FCC SAR Test Report

APPLICANT	:	Xiaomi Communications Co., Ltd.
EQUIPMENT	:	Mobile Phone
BRAND NAME	:	Redmi
MODEL NAME	:	22041219NY
FCC ID	:	2AFZZ1219NY
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 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.

Tony Zhang

Reviewed by: Tong Zhang / Supervisor

Kat Yin

Approved by: Kat Yin / Manager

ACCREDITED Cert #5145.02

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People's Republic of China

Table of Contents

Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA211812	Rev. 01	Initial issue of report.	Mar. 17, 2022

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Xiaomi Communications Co., Ltd., Mobile Phone, 22041219NY,** are as follows.

Highest 1g SAR Summary						
Equipment Class	Frequency Band		Head (Separation 0mm)	Hotspot (Separation 10mm)	Body-worn (Separation 15mm)	Highest Simultaneous Transmission 1g SAR (W/kg)
			1g SAR (W/kg)			
Licensed	GSM	GSM850	0.63	0.54	0.28	1.59
		GSM1900	0.62	0.88	0.70	
	WCDMA	Band II	1.00	1.02	0.80	
		Band IV	0.98	**1.09**	0.70	
		Band V	0.69	0.43	0.29	
	LTE	Band 2	1.02	0.96	0.90	
		Band 7	0.98	1.06	0.85	
		Band 12/Band 17	0.58	0.27	0.24	
		Band 13	0.72	0.36	0.23	
		Band 26/Band 5	0.60	0.38	0.20	
		Band 66/ Band 4	0.96	1.03	0.79	
		Band 41/Band 38	0.87	0.97	0.59	
	5G NR	n5	0.58	0.45	0.21	
		n7	0.90	0.71	0.65	
		n66	0.75	1.06	0.78	
		n41/ n38	0.94	0.57	0.41	
		n77	**1.09**	0.89	**1.09**	
		n78	0.85	0.66	0.60	
DTS	WLAN	2.4GHz WLAN	0.49	0.37	0.21	1.51
NII		5GHz WLAN	0.60	0.39	0.28	1.59
DSS	Bluetooth	2.4GHz Bluetooth	0.18	<0.10	<0.10	1.59

Highest 10g SAR Summary			
Equipment Class	Frequency Band		Product Specific 10g SAR (W/kg) (Separation 0mm)
NII	WLAN	5GHz WLAN	**0.93**
Date of Testing:			2022/2/3 ~ 2022/2/28

Remark:

1. This device supports LTE B4 / B5 / B17 / B38 and B66 / B26 / B12 / B41. Since the supported frequency span for LTE B4 / B5 / B17 / B38 falls completely within the supports frequency span for LTE B66 / B26 / B12 / B41, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B66 / B26 / B12 / B41.
2. This device supports 5G NR n38 and 5G NR n41. Since the supported frequency span for 5G NR n38 falls completely within the supports frequency span for 5G NR n41, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for 5G NR n41.

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, 4.0 W/kg for Product Specific 10g 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 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	SAR06-KS	CN1257	314309

Applicant	
Company Name	Xiaomi Communications Co., Ltd.
Address	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

Manufacturer	
Company Name	Xiaomi Communications Co., Ltd.
Address	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

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 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r03
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 616217 D04 SAR for laptop and tablets v01r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Phone
Brand Name	Redmi
Model Name	22041219NY
FCC ID	2AFZZ1219NY
IMEI Code	SIM1: 863160060063185 SIM2: 863160060063193
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 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 66: 1710 MHz ~ 1780 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n7: 2500 MHz ~ 2570 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41: 2496 MHz ~ 2690 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n77: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3980 MHz 5G NR n78: 3450 MHz ~ 3550 MHz, 3700 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 NFC: 13.56 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+(16QAM uplink is supported) LTE: QPSK, 16QAM, 64QAM LTE: 256QAM(Downlink Only) 5G NR : CP-OFDM / DFT-s-OFDM, PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM WLAN 2.4GHz 802.11b/g/n HT20 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE NFC:ASK
HW Version	P2
SW Version	MIUI 13
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. 802.11n-HT40 is not supported in 2.4GHz WLAN.
2. This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
3. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.
4. This device 2.4GHz WLAN/5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WiFi Direct (GC/GO), and 5.3GHz / 5.5GHz supports WiFi Direct (GC only).
5. This device does not support DTM operation and supports GPRS/EGPRS mode up to multi-slot class 12.
6. For dual SIM card mobile has two SIM slots and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (single active). After pre-scan two SIM cards power, we found test result of the SIM1 was the worse, so we chose SIM1 slot to perform all tests.
7. There are three samples. Sample 1 is 1st source battery for CoxMX of 4G+128G, sample 2 is 2nd source battery for Sunwoda of 6G+128G, and sample 3 is 1st source battery for CoxMX 4G+64G. According to the differences, we choose sample 1 to perform full test.
8. The device implements Proximity sensors/receiver detect mechanism/hotspot trigger reduced power for the power management for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity). The device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to appendix E. power table. Full power table and reduced power table (DSI 1: receiver on reduced power for head; DSI 4/3: P-sensor on for hotspot/ handheld; DSI 2: receiver off/P-sensor off).
9. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
10. 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.
11. 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.
12. 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.
13. 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.
14. 5G NR n41/n77/n78 supports HPUE, HPUE power and SAR testing performed separately.
15. 5G NR n41/n77/n78 HPUE with higher power, n41/n77/n78 HPUE SAR can represent power class 3 level SAR.
16. For 5G NR EN-DC mode, standalone SAR performed for 5GNR band with the maximum power, EN-DC SAR summed 5GNR standalone SAR and LTE standalone SAR, the result of EN-DC SAR is more conservatively.
17. For 5GNR FDD/TDD supports SCS15KHz and SCS30KHz, chose higher power which is SCS30KHz to perform SAR testing
18. This device supports 5GNR FR1 bands as following table, including NSA mode and SA mode.

<5G NR>

Mode	Band	Duplex	SCS(KHz)	Bandwidths(BW)
NSA	n5	FDD	15	5, 10, 15, 20
			30	10, 15, 20
	n7	FDD	15	5, 10, 15, 20
			30	10, 15, 20
	n66	FDD	15	5, 10, 15, 20, 40
			30	10, 15, 20, 40
	n41	TDD	15	10, 15, 20, 40, 50
			30	10, 15, 20, 40, 50, 60, 80, 90, 100
	n77	TDD	15	10, 15, 20, 40, 50
			30	10, 15, 20, 40, 50, 60, 80, 90, 100
	n78	TDD	15	10, 15, 20, 40, 50
			30	10, 15, 20, 40, 50, 60, 80, 90, 100
SA	n5	FDD	15	5, 10, 15, 20
			30	10, 15, 20
	n7	FDD	15	5, 10, 15, 20
			30	10, 15, 20
	n66	FDD	15	5, 10, 15, 20, 40
			30	10, 15, 20, 40
	n38	TDD	15	5, 10, 15, 20, 40
			30	10, 15, 20, 40
	n41	TDD	15	10, 15, 20, 40, 50
			30	10, 15, 20, 40, 50, 60, 80, 90, 100

	n77	TDD	15	10, 15, 20, 40, 50
			30	10, 15, 20, 40, 50, 60, 80, 90, 100
	n78	TDD	15	10, 15, 20, 40, 50
			30	10, 15, 20, 40, 50, 60, 80, 90, 100

4.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05	
FCC ID	2AFZZ1219NY
Equipment Name	Mobile Phone
Operating Frequency Range of each LTE transmission band	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 66: 1710 MHz ~ 1780 MHz
Channel Bandwidth	LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 13: 5MHz, 10MHz LTE Band 17: 5MHz, 10MHz LTE Band 26: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
uplink modulations used	QPSK / 16QAM / 64QAM
LTE Voice / Data requirements	Voice and Data
LTE Release Version	R15, Cat13
CA Support	Supported, Uplink and Downlink
LTE MPR permanently built-in by design	**Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3** Modulation | Channel bandwidth / Transmission bandwidth (N_{RB}) | MPR (dB) 1.4 MHz | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz QPSK: > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 1 16 QAM: ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 1 16 QAM: > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 2 64 QAM: ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 2 64 QAM: > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 3 256 QAM: ≥ 1 | ≤ 5
LTE A-MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)
Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.
Power reduction applied to satisfy SAR compliance	Yes, when operating in Proximity sensors/receiver detect mechanism, head/body-worn/ hotspot/extremity will trigger reduced power for some bands applied to satisfy SAR compliance, the detail please referred to section 13.
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power verification please referred to section 13.
LTE Carrier Aggregation Additional Information	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 downlink and 2 carriers in the uplink.

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

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

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 n38 : 2570 MHz ~ 2620 MHz 5G NR n41: 2496 MHz ~ 2690 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n77: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3980 MHz 5G NR n78: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3800 MHz
Channel Bandwidth	**For SCS-15KHz:** 5G NR n5: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n7: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n38: 5MHz, 10MHz, 15MHz, 20MHz, 40MHz 5G NR n41: 10MHz, 15MHz, 20MHz, 40MHz, 50MHz 5G NR n66: 5MHz, 10MHz, 15MHz, 20MHz, 40MHz 5G NR n77: 10MHz, 15MHz, 20MHz, 40MHz, 50MHz 5G NR n78: 10MHz, 15MHz, 20MHz, 40MHz, 50MHz **For SCS-30KHz:** 5G NR n5: 10MHz, 15MHz, 20MHz 5G NR n7: 10MHz, 15MHz, 20MHz 5G NR n38: 10MHz, 15MHz, 20MHz, 40MHz 5G NR n41: 10MHz, 15MHz, 20MHz, 40MHz, 50MHz, 60MHz, 80MHz, 90MHz,100MHz 5G NR n66: 10MHz, 15MHz, 20MHz, 40MHz 5G NR n77: 10MHz, 15MHz, 20MHz, 40MHz, 50MHz, 60MHz, 80MHz, 90MHz,100MHz 5G NR n78: 10MHz, 15MHz, 20MHz, 40MHz, 50MHz, 60MHz, 80MHz, 90MHz,100MHz
SCS	FDD/TDD: SCS15KHz, 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 n66	LTE B2/7/66
LTE Anchor Bands for n77	LTE B41
LTE Anchor Bands for n78	LTE B2/5/7/38/41/66
LTE Anchor Bands for n41	LTE B41

NR Band 5 SCS15KHz								
	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 SCS15KHz								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500500	2502.5	501000	2505	501500	2507.5	502000	2510
M	507000	2535	507000	2535	507000	2535	507000	2535
H	513500	2567.5	513000	2565	512500	2562.5	512000	2560

NR Band 38 SCS15KHz										
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	515000	2575	515004	2575.02	515502	2577.51	516000	2580		
M	519000	2595	519000	2595	519000	2595	519000	2595	519000	2595
H	523000	2615	522996	2614.98	522498	2612.49	522000	2610		

NR Band 41 SCS15KHz										
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz		Bandwidth 50MHz	
	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	503202	2516.01	504204	2521.02
M	518598	2595.99	518598	2595.99	518598	2595.99	518598	2595.99	518598	2595.99
H	537000	2685	536496	2685.48	535998	2679.99	534000	2670	532998	2664.99

NR Band 66 SCS15KHz										
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	342500	1712.5	343000	1715	343500	1717.5	344000	1720	346000	1730

M	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770	352000	1760

NR Band 5 SCS30KHz						
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	165800	829	166300	831.5	166800	834
M	167300	836.5	167300	836.5	167300	836.5
H	168800	844	168300	841.5	167800	839

NR Band 7 SCS30KHz						
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	501000	2505	501500	2507.5	502000	2510
M	507000	2535	507000	2535	507000	2535
H	513000	2565	512500	2562.5	512000	2560

NR Band 38 SCS30KHz								
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	515004	2575.02	515502	2577.51	516000	2580	518004	2590.02
M	519000	2595	519000	2595	519000	2595	519000	2595
H	522996	2614.98	522498	2612.49	522000	2610	519996	2599.98

NR Band 41 SCS30KHz																				
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		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)
L	500202	2501.01	500700	2503.5	501204	2506.02	503202	2516.01	504204	2521.02	505200	2526	507204	2536.02	508200	2541	509202	2546.01
M	518598	2595.99	518598	2595.99	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	2685.48	535998	2679.99	534000	2670	532998	2664.99	531996	2659.98	529998	2649.99	528996	2644.98	528000	2640

NR Band 66 SCS30KHz								
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	343000	1715	343500	1717.5	344000	1720	346000	1730
M	349000	1745	349000	1745	349000	1745	349000	1745
H	355000	1775	354500	1772.5	354000	1770	352000	1760

<3700 MHz ~ 3980 MHz>

NR Band 77 SCS15KHz										
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz		Bandwidth 50MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	647000	3705	647168	3707.52	647334	3710.01	648000	3720	648334	3725.01
M	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840
H	665000	3975	664834	3972.51	664668	3970.02	664000	3960	663668	3955.00

NR Band 78 SCS15KHz										
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz		Bandwidth 50MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	647000	3705	647168	3707.52	647334	3710.01	648000	3720		
M	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750
H	653000	3795	652834	3792.51	652668	3790.02	652000	3780		

NR Band 77 SCS30KHz																		
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		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)
L	647000	3705	647168	3707.52	647334	3710.01	648000	3720	648334	3725.01	648668	3730.02	649334	3740.01	649668	3745.02	650000	3750
M	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840
H	665000	3975	664834	3972.51	664668	3970.02	664000	3960	663668	3955.02	663334	3950.01	662668	3940.02	662334	3935.01	662000	3930

NR Band 78 SCS30KHz																				
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		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)
L	647000	3705	647168	3707.52	647334	3710.01	648000	3720	648334	3725.01	648668	3730.02	649334	3740.01	649668	3745.02		
M	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750
H	653000	3795	652834	3792.51	652668	3790.02	652000	3780	651668	3775.02	651334	3770.01	650668	3760.02	650334	3755.01		

<3450 MHz ~ 3550 MHz>

NR Band 77 SCS15KHz										
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz		Bandwidth 50MHz	
	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	631334	3470.01		
M	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01
H	636334	3545.01	636168	3542.52	636000	3540	635334	3530.01		

NR Band 78 SCS15KHz										
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz		Bandwidth 50MHz	
	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	631334	3470.01		
M	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01
H	636334	3545.01	636168	3542.52	636000	3540	635334	3530.01		

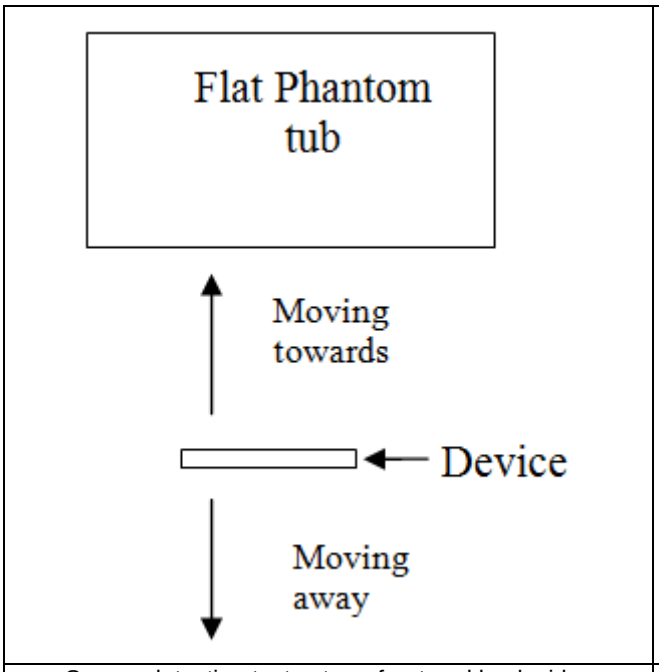
NR Band 77 SCS30KHz																		
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	630334	3455.01	630550	3457.5	630668	3460.02	631334	3470.01	631668	3475.02	632000	3480	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
H	636334	3545.01	636168	3542.52	636000	3540	635334	3530.01	635000	3525	634668	3520.02	634000	3510	633668	3505.02		

NR Band 78 SCS30KHz																		
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		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)
L	630334	3455.01	630550	3457.5	630668	3460.02	631334	3470.01	631668	3475.02	632000	3480	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
H	636334	3545.01	636168	3542.52	636000	3540	635334	3530.01	635000	3525	634668	3520.02	634000	3510	633668	3505.02		

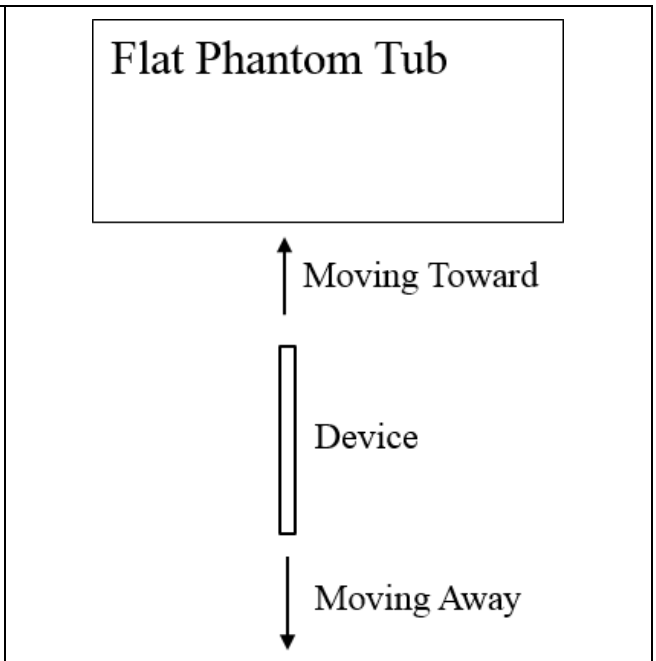
5. Proximity Sensor Triggering Test

5.1 Proximity sensor triggering distances(Per KDB616217§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.
2. Proximity sensor triggering distance testing was performed according 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 (3980MHz) and lowest (850MHz) frequency was used for proximity sensor triggering testing.
3. Capacitive proximity sensor placed coincident with antenna elements at the top/bottom end of the phone are utilized to determine when the device comes in proximity of the user's body or finger or hand at the front or back or bottom or left or right or top 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.
4. The sensors can use to detect the proximity of the user's body or handheld states at the front or back or bottom or top or left side of the device use a detection threshold distance. When front/back/left/top/bottom sides of body or handheld condition is detected reduced power will be active. The trigger distance shown in the sections below.
5. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance -1mm was performed.



Sensor detection test set-up, front and back sides



Sensor detection test set-up, left/top/bottom sides

<P-Sensor>

<Sensor on for Ant1 >

(Declared by manufacturer)

Proximity Sensor Triggering Distance (mm)						
Position	Front		Back		Bottom Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	16	16	16	16	16	16

<Sensor on for Ant3/4 >

(Declared by manufacturer)

Proximity Sensor Triggering Distance (mm)						
Position	Front		Back		Top Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	16	16	16	16	16	16

<Sensor on for Ant2 >

(Declared by manufacturer)

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Top Side		Left Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	16	16	16	16	6	6	6	6

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:

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

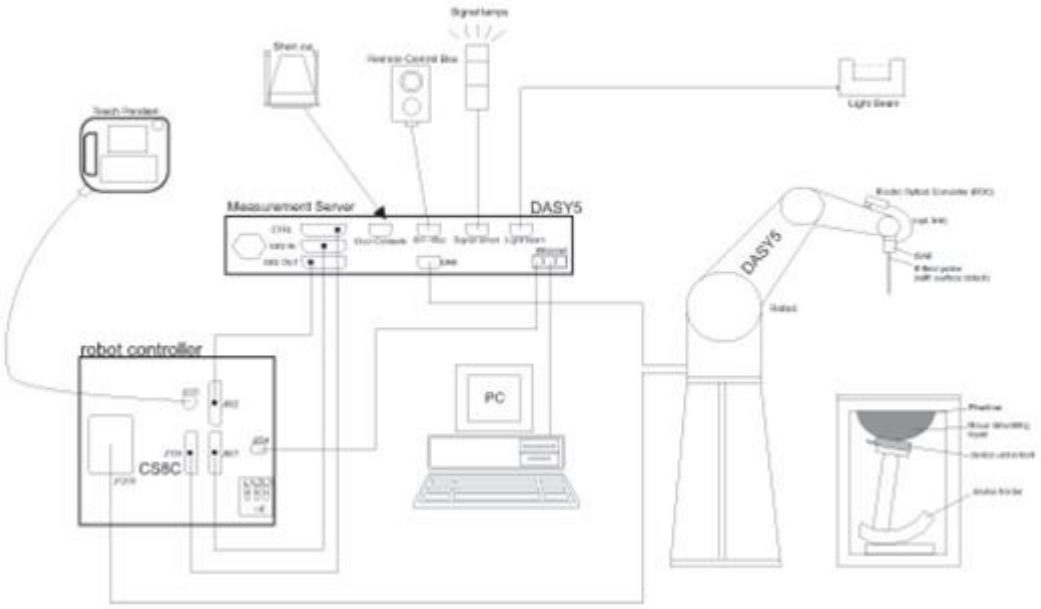
SAR is expressed in units of Watts per kilogram (W/kg)

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

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 WinXP or Win7 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

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	10 MHz – >6 GHz Linearity: ±0.2 dB (30 MHz – 6 GHz)	
Directivity	±0.3 dB in TSL (rotation around probe axis) ±0.5 dB in TSL (rotation normal to probe axis)	
Dynamic Range	10 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.

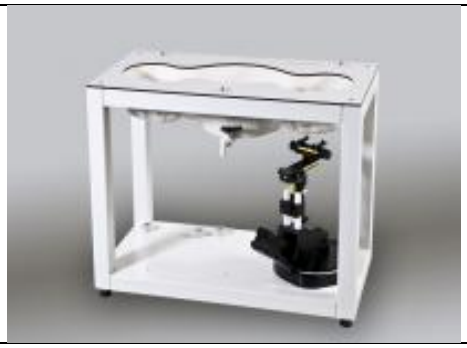
The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Photo of DAE

8.3 Phantom

<SAM Twin Phantom>

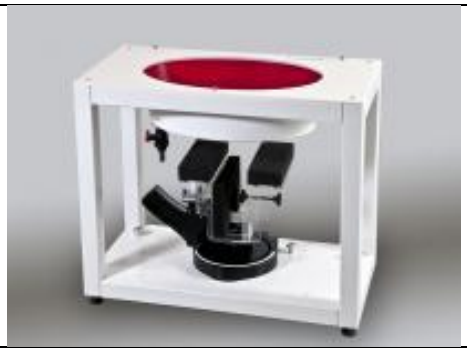
Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom



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 in the frequency range of 30 MHz to 6 GHz. ELI4 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	2019/3/27	2022/3/24
SPEAG	835MHz System Validation Kit	D835V2	4d258	2020/5/7	2023/5/6
SPEAG	1750MHz System Validation Kit	D1750V2	1090	2019/3/27	2022/3/25
SPEAG	1900MHz System Validation Kit	D1900V2	5d170	2019/3/26	2022/3/24
SPEAG	2450MHz System Validation Kit	D2450V2	908	2019/3/25	2022/3/23
SPEAG	2600MHz System Validation Kit	D2600V2	1061	2020/11/26	2023/11/25
SPEAG	3500MHz System Validation Kit	D3500V2	1037	2020/11/25	2023/11/24
SPEAG	3700MHz System Validation Kit	D3700V2	1008	2020/11/25	2023/11/24
SPEAG	3900MHz System Validation Kit	D3900V2	1048	2020/5/14	2023/5/13
SPEAG	5000MHz System Validation Kit	D5GHzV2	1113	2019/9/24	2022/9/22
SPEAG	Data Acquisition Electronics	DAE4	1279	2021/9/21	2022/9/20
SPEAG	Dosimetric E-Field Probe	EX3DV4	3935	2021/4/29	2022/4/28
SPEAG	SAM Twin Phantom	SAM Twin	TP-2022	NCR	NCR
Testo	Thermo-Hygrometer	608-H1	1241332102	2022/1/6	2023/1/5
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio Communication Analyzer	MT8821C	6201432831	2021/4/13	2022/4/12
Agilent	ENA Series Network Analyzer	E5071C	MY46106933	2021/7/31	2022/7/30
SPEAG	Dielectric Probe Kit	DAK-3.5	1138	2021/6/9	2022/6/8
Anritsu	Vector Signal Generator	MG3710A	6201682672	2022/1/6	2023/1/5
Rohde & Schwarz	Power Meter	NRVD	102081	2021/8/12	2022/8/11
Rohde & Schwarz	Power Sensor	NRV-Z5	100538	2021/8/12	2022/8/11
Rohde & Schwarz	Power Sensor	NRV-Z5	100539	2021/8/12	2022/8/11
R&S	CBT BLUETOOTH TESTER	CBT	101246	2021/4/12	2022/4/11
EXA	Spectrum Analyzer	FSV7	101631	2021/10/14	2022/10/13
FLUKE	DIGITAC THERMOMETER	51II	97240029	2021/8/13	2022/8/12
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	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
2. Referring to KDB 865664 D01v01r04, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
3. The justification data of dipole can be found in appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.

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 head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.1. 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. 11.2.

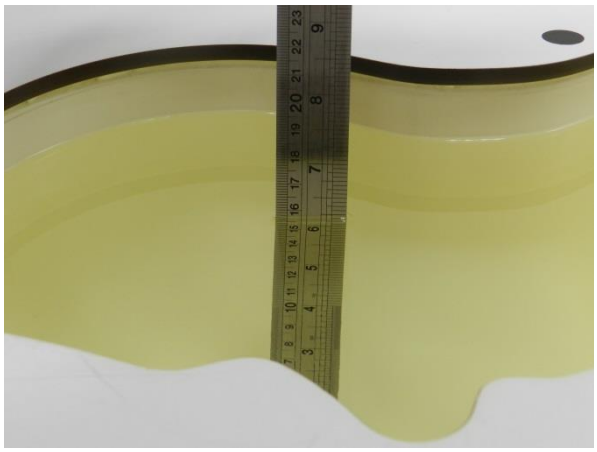


Fig 11.1 Photo of Liquid Height for Head SAR

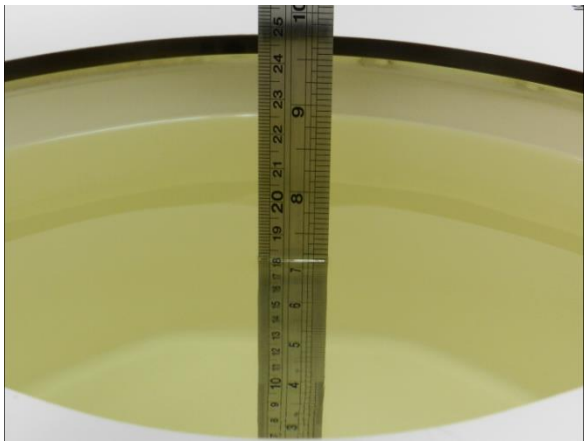


Fig 11.2 Photo of Liquid Height for Body SAR

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
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)	Head	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	Head	22.8	0.916	43.405	0.89	41.90	2.92	3.59	±5	2022/2/3
835	Head	22.7	0.930	40.910	0.90	41.50	3.33	-1.42	±5	2022/2/5
1750	Head	22.9	1.401	40.508	1.37	40.10	2.26	1.02	±5	2022/2/7
1900	Head	22.6	1.427	38.737	1.40	40.00	1.93	-3.16	±5	2022/2/9
2450	Head	22.6	1.806	38.608	1.80	39.20	0.33	-1.51	±5	2022/2/11
2600	Head	22.6	1.880	39.148	1.96	39.00	-4.08	0.38	±5	2022/2/13
3500	Head	22.7	2.809	39.002	2.91	37.90	-3.47	2.91	±5	2022/2/15
3700	Head	22.9	2.995	38.682	3.12	37.70	-4.01	2.60	±5	2022/2/17
3900	Head	22.9	3.195	38.391	3.32	37.50	-3.77	2.38	±5	2022/2/28
5250	Head	22.9	4.562	35.975	4.71	35.90	-3.14	0.21	±5	2022/2/28
5600	Head	22.9	4.961	35.423	5.07	35.50	-2.15	-0.22	±5	2022/2/28
5750	Head	22.9	5.132	35.226	5.22	35.40	-1.69	-0.49	±5	2022/2/28
750	Head	22.7	0.909	43.056	0.89	41.90	2.13	2.76	±5	2022/2/4
835	Head	22.8	0.939	42.773	0.90	41.50	4.33	3.07	±5	2022/2/6
1750	Head	22.6	1.396	40.498	1.37	40.10	1.90	0.99	±5	2022/2/8
1900	Head	22.9	1.424	38.981	1.40	40.00	1.71	-2.55	±5	2022/2/10
2450	Head	22.9	1.805	38.547	1.80	39.20	0.28	-1.67	±5	2022/2/12
2600	Head	22.8	1.923	38.240	1.96	39.00	-1.89	-1.95	±5	2022/2/14
3500	Head	22.7	2.827	39.042	2.91	37.90	-2.85	3.01	±5	2022/2/16
3700	Head	22.9	3.016	38.715	3.12	37.70	-3.33	2.69	±5	2022/2/18
3900	Head	22.9	3.219	38.420	3.32	37.50	-3.04	2.45	±5	2022/2/24
5250	Head	22.9	4.601	35.834	4.71	35.90	-2.31	-0.18	±5	2022/2/28
5600	Head	22.9	5.004	35.267	5.07	35.50	-1.30	-0.66	±5	2022/2/28
5750	Head	22.9	5.171	35.076	5.22	35.40	-0.94	-0.92	±5	2022/2/28

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.

