.006	0.06	0.496	0.656
	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	Ant 1	Sensor on	40620	2593	4	12.93	14.00	1.279	62.9	1.006	-0.18	0.348	0.448
	LTE Band 41	20M	QPSK	50	0	Edge 1	0mm	Ant 1	Sensor on	40620	2593	4	12.90	14.00	1.288	62.9	1.006	-0.11	0.309	0.400
	LTE Band 41	20M	QPSK	1	0	Edge 2	0mm	Ant 1	Sensor on	40620	2593	4	12.90	14.00	1.288	62.9	1.006	0.06	0.203	0.263
	LTE Band 41	20M	QPSK	50	0	Edge 2	0mm	Ant 1	Sensor on	40620	2593	4	12.90	14.00	1.288	62.9	1.006	-0.12	0.085	0.110
	LTE Band 41	20M	QPSK	1	0	Edge 3	0mm	Ant 1	Full Power	40620	2593	4	22.91	24.00	1.285	62.9	1.006	0.16	0.016	0.021
	LTE Band 41	20M	QPSK	50	0	Edge 3	0mm	Ant 1	Full Power	40620	2593	4	22.85	23.00	1.035	62.9	1.006	0.01	0.009	0.009
	LTE Band 41	20M	QPSK	1	0	Edge 4	0mm	Ant 1	Full Power	40620	2593	4	22.91	24.00	1.285	62.9	1.006	-0.16	0.038	0.049
	LTE Band 41	20M	QPSK	50	0	Edge 4	0mm	Ant 1	Full Power	40620	2593	4	22.85	23.00	1.035	62.9	1.006	0.01	0.031	0.032
	LTE Band 41	20M	QPSK	1	0	Bottom Face	16mm	Ant 1	Sensor off	40620	2593	4	22.91	24.00	1.285	62.9	1.006	0.09	0.365	0.472
	LTE Band 41	20M	QPSK	1	0	Edge 1	17mm	Ant 1	Sensor off	40620	2593	4	22.91	24.00	1.285	62.9	1.006	-0.16	0.371	0.480
	LTE Band 41	20M	QPSK	1	0	Edge 2	10mm	Ant 1	Sensor off	40620	2593	4	22.91	24.00	1.285	62.9	1.006	0.04	0.279	0.361

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	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)
	FR1 n7	50M	BPSK	1	1	DFT-15	Bottom Face	0mm	Ant 0	Sensor on	507000	2535	4	9.84	11.00	1.306	100	1.000	-0.15	0.373	0.487
	FR1 n7	50M	BPSK	135	68	DFT-15	Bottom Face	0mm	Ant 0	Sensor on	507000	2535	4	9.79	11.00	1.321	100	1.000	0.06	0.428	0.565
	FR1 n7	50M	BPSK	1	1	DFT-15	Edge 1	0mm	Ant 0	Sensor on	507000	2535	4	9.84	11.00	1.306	100	1.000	-0.16	0.241	0.315
	FR1 n7	50M	BPSK	135	68	DFT-15	Edge 1	0mm	Ant 0	Sensor on	507000	2535	4	9.79	11.00	1.321	100	1.000	-0.18	0.252	0.333
	FR1 n7	50M	BPSK	1	1	DFT-15	Edge 2	0mm	Ant 0	Full Power	507000	2535	4	22.76	24.00	1.330	100	1.000	-0.02	0.045	0.060
	FR1 n7	50M	BPSK	135	68	DFT-15	Edge 2	0mm	Ant 0	Full Power	507000	2535	4	22.56	24.00	1.393	100	1.000	-0.09	0.046	0.064
	FR1 n7	50M	BPSK	1	1	DFT-15	Edge 3	0mm	Ant 0	Full Power	507000	2535	4	22.76	24.00	1.330	100	1.000	0.14	0.042	0.056
	FR1 n7	50M	BPSK	135	68	DFT-15	Edge 3	0mm	Ant 0	Full Power	507000	2535	4	22.56	24.00	1.393	100	1.000	0.1	0.048	0.067
	FR1 n7	50M	BPSK	1	1	DFT-15	Edge 4	0mm	Ant 0	Full Power	507000	2535	4	22.76	24.00	1.330	100	1.000	-0.09	0.244	0.325
	FR1 n7	50M	BPSK	135	68	DFT-15	Edge 4	0mm	Ant 0	Full Power	507000	2535	4	22.56	24.00	1.393	100	1.000	0.07	0.217	0.302
	FR1 n7	50M	BPSK	1	1	DFT-15	Bottom Face	16mm	Ant 0	Sensor off	507000	2535	4	22.76	24.00	1.330	100	1.000	-0.13	0.348	0.463
	FR1 n7	50M	BPSK	1	1	DFT-15	Edge 1	17mm	Ant 0	Sensor off	507000	2535	4	22.76	24.00	1.330	100	1.000	-0.07	0.265	0.352
09	FR1 n7	50M	BPSK	1	1	DFT-15	Bottom Face	0mm	Ant 1	Sensor on	507000	2535	4	11.77	13.00	1.327	100	1.000	0.07	0.894	**1.186**
	FR1 n7	50M	BPSK	1	1	DFT-15	Bottom Face	0mm	Ant 1	Sensor on	507000	2535	1	11.77	13.00	1.327	100	1.000	0.03	0.765	1.015
	FR1 n7	50M	BPSK	135	68	DFT-15	Bottom Face	0mm	Ant 1	Sensor on	507000	2535	4	11.75	13.00	1.334	100	1.000	-0.09	0.832	1.110
	FR1 n7	50M	BPSK	270	0	DFT-15	Bottom Face	0mm	Ant 1	Sensor on	507000	2535	4	11.61	13.00	1.377	100	1.000	-0.16	0.825	1.136
	FR1 n7	50M	BPSK	1	1	DFT-15	Edge 1	0mm	Ant 1	Sensor on	507000	2535	4	11.77	13.00	1.327	100	1.000	-0.13	0.434	0.576
	FR1 n7	50M	BPSK	135	68	DFT-15	Edge 1	0mm	Ant 1	Sensor on	507000	2535	4	11.75	13.00	1.334	100	1.000	0.16	0.467	0.623
	FR1 n7	50M	BPSK	1	1	DFT-15	Edge 2	0mm	Ant 1	Sensor on	507000	2535	4	11.75	13.00	1.334	100	1.000	0.08	0.231	0.308
	FR1 n7	50M	BPSK	135	68	DFT-15	Edge 2	0mm	Ant 1	Sensor on	507000	2535	4	11.75	13.00	1.334	100	1.000	0.01	0.215	0.287
	FR1 n7	50M	BPSK	1	1	DFT-15	Edge 3	0mm	Ant 1	Full Power	507000	2535	4	22.71	24.00	1.346	100	1.000	-0.09	0.010	0.013
	FR1 n7	50M	BPSK	135	68	DFT-15	Edge 3	0mm	Ant 1	Full Power	507000	2535	4	22.41	24.00	1.442	100	1.000	-0.06	0.006	0.009
	FR1 n7	50M	BPSK	1	1	DFT-15	Edge 4	0mm	Ant 1	Full Power	507000	2535	4	22.71	24.00	1.346	100	1.000	-0.17	0.047	0.063
	FR1 n7	50M	BPSK	135	68	DFT-15	Edge 4	0mm	Ant 1	Full Power	507000	2535	4	22.41	24.00	1.442	100	1.000	0.08	0.058	0.084
	FR1 n7	50M	BPSK	1	1	DFT-15	Bottom Face	16mm	Ant 1	Sensor off	507000	2535	4	22.71	24.00	1.346	100	1.000	-0.18	0.359	0.483
	FR1 n7	50M	BPSK	1	1	DFT-15	Edge 1	17mm	Ant 1	Sensor off	507000	2535	4	22.71	24.00	1.346	100	1.000	-0.02	0.357	0.481