<1g SAR>

Date	Frequency (MHz)	Head	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 (%)
2022/2/3	750	Head	50	1087	3935	1279	0.422	8.36	8.44	0.96
2022/2/5	835	Head	50	4d258	3935	1279	0.487	9.44	9.74	3.18
2022/2/7	1750	Head	50	1090	3935	1279	1.910	36.40	38.2	4.95
2022/2/9	1900	Head	50	5d170	3935	1279	1.890	39.00	37.8	-3.08
2022/2/11	2450	Head	50	908	3935	1279	2.450	52.80	49	-7.20
2022/2/13	2600	Head	50	1061	3935	1279	2.650	56.60	53	-6.36
2022/2/15	3500	Head	50	1037	3935	1279	3.260	68.00	65.2	-4.12
2022/2/17	3700	Head	50	1008	3935	1279	3.230	67.60	64.6	-4.44
2022/2/28	3900	Head	50	1048	3935	1279	3.260	70.20	65.2	-7.12
2022/2/28	5250	Head	50	1113	3935	1279	3.730	80.50	74.6	-7.33
2022/2/28	5600	Head	50	1113	3935	1279	3.910	83.40	78.2	-6.24
2022/2/28	5750	Head	50	1113	3935	1279	3.770	80.00	75.4	-5.75
2022/2/4	750	Head	50	1087	3935	1279	0.418	8.36	8.36	0.00
2022/2/6	835	Head	50	4d258	3935	1279	0.507	9.44	10.14	7.42
2022/2/8	1750	Head	50	1090	3935	1279	1.890	36.40	37.8	3.85
2022/2/10	1900	Head	50	5d170	3935	1279	1.990	39.00	39.8	2.05
2022/2/12	2450	Head	50	908	3935	1279	2.460	52.80	49.2	-6.82
2022/2/14	2600	Head	50	1061	3935	1279	2.610	56.60	52.2	-7.77
2022/2/16	3500	Head	50	1037	3935	1279	3.200	68.00	64	-5.88
2022/2/18	3700	Head	50	1008	3935	1279	3.300	67.60	66	-2.37
2022/2/24	3900	Head	50	1048	3935	1279	3.290	70.20	65.8	-6.27
2022/2/28	5250	Head	50	1113	3935	1279	3.750	80.50	75	-6.83
2022/2/28	5600	Head	50	1113	3935	1279	3.850	83.40	77	-7.67
2022/2/28	5750	Head	50	1113	3935	1279	3.720	80.00	74.4	-7.00

<10g SAR>

Date	Frequency (MHz)	Head	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2022/2/3	750	Head	50	1087	3935	1279	0.281	5.65	5.62	-0.53
2022/2/5	835	Head	50	4d258	3935	1279	0.315	6.13	6.3	2.77
2022/2/7	1750	Head	50	1090	3935	1279	1.020	19.20	20.4	6.25
2022/2/9	1900	Head	50	5d170	3935	1279	0.982	20.30	19.64	-3.25
2022/2/11	2450	Head	50	908	3935	1279	1.130	24.20	22.6	-6.61
2022/2/13	2600	Head	50	1061	3935	1279	1.250	25.10	25	-0.40
2022/2/15	3500	Head	50	1037	3935	1279	1.330	25.40	26.6	4.72
2022/2/17	3700	Head	50	1008	3935	1279	1.290	24.40	25.8	5.74
2022/2/28	3900	Head	50	1048	3935	1279	1.160	24.40	23.2	-4.92
2022/2/28	5250	Head	50	1113	3935	1279	1.070	23.10	21.4	-7.36
2022/2/28	5600	Head	50	1113	3935	1279	1.130	23.80	22.6	-5.04
2022/2/28	5750	Head	50	1113	3935	1279	1.080	22.80	21.6	-5.26
2022/2/4	750	Head	50	1087	3935	1279	0.278	5.65	5.56	-1.59
2022/2/6	835	Head	50	4d258	3935	1279	0.321	6.13	6.42	4.73
2022/2/8	1750	Head	50	1090	3935	1279	1.020	19.20	20.4	6.25
2022/2/10	1900	Head	50	5d170	3935	1279	1.040	20.30	20.8	2.46
2022/2/12	2450	Head	50	908	3935	1279	1.130	24.20	22.6	-6.61
2022/2/14	2600	Head	50	1061	3935	1279	1.200	25.10	24	-4.38
2022/2/16	3500	Head	50	1037	3935	1279	1.240	25.40	24.8	-2.36
2022/2/18	3700	Head	50	1008	3935	1279	1.280	24.40	25.6	4.92
2022/2/24	3900	Head	50	1048	3935	1279	1.170	24.40	23.4	-4.10
2022/2/28	5250	Head	50	1113	3935	1279	1.070	23.10	21.4	-7.36
2022/2/28	5600	Head	50	1113	3935	1279	1.130	23.80	22.6	-5.04
2022/2/28	5750	Head	50	1113	3935	1279	1.090	22.80	21.8	-4.39

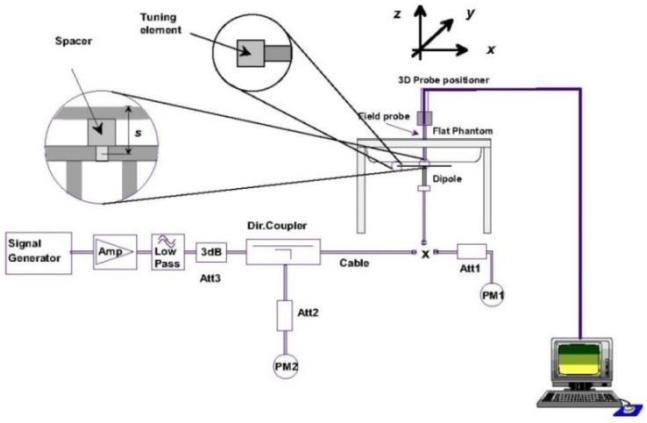


Fig 11.3.1 System Performance Check Setup

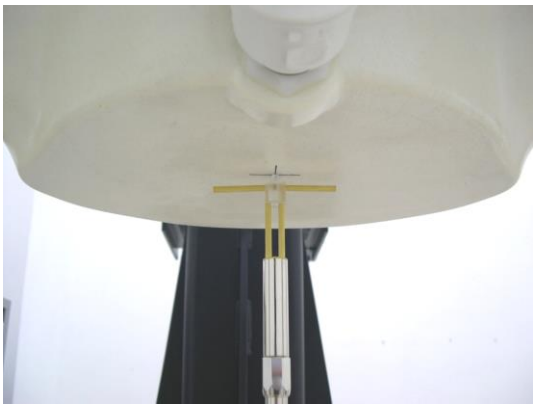


Fig 11.3.2 Setup Photo

12. RF Exposure Positions

12.1 Ear and handset reference point

Figure 12.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled “M,” the left ear reference point (ERP) is marked “LE,” and the right ERP is marked “RE.” Each ERP is 15 mm along the B-M (back-mouth) line behind the entrance-to-ear-canal (EEC) point, as shown in Figure 12.1.2 The Reference Plane is defined as passing through the two ear reference points and point M. The line N-F (neck-front), also called the reference pivoting line, is normal to the Reference Plane and perpendicular to both a line passing through RE and LE and the B-M line (see Figure 12.1.3). Both N-F and B-M lines should be marked on the exterior of the phantom shell to facilitate handset positioning. Posterior to the N-F line the ear shape is a flat surface with 6 mm thickness at each ERP, and forward of the N-F line the ear is truncated, as illustrated in Figure 12.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

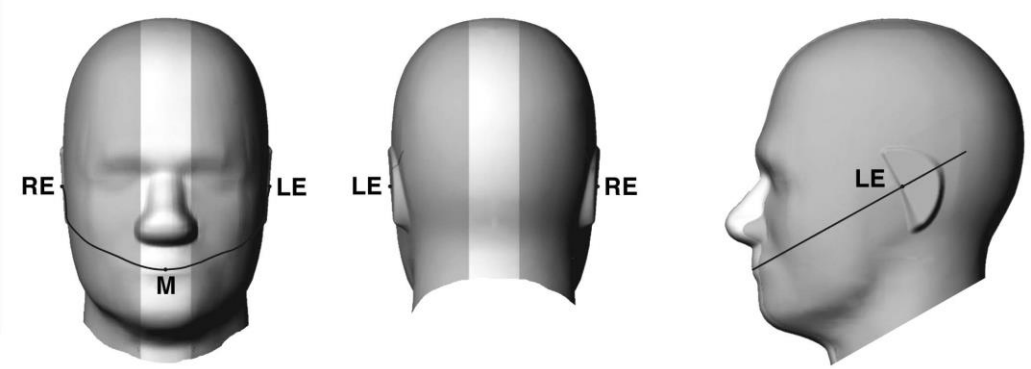


Fig 12.1.1 Front, back, and side views of SAM twin phantom

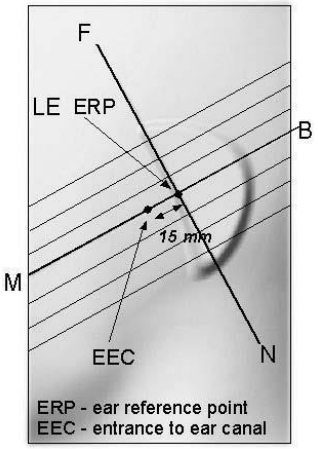


Fig 12.1.2 Close-up side view of phantom showing the ear region.

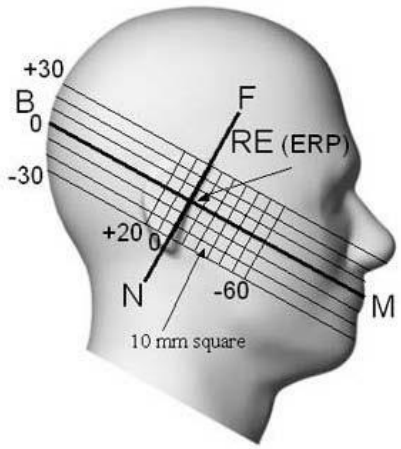


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

12.2 Definition of the cheek position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset—the midpoint of the width wt of the handset at the level of the acoustic output (point A in Figure 12.2.1 and Figure 12.2.2), and the midpoint of the width wb of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 12.2.1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 12.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
3. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 12.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
4. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP.
5. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
6. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.
7. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 12.2.3. The actual rotation angles should be documented in the test report.

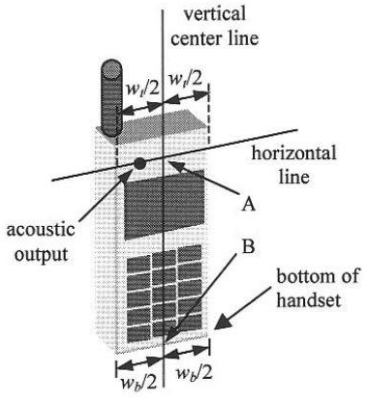


Fig 12.2.1 Handset vertical and horizontal reference lines—"fixed case

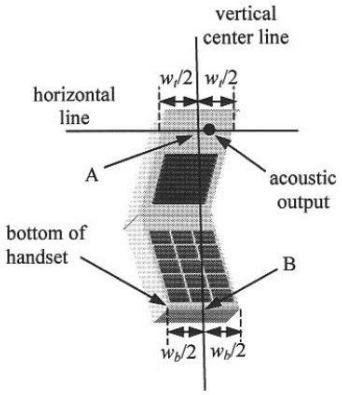


Fig 12.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

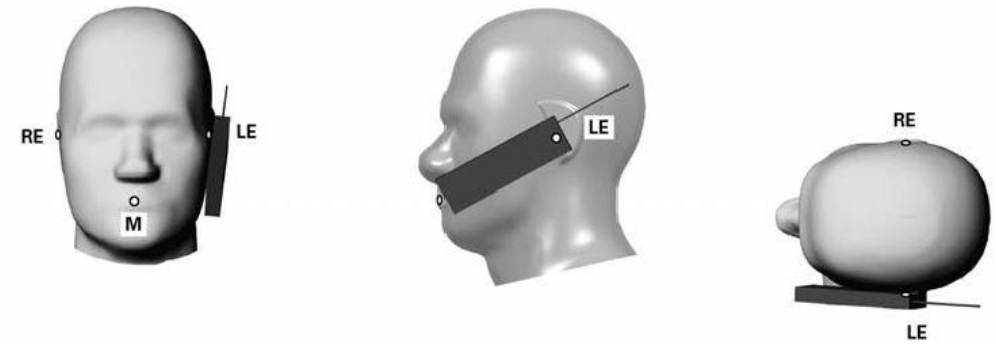


Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

12.3 Definition of the tilt position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
3. Rotate the handset around the horizontal line by 15°.
4. While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. See Figure 12.3.1. If contact occurs at any location other than the pinna, e.g., the antenna at the back of the phantom head, the angle of the handset should be reduced. In this case, the tilt position is obtained if any point on the handset is in contact with the pinna and a second point

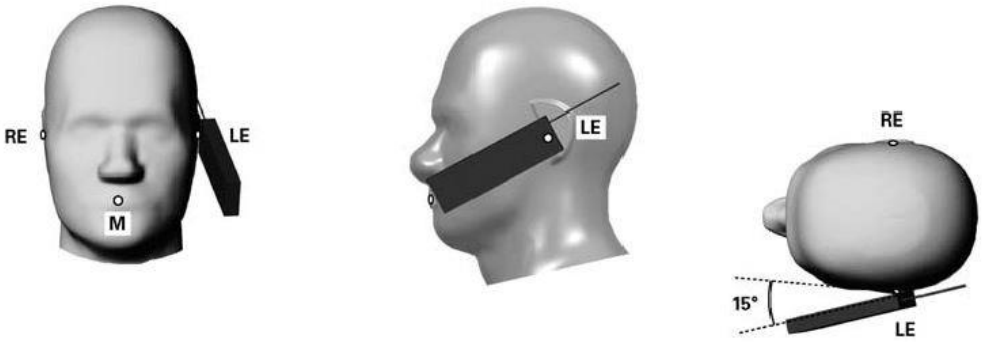


Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

12.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 12.4). Per KDB648474 D04v01r03, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a handset attached to the handset.

Accessories for body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are test with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-chip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

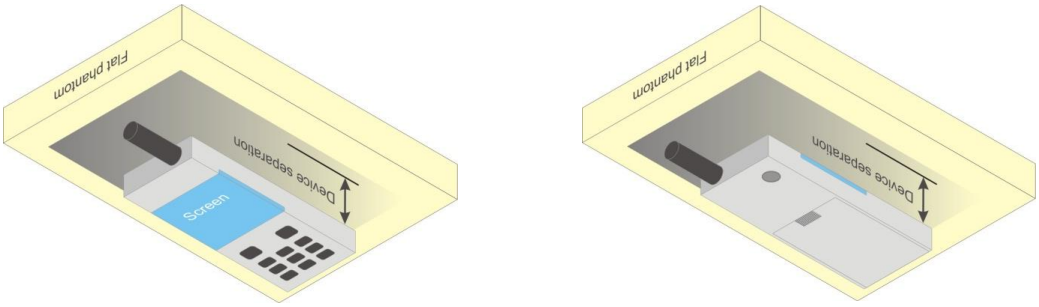


Fig 12.4 Body Worn Position

12.5 Product Specific 10g SAR Exposure

For smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, According to KDB648474 D04v01r03, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance

1. The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.

2. The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions.6 The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.

12.6 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined form general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v06 publication procedures. The “Portable Hotspot” feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

13. Conducted RF Output Power (Unit: dBm)

The detailed conducted power table can refer to Appendix E.

<GSM Conducted Power>

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 HSPA+ devices supporting 16 QAM in the uplink, power measurements procedure is according to the configurations in Table C.11.1.4 of 3GPP TS 34.121-1.
4. 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	$\beta_{ed}1$: 47/15 $\beta_{ed}2$: 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 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.		

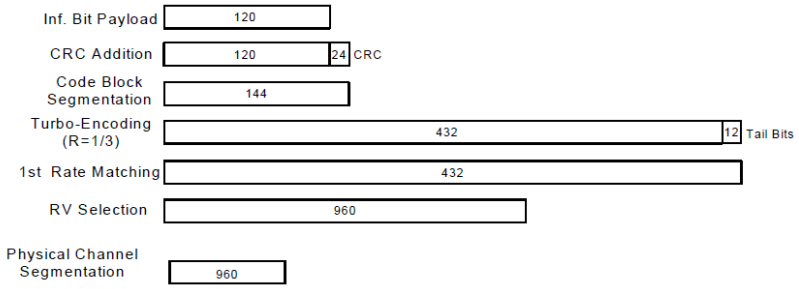


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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>

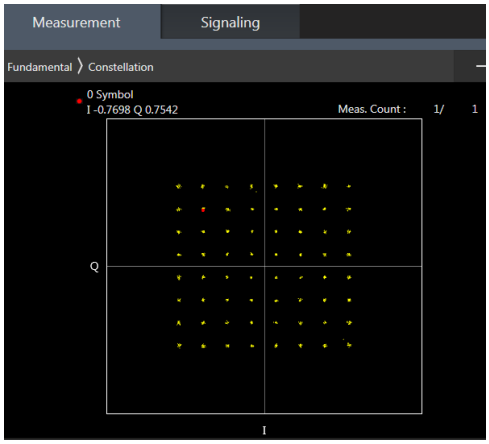
General Note:

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+.

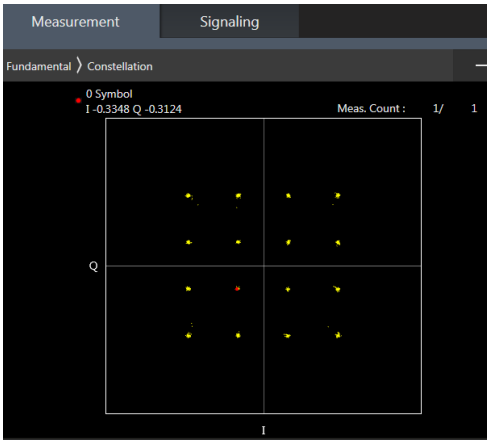
<LTE Conducted Power>

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 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 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 B4 / B5 / B12 / B17 / 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 B4 / B5 / B17 / B38 SAR test was covered by B66 / B26 / B12 / B41; 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 2017 TCB workshop, for 64 QAM and 16 QAM 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 64QAM and 16QAM signal modulation are correct.



64QAM



16QAM

<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.

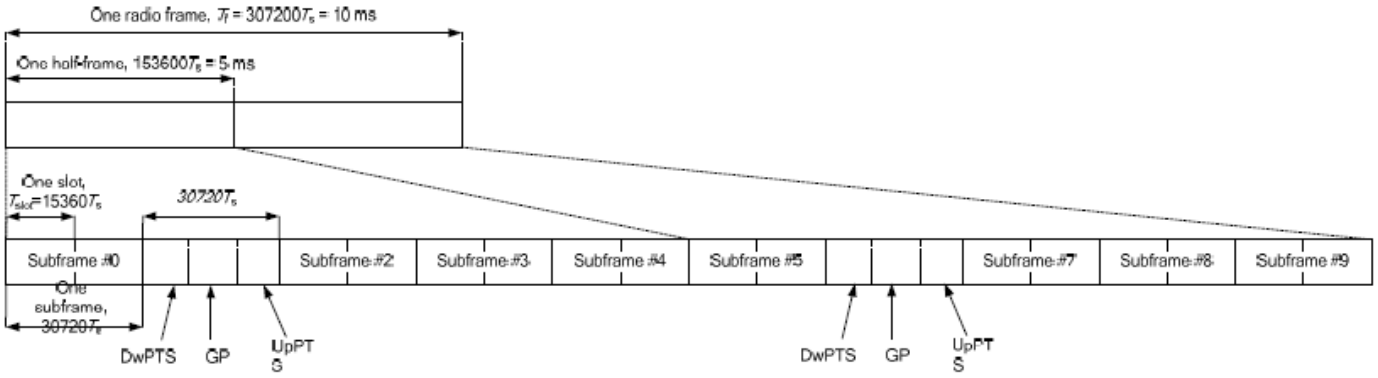


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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>

General Note:

1. This device supports Carrier Aggregation on downlink for inter and intra band. For the device supports bands and bandwidths and configurations are provided as follow table was according to 3GPP.
2. In applying the existing power measurement procedures of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of frequency bands and CCs in each row need combination, and for this device that all the configurations were choose to power measurement.
3. The gray color table is covered by other combinations and no need to verify power.
4. All permutations exist. No restrictions on Pcell & Scell combinations.

2CC Downlink Carrier Aggregation	
Number	Combination
1	CA_2C
2	CA_2A-4A
3	CA_2A-5A
4	CA_2A-7A
5	CA_4A-5A
6	CA_4A-7A
7	CA_5A-7A
8	CA_5A-66A
9	CA_7A-7A
10	CA_7C
11	CA_38C
12	CA_41A-41A
13	CA_41C
14	CA_2A-4A
15	CA_2A-5A
16	CA_2A-7A
17	CA_4A-5A
18	CA_4A-7A
19	CA_5A-7A
20	CA_5A-66A
21	CA_7A-7A
22	CA_7C
23	CA_66B
24	CA_66C
25	CA_66A-66A
26	CA_7A-66A
27	CA_2A-66A
28	CA_12A-66A
29	CA_7C
30	CA_38C
31	CA_4A-7A
32	CA_4A-26A
33	CA_7A-26A

LTE Carrier Aggregation Conducted Power (Downlink)

i. According to KDB941225 D05A v01r02, Uplink maximum output power measurement with downlink carrier aggregation active should be measured, using the highest output channel measured without downlink carrier aggregation, to confirm that uplink maximum output power with downlink carrier aggregation active remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output measured without downlink carrier aggregation active.

ii. Uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded.

iii. The device supports downlink two carrier aggregation. For power measurement were control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.

iv. Selected highest measured power when downlink carrier aggregation is inactive for conducted power comparison with downlink carrier aggregation is active, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.

v. For inter-band CA, the SCC selected highest bandwidth and near the middle of its transmission band. For SCC DL RB size and offset will base on the PCC corresponding RB allocation.

vi. For non-contiguous intra-band CA, the SCC selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band.

vii. For Intra-band, contiguous CA, the downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

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

LTE 4x4 MIMO (Downlink)

This device supports downlink 4x4 MIMO operations for LTE Bands 7/38/41 only. Uplink transmission is limited to a single output stream. Power measurements were performed with downlink 4x4 MIMO active for the configuration with highest measured maximum conducted power with 4x4 downlink MIMO inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.

Per FCC Guidance, SAR for downlink 4x4 MIMO was not needed since the maximum average output power in 4x4 downlink MIMO mode was not > 0.25 dB higher than the maximum output power with downlink 4x4 MIMO inactive. When carrier aggregation is applicable, power measurements were performed with the downlink carrier aggregation and 4x4 DL MIMO active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.

4X4 MIMO	WWAN Band
	LTE Band: B7/B38/B41

LTE Carrier Aggregation Conducted Power (Uplink)

<Intra-band>

2CC Uplink Carrier Aggregation	
Number	Combination
1	7C
2	38C

General Note:

i. The device supports intra-band uplink carrier aggregation for LTE B7/B38 with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre 3GPP requirement.

ii. The device supports uplink carrier aggregation with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre the 3GPP requirement.

iii. According TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.

iv. According TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.

v. 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	
Combination	Band&Ant No.	Band&Ant No.
4A-7A	LTE B4: Ant1	LTE B7: Ant2

General Note:

The single carrier of inter band CA uplink power level is the same as Non-CA standalone LTE power level. 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, n66, n38, n41, n77, n78 supports SA operation.
2. 5G NR n5, n7, n66, n41, n77, n78 supports NSA.
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-QPSK and the reported SAR for the DFT-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/64 QAM/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 AM 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. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% transmission.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 5G NR n41/n77/n78 supports HPUE, HPUE power and SAR testing performed separately.
11. 5G NR n41/n77/n78 HPUE with higher power, n41/n77/n78 HPUE SAR can represent power class 3 level SAR.
12. For 5G NR EN-DC mode, standalone SAR performed for 5GNR band with the maximum power, EN-DC SAR summed 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		

ENDC List	LTE Ant No.	NR Ant No.
DC_7A_n66A	Ant2	Ant1
DC_2A_n66A	Ant2	Ant1
DC_5A_n7A	Ant1	Ant4
DC_7A_n5A	Ant2	Ant4
DC_7A_n78A	Ant2	Ant3
DC_41A_n77A	Ant2	Ant3
DC_38A_n78A	Ant2	Ant3
DC_41A_n78A	Ant2	Ant3
DC_66A_n78A	Ant2	Ant3
DC_5A_n78A	Ant1	Ant3
DC_2A_n78A	Ant2	Ant3
DC_7A_n7A	Ant2	Ant1
DC_41A_n41A	Ant2	Ant1
DC_66A_n66A	Ant2	Ant1

Note: 1. For EN-DC component，LTE band 7/66/38/41 for ANT 2 is limited to EN-DC active and they will act as anchor mode. When EN-DC is not active, LTE band 7/66/38/41 will not transmit.

<WLAN Conducted Power>

General Note:

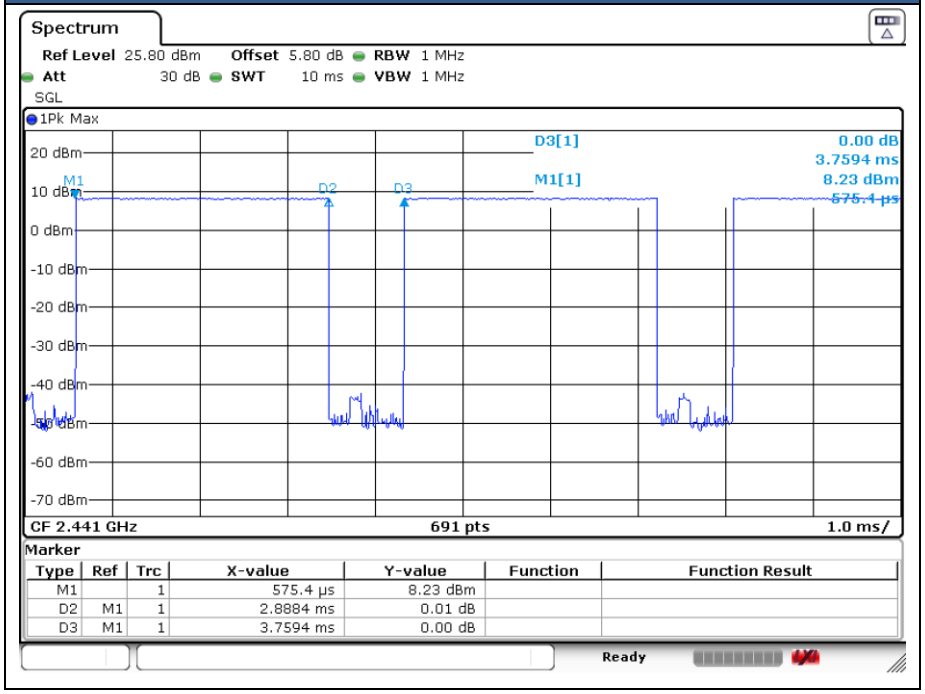
1. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. 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.
2. 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).
3. 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.
4. 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 76.83 % as following figure, according to 2016 Oct. TCB workshop for Bluetooth SAR scaling need further consideration and the maximum duty cycle is 100%, therefore the actual duty cycle will be scaled up to 100% for Bluetooth reported SAR calculation

Bluetooth time-domain plot



14. Antenna Location

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

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 BT/WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
   c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   d. For BT/WLAN: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
   e. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required when the measured SAR is ≥ 0.8W/kg. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. For dual SIM card mobile has two SIM slots and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (single active). After pre-scan two SIM cards power, we found test result of the SIM1 was the worse, so we chose SIM1 slot to perform all tests.
5. The device implements Proximity sensors/receiver detect mechanism/hotspot trigger reduced power for the power management for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity). The device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to appendix E. power table. Full power table and reduced power table (DSI 1: receiver on reduced power for head; DSI 4/3: P-sensor on for hotspot/ handheld; DSI 2: P-sensor off).
6. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
7. 5G NR n41/n77/n78 supports HPUE, HPUE power and SAR testing performed separately.
8. 5G NR n41/n77/n78 HPUE with higher power, n41/n77/n78 HPUE SAR can represent power class 3 level SAR.
9. For 5GNR EN-DC mode, standalone SAR performed for 5GNR band with the maximum power, EN-DC SAR summed 5GNR standalone SAR and LTE standalone SAR, the result of EN-DC SAR is more conservatively.
10. 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.
11. 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.
12. 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.
13. 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.
14. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold,
    a. WLAN 5.3/5.5GHz tested the product specific 10g SAR since it has no hotspot mode.
    b. When 10-g product specific 10g SAR is considered, SAR thresholds is specified in the procedures for SAR test reduction and exclusion should be multiplied by 2.5.
15. For different distance SAR always chose higher SAR at the same position to do co-located analysis.
16. For the front and back sensor distance SAR of hotspot exposure condition could be referred to front and back

body-worn SAR.

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 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 SAR testing is not required.
5. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4 / B5 / B12 / B17 / B26/ B38 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 B4 / B5 / B17 / B38 SAR test was covered by B66 / B26 / B12 / B41; 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 n38/n41/n77/n78 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 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.
6. Based on WLAN2.4GHz and Bluetooth share the same, so Bluetooth RF exposure evaluation chose the worst positon of WLAN 2.4GHz to perform Bluetooth SAR test, and used this Bluetooth SAR value conservatively represent other position do co-located analysis with WWAN.