	FR1 n7	50M	BPSK	1	1	DFT-15	Edge 2	10mm	Ant 1	Sensor off	507000	2535	4	22.71	24.00	1.346	100	1.000	0.02	0.391	0.526
	FR1 n26	20M	BPSK	1	1	DFT-15	Bottom Face	0mm	Ant 0	Sensor on	166300	831.5	4	14.60	15.00	1.096	100	1.000	-0.01	0.264	0.289
	FR1 n26	20M	BPSK	50	28	DFT-15	Bottom Face	0mm	Ant 0	Sensor on	166300	831.5	4	14.57	15.00	1.104	100	1.000	-0.11	0.280	0.309
10	FR1 n26	20M	BPSK	1	1	DFT-15	Edge 1	0mm	Ant 0	Sensor on	166300	831.5	4	14.60	15.00	1.096	100	1.000	-0.07	0.364	**0.399**
	FR1 n26	20M	BPSK	50	28	DFT-15	Edge 1	0mm	Ant 0	Sensor on	166300	831.5	4	14.57	15.00	1.104	100	1.000	-0.08	0.327	0.361
	FR1 n26	20M	BPSK	1	1	DFT-15	Edge 2	0mm	Ant 0	Full Power	166300	831.5	4	23.58	24.00	1.102	100	1.000	0.16	0.047	0.052
	FR1 n26	20M	BPSK	50	28	DFT-15	Edge 2	0mm	Ant 0	Full Power	166300	831.5	4	23.56	24.00	1.107	100	1.000	-0.06	0.042	0.046
	FR1 n26	20M	BPSK	1	1	DFT-15	Edge 3	0mm	Ant 0	Full Power	166300	831.5	4	23.58	24.00	1.102	100	1.000	0.02	0.015	0.017
	FR1 n26	20M	BPSK	50	28	DFT-15	Edge 3	0mm	Ant 0	Full Power	166300	831.5	4	23.56	24.00	1.107	100	1.000	-0.16	0.011	0.012
	FR1 n26	20M	BPSK	1	1	DFT-15	Edge 4	0mm	Ant 0	Full Power	166300	831.5	4	23.58	24.00	1.102	100	1.000	0.05	0.152	0.168
	FR1 n26	20M	BPSK	50	28	DFT-15	Edge 4	0mm	Ant 0	Full Power	166300	831.5	4	23.56	24.00	1.107	100	1.000	-0.03	0.142	0.157
	FR1 n26	20M	BPSK	1	1	DFT-15	Bottom Face	16mm	Ant 0	Sensor off	166300	831.5	4	23.58	24.00	1.102	100	1.000	-0.04	0.296	0.326
	FR1 n26	20M	BPSK	1	1	DFT-15	Edge 1	17mm	Ant 0	Sensor off	166300	831.5	4	23.58	24.00	1.102	100	1.000	-0.1	0.288	0.317
11	FR1 n71	20M	BPSK	1	1	DFT-15	Bottom Face	0mm	Ant 0	Sensor on	136100	680.5	4	16.30	17.00	1.175	100	1.000	0.08	0.441	**0.518**
	FR1 n71	20M	BPSK	50	28	DFT-15	Bottom Face	0mm	Ant 0	Sensor on	136100	680.5	4	16.29	17.00	1.178	100	1.000	0.17	0.434	0.511
	FR1 n71	20M	BPSK	1	1	DFT-15	Edge 1	0mm	Ant 0	Sensor on	136100	680.5	4	16.30	17.00	1.175	100	1.000	-0.01	0.409	0.481
	FR1 n71	20M	BPSK	50	28	DFT-15	Edge 1	0mm	Ant 0	Sensor on	136100	680.5	4	16.29	17.00	1.178	100	1.000	-0.11	0.374	0.441
	FR1 n71	20M	BPSK	1	1	DFT-15	Edge 2	0mm	Ant 0	Full Power	136100	680.5	4	22.81	24.00	1.315	100	1.000	-0.13	0.061	0.080
	FR1 n71	20M	BPSK	50	28	DFT-15	Edge 2	0mm	Ant 0	Full Power	136100	680.5	4	22.49	24.00	1.416	100	1.000	-0.01	0.064	0.091
	FR1 n71	20M	BPSK	1	1	DFT-15	Edge 3	0mm	Ant 0	Full Power	136100	680.5	4	22.81	24.00	1.315	100	1.000	-0.11	0.010	0.013
	FR1 n71	20M	BPSK	50	28	DFT-15	Edge 3	0mm	Ant 0	Full Power	136100	680.5	4	22.49	24.00	1.416	100	1.000	0.19	0.005	0.007
	FR1 n71	20M	BPSK	1	1	DFT-15	Edge 4	0mm	Ant 0	Full Power	136100	680.5	4	22.81	24.00	1.315	100	1.000	-0.14	0.151	0.199
	FR1 n71	20M	BPSK	50	28	DFT-15	Edge 4	0mm	Ant 0	Full Power	136100	680.5	4	22.49	24.00	1.416	100	1.000	-0.18	0.134	0.190
	FR1 n71	20M	BPSK	1	1	DFT-15	Bottom Face	16mm	Ant 0	Sensor off	136100	680.5	4	22.81	24.00	1.315	100	1.000	0.16	0.333	0.438
	FR1 n71	20M	BPSK	1	1	DFT-15	Edge 1	17mm	Ant 0	Sensor off	136100	680.5	4	22.81	24.00	1.315	100	1.000	0.19	0.269	0.354
	FR1 n41	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 0	Sensor on	518598	2592.99	4	15.10	16.00	1.230	100	1.000	-0.06	0.326	0.401
	FR1 n41	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 0	Sensor on	518598	2592.99	4	15.07	16.00	1.239	100	1.000	0.01	0.391	0.484
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 1	0mm	Ant 0	Sensor on	518598	2592.99	4	15.10	16.00	1.230	100	1.000	0.08	0.247	0.304
	FR1 n41	100M	BPSK	135	69	DFT-30	Edge 1	0mm	Ant 0	Sensor on	518598	2592.99	4	15.07	16.00	1.239	100	1.000	0.19	0.262	0.325
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 2	0mm	Ant 0	Full Power	518598	2592.99	4	23.09	24.00	1.233	100	1.000	0.13	0.030	0.037
	FR1 n41	100M	BPSK	135	69	DFT-30	Edge 2	0mm	Ant 0	Full Power	518598	2592.99	4	22.92	24.00	1.282	100	1.000	0.12	0.021	0.027
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 3	0mm	Ant 0	Full Power	518598	2592.99	4	23.09	24.00	1.233	100	1.000	0.07	0.019	0.023
	FR1 n41	100M	BPSK	135	69	DFT-30	Edge 3	0mm	Ant 0	Full Power	518598	2592.99	4	22.92	24.00	1.282	100	1.000	0.08	0.011	0.014
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 4	0mm	Ant 0	Full Power	518598	2592.99	4	23.09	24.00	1.233	100	1.000	0.19	0.044	0.054
	FR1 n41	100M	BPSK	135	69	DFT-30	Edge 4	0mm	Ant 0	Full Power	518598	2592.99	4	22.92	24.00	1.282	100	1.000	-0.06	0.055	0.071
	FR1 n41	100M	BPSK	1	1	DFT-30	Bottom Face	16mm	Ant 0	Sensor off	518598	2592.99	4	23.09	24.00	1.233	100	1.000	0.16	0.079	0.097
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 1	17mm	Ant 0	Sensor off	518598	2592.99	4	23.09	24.00	1.233	100	1.000	-0.06	0.066	0.081
	FR1 n41	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 1	Sensor on	518598	2592.99	4	10.91	12.00	1.285	100	1.000	0.05	0.917	1.178
	FR1 n41	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 1	Sensor on	518598	2592.99	4	10.89	12.00	1.291	100	1.000	0.15	0.794	1.025
	FR1 n41	100M	BPSK	270	0	DFT-30	Bottom Face	0mm	Ant 1	Sensor on	518598	2592.99	4	10.75	12.00	1.334	100	1.000	-0.03	0.785	1.047
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 1	0mm	Ant 1	Sensor on	518598	2592.99	4	10.91	12.00	1.285	100	1.000	-0.12	0.378	0.486
	FR1 n41	100M	BPSK	135	69	DFT-30	Edge 1	0mm	Ant 1	Sensor on	518598	2592.99	4	10.89	12.00	1.291	100	1.000	0.02	0.324	0.418
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 2	0mm	Ant 1	Sensor on	518598	2592.99	4	10.89	12.00	1.291	100	1.000	0.03	0.144	0.186
	FR1 n41	100M	BPSK	135	0	DFT-30	Edge 2	0mm	Ant 1	Sensor on	518598	2592.99	4	10.89	12.00	1.291	100	1.000	-0.08	0.128	0.165
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 3	0mm	Ant 1	Full Power	518598	2592.99	4	22.89	24.00	1.291	100	1.000	0.08	0.015	0.019
	FR1 n41	100M	BPSK	135	69	DFT-30	Edge 3	0mm	Ant 1	Full Power	518598	2592.99	4	22.85	24.00	1.303	100	1.000	-0.07	0.010	0.013
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 4	0mm	Ant 1	Full Power	518598	2592.99	4	22.89	24.00	1.291	100	1.000	0.01	0.048	0.062
	FR1 n41	100M	BPSK	135	69	DFT-30	Edge 4	0mm	Ant 1	Full Power	518598	2592.99	4	22.85	24.00	1.303	100	1.000	0.06	0.055	0.072
	FR1 n41	100M	BPSK	1	1	DFT-30	Bottom Face	16mm	Ant 1	Sensor off	518598	2592.99	4	22.89	24.00	1.291	100	1.000	0.07	0.453	0.585
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 1	17mm	Ant 1	Sensor off	518598	2592.99	4	22.89	24.00	1.291	100	1.000	0.12	0.451	0.582
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 2	10mm	Ant 1	Sensor off	518598	2592.99	4	22.89	24.00	1.291	100	1.000	0.04	0.355	0.458
12	FR1 n41	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 3	Sensor on	518598	2592.99	4	11.21	12.50	1.346	100	1.000	0.06	0.883	**1.189**
	FR1 n41	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 3	Sensor on	518598	2592.99	1	11.21	12.50	1.346	100	1.000	0.01	0.747	1.005
	FR1 n41	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 3	Sensor on	518598	2592.99	4	11.19	12.50	1.352	100	1.000	0.06	0.856	1.157
	FR1 n41	100M	BPSK	270	0	DFT-30	Bottom Face	0mm	Ant 3	Sensor on	518598	2592.99	4	11.14	12.50	1.368	100	1.000	-0.05	0.832	1.138
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 1	0mm	Ant 3	Sensor on	518598	2592.99	4	11.21	12.50	1.346	100	1.000	0.06	0.119	0.160

	FR1 n41	100M	BPSK	135	69	DFT-30	Edge 1	0mm	Ant 3	Sensor on	518598	2592.99	4	11.19	12.50	1.352	100	1.000	-0.05	0.122	0.165
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 2	0mm	Ant 3	Sensor on	518598	2592.99	4	11.21	12.50	1.346	100	1.000	-0.08	0.592	0.797
	FR1 n41	100M	BPSK	135	69	DFT-30	Edge 2	0mm	Ant 3	Sensor on	518598	2592.99	4	11.19	12.50	1.352	100	1.000	-0.13	0.495	0.669
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 3	0mm	Ant 3	Full Power	518598	2592.99	4	22.65	24.00	1.365	100	1.000	-0.05	0.350	0.478
	FR1 n41	100M	BPSK	135	69	DFT-30	Edge 3	0mm	Ant 3	Full Power	518598	2592.99	4	22.63	24.00	1.371	100	1.000	0.06	0.432	0.592
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 4	0mm	Ant 3	Full Power	518598	2592.99	4	22.65	24.00	1.365	100	1.000	0.01	0.010	0.014
	FR1 n41	100M	BPSK	135	69	DFT-30	Edge 4	0mm	Ant 3	Full Power	518598	2592.99	4	22.63	24.00	1.371	100	1.000	-0.03	0.005	0.007
	FR1 n41	100M	BPSK	1	1	DFT-30	Bottom Face	16mm	Ant 3	Sensor off	518598	2592.99	4	22.65	24.00	1.365	100	1.000	-0.08	0.478	0.652
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 1	11mm	Ant 3	Sensor off	518598	2592.99	4	22.65	24.00	1.365	100	1.000	-0.08	0.391	0.534
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 2	10mm	Ant 3	Sensor off	518598	2592.99	4	22.65	24.00	1.365	100	1.000	-0.11	0.530	0.723
	FR1 n41	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 4	Sensor off	518598	2592.99	4	14.03	15.00	1.250	100	1.000	0.09	0.394	0.493
	FR1 n41	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 4	Sensor off	518598	2592.99	4	14.01	15.00	1.256	100	1.000	0.04	0.468	0.588
	FR1 n41	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 4	Sensor off	518598	2592.99	1	14.01	15.00	1.256	100	1.000	0.05	0.404	0.507
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 1	0mm	Ant 4	Sensor off	518598	2592.99	4	14.03	15.00	1.250	100	1.000	0.11	0.034	0.043
	FR1 n41	100M	BPSK	135	69	DFT-30	Edge 1	0mm	Ant 4	Sensor off	518598	2592.99	4	14.01	15.00	1.256	100	1.000	-0.13	0.054	0.068
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 2	0mm	Ant 4	Sensor off	518598	2592.99	4	14.03	15.00	1.250	100	1.000	0.12	0.021	0.026
	FR1 n41	100M	BPSK	135	69	DFT-30	Edge 2	0mm	Ant 4	Sensor off	518598	2592.99	4	14.01	15.00	1.256	100	1.000	-0.11	0.015	0.019
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 3	0mm	Ant 4	Sensor off	518598	2592.99	4	14.03	15.00	1.250	100	1.000	0.17	0.010	0.013
	FR1 n41	100M	BPSK	135	69	DFT-30	Edge 3	0mm	Ant 4	Sensor off	518598	2592.99	4	14.01	15.00	1.256	100	1.000	-0.16	0.006	0.008
	FR1 n41	100M	BPSK	1	1	DFT-30	Edge 4	0mm	Ant 4	Sensor off	518598	2592.99	4	14.03	15.00	1.250	100	1.000	-0.17	0.228	0.285
	FR1 n41	100M	BPSK	135	69	DFT-30	Edge 4	0mm	Ant 4	Sensor off	518598	2592.99	4	14.01	15.00	1.256	100	1.000	0.11	0.341	0.428

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	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)
	FR1 n77	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 0	Sensor on	633332	3499.98	4	11.20	12.00	1.202	100	1.000	0.01	0.458	0.551
	FR1 n77	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 0	Sensor on	633332	3499.98	4	11.19	12.00	1.205	100	1.000	0.08	0.317	0.382
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 1	0mm	Ant 0	Sensor on	633332	3499.98	4	11.20	12.00	1.202	100	1.000	0.02	0.241	0.290
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 1	0mm	Ant 0	Sensor on	633332	3499.98	4	11.19	12.00	1.205	100	1.000	0.01	0.273	0.329
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 2	0mm	Ant 0	Full Power	633332	3499.98	4	12.31	13.00	1.172	100	1.000	0.06	0.052	0.061
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 2	0mm	Ant 0	Full Power	633332	3499.98	4	12.28	13.00	1.180	100	1.000	0.03	0.043	0.051
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 3	0mm	Ant 0	Full Power	633332	3499.98	4	12.31	13.00	1.172	100	1.000	0.01	0.012	0.014
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 3	0mm	Ant 0	Full Power	633332	3499.98	4	12.28	13.00	1.180	100	1.000	-0.08	0.006	0.007
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 4	0mm	Ant 0	Full Power	633332	3499.98	4	12.31	13.00	1.172	100	1.000	0.03	0.088	0.103
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 4	0mm	Ant 0	Full Power	633332	3499.98	4	12.28	13.00	1.180	100	1.000	-0.08	0.046	0.054
	FR1 n77	100M	BPSK	1	1	DFT-30	Bottom Face	16mm	Ant 0	Sensor off	633332	3499.98	4	12.31	13.00	1.172	100	1.000	0.06	0.050	0.059
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 1	17mm	Ant 0	Sensor off	633332	3499.98	4	12.31	13.00	1.172	100	1.000	0.06	0.036	0.042
	FR1 n77	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 0	Sensor on	656000	3840	4	11.15	12.00	1.216	100	1.000	-0.1	0.471	0.573
	FR1 n77	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 0	Sensor on	656000	3840	1	11.15	12.00	1.216	100	1.000	0.06	0.425	0.517
	FR1 n77	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 0	Sensor on	656000	3840	4	11.13	12.00	1.222	100	1.000	0.07	0.331	0.404
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 1	0mm	Ant 0	Sensor on	656000	3840	4	11.15	12.00	1.216	100	1.000	-0.1	0.317	0.385
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 1	0mm	Ant 0	Sensor on	656000	3840	4	11.13	12.00	1.222	100	1.000	0.01	0.332	0.406
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 2	0mm	Ant 0	Full Power	656000	3840	4	11.35	13.00	1.462	100	1.000	0.19	0.033	0.048
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 2	0mm	Ant 0	Full Power	656000	3840	4	11.35	13.00	1.462	100	1.000	0.07	0.026	0.038
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 3	0mm	Ant 0	Full Power	656000	3840	4	11.35	13.00	1.462	100	1.000	-0.18	0.011	0.016
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 3	0mm	Ant 0	Full Power	656000	3840	4	11.35	13.00	1.462	100	1.000	0.03	0.007	0.010
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 4	0mm	Ant 0	Full Power	656000	3840	4	11.35	13.00	1.462	100	1.000	-0.15	0.112	0.164
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 4	0mm	Ant 0	Full Power	656000	3840	4	11.35	13.00	1.462	100	1.000	-0.15	0.108	0.158
	FR1 n77	100M	BPSK	1	1	DFT-30	Bottom Face	16mm	Ant 0	Sensor off	656000	3840	4	11.35	13.00	1.462	100	1.000	0.18	0.035	0.051
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 1	17mm	Ant 0	Sensor off	656000	3840	4	11.35	13.00	1.462	100	1.000	-0.15	0.021	0.031
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 0	Sensor on	641666	3624.99	4	11.12	12.00	1.225	100	1.000	0.05	0.387	0.474
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 0	Sensor on	641666	3624.99	4	11.12	12.00	1.225	100	1.000	0.08	0.272	0.333
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 1	0mm	Ant 0	Sensor on	641666	3624.99	4	11.12	12.00	1.225	100	1.000	0.01	0.260	0.319
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Edge 1	0mm	Ant 0	Sensor on	641666	3624.99	4	11.12	12.00	1.225	100	1.000	0.03	0.273	0.334
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 2	0mm	Ant 0	Full Power	641666	3624.99	4	11.32	13.00	1.472	100	1.000	-0.08	0.027	0.040
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Edge 2	0mm	Ant 0	Full Power	641666	3624.99	4	11.29	13.00	1.483	100	1.000	-0.08	0.021	0.031

	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 3	0mm	Ant 0	Full Power	641666	3624.99	4	11.32	13.00	1.472	100	1.000	0.1	0.009	0.013
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Edge 3	0mm	Ant 0	Full Power	641666	3624.99	4	11.29	13.00	1.483	100	1.000	-0.18	0.006	0.009
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 4	0mm	Ant 0	Full Power	641666	3624.99	4	11.32	13.00	1.472	100	1.000	0.1	0.092	0.135
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Edge 4	0mm	Ant 0	Full Power	641666	3624.99	4	11.29	13.00	1.483	100	1.000	0.12	0.089	0.132
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Bottom Face	16mm	Ant 0	Sensor off	641666	3624.99	4	11.32	13.00	1.472	100	1.000	0.08	0.029	0.043
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 1	17mm	Ant 0	Sensor off	641666	3624.99	4	11.32	13.00	1.472	100	1.000	-0.17	0.017	0.025
	FR1 n77	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 2	Sensor on	633332	3499.98	4	8.85	10.00	1.303	100	1.000	0.1	0.664	0.865
	FR1 n77	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 2	Sensor on	633332	3499.98	4	8.83	10.00	1.309	100	1.000	-0.18	0.729	0.954
	FR1 n77	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 2	Sensor on	633332	3499.98	1	8.83	10.00	1.309	100	1.000	0.03	0.693	0.907
	FR1 n77	100M	BPSK	270	0	DFT-30	Bottom Face	0mm	Ant 2	Sensor on	633332	3499.98	4	8.76	10.00	1.330	100	1.000	0.1	0.705	0.938
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 1	0mm	Ant 2	Sensor on	633332	3499.98	4	8.85	10.00	1.303	100	1.000	0.08	0.241	0.314
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 1	0mm	Ant 2	Sensor on	633332	3499.98	4	8.83	10.00	1.309	100	1.000	-0.17	0.285	0.373
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 2	0mm	Ant 2	Sensor on	633332	3499.98	4	8.85	10.00	1.303	100	1.000	0.14	0.042	0.055
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 2	0mm	Ant 2	Sensor on	633332	3499.98	4	8.83	10.00	1.309	100	1.000	0.11	0.046	0.060
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 3	0mm	Ant 2	Full Power	633332	3499.98	4	22.79	24.00	1.321	100	1.000	0.18	0.121	0.160
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 3	0mm	Ant 2	Full Power	633332	3499.98	4	22.78	24.00	1.324	100	1.000	0.14	0.172	0.228
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 4	0mm	Ant 2	Full Power	633332	3499.98	4	22.79	24.00	1.321	100	1.000	-0.17	0.066	0.087
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 4	0mm	Ant 2	Full Power	633332	3499.98	4	22.78	24.00	1.324	100	1.000	0.17	0.055	0.073
	FR1 n77	100M	BPSK	1	1	DFT-30	Bottom Face	16mm	Ant 2	Sensor off	633332	3499.98	4	22.79	24.00	1.321	100	1.000	0.12	0.435	0.575
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 1	11mm	Ant 2	Sensor off	633332	3499.98	4	22.79	24.00	1.321	100	1.000	-0.03	0.267	0.353
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 2	10mm	Ant 2	Sensor off	633332	3499.98	4	22.79	24.00	1.321	100	1.000	-0.05	0.260	0.343
	FR1 n77	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 2	Sensor on	656000	3840	4	8.80	10.00	1.318	100	1.000	0.11	0.570	0.751
	FR1 n77	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 2	Sensor on	656000	3840	4	8.78	10.00	1.324	100	1.000	-0.08	0.415	0.549
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 1	0mm	Ant 2	Sensor on	656000	3840	4	8.80	10.00	1.318	100	1.000	-0.08	0.166	0.219
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 1	0mm	Ant 2	Sensor on	656000	3840	4	8.78	10.00	1.324	100	1.000	-0.04	0.187	0.248
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 2	0mm	Ant 2	Sensor on	656000	3840	4	8.80	10.00	1.318	100	1.000	0.17	0.046	0.061
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 2	0mm	Ant 2	Sensor on	656000	3840	4	8.78	10.00	1.324	100	1.000	0.18	0.067	0.089
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 3	0mm	Ant 2	Full Power	656000	3840	4	23.21	24.00	1.199	100	1.000	-0.08	0.101	0.121
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 3	0mm	Ant 2	Full Power	656000	3840	4	23.15	24.00	1.216	100	1.000	-0.13	0.133	0.162
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 4	0mm	Ant 2	Full Power	656000	3840	4	23.21	24.00	1.199	100	1.000	-0.13	0.086	0.103
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 4	0mm	Ant 2	Full Power	656000	3840	4	23.15	24.00	1.216	100	1.000	0.06	0.071	0.086
	FR1 n77	100M	BPSK	1	1	DFT-30	Bottom Face	16mm	Ant 2	Sensor off	656000	3840	4	23.21	24.00	1.199	100	1.000	-0.17	0.379	0.454
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 1	11mm	Ant 2	Sensor off	656000	3840	4	23.21	24.00	1.199	100	1.000	-0.08	0.442	0.530
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 2	10mm	Ant 2	Sensor off	656000	3840	4	23.21	24.00	1.199	100	1.000	-0.04	0.495	0.594
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 2	Sensor on	641666	3624.99	4	8.75	10.00	1.334	100	1.000	-0.03	**0.575**	0.767
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 2	Sensor on	641666	3624.99	4	8.72	10.00	1.343	100	1.000	0.14	0.420	0.564
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 1	0mm	Ant 2	Sensor on	641666	3624.99	4	8.75	10.00	1.334	100	1.000	0.11	0.168	0.224
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Edge 1	0mm	Ant 2	Sensor on	641666	3624.99	4	8.72	10.00	1.343	100	1.000	-0.05	0.190	0.255
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 2	0mm	Ant 2	Sensor on	641666	3624.99	4	8.75	10.00	1.334	100	1.000	0.18	0.047	0.063
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Edge 2	0mm	Ant 2	Sensor on	641666	3624.99	4	8.72	10.00	1.343	100	1.000	0.14	0.068	0.091
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 3	0mm	Ant 2	Full Power	641666	3624.99	4	23.30	24.00	1.175	100	1.000	-0.17	0.092	0.108
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Edge 3	0mm	Ant 2	Full Power	641666	3624.99	4	23.17	24.00	1.211	100	1.000	0.17	0.123	0.149
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 4	0mm	Ant 2	Full Power	641666	3624.99	4	23.30	24.00	1.175	100	1.000	-0.05	0.078	0.092
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Edge 4	0mm	Ant 2	Full Power	641666	3624.99	4	23.17	24.00	1.211	100	1.000	0.01	0.066	0.080
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Bottom Face	16mm	Ant 2	Sensor off	641666	3624.99	4	23.30	24.00	1.175	100	1.000	0.1	0.345	0.405
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 1	11mm	Ant 2	Sensor off	641666	3624.99	4	23.30	24.00	1.175	100	1.000	-0.17	0.403	0.474
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 2	10mm	Ant 2	Sensor off	641666	3624.99	4	23.30	24.00	1.175	100	1.000	0.04	0.451	0.530
13	FR1 n77	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 3	Sensor on	633332	3499.98	4	10.25	11.00	1.189	100	1.000	-0.05	0.943	**1.121**
	FR1 n77	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 3	Sensor on	633332	3499.98	1	10.25	11.00	1.189	100	1.000	0.08	0.925	1.100
	FR1 n77	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 3	Sensor on	633332	3499.98	4	10.21	11.00	1.199	100	1.000	0.01	0.883	1.059
	FR1 n77	100M	BPSK	270	0	DFT-30	Bottom Face	0mm	Ant 3	Sensor on	633332	3499.98	4	10.13	11.00	1.222	100	1.000	0.1	0.875	1.069
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 1	0mm	Ant 3	Sensor on	633332	3499.98	4	10.25	11.00	1.189	100	1.000	0.04	0.054	0.064
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 1	0mm	Ant 3	Sensor on	633332	3499.98	4	10.21	11.00	1.199	100	1.000	-0.01	0.065	0.078
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 2	0mm	Ant 3	Sensor on	633332	3499.98	4	10.25	11.00	1.189	100	1.000	0.05	0.331	0.394
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 2	0mm	Ant 3	Sensor on	633332	3499.98	4	10.21	11.00	1.199	100	1.000	0.06	0.329	0.394
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 3	0mm	Ant 3	Full Power	633332	3499.98	4	20.19	21.00	1.205	100	1.000	0.12	0.192	0.231