15.1 Head SAR

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	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750MHz																		
	LTE Band 12	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI1	23095	707.5	24.70	25.50	1.202	0.14	0.073	0.088
	LTE Band 12	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 1	DSI1	23095	707.5	23.52	24.50	1.253	0.05	0.056	0.070
	LTE Band 12	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI1	23095	707.5	24.70	25.50	1.202	0.01	0.058	0.070
	LTE Band 12	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 1	DSI1	23095	707.5	23.52	24.50	1.253	0.02	0.046	0.058
	LTE Band 12	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI1	23095	707.5	24.70	25.50	1.202	0.09	0.098	0.118
	LTE Band 12	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 1	DSI1	23095	707.5	23.52	24.50	1.253	0.04	0.077	0.096
	LTE Band 12	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI1	23095	707.5	24.70	25.50	1.202	-0.12	0.055	0.066
	LTE Band 12	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 1	DSI1	23095	707.5	23.52	24.50	1.253	0.11	0.043	0.054
	LTE Band 12	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI1	23095	707.5	25.27	25.50	1.054	0.06	0.306	0.323
	LTE Band 12	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 4	DSI1	23095	707.5	24.27	24.50	1.054	-0.17	0.297	0.313
	LTE Band 12	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	23095	707.5	25.27	25.50	1.054	-0.04	0.380	0.401
	LTE Band 12	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 4	DSI1	23095	707.5	24.27	24.50	1.054	-0.18	0.297	0.313
	LTE Band 12	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	DSI1	23095	707.5	25.27	25.50	1.054	-0.13	0.344	0.363
	LTE Band 12	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 4	DSI1	23095	707.5	24.27	24.50	1.054	0.09	0.272	0.287
01	LTE Band 12	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI1	23095	707.5	25.27	25.50	1.054	-0.07	0.548	**0.578**
	LTE Band 12	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 4	DSI1	23095	707.5	24.27	24.50	1.054	-0.05	0.426	0.449
	LTE Band 13	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI1	23230	782	24.61	25.50	1.227	0.03	0.105	0.129
	LTE Band 13	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 1	DSI1	23230	782	23.68	24.50	1.208	0.01	0.085	0.103
	LTE Band 13	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI1	23230	782	24.61	25.50	1.227	0.05	0.088	0.108
	LTE Band 13	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 1	DSI1	23230	782	23.68	24.50	1.208	-0.17	0.058	0.070
	LTE Band 13	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI1	23230	782	24.61	25.50	1.227	-0.03	0.130	0.160
	LTE Band 13	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 1	DSI1	23230	782	23.68	24.50	1.208	0.04	0.104	0.126
	LTE Band 13	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI1	23230	782	24.61	25.50	1.227	0.03	0.077	0.095
	LTE Band 13	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 1	DSI1	23230	782	23.68	24.50	1.208	-0.04	0.061	0.074
	LTE Band 13	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI1	23230	782	24.18	24.50	1.076	0.13	0.661	0.712
	LTE Band 13	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 4	DSI1	23230	782	24.11	24.50	1.094	0.04	0.570	0.624
	LTE Band 13	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	23230	782	24.18	24.50	1.076	0.11	0.642	0.691
	LTE Band 13	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 4	DSI1	23230	782	24.11	24.50	1.094	0.02	0.520	0.569
	LTE Band 13	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	DSI1	23230	782	24.18	24.50	1.076	0.11	0.648	0.698
	LTE Band 13	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 4	DSI1	23230	782	24.11	24.50	1.094	0.04	0.551	0.603
02	LTE Band 13	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI1	23230	782	24.18	24.50	1.076	-0.13	0.667	**0.718**
	LTE Band 13	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 4	DSI1	23230	782	24.11	24.50	1.094	-0.08	0.635	0.695
850MHz																		
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Right Cheek	0mm	Ant 1	DSI1	189	836.4	27.72	29.50	1.507	0.04	0.211	0.318
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Right Tilted	0mm	Ant 1	DSI1	189	836.4	27.72	29.50	1.507	-0.07	0.106	0.160
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Left Cheek	0mm	Ant 1	DSI1	189	836.4	27.72	29.50	1.507	-0.12	0.197	0.297
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Left Tilted	0mm	Ant 1	DSI1	189	836.4	27.72	29.50	1.507	0.05	0.100	0.151
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Right Cheek	0mm	Ant 4	DSI1	189	836.4	27.46	27.50	1.009	-0.17	0.531	0.536
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Right Tilted	0mm	Ant 4	DSI1	189	836.4	27.46	27.50	1.009	0.07	0.528	0.533
03	GSM850	-	-	-	-	GPRS (3 Tx slots)	Left Cheek	0mm	Ant 4	DSI1	189	836.4	27.46	27.50	1.009	-0.02	0.625	**0.631**
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Left Tilted	0mm	Ant 4	DSI1	189	836.4	27.46	27.50	1.009	0.04	0.430	0.434
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 1	DSI1	4182	836.4	24.45	25.50	1.274	0.01	0.164	0.209
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 1	DSI1	4182	836.4	24.45	25.50	1.274	0.03	0.083	0.106
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 1	DSI1	4182	836.4	24.45	25.50	1.274	0.11	0.148	0.188
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 1	DSI1	4182	836.4	24.45	25.50	1.274	0.03	0.083	0.106
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 4	DSI1	4182	836.4	22.44	22.50	1.014	0.18	0.649	0.658
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 4	DSI1	4182	836.4	22.44	22.50	1.014	-0.07	0.474	0.481
04	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 4	DSI1	4182	836.4	22.44	22.50	1.014	0.03	0.680	**0.689**
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 4	DSI1	4182	836.4	22.44	22.50	1.014	-0.18	0.511	0.518
	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI1	26865	831.5	24.65	25.50	1.216	0.16	0.100	0.122
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 1	DSI1	26865	831.5	23.81	24.50	1.172	0.09	0.077	0.090

	LTE Band 26	15M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI1	26865	831.5	24.65	25.50	1.216	-0.16	0.057	0.069
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	0mm	Ant 1	DSI1	26865	831.5	23.81	24.50	1.172	0.06	0.045	0.053
	LTE Band 26	15M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI1	26865	831.5	24.65	25.50	1.216	-0.06	0.128	0.156
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	0mm	Ant 1	DSI1	26865	831.5	23.81	24.50	1.172	0.03	0.100	0.117
	LTE Band 26	15M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI1	26865	831.5	24.65	25.50	1.216	0.18	0.081	0.099
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	0mm	Ant 1	DSI1	26865	831.5	23.81	24.50	1.172	0.1	0.060	0.070
	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI1	26865	831.5	21.37	21.50	1.030	-0.12	0.402	0.414
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 4	DSI1	26865	831.5	21.29	21.50	1.050	0.01	0.316	0.332
	LTE Band 26	15M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	26865	831.5	21.37	21.50	1.030	0.02	0.373	0.384
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	0mm	Ant 4	DSI1	26865	831.5	21.29	21.50	1.050	0.15	0.291	0.305
	LTE Band 26	15M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	DSI1	26865	831.5	21.37	21.50	1.030	0.07	0.400	0.412
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	0mm	Ant 4	DSI1	26865	831.5	21.29	21.50	1.050	0.15	0.315	0.331
05	LTE Band 26	15M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI1	26865	831.5	21.37	21.50	1.030	-0.05	0.579	**0.597**
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	0mm	Ant 4	DSI1	26865	831.5	21.29	21.50	1.050	0.08	0.452	0.474
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 1	DSI1	167300	836.5	24.64	25.50	1.219	0.09	0.139	0.169
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Right Cheek	0mm	Ant 1	DSI1	167300	836.5	24.53	25.50	1.250	0.03	0.158	0.198
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 1	DSI1	167300	836.5	24.64	25.50	1.219	-0.12	0.074	0.090
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Right Tilted	0mm	Ant 1	DSI1	167300	836.5	24.53	25.50	1.250	-0.14	0.090	0.113
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 1	DSI1	167300	836.5	24.64	25.50	1.219	0.03	0.168	0.205
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Left Cheek	0mm	Ant 1	DSI1	167300	836.5	24.53	25.50	1.250	0.02	0.198	0.248
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 1	DSI1	167300	836.5	24.64	25.50	1.219	-0.08	0.097	0.118
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Left Tilted	0mm	Ant 1	DSI1	167300	836.5	24.53	25.50	1.250	-0.07	0.107	0.134
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 4	DSI1	167300	836.5	21.89	22.50	1.151	-0.02	0.432	0.497
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Right Cheek	0mm	Ant 4	DSI1	167300	836.5	21.72	22.50	1.197	0.05	0.418	0.500
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 4	DSI1	167300	836.5	21.89	22.50	1.151	-0.06	0.318	0.366
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Right Tilted	0mm	Ant 4	DSI1	167300	836.5	21.72	22.50	1.197	0.06	0.395	0.473
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 4	DSI1	167300	836.5	21.89	22.50	1.151	0.06	0.373	0.429
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Left Cheek	0mm	Ant 4	DSI1	167300	836.5	21.72	22.50	1.197	0.03	0.409	0.489
06	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 4	DSI1	167300	836.5	21.89	22.50	1.151	0.03	0.504	**0.580**
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Left Tilted	0mm	Ant 4	DSI1	167300	836.5	21.72	22.50	1.197	-0.07	0.437	0.523
1750MHz																		
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 1	DSI1	1413	1732.6	24.08	25.00	1.236	0.07	0.087	0.108
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 1	DSI1	1413	1732.6	24.08	25.00	1.236	0.01	0.056	0.069
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 1	DSI1	1413	1732.6	24.08	25.00	1.236	0.03	0.099	0.122
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 1	DSI1	1413	1732.6	24.08	25.00	1.236	0.16	0.045	0.056
07	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 4	DSI1	1413	1732.6	21.28	22.00	1.180	-0.01	0.828	**0.977**
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 4	DSI1	1312	1712.4	21.23	22.00	1.194	0.03	0.811	0.968
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 4	DSI1	1513	1752.6	21.26	22.00	1.186	0.05	0.799	0.947
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 4	DSI1	1413	1732.6	21.28	22.00	1.180	0.12	0.817	0.964
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 4	DSI1	1312	1712.4	21.23	22.00	1.194	0.13	0.800	0.955
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 4	DSI1	1513	1752.6	21.26	22.00	1.186	0.11	0.788	0.934
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 4	DSI1	1413	1732.6	21.28	22.00	1.180	-0.05	0.588	0.694
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 4	DSI1	1413	1732.6	21.28	22.00	1.180	-0.04	0.618	0.729
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI1	132322	1745	24.25	25.00	1.189	0.17	0.092	0.109
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI1	132322	1745	23.33	24.00	1.167	-0.15	0.067	0.078
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI1	132322	1745	24.25	25.00	1.189	-0.02	0.056	0.067
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI1	132322	1745	23.33	24.00	1.167	0.13	0.045	0.053
	LTE Band 66	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI1	132322	1745	24.25	25.00	1.189	0.02	0.114	0.135
	LTE Band 66	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	DSI1	132322	1745	23.33	24.00	1.167	0.06	0.091	0.106
	LTE Band 66	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI1	132322	1745	24.25	25.00	1.189	-0.1	0.048	0.057
	LTE Band 66	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	DSI1	132322	1745	23.33	24.00	1.167	-0.19	0.038	0.044
	LTE Band 66-ENDC	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI1	132322	1745	12.33	14.00	1.469	0.02	0.116	0.170
	LTE Band 66-ENDC	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 2	DSI1	132322	1745	12.30	14.00	1.479	0.02	0.122	0.180
	LTE Band 66-ENDC	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 2	DSI1	132322	1745	12.33	14.00	1.469	-0.1	0.053	0.078
	LTE Band 66-ENDC	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 2	DSI1	132322	1745	12.30	14.00	1.479	0.05	0.050	0.074
	LTE Band 66-ENDC	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI1	132322	1745	12.33	14.00	1.469	0.06	0.076	0.112

	LTE Band 66-ENDC	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 2	DSI1	132322	1745	12.30	14.00	1.479	0.19	0.080	0.118
	LTE Band 66-ENDC	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 2	DSI1	132322	1745	12.33	14.00	1.469	0.08	0.062	0.091
	LTE Band 66-ENDC	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 2	DSI1	132322	1745	12.30	14.00	1.479	0.01	0.065	0.096
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI1	132322	1745	21.37	22.00	1.156	0.03	0.689	0.797
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	DSI1	132322	1745	21.31	22.00	1.172	0.06	0.661	0.775
08	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	132322	1745	21.37	22.00	1.156	-0.09	0.826	**0.955**
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	132072	1720	21.24	22.00	1.191	0.1	0.781	0.930
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	132572	1770	21.27	22.00	1.183	0.06	0.798	0.944
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI1	132322	1745	21.31	22.00	1.172	-0.02	0.806	0.945
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI1	132072	1720	21.22	22.00	1.197	0.04	0.792	0.948
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI1	132572	1770	21.30	22.00	1.175	0.02	0.801	0.941
	LTE Band 66	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 4	DSI1	132322	1745	21.29	22.00	1.178	0.07	0.781	0.920
	LTE Band 66	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	DSI1	132322	1745	21.37	22.00	1.156	0.08	0.566	0.654
	LTE Band 66	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 4	DSI1	132322	1745	21.31	22.00	1.172	0.04	0.509	0.597
	LTE Band 66	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI1	132322	1745	21.37	22.00	1.156	-0.16	0.657	0.760
	LTE Band 66	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	DSI1	132322	1745	21.31	22.00	1.172	0.02	0.635	0.744
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 1	DSI1	349000	1745	24.10	25.00	1.230	0.05	0.065	0.080
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Right Cheek	0mm	Ant 1	DSI1	349000	1745	24.06	25.00	1.242	0.02	0.084	0.104
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 1	DSI1	349000	1745	24.10	25.00	1.230	0.08	0.050	0.062
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Right Tilted	0mm	Ant 1	DSI1	349000	1745	24.06	25.00	1.242	0.04	0.062	0.077
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 1	DSI1	349000	1745	24.10	25.00	1.230	0.04	0.091	0.112
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Left Cheek	0mm	Ant 1	DSI1	349000	1745	24.06	25.00	1.242	0.02	0.118	0.147
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 1	DSI1	349000	1745	24.10	25.00	1.230	0.05	0.000	0.000
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Left Tilted	0mm	Ant 1	DSI1	349000	1745	24.06	25.00	1.242	0.04	0.052	0.065
09	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 4	DSI1	349000	1745	21.35	22.00	1.161	-0.05	0.645	**0.749**
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Right Cheek	0mm	Ant 4	DSI1	349000	1745	21.32	22.00	1.169	0.18	0.537	0.628
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 4	DSI1	349000	1745	21.35	22.00	1.161	0.09	0.547	0.635
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Right Tilted	0mm	Ant 4	DSI1	349000	1745	21.32	22.00	1.169	0.09	0.554	0.648
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 4	DSI1	349000	1745	21.35	22.00	1.161	-0.1	0.366	0.425
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Left Cheek	0mm	Ant 4	DSI1	349000	1745	21.32	22.00	1.169	0.05	0.363	0.425
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 4	DSI1	349000	1745	21.35	22.00	1.161	0.18	0.437	0.508
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Left Tilted	0mm	Ant 4	DSI1	349000	1745	21.32	22.00	1.169	0.07	0.439	0.513
1900MHz																		
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Right Cheek	0mm	Ant 1	DSI1	661	1880	24.14	26.00	1.535	-0.15	0.079	0.121
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Right Tilted	0mm	Ant 1	DSI1	661	1880	24.14	26.00	1.535	0.05	0.073	0.112
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Left Cheek	0mm	Ant 1	DSI1	661	1880	24.14	26.00	1.535	0.03	0.111	0.170
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Left Tilted	0mm	Ant 1	DSI1	661	1880	24.14	26.00	1.535	0.14	0.060	0.092
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Right Cheek	0mm	Ant 4	DSI1	661	1880	20.12	21.50	1.374	0.06	0.330	0.453
10	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Right Tilted	0mm	Ant 4	DSI1	661	1880	20.12	21.50	1.374	-0.03	0.450	**0.618**
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Left Cheek	0mm	Ant 4	DSI1	661	1880	20.12	21.50	1.374	-0.01	0.267	0.367
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Left Tilted	0mm	Ant 4	DSI1	661	1880	20.12	21.50	1.374	-0.02	0.321	0.441
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 1	DSI1	9400	1880	24.26	25.00	1.186	-0.11	0.142	0.168
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 1	DSI1	9400	1880	24.26	25.00	1.186	0.07	0.111	0.132
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 1	DSI1	9400	1880	24.26	25.00	1.186	0.02	0.176	0.209
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 1	DSI1	9400	1880	24.26	25.00	1.186	-0.14	0.092	0.109
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 4	DSI1	9400	1880	19.76	20.50	1.186	0.09	0.666	0.790
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 4	DSI1	9400	1880	19.76	20.50	1.186	0.07	0.755	0.895
11	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 4	DSI1	9262	1852.4	19.58	20.50	1.236	0.02	0.807	**0.997**
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 4	DSI1	9538	1907.6	19.68	20.50	1.208	0.12	0.729	0.880
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 4	DSI1	9400	1880	19.76	20.50	1.186	0.09	0.485	0.575
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 4	DSI1	9400	1880	19.76	20.50	1.186	-0.14	0.574	0.681
	LTE Band 2	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI1	18900	1880	24.36	25.00	1.159	0.01	0.154	0.178
	LTE Band 2	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI1	18900	1880	23.34	24.00	1.164	0.1	0.122	0.142
	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI1	18900	1880	24.36	25.00	1.159	-0.02	0.145	0.168
	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI1	18900	1880	23.34	24.00	1.164	0.08	0.116	0.135
	LTE Band 2	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI1	18900	1880	24.36	25.00	1.159	0.04	0.196	0.227

	LTE Band 2	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	DSI1	18900	1880	23.34	24.00	1.164	0.06	0.163	0.190
	LTE Band 2	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI1	18900	1880	24.36	25.00	1.159	0.04	0.134	0.155
	LTE Band 2	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	DSI1	18900	1880	23.34	24.00	1.164	0.06	0.100	0.116
	LTE Band 2-ENDC	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI1	18900	1880	17.19	19.00	1.517	0.02	0.083	0.126
	LTE Band 2-ENDC	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 2	DSI1	18900	1880	17.17	19.00	1.524	0.03	0.081	0.123
	LTE Band 2-ENDC	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 2	DSI1	18900	1880	17.19	19.00	1.517	0.07	0.114	0.173
	LTE Band 2-ENDC	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 2	DSI1	18900	1880	17.17	19.00	1.524	0.02	0.111	0.169
	LTE Band 2-ENDC	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI1	18900	1880	17.19	19.00	1.517	0.03	0.145	0.220
	LTE Band 2-ENDC	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 2	DSI1	18900	1880	17.17	19.00	1.524	0.14	0.132	0.201
	LTE Band 2-ENDC	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 2	DSI1	18900	1880	17.19	19.00	1.517	-0.08	0.111	0.168
	LTE Band 2-ENDC	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 2	DSI1	18900	1880	17.17	19.00	1.524	0.06	0.103	0.157
	LTE Band 2	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI1	18900	1880	19.91	20.50	1.146	0.12	0.646	0.740
	LTE Band 2	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	DSI1	18900	1880	19.87	20.50	1.156	0.09	0.646	0.747
	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	18900	1880	19.91	20.50	1.146	0.01	0.836	0.958
	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	18700	1860	19.81	20.50	1.172	-0.07	0.845	0.991
	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	19100	1900	19.87	20.50	1.156	-0.18	0.802	0.927
	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI1	18900	1880	19.87	20.50	1.156	-0.05	0.836	0.967
12	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI1	18700	1860	19.75	20.50	1.189	-0.08	0.858	**1.020**
	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI1	19100	1900	19.79	20.50	1.178	0.06	0.793	0.934
	LTE Band 2	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 4	DSI1	18900	1880	19.86	20.50	1.159	-0.11	0.841	0.975
	LTE Band 2	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	DSI1	18900	1880	19.91	20.50	1.146	0.08	0.511	0.585
	LTE Band 2	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 4	DSI1	18900	1880	19.87	20.50	1.156	0.06	0.511	0.591
	LTE Band 2	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI1	18900	1880	19.91	20.50	1.146	0.12	0.741	0.849
	LTE Band 2	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI1	18700	1860	19.81	20.50	1.172	0.09	0.754	0.884
	LTE Band 2	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI1	19100	1900	19.87	20.50	1.156	0.09	0.711	0.822
	LTE Band 2	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	DSI1	18900	1880	19.87	20.50	1.156	-0.04	0.745	0.861
	LTE Band 2	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	DSI1	18700	1860	19.75	20.50	1.189	0.15	0.758	0.901
	LTE Band 2	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	DSI1	19100	1900	19.79	20.50	1.178	0.08	0.711	0.837
	LTE Band 2	20M	QPSK	100	0	-	Left Tilted	0mm	Ant 4	DSI1	18900	1880	19.86	20.50	1.159	0.06	0.745	0.863

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)	Reported 1g SAR (W/kg)
2600MHz																				
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI1	21100	2535	24.43	25.50	1.279	-	-	0.04	0.059	0.075
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI1	21100	2535	23.44	24.50	1.276	-	-	0.01	0.048	0.061
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI1	21100	2535	24.43	25.50	1.279	-	-	-0.06	0.075	0.096
	LTE Band 7C	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI1	21100+ 21298	2535+ 2554.8	24.30	25.50	1.318	-	-	0.04	0.056	0.074
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI1	21100	2535	23.44	24.50	1.276	-	-	-0.14	0.061	0.078
	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI1	21100	2535	24.43	25.50	1.279	-	-	0.12	0.065	0.083
	LTE Band 7	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	DSI1	21100	2535	23.44	24.50	1.276	-	-	-0.08	0.055	0.070
	LTE Band 7	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI1	21100	2535	24.43	25.50	1.279	-	-	0.01	0.040	0.051
	LTE Band 7	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	DSI1	21100	2535	23.44	24.50	1.276	-	-	0.12	0.033	0.042
	LTE Band 7-ENDC	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI1	21100	2535	10.84	12.50	1.466	-	-	0.13	0.121	0.177
	LTE Band 7-ENDC	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 2	DSI1	21100	2535	10.74	12.50	1.500	-	-	-0.02	0.101	0.151
	LTE Band 7-ENDC	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 2	DSI1	21100	2535	10.84	12.50	1.466	-	-	-0.17	0.048	0.070
	LTE Band 7-ENDC	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 2	DSI1	21100	2535	10.74	12.50	1.500	-	-	-0.02	0.047	0.070
	LTE Band 7-ENDC	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI1	21100	2535	10.84	12.50	1.466	-	-	0.03	0.024	0.035
	LTE Band 7-ENDC	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 2	DSI1	21100	2535	10.74	12.50	1.500	-	-	-0.13	0.024	0.036
	LTE Band 7-ENDC	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 2	DSI1	21100	2535	10.84	12.50	1.466	-	-	-0.17	0.027	0.040
	LTE Band 7-ENDC	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 2	DSI1	21100	2535	10.74	12.50	1.500	-	-	0.18	0.029	0.043
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI1	21100	2535	18.49	19.50	1.262	-	-	0.08	0.550	0.694
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	DSI1	21100	2535	18.45	19.50	1.274	-	-	0.18	0.550	0.700
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	21100	2535	18.49	19.50	1.262	-	-	0.12	0.708	0.893
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	20850	2510	18.41	19.50	1.285	-	-	0.05	0.655	0.842
13	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	21350	2560	18.47	19.50	1.268	-	-	0.02	0.771	**0.977**
	LTE Band 7C	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	21350+ 21152	2560+ 2540.2	18.36	19.50	1.300	-	-	0.01	0.743	0.966
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI1	21100	2535	18.45	19.50	1.274	-	-	0.04	0.704	0.897
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI1	20850	2510	18.35	19.50	1.303	-	-	0.13	0.651	0.848
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI1	21350	2560	18.33	19.50	1.309	-	-	-0.14	0.737	0.965
	LTE Band 7	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 4	DSI1	21100	2535	18.31	19.50	1.315	-	-	0.01	0.699	0.919
	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	DSI1	21100	2535	18.49	19.50	1.262	-	-	-0.1	0.416	0.525
	LTE Band 7	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 4	DSI1	21100	2535	18.45	19.50	1.274	-	-	0.09	0.420	0.535
	LTE Band 7	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI1	21100	2535	18.49	19.50	1.262	-	-	0.03	0.622	0.785
	LTE Band 7	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	DSI1	21100	2535	18.45	19.50	1.274	-	-	0.04	0.627	0.798
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI1	40620	2593	24.48	25.50	1.265	62.9	1.006	-0.1	0.102	0.130
	LTE Band 38C	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI1	38000+ 38150	2595+ 2610	24.39	25.50	1.291	62.9	1.006	0.03	0.089	0.116
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI1	40620	2593	23.50	24.50	1.259	62.9	1.006	-0.18	0.083	0.105
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI1	40620	2593	24.48	25.50	1.265	62.9	1.006	0.01	0.090	0.115
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI1	40620	2593	23.50	24.50	1.259	62.9	1.006	0.06	0.071	0.090
	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI1	40620	2593	24.48	25.50	1.265	62.9	1.006	-0.17	0.078	0.099
	LTE Band 41	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	DSI1	40620	2593	23.50	24.50	1.259	62.9	1.006	0.17	0.058	0.073
	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI1	40620	2593	24.48	25.50	1.265	62.9	1.006	0.03	0.057	0.073
	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	DSI1	40620	2593	23.50	24.50	1.259	62.9	1.006	-0.08	0.047	0.060
	LTE Band 41-ENDC	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI1	40620	2593	15.88	17.50	1.452	62.9	1.006	0.03	0.358	0.523
	LTE Band 41-ENDC	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 2	DSI1	40620	2593	15.80	17.50	1.479	62.9	1.006	-0.09	0.363	0.540
	LTE Band 41-ENDC	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 2	DSI1	40620	2593	15.88	17.50	1.452	62.9	1.006	-0.1	0.151	0.221
	LTE Band 41-ENDC	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 2	DSI1	40620	2593	15.80	17.50	1.479	62.9	1.006	-0.12	0.155	0.231
	LTE Band 41-ENDC	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI1	40620	2593	15.88	17.50	1.452	62.9	1.006	0.03	0.097	0.142
	LTE Band 41-ENDC	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 2	DSI1	40620	2593	15.80	17.50	1.479	62.9	1.006	0.07	0.102	0.152
	LTE Band 41-ENDC	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 2	DSI1	40620	2593	15.88	17.50	1.452	62.9	1.006	0.03	0.141	0.206
	LTE Band 41-ENDC	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 2	DSI1	40620	2593	15.80	17.50	1.479	62.9	1.006	0.12	0.144	0.214
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI1	40620	2593	20.51	21.50	1.256	62.9	1.006	-0.02	0.535	0.676
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI1	39750	2506	20.43	21.50	1.279	62.9	1.006	0.04	0.512	0.659

	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI1	40185	2549.5	20.36	21.50	1.300	62.9	1.006	0.05	0.511	0.668
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI1	41055	2636.5	20.44	21.50	1.276	62.9	1.006	-0.04	0.504	0.647
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI1	41490	2680	20.39	21.50	1.291	62.9	1.006	0.05	0.515	0.669
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	DSI1	40620	2593	20.45	21.50	1.274	62.9	1.006	0.11	0.539	0.691
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	DSI1	39750	2506	20.20	21.50	1.349	62.9	1.006	-0.03	0.521	0.707
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	DSI1	40185	2549.5	20.43	21.50	1.279	62.9	1.006	0.12	0.512	0.659
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	DSI1	41055	2636.5	20.43	21.50	1.279	62.9	1.006	0.19	0.535	0.689
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	DSI1	41490	2680	20.38	21.50	1.294	62.9	1.006	-0.14	0.533	0.694
	LTE Band 41	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 4	DSI1	40620	2593	20.41	21.50	1.285	62.9	1.006	-0.19	0.524	0.678
14	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	40620	2593	20.51	21.50	1.256	62.9	1.006	0.16	0.686	**0.867**
	LTE Band 38C	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	38000+ 38150	2595+ 2610	20.49	21.50	1.262	62.9	1.006	0.01	0.634	0.805
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	39750	2506	20.43	21.50	1.279	62.9	1.006	0.13	0.541	0.696
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	40185	2549.5	20.36	21.50	1.300	62.9	1.006	-0.02	0.625	0.817
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	41055	2636.5	20.44	21.50	1.276	62.9	1.006	0.06	0.668	0.858
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI1	41490	2680	20.39	21.50	1.291	62.9	1.006	-0.14	0.521	0.677
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI1	40620	2593	20.45	21.50	1.274	62.9	1.006	0.15	0.674	0.863
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI1	39750	2506	20.20	21.50	1.349	62.9	1.006	0.07	0.541	0.734
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI1	40185	2549.5	20.43	21.50	1.279	62.9	1.006	0.09	0.625	0.804
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI1	41055	2636.5	20.43	21.50	1.279	62.9	1.006	-0.04	0.670	0.862
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI1	41490	2680	20.38	21.50	1.294	62.9	1.006	0.02	0.529	0.689
	LTE Band 41	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 4	DSI1	40620	2593	20.41	21.50	1.285	62.9	1.006	-0.03	0.666	0.861
	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	DSI1	40620	2593	20.51	21.50	1.256	62.9	1.006	0.07	0.457	0.577
	LTE Band 41	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 4	DSI1	40620	2593	20.45	21.50	1.274	62.9	1.006	0.03	0.433	0.555
	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI1	40620	2593	20.51	21.50	1.256	62.9	1.006	0.17	0.494	0.624
	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI1	39750	2506	20.43	21.50	1.279	62.9	1.006	0.09	0.488	0.628
	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI1	40185	2549.5	20.36	21.50	1.300	62.9	1.006	-0.11	0.512	0.670
	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI1	41055	2636.5	20.44	21.50	1.276	62.9	1.006	0.05	0.500	0.642
	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI1	41490	2680	20.39	21.50	1.291	62.9	1.006	-0.09	0.512	0.665
	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	DSI1	40620	2593	20.45	21.50	1.274	62.9	1.006	0.08	0.602	0.771
	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	DSI1	39750	2506	20.20	21.50	1.349	62.9	1.006	-0.12	0.560	0.760
	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	DSI1	40185	2549.5	20.43	21.50	1.279	62.9	1.006	0.03	0.587	0.756
	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	DSI1	41055	2636.5	20.43	21.50	1.279	62.9	1.006	0.08	0.589	0.758
	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	DSI1	41490	2680	20.38	21.50	1.294	62.9	1.006	0.08	0.591	0.769
	LTE Band 41	20M	QPSK	100	0	-	Left Tilted	0mm	Ant 4	DSI1	40620	2593	20.41	21.50	1.285	62.9	1.006	0.11	0.592	0.765
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 1	DSI1	507000	2535	24.73	25.50	1.194	-	-	0.05	0.095	0.113
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Right Cheek	0mm	Ant 1	DSI1	507000	2535	24.44	25.50	1.276	-	-	-0.19	0.104	0.133
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 1	DSI1	507000	2535	24.73	25.50	1.194	-	-	0.07	0.092	0.110
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Right Tilted	0mm	Ant 1	DSI1	507000	2535	24.44	25.50	1.276	-	-	-0.03	0.093	0.119
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 1	DSI1	507000	2535	24.73	25.50	1.194	-	-	0.07	0.086	0.103
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Left Cheek	0mm	Ant 1	DSI1	507000	2535	24.44	25.50	1.276	-	-	-0.17	0.100	0.128
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 1	DSI1	507000	2535	24.73	25.50	1.194	-	-	0.01	0.052	0.062
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Left Tilted	0mm	Ant 1	DSI1	507000	2535	24.44	25.50	1.276	-	-	0.04	0.064	0.082
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 4	DSI1	507000	2535	19.16	20.00	1.213	-	-	-0.15	0.582	0.706
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Right Cheek	0mm	Ant 4	DSI1	507000	2535	19.12	20.00	1.225	-	-	-0.14	0.607	0.743
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 4	DSI1	507000	2535	19.16	20.00	1.213	-	-	0.01	0.710	0.862
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 4	DSI1	502000	2510	19.05	20.00	1.245	-	-	0.09	0.700	0.871
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 4	DSI1	512000	2560	18.99	20.00	1.262	-	-	0.11	0.698	0.881
15	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Right Tilted	0mm	Ant 4	DSI1	507000	2535	19.12	20.00	1.225	-	-	-0.08	0.734	**0.899**
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Right Tilted	0mm	Ant 4	DSI1	502000	2510	19.03	20.00	1.250	-	-	0.09	0.717	0.896
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Right Tilted	0mm	Ant 4	DSI1	512000	2560	19.07	20.00	1.239	-	-	0.11	0.700	0.867
	FR1 n7	20M	QPSK	50	0	DFT-SCS-30KHz	Right Tilted	0mm	Ant 4	DSI1	507000	2535	19.11	20.00	1.227	-	-	0.07	0.719	0.883
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 4	DSI1	507000	2535	19.16	20.00	1.213	-	-	0.08	0.386	0.468
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Left Cheek	0mm	Ant 4	DSI1	507000	2535	19.12	20.00	1.225	-	-	0.08	0.420	0.514
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 4	DSI1	507000	2535	19.16	20.00	1.213	-	-	-0.1	0.514	0.624
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Left Tilted	0mm	Ant 4	DSI1	507000	2535	19.12	20.00	1.225	-	-	-0.04	0.524	0.642
	FR1 n41-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 1	DSI1	518598	2592.99	26.17	27.00	1.211	-	-	-0.1	0.247	0.299

	FR1 n41-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 1	DSI1	518598	2592.99	25.92	27.00	1.282	-	-	-0.18	0.296	0.380
	FR1 n41-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 1	DSI1	518598	2592.99	26.17	27.00	1.211	-	-	0.03	0.166	0.201
	FR1 n41-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 1	DSI1	518598	2592.99	25.92	27.00	1.282	-	-	0.15	0.179	0.230
	FR1 n41-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 1	DSI1	518598	2592.99	26.17	27.00	1.211	-	-	0.18	0.137	0.166
	FR1 n41-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 1	DSI1	518598	2592.99	25.92	27.00	1.282	-	-	-0.08	0.149	0.191
	FR1 n41-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 1	DSI1	518598	2592.99	26.17	27.00	1.211	-	-	-0.15	0.129	0.156
	FR1 n41-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 1	DSI1	518598	2592.99	25.92	27.00	1.282	-	-	0.02	0.140	0.180
	FR1 n41-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 4	DSI1	518598	2592.99	22.12	23.00	1.225	-	-	0.07	0.619	0.758
	FR1 n41-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 4	DSI1	518598	2592.99	22.01	23.00	1.256	-	-	0.17	0.592	0.744
	FR1 n41-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 4	DSI1	518598	2592.99	22.12	23.00	1.225	-	-	-0.05	0.725	0.888
16	FR1 n41-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 4	DSI1	518598	2592.99	22.01	23.00	1.256	-	-	-0.06	0.750	**0.942**
	FR1 n41-HPUE	100M	QPSK	270	0	DFT-SCS-30KHz	Right Tilted	0mm	Ant 4	DSI1	518598	2592.99	21.85	23.00	1.303	-	-	0.07	0.695	0.906
	FR1 n41-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 4	DSI1	518598	2592.99	22.12	23.00	1.225	-	-	0.18	0.331	0.405
	FR1 n41-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 4	DSI1	518598	2592.99	22.01	23.00	1.256	-	-	0.08	0.354	0.445
	FR1 n41-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 4	DSI1	518598	2592.99	22.12	23.00	1.225	-	-	-0.07	0.450	0.551
	FR1 n41-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 4	DSI1	518598	2592.99	22.01	23.00	1.256	-	-	0.19	0.469	0.589
3500MHz																				
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	DSI1	656000	3840	18.82	20.50	1.472	-	-	0.05	0.707	1.041
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	DSI1	656000	3840	18.64	20.50	1.535	-	-	0.11	0.600	0.921
	FR1 n77	100M	QPSK	270	0	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	DSI1	656000	3840	18.60	20.50	1.549	-	-	-0.01	0.657	1.018
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	DSI1	656000	3840	18.82	20.50	1.472	-	-	0.1	0.333	0.490
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	DSI1	656000	3840	18.64	20.50	1.535	-	-	-0.03	0.300	0.460
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	DSI1	656000	3840	18.82	20.50	1.472	-	-	0.11	0.217	0.319
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	DSI1	656000	3840	18.64	20.50	1.535	-	-	0.06	0.196	0.301
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 2	DSI1	656000	3840	18.82	20.50	1.472	-	-	-0.07	0.111	0.163
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 2	DSI1	656000	3840	18.64	20.50	1.535	-	-	0.16	0.086	0.132
17	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	DSI1	633334	3500.01	18.71	20.50	1.510	-	-	0.03	0.722	**1.090**
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	DSI1	633334	3500.01	18.56	20.50	1.563	-	-	0.03	0.681	1.065
	FR1 n77	100M	QPSK	270	0	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	DSI1	633334	3500.01	18.52	20.50	1.578	-	-	-0.13	0.669	1.055
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	DSI1	633334	3500.01	18.71	20.50	1.510	-	-	0.07	0.439	0.663
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	DSI1	633334	3500.01	18.56	20.50	1.563	-	-	-0.14	0.445	0.696
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	DSI1	633334	3500.01	18.71	20.50	1.510	-	-	0.19	0.222	0.335
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	DSI1	633334	3500.01	18.56	20.50	1.563	-	-	0.08	0.232	0.363
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 2	DSI1	633334	3500.01	18.71	20.50	1.510	-	-	0.08	0.196	0.296
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 2	DSI1	633334	3500.01	18.56	20.50	1.563	-	-	-0.15	0.219	0.342
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 3	DSI1	656000	3840	18.77	19.00	1.054	-	-	0.18	0.534	0.563
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 3	DSI1	656000	3840	18.63	19.00	1.089	-	-	0.13	0.543	0.591
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 3	DSI1	656000	3840	18.77	19.00	1.054	-	-	0.08	0.690	0.728
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 3	DSI1	656000	3840	18.63	19.00	1.089	-	-	0.04	0.700	0.762
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 3	DSI1	656000	3840	18.77	19.00	1.054	-	-	0.05	0.713	0.752
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 3	DSI1	656000	3840	18.63	19.00	1.089	-	-	0.03	0.717	0.781
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 3	DSI1	656000	3840	18.77	19.00	1.054	-	-	0.05	0.912	0.962
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 3	DSI1	656000	3840	18.63	19.00	1.089	-	-	0.05	0.927	1.009
	FR1 n77-HPUE	100M	QPSK	270	0	DFT-SCS-30KHz	Left Tilted	0mm	Ant 3	DSI1	656000	3840	18.26	19.00	1.186	-	-	-0.17	0.855	1.014
	FR1 n77-ENDC	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 3	DSI1	656000	3840	15.56	16.00	1.107	-	-	0.01	0.450	0.498
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 3	DSI1	633334	3500.01	18.34	19.00	1.164	-	-	0.1	0.432	0.503
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 3	DSI1	633334	3500.01	18.23	19.00	1.194	-	-	-0.17	0.486	0.580
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 3	DSI1	633334	3500.01	18.34	19.00	1.164	-	-	0.04	0.493	0.574
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 3	DSI1	633334	3500.01	18.23	19.00	1.194	-	-	0.06	0.540	0.645
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 3	DSI1	633334	3500.01	18.34	19.00	1.164	-	-	0.09	0.685	0.797
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 3	DSI1	633334	3500.01	18.23	19.00	1.194	-	-	0.03	0.658	0.786
	FR1 n77-HPUE	100M	QPSK	270	0	DFT-SCS-30KHz	Left Cheek	0mm	Ant 3	DSI1	633334	3500.01	18.00	19.00	1.259	-	-	0.01	0.620	0.781
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 3	DSI1	633334	3500.01	18.34	19.00	1.164	-	-	0.07	0.709	0.825
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 3	DSI1	633334	3500.01	18.23	19.00	1.194	-	-	0.03	0.737	0.880
	FR1 n77-HPUE	100M	QPSK	270	0	DFT-SCS-30KHz	Left Tilted	0mm	Ant 3	DSI1	633334	3500.01	18.00	19.00	1.259	-	-	0.03	0.699	0.880
	FR1 n77-ENDC	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 3	DSI1	633334	3500.01	16.62	17.50	1.225	-	-	0.07	0.421	0.516

	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 5	DSI1	656000	3840	12.21	14.00	1.510	-	-	0.1	0.058	0.088
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 5	DSI1	656000	3840	12.17	14.00	1.524	-	-	0.08	0.050	0.076
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 5	DSI1	656000	3840	12.21	14.00	1.510	-	-	0.07	0.052	0.079
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 5	DSI1	656000	3840	12.17	14.00	1.524	-	-	-0.05	0.051	0.078
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	DSI1	656000	3840	12.21	14.00	1.510	-	-	0.01	0.360	0.544
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	DSI1	656000	3840	12.17	14.00	1.524	-	-	-0.03	0.310	0.472
	FR1 n77	100M	QPSK	270	0	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	DSI1	656000	3840	12.15	14.00	1.531	-	-	0.05	0.350	0.536
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	DSI1	656000	3840	12.21	14.00	1.510	-	-	-0.03	0.134	0.202
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	DSI1	656000	3840	12.17	14.00	1.524	-	-	0.09	0.123	0.187
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 5	DSI1	633334	3500.01	12.19	14.00	1.517	-	-	-0.05	0.121	0.184
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 5	DSI1	633334	3500.01	12.17	14.00	1.524	-	-	-0.02	0.125	0.191
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 5	DSI1	633334	3500.01	12.19	14.00	1.517	-	-	0.11	0.146	0.221
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 5	DSI1	633334	3500.01	12.17	14.00	1.524	-	-	0.06	0.142	0.216
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	DSI1	633334	3500.01	12.19	14.00	1.517	-	-	0.07	0.473	0.718
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	DSI1	633334	3500.01	12.17	14.00	1.524	-	-	0.08	0.503	0.767
	FR1 n77	100M	QPSK	270	0	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	DSI1	633334	3500.01	12.13	14.00	1.538	-	-	0.06	0.481	0.740
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	DSI1	633334	3500.01	12.19	14.00	1.517	-	-	0.03	0.263	0.399
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	DSI1	633334	3500.01	12.17	14.00	1.524	-	-	0.03	0.260	0.396
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 6	DSI1	656000	3840	18.63	20.50	1.538	-	-	0.05	0.016	0.025
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 6	DSI1	656000	3840	18.59	20.50	1.552	-	-	0.07	0.021	0.033
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 6	DSI1	656000	3840	18.63	20.50	1.538	-	-	-0.12	0.017	0.026
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 6	DSI1	656000	3840	18.59	20.50	1.552	-	-	0.04	0.031	0.048
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 6	DSI1	656000	3840	18.63	20.50	1.538	-	-	-0.02	0.007	0.011
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 6	DSI1	656000	3840	18.59	20.50	1.552	-	-	0.12	0.031	0.048
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 6	DSI1	656000	3840	18.63	20.50	1.538	-	-	-0.06	0.021	0.032
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 6	DSI1	656000	3840	18.59	20.50	1.552	-	-	0.01	0.049	0.076
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 6	DSI1	633334	3500.01	18.70	20.50	1.514	-	-	0.04	0.166	0.251
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 6	DSI1	633334	3500.01	18.63	20.50	1.538	-	-	-0.17	0.161	0.248
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 6	DSI1	633334	3500.01	18.70	20.50	1.514	-	-	0.03	0.208	0.315
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 6	DSI1	633334	3500.01	18.63	20.50	1.538	-	-	-0.16	0.210	0.323
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 6	DSI1	633334	3500.01	18.70	20.50	1.514	-	-	0.03	0.221	0.334
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 6	DSI1	633334	3500.01	18.63	20.50	1.538	-	-	0.05	0.200	0.308
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 6	DSI1	633334	3500.01	18.70	20.50	1.514	-	-	0.15	0.144	0.218
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 6	DSI1	633334	3500.01	18.63	20.50	1.538	-	-	0.17	0.127	0.195
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	DSI1	650000	3750	20.45	22.00	1.429	-	-	0.02	0.412	0.589
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	DSI1	650000	3750	20.36	22.00	1.459	-	-	-0.05	0.468	0.683
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	DSI1	650000	3750	20.45	22.00	1.429	-	-	0.07	0.191	0.273
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	DSI1	650000	3750	20.36	22.00	1.459	-	-	0.05	0.179	0.261
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	DSI1	650000	3750	20.45	22.00	1.429	-	-	0.01	0.125	0.179
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	DSI1	650000	3750	20.36	22.00	1.459	-	-	0.1	0.139	0.203
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 2	DSI1	650000	3750	20.45	22.00	1.429	-	-	0.09	0.053	0.076
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 2	DSI1	650000	3750	20.36	22.00	1.459	-	-	0.02	0.055	0.080
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	DSI1	633334	3500.01	20.39	22.00	1.449	-	-	0.07	0.536	0.777
18	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	DSI1	633334	3500.01	20.20	22.00	1.514	-	-	-0.05	0.560	**0.848**
	FR1 n78	100M	QPSK	207	0	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	DSI1	633334	3500.01	20.21	22.00	1.510			-0.01	0.554	0.837
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	DSI1	633334	3500.01	20.39	22.00	1.449	-	-	0.04	0.264	0.382
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	DSI1	633334	3500.01	20.20	22.00	1.514	-	-	0.07	0.266	0.403
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	DSI1	633334	3500.01	20.39	22.00	1.449	-	-	0.09	0.161	0.233
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	DSI1	633334	3500.01	20.20	22.00	1.514	-	-	-0.05	0.159	0.241
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 2	DSI1	633334	3500.01	20.39	22.00	1.449	-	-	0.1	0.159	0.230
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 2	DSI1	633334	3500.01	20.20	22.00	1.514	-	-	0.02	0.163	0.247

Plot No.	Band	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)	Reported 1g SAR (W/kg)
2450MHz																
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 7	Reduced	11	2462	12.82	14.50	1.472	100	1.000	-0.08	0.146	0.215
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 7	Reduced	11	2462	12.82	14.50	1.472	100	1.000	-0.18	0.096	0.141
19	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 7	Reduced	11	2462	12.82	14.50	1.472	100	1.000	-0.05	0.334	**0.492**
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 7	Reduced	11	2462	12.82	14.50	1.472	100	1.000	-0.03	0.232	0.342
20	Bluetooth	1Mbps	Left Cheek	0mm	Ant 7	Full	0	2402	8.50	10	1.413	76.83	1.302	0.07	0.099	**0.182**
5000MHz																
	WLAN5.3GHz	802.11a 6Mbps	Right Cheek	0mm	Ant 7	Full	56	5280	17.23	19.00	1.503	97.46	1.026	0.03	0.203	0.313
	WLAN5.3GHz	802.11a 6Mbps	Right Tilted	0mm	Ant 7	Full	56	5280	17.23	19.00	1.503	97.46	1.026	-0.08	0.200	0.308
21	WLAN5.3GHz	802.11a 6Mbps	Left Cheek	0mm	Ant 7	Full	56	5280	17.23	19.00	1.503	97.46	1.026	-0.03	0.392	**0.604**
	WLAN5.3GHz	802.11a 6Mbps	Left Tilted	0mm	Ant 7	Full	56	5280	17.23	19.00	1.503	97.46	1.026	0.01	0.319	0.492
	WLAN5.5GHz	802.11a 6Mbps	Right Cheek	0mm	Ant 7	Full	144	5720	17.22	19.00	1.506	97.46	1.026	-0.12	0.110	0.170
	WLAN5.5GHz	802.11a 6Mbps	Right Tilted	0mm	Ant 7	Full	144	5720	17.22	19.00	1.506	97.46	1.026	0.04	0.129	0.199
	WLAN5.5GHz	802.11a 6Mbps	Left Cheek	0mm	Ant 7	Full	144	5720	17.22	19.00	1.506	97.46	1.026	0.05	0.206	0.318
22	WLAN5.5GHz	802.11a 6Mbps	Left Tilted	0mm	Ant 7	Full	144	5720	17.22	19.00	1.506	97.46	1.026	-0.06	0.219	**0.338**
	WLAN5.8GHz	802.11a 6Mbps	Right Cheek	0mm	Ant 7	Full	157	5785	17.31	19.00	1.475	97.46	1.026	-0.09	0.153	0.232
	WLAN5.8GHz	802.11a 6Mbps	Right Tilted	0mm	Ant 7	Full	157	5785	17.31	19.00	1.475	97.46	1.026	0.02	0.171	0.259
23	WLAN5.8GHz	802.11a 6Mbps	Left Cheek	0mm	Ant 7	Full	157	5785	17.31	19.00	1.475	97.46	1.026	-0.03	0.323	**0.489**
	WLAN5.8GHz	802.11a 6Mbps	Left Tilted	0mm	Ant 7	Full	157	5785	17.31	19.00	1.475	97.46	1.026	0.04	0.309	0.468

15.2 Hotspot SAR

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	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750MHz																		
	LTE Band 12	10M	QPSK	1	0	-	Front	10mm	Ant 1	DSI3	23095	707.5	24.59	25.50	1.233	0.07	0.134	0.165
	LTE Band 12	10M	QPSK	25	0	-	Front	10mm	Ant 1	DSI3	23095	707.5	23.52	24.50	1.253	0.18	0.117	0.147
24	LTE Band 12	10M	QPSK	1	0	-	Back	10mm	Ant 1	DSI3	23095	707.5	24.59	25.50	1.233	-0.03	0.218	**0.269**
	LTE Band 12	10M	QPSK	25	0	-	Back	10mm	Ant 1	DSI3	23095	707.5	23.52	24.50	1.253	0.14	0.168	0.211
	LTE Band 12	10M	QPSK	1	0	-	Left Side	10mm	Ant 1	DSI2	23095	707.5	24.70	25.50	1.202	0.1	0.205	0.246
	LTE Band 12	10M	QPSK	25	0	-	Left Side	10mm	Ant 1	DSI2	23095	707.5	23.52	24.50	1.253	0.09	0.161	0.202
	LTE Band 12	10M	QPSK	1	0	-	Right Side	10mm	Ant 1	DSI2	23095	707.5	24.70	25.50	1.202	0.07	0.171	0.206
	LTE Band 12	10M	QPSK	25	0	-	Right Side	10mm	Ant 1	DSI2	23095	707.5	23.52	24.50	1.253	-0.05	0.135	0.169
	LTE Band 12	10M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	DSI3	23095	707.5	24.59	25.50	1.233	-0.05	0.107	0.132
	LTE Band 12	10M	QPSK	25	0	-	Bottom Side	10mm	Ant 1	DSI3	23095	707.5	23.52	24.50	1.253	0.04	0.088	0.110
	LTE Band 12	10M	QPSK	1	0	-	Front	10mm	Ant 4	DSI4	23095	707.5	25.27	25.50	1.054	0.04	0.084	0.089
	LTE Band 12	10M	QPSK	25	0	-	Front	10mm	Ant 4	DSI4	23095	707.5	24.27	24.50	1.054	0.06	0.065	0.069
	LTE Band 12	10M	QPSK	1	0	-	Back	10mm	Ant 4	DSI4	23095	707.5	25.27	25.50	1.054	-0.07	0.127	0.134
	LTE Band 12	10M	QPSK	25	0	-	Back	10mm	Ant 4	DSI4	23095	707.5	24.27	24.50	1.054	-0.06	0.099	0.104
	LTE Band 12	10M	QPSK	1	0	-	Left Side	10mm	Ant 4	DSI2	23095	707.5	25.27	25.50	1.054	0.06	0.069	0.073
	LTE Band 12	10M	QPSK	25	0	-	Left Side	10mm	Ant 4	DSI2	23095	707.5	24.27	24.50	1.054	0.14	0.053	0.056
	LTE Band 12	10M	QPSK	1	0	-	Top Side	10mm	Ant 4	DSI4	23095	707.5	25.27	25.50	1.054	0.02	0.087	0.092
	LTE Band 12	10M	QPSK	25	0	-	Top Side	10mm	Ant 4	DSI4	23095	707.5	24.27	24.50	1.054	0.08	0.068	0.072
	LTE Band 13	10M	QPSK	1	0	-	Front	10mm	Ant 1	DSI3	23230	782	23.59	24.50	1.233	0.01	0.072	0.089
	LTE Band 13	10M	QPSK	25	0	-	Front	10mm	Ant 1	DSI3	23230	782	23.58	24.50	1.236	-0.1	0.072	0.089
	LTE Band 13	10M	QPSK	1	0	-	Back	10mm	Ant 1	DSI3	23230	782	23.59	24.50	1.233	-0.14	0.153	0.189
	LTE Band 13	10M	QPSK	25	0	-	Back	10mm	Ant 1	DSI3	23230	782	23.58	24.50	1.236	0.02	0.157	0.194
	LTE Band 13	10M	QPSK	1	0	-	Left Side	10mm	Ant 1	DSI2	23230	782	24.61	25.50	1.227	0.04	0.101	0.124
	LTE Band 13	10M	QPSK	25	0	-	Left Side	10mm	Ant 1	DSI2	23230	782	23.68	24.50	1.208	0.01	0.086	0.104
	LTE Band 13	10M	QPSK	1	0	-	Right Side	10mm	Ant 1	DSI2	23230	782	24.61	25.50	1.227	0.18	0.084	0.103
	LTE Band 13	10M	QPSK	25	0	-	Right Side	10mm	Ant 1	DSI2	23230	782	23.68	24.50	1.208	-0.05	0.067	0.081
	LTE Band 13	10M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	DSI3	23230	782	23.59	24.50	1.233	-0.1	0.093	0.115
	LTE Band 13	10M	QPSK	25	0	-	Bottom Side	10mm	Ant 1	DSI3	23230	782	23.58	24.50	1.236	0.03	0.093	0.115
	LTE Band 13	10M	QPSK	1	0	-	Bottom Side	15mm	Ant 1	DSI2	23230	782	24.61	25.50	1.227	0.02	0.047	0.058
	LTE Band 13	10M	QPSK	1	0	-	Front	10mm	Ant 4	DSI4	23230	782	25.12	25.50	1.091	0.06	0.279	0.305
	LTE Band 13	10M	QPSK	25	0	-	Front	10mm	Ant 4	DSI4	23230	782	24.20	24.50	1.072	0.13	0.224	0.240
	LTE Band 13	10M	QPSK	1	0	-	Back	10mm	Ant 4	DSI4	23230	782	25.12	25.50	1.091	-0.03	0.326	0.356
25	LTE Band 13	10M	QPSK	25	0	-	Back	10mm	Ant 4	DSI4	23230	782	24.20	24.50	1.072	-0.01	0.337	**0.361**
	LTE Band 13	10M	QPSK	1	0	-	Left Side	10mm	Ant 4	DSI2	23230	782	25.12	25.50	1.091	-0.09	0.082	0.089
	LTE Band 13	10M	QPSK	25	0	-	Left Side	10mm	Ant 4	DSI2	23230	782	24.20	24.50	1.072	0.08	0.064	0.069
	LTE Band 13	10M	QPSK	1	0	-	Top Side	10mm	Ant 4	DSI4	23230	782	25.12	25.50	1.091	-0.09	0.279	0.305
	LTE Band 13	10M	QPSK	25	0	-	Top Side	10mm	Ant 4	DSI4	23230	782	24.20	24.50	1.072	0.05	0.218	0.234
850MHz																		
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Front	10mm	Ant 1	DSI3	189	836.4	27.72	29.50	1.507	0.07	0.136	0.205
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Back	10mm	Ant 1	DSI3	189	836.4	27.72	29.50	1.507	-0.03	0.297	0.447
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Left Side	10mm	Ant 1	DSI2	189	836.4	27.72	29.50	1.507	0.02	0.184	0.277
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Right Side	10mm	Ant 1	DSI2	189	836.4	27.72	29.50	1.507	0.06	0.122	0.184
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	10mm	Ant 1	DSI3	189	836.4	27.72	29.50	1.507	0.07	0.121	0.182
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Front	10mm	Ant 4	DSI4	189	836.4	28.87	29.00	1.030	0.09	0.395	0.407
26	GSM850	-	-	-	-	GPRS (3 Tx slots)	Back	10mm	Ant 4	DSI4	189	836.4	28.87	29.00	1.030	-0.08	0.521	**0.537**
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Left Side	10mm	Ant 4	DSI2	189	836.4	29.46	29.50	1.009	0.02	0.112	0.113
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Top Side	10mm	Ant 4	DSI4	189	836.4	28.87	29.00	1.030	0.04	0.330	0.340
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 1	DSI3	4182	836.4	23.46	24.50	1.271	0.15	0.114	0.145
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 1	DSI3	4182	836.4	23.46	24.50	1.271	-0.09	0.225	0.286
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 1	DSI2	4182	836.4	24.45	25.50	1.274	-0.16	0.140	0.178
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Side	10mm	Ant 1	DSI2	4182	836.4	24.45	25.50	1.274	0.09	0.125	0.159

	WCDMA V	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 1	DSI3	4182	836.4	23.46	24.50	1.271	-0.08	0.156	0.198
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Bottom Side	15mm	Ant 1	DSI2	4182	836.4	24.45	25.50	1.274	0.02	0.061	0.078
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 4	DSI4	4182	836.4	25.35	25.50	1.035	0.03	0.272	0.282
27	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 4	DSI4	4182	836.4	25.35	25.50	1.035	-0.08	0.411	**0.425**
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 4	DSI2	4182	836.4	25.35	25.50	1.035	0.11	0.081	0.084
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Top Side	10mm	Ant 4	DSI4	4182	836.4	25.35	25.50	1.035	-0.14	0.322	0.333
	LTE Band 26	15M	QPSK	1	0	-	Front	10mm	Ant 1	DSI3	26865	831.5	24.65	25.50	1.216	0.07	0.128	0.156
	LTE Band 26	15M	QPSK	36	0	-	Front	10mm	Ant 1	DSI3	26865	831.5	23.81	24.50	1.172	0.06	0.097	0.114
	LTE Band 26	15M	QPSK	1	0	-	Back	10mm	Ant 1	DSI3	26865	831.5	24.65	25.50	1.216	0.07	0.256	0.311
	LTE Band 26	15M	QPSK	36	0	-	Back	10mm	Ant 1	DSI3	26865	831.5	23.81	24.50	1.172	0.13	0.199	0.233
	LTE Band 26	15M	QPSK	1	0	-	Left Side	10mm	Ant 1	DSI2	26865	831.5	24.65	25.50	1.216	-0.06	0.123	0.150
	LTE Band 26	15M	QPSK	36	0	-	Left Side	10mm	Ant 1	DSI2	26865	831.5	23.81	24.50	1.172	-0.12	0.097	0.114
	LTE Band 26	15M	QPSK	1	0	-	Right Side	10mm	Ant 1	DSI2	26865	831.5	24.65	25.50	1.216	0.08	0.099	0.120
	LTE Band 26	15M	QPSK	36	0	-	Right Side	10mm	Ant 1	DSI2	26865	831.5	23.81	24.50	1.172	-0.12	0.076	0.089
	LTE Band 26	15M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	DSI3	26865	831.5	24.65	25.50	1.216	0.03	0.135	0.164
	LTE Band 26	15M	QPSK	36	0	-	Bottom Side	10mm	Ant 1	DSI3	26865	831.5	23.81	24.50	1.172	0.02	0.107	0.125
	LTE Band 26	15M	QPSK	1	0	-	Front	10mm	Ant 4	DSI4	26865	831.5	25.34	25.50	1.038	0.04	0.259	0.269
	LTE Band 26	15M	QPSK	36	0	-	Front	10mm	Ant 4	DSI4	26865	831.5	24.39	24.50	1.026	-0.1	0.200	0.205
28	LTE Band 26	15M	QPSK	1	0	-	Back	10mm	Ant 4	DSI4	26865	831.5	25.34	25.50	1.038	0.03	0.369	**0.383**
	LTE Band 26	15M	QPSK	36	0	-	Back	10mm	Ant 4	DSI4	26865	831.5	24.39	24.50	1.026	0.04	0.287	0.294
	LTE Band 26	15M	QPSK	1	0	-	Left Side	10mm	Ant 4	DSI2	26865	831.5	25.34	25.50	1.038	0.05	0.078	0.081
	LTE Band 26	15M	QPSK	36	0	-	Left Side	10mm	Ant 4	DSI2	26865	831.5	24.39	24.50	1.026	0.06	0.061	0.063
	LTE Band 26	15M	QPSK	1	0	-	Top Side	10mm	Ant 4	DSI4	26865	831.5	25.34	25.50	1.038	-0.08	0.276	0.286
	LTE Band 26	15M	QPSK	36	0	-	Top Side	10mm	Ant 4	DSI4	26865	831.5	24.39	24.50	1.026	0.05	0.214	0.219
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 1	DSI3	167300	836.5	23.74	24.50	1.191	-0.1	0.106	0.126
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Front	10mm	Ant 1	DSI3	167300	836.5	23.63	24.50	1.222	0.02	0.124	0.152
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 1	DSI3	167300	836.5	23.74	24.50	1.191	-0.09	0.200	0.238
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Back	10mm	Ant 1	DSI3	167300	836.5	23.63	24.50	1.222	-0.07	0.222	0.271
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Left Side	10mm	Ant 1	DSI2	167300	836.5	24.64	25.50	1.219	0.06	0.140	0.171
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Left Side	10mm	Ant 1	DSI2	167300	836.5	24.53	25.50	1.250	0.03	0.195	0.244
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Right Side	10mm	Ant 1	DSI2	167300	836.5	24.64	25.50	1.219	0.05	0.132	0.161
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Right Side	10mm	Ant 1	DSI2	167300	836.5	24.53	25.50	1.250	0.06	0.163	0.204
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Bottom Side	10mm	Ant 1	DSI3	167300	836.5	23.74	24.50	1.191	0.04	0.074	0.088
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Bottom Side	10mm	Ant 1	DSI3	167300	836.5	23.63	24.50	1.222	0.03	0.094	0.115
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Bottom Side	15mm	Ant 1	DSI2	167300	836.5	24.64	25.50	1.219	0.02	0.074	0.090
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 4	DSI4	167300	836.5	24.69	25.50	1.205	0.03	0.181	0.218
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Front	10mm	Ant 4	DSI4	167300	836.5	24.55	25.50	1.245	-0.02	0.238	0.296
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 4	DSI4	167300	836.5	24.69	25.50	1.205	0.15	0.272	0.328
29	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Back	10mm	Ant 4	DSI4	167300	836.5	24.55	25.50	1.245	-0.05	0.362	**0.451**
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Left Side	10mm	Ant 4	DSI2	167300	836.5	24.69	25.50	1.205	0.13	0.071	0.086
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Left Side	10mm	Ant 4	DSI2	167300	836.5	24.55	25.50	1.245	-0.11	0.089	0.111
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 4	DSI4	167300	836.5	24.69	25.50	1.205	-0.16	0.156	0.188
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Top Side	10mm	Ant 4	DSI4	167300	836.5	24.55	25.50	1.245	-0.15	0.191	0.238
1750MHz																		
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 1	DSI3	1413	1732.6	20.09	21.00	1.233	0.02	0.238	0.293
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 1	DSI3	1413	1732.6	20.09	21.00	1.233	0.07	0.698	0.861
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 1	DSI3	1312	1712.4	19.95	21.00	1.274	0.08	0.659	0.839
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 1	DSI3	1513	1752.6	20.01	21.00	1.256	-0.1	0.697	0.875
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 1	DSI2	1413	1732.6	21.52	22.50	1.253	0.19	0.086	0.108
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Side	10mm	Ant 1	DSI2	1413	1732.6	21.52	22.50	1.253	-0.03	0.138	0.173
30	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 1	DSI3	1413	1732.6	20.09	21.00	1.233	-0.11	0.884	**1.090**
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 1	DSI3	1312	1712.4	19.95	21.00	1.274	0.08	0.752	0.958
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 1	DSI3	1513	1752.6	20.01	21.00	1.256	0.13	0.837	1.051
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	15mm	Ant 1	DSI2	1413	1732.6	21.52	22.50	1.253	0.01	0.635	0.796
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 4	DSI4	1413	1732.6	19.22	20.00	1.197	-0.09	0.105	0.126
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 4	DSI4	1413	1732.6	19.22	20.00	1.197	-0.09	0.338	0.404