	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 3	0mm	Ant 3	Full Power	633332	3499.98	4	20.22	21.00	1.197	100	1.000	0.03	0.185	0.221
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 4	0mm	Ant 3	Full Power	633332	3499.98	4	20.19	21.00	1.205	100	1.000	0.18	0.042	0.051
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 4	0mm	Ant 3	Full Power	633332	3499.98	4	20.22	21.00	1.197	100	1.000	0.16	0.037	0.044
	FR1 n77	100M	BPSK	1	1	DFT-30	Bottom Face	16mm	Ant 3	Sensor off	633332	3499.98	4	20.19	21.00	1.205	100	1.000	-0.17	0.594	0.716
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 1	11mm	Ant 3	Sensor off	633332	3499.98	4	20.19	21.00	1.205	100	1.000	-0.08	0.127	0.153
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 2	10mm	Ant 3	Sensor off	633332	3499.98	4	20.19	21.00	1.205	100	1.000	-0.09	0.903	1.088
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 2	10mm	Ant 3	Sensor off	633332	3499.98	4	20.22	21.00	1.197	100	1.000	-0.08	0.866	1.037
	FR1 n77	100M	BPSK	270	0	DFT-30	Edge 2	10mm	Ant 3	Sensor off	633332	3499.98	4	20.05	21.00	1.245	100	1.000	0.13	0.752	0.936
	FR1 n77	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 3	Sensor on	656000	3840	4	10.18	11.00	1.208	100	1.000	-0.03	0.873	1.055
	FR1 n77	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 3	Sensor on	656000	3840	4	10.16	11.00	1.213	100	1.000	-0.03	0.809	0.981
	FR1 n77	100M	BPSK	270	0	DFT-30	Bottom Face	0mm	Ant 3	Sensor on	656000	3840	4	10.05	11.00	1.245	100	1.000	0.08	0.784	0.976
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 1	0mm	Ant 3	Sensor on	656000	3840	4	10.18	11.00	1.208	100	1.000	0.05	0.130	0.157
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 1	0mm	Ant 3	Sensor on	656000	3840	4	10.16	11.00	1.213	100	1.000	-0.11	0.104	0.126
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 2	0mm	Ant 3	Sensor on	656000	3840	4	10.18	11.00	1.208	100	1.000	0.03	0.261	0.315
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 2	0mm	Ant 3	Sensor on	656000	3840	4	10.16	11.00	1.213	100	1.000	-0.16	0.193	0.234
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 3	0mm	Ant 3	Full Power	656000	3840	4	20.21	21.00	1.199	100	1.000	0.11	0.113	0.135
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 3	0mm	Ant 3	Full Power	656000	3840	4	20.19	21.00	1.205	100	1.000	-0.05	0.100	0.121
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 4	0mm	Ant 3	Full Power	656000	3840	4	20.21	21.00	1.199	100	1.000	-0.08	0.075	0.090
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 4	0mm	Ant 3	Full Power	656000	3840	4	20.19	21.00	1.205	100	1.000	0.16	0.084	0.101
	FR1 n77	100M	BPSK	1	1	DFT-30	Bottom Face	16mm	Ant 3	Sensor off	656000	3840	4	20.21	21.00	1.199	100	1.000	-0.07	0.377	0.452
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 1	11mm	Ant 3	Sensor off	656000	3840	4	20.21	21.00	1.199	100	1.000	-0.12	0.157	0.188
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 2	10mm	Ant 3	Sensor off	656000	3840	4	20.21	21.00	1.199	100	1.000	-0.02	0.826	0.990
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 2	10mm	Ant 3	Sensor off	656000	3840	4	20.19	21.00	1.205	100	1.000	0.15	0.810	0.976
	FR1 n77	100M	BPSK	270	0	DFT-30	Edge 2	10mm	Ant 3	Sensor off	656000	3840	4	20.11	21.00	1.227	100	1.000	-0.09	0.701	0.860
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 3	Sensor on	641666	3624.99	4	10.12	11.00	1.225	100	1.000	-0.05	0.821	1.006
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 3	Sensor on	641666	3624.99	4	10.11	11.00	1.227	100	1.000	-0.01	0.761	0.934
	FR1 n77 Part96	100M	BPSK	270	0	DFT-30	Bottom Face	0mm	Ant 3	Sensor on	641666	3624.99	4	9.93	11.00	1.279	100	1.000	-0.08	0.737	0.943
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 1	0mm	Ant 3	Sensor on	641666	3624.99	4	10.12	11.00	1.225	100	1.000	0.05	0.122	0.149
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Edge 1	0mm	Ant 3	Sensor on	641666	3624.99	4	10.11	11.00	1.227	100	1.000	0.06	0.098	0.120
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 2	0mm	Ant 3	Sensor on	641666	3624.99	4	10.12	11.00	1.225	100	1.000	-0.09	0.245	0.300
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Edge 2	0mm	Ant 3	Sensor on	641666	3624.99	4	10.11	11.00	1.227	100	1.000	-0.08	0.182	0.223
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 3	0mm	Ant 3	Full Power	641666	3624.99	4	20.17	21.00	1.211	100	1.000	0.13	0.106	0.128
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Edge 3	0mm	Ant 3	Full Power	641666	3624.99	4	20.13	21.00	1.222	100	1.000	0.12	0.094	0.115
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 4	0mm	Ant 3	Full Power	641666	3624.99	4	20.17	21.00	1.211	100	1.000	0.03	0.071	0.086
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Edge 4	0mm	Ant 3	Full Power	641666	3624.99	4	20.13	21.00	1.222	100	1.000	0.18	0.079	0.097
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Bottom Face	16mm	Ant 3	Sensor off	641666	3624.99	4	20.17	21.00	1.211	100	1.000	0.16	0.355	0.430
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 1	11mm	Ant 3	Sensor off	641666	3624.99	4	20.17	21.00	1.211	100	1.000	-0.1	0.148	0.179
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 2	10mm	Ant 3	Sensor off	641666	3624.99	4	20.17	21.00	1.211	100	1.000	0.07	0.777	0.941
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Edge 2	10mm	Ant 3	Sensor off	641666	3624.99	4	20.13	21.00	1.222	100	1.000	0.18	0.762	0.931
	FR1 n77 Part96	100M	BPSK	270	0	DFT-30	Edge 2	10mm	Ant 3	Sensor off	641666	3624.99	4	20.03	21.00	1.250	100	1.000	-0.1	0.659	0.824
	FR1 n77	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 4	Sensor off	633332	3499.98	4	10.03	11.00	1.250	100	1.000	0.01	0.487	0.609
	FR1 n77	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 4	Sensor off	633332	3499.98	1	10.03	11.00	1.250	100	1.000	0.01	0.430	0.538
	FR1 n77	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 4	Sensor off	633332	3499.98	4	10.01	11.00	1.256	100	1.000	-0.06	0.409	0.514
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 1	0mm	Ant 4	Sensor off	633332	3499.98	4	10.03	11.00	1.250	100	1.000	-0.12	0.104	0.130
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 1	0mm	Ant 4	Sensor off	633332	3499.98	4	10.01	11.00	1.256	100	1.000	-0.16	0.088	0.111
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 2	0mm	Ant 4	Sensor off	633332	3499.98	4	10.03	11.00	1.250	100	1.000	-0.03	0.021	0.026
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 2	0mm	Ant 4	Sensor off	633332	3499.98	4	10.01	11.00	1.256	100	1.000	0.17	0.015	0.019
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 3	0mm	Ant 4	Sensor off	633332	3499.98	4	10.03	11.00	1.250	100	1.000	0.02	0.011	0.014
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 3	0mm	Ant 4	Sensor off	633332	3499.98	4	10.01	11.00	1.256	100	1.000	0.01	0.005	0.006
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 4	0mm	Ant 4	Sensor off	633332	3499.98	4	10.03	11.00	1.250	100	1.000	0.18	0.386	0.483
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 4	0mm	Ant 4	Sensor off	633332	3499.98	4	10.01	11.00	1.256	100	1.000	-0.11	0.435	0.546
	FR1 n77	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 4	Sensor off	656000	3840	4	10.00	11.00	1.259	100	1.000	0.01	0.447	0.563
	FR1 n77	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 4	Sensor off	656000	3840	4	9.99	11.00	1.262	100	1.000	-0.13	0.331	0.418
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 1	0mm	Ant 4	Sensor off	656000	3840	4	10.00	11.00	1.259	100	1.000	-0.04	0.029	0.037
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 1	0mm	Ant 4	Sensor off	656000	3840	4	9.99	11.00	1.262	100	1.000	-0.15	0.034	0.043
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 2	0mm	Ant 4	Sensor off	656000	3840	4	10.00	11.00	1.259	100	1.000	-0.09	0.025	0.031

	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 2	0mm	Ant 4	Sensor off	656000	3840	4	9.99	11.00	1.262	100	1.000	0.05	0.021	0.027
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 3	0mm	Ant 4	Sensor off	656000	3840	4	10.00	11.00	1.259	100	1.000	0.13	0.013	0.016
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 3	0mm	Ant 4	Sensor off	656000	3840	4	9.99	11.00	1.262	100	1.000	-0.07	0.009	0.011
	FR1 n77	100M	BPSK	1	1	DFT-30	Edge 4	0mm	Ant 4	Sensor off	656000	3840	4	10.00	11.00	1.259	100	1.000	-0.12	0.120	0.151
	FR1 n77	100M	BPSK	135	69	DFT-30	Edge 4	0mm	Ant 4	Sensor off	656000	3840	4	9.99	11.00	1.262	100	1.000	0.15	0.162	0.204
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Bottom Face	0mm	Ant 4	Sensor off	641666	3624.99	4	9.92	11.00	1.282	100	1.000	0.06	0.455	0.583
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Bottom Face	0mm	Ant 4	Sensor off	641666	3624.99	4	9.91	11.00	1.285	100	1.000	0.08	0.337	0.433
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 1	0mm	Ant 4	Sensor off	641666	3624.99	4	9.92	11.00	1.282	100	1.000	0.01	0.030	0.038
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Edge 1	0mm	Ant 4	Sensor off	641666	3624.99	4	9.91	11.00	1.285	100	1.000	0.03	0.035	0.045
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 2	0mm	Ant 4	Sensor off	641666	3624.99	4	9.92	11.00	1.282	100	1.000	-0.08	0.025	0.032
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Edge 2	0mm	Ant 4	Sensor off	641666	3624.99	4	9.91	11.00	1.285	100	1.000	-0.08	0.021	0.027
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 3	0mm	Ant 4	Sensor off	641666	3624.99	4	9.92	11.00	1.282	100	1.000	0.1	0.013	0.017
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Edge 3	0mm	Ant 4	Sensor off	641666	3624.99	4	9.91	11.00	1.285	100	1.000	-0.18	0.009	0.012
	FR1 n77 Part96	100M	BPSK	1	1	DFT-30	Edge 4	0mm	Ant 4	Sensor off	641666	3624.99	4	9.92	11.00	1.282	100	1.000	0.1	0.122	0.156
	FR1 n77 Part96	100M	BPSK	135	69	DFT-30	Edge 4	0mm	Ant 4	Sensor off	641666	3624.99	4	9.91	11.00	1.285	100	1.000	0.12	0.165	0.212