	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 4	DSI2	1413	1732.6	24.07	25.00	1.239	0.11	0.158	0.196
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Top Side	10mm	Ant 4	DSI4	1413	1732.6	19.22	20.00	1.197	-0.15	0.205	0.245
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Top Side	15mm	Ant 4	DSI2	1413	1732.6	24.07	25.00	1.239	-0.03	0.375	0.465
	LTE Band 66	20M	QPSK	1	0	-	Front	10mm	Ant 1	DSI3	132322	1745	19.69	20.50	1.205	0.05	0.238	0.287
	LTE Band 66	20M	QPSK	50	0	-	Front	10mm	Ant 1	DSI3	132322	1745	19.64	20.50	1.219	0.07	0.239	0.291
	LTE Band 66	20M	QPSK	1	0	-	Back	10mm	Ant 1	DSI3	132322	1745	19.69	20.50	1.205	0.11	0.491	0.592
	LTE Band 66	20M	QPSK	50	0	-	Back	10mm	Ant 1	DSI3	132322	1745	19.64	20.50	1.219	-0.15	0.496	0.605
	LTE Band 66	20M	QPSK	1	0	-	Left Side	10mm	Ant 1	DSI2	132322	1745	22.78	23.50	1.180	-0.19	0.124	0.146
	LTE Band 66	20M	QPSK	50	0	-	Left Side	10mm	Ant 1	DSI2	132322	1745	22.69	23.50	1.205	0.12	0.098	0.118
	LTE Band 66	20M	QPSK	1	0	-	Right Side	10mm	Ant 1	DSI2	132322	1745	22.78	23.50	1.180	0.07	0.192	0.227
	LTE Band 66	20M	QPSK	50	0	-	Right Side	10mm	Ant 1	DSI2	132322	1745	22.69	23.50	1.205	-0.02	0.156	0.188
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	DSI3	132322	1745	19.69	20.50	1.205	0.05	0.826	0.995
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	DSI3	132072	1720	19.52	20.50	1.253	-0.11	0.772	0.967
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	DSI3	132572	1770	19.52	20.50	1.253	0.08	0.806	1.010
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	DSI3	132322	1745	19.64	20.50	1.219	0.09	0.832	1.014
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	DSI3	132072	1720	19.50	20.50	1.259	-0.04	0.780	0.982
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	DSI3	132572	1770	19.57	20.50	1.239	0.04	0.811	1.005
	LTE Band 66	20M	QPSK	100	0	-	Bottom Side	10mm	Ant 1	DSI3	132322	1745	19.56	20.50	1.242	0.1	0.803	0.997
31	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	15mm	Ant 1	DSI2	132322	1745	22.78	23.50	1.180	0.16	0.871	**1.028**
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	15mm	Ant 1	DSI2	132072	1720	22.72	23.50	1.197	0.05	0.853	1.021
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	15mm	Ant 1	DSI2	132572	1770	22.63	23.50	1.222	0.07	0.840	1.026
	LTE Band 66	20M	QPSK	100	0	-	Bottom Side	15mm	Ant 1	DSI2	132322	1745	22.59	23.50	1.233	0.1	0.833	1.027
	LTE Band 66-ENDC	20M	QPSK	1	0	-	Front	10mm	Ant 2	DSI4	132322	1745	18.33	19.50	1.309	-0.13	0.104	0.136
	LTE Band 66-ENDC	20M	QPSK	50	0	-	Front	10mm	Ant 2	DSI4	132322	1745	18.30	19.50	1.318	0.17	0.102	0.134
	LTE Band 66-ENDC	20M	QPSK	1	0	-	Back	10mm	Ant 2	DSI4	132322	1745	18.33	19.50	1.309	0.08	0.230	0.301
	LTE Band 66-ENDC	20M	QPSK	50	0	-	Back	10mm	Ant 2	DSI4	132322	1745	18.30	19.50	1.318	-0.03	0.238	0.314
	LTE Band 66-ENDC	20M	QPSK	1	0	-	Left Side	10mm	Ant 2	DSI2	132322	1745	21.18	23.00	1.521	-0.13	0.244	0.371
	LTE Band 66-ENDC	20M	QPSK	50	0	-	Left Side	10mm	Ant 2	DSI2	132322	1745	20.19	22.00	1.517	-0.07	0.227	0.344
	LTE Band 66-ENDC	20M	QPSK	1	0	-	Top Side	10mm	Ant 2	DSI2	132322	1745	21.18	23.00	1.521	-0.12	0.187	0.284
	LTE Band 66-ENDC	20M	QPSK	50	0	-	Top Side	10mm	Ant 2	DSI2	132322	1745	20.19	22.00	1.517	0.06	0.154	0.234
	LTE Band 66	20M	QPSK	1	0	-	Front	10mm	Ant 4	DSI4	132322	1745	19.41	20.00	1.146	0.03	0.108	0.124
	LTE Band 66	20M	QPSK	50	0	-	Front	10mm	Ant 4	DSI4	132322	1745	19.35	20.00	1.161	-0.1	0.112	0.130
	LTE Band 66	20M	QPSK	1	0	-	Back	10mm	Ant 4	DSI4	132322	1745	19.41	20.00	1.146	-0.08	0.358	0.410
	LTE Band 66	20M	QPSK	50	0	-	Back	10mm	Ant 4	DSI4	132322	1745	19.35	20.00	1.161	0.06	0.350	0.407
	LTE Band 66	20M	QPSK	1	0	-	Left Side	10mm	Ant 4	DSI2	132322	1745	24.28	25.00	1.180	0.12	0.159	0.188
	LTE Band 66	20M	QPSK	50	0	-	Left Side	10mm	Ant 4	DSI2	132322	1745	23.32	24.00	1.169	0.02	0.128	0.150
	LTE Band 66	20M	QPSK	1	0	-	Top Side	10mm	Ant 4	DSI4	132322	1745	19.41	20.00	1.146	0.03	0.224	0.257
	LTE Band 66	20M	QPSK	50	0	-	Top Side	10mm	Ant 4	DSI4	132322	1745	19.35	20.00	1.161	0.1	0.226	0.262
	LTE Band 66	20M	QPSK	1	0	-	Top Side	15mm	Ant 4	DSI2	132322	1745	24.28	25.00	1.180	0.02	0.375	0.443
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 1	DSI3	349000	1745	19.54	20.50	1.247	0.17	0.201	0.251
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Front	10mm	Ant 1	DSI3	349000	1745	19.50	20.50	1.259	-0.04	0.221	0.278
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 1	DSI3	349000	1745	19.54	20.50	1.247	0.01	0.558	0.696
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 1	DSI3	349000	1745	19.50	20.50	1.259	0.07	0.581	0.731
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Left Side	10mm	Ant 1	DSI2	349000	1745	22.58	23.50	1.236	-0.05	0.074	0.091
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Left Side	10mm	Ant 1	DSI2	349000	1745	22.47	23.50	1.268	0.04	0.082	0.104
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Right Side	10mm	Ant 1	DSI2	349000	1745	22.58	23.50	1.236	-0.07	0.113	0.140
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Right Side	10mm	Ant 1	DSI2	349000	1745	22.47	23.50	1.268	-0.16	0.131	0.166
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Bottom Side	10mm	Ant 1	DSI3	349000	1745	19.54	20.50	1.247	0.13	0.688	0.858
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Bottom Side	10mm	Ant 1	DSI3	346000	1730	19.40	20.50	1.288	-0.11	0.666	0.858
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Bottom Side	10mm	Ant 1	DSI3	352000	1760	19.47	20.50	1.268	0.11	0.673	0.853
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Bottom Side	10mm	Ant 1	DSI3	349000	1745	19.50	20.50	1.259	-0.03	0.781	0.983
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Bottom Side	10mm	Ant 1	DSI3	346000	1730	19.44	20.50	1.276	-0.15	0.772	0.985
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Bottom Side	10mm	Ant 1	DSI3	352000	1760	19.39	20.50	1.291	-0.08	0.735	0.949
	FR1 n66	40M	QPSK	100	0	DFT-SCS-30KHz	Bottom Side	10mm	Ant 1	DSI3	349000	1745	19.44	20.50	1.276	-0.19	0.798	1.019
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Bottom Side	15mm	Ant 1	DSI2	349000	1745	22.58	23.50	1.236	0.05	0.818	1.011
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Bottom Side	15mm	Ant 1	DSI2	346000	1730	22.43	23.50	1.279	0.07	0.820	1.049

	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Bottom Side	15mm	Ant 1	DSI2	352000	1760	22.47	23.50	1.268	0.01	0.837	1.061
32	FR1 n66	40M	QPSK	100	0	DFT-SCS-30KHz	Bottom Side	15mm	Ant 1	DSI2	349000	1745	22.43	23.50	1.279	-0.06	0.832	**1.064**
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 4	DSI4	349000	1745	19.02	20.00	1.253	-0.07	0.072	0.090
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Front	10mm	Ant 4	DSI4	349000	1745	18.87	20.00	1.297	0.06	0.083	0.108
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 4	DSI4	349000	1745	19.02	20.00	1.253	0.12	0.274	0.343
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 4	DSI4	349000	1745	18.87	20.00	1.297	-0.16	0.329	0.427
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Left Side	10mm	Ant 4	DSI2	349000	1745	23.95	25.00	1.274	0.04	0.109	0.139
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Left Side	10mm	Ant 4	DSI2	349000	1745	23.83	25.00	1.309	-0.13	0.121	0.158
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 4	DSI4	349000	1745	19.02	20.00	1.253	-0.15	0.128	0.160
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Top Side	10mm	Ant 4	DSI4	349000	1745	18.87	20.00	1.297	-0.16	0.167	0.217
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Top Side	15mm	Ant 4	DSI2	349000	1745	23.95	25.00	1.274	-0.05	0.371	0.472
1900MHz																		
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Front	10mm	Ant 1	DSI3	661	1880	21.75	23.50	1.496	0.06	0.123	0.184
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	10mm	Ant 1	DSI3	661	1880	21.75	23.50	1.496	0.02	0.307	0.459
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Left Side	10mm	Ant 1	DSI2	661	1880	24.14	26.00	1.535	-0.07	0.054	0.083
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Right Side	10mm	Ant 1	DSI2	661	1880	24.14	26.00	1.535	0.05	0.058	0.089
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	10mm	Ant 1	DSI3	661	1880	21.75	23.50	1.496	0.03	0.421	0.630
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	15mm	Ant 1	DSI2	661	1880	24.14	26.00	1.535	0.01	0.561	0.861
33	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	15mm	Ant 1	DSI2	810	1909.8	24.11	26.00	1.545	0.14	0.572	**0.884**
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	15mm	Ant 1	DSI2	512	1850.2	24.04	26.00	1.570	0.03	0.549	0.862
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Front	10mm	Ant 4	DSI4	661	1880	22.58	24.00	1.387	0.02	0.174	0.241
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	10mm	Ant 4	DSI4	661	1880	22.58	24.00	1.387	-0.13	0.601	0.833
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	10mm	Ant 4	DSI4	512	1850.2	22.59	24.00	1.384	0.08	0.545	0.754
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	10mm	Ant 4	DSI4	810	1909.8	22.53	24.00	1.403	0.08	0.551	0.773
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Left Side	10mm	Ant 4	DSI2	661	1880	24.56	26.00	1.393	0.02	0.093	0.130
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Top Side	10mm	Ant 4	DSI4	661	1880	22.58	24.00	1.387	0.07	0.566	0.785
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Top Side	15mm	Ant 4	DSI2	661	1880	24.56	26.00	1.393	0.02	0.506	0.705
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 1	DSI3	9400	1880	20.26	21.00	1.186	-0.17	0.274	0.325
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 1	DSI3	9400	1880	20.26	21.00	1.186	0.06	0.687	0.815
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 1	DSI3	9262	1852.4	20.18	21.00	1.208	-0.19	0.666	0.804
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 1	DSI3	9538	1907.6	20.10	21.00	1.230	0.13	0.670	0.824
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 1	DSI2	9400	1880	23.18	24.00	1.208	0.17	0.186	0.225
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Side	10mm	Ant 1	DSI2	9400	1880	23.18	24.00	1.208	0.08	0.285	0.344
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 1	DSI3	9400	1880	20.26	21.00	1.186	-0.13	0.776	0.920
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 1	DSI3	9262	1852.4	20.18	21.00	1.208	0.08	0.760	0.918
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 1	DSI3	9538	1907.6	20.10	21.00	1.230	0.09	0.745	0.917
34	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	15mm	Ant 1	DSI2	9400	1880	23.18	24.00	1.208	-0.03	0.842	**1.017**
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	15mm	Ant 1	DSI2	9262	1852.4	23.02	24.00	1.253	0.07	0.811	1.016
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	15mm	Ant 1	DSI2	9538	1907.6	23.09	24.00	1.233	0.05	0.805	0.993
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 4	DSI4	9400	1880	19.76	20.50	1.186	0.04	0.130	0.154
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 4	DSI4	9400	1880	19.76	20.50	1.186	-0.02	0.493	0.585
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 4	DSI2	9400	1880	24.27	25.00	1.183	0.04	0.131	0.155
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	10mm	Ant 4	DSI4	9400	1880	19.76	20.50	1.186	-0.11	0.372	0.441
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	15mm	Ant 4	DSI2	9400	1880	24.27	25.00	1.183	-0.1	0.713	0.844
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	15mm	Ant 4	DSI2	9262	1852.4	24.04	25.00	1.247	-0.13	0.672	0.838
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	15mm	Ant 4	DSI2	9538	1907.6	24.10	25.00	1.230	0.05	0.682	0.839
	LTE Band 2	20M	QPSK	1	0	-	Front	10mm	Ant 1	DSI3	18900	1880	19.86	20.50	1.159	-0.17	0.226	0.262
	LTE Band 2	20M	QPSK	50	0	-	Front	10mm	Ant 1	DSI3	18900	1880	19.78	20.50	1.180	0.03	0.228	0.269
	LTE Band 2	20M	QPSK	1	0	-	Back	10mm	Ant 1	DSI3	18900	1880	19.86	20.50	1.159	-0.14	0.598	0.693
	LTE Band 2	20M	QPSK	50	0	-	Back	10mm	Ant 1	DSI3	18900	1880	19.78	20.50	1.180	0.06	0.595	0.702
	LTE Band 2	20M	QPSK	1	0	-	Left Side	10mm	Ant 1	DSI2	18900	1880	23.32	24.00	1.169	-0.11	0.161	0.188
	LTE Band 2	20M	QPSK	50	0	-	Left Side	10mm	Ant 1	DSI2	18900	1880	23.23	24.00	1.194	0.05	0.169	0.202
	LTE Band 2	20M	QPSK	1	0	-	Right Side	10mm	Ant 1	DSI2	18900	1880	23.32	24.00	1.169	0.09	0.269	0.315
	LTE Band 2	20M	QPSK	50	0	-	Right Side	10mm	Ant 1	DSI2	18900	1880	23.23	24.00	1.194	0.03	0.267	0.319
	LTE Band 2	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	DSI3	18900	1880	19.86	20.50	1.159	-0.12	0.737	0.854
	LTE Band 2	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	DSI3	18700	1860	19.82	20.50	1.169	-0.15	0.725	0.848

	LTE Band 2	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	DSI3	19100	1900	19.74	20.50	1.191	0.06	0.697	0.830
	LTE Band 2	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	DSI3	18900	1880	19.78	20.50	1.180	0.05	0.746	0.881
	LTE Band 2	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	DSI3	18700	1860	19.67	20.50	1.211	0.07	0.725	0.878
	LTE Band 2	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	DSI3	19100	1900	19.63	20.50	1.222	0.03	0.703	0.859
	LTE Band 2	20M	QPSK	100	0	-	Bottom Side	10mm	Ant 1	DSI3	18900	1880	19.75	20.50	1.189	0.16	0.740	0.879
35	LTE Band 2	20M	QPSK	1	0	-	Bottom Side	15mm	Ant 1	DSI2	18900	1880	23.32	24.00	1.169	0.11	0.817	**0.955**
	LTE Band 2	20M	QPSK	1	0	-	Bottom Side	15mm	Ant 1	DSI2	18700	1860	23.17	24.00	1.211	0.02	0.780	0.944
	LTE Band 2	20M	QPSK	1	0	-	Bottom Side	15mm	Ant 1	DSI2	19100	1900	23.21	24.00	1.199	0.07	0.778	0.933
	LTE Band 2	20M	QPSK	100	0	-	Bottom Side	15mm	Ant 1	DSI2	18900	1880	23.18	24.00	1.208	0.03	0.780	0.942
	LTE Band 2-ENDC	20M	QPSK	1	0	-	Front	10mm	Ant 2	DSI4	18900	1880	17.19	19.00	1.517	0.09	0.046	0.070
	LTE Band 2-ENDC	20M	QPSK	50	0	-	Front	10mm	Ant 2	DSI4	18900	1880	17.17	19.00	1.524	0.04	0.041	0.062
	LTE Band 2-ENDC	20M	QPSK	1	0	-	Back	10mm	Ant 2	DSI4	18900	1880	17.19	19.00	1.517	-0.02	0.062	0.094
	LTE Band 2-ENDC	20M	QPSK	50	0	-	Back	10mm	Ant 2	DSI4	18900	1880	17.17	19.00	1.524	0.03	0.062	0.094
	LTE Band 2-ENDC	20M	QPSK	1	0	-	Left Side	10mm	Ant 2	DSI2	18900	1880	21.15	23.00	1.531	0.14	0.094	0.144
	LTE Band 2-ENDC	20M	QPSK	50	0	-	Left Side	10mm	Ant 2	DSI2	18900	1880	20.31	22.00	1.476	-0.05	0.077	0.114
	LTE Band 2-ENDC	20M	QPSK	1	0	-	Top Side	10mm	Ant 2	DSI2	18900	1880	21.15	23.00	1.531	0.03	0.166	0.254
	LTE Band 2-ENDC	20M	QPSK	50	0	-	Top Side	10mm	Ant 2	DSI2	18900	1880	20.31	22.00	1.476	0.01	0.090	0.133
	LTE Band 2	20M	QPSK	1	0	-	Front	10mm	Ant 4	DSI4	18900	1880	19.91	20.50	1.146	0.05	0.169	0.194
	LTE Band 2	20M	QPSK	50	0	-	Front	10mm	Ant 4	DSI4	18900	1880	19.87	20.50	1.156	-0.15	0.170	0.197
	LTE Band 2	20M	QPSK	1	0	-	Back	10mm	Ant 4	DSI4	18900	1880	19.91	20.50	1.146	0.16	0.546	0.625
	LTE Band 2	20M	QPSK	50	0	-	Back	10mm	Ant 4	DSI4	18900	1880	19.87	20.50	1.156	0.09	0.554	0.640
	LTE Band 2	20M	QPSK	1	0	-	Left Side	10mm	Ant 4	DSI2	18900	1880	24.42	25.00	1.143	0.02	0.180	0.206
	LTE Band 2	20M	QPSK	50	0	-	Left Side	10mm	Ant 4	DSI2	18900	1880	23.38	24.00	1.153	-0.14	0.142	0.164
	LTE Band 2	20M	QPSK	1	0	-	Top Side	10mm	Ant 4	DSI4	18900	1880	19.91	20.50	1.146	-0.09	0.500	0.573
	LTE Band 2	20M	QPSK	50	0	-	Top Side	10mm	Ant 4	DSI4	18900	1880	19.87	20.50	1.156	0.06	0.510	0.590
	LTE Band 2	20M	QPSK	1	0	-	Top Side	15mm	Ant 4	DSI2	18900	1880	24.42	25.00	1.143	0.04	0.698	0.798

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)	Reported 1g SAR (W/kg)
								2600MHz												
	LTE Band 7	20M	QPSK	1	0	-	Front	10mm	Ant 1	DSI3	21100	2535	18.41	19.50	1.285	-	-	0.12	0.148	0.190
	LTE Band 7	20M	QPSK	50	0	-	Front	10mm	Ant 1	DSI3	21100	2535	18.38	19.50	1.294	-	-	0.06	0.145	0.188
	LTE Band 7	20M	QPSK	1	0	-	Back	10mm	Ant 1	DSI3	21100	2535	18.41	19.50	1.285	-	-	-0.12	0.371	0.477
	LTE Band 7	20M	QPSK	50	0	-	Back	10mm	Ant 1	DSI3	21100	2535	18.38	19.50	1.294	-	-	0.03	0.379	0.491
	LTE Band 7	20M	QPSK	1	0	-	Left Side	10mm	Ant 1	DSI2	21100	2535	24.43	25.50	1.279	-	-	-0.19	0.164	0.210
	LTE Band 7	20M	QPSK	50	0	-	Left Side	10mm	Ant 1	DSI2	21100	2535	23.44	24.50	1.276	-	-	0.04	0.121	0.154
	LTE Band 7	20M	QPSK	1	0	-	Right Side	10mm	Ant 1	DSI2	21100	2535	24.43	25.50	1.279	-	-	0.01	0.113	0.145
	LTE Band 7	20M	QPSK	50	0	-	Right Side	10mm	Ant 1	DSI2	21100	2535	23.44	24.50	1.276	-	-	-0.03	0.090	0.115
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	DSI3	21100	2535	18.41	19.50	1.285	-	-	0.03	0.484	0.622
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	DSI3	21100	2535	18.38	19.50	1.294	-	-	0.08	0.491	0.635
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	15mm	Ant 1	DSI2	21100	2535	24.43	25.50	1.279	-	-	-0.08	0.716	0.916
	LTE Band 7C	20M	QPSK	1	0	-	Bottom Side	15mm	Ant 1	DSI2	21100+ 21298	2535+ 2554.8	24.30	25.50	1.318	-	-	0.03	0.687	0.906
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	15mm	Ant 1	DSI2	20850	2510	24.40	25.50	1.288	-	-	0.02	0.700	0.902
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	15mm	Ant 1	DSI2	21350	2560	24.37	25.50	1.297	-	-	-0.14	0.689	0.894
	LTE Band 7	20M	QPSK	100	0	-	Bottom Side	15mm	Ant 1	DSI2	21100	2535	23.25	24.50	1.334	-	-	-0.09	0.670	0.893
	LTE Band 7-ENDC	20M	QPSK	1	0	-	Front	10mm	Ant 2	DSI4	21100	2535	16.00	17.50	1.413	-	-	0.09	0.045	0.064
	LTE Band 7-ENDC	20M	QPSK	50	0	-	Front	10mm	Ant 2	DSI4	21100	2535	15.96	17.50	1.426	-	-	0.04	0.053	0.076
	LTE Band 7-ENDC	20M	QPSK	1	0	-	Back	10mm	Ant 2	DSI4	21100	2535	16.00	17.50	1.413	-	-	-0.02	0.253	0.357
	LTE Band 7-ENDC	20M	QPSK	50	0	-	Back	10mm	Ant 2	DSI4	21100	2535	15.96	17.50	1.426	-	-	0.03	0.286	0.408
	LTE Band 7-ENDC	20M	QPSK	1	0	-	Left Side	10mm	Ant 2	DSI2	21100	2535	21.34	23.00	1.466	-	-	0.14	0.700	1.026
	LTE Band 7-ENDC	20M	QPSK	1	0	-	Left Side	10mm	Ant 2	DSI2	20850	2510	21.28	23.00	1.486	-	-	0.07	0.570	0.847
36	LTE Band 7-ENDC	20M	QPSK	1	0	-	Left Side	10mm	Ant 2	DSI2	21350	2560	21.23	23.00	1.503	-	-	-0.06	0.705	**1.060**
	LTE Band 7-ENDC	20M	QPSK	50	0	-	Left Side	10mm	Ant 2	DSI2	21100	2535	20.39	22.00	1.449	-	-	-0.05	0.508	0.736
	LTE Band 7-ENDC	20M	QPSK	100	0	-	Left Side	10mm	Ant 2	DSI2	21100	2535	20.30	22.00	1.479	-	-	0.04	0.511	0.756
	LTE Band 7-ENDC	20M	QPSK	1	0	-	Top Side	10mm	Ant 2	DSI2	21100	2535	21.34	23.00	1.466	-	-	0.05	0.283	0.415
	LTE Band 7-ENDC	20M	QPSK	50	0	-	Top Side	10mm	Ant 2	DSI2	21100	2535	20.39	22.00	1.449	-	-	0.06	0.251	0.364
	LTE Band 7	20M	QPSK	1	0	-	Front	10mm	Ant 4	DSI4	21100	2535	18.49	19.50	1.262	-	-	0.01	0.149	0.188
	LTE Band 7	20M	QPSK	50	0	-	Front	10mm	Ant 4	DSI4	21100	2535	18.45	19.50	1.274	-	-	0.02	0.150	0.191
	LTE Band 7	20M	QPSK	1	0	-	Back	10mm	Ant 4	DSI4	21100	2535	18.49	19.50	1.262	-	-	-0.01	0.406	0.512
	LTE Band 7	20M	QPSK	50	0	-	Back	10mm	Ant 4	DSI4	21100	2535	18.45	19.50	1.274	-	-	0.08	0.408	0.520
	LTE Band 7	20M	QPSK	1	0	-	Left Side	10mm	Ant 4	DSI2	21100	2535	24.40	25.50	1.288	-	-	0.04	0.099	0.128
	LTE Band 7	20M	QPSK	50	0	-	Left Side	10mm	Ant 4	DSI2	21100	2535	23.29	24.50	1.321	-	-	0.04	0.076	0.100
	LTE Band 7	20M	QPSK	1	0	-	Top Side	10mm	Ant 4	DSI4	21100	2535	18.49	19.50	1.262	-	-	0.15	0.505	0.637
	LTE Band 7	20M	QPSK	50	0	-	Top Side	10mm	Ant 4	DSI4	21100	2535	18.45	19.50	1.274	-	-	0.08	0.507	0.646
	LTE Band 7	20M	QPSK	1	0	-	Top Side	15mm	Ant 4	DSI2	21100	2535	24.40	25.50	1.288	-	-	0.08	0.570	0.734
	LTE Band 7C	20M	QPSK	1	0	-	Top Side	15mm	Ant 4	DSI2	21100+ 21298	2535+ 2554.8	24.35	25.50	1.303	-	-	0.03	0.534	0.696
	LTE Band 41	20M	QPSK	1	0	-	Front	10mm	Ant 1	DSI3	40620	2593	20.43	21.50	1.279	62.9	1.006	-0.12	0.142	0.183
	LTE Band 41	20M	QPSK	50	0	-	Front	10mm	Ant 1	DSI3	40620	2593	20.33	21.50	1.309	62.9	1.006	-0.16	0.144	0.190
	LTE Band 41	20M	QPSK	1	0	-	Back	10mm	Ant 1	DSI3	40620	2593	20.43	21.50	1.279	62.9	1.006	0.18	0.357	0.459
	LTE Band 41	20M	QPSK	50	0	-	Back	10mm	Ant 1	DSI3	40620	2593	20.33	21.50	1.309	62.9	1.006	-0.01	0.359	0.473
	LTE Band 41	20M	QPSK	1	0	-	Left Side	10mm	Ant 1	DSI2	40620	2593	24.48	25.50	1.265	62.9	1.006	-0.17	0.114	0.145
	LTE Band 41	20M	QPSK	50	0	-	Left Side	10mm	Ant 1	DSI2	40620	2593	23.50	24.50	1.259	62.9	1.006	0.11	0.092	0.117
	LTE Band 41	20M	QPSK	1	0	-	Right Side	10mm	Ant 1	DSI2	40620	2593	24.48	25.50	1.265	62.9	1.006	0.02	0.131	0.167
	LTE Band 41	20M	QPSK	50	0	-	Right Side	10mm	Ant 1	DSI2	40620	2593	23.50	24.50	1.259	62.9	1.006	0.02	0.103	0.130
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	DSI3	40620	2593	20.43	21.50	1.279	62.9	1.006	-0.13	0.478	0.615
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	DSI3	40620	2593	20.33	21.50	1.309	62.9	1.006	0.02	0.484	0.637
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	15mm	Ant 1	DSI2	40620	2593	24.48	25.50	1.265	62.9	1.006	-0.05	0.589	0.749
	LTE Band 38C	20M	QPSK	1	0	-	Bottom Side	15mm	Ant 1	DSI2	38000+ 38150	2595+ 2610	24.39	25.50	1.291	62.9	1.006	0.01	0.543	0.705
	LTE Band 41-ENDC	20M	QPSK	1	0	-	Front	10mm	Ant 2	DSI4	40620	2593	16.45	18.00	1.429	62.9	1.006	0.08	0.059	0.085
	LTE Band 41-ENDC	20M	QPSK	50	0	-	Front	10mm	Ant 2	DSI4	40620	2593	16.43	18.00	1.435	62.9	1.006	0.14	0.052	0.075
	LTE Band 41-ENDC	20M	QPSK	1	0	-	Back	10mm	Ant 2	DSI4	40620	2593	16.45	18.00	1.429	62.9	1.006	0.18	0.285	0.410
	LTE Band 41-ENDC	20M	QPSK	50	0	-	Back	10mm	Ant 2	DSI4	40620	2593	16.43	18.00	1.435	62.9	1.006	0.14	0.298	0.430

37	LTE Band 41-ENDC	20M	QPSK	1	0	-	Left Side	10mm	Ant 2	DSI2	40620	2593	21.34	23.00	1.466	62.9	1.006	-0.08	0.658	**0.970**
	LTE Band 41-ENDC	20M	QPSK	1	0	-	Left Side	10mm	Ant 2	DSI2	39750	2506	21.30	23.00	1.479	62.9	1.006	-0.19	0.633	0.942
	LTE Band 41-ENDC	20M	QPSK	1	0	-	Left Side	10mm	Ant 2	DSI2	40185	2549.5	21.21	23.00	1.510	62.9	1.006	0.04	0.638	0.969
	LTE Band 41-ENDC	20M	QPSK	1	0	-	Left Side	10mm	Ant 2	DSI2	41055	2636.5	21.20	23.00	1.514	62.9	1.006	0.01	0.618	0.941
	LTE Band 41-ENDC	20M	QPSK	1	0	-	Left Side	10mm	Ant 2	DSI2	41490	2680	21.31	23.00	1.476	62.9	1.006	-0.03	0.630	0.935
	LTE Band 41-ENDC	20M	QPSK	50	0	-	Left Side	10mm	Ant 2	DSI2	40620	2593	20.36	22.00	1.459	62.9	1.006	0.03	0.529	0.776
	LTE Band 41-ENDC	20M	QPSK	100	0	-	Left Side	10mm	Ant 2	DSI2	40620	2593	20.33	22.00	1.469	62.9	1.006	0.08	0.620	0.916
	LTE Band 41-ENDC	20M	QPSK	1	0	-	Top Side	10mm	Ant 2	DSI2	40620	2593	21.34	23.00	1.466	62.9	1.006	0.06	0.384	0.566
	LTE Band 41-ENDC	20M	QPSK	50	0	-	Top Side	10mm	Ant 2	DSI2	40620	2593	20.36	22.00	1.459	62.9	1.006	0.01	0.351	0.515
	LTE Band 41	20M	QPSK	1	0	-	Front	10mm	Ant 4	DSI4	40620	2593	20.51	21.50	1.256	62.9	1.006	0.02	0.143	0.181
	LTE Band 41	20M	QPSK	50	0	-	Front	10mm	Ant 4	DSI4	40620	2593	20.45	21.50	1.274	62.9	1.006	-0.17	0.139	0.178
	LTE Band 41	20M	QPSK	1	0	-	Back	10mm	Ant 4	DSI4	40620	2593	20.51	21.50	1.256	62.9	1.006	0.14	0.341	0.431
	LTE Band 41	20M	QPSK	50	0	-	Back	10mm	Ant 4	DSI4	40620	2593	20.45	21.50	1.274	62.9	1.006	-0.04	0.341	0.437
	LTE Band 41	20M	QPSK	1	0	-	Left Side	10mm	Ant 4	DSI2	40620	2593	24.55	25.50	1.245	62.9	1.006	0.05	0.033	0.041
	LTE Band 41	20M	QPSK	50	0	-	Left Side	10mm	Ant 4	DSI2	40620	2593	23.59	24.50	1.233	62.9	1.006	-0.12	0.039	0.048
	LTE Band 41	20M	QPSK	1	0	-	Top Side	10mm	Ant 4	DSI4	40620	2593	20.51	21.50	1.256	62.9	1.006	-0.03	0.445	0.562
	LTE Band 41	20M	QPSK	50	0	-	Top Side	10mm	Ant 4	DSI4	40620	2593	20.45	21.50	1.274	62.9	1.006	0.01	0.438	0.561
	LTE Band 41	20M	QPSK	1	0	-	Top Side	15mm	Ant 4	DSI2	40620	2593	24.55	25.50	1.245	62.9	1.006	-0.03	0.483	0.605
	LTE Band 38C	20M	QPSK	1	0	-	Top Side	15mm	Ant 4	DSI2	38000+ 38150	2595+ 2610	24.55	25.50	1.245	62.9	1.006	-0.01	0.456	0.571
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 1	DSI3	507000	2535	18.62	19.50	1.225	-	-	-0.13	0.120	0.147
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Front	10mm	Ant 1	DSI3	507000	2535	18.56	19.50	1.242	-	-	0.08	0.132	0.164
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 1	DSI3	507000	2535	18.62	19.50	1.225	-	-	0.07	0.275	0.337
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Back	10mm	Ant 1	DSI3	507000	2535	18.56	19.50	1.242	-	-	0.05	0.286	0.355
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Left Side	10mm	Ant 1	DSI2	507000	2535	22.64	23.50	1.219	-	-	-0.09	0.135	0.165
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Left Side	10mm	Ant 1	DSI2	507000	2535	22.59	23.50	1.233	-	-	-0.03	0.143	0.176
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Right Side	10mm	Ant 1	DSI2	507000	2535	22.64	23.50	1.219	-	-	-0.17	0.116	0.141
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Right Side	10mm	Ant 1	DSI2	507000	2535	22.59	23.50	1.233	-	-	0.02	0.130	0.160
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Bottom Side	10mm	Ant 1	DSI3	507000	2535	18.62	19.50	1.225	-	-	0.13	0.447	0.547
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Bottom Side	10mm	Ant 1	DSI3	507000	2535	18.56	19.50	1.242	-	-	-0.04	0.510	0.633
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Bottom Side	15mm	Ant 1	DSI2	507000	2535	22.64	23.50	1.219	-	-	0.07	0.566	0.690
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 4	DSI4	507000	2535	18.84	19.50	1.164	-	-	-0.06	0.122	0.142
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Front	10mm	Ant 4	DSI4	507000	2535	18.83	19.50	1.167	-	-	0.03	0.131	0.153
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 4	DSI4	507000	2535	18.84	19.50	1.164	-	-	-0.05	0.367	0.427
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Back	10mm	Ant 4	DSI4	507000	2535	18.83	19.50	1.167	-	-	0.15	0.375	0.438
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Left Side	10mm	Ant 4	DSI2	507000	2535	23.56	24.50	1.242	-	-	-0.16	0.115	0.143
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Left Side	10mm	Ant 4	DSI2	507000	2535	23.53	24.50	1.250	-	-	0.18	0.135	0.169
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 4	DSI4	507000	2535	18.84	19.50	1.164	-	-	-0.09	0.441	0.513
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Top Side	10mm	Ant 4	DSI4	507000	2535	18.83	19.50	1.167	-	-	0.01	0.455	0.531
38	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Top Side	15mm	Ant 4	DSI2	507000	2535	23.56	24.50	1.242	-	-	0.06	0.571	**0.709**
	FR1 n41	100M	QPSK	1	137	DFT-SCS-30KHz	Front	10mm	Ant 1	DSI3	518598	2592.99	18.49	19.50	1.262	-	-	0.01	0.110	0.139
	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 1	DSI3	518598	2592.99	18.36	19.50	1.300	-	-	0.07	0.116	0.151
	FR1 n41	100M	QPSK	1	137	DFT-SCS-30KHz	Back	10mm	Ant 1	DSI3	518598	2592.99	18.49	19.50	1.262	-	-	-0.09	0.166	0.209
	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 1	DSI3	518598	2592.99	18.36	19.50	1.300	-	-	0.01	0.168	0.218
	FR1 n41	100M	QPSK	1	137	DFT-SCS-30KHz	Left Side	10mm	Ant 1	DSI2	518598	2592.99	26.17	27.00	1.211	-	-	-0.11	0.068	0.082
	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	10mm	Ant 1	DSI2	518598	2592.99	25.92	27.00	1.282	-	-	-0.12	0.057	0.073
	FR1 n41	100M	QPSK	1	137	DFT-SCS-30KHz	Right Side	10mm	Ant 1	DSI2	518598	2592.99	26.17	27.00	1.211	-	-	-0.12	0.169	0.205
	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	10mm	Ant 1	DSI2	518598	2592.99	25.92	27.00	1.282	-	-	-0.03	0.136	0.174
	FR1 n41	100M	QPSK	1	137	DFT-SCS-30KHz	Bottom Side	10mm	Ant 1	DSI3	518598	2592.99	18.49	19.50	1.262	-	-	0.11	0.163	0.206
	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Bottom Side	10mm	Ant 1	DSI3	518598	2592.99	18.36	19.50	1.300	-	-	-0.14	0.172	0.224
39	FR1 n41	100M	QPSK	1	137	DFT-SCS-30KHz	Bottom Side	15mm	Ant 1	DSI2	518598	2592.99	26.17	27.00	1.211	-	-	-0.02	0.472	**0.571**
	FR1 n41	100M	QPSK	1	137	DFT-SCS-30KHz	Front	10mm	Ant 4	DSI4	518598	2592.99	19.94	21.00	1.276	-	-	0.06	0.072	0.092
	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 4	DSI4	518598	2592.99	19.90	21.00	1.288	-	-	0.19	0.072	0.093
	FR1 n41	100M	QPSK	1	137	DFT-SCS-30KHz	Back	10mm	Ant 4	DSI4	518598	2592.99	19.94	21.00	1.276	-	-	-0.17	0.181	0.231
	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 4	DSI4	518598	2592.99	19.90	21.00	1.288	-	-	0.03	0.211	0.272
	FR1 n41	100M	QPSK	1	137	DFT-SCS-30KHz	Left Side	10mm	Ant 4	DSI2	518598	2592.99	26.08	27.00	1.236	-	-	0.04	0.035	0.043
	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	10mm	Ant 4	DSI2	518598	2592.99	26.01	27.00	1.256	-	-	0.17	0.041	0.051

	FR1 n41	100M	QPSK	1	137	DFT-SCS-30KHz	Top Side	10mm	Ant 4	DSI4	518598	2592.99	19.94	21.00	1.276	-	-	0.07	0.226	0.288
	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 4	DSI4	518598	2592.99	19.90	21.00	1.288	-	-	0.07	0.231	0.298
	FR1 n41	100M	QPSK	1	137	DFT-SCS-30KHz	Top Side	15mm	Ant 4	DSI2	518598	2592.99	26.08	27.00	1.236	-	-	-0.04	0.362	0.447
3500MHz																				
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI4	656000	3840	16.31	18.00	1.476	-	-	-0.14	0.114	0.168
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI4	656000	3840	16.24	18.00	1.500	-	-	0.03	0.103	0.154
40	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI4	656000	3840	16.31	18.00	1.476	-	-	-0.09	0.602	**0.888**
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI4	656000	3840	16.24	18.00	1.500	-	-	0.08	0.574	0.861
	FR1 n77	100M	QPSK	270	0	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI4	656000	3840	16.20	18.00	1.514	-	-	-0.11	0.566	0.857
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI2	656000	3840	21.61	23.50	1.545	-	-	0.01	0.459	0.709
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI2	656000	3840	21.60	23.50	1.549	-	-	0.09	0.440	0.681
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Top Side	10mm	Ant 2	DSI2	656000	3840	21.61	23.50	1.545	-	-	0.02	0.135	0.209
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 2	DSI2	656000	3840	21.60	23.50	1.549	-	-	0.01	0.126	0.195
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI4	633334	3500.01	16.26	18.00	1.493	-	-	-0.17	0.092	0.137
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI4	633334	3500.01	16.18	18.00	1.521	-	-	0.18	0.093	0.141
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI4	633334	3500.01	16.26	18.00	1.493	-	-	-0.17	0.345	0.515
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI4	633334	3500.01	16.18	18.00	1.521	-	-	0.03	0.357	0.543
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI2	633334	3500.01	21.58	23.50	1.556	-	-	0.18	0.308	0.479
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI2	633334	3500.01	21.57	23.50	1.560	-	-	0.07	0.282	0.440
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Top Side	10mm	Ant 2	DSI2	633334	3500.01	21.58	23.50	1.556	-	-	0.06	0.205	0.319
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 2	DSI2	633334	3500.01	21.57	23.50	1.560	-	-	0.01	0.214	0.334
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI4	656000	3840	18.04	18.50	1.112	-	-	-0.12	0.135	0.150
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI4	656000	3840	18.01	18.50	1.119	-	-	-0.04	0.128	0.143
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Back	10mm	Ant 3	DSI4	656000	3840	18.04	18.50	1.112	-	-	-0.09	0.477	0.530
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 3	DSI4	656000	3840	18.01	18.50	1.119	-	-	0.02	0.498	0.557
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Side	10mm	Ant 3	DSI2	656000	3840	25.83	27.00	1.309	-	-	0.06	0.212	0.278
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	10mm	Ant 3	DSI2	656000	3840	25.75	27.00	1.334	-	-	-0.03	0.193	0.257
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Top Side	10mm	Ant 3	DSI4	656000	3840	18.04	18.50	1.112	-	-	-0.16	0.525	0.584
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 3	DSI4	656000	3840	18.01	18.50	1.119	-	-	0.01	0.537	0.601
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI4	633334	3500.01	17.83	18.50	1.167	-	-	0.03	0.063	0.074
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI4	633334	3500.01	17.71	18.50	1.199	-	-	0.18	0.063	0.076
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Back	10mm	Ant 3	DSI4	633334	3500.01	17.83	18.50	1.167	-	-	-0.03	0.222	0.259
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 3	DSI4	633334	3500.01	17.71	18.50	1.199	-	-	-0.1	0.231	0.277
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Side	10mm	Ant 3	DSI2	633334	3500.01	25.63	27.00	1.371	-	-	0.02	0.206	0.282
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	10mm	Ant 3	DSI2	633334	3500.01	25.52	27.00	1.406	-	-	0.05	0.196	0.276
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Top Side	10mm	Ant 3	DSI4	633334	3500.01	17.83	18.50	1.167	-	-	-0.13	0.226	0.264
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 3	DSI4	633334	3500.01	17.71	18.50	1.199	-	-	0.02	0.242	0.290
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI2	656000	3840	15.71	17.50	1.510	-	-	-0.02	0.078	0.118
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI2	656000	3840	15.68	17.50	1.521	-	-	0.04	0.082	0.125
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI2	656000	3840	15.71	17.50	1.510	-	-	-0.17	0.481	0.726
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI2	656000	3840	15.68	17.50	1.521	-	-	0.06	0.501	0.762
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Right Side	10mm	Ant 5	DSI2	656000	3840	15.71	17.50	1.510	-	-	-0.06	0.427	0.645
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	10mm	Ant 5	DSI2	656000	3840	15.68	17.50	1.521	-	-	0.12	0.400	0.608
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Top Side	10mm	Ant 5	DSI2	656000	3840	15.71	17.50	1.510	-	-	0.06	0.077	0.116
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 5	DSI2	656000	3840	15.68	17.50	1.521	-	-	0.08	0.078	0.119
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI2	633334	3500.01	15.75	17.50	1.496	-	-	0.05	0.074	0.111
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI2	633334	3500.01	15.66	17.50	1.527	-	-	-0.18	0.077	0.118
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI2	633334	3500.01	15.75	17.50	1.496	-	-	-0.09	0.412	0.616
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI2	633334	3500.01	15.66	17.50	1.527	-	-	0.05	0.426	0.650
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Right Side	10mm	Ant 5	DSI2	633334	3500.01	15.75	17.50	1.496	-	-	-0.07	0.411	0.615
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	10mm	Ant 5	DSI2	633334	3500.01	15.66	17.50	1.527	-	-	0.03	0.401	0.612
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Top Side	10mm	Ant 5	DSI2	633334	3500.01	15.75	17.50	1.496	-	-	0.01	0.075	0.112
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 5	DSI2	633334	3500.01	15.66	17.50	1.527	-	-	0.04	0.085	0.130
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Front	10mm	Ant 6	DSI2	656000	3840	16.65	18.50	1.531	-	-	-0.08	0.128	0.196
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 6	DSI2	656000	3840	16.61	18.50	1.545	-	-	-0.09	0.134	0.207
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Back	10mm	Ant 6	DSI2	656000	3840	16.65	18.50	1.531	-	-	0.07	0.372	0.570

	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 6	DSI2	656000	3840	16.61	18.50	1.545	-	-	0.09	0.441	0.681
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Left Side	10mm	Ant 6	DSI2	656000	3840	16.65	18.50	1.531	-	-	-0.04	0.234	0.358
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	10mm	Ant 6	DSI2	656000	3840	16.61	18.50	1.545	-	-	0.13	0.234	0.362
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Bottom Side	10mm	Ant 6	DSI2	656000	3840	16.65	18.50	1.531	-	-	-0.06	0.177	0.271
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Bottom Side	10mm	Ant 6	DSI2	656000	3840	16.61	18.50	1.545	-	-	-0.15	0.169	0.261
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Front	10mm	Ant 6	DSI2	633334	3500.01	16.70	18.50	1.514	-	-	0.03	0.125	0.189
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 6	DSI2	633334	3500.01	16.68	18.50	1.521	-	-	0.08	0.142	0.216
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Back	10mm	Ant 6	DSI2	633334	3500.01	16.70	18.50	1.514	-	-	0.17	0.493	0.746
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 6	DSI2	633334	3500.01	16.68	18.50	1.521	-	-	0.01	0.528	0.803
	FR1 n77	100M	QPSK	270	0	DFT-SCS-30KHz	Back	10mm	Ant 6	DSI2	633334	3500.01	16.68	18.50	1.521			0.01	0.515	0.783
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Left Side	10mm	Ant 6	DSI2	633334	3500.01	16.70	18.50	1.514	-	-	-0.18	0.438	0.663
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	10mm	Ant 6	DSI2	633334	3500.01	16.68	18.50	1.521	-	-	0.05	0.461	0.701
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Bottom Side	10mm	Ant 6	DSI2	633334	3500.01	16.70	18.50	1.514	-	-	-0.12	0.153	0.232
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Bottom Side	10mm	Ant 6	DSI2	633334	3500.01	16.68	18.50	1.521	-	-	0.15	0.160	0.243
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI4	650000	3750	18.20	19.50	1.349	-	-	0.05	0.106	0.143
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI4	650000	3750	18.04	19.50	1.400	-	-	0.15	0.102	0.143
41	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI4	650000	3750	18.20	19.50	1.349	-	-	-0.09	0.488	**0.658**
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI4	650000	3750	18.04	19.50	1.400	-	-	-0.08	0.440	0.616
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI2	650000	3750	23.44	25.00	1.432	-	-	0.08	0.396	0.567
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI2	650000	3750	23.28	25.00	1.486	-	-	-0.03	0.371	0.551
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Top Side	10mm	Ant 2	DSI2	650000	3750	23.44	25.00	1.432	-	-	0.09	0.132	0.189
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 2	DSI2	650000	3750	23.28	25.00	1.486	-	-	0.01	0.124	0.184
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI4	633334	3500.01	18.22	19.50	1.343	-	-	0.17	0.089	0.120
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI4	633334	3500.01	18.07	19.50	1.390	-	-	-0.06	0.086	0.120
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI4	633334	3500.01	18.22	19.50	1.343	-	-	0.04	0.315	0.423
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI4	633334	3500.01	18.07	19.50	1.390	-	-	0.06	0.298	0.414
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI2	633334	3500.01	23.30	25.00	1.479	-	-	0.14	0.264	0.390
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI2	633334	3500.01	23.17	25.00	1.524	-	-	0.17	0.250	0.381
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Top Side	10mm	Ant 2	DSI2	633334	3500.01	23.30	25.00	1.479	-	-	0.03	0.232	0.343
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 2	DSI2	633334	3500.01	23.17	25.00	1.524	-	-	0.01	0.239	0.364

Plot No.	Band	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)	Reported 1g SAR (W/kg)
2450MHz																
	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 7	Full	11	2462	19.31	21.00	1.476	100	1.000	-0.1	0.252	0.372
42	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 7	Full	11	2462	19.31	21.00	1.476	100	1.000	0.01	0.253	**0.373**
	WLAN2.4GHz	802.11b 1Mbps	Right Side	10mm	Ant 7	Full	11	2462	19.31	21.00	1.476	100	1.000	-0.14	0.230	0.339
	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Ant 7	Full	11	2462	19.31	21.00	1.476	100	1.000	0.09	0.158	0.233
43	Bluetooth	1Mbps	Back	10mm	Ant 7	Full	0	2402	8.5	10	1.413	76.83	1.302	0.07	0.026	**0.048**
5000MHz																
	WLAN5.2GHz	802.11a 6Mbps	Front	10mm	Ant 7	Full	44	5220	17.19	19.00	1.516	97.46	1.026	0.13	0.076	0.118
44	WLAN5.2GHz	802.11a 6Mbps	Back	10mm	Ant 7	Full	44	5220	17.19	19.00	1.516	97.46	1.026	0.02	0.138	**0.215**
	WLAN5.2GHz	802.11a 6Mbps	Right Side	10mm	Ant 7	Full	44	5220	17.19	19.00	1.516	97.46	1.026	0.03	0.079	0.123
	WLAN5.2GHz	802.11a 6Mbps	Top Side	10mm	Ant 7	Full	44	5220	17.19	19.00	1.516	97.46	1.026	0.09	0.128	0.199
	WLAN5.8GHz	802.11a 6Mbps	Front	10mm	Ant 7	Full	157	5785	17.31	19.00	1.475	97.46	1.026	0.03	0.068	0.103
45	WLAN5.8GHz	802.11a 6Mbps	Back	10mm	Ant 7	Full	157	5785	17.31	19.00	1.475	97.46	1.026	-0.06	0.256	**0.387**
	WLAN5.8GHz	802.11a 6Mbps	Right Side	10mm	Ant 7	Full	157	5785	17.31	19.00	1.475	97.46	1.026	-0.19	0.182	0.275
	WLAN5.8GHz	802.11a 6Mbps	Top Side	10mm	Ant 7	Full	157	5785	17.31	19.00	1.475	97.46	1.026	0.08	0.207	0.313

15.3 Body Worn Accessory SAR

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	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750MHz																		
	LTE Band 12	10M	QPSK	1	0	-	Front	15mm	Ant 1	DSI2	23095	707.5	24.70	25.50	1.202	0.02	0.156	0.188
	LTE Band 12	10M	QPSK	25	0	-	Front	15mm	Ant 1	DSI2	23095	707.5	23.52	24.50	1.253	-0.01	0.123	0.154
46	LTE Band 12	10M	QPSK	1	0	-	Back	15mm	Ant 1	DSI2	23095	707.5	24.70	25.50	1.202	-0.09	0.198	**0.238**
	LTE Band 12	10M	QPSK	25	0	-	Back	15mm	Ant 1	DSI2	23095	707.5	23.52	24.50	1.253	0.01	0.154	0.193
	LTE Band 12	10M	QPSK	1	0	-	Front	15mm	Ant 4	DSI2	23095	707.5	25.27	25.50	1.054	-0.1	0.087	0.092
	LTE Band 12	10M	QPSK	25	0	-	Front	15mm	Ant 4	DSI2	23095	707.5	24.27	24.50	1.054	-0.03	0.069	0.073
	LTE Band 12	10M	QPSK	1	0	-	Back	15mm	Ant 4	DSI2	23095	707.5	25.27	25.50	1.054	-0.06	0.120	0.127
	LTE Band 12	10M	QPSK	25	0	-	Back	15mm	Ant 4	DSI2	23095	707.5	24.27	24.50	1.054	0.03	0.094	0.099
	LTE Band 13	10M	QPSK	1	0	-	Front	15mm	Ant 1	DSI2	23230	782	24.61	25.50	1.227	0.08	0.141	0.173
	LTE Band 13	10M	QPSK	25	0	-	Front	15mm	Ant 1	DSI2	23230	782	23.68	24.50	1.208	-0.06	0.113	0.136
	LTE Band 13	10M	QPSK	1	0	-	Back	15mm	Ant 1	DSI2	23230	782	24.61	25.50	1.227	-0.06	0.146	0.179
	LTE Band 13	10M	QPSK	25	0	-	Back	15mm	Ant 1	DSI2	23230	782	23.68	24.50	1.208	-0.12	0.120	0.145
	LTE Band 13	10M	QPSK	1	0	-	Front	15mm	Ant 4	DSI2	23230	782	25.12	25.50	1.091	0.07	0.158	0.172
	LTE Band 13	10M	QPSK	25	0	-	Front	15mm	Ant 4	DSI2	23230	782	24.20	24.50	1.072	0.03	0.125	0.134
47	LTE Band 13	10M	QPSK	1	0	-	Back	15mm	Ant 4	DSI2	23230	782	25.12	25.50	1.091	-0.1	0.213	**0.232**
	LTE Band 13	10M	QPSK	25	0	-	Back	15mm	Ant 4	DSI2	23230	782	24.20	24.50	1.072	0.03	0.168	0.180
850MHz																		
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Front	15mm	Ant 1	DSI2	189	836.4	27.72	29.50	1.507	0.05	0.183	0.276
48	GSM850	-	-	-	-	GPRS (3 Tx slots)	Back	15mm	Ant 1	DSI2	189	836.4	27.72	29.50	1.507	-0.07	0.187	**0.282**
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Front	15mm	Ant 4	DSI2	189	836.4	29.46	29.50	1.009	0.09	0.210	0.212
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Back	15mm	Ant 4	DSI2	189	836.4	29.46	29.50	1.009	0.11	0.273	0.276
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 1	DSI2	4182	836.4	24.45	25.50	1.274	0.05	0.204	0.260
49	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 1	DSI2	4182	836.4	24.45	25.50	1.274	0.06	0.228	**0.290**
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 4	DSI2	4182	836.4	25.35	25.50	1.035	-0.19	0.201	0.208
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 4	DSI2	4182	836.4	25.35	25.50	1.035	-0.02	0.223	0.231
	LTE Band 26	15M	QPSK	1	0	-	Front	15mm	Ant 1	DSI2	26865	831.5	24.65	25.50	1.216	-0.05	0.133	0.162
	LTE Band 26	15M	QPSK	36	0	-	Front	15mm	Ant 1	DSI2	26865	831.5	23.81	24.50	1.172	-0.09	0.105	0.123
	LTE Band 26	15M	QPSK	1	0	-	Back	15mm	Ant 1	DSI2	26865	831.5	24.65	25.50	1.216	0.01	0.153	0.186
	LTE Band 26	15M	QPSK	36	0	-	Back	15mm	Ant 1	DSI2	26865	831.5	23.81	24.50	1.172	-0.17	0.119	0.139
	LTE Band 26	15M	QPSK	1	0	-	Front	15mm	Ant 4	DSI2	26865	831.5	25.34	25.50	1.038	0.07	0.146	0.151
	LTE Band 26	15M	QPSK	36	0	-	Front	15mm	Ant 4	DSI2	26865	831.5	24.39	24.50	1.026	-0.04	0.114	0.117
50	LTE Band 26	15M	QPSK	1	0	-	Back	15mm	Ant 4	DSI2	26865	831.5	25.34	25.50	1.038	0.03	0.192	**0.199**
	LTE Band 26	15M	QPSK	36	0	-	Back	15mm	Ant 4	DSI2	26865	831.5	24.39	24.50	1.026	0.09	0.149	0.153
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Front	15mm	Ant 1	DSI2	167300	836.5	24.64	25.50	1.219	0.09	0.086	0.105
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Front	15mm	Ant 1	DSI2	167300	836.5	24.53	25.50	1.250	0.05	0.100	0.125
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Back	15mm	Ant 1	DSI2	167300	836.5	24.64	25.50	1.219	-0.1	0.105	0.128
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Back	15mm	Ant 1	DSI2	167300	836.5	24.53	25.50	1.250	0.01	0.130	0.163
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Front	15mm	Ant 4	DSI2	167300	836.5	24.69	25.50	1.205	-0.13	0.094	0.113
	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Front	15mm	Ant 4	DSI2	167300	836.5	24.55	25.50	1.245	0.05	0.123	0.153
	FR1 n5	20M	QPSK	1	1	DFT-SCS-30KHz	Back	15mm	Ant 4	DSI2	167300	836.5	24.69	25.50	1.205	-0.08	0.130	0.157
51	FR1 n5	20M	QPSK	25	13	DFT-SCS-30KHz	Back	15mm	Ant 4	DSI2	167300	836.5	24.55	25.50	1.245	0.19	0.170	**0.212**
1750MHz																		
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 1	DSI2	1413	1732.6	21.52	22.50	1.253	0.07	0.194	0.243
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 1	DSI2	1413	1732.6	21.52	22.50	1.253	0.02	0.516	0.650
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 4	DSI2	1413	1732.6	24.07	25.00	1.239	-0.14	0.220	0.273
52	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 4	DSI2	1413	1732.6	24.07	25.00	1.239	-0.06	0.565	**0.700**
	LTE Band 66	20M	QPSK	1	0	-	Front	15mm	Ant 1	DSI2	132322	1745	22.78	23.50	1.180	0.01	0.249	0.294
	LTE Band 66	20M	QPSK	50	0	-	Front	15mm	Ant 1	DSI2	132322	1745	22.69	23.50	1.205	-0.1	0.201	0.242
53	LTE Band 66	20M	QPSK	1	0	-	Back	15mm	Ant 1	DSI2	132322	1745	22.78	23.50	1.180	0.08	0.665	**0.785**
	LTE Band 66	20M	QPSK	1	0	-	Back	15mm	Ant 1	DSI2	132072	1720	22.72	23.50	1.197	0.11	0.647	0.774