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	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)
14	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	Ant 6	Sensor on	6	2437	4	9.77	11.00	1.327	100	1.000	0.02	0.593	**0.787**
	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	Ant 6	Sensor on	6	2437	1	9.77	11.00	1.327	100	1.000	0.03	0.560	0.743
	WLAN2.4GHz	802.11b 1Mbps	Edge 1	0mm	Ant 6	Full Power	6	2437	4	19.24	20.50	1.337	100	1.000	0.04	0.029	0.039
	WLAN2.4GHz	802.11b 1Mbps	Edge 2	0mm	Ant 6	Full Power	6	2437	4	19.24	20.50	1.337	100	1.000	0.13	0.003	0.004
	WLAN2.4GHz	802.11b 1Mbps	Edge 3	0mm	Ant 6	Full Power	6	2437	4	19.24	20.50	1.337	100	1.000	0.18	0.003	0.004
	WLAN2.4GHz	802.11b 1Mbps	Edge 4	0mm	Ant 6	Full Power	6	2437	4	19.24	20.50	1.337	100	1.000	-0.08	0.006	0.008
	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	16mm	Ant 6	Sensor off	6	2437	4	19.24	20.50	1.337	100	1.000	0.17	0.327	0.437
15	WLAN5.3GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 6	Sensor on	58	5290	4	4.95	6.00	1.274	90.32	1.107	0.05	0.552	**0.778**
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 6	Sensor on	58	5290	1	4.95	6.00	1.274	90.32	1.107	0.01	0.425	0.599
	WLAN5.3GHz	802.11a 6Mbps	Edge 1	0mm	Ant 6	Full Power	60	5300	4	18.90	20.00	1.288	97.46	1.026	-0.03	0.331	0.437
	WLAN5.3GHz	802.11a 6Mbps	Edge 2	0mm	Ant 6	Full Power	60	5300	4	18.90	20.00	1.288	97.46	1.026	-0.15	0.079	0.104
	WLAN5.3GHz	802.11a 6Mbps	Edge 3	0mm	Ant 6	Full Power	60	5300	4	18.90	20.00	1.288	97.46	1.026	0.02	0.068	0.090
	WLAN5.3GHz	802.11a 6Mbps	Edge 4	0mm	Ant 6	Full Power	60	5300	4	18.90	20.00	1.288	97.46	1.026	0.07	0.160	0.211
	WLAN5.3GHz	802.11a 6Mbps	Bottom Face	16mm	Ant 6	Sensor off	60	5300	4	18.90	20.00	1.288	97.46	1.026	0.05	0.301	0.398
16	WLAN5.5GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 6	Sensor on	122	5610	4	4.85	6.00	1.303	90.32	1.107	0.16	0.531	**0.766**
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 6	Sensor on	122	5610	1	4.85	6.00	1.303	90.32	1.107	0.09	0.484	0.698
	WLAN5.5GHz	802.11a 6Mbps	Edge 1	0mm	Ant 6	Full Power	144	5720	4	18.58	20.00	1.387	97.46	1.026	0.04	0.289	0.411
	WLAN5.5GHz	802.11a 6Mbps	Edge 2	0mm	Ant 6	Full Power	144	5720	4	18.58	20.00	1.387	97.46	1.026	0.08	0.018	0.026
	WLAN5.5GHz	802.11a 6Mbps	Edge 3	0mm	Ant 6	Full Power	144	5720	4	18.58	20.00	1.387	97.46	1.026	0.01	0.007	0.010
	WLAN5.5GHz	802.11a 6Mbps	Edge 4	0mm	Ant 6	Full Power	144	5720	4	18.58	20.00	1.387	97.46	1.026	0.03	0.055	0.078
	WLAN5.5GHz	802.11a 6Mbps	Bottom Face	16mm	Ant 6	Sensor off	144	5720	4	18.58	20.00	1.387	97.46	1.026	-0.08	0.311	0.443
17	WLAN5.8GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 6	Sensor on	155	5775	4	4.81	6.00	1.315	90.32	1.107	-0.17	0.522	**0.760**
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 6	Sensor on	155	5775	1	4.81	6.00	1.315	90.32	1.107	-0.03	0.449	0.654
	WLAN5.8GHz	802.11a 6Mbps	Edge 1	0mm	Ant 6	Full Power	149	5745	4	18.66	20.00	1.361	97.46	1.026	-0.01	0.296	0.413
	WLAN5.8GHz	802.11a 6Mbps	Edge 2	0mm	Ant 6	Full Power	149	5745	4	18.66	20.00	1.361	97.46	1.026	-0.06	0.004	0.006
	WLAN5.8GHz	802.11a 6Mbps	Edge 3	0mm	Ant 6	Full Power	149	5745	4	18.66	20.00	1.361	97.46	1.026	-0.04	0.004	0.006
	WLAN5.8GHz	802.11a 6Mbps	Edge 4	0mm	Ant 6	Full Power	149	5745	4	18.66	20.00	1.361	97.46	1.026	-0.09	0.007	0.010
	WLAN5.8GHz	802.11a 6Mbps	Bottom Face	16mm	Ant 6	Sensor off	149	5745	4	18.66	20.00	1.361	97.46	1.026	0.01	0.307	0.429
18	Bluetooth	1Mbps	Bottom Face	0mm	Ant 6	Full Power	39	2441	4	6.20	7.50	1.349	76.79	1.085	0.01	0.109	**0.160**
	Bluetooth	1Mbps	Edge 1	0mm	Ant 6	Full Power	39	2441	4	6.20	7.50	1.349	76.79	1.085	-0.07	0.006	0.009
	Bluetooth	1Mbps	Edge 2	0mm	Ant 6	Full Power	39	2441	4	6.20	7.50	1.349	76.79	1.085	0.03	0.002	0.003
	Bluetooth	1Mbps	Edge 3	0mm	Ant 6	Full Power	39	2441	4	6.20	7.50	1.349	76.79	1.085	0.01	0.002	0.003
	Bluetooth	1Mbps	Edge 4	0mm	Ant 6	Full Power	39	2441	4	6.20	7.50	1.349	76.79	1.085	0.06	0.003	0.004
	Bluetooth	1Mbps	Bottom Face	16mm	Ant 6	Full Power	39	2441	4	6.20	7.50	1.349	76.79	1.085	0.02	0.001	0.001

15.2 Repeated SAR Measurement

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	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 IV	-	-	-	-	RMC 12.2Kbps	Edge 4	0mm	Ant 0	Full Power	1413	1732.6	23.76	25.00	1.330	100	1.000	0.12	0.865	1	1.150
2nd	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Edge 4	0mm	Ant 0	Full Power	1413	1732.6	23.76	25.00	1.330	100	1.000	0.05	0.846	1.022	1.125
1st	FR1 n41	100M	BPSK	1	1	-	Bottom Face	0mm	Ant 1	Sensor on	518598	2592.99	10.91	12.00	1.285	100	1.000	0.05	0.917	1	1.178
2nd	FR1 n41	100M	BPSK	1	1	-	Bottom Face	0mm	Ant 1	Sensor on	518598	2592.99	10.91	12.00	1.285	100	1.000	0.06	0.909	1.009	1.168
1st	FR1 n77	100M	BPSK	1	1	-	Bottom Face	0mm	Ant 3	Sensor on	633332	3499.98	10.25	11.00	1.189	100	1.000	-0.05	0.943	1	1.121
2nd	FR1 n77	100M	BPSK	1	1	-	Bottom Face	0mm	Ant 3	Sensor on	633332	3499.98	10.25	11.00	1.189	100	1.000	0.01	0.938	1.005	1.115
1st	FR1 n77	100M	BPSK	1	1	-	Bottom Face	0mm	Ant 3	Sensor on	656000	3840	10.18	11.00	1.208	100	1.000	-0.03	0.873	1	1.055
2nd	FR1 n77	100M	BPSK	1	1	-	Bottom Face	0mm	Ant 3	Sensor on	656000	3840	10.18	11.00	1.208	100	1.000	0.05	0.841	1.038	1.016
1st	FR1 n77 Part96	100M	BPSK	1	1	-	Bottom Face	0mm	Ant 3	Sensor on	641666	3624.99	10.12	11.00	1.225	100	1.000	-0.05	0.821	1	1.006
2nd	FR1 n77 Part96	100M	BPSK	1	1	-	Bottom Face	0mm	Ant 3	Sensor on	641666	3624.99	10.12	11.00	1.225	100	1.000	0.01	0.804	1.021	0.985

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR <1.45W/kg, only one repeated measurement is required.
3. 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.

16. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Portable Tablet Computer
		Body
1.	WWAN + 2.4GHz WLAN	Yes
2.	WWAN + 5GHz WLAN	Yes
3.	WWAN + Bluetooth	Yes
4.	WWAN + 5GHz WLAN + Bluetooth	Yes

General Note:

1. EUT will choose each GSM, WCDMA, LTE and 5GNR according to the network signal condition; therefore, they will not operate simultaneously at any moment.
2. WWAN above includes 5G NR bands and EN-DC combination.
3. EUT will choose either WLAN 2.4GHz or WLAN 5GHz according to the network signal condition; therefore, 2.4GHz WLAN and 5GHz WLAN will not operate simultaneously at any moment though they have independent antenna.
4. WLAN 2.4GHz and Bluetooth share the same antenna so can't transmit simultaneously.
5. According to the EUT characteristic, WLAN 5GHz and Bluetooth can transmit simultaneously.
6. The worst case 5 GHz WLAN SAR for each configuration was used for SAR summation.
7. When stand-alone SAR is not required for a transmitter or antenna, its SAR is considered zero in the SAR summing process to assess Multi-band transmission SAR compliance.
8. All licensed modes share the same antenna part and cannot transmit simultaneously.
9. The reported SAR summation is calculated based on the same configuration and test position.
10. For standalone WWAN, always choose the highest SAR among all WWAN bands within the selected antenna for each exposure position to perform simultaneous transmission analysis with WLAN/BT. This is the worst co-located analysis and can represent each band. If the co-located analysis within standalone SAR is higher SAR limit (1.6W/kg for 1g SAR), always choose the highest SAR among the selected WWAN bands within the selected antenna for each exposure position to perform simultaneous transmission analysis with WLAN/BT.
11. For inter-band ULCA SAR co-located with WLAN/Bluetooth, chose the worst SAR among the selected LTE bands within the selected antenna per each test position to do co-located with WLAN/Bluetooth. This is the worst co-located analysis and can represent each LTE/NR bands.
12. For EN-DC SAR co-located with WLAN/Bluetooth, chose the worst SAR among the selected LTE bands within the selected antenna per each test position and also the worst SAR of the selected 5GNR Bands within the selected antenna to do co-located with WLAN/Bluetooth. This is the worst co-located analysis and can represent each LTE bands and each 5GNR bands.
13. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
    i) 1g Scalar SAR summation < 1.6W/kg and 10g Scalar SAR summation < 4.0W/kg.
    ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
    iii) If SPLSR ≤ 0.04 for 1g SAR and SPLSR≤ 0.10 for 10g SAR, simultaneously transmission SAR measurement is not necessary.
    iv) Simultaneously transmission SAR measurement, and the reported multi-band 1g SAR < 1.6W/kg.
    v) The SPLSR calculated results please refer to section 16.2.

16.1 Body Exposure Conditions

WWAN Band	Exposure Position	1	2	3	4	1+2	1+3+4	SPLSR
		WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed	
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
All Band Ant 0	Bottom Face	0.573	0.787	0.778	0.160	1.36	1.51	
	Edge 1	0.620	0.039	0.437	0.009	0.66	1.07	
	Edge 2	0.293	0.004	0.104	0.003	0.30	0.40	
	Edge 3	0.115	0.004	0.090	0.003	0.12	0.21	
	Edge 4	1.150	0.008	0.211	0.004	1.16	1.37	
FR1 n77 Ant 2	Bottom Face	0.954	0.787	0.778	0.160	**1.74**	**1.89**	**1,2**
	Edge 1	0.373	0.039	0.437	0.009	0.41	0.82	
	Edge 2	0.089	0.004	0.104	0.003	0.09	0.20	
	Edge 3	0.228	0.004	0.090	0.003	0.23	0.32	
	Edge 4	0.103	0.008	0.211	0.004	0.11	0.32	
All Band Ant 4	Bottom Face	0.609	0.787	0.778	0.160	1.40	1.55	
	Edge 1	0.130	0.039	0.437	0.009	0.17	0.58	
	Edge 2	0.031	0.004	0.104	0.003	0.04	0.14	
	Edge 3	0.016	0.004	0.090	0.003	0.02	0.11	
	Edge 4	0.546	0.008	0.211	0.004	0.55	0.76	
LTE Band 7 Ant 1	Bottom Face	0.904	0.787	0.778	0.160	**1.69**	**1.84**	**3,4**
	Edge 1	0.410	0.039	0.437	0.009	0.45	0.86	
	Edge 2	0.157	0.004	0.104	0.003	0.16	0.26	
	Edge 3	0.011	0.004	0.090	0.003	0.02	0.10	
	Edge 4	0.049	0.008	0.211	0.004	0.06	0.26	
LTE Band 41 Ant 1	Bottom Face	1.032	0.787	0.778	0.160	**1.82**	**1.97**	**5,6**
	Edge 1	0.448	0.039	0.437	0.009	0.49	0.89	
	Edge 2	0.263	0.004	0.104	0.003	0.27	0.37	
	Edge 3	0.021	0.004	0.090	0.003	0.03	0.11	
	Edge 4	0.049	0.008	0.211	0.004	0.06	0.26	
FR1 n7 Ant 1	Bottom Face	1.186	0.787	0.778	0.160	**1.97**	**2.12**	**7,8**
	Edge 1	0.623	0.039	0.437	0.009	0.66	1.07	
	Edge 2	0.308	0.004	0.104	0.003	0.31	0.42	
	Edge 3	0.013	0.004	0.090	0.003	0.02	0.11	
	Edge 4	0.084	0.008	0.211	0.004	0.09	0.30	
FR1 n41 Ant 1	Bottom Face	1.178	0.787	0.778	0.160	**1.97**	**2.12**	**9,10**
	Edge 1	0.486	0.039	0.437	0.009	0.53	0.93	
	Edge 2	0.186	0.004	0.104	0.003	0.19	0.29	
	Edge 3	0.019	0.004	0.090	0.003	0.02	0.11	
	Edge 4	0.072	0.008	0.211	0.004	0.08	0.29	
FR1 n41 Ant 3	Bottom Face	1.189	0.787	0.778	0.160	**1.98**	**2.13**	**11,12**
	Edge 1	0.165	0.039	0.437	0.009	0.20	0.61	
	Edge 2	0.797	0.004	0.104	0.003	0.80	0.90	
	Edge 3	0.592	0.004	0.090	0.003	0.60	0.69	
	Edge 4	0.014	0.008	0.211	0.004	0.02	0.23	
FR1 n77 Ant 3	Bottom Face	1.121	0.787	0.778	0.160	**1.91**	**2.06**	**13,14**
	Edge 1	0.157	0.039	0.437	0.009	0.20	0.60	
	Edge 2	0.394	0.004	0.104	0.003	0.40	0.50	
	Edge 3	0.231	0.004	0.090	0.003	0.24	0.32	
	Edge 4	0.101	0.008	0.211	0.004	0.11	0.32	