	LTE Band 66	20M	QPSK	1	0	-	Back	15mm	Ant 1	DSI2	132572	1770	22.63	23.50	1.222	0.07	0.632	0.772
	LTE Band 66	20M	QPSK	50	0	-	Back	15mm	Ant 1	DSI2	132322	1745	22.69	23.50	1.205	-0.03	0.554	0.668
	LTE Band 66	20M	QPSK	100	0	-	Back	15mm	Ant 1	DSI2	132322	1745	22.59	23.50	1.233	0.01	0.557	0.687
	LTE Band 66-ENDC	20M	QPSK	1	0	-	Front	15mm	Ant 2	DSI2	132322	1745	21.18	23.00	1.521	0.06	0.095	0.144
	LTE Band 66-ENDC	20M	QPSK	50	0	-	Front	15mm	Ant 2	DSI2	132322	1745	20.19	22.00	1.517	0.07	0.075	0.114
	LTE Band 66-ENDC	20M	QPSK	1	0	-	Back	15mm	Ant 2	DSI2	132322	1745	21.18	23.00	1.521	-0.17	0.154	0.234
	LTE Band 66-ENDC	20M	QPSK	50	0	-	Back	15mm	Ant 2	DSI2	132322	1745	20.19	22.00	1.517	-0.06	0.125	0.190
	LTE Band 66	20M	QPSK	1	0	-	Front	15mm	Ant 4	DSI2	132322	1745	24.28	25.00	1.180	0.08	0.209	0.247
	LTE Band 66	20M	QPSK	50	0	-	Front	15mm	Ant 4	DSI2	132322	1745	23.32	24.00	1.169	-0.05	0.169	0.198
	LTE Band 66	20M	QPSK	1	0	-	Back	15mm	Ant 4	DSI2	132322	1745	24.28	25.00	1.180	-0.02	0.614	0.725
	LTE Band 66	20M	QPSK	50	0	-	Back	15mm	Ant 4	DSI2	132322	1745	23.32	24.00	1.169	0.05	0.500	0.585
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Front	15mm	Ant 1	DSI2	349000	1745	22.58	23.50	1.236	0.08	0.207	0.256
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Front	15mm	Ant 1	DSI2	349000	1745	22.47	23.50	1.268	-0.14	0.230	0.292
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Back	15mm	Ant 1	DSI2	349000	1745	22.58	23.50	1.236	0.18	0.565	0.698
54	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Back	15mm	Ant 1	DSI2	349000	1745	22.47	23.50	1.268	0.09	0.615	**0.780**
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Front	15mm	Ant 4	DSI2	349000	1745	23.95	25.00	1.274	0.05	0.125	0.159
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Front	15mm	Ant 4	DSI2	349000	1745	23.83	25.00	1.309	-0.17	0.144	0.189
	FR1 n66	40M	QPSK	1	1	DFT-SCS-30KHz	Back	15mm	Ant 4	DSI2	349000	1745	23.95	25.00	1.274	0.03	0.421	0.536
	FR1 n66	40M	QPSK	50	28	DFT-SCS-30KHz	Back	15mm	Ant 4	DSI2	349000	1745	23.83	25.00	1.309	-0.09	0.501	0.656
1900MHz																		
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Front	15mm	Ant 1	DSI2	661	1880	24.14	26.00	1.535	0.05	0.270	0.414
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	15mm	Ant 1	DSI2	661	1880	24.14	26.00	1.535	-0.07	0.382	0.586
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Front	15mm	Ant 4	DSI2	661	1880	24.56	26.00	1.393	0.14	0.163	0.227
55	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	15mm	Ant 4	DSI2	661	1880	24.56	26.00	1.393	0.1	0.504	**0.702**
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 1	DSI2	9400	1880	23.18	24.00	1.208	0.09	0.212	0.256
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 1	DSI2	9400	1880	23.18	24.00	1.208	-0.02	0.652	0.787
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 4	DSI2	9400	1880	24.27	25.00	1.183	0.02	0.277	0.328
56	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 4	DSI2	9400	1880	24.27	25.00	1.183	-0.03	0.675	**0.799**
	LTE Band 2	20M	QPSK	1	0	-	Front	15mm	Ant 1	DSI2	18900	1880	23.32	24.00	1.169	0.08	0.292	0.341
	LTE Band 2	20M	QPSK	50	0	-	Front	15mm	Ant 1	DSI2	18900	1880	23.23	24.00	1.194	0.08	0.296	0.353
	LTE Band 2	20M	QPSK	1	0	-	Back	15mm	Ant 1	DSI2	18900	1880	23.32	24.00	1.169	-0.06	0.690	0.807
	LTE Band 2	20M	QPSK	1	0	-	Back	15mm	Ant 1	DSI2	18700	1860	23.17	24.00	1.211	0.01	0.712	0.862
	LTE Band 2	20M	QPSK	1	0	-	Back	15mm	Ant 1	DSI2	19100	1900	23.21	24.00	1.199	0.02	0.649	0.778
	LTE Band 2	20M	QPSK	50	0	-	Back	15mm	Ant 1	DSI2	18900	1880	23.23	24.00	1.194	0.18	0.692	0.826
	LTE Band 2	20M	QPSK	50	0	-	Back	15mm	Ant 1	DSI2	18700	1860	23.19	24.00	1.205	-0.09	0.709	0.854
	LTE Band 2	20M	QPSK	50	0	-	Back	15mm	Ant 1	DSI2	19100	1900	23.14	24.00	1.219	-0.12	0.639	0.779
	LTE Band 2	20M	QPSK	100	0	-	Back	15mm	Ant 1	DSI2	18900	1880	23.18	24.00	1.208	-0.09	0.684	0.826
	LTE Band 2-ENDC	20M	QPSK	1	0	-	Front	15mm	Ant 2	DSI2	18900	1880	21.15	23.00	1.531	0.03	0.069	0.106
	LTE Band 2-ENDC	20M	QPSK	50	0	-	Front	15mm	Ant 2	DSI2	18900	1880	20.31	22.00	1.476	0.01	0.057	0.084
	LTE Band 2-ENDC	20M	QPSK	1	0	-	Back	15mm	Ant 2	DSI2	18900	1880	21.15	23.00	1.531	0.05	0.083	0.127
	LTE Band 2-ENDC	20M	QPSK	50	0	-	Back	15mm	Ant 2	DSI2	18900	1880	20.31	22.00	1.476	0.01	0.069	0.102
	LTE Band 2	20M	QPSK	1	0	-	Front	15mm	Ant 4	DSI2	18900	1880	24.42	25.00	1.143	0.04	0.250	0.286
	LTE Band 2	20M	QPSK	50	0	-	Front	15mm	Ant 4	DSI2	18900	1880	23.38	24.00	1.153	-0.12	0.198	0.228
	LTE Band 2	20M	QPSK	1	0	-	Back	15mm	Ant 4	DSI2	18900	1880	24.42	25.00	1.143	0.07	0.757	0.865
57	LTE Band 2	20M	QPSK	1	0	-	Back	15mm	Ant 4	DSI2	18700	1860	24.37	25.00	1.156	-0.01	0.781	**0.903**
	LTE Band 2	20M	QPSK	1	0	-	Back	15mm	Ant 4	DSI2	19100	1900	24.38	25.00	1.153	-0.07	0.702	0.810
	LTE Band 2	20M	QPSK	50	0	-	Back	15mm	Ant 4	DSI2	18900	1880	23.38	24.00	1.153	0.04	0.601	0.693
	LTE Band 2	20M	QPSK	100	0	-	Back	15mm	Ant 4	DSI2	18900	1880	23.33	24.00	1.167	-0.04	0.604	0.705

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)	Reported 1g SAR (W/kg)
2600MHz																				
	LTE Band 7	20M	QPSK	1	0	-	Front	15mm	Ant 1	DSI2	21100	2535	24.43	25.50	1.279	-	-	-0.03	0.285	0.365
	LTE Band 7	20M	QPSK	50	0	-	Front	15mm	Ant 1	DSI2	21100	2535	23.44	24.50	1.276	-	-	0.14	0.229	0.292
	LTE Band 7	20M	QPSK	1	0	-	Back	15mm	Ant 1	DSI2	21100	2535	24.43	25.50	1.279	-	-	0.06	0.652	0.834
	LTE Band 7	20M	QPSK	1	0	-	Back	15mm	Ant 1	DSI2	20850	2510	24.40	25.50	1.288	-	-	0.03	0.606	0.781
58	LTE Band 7	20M	QPSK	1	0	-	Back	15mm	Ant 1	DSI2	21350	2560	24.37	25.50	1.297	-	-	-0.18	0.654	**0.848**
	LTE Band 7C	20M	QPSK	1	0	-	Back	15mm	Ant 1	DSI2	21100+ 21298	2535+ 2554.8	24.30	25.50	1.318	-	-	0.03	0.612	0.807
	LTE Band 7	20M	QPSK	50	0	-	Back	15mm	Ant 1	DSI2	21100	2535	23.44	24.50	1.276	-	-	0.14	0.524	0.669
	LTE Band 7	20M	QPSK	100	0	-	Back	15mm	Ant 1	DSI2	21100	2535	23.25	24.50	1.334	-	-	-0.19	0.525	0.700
	LTE Band 7-ENDC	20M	QPSK	1	0	-	Front	15mm	Ant 2	DSI2	21100	2535	21.34	23.00	1.466	-	-	0.12	0.073	0.107
	LTE Band 7-ENDC	20M	QPSK	50	0	-	Front	15mm	Ant 2	DSI2	21100	2535	20.39	22.00	1.449	-	-	-0.19	0.057	0.083
	LTE Band 7-ENDC	20M	QPSK	1	0	-	Back	15mm	Ant 2	DSI2	21100	2535	21.34	23.00	1.466	-	-	-0.08	0.346	0.507
	LTE Band 7-ENDC	20M	QPSK	50	0	-	Back	15mm	Ant 2	DSI2	21100	2535	20.39	22.00	1.449	-	-	-0.19	0.344	0.498
	LTE Band 7	20M	QPSK	1	0	-	Front	15mm	Ant 4	DSI2	21100	2535	24.40	25.50	1.288	-	-	0.11	0.227	0.292
	LTE Band 7	20M	QPSK	50	0	-	Front	15mm	Ant 4	DSI2	21100	2535	23.29	24.50	1.321	-	-	0.17	0.181	0.239
	LTE Band 7	20M	QPSK	1	0	-	Back	15mm	Ant 4	DSI2	21100	2535	24.40	25.50	1.288	-	-	-0.02	0.585	0.754
	LTE Band 7C	20M	QPSK	1	0	-	Back	15mm	Ant 4	DSI2	21100+ 21298	2535+ 2554.8	24.35	25.50	1.303	-	-	0.01	0.573	0.747
	LTE Band 7	20M	QPSK	50	0	-	Back	15mm	Ant 4	DSI2	21100	2535	23.29	24.50	1.321	-	-	0.16	0.464	0.613
	LTE Band 41	20M	QPSK	1	0	-	Front	15mm	Ant 1	DSI2	40620	2593	24.48	25.50	1.265	62.9	1.006	-0.03	0.189	0.240
	LTE Band 41	20M	QPSK	50	0	-	Front	15mm	Ant 1	DSI2	40620	2593	23.50	24.50	1.259	62.9	1.006	0.07	0.150	0.190
	LTE Band 41	20M	QPSK	1	0	-	Back	15mm	Ant 1	DSI2	40620	2593	24.48	25.50	1.265	62.9	1.006	-0.18	0.386	0.491
	LTE Band 38C	20M	QPSK	1	0	-	Back	15mm	Ant 1	DSI2	38000+ 38150	2595+ 2610	24.39	25.50	1.291	62.9	1.006	0.02	0.357	0.464
	LTE Band 41	20M	QPSK	50	0	-	Back	15mm	Ant 1	DSI2	40620	2593	23.50	24.50	1.259	62.9	1.006	0.05	0.314	0.398
	LTE Band 41-ENDC	20M	QPSK	1	0	-	Front	15mm	Ant 2	DSI2	40620	2593	21.34	23.00	1.466	62.9	1.006	-0.15	0.065	0.096
	LTE Band 41-ENDC	20M	QPSK	50	0	-	Front	15mm	Ant 2	DSI2	40620	2593	20.36	22.00	1.459	62.9	1.006	0.07	0.051	0.075
59	LTE Band 41-ENDC	20M	QPSK	1	0	-	Back	15mm	Ant 2	DSI2	40620	2593	21.34	23.00	1.466	62.9	1.006	0.01	0.400	**0.590**
	LTE Band 41-ENDC	20M	QPSK	50	0	-	Back	15mm	Ant 2	DSI2	40620	2593	20.36	22.00	1.459	62.9	1.006	0.02	0.328	0.481
	LTE Band 41	20M	QPSK	1	0	-	Front	15mm	Ant 4	DSI2	40620	2593	24.55	25.50	1.245	62.9	1.006	-0.14	0.155	0.194
	LTE Band 41	20M	QPSK	50	0	-	Front	15mm	Ant 4	DSI2	40620	2593	23.59	24.50	1.233	62.9	1.006	0.11	0.124	0.154
	LTE Band 41	20M	QPSK	1	0	-	Back	15mm	Ant 4	DSI2	40620	2593	24.55	25.50	1.245	62.9	1.006	-0.02	0.337	0.422
	LTE Band 38C	20M	QPSK	1	0	-	Back	15mm	Ant 4	DSI2	38000+ 38150	2595+ 2610	24.55	25.50	1.245	62.9	1.006	0.01	0.324	0.406
	LTE Band 41	20M	QPSK	50	0	-	Back	15mm	Ant 4	DSI2	40620	2593	23.59	24.50	1.233	62.9	1.006	0.02	0.266	0.330
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Front	15mm	Ant 1	DSI2	507000	2535	22.64	23.50	1.219	-	-	0.06	0.169	0.206
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Front	15mm	Ant 1	DSI2	507000	2535	22.61	23.50	1.227	-	-	-0.14	0.176	0.216
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Back	15mm	Ant 1	DSI2	507000	2535	22.64	23.50	1.219	-	-	-0.07	0.360	0.439
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Back	15mm	Ant 1	DSI2	507000	2535	22.61	23.50	1.227	-	-	-0.14	0.176	0.216
	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Front	15mm	Ant 4	DSI2	507000	2535	23.56	24.50	1.242	-	-	0.03	0.186	0.231
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Front	15mm	Ant 4	DSI2	507000	2535	23.53	24.50	1.250	-	-	0.15	0.198	0.248
60	FR1 n7	20M	QPSK	1	1	DFT-SCS-30KHz	Back	15mm	Ant 4	DSI2	507000	2535	23.56	24.50	1.242	-	-	0.05	0.524	**0.651**
	FR1 n7	20M	QPSK	25	13	DFT-SCS-30KHz	Back	15mm	Ant 4	DSI2	507000	2535	23.53	24.50	1.250	-	-	0.03	0.482	0.603
	FR1 n41-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Front	15mm	Ant 1	DSI2	518598	2592.99	26.17	27.00	1.211	-	-	0.01	0.276	0.334
	FR1 n41-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	15mm	Ant 1	DSI2	518598	2592.99	25.92	27.00	1.282	-	-	0.04	0.231	0.296
61	FR1 n41-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Back	15mm	Ant 1	DSI2	518598	2592.99	26.17	27.00	1.211	-	-	-0.09	0.337	**0.408**
	FR1 n41-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	15mm	Ant 1	DSI2	518598	2592.99	25.92	27.00	1.282	-	-	0.08	0.298	0.382
	FR1 n41-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Front	15mm	Ant 4	DSI2	518598	2592.99	26.08	27.00	1.236	-	-	0.07	0.126	0.156
	FR1 n41-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	15mm	Ant 4	DSI2	518598	2592.99	26.01	27.00	1.256	-	-	-0.01	0.134	0.168
	FR1 n41-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Back	15mm	Ant 4	DSI2	518598	2592.99	26.08	27.00	1.236	-	-	0.06	0.304	0.376
	FR1 n41-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	15mm	Ant 4	DSI2	518598	2592.99	26.01	27.00	1.256	-	-	-0.07	0.317	0.398
3500MHz																				
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Front	15mm	Ant 2	DSI2	656000	3840	21.61	23.50	1.545	-	-	-0.1	0.101	0.156
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	15mm	Ant 2	DSI2	656000	3840	21.60	23.50	1.549	-	-	0.03	0.109	0.169

	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Back	15mm	Ant 2	DSI2	656000	3840	21.61	23.50	1.545	-	-	0.07	0.420	0.649
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	15mm	Ant 2	DSI2	656000	3840	21.60	23.50	1.549	-	-	0.01	0.521	0.807
	FR1 n77	100M	QPSK	270	0	DFT-SCS-30KHz	Back	15mm	Ant 2	DSI2	656000	3840	21.59	23.50	1.552	-	-	0.07	0.489	0.759
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Front	15mm	Ant 2	DSI2	633334	3500.01	21.58	23.50	1.556	-	-	0.09	0.080	0.124
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	15mm	Ant 2	DSI2	633334	3500.01	21.57	23.50	1.560	-	-	0.05	0.084	0.131
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Back	15mm	Ant 2	DSI2	633334	3500.01	21.58	23.50	1.556	-	-	0.11	0.283	0.440
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	15mm	Ant 2	DSI2	633334	3500.01	21.57	23.50	1.560	-	-	-0.08	0.290	0.452
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Front	15mm	Ant 3	DSI2	656000	3840	25.83	27.00	1.309	-	-	0.14	0.197	0.258
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	15mm	Ant 3	DSI2	656000	3840	25.75	27.00	1.334	-	-	-0.13	0.202	0.269
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Back	15mm	Ant 3	DSI2	656000	3840	25.83	27.00	1.309	-	-	0.01	0.683	0.894
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	15mm	Ant 3	DSI2	656000	3840	25.75	27.00	1.334	-	-	0.04	0.687	0.916
	FR1 n77-HPUE	100M	QPSK	270	0	DFT-SCS-30KHz	Back	15mm	Ant 3	DSI2	656000	3840	25.58	27.00	1.387	-	-	-0.06	0.658	0.912
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	15mm	Ant 3	DSI2	656000	3840	23.70	24.50	1.202	-	-	0.02	0.365	0.439
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Front	15mm	Ant 3	DSI2	633334	3500.01	25.63	27.00	1.371	-	-	-0.1	0.220	0.302
	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	15mm	Ant 3	DSI2	633334	3500.01	25.52	27.00	1.406	-	-	-0.13	0.220	0.309
	FR1 n77-HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Back	15mm	Ant 3	DSI2	633334	3500.01	25.63	27.00	1.371	-	-	0.02	0.709	0.972
62	FR1 n77-HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	15mm	Ant 3	DSI2	633334	3500.01	25.52	27.00	1.406	-	-	-0.04	0.775	**1.090**
	FR1 n77-HPUE	100M	QPSK	270	0	DFT-SCS-30KHz	Back	15mm	Ant 3	DSI2	633334	3500.01	25.24	27.00	1.500	-	-	0.06	0.663	0.994
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	15mm	Ant 3	DSI2	633334	3500.01	23.43	24.50	1.279	-	-	-0.01	0.385	0.493
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Front	15mm	Ant 5	DSI2	656000	3840	15.71	17.50	1.510	-	-	0.06	0.024	0.036
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	15mm	Ant 5	DSI2	656000	3840	15.68	17.50	1.521	-	-	0.02	0.057	0.087
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Back	15mm	Ant 5	DSI2	656000	3840	15.71	17.50	1.510	-	-	0.18	0.159	0.240
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	15mm	Ant 5	DSI2	656000	3840	15.68	17.50	1.521	-	-	0.03	0.169	0.257
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Front	15mm	Ant 5	DSI2	633334	3500.01	15.75	17.50	1.496	-	-	-0.11	0.027	0.040
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	15mm	Ant 5	DSI2	633334	3500.01	15.66	17.50	1.528	-	-	-0.06	0.028	0.043
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Back	15mm	Ant 5	DSI2	633334	3500.01	15.75	17.50	1.496	-	-	0.02	0.148	0.221
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	15mm	Ant 5	DSI2	633334	3500.01	15.66	17.50	1.528	-	-	0.09	0.153	0.234
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Front	15mm	Ant 6	DSI2	656000	3840	16.65	18.50	1.531	-	-	0.05	0.073	0.112
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	15mm	Ant 6	DSI2	656000	3840	16.61	18.50	1.545	-	-	0.07	0.097	0.150
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Back	15mm	Ant 6	DSI2	656000	3840	16.65	18.50	1.531	-	-	0.03	0.181	0.277
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	15mm	Ant 6	DSI2	656000	3840	16.61	18.50	1.545	-	-	0.06	0.169	0.261
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Front	15mm	Ant 6	DSI2	633334	3500.01	16.70	18.50	1.514	-	-	0.06	0.097	0.147
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	15mm	Ant 6	DSI2	633334	3500.01	16.68	18.50	1.521	-	-	-0.1	0.089	0.135
	FR1 n77	100M	QPSK	1	137	DFT-SCS-30KHz	Back	15mm	Ant 6	DSI2	633334	3500.01	16.70	18.50	1.514	-	-	0.05	0.325	0.492
	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	15mm	Ant 6	DSI2	633334	3500.01	16.68	18.50	1.521	-	-	-0.08	0.308	0.468
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Front	15mm	Ant 2	DSI2	650000	3750	23.44	25.00	1.432	-	-	-0.17	0.088	0.126
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Front	15mm	Ant 2	DSI2	650000	3750	23.28	25.00	1.486	-	-	0.06	0.096	0.143
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	15mm	Ant 2	DSI2	650000	3750	23.44	25.00	1.432	-	-	-0.18	0.361	0.517
63	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	15mm	Ant 2	DSI2	650000	3750	23.28	25.00	1.486	-	-	0.09	0.403	**0.599**
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Front	15mm	Ant 2	DSI2	633334	3500.01	23.30	25.00	1.479	-	-	0.02	0.082	0.121
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Front	15mm	Ant 2	DSI2	633334	3500.01	23.17	25.00	1.524	-	-	-0.19	0.085	0.130
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	15mm	Ant 2	DSI2	633334	3500.01	23.30	25.00	1.479	-	-	0.02	0.227	0.336
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	15mm	Ant 2	DSI2	633334	3500.01	23.17	25.00	1.524	-	-	-0.08	0.233	0.355

Plot No.	Band	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)	Reported 1g SAR (W/kg)
2450MHz																
	WLAN2.4GHz	802.11b 1Mbps	Front	15mm	Ant 7	DSI2	11	2462	19.31	21.00	1.476	100	1.000	0.02	0.130	0.192
64	WLAN2.4GHz	802.11b 1Mbps	Back	15mm	Ant 7	DSI2	11	2462	19.31	21.00	1.476	100	1.000	0.08	0.142	**0.210**
65	Bluetooth	1Mbps	Back	15mm	Ant 7	DSI2	0	2402	8.5	10	1.413	76.83	1.302	0.09	0.0025	0.005
5000MHz																
	WLAN5.3GHz	802.11a 6Mbps	Front	15mm	Ant 7	DSI2	56	5280	17.23	19.00	1.503	97.46	1.026	0.16	0.056	0.086
66	WLAN5.3GHz	802.11a 6Mbps	Back	15mm	Ant 7	DSI2	56	5280	17.23	19.00	1.503	97.46	1.026	-0.05	0.106	**0.163**
	WLAN5.5GHz	802.11a 6Mbps	Front	15mm	Ant 7	DSI2	144	5720	17.22	19.00	1.507	97.46	1.026	0.03	0.103	0.159
67	WLAN5.5GHz	802.11a 6Mbps	Back	15mm	Ant 7	DSI2	144	5720	17.22	19.00	1.507	97.46	1.026	0.08	0.141	**0.218**
	WLAN5.8GHz	802.11a 6Mbps	Front	15mm	Ant 7	DSI2	157	5785	17.31	19.00	1.476	97.46	1.026	0.02	0.066	0.100
68	WLAN5.8GHz	802.11a 6Mbps	Back	15mm	Ant 7	DSI2	157	5785	17.31	19.00	1.476	97.46	1.026	-0.06	0.184	**0.279**

15.4 Product Specific SAR

Plot No.	Band	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 10g SAR (W/kg)	Reported 10g SAR (W/kg)
5000MHz																
	WLAN5.3GHz	802.11a 6Mbps	Front	0mm	Ant 7	Full	56	5280	17.23	19.00	1.503	97.46	1.026	0.02	0.284	0.438
	WLAN5.3GHz	802.11a 6Mbps	Back	0mm	Ant 7	Full	56	5280	17.23	19.00	1.503	97.46	1.026	0.06	0.362	0.558
	WLAN5.3GHz	802.11a 6Mbps	Right Side	0mm	Ant 7	Full	56	5280	17.23	19.00	1.503	97.46	1.026	-0.03	0.196	0.302
69	WLAN5.3GHz	802.11a 6Mbps	Top Side	0mm	Ant 7	Full	56	5280	17.23	19.00	1.503	97.46	1.026	0.15	0.603	**0.930**
	WLAN5.5GHz	802.11a 6Mbps	Front	0mm	Ant 7	Full	144	5720	17.22	19.00	1.506	97.46	1.026	-0.08	0.131	0.202
	WLAN5.5GHz	802.11a 6Mbps	Back	0mm	Ant 7	Full	144	5720	17.22	19.00	1.506	97.46	1.026	-0.05	0.276	0.426
	WLAN5.5GHz	802.11a 6Mbps	Right Side	0mm	Ant 7	Full	144	5720	17.22	19.00	1.506	97.46	1.026	-0.08	0.188	0.290
70	WLAN5.5GHz	802.11a 6Mbps	Top Side	0mm	Ant 7	Full	144	5720	17.22	19.00	1.506	97.46	1.026	-0.01	0.477	**0.737**

15.5 Repeated SAR Measurement

<1g>

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	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI1	18700	1860	19.75	20.50	1.189	-	-	-0.08	0.858	1	1.020
2nd	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI1	18700	1860	19.75	20.50	1.189	-	-	0.03	0.824	1.041	0.979
1st	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 1	DSI3	1413	1732.6	20.09	21.00	1.233	-	-	-0.11	0.884	1	1.090
2nd	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 1	DSI3	1413	1732.6	20.09	21.00	1.233	-	-	0.02	0.854	1.035	1.053

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 Handset			
		Head	Body-worn	Hotspot	Product Specific
1.	WWAN + WLAN2.4GHz	Yes	Yes	Yes	Yes
2.	WWAN + WLAN5GHz	Yes	Yes	Yes	Yes
3.	WWAN + Bluetooth	Yes	Yes	Yes	Yes
4.	Bluetooth + WLAN5GHz	Yes	Yes	Yes	Yes
5.	WWAN + Bluetooth + WLAN5GHz	Yes	Yes	Yes	Yes

General Note:

1. This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. for 3rd-party VoIP) and LTE supports VoLTE operation.
2. WWAN above includes 5G NR bands.
3. EN-DC SAR summed the standalone 5GNR SAR and LTE standalone SAR more conservatively.
4. EUT will choose each GSM, WCDMA, LTE and 5GNR according to the network signal condition; therefore, they will not operate simultaneously at any moment.
5. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.
6. This device 2.4GHz WLAN/ 5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WLAN Direct (GC/GO), and 5.3GHz / 5.5GHz supports WLAN Direct (GC only).
7. WLAN2.4GHz and Bluetooth share the same antenna, so can't transmit simultaneously.
8. According to the characteristic of EUT, WLAN5GHz and Bluetooth can transmit simultaneously.
9. According to the EUT character, WLAN 2.4GHz and WLAN 5GHz cannot transmit simultaneously.
10. For simultaneously analysis, since the SAR summation of 3 transmitters can cover others combination of 2 transmitters, therefore in this section did not additional to evaluate 2TX combination of simultaneously transmission.
11. The worst case 5 GHz WLAN SAR for each configuration was used for SAR summation.
12. Chose the worst zoom scan SAR of WLAN correspondingly for co-located with WWAN analysis.
13. The reported SAR summation is calculated based on the same configuration and test position.
14. 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 and 10g SAR < 4.0W/kg.

16.1 Head Exposure Conditions

WWAN Band	Exposure Position	1	2	3	4	1+2	1+3+4
		WWAN	WLAN2.4GHz Ant 7	WLAN5GHz Ant 7	Bluetooth Ant 7	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)
WWAN All Bands	Right Cheek	1.090	0.215	0.313	0.182	1.31	**1.59**
	Right Tilted	1.020	0.141	0.308	0.182	1.16	1.51
	Left Cheek	0.797	0.492	0.604	0.182	1.29	1.58
	Left Tilted	0.903	0.342	0.492	0.182	1.25	1.58

<Inter UL CA Mode>

WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	WWAN	WLAN2.4GHz Ant 7	WLAN5GHz Ant 7	Bluetooth Ant 7	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 Band66 Ant1(LTE Band4)	LTE Band7 Ant2	Right Cheek	0.109	0.177	0.215	0.313	0.182	0.50	0.78
		Right Tilted	0.067	0.070	0.141	0.308	0.182	0.28	0.63
		Left Cheek	0.135	0.036	0.492	0.604	0.182	0.66	0.96
		Left Tilted	0.057	0.043	0.342	0.492	0.182	0.44	0.78

<5GNR EN-DC Mode>

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	FR1	WLAN2.4GHz Ant 7	WLAN5GHz Ant 7	Bluetooth Ant 7	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 Band66 Ant2	FR1 n66 Ant1	Right Cheek	0.180	0.104	0.215	0.313	0.182	0.50	0.78
		Right Tilted	0.078	0.077	0.141	0.308	0.182	0.30	0.65
		Left Cheek	0.118	0.147	0.492	0.604	0.182	0.76	1.05
		Left Tilted	0.096	0.065	0.342	0.492	0.182	0.50	0.84
LTE Band41 Ant2	FR1 n41 Ant1	Right Cheek	0.540	0.380	0.215	0.313	0.182	1.14	1.42
		Right Tilted	0.231	0.230	0.141	0.308	0.182	0.60	0.95
		Left Cheek	0.152	0.191	0.492	0.604	0.182	0.84	1.13
		Left Tilted	0.214	0.180	0.342	0.492	0.182	0.74	1.07
LTE Band7 Ant2	FR1 n7 Ant1	Right Cheek	0.177	0.133	0.215	0.313	0.182	0.53	0.81
		Right Tilted	0.070	0.119	0.141	0.308	0.182	0.33	0.68
		Left Cheek	0.036	0.128	0.492	0.604	0.182	0.66	0.95
		Left Tilted	0.043	0.082	0.342	0.492	0.182	0.47	0.80
LTE Band2 Ant2	FR1 n77 Ant3 (FR1 n78)	Right Cheek	0.126	0.516	0.215	0.313	0.182	0.86	1.14
		Right Tilted	0.173	0.516	0.141	0.308	0.182	0.83	1.18
		Left Cheek	0.220	0.516	0.492	0.604	0.182	1.23	1.52
		Left Tilted	0.168	0.516	0.342	0.492	0.182	1.03	1.36
LTE Band7 Ant2	FR1 n66 Ant1	Right Cheek	0.177	0.104	0.215	0.313	0.182	0.50	0.78
		Right Tilted	0.070	0.077	0.141	0.308	0.182	0.29	0.64
		Left Cheek	0.036	0.147	0.492	0.604	0.182	0.68	0.97
		Left Tilted	0.043	0.065	0.342	0.492	0.182	0.45	0.78
LTE Band2 Ant2	FR1 n66 Ant1	Right Cheek	0.126	0.104	0.215	0.313	0.182	0.45	0.73
		Right Tilted	0.173	0.077	0.141	0.308	0.182	0.39	0.74
		Left Cheek	0.220	0.147	0.492	0.604	0.182	0.86	1.15
		Left Tilted	0.168	0.065	0.342	0.492	0.182	0.58	0.91
LTE Band26 Ant1(LTE Band5)	FR1 n7 Ant4	Right Cheek	0.122	0.743	0.215	0.313	0.182	1.08	1.36
		Right Tilted	0.069	0.899	0.141	0.308	0.182	1.11	1.46
		Left Cheek	0.156	0.514	0.492	0.604	0.182	1.16	1.46
		Left Tilted	0.099	0.642	0.342	0.492	0.182	1.08	1.42
LTE Band7 Ant2	FR1 n5 Ant4	Right Cheek	0.177	0.500	0.215	0.313	0.182	0.89	1.17
		Right Tilted	0.070	0.473	0.141	0.308	0.182	0.68	1.03
		Left Cheek	0.036	0.489	0.492	0.604	0.182	1.02	1.31
		Left Tilted	0.043	0.580	0.342	0.492	0.182	0.97	1.30
LTE Band7 Ant2	FR1 n77 Ant3 (FR1 n78)	Right Cheek	0.177	0.516	0.215	0.313	0.182	0.91	1.19
		Right Tilted	0.070	0.516	0.141	0.308	0.182	0.73	1.08
		Left Cheek	0.036	0.516	0.492	0.604	0.182	1.04	1.34
		Left Tilted	0.043	0.516	0.342	0.492	0.182	0.90	1.23
LTE Band41 Ant2(LTE Band38)	FR1 n77 Ant3 (FR1 n78)	Right Cheek	0.540	0.516	0.215	0.313	0.182	1.27	1.55
		Right Tilted	0.231	0.516	0.141	0.308	0.182	0.89	1.24
		Left Cheek	0.152	0.516	0.492	0.604	0.182	1.16	1.45
		Left Tilted	0.214	0.516	0.342	0.492	0.182	1.07	1.40
LTE Band66 Ant2	FR1 n77 Ant3 (FR1 n78)	Right Cheek	0.180	0.516	0.215	0.313	0.182	0.91	1.19
		Right Tilted	0.078	0.516	0.141	0.308	0.182	0.74	1.08
		Left Cheek	0.118	0.516	0.492	0.604	0.182	1.13	1.42
		Left Tilted	0.096	0.516	0.342	0.492	0.182	0.95	1.29
LTE Band26 Ant1(LTE Band5)	FR1 n77 Ant3 (FR1 n78)	Right Cheek	0.122	0.516	0.215	0.313	0.182	0.85	1.13
		Right Tilted	0.069	0.516	0.141	0.308	0.182	0.73	1.08
		Left Cheek	0.156	0.516	0.492	0.604	0.182	1.16	1.46
		Left Tilted	0.099	0.516	0.342	0.492	0.182	0.96	1.29

16.2 Hotspot Exposure Conditions

WWAN Band	Exposure Position	1	2	3	4	1+2	1+3+4
		WWAN	WLAN2.4GHz Ant 7	WLAN5GHz Ant 7	Bluetooth Ant 7	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)
WWAN All Bands	Front	0.407	0.372	0.118	0.048	0.78	0.57
	Back	0.888	0.373	0.387	0.048	1.26	1.32
	Left side	1.060			0.048	1.06	1.11
	Right side	0.645	0.339	0.275	0.048	0.98	0.97
	Top side	0.844	0.233	0.313	0.048	1.08	1.21
	Bottom side	1.090			0.048	1.09	1.14

<Inter UL CA Mode>

WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	WWAN	WLAN2.4GHz Ant 7	WLAN5GHz Ant 7	Bluetooth Ant 7	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 Band66 Ant1(LTE Band4)	LTE Band7 Ant2	Front	0.291	0.076	0.372	0.118	0.048	0.74	0.53
		Back	0.605	0.408	0.373	0.387	0.048	1.39	1.45
		Left side	0.146	1.060			0.048	1.21	1.25
		Right side	0.227		0.339	0.275	0.048	0.57	0.55
		Top side		0.415	0.233	0.313	0.048	0.65	0.78
		Bottom side	1.028				0.048	1.03	1.08

<5GNR EN-DC Mode>

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	FR1	WLAN2.4GHz Ant 7	WLAN5GHz Ant 7	Bluetooth Ant 7	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 Band66 Ant2	FR1 n66 Ant1	Front	0.136	0.278	0.372	0.118	0.048	0.79	0.58
		Back	0.314	0.731	0.373	0.387	0.048	1.42	1.48
		Left side	0.371	0.104			0.048	0.48	0.52
		Right side		0.166	0.339	0.275	0.048	0.51	0.49
		Top side	0.284		0.233	0.313	0.048	0.52	0.65
		Bottom side		1.064			0.048	1.06	1.11
LTE Band41 Ant2	FR1 n41 Ant1	Front	0.085	0.151	0.372	0.118	0.048	0.61	0.40
		Back	0.430	0.218	0.373	0.387	0.048	1.02	1.08
		Left side	0.970	0.082			0.048	1.05	1.10
		Right side		0.205	0.339	0.275	0.048	0.54	0.53
		Top side	0.566		0.233	0.313	0.048	0.80	0.93
		Bottom side		0.571			0.048	0.57	0.62
LTE Band7 Ant2	FR1 n7 Ant1	Front	0.076	0.164	0.372	0.118	0.048	0.61	0.41
		Back	0.408	0.355	0.373	0.387	0.048	1.14	1.20
		Left side	1.060	0.176			0.048	1.24	1.28
		Right side		0.160	0.339	0.275	0.048	0.50	0.48
		Top side	0.415		0.233	0.313	0.048	0.65	0.78
		Bottom side		0.690			0.048	0.69	0.74
LTE Band2 Ant2	FR1 n77 Ant3 (FR1 n78)	Front	0.070	0.150	0.372	0.118	0.048	0.59	0.39
		Back	0.094	0.557	0.373	0.387	0.048	1.02	1.09
		Left side	0.144				0.048	0.14	0.19
		Right side		0.282	0.339	0.275	0.048	0.62	0.61
		Top side	0.254	0.601	0.233	0.313	0.048	1.09	1.22
		Bottom side					0.048	0.00	0.05
LTE Band7 Ant2	FR1 n66 Ant1	Front	0.076	0.278	0.372	0.118	0.048	0.73	0.52
		Back	0.408	0.731	0.373	0.387	0.048	**1.51**	1.57
		Left side	1.060	0.104			0.048	1.16	1.21
		Right side		0.166	0.339	0.275	0.048	0.51	0.49
		Top side	0.415		0.233	0.313	0.048	0.65	0.78
		Bottom side		1.064			0.048	1.06	1.11
LTE Band2 Ant2	FR1 n66 Ant1	Front	0.070	0.278	0.372	0.118	0.048	0.72	0.51
		Back	0.094	0.731	0.373	0.387	0.048	1.20	1.26
		Left side	0.144	0.104			0.048	0.25	0.30
		Right side		0.166	0.339	0.275	0.048	0.51	0.49
		Top side	0.254		0.233	0.313	0.048	0.49	0.62
		Bottom side		1.064			0.048	1.06	1.11
LTE Band26 Ant1(LTE Band5)	FR1 n7 Ant4	Front	0.156	0.153	0.372	0.118	0.048	0.68	0.48
		Back	0.311	0.438	0.373	0.387	0.048	1.12	1.18
		Left side	0.150	0.169			0.048	0.32	0.37
		Right side	0.120		0.339	0.275	0.048	0.46	0.44
		Top side		0.714	0.233	0.313	0.048	0.95	1.08
		Bottom side	0.164				0.048	0.16	0.21
LTE Band7 Ant2	FR1 n5 Ant4	Front	0.076	0.296	0.372	0.118	0.048	0.74	0.54
		Back	0.408	0.451	0.373	0.387	0.048	1.23	1.29
		Left side	1.060	0.111			0.048	1.17	1.22
		Right side			0.339	0.275	0.048	0.34	0.32
		Top side	0.415	0.238	0.233	0.313	0.048	0.89	1.01
		Bottom side					0.048	0.00	0.05
LTE Band7 Ant2	FR1 n77 Ant3 (FR1 n78)	Front	0.076	0.150	0.372	0.118	0.048	0.60	0.39
		Back	0.408	0.557	0.373	0.387	0.048	1.34	1.40
		Left side	1.060				0.048	1.06	1.11
		Right side		0.282	0.339	0.275	0.048	0.62	0.61

		Top side	0.415	0.601	0.233	0.313	0.048	1.25	1.38
		Bottom side					0.048	0.00	0.05
LTE Band41 Ant2(LTE Band38)	FR1 n77 Ant3 (FR1 n78)	Front	0.085	0.150	0.372	0.118	0.048	0.61	0.40
		Back	0.430	0.557	0.373	0.387	0.048	1.36	1.42
		Left side	0.970				0.048	0.97	1.02
		Right side		0.282	0.339	0.275	0.048	0.62	0.61
		Top side	0.566	0.601	0.233	0.313	0.048	1.40	1.53
		Bottom side					0.048	0.00	0.05
LTE Band66 Ant2	FR1 n77 Ant3 (FR1 n78)	Front	0.136	0.150	0.372	0.118	0.048	0.66	0.45
		Back	0.314	0.557	0.373	0.387	0.048	1.24	1.31
		Left side	0.371				0.048	0.37	0.42
		Right side		0.282	0.339	0.275	0.048	0.62	0.61
		Top side	0.284	0.601	0.233	0.313	0.048	1.12	1.25
		Bottom side					0.048	0.00	0.05
LTE Band26 Ant1(LTE Band5)	FR1 n77 Ant3 (FR1 n78)	Front	0.156	0.150	0.372	0.118	0.048	0.68	0.47
		Back	0.311	0.557	0.373	0.387	0.048	1.24	1.30
		Left side	0.150				0.048	0.15	0.20
		Right side	0.120	0.282	0.339	0.275	0.048	0.74	0.73
		Top side		0.601	0.233	0.313	0.048	0.83	0.96
		Bottom side	0.164				0.048	0.16	0.21

16.3 Body-Worn Accessory Exposure Conditions

WWAN Band	Exposure Position	1	2	3	4	1+2	1+3+4
		WWAN	WLAN2.4GHz Ant 7	WLAN5GHz Ant 7	Bluetooth Ant 7	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)
WWAN All Bands	Front	0.414	0.192	0.159	0.005	0.61	0.58
	Back	1.090	0.210	0.279	0.005	1.30	1.37

<Inter UL CA Mode>

WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	WWAN	WLAN2.4GHz Ant 7	WLAN5GHz Ant 7	Bluetooth Ant 7	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 Band66 Ant1(LTE Band4)	LTE Band7 Ant2	Front	0.294	0.107	0.192	0.159	0.005	0.59	0.57
		Back	0.785	0.507	0.210	0.279	0.005	1.50	1.58

<5GNR EN-DC Mode>

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	FR1	WLAN2.4GHz Ant 7	WLAN5GHz Ant 7	Bluetooth Ant 7	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 Band66 Ant2	FR1 n66 Ant1	Front	0.144	0.292	0.192	0.159	0.005	0.63	0.60
		Back	0.234	0.780	0.210	0.279	0.005	1.22	1.30
LTE Band41 Ant2	FR1 n41 Ant1	Front	0.096	0.334	0.192	0.159	0.005	0.62	0.59
		Back	0.590	0.408	0.210	0.279	0.005	1.21	1.28
LTE Band7 Ant2	FR1 n7 Ant1	Front	0.107	0.216	0.192	0.159	0.005	0.52	0.49
		Back	0.522	0.480	0.210	0.279	0.005	1.21	1.29
LTE Band2 Ant2	FR1 n77 Ant3 (FR1 n78)	Front	0.106	0.493	0.192	0.159	0.005	0.79	0.76
		Back	0.127	0.493	0.210	0.279	0.005	0.83	0.90
LTE Band7 Ant2	FR1 n66 Ant1	Front	0.107	0.292	0.192	0.159	0.005	0.59	0.56
		Back	0.522	0.780	0.210	0.279	0.005	1.51	1.59
LTE Band2 Ant2	FR1 n66 Ant1	Front	0.106	0.292	0.192	0.159	0.005	0.59	0.56
		Back	0.127	0.780	0.210	0.279	0.005	1.12	1.19
LTE Band26 Ant1(LTE Band5)	FR1 n7 Ant4	Front	0.162	0.248	0.192	0.159	0.005	0.60	0.57
		Back	0.186	0.651	0.210	0.279	0.005	1.05	1.12
LTE Band7 Ant2	FR1 n5 Ant4	Front	0.107	0.153	0.192	0.159	0.005	0.45	0.42
		Back	0.522	0.212	0.210	0.279	0.005	0.94	1.02
LTE Band7 Ant2	FR1 n77 Ant3 (FR1 n78)	Front	0.107	0.493	0.192	0.159	0.005	0.79	0.76
		Back	0.522	0.493	0.210	0.279	0.005	1.23	1.30
LTE Band41 Ant2(LTE Band38)	FR1 n77 Ant3 (FR1 n78)	Front	0.096	0.493	0.192	0.159	0.005	0.78	0.75
		Back	0.590	0.493	0.210	0.279	0.005	1.29	1.37
LTE Band66 Ant2	FR1 n77 Ant3 (FR1 n78)	Front	0.144	0.493	0.192	0.159	0.005	0.83	0.80
		Back	0.234	0.493	0.210	0.279	0.005	0.94	1.01
LTE Band26 Ant1(LTE Band5)	FR1 n77 Ant3 (FR1 n78)	Front	0.162	0.493	0.192	0.159	0.005	0.85	0.82
		Back	0.186	0.493	0.210	0.279	0.005	0.89	0.96

Test Engineer : Bruce Li, Martin Li, 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 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.

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

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

[8] FCC KDB 648474 D04 v01r03, “SAR Evaluation Considerations for Wireless Handsets”, Oct 2015.

[9] FCC KDB 248227 D01 v02r02, “SAR Guidance for IEEE 802.11 (WiFi) Transmitters”, Oct 2015.

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

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

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

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

[14] FCC KDB 941225 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 2015.

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

Appendix A. Plots of System Performance Check

The plots are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2022/2/3

System Check_Head_750MHz

DUT: D750V3 - SN:1087

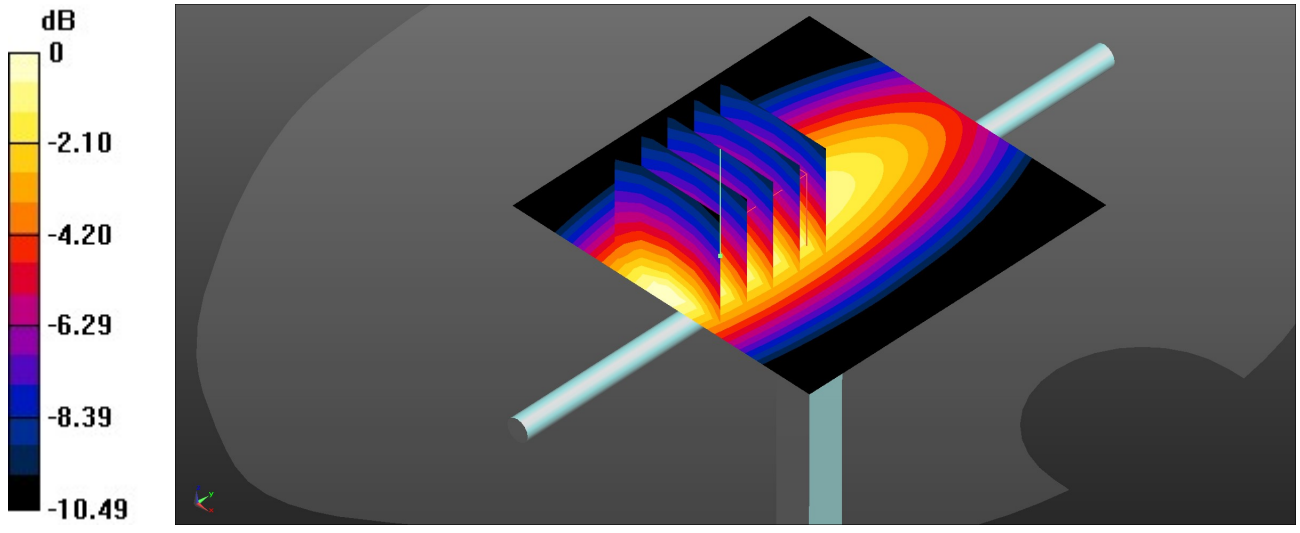
Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium: HSL_750 Medium parameters used: f = 750 MHz; σ = 0.916 S/m; ε_r = 43.405; ρ = 1000 kg/m^3

Ambient Temperature：23.1 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(10.59, 10.59, 10.59); Calibrated: 2021/4/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2021/9/21
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-2022
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Pin=50mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.572 W/kg

Pin=50mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.19 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.640 W/kg
SAR(1 g) = 0.422 W/kg; SAR(10 g) = 0.281 W/kg
Maximum value of SAR (measured) = 0.565 W/kg



0 dB = 0.565 W/kg = -2.48 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2022/2/5

System Check_Head_835MHz

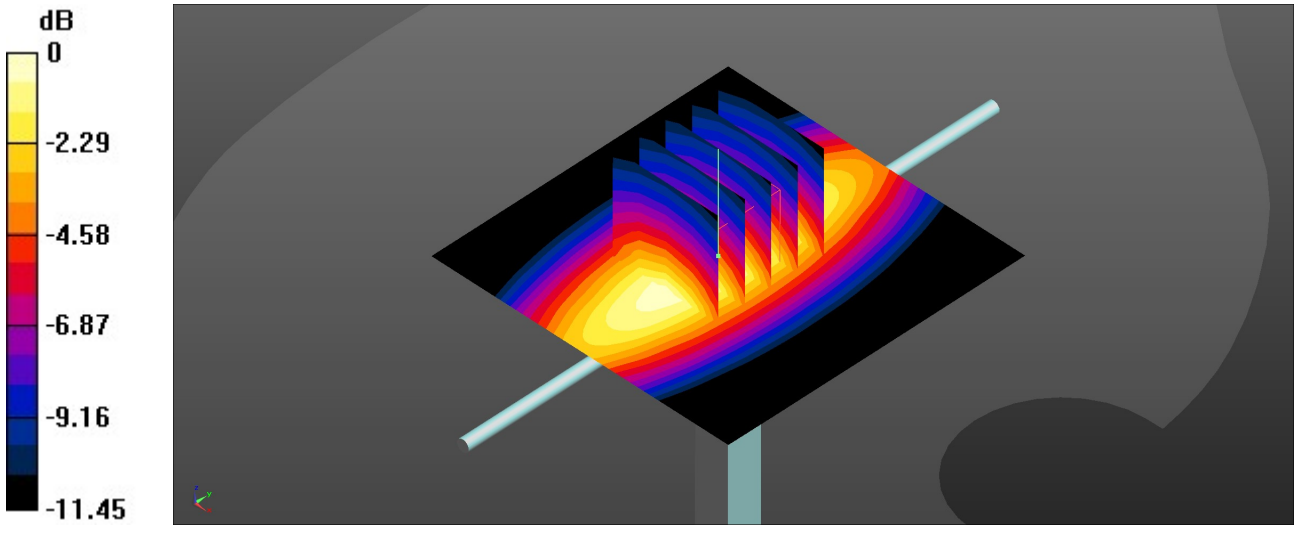
DUT: D835V2 - SN:4d258

Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 835 MHz; σ = 0.93 S/m; ε_r = 40.91; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(10.27, 10.27, 10.27); Calibrated: 2021/4/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2021/9/21
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-2022
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Pin=50mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.942 W/kg

Pin=50mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.06 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.09 W/kg
SAR(1 g) = 0.487 W/kg; SAR(10 g) = 0.315 W/kg
Maximum value of SAR (measured) = 0.941 W/kg



0 dB = 0.941 W/kg = -0.26 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2022/2/7

System Check_Head_1750MHz

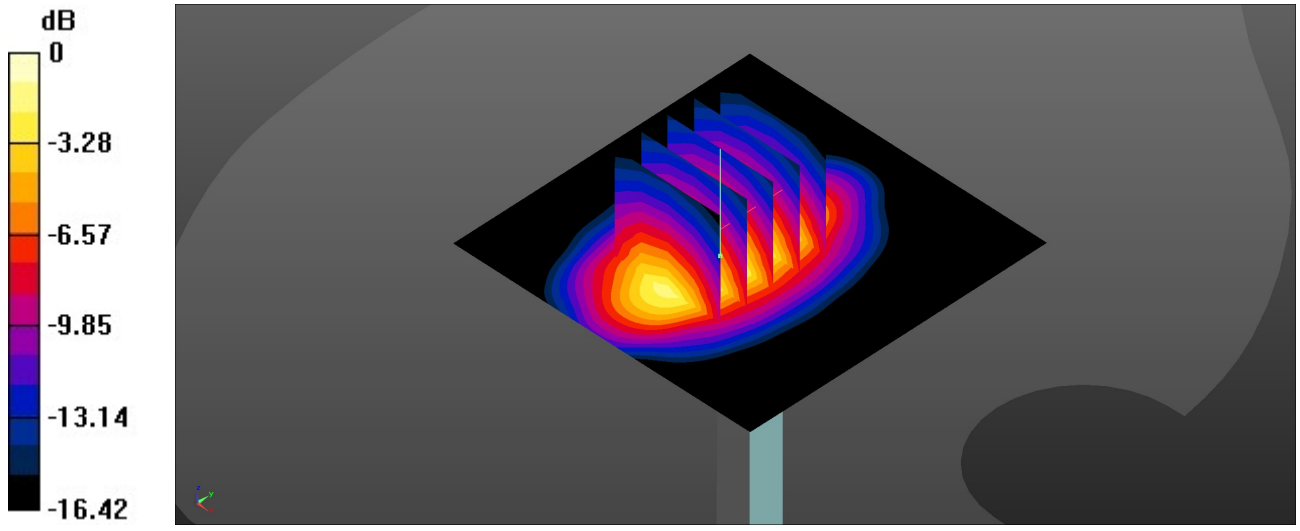
DUT: D1750V2 - SN:1090

Communication System: UID 0, CW (0); Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: HSL_1750 Medium parameters used: f = 1750 MHz; σ = 1.401 S/m; ε_r = 40.508; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.9, 8.9, 8.9); Calibrated: 2021/4/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2021/9/21
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-2022
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Pin=50mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.95 W/kg

Pin=50mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 44.14 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 3.44 W/kg
SAR(1 g) = 1.91 W/kg; SAR(10 g) = 1.02 W/kg
Maximum value of SAR (measured) = 2.92 W/kg



0 dB = 2.92 W/kg = 4.65 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2022/2/9

System Check_Head_1900MHz

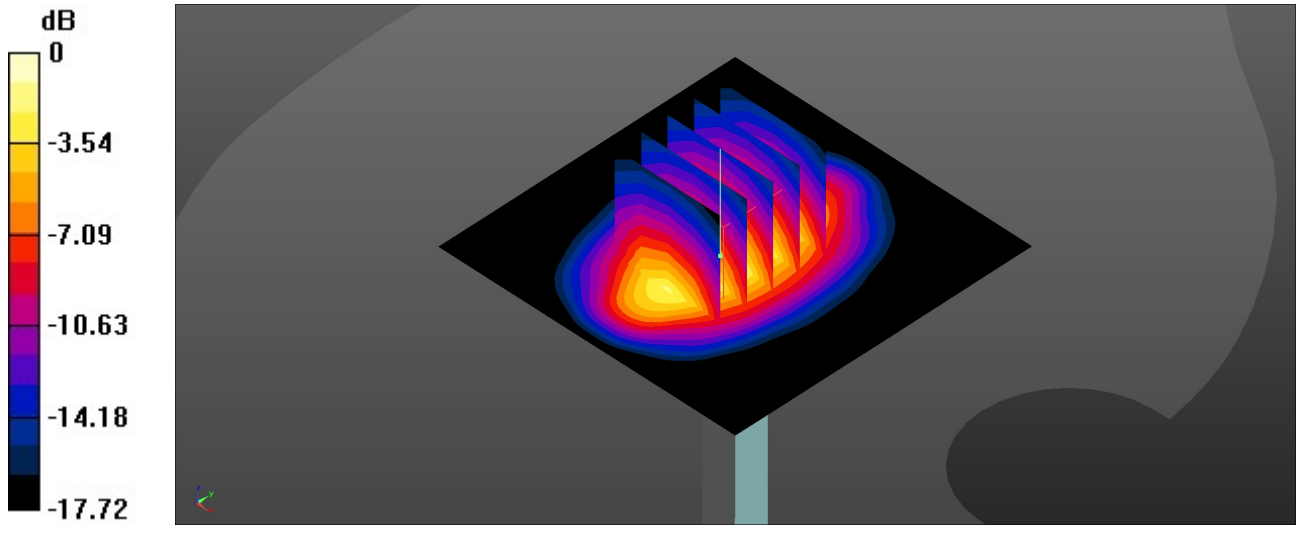
DUT: D1900V2 - SN:5d170

Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1900 MHz; σ = 1.427 S/m; ε_r = 38.737; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.61, 8.61, 8.61); Calibrated: 2021/4/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2021/9/21
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-2022
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Pin=50mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.12 W/kg

Pin=50mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 47.38 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 3.71 W/kg
SAR(1 g) = 1.89 W/kg; SAR(10 g) = 0.982 W/kg
Maximum value of SAR (measured) = 3.10 W/kg



0 dB = 3.10 W/kg = 4.91 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2022/2/11

System Check_Head_2450MHz

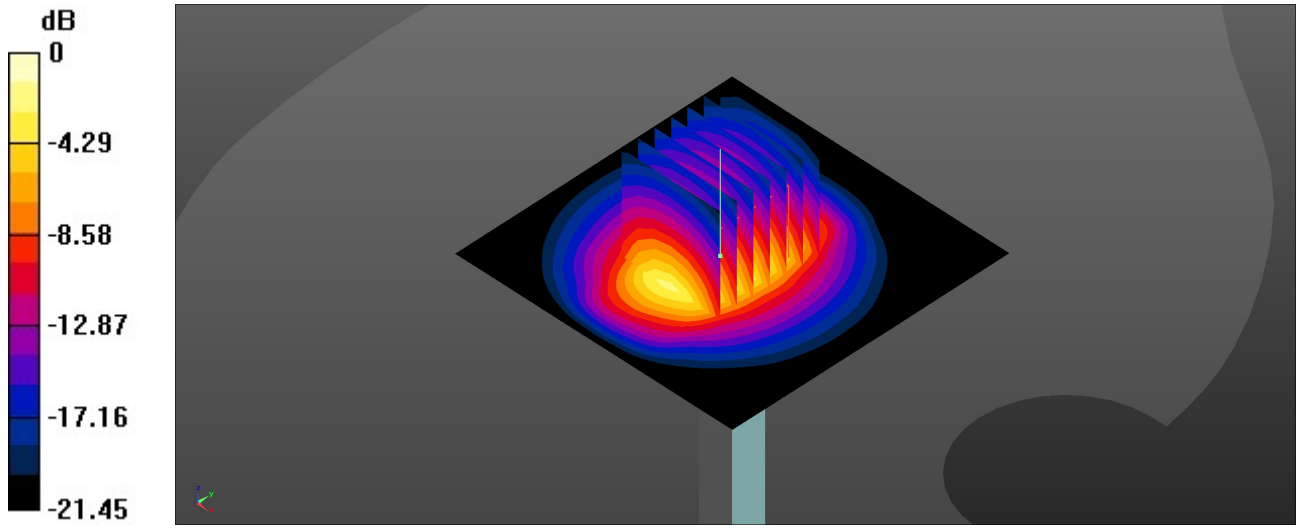
DUT: D2450V2 - SN:908

Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: HSL_2450 Medium parameters used: f = 2450 MHz; σ = 1.806 S/m; ε_r = 38.608; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.86, 7.86, 7.86); Calibrated: 2021/4/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2021/9/21
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-2022
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Pin=50mW/Area Scan (71x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 3.84 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 47.97 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 4.77 W/kg
SAR(1 g) = 2.45 W/kg; SAR(10 g) = 1.13 W/kg
Maximum value of SAR (measured) = 3.93 W/kg



0 dB = 3.93 W/kg = 5.94 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2022/2/13

System Check_Head_2600MHz

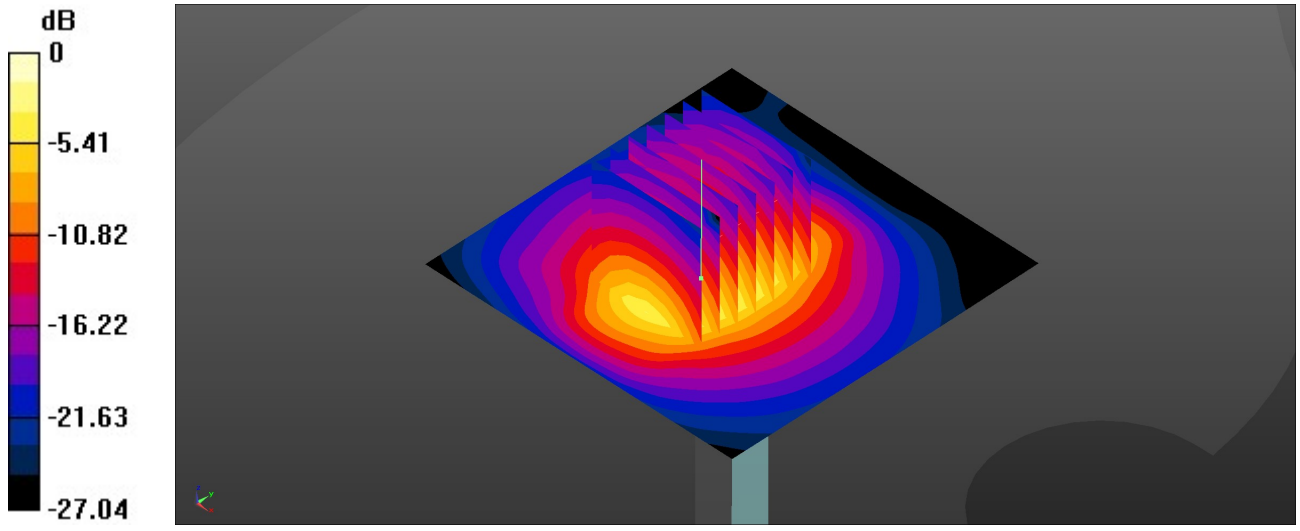
DUT: D2600V2 - SN:1061

Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: HSL_2600 Medium parameters used: f = 2600 MHz; σ = 1.88 S/m; ε_r = 39.148; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.66, 7.66, 7.66); Calibrated: 2021/4/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2021/9/21
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-2022
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Pin=50mW/Area Scan (71x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 3.91 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 45.44 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 5.03 W/kg
SAR(1 g) = 2.65 W/kg; SAR(10 g) = 1.25 W/kg
Maximum value of SAR (measured) = 4.07 W/kg



0 dB = 4.07 W/kg = 6.10 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2022/2/15

System Check_Head_3500MHz

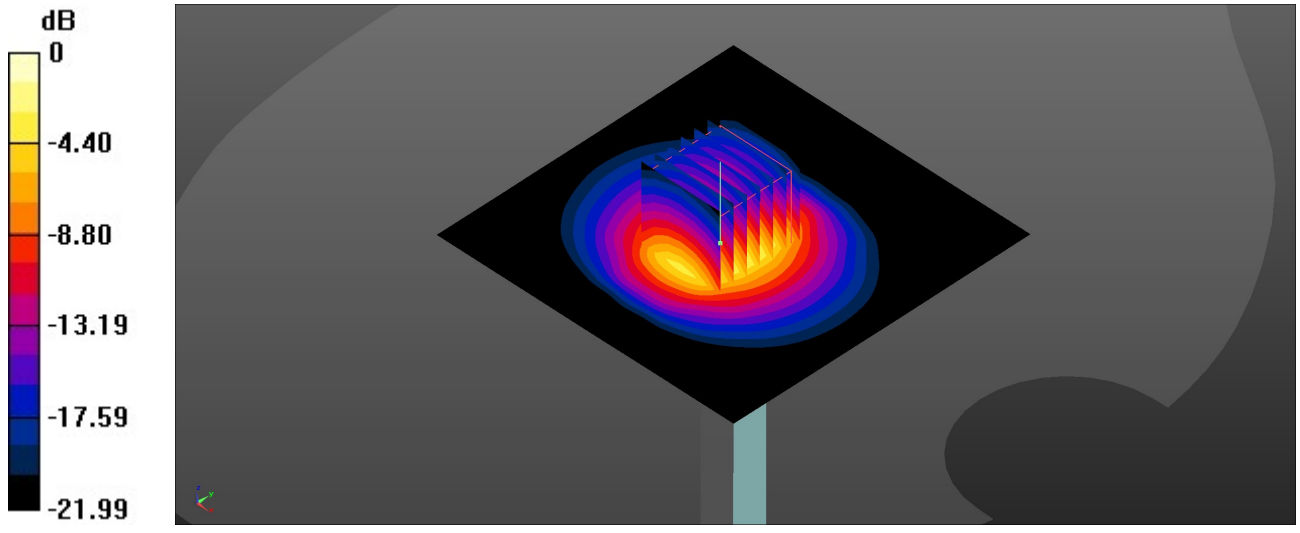
DUT: D3500V2 - SN:1037

Communication System: UID 0, CW (0); Frequency: 3500 MHz;Duty Cycle: 1:1
Medium: HSL_3500 Medium parameters used: f = 3500 MHz; σ = 2.809 S/m; ε_r = 39.002; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.16, 7.16, 7.16); Calibrated: 2021/4/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2021/9/21
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-2022
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Pin=50mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 5.70 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 46.45 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 7.74 W/kg
SAR(1 g) = 3.26 W/kg; SAR(10 g) = 1.33 W/kg
Maximum value of SAR (measured) = 5.91 W/kg



0 dB = 5.91 W/kg = 7.72 dBW/kg