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WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5	SPLSR
			WWAN	WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed	
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
LTE Band 5 Ant0	LTE Band 7 Ant1	Bottom Face	0.492	0.904	0.787	0.778	0.160	**2.18**	**2.33**	**15,16**
		Edge 1	0.612	0.410	0.039	0.437	0.009	1.06	1.47	
		Edge 2	0.116	0.813	0.004	0.104	0.003	0.93	1.04	
		Edge 3	0.027	0.011	0.004	0.090	0.003	0.04	0.13	
		Edge 4	0.300	0.049	0.008	0.211	0.004	0.36	0.56	

<ENDC>

WWAN Band	NR Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5	SPLSR
			WWAN	FR1	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed	
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
LTE Band 5 Ant0	FR1 n7 Ant1	Bottom Face	0.492	1.186	0.787	0.778	0.160	**2.47**	**2.62**	**18,19**
		Edge 1	0.612	0.623	0.039	0.437	0.009	1.27	**1.68**	**20**
		Edge 2	0.116	1.114	0.004	0.104	0.003	1.23	1.34	
		Edge 3	0.027	0.013	0.004	0.090	0.003	0.04	0.13	
		Edge 4	0.300	0.084	0.008	0.211	0.004	0.39	0.60	
LTE Band 41 Ant1	FR1 n41 Ant0	Bottom Face	1.032	0.484	0.787	0.778	0.160	**2.30**	**2.45**	**21,22**
		Edge 1	0.448	0.325	0.039	0.437	0.009	0.81	1.22	
		Edge 2	1.136	0.037	0.004	0.104	0.003	1.18	1.28	
		Edge 3	0.021	0.023	0.004	0.090	0.003	0.05	0.14	
		Edge 4	0.049	0.071	0.008	0.211	0.004	0.13	0.34	
LTE Band 26(5) Ant 0	FR1 N77(78) Ant 2	Bottom Face	0.492	0.954	0.787	0.778	0.160	**2.23**	**2.38**	**23,24**
		Edge 1	0.612	0.373	0.039	0.437	0.009	1.02	1.43	
		Edge 2	0.116	0.089	0.004	0.104	0.003	0.21	0.31	
		Edge 3	0.027	0.228	0.004	0.090	0.003	0.26	0.35	
		Edge 4	0.300	0.103	0.008	0.211	0.004	0.41	0.62	
LTE Band 7 Ant 0	FR1 N77(78) Ant 2	Bottom Face	0.538	0.954	0.787	0.778	0.160	**2.28**	**2.43**	**26,27**
		Edge 1	0.338	0.373	0.039	0.437	0.009	0.75	1.16	
		Edge 2	0.098	0.089	0.004	0.104	0.003	0.19	0.29	
		Edge 3	0.115	0.228	0.004	0.090	0.003	0.35	0.44	
		Edge 4	0.472	0.103	0.008	0.211	0.004	0.58	0.79	
LTE Band 41(38) Ant 0	FR1 N77(78) Ant 2	Bottom Face	0.530	0.954	0.787	0.778	0.160	**2.27**	**2.42**	**28,29**
		Edge 1	0.377	0.373	0.039	0.437	0.009	0.79	1.20	
		Edge 2	0.094	0.089	0.004	0.104	0.003	0.19	0.29	
		Edge 3	0.066	0.228	0.004	0.090	0.003	0.30	0.39	
		Edge 4	0.191	0.103	0.008	0.211	0.004	0.30	0.51	
LTE Band 7 Ant1	FR1 n5 Ant0	Bottom Face	0.904	0.309	0.787	0.778	0.160	**2.00**	**2.15**	**30,31**
		Edge 1	0.410	0.399	0.039	0.437	0.009	0.85	1.26	
		Edge 2	0.157	0.052	0.004	0.104	0.003	0.21	0.32	
		Edge 3	0.011	0.017	0.004	0.090	0.003	0.03	0.12	
		Edge 4	0.049	0.168	0.008	0.211	0.004	0.23	0.43	
LTE Band 7 Ant1	FR1 n7 Ant0	Bottom Face	0.904	0.565	0.787	0.778	0.160	**2.26**	**2.41**	**32,33**
		Edge 1	0.410	0.333	0.039	0.437	0.009	0.78	1.19	
		Edge 2	0.157	0.064	0.004	0.104	0.003	0.23	0.33	
		Edge 3	0.011	0.067	0.004	0.090	0.003	0.08	0.17	
		Edge 4	0.049	0.325	0.008	0.211	0.004	0.38	0.59	

<Sensor Off>

WWAN Band	Exposure Position	1	2	3	4	1+2	1+3+4
		WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
All Band Ant 2	Bottom Face at 16mm	0.575	0.437	0.443	0.001	1.01	1.02
	Edge 1 at 11mm	0.530	0.039	0.437	0.001	0.57	0.97
	Edge 2 at 10mm	0.594	0.004	0.104	0.001	0.60	0.70
All Band Ant 3	Bottom Face at 16mm	0.716	0.437	0.443	0.001	1.15	1.16
	Edge 1 at 11mm	0.534	0.039	0.437	0.001	0.57	0.97
	Edge 2 at 10mm	1.088	0.004	0.104	0.001	1.09	1.19
All Band Ant 0	Bottom Face at 16mm	0.968	0.437	0.443	0.001	1.41	1.41
	Edge 1 at 17mm	0.900	0.039	0.437	0.001	0.94	1.34
All Band Ant 1	Bottom Face at 16mm	0.585	0.437	0.443	0.001	1.02	1.03
	Edge 1 at 17mm	0.582	0.039	0.437	0.001	0.62	1.02
	Edge 2 at 10mm	0.526	0.004	0.104	0.001	0.53	0.63

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WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	**1+2+3**	**1+2+4+5**
			WWAN	WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	**Summed**	**Summed**
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	**1g SAR (W/kg)**	**1g SAR (W/kg)**
LTE Band 5 Ant0	LTE Band 7 Ant1	Bottom Face 16mm	0.569	0.403	0.437	0.443	0.001	1.41	1.42
		Edge 1 17mm	0.551	0.356	0.039	0.437	0.001	0.95	1.35
		Edge 2 10mm	0.116	0.486	0.004	0.104	0.001	0.61	0.71

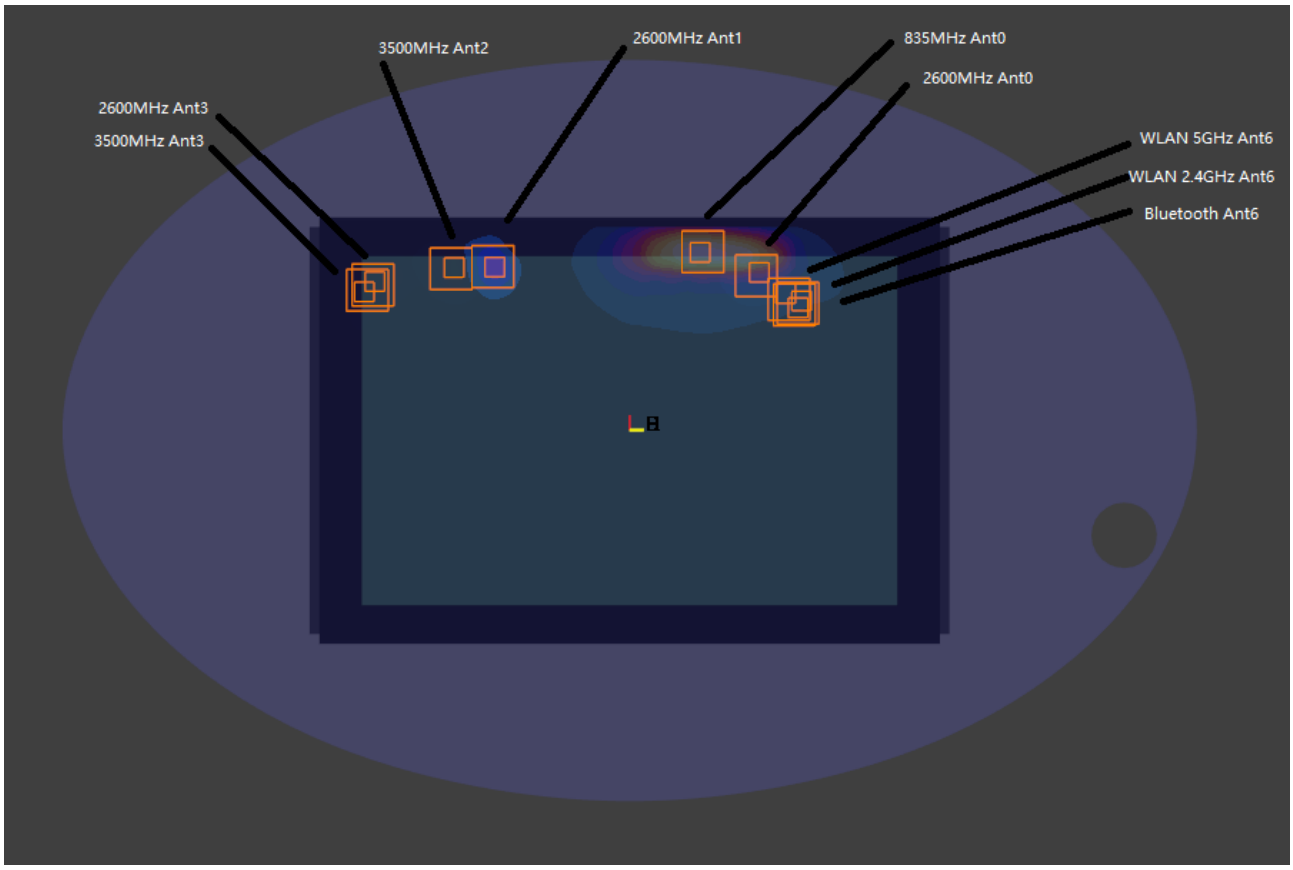
<ENDC>

WWAN Band	NR Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	FR1	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
LTE Band 5 Ant0	FR1 n7 Ant1	Bottom Face	0.569	0.483	0.437	0.443	0.001	1.49	1.50
		Edge 1	0.551	0.481	0.039	0.437	0.001	1.07	1.47
		Edge 2	0.116	0.526	0.004	0.104	0.001	0.65	0.75
LTE Band 41 Ant1	FR1 n41 Ant0	Bottom Face	0.472	0.097	0.437	0.443	0.001	1.01	1.01
		Edge 1	0.480	0.081	0.039	0.437	0.001	0.60	1.00
		Edge 2	0.361	0.037	0.004	0.104	0.001	0.40	0.50
LTE Band 26(5) Ant 0	FR1 N77(78) Ant 2	Bottom Face	0.569	0.575	0.437	0.443	0.001	**1.58**	**1.59**
		Edge 1	0.551	0.530	0.039	0.437	0.001	1.12	1.52
		Edge 2	0.116	0.594	0.004	0.104	0.001	0.71	0.82
LTE Band 7 Ant 0	FR1 N77(78) Ant 2	Bottom Face	0.566	0.575	0.437	0.443	0.001	1.58	1.59
		Edge 1	0.475	0.530	0.039	0.437	0.001	1.04	1.44
		Edge 2	0.098	0.594	0.004	0.104	0.001	0.70	0.80
LTE Band 41(38) Ant 0	FR1 N77(78) Ant 2	Bottom Face	0.352	0.575	0.437	0.443	0.001	1.36	1.37
		Edge 1	0.293	0.530	0.039	0.437	0.001	0.86	1.26
		Edge 2	0.094	0.594	0.004	0.104	0.001	0.69	0.79
LTE Band 7 Ant1	FR1 n5 Ant0	Bottom Face	0.403	0.326	0.437	0.443	0.001	1.17	1.17
		Edge 1	0.356	0.317	0.039	0.437	0.001	0.71	1.11
		Edge 2	0.486	0.052	0.004	0.104	0.001	0.54	0.64
LTE Band 7 Ant1	FR1 n7 Ant0	Bottom Face	0.403	0.463	0.437	0.443	0.001	1.30	1.31
		Edge 1	0.356	0.352	0.039	0.437	0.001	0.75	1.15
		Edge 2	0.486	0.064	0.004	0.104	0.001	0.55	0.66

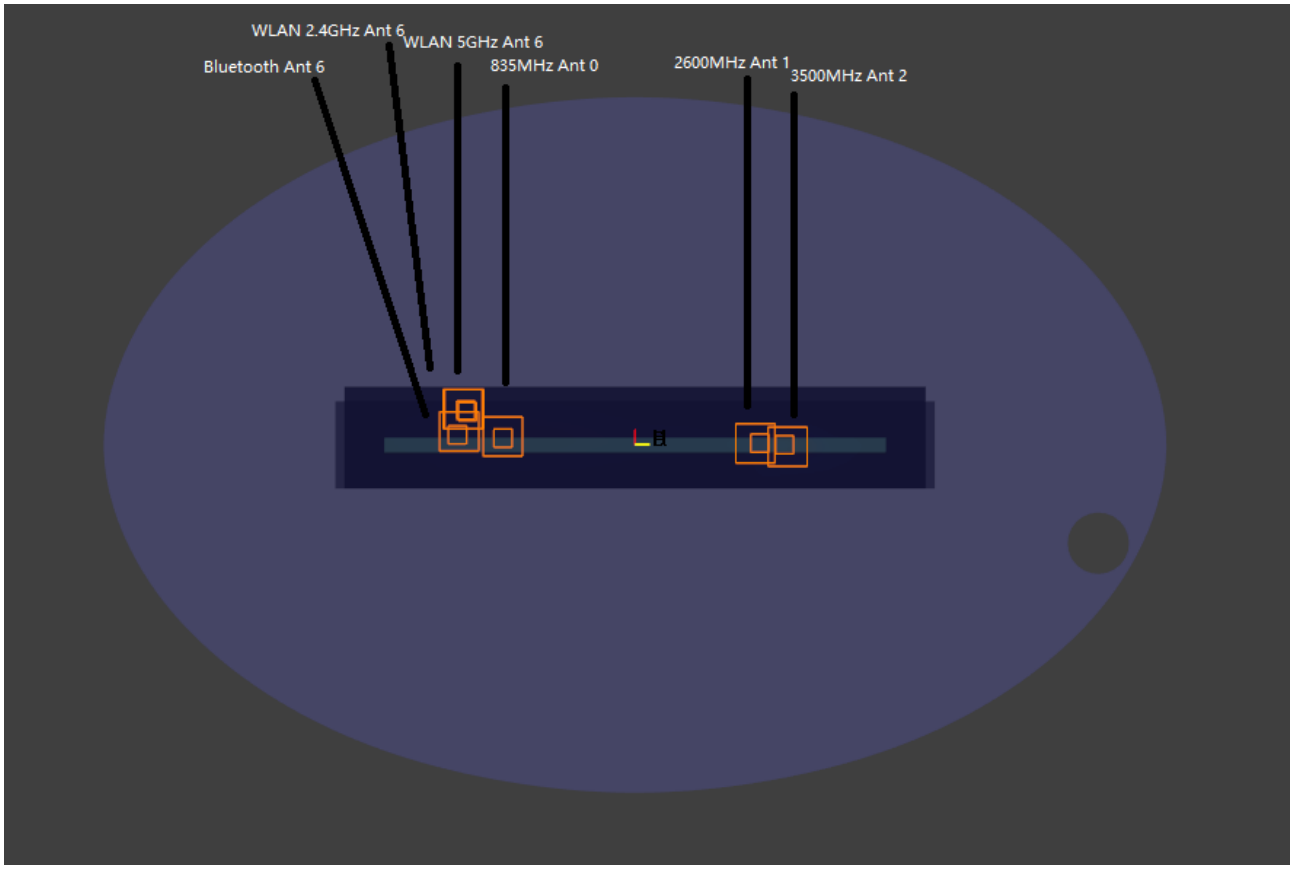
16.2 SPLSR Evaluation and Analysis

General Note:

1. When standalone SAR is measured for both antennas in the pair, the peak location separation distance is computed by the square root of [(x1−x2)2 + (y1−y2)2 + (z1−z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates in the area scans or extrapolated peak SAR locations in the zoom scans, as appropriate.
2. SPLSR = (SAR1 + SAR2)1.5 / (min. separation distance, mm). If SPLSR ≤ 0.04 for 1g SAR, simultaneously transmission SAR measurement is not necessary.
3. Per April 2022 TCB Workshop Notes, WWAN Ant0 was summed algebraically with WLAN/BT Ant6 for the purposes of hybrid SPLSR combination and they are located at the side of the device.
4. Per April 2022 TCB Workshop, instead of doing a small volume scan over a co-located antenna pair, used summing the SAR values of the co-located pair and using that value in SPLSR calculation. In the calculation used the minimum distance between the spatially separated antenna and the closest antenna of the co-located antenna pair to be conservative.



WWAN+WLAN+BT Bottom Face 0mm



WWAN+WLAN+BT Edge 1 0mm

Case No	Band	Position	SAR 1g SAR (W/kg)	Summed 1g SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 1	FR1 n77 Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	174.3	1.74	0.01	Not required
	WLAN2.4GHz Ant 6	Bottom Face	0.787	0.787	0mm	-69.3	84.5	-177				
Case 2	FR1 n77 Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	179.2	1.89	0.01	Not required
	WLAN5GHz Ant 6	Bottom Face	0.778	0.938	0mm	-66.9	89.2	-177				
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	FR1 n77 Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	174.4	1.89	0.01	Not required
	WLAN5GHz Ant 6	Bottom Face	0.778	0.938	0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm	-68.1	84.5	-177				
Case 3	LTE Band 7 Ant 1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	157.0	1.69	0.01	Not required
	WLAN2.4GHz Ant 6	Bottom Face	0.787	0.787	0mm	-69.3	84.5	-177				
Case 4	LTE Band 7 Ant 1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	162.0	1.84	0.02	Not required
	WLAN5GHz Ant 6	Bottom Face	0.778	0.938	0mm	-66.9	89.2	-177				
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	LTE Band 7 Ant 1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	157.1	1.84	0.02	Not required
	WLAN5GHz Ant 6	Bottom Face	0.778	0.938	0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm	-68.1	84.5	-177				
Case 5	LTE Band 41 Ant 1	Bottom Face	1.032	1.032	0mm	-87.5	-76	-177	161.5	1.82	0.02	Not required
	WLAN2.4GHz Ant 6	Bottom Face	0.787	0.787	0mm	-69.3	84.5	-177				
Case 6	LTE Band 41 Ant 1	Bottom Face	1.032	1.032	0mm	-87.5	-76	-177	166.5	1.97	0.02	Not required

	WLAN5GHz Ant 6	Bottom Face	0.778	0.938	0mm	-66.9	89.2	-177				
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	LTE Band 41 Ant 1	Bottom Face	1.032	1.032	0mm	-87.5	-76	-177	161.7	1.97	0.02	Not required
	WLAN5GHz Ant 6	Bottom Face	0.778	0.938	0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm	-68.1	84.5	-177				
Case 7	FR1 n7 Ant 1	Bottom Face	1.186	1.186	0mm	-88.2	-72.5	-177	158.1	1.97	0.02	Not required
	WLAN2.4GHz Ant 6	Bottom Face	0.787	0.787	0mm	-69.3	84.5	-177				
Case 8	FR1 n7 Ant 1	Bottom Face	1.186	1.186	0mm	-88.2	-72.5	-177	163.1	2.12	0.02	Not required
	WLAN5GHz Ant 6	Bottom Face	0.778	0.938	0mm	-66.9	89.2	-177				
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	FR1 n7 Ant 1	Bottom Face	1.186	1.186	0mm	-88.2	-72.5	-177	158.3	2.12	0.02	Not required
	WLAN5GHz Ant 6	Bottom Face	0.778	0.938	0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm	-68.1	84.5	-177				
Case 9	FR1 n41 Ant 1	Bottom Face	1.178	1.178	0mm	-86.3	-76	-177	161.4	1.97	0.02	Not required
	WLAN2.4GHz Ant 6	Bottom Face	0.787	0.787	0mm	-69.3	84.5	-177				
Case 10	FR1 n41 Ant 1	Bottom Face	1.178	1.178	0mm	-86.3	-76	-177	166.3	2.12	0.02	Not required
	WLAN5GHz Ant 6	Bottom Face	0.778	0.938	0mm	-66.9	89.2	-177				
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	FR1 n41 Ant 1	Bottom Face	1.178	1.178	0mm	-86.3	-76	-177	161.5	2.12	0.02	Not required
	WLAN5GHz Ant 6	Bottom Face	0.778	0.938	0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm	-68.1	84.5	-177				
Case 11	FR1 n41 Ant 3	Bottom Face	1.189	1.189	0mm	-70.6	-137.1	-177	221.6	1.98	0.01	Not required
	WLAN2.4GHz Ant 6	Bottom Face	0.787	0.787	0mm	-69.3	84.5	-177				
Case 12	FR1 n41 Ant 3	Bottom Face	1.189	1.189	0mm	-70.6	-137.1	-177	226.3	2.13	0.01	Not required
	WLAN5GHz Ant 6	Bottom Face	0.778	0.938	0mm	-66.9	89.2	-177				
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	FR1 n41 Ant 3	Bottom Face	1.189	1.189	0mm	-70.6	-137.1	-177	221.6	2.13	0.01	Not required
	WLAN5GHz Ant 6	Bottom Face	0.778	0.938	0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm	-68.1	84.5	-177				
Case 13	FR1 n77 Ant 3	Bottom Face	1.121	1.121	0mm	-70.5	-138	-177	222.5	1.91	0.01	Not required
	WLAN2.4GHz Ant 6	Bottom Face	0.787	0.787	0mm	-69.3	84.5	-177				
Case 14	FR1 n77 Ant 3	Bottom Face	1.121	1.121	0mm	-70.5	-138	-177	227.2	2.06	0.01	Not required
	WLAN5GHz Ant 6	Bottom Face	0.778	0.938	0mm	-66.9	89.2	-177				
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	FR1 n77 Ant 3	Bottom Face	1.121	1.121	0mm	-70.5	-138	-177	222.5	2.06	0.01	Not required
	WLAN5GHz Ant 6	Bottom Face	0.778	0.938	0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm	-68.1	84.5	-177				
Case 15	LTE Band 7 Ant1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	128.6	2.18	0.03	Not required
	LTE Band 5 Ant0	Bottom Face	0.492	1.279	0mm	-90	57	-174				
	WLAN2.4GHz Ant 6	Bottom Face	0.787		0mm							
	LTE Band 7 Ant1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	157.0	2.18	0.02	Not required
	LTE Band 5 Ant0	Bottom Face	0.492	1.279	0mm							
	WLAN2.4GHz Ant 6	Bottom Face	0.787		0mm	-69.3	84.5	-177				
Case 16	LTE Band 7 Ant1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	128.6	2.33	0.03	Not required

	LTE Band 5 Ant0	Bottom Face	0.492	1.43	0mm	-90	57	-174				
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	LTE Band 7 Ant1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	162.0	2.33	0.02	Not required
	LTE Band 5 Ant0	Bottom Face	0.492	1.43	0mm							
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm	-66.9	89.2	-177				
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	LTE Band 7 Ant1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	157.1	2.33	0.02	Not required
	LTE Band 5 Ant0	Bottom Face	0.492	1.43	0mm							
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm	-68.1	84.5	-177				
Case 18	FR1 n7 Ant1	Bottom Face	1.186	1.186	0mm	-88.2	-72.5	-177	129.5	2.47	0.03	Not required
	LTE Band 5 Ant0	Bottom Face	0.492	1.279	0mm	-90	57	-174				
	WLAN2.4GHz Ant 6	Bottom Face	0.787		0mm							
	FR1 n7 Ant1	Bottom Face	1.186	1.186	0mm	-88.2	-72.5	-177	158.1	2.47	0.02	Not required
	LTE Band 5 Ant0	Bottom Face	0.492	1.279	0mm							
	WLAN2.4GHz Ant 6	Bottom Face	0.787		0mm	-69.3	84.5	-177				
Case 19	FR1 n7 Ant1	Bottom Face	1.186	1.186	0mm	-88.2	-72.5	-177	129.5	2.62	0.03	Not required
	LTE Band 5 Ant0	Bottom Face	0.492	1.43	0mm	-90	57	-174				
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	FR1 n7 Ant1	Bottom Face	1.186	1.186	0mm	-88.2	-72.5	-177	163.1	2.62	0.03	Not required
	LTE Band 5 Ant0	Bottom Face	0.492	1.43	0mm							
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm	-66.9	89.2	-177				
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	FR1 n7 Ant1	Bottom Face	1.186	1.186	0mm	-88.2	-72.5	-177	158.3	2.62	0.03	Not required
	LTE Band 5 Ant0	Bottom Face	0.492	1.43	0mm							
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm	-68.1	84.5	-177				
	FR1 n7 Ant1	Edge 1	0.623	0.623	0mm	-0.8	69	-174	142.5	1.68	0.02	Not required
	LTE Band 5 Ant0	Edge 1	0.612	1.058	0mm	-3.2	-73.5	-174				
	WLAN5GHz Ant 6	Edge 1	0.437		0mm							
	Bluetooth Ant 6	Edge 1	0.009		0mm							
	FR1 n7 Ant1	Edge 1	0.623	0.623	0mm	-0.8	69	-174	167.1	1.68	0.01	Not required
Case 20	LTE Band 5 Ant0	Edge 1	0.612	1.058	0mm							
	WLAN5GHz Ant 6	Edge 1	0.437		0mm	-5.6	-98	-174				
	Bluetooth Ant 6	Edge 1	0.009		0mm							
	FR1 n7 Ant1	Edge 1	0.623	0.623	0mm	-0.8	69	-174	162.0	1.68	0.01	Not required
	LTE Band 5 Ant0	Edge 1	0.612	1.058	0mm							
	WLAN5GHz Ant 6	Edge 1	0.437		0mm							
	Bluetooth Ant 6	Edge 1	0.009		0mm	-18.4	-92	-174				
Case 21	LTE Band 41 Ant1	Bottom Face	1.032	1.032	0mm	-87.5	-76	-177	142.5	2.30	0.02	Not required
	FR1 n41 Ant0	Bottom Face	0.484	1.271	0mm	-84.3	66.5	-177				
	WLAN2.4GHz Ant 6	Bottom Face	0.787		0mm							
	LTE Band 41 Ant1	Bottom Face	1.032	1.032	0mm	-87.5	-76	-177	161.5	2.30	0.02	Not required

	FR1 n41 Ant0	Bottom Face	0.484	1.271	0mm							
	WLAN2.4GHz Ant 6	Bottom Face	0.787		0mm	-69.3	84.5	-177				
Case 22	LTE Band 41 Ant1	Bottom Face	1.032	1.032	0mm	-87.5	-76	-177	142.5	2.45	0.03	Not required
	FR1 n41 Ant0	Bottom Face	0.484	1.422	0mm	-84.3	66.5	-177				
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	LTE Band 41 Ant1	Bottom Face	1.032	1.032	0mm	-87.5	-76	-177	166.5	2.45	0.02	Not required
	FR1 n41 Ant0	Bottom Face	0.484	1.422	0mm							
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm	-66.9	89.2	-177				
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	LTE Band 41 Ant1	Bottom Face	1.032	1.032	0mm	-87.5	-76	-177	161.7	2.45	0.02	Not required
	FR1 n41 Ant0	Bottom Face	0.484	1.422	0mm							
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm	-68.1	84.5	-177				
Case 23	FR1 N77(78) Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	146.4	2.23	0.02	Not required
	LTE Band 26(5) Ant 0	Bottom Face	0.492	1.279	0mm	-90	57	-174				
	WLAN2.4GHz Ant 6	Bottom Face	0.787		0mm							
	FR1 N77(78) Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	174.3	2.23	0.02	Not required
	LTE Band 26(5) Ant 0	Bottom Face	0.492	1.279	0mm							
	WLAN2.4GHz Ant 6	Bottom Face	0.787		0mm	-69.3	84.5	-177				
Case 24	FR1 N77(78) Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	146.4	2.38	0.03	Not required
	LTE Band 26(5) Ant 0	Bottom Face	0.492	1.43	0mm	-90	57	-174				
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	FR1 N77(78) Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	179.2	2.38	0.02	Not required
	LTE Band 26(5) Ant 0	Bottom Face	0.492	1.43	0mm							
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm	-66.9	89.2	-177				
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	FR1 N77(78) Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	174.4	2.38	0.02	Not required
	LTE Band 26(5) Ant 0	Bottom Face	0.492	1.43	0mm							
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm	-68.1	84.5	-177				
Case 26	FR1 N77(78) Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	155.7	2.28	0.02	Not required
	LTE Band 7 Ant 0	Bottom Face	0.538	1.325	0mm	-80.6	66.5	-177				
	WLAN2.4GHz Ant 6	Bottom Face	0.787		0mm							
	FR1 N77(78) Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	174.3	2.28	0.02	Not required
	LTE Band 7 Ant 0	Bottom Face	0.538	1.325	0mm							
	WLAN2.4GHz Ant 6	Bottom Face	0.787		0mm	-69.3	84.5	-177				
Case 27	FR1 N77(78) Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	156.2	2.43	0.02	Not required
	LTE Band 7 Ant 0	Bottom Face	0.538	1.476	0mm	-84.3	67	-177				
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	FR1 N77(78) Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	179.2	2.43	0.02	Not required
	LTE Band 7 Ant 0	Bottom Face	0.538	1.476	0mm							
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm	-66.9	89.2	-177				

	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	FR1 N77(78) Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	174.4	2.43	0.02	Not required
	LTE Band 7 Ant 0	Bottom Face	0.538	1.476	0mm							
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm	-68.1	84.5	-177				
Case 28	FR1 N77(78) Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	155.7	2.27	0.02	Not required
	LTE Band 41(38) Ant 0	Bottom Face	0.53	1.317	0mm	-84.3	66.5	-177				
	WLAN2.4GHz Ant 6	Bottom Face	0.787		0mm							
	FR1 N77(78) Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	174.3	2.27	0.02	Not required
	LTE Band 41(38) Ant 0	Bottom Face	0.53	1.317	0mm							
	WLAN2.4GHz Ant 6	Bottom Face	0.787		0mm	-69.3	84.5	-177				
Case 29	FR1 N77(78) Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	155.7	2.42	0.02	Not required
	LTE Band 41(38) Ant 0	Bottom Face	0.53	1.468	0mm	-84.3	66.5	-177				
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	FR1 N77(78) Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	179.2	2.42	0.02	Not required
	LTE Band 41(38) Ant 0	Bottom Face	0.53	1.468	0mm							
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm	-66.9	89.2	-177				
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	FR1 N77(78) Ant 2	Bottom Face	0.954	0.954	0mm	-83.4	-89.2	-177	174.4	2.42	0.02	Not required
	LTE Band 41(38) Ant 0	Bottom Face	0.53	1.468	0mm							
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm	-68.1	84.5	-177				
Case 30	LTE Band 7 Ant1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	128.6	2.00	0.02	Not required
	FR1 n5 Ant0	Bottom Face	0.309	1.096	0mm	-90	57	-174				
	WLAN2.4GHz Ant 6	Bottom Face	0.787		0mm							
	LTE Band 7 Ant1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	157.0	2.00	0.02	Not required
	FR1 n5 Ant0	Bottom Face	0.309	1.096	0mm							
	WLAN2.4GHz Ant 6	Bottom Face	0.787		0mm	-69.3	84.5	-177				
Case 31	LTE Band 7 Ant1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	128.6	2.15	0.02	Not required
	FR1 n5 Ant0	Bottom Face	0.309	1.247	0mm	-90	57	-174				
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	LTE Band 7 Ant1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	162.0	2.15	0.02	Not required
	FR1 n5 Ant0	Bottom Face	0.309	1.247	0mm							
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm	-66.9	89.2	-177				
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	LTE Band 7 Ant1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	157.1	2.15	0.02	Not required
	FR1 n5 Ant0	Bottom Face	0.309	1.247	0mm							
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm	-68.1	84.5	-177				
Case 32	LTE Band 7 Ant1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	138.1	2.26	0.02	Not required
	FR1 n7 Ant0	Bottom Face	0.565	1.352	0mm	-80.6	66.5	-177				
	WLAN2.4GHz Ant 6	Bottom Face	0.787		0mm							

	LTE Band 7 Ant1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	157.0	2.26	0.02	Not required
	FR1 n7 Ant0	Bottom Face	0.565	1.352	0mm							
	WLAN2.4GHz Ant 6	Bottom Face	0.787		0mm	-69.3	84.5	-177				
Case 33	LTE Band 7 Ant1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	138.1	2.41	0.03	Not required
	FR1 n7 Ant0	Bottom Face	0.565	1.503	0mm	-80.6	66.5	-177				
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	LTE Band 7 Ant1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	162.0	2.41	0.02	Not required
	FR1 n7 Ant0	Bottom Face	0.565	1.503	0mm							
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm	-66.9	89.2	-177				
	Bluetooth Ant 6	Bottom Face	0.16		0mm							
	LTE Band 7 Ant1	Bottom Face	0.904	0.904	0mm	-87	-71.5	-177	157.1	2.41	0.02	Not required
	FR1 n7 Ant0	Bottom Face	0.565	1.503	0mm							
	WLAN5GHz Ant 6	Bottom Face	0.778		0mm							
	Bluetooth Ant 6	Bottom Face	0.16		0mm	-68.1	84.5	-177				

Test Engineer : Martin Li, Varus Wang, Light Wang, Ricky Gu

17. Uncertainty Assessment

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

18. 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 248227 D01 v02r02, “SAR Guidance for IEEE 802.11 (WiFi) Transmitters”, Oct 2015.

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

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

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

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

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

Appendixes

Please refer to separated files for the following appendixes

Appendix A. Plots of System Performance Check

Appendix B. Plots of High SAR Measurement

Appendix C. DASY Calibration Certificate

Appendix D. Test Setup Photos

Appendix E. Conducted RF Output Power Table

Appendix F. Power measurement connection diagram and CA Conducted RF Output Power Table

------THE END------