FCC SAR Test Report

APPLICANT	: vivo Mobile Communication Co., Ltd.
EQUIPMENT	: Mobile Phone
BRAND NAME	: vivo
MODEL NAME	: V2343
FCC ID	: 2AUCY-V2343
STANDARD	: FCC 47 CFR Part 2 (2.1093)

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

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

Si Zhang

Approved by: Si Zhang

ACCREDITED
Cert #5145.01

Sporton International Inc. (Shenzhen)
1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055
People's Republic of China

Table of Contents

1. Statement of Compliance 4
2. Administration Data 6
3. Guidance Applied 6
4. Equipment Under Test (EUT) Information 7
4.1 General Information 7
4.2 General LTE SAR Test and Reporting Considerations 9
4.3 General 5G NR SAR Test and Reporting Considerations 12
5. Smart Transmit feature for RF Exposure compliance 15
6. Proximity Sensor Triggering Test 18
6.1 Proximity sensor triggering distances(Per KDB616217§6.2) 18
6.2 proximity sensor triggering (KDB 616217 D04 section 6.4): 19
7. RF Exposure Limits 20
7.1 Uncontrolled Environment 20
7.2 Controlled Environment 20
8. Specific Absorption Rate (SAR) 21
8.1 Introduction 21
8.2 SAR Definition 21
9. System Description and Setup 22
9.1 E-Field Probe 23
9.2 Data Acquisition Electronics (DAE) 23
9.3 Phantom 24
9.4 Device Holder 25
10. Measurement Procedures 26
10.1 Spatial Peak SAR Evaluation 26
10.2 Power Reference Measurement 27
10.3 Area Scan 27
10.4 Zoom Scan 28
10.5 Volume Scan Procedures 28
10.6 Power Drift Monitoring 28
11. Test Equipment List 29
12. System Verification 31
12.1 Tissue Simulating Liquids 31
12.2 Tissue Verification 31
12.3 System Performance Check Results 33
13. RF Exposure Positions 35
13.1 Ear and handset reference point 35
13.2 Definition of the cheek position 36
13.3 Definition of the tilt position 37
13.4 Body Worn Accessory 38
13.5 Product Specific 10g SAR Exposure 39
13.6 Wireless Router 39
14. Conducted RF Output Power (Unit: dBm) 40
15. Antenna Location 57
16. SAR Test Results 58
16.1 Head SAR 61
16.2 Hotspot SAR 72
16.3 Body Worn Accessory SAR 83
16.4 Product specific 10g SAR 89
16.5 Repeated SAR Measurement 92
17. Simultaneous Transmission Analysis 93
17.1 5G NR + LTE + WLAN + BT Sim-Tx analysis 94
17.2 Head Exposure Conditions 95
17.3 Hotspot Exposure Conditions 95
17.4 Body-Worn Accessory Exposure Conditions 95
17.5 Product specific 10g SAR Exposure Conditions 95
18. Uncertainty Assessment 96
19. References 97
Appendix A. Plots of System Performance Check
Appendix B. Plots of High SAR Measurement
Appendix C. DASY Calibration Certificate
Appendix D. Test Setup Photos
Appendix E. Conducted RF Output Power Table
Appendix F. Power reduction mechanism verification

Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA420616	Rev. 01	Initial issue of report.	Apr. 12, 2024

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **vivo Mobile Communication Co., Ltd., Mobile Phone, V2343,** 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	0.79	0.41	0.24	1.39
		GSM1900	**0.99**	0.77	0.25	
	WCDMA	WCDMA II	0.92	0.67	0.53	
		WCDMA IV	**0.99**	0.61	0.48	
		WCDMA V	0.78	0.43	0.26	
	LTE	LTE Band 2	0.94	0.71	0.60	
		LTE Band 7	0.85	0.42	**0.92**	
		LTE Band 12/17	0.80	0.20	0.20	
		LTE Band 13	0.67	0.26	0.27	
		LTE Band 26/5	0.90	0.37	0.23	
		LTE Band 66/4	0.93	0.70	0.52	
		LTE Band 41/38	0.92	0.51	0.90	
	5G NR	FR1 n2	0.90	0.51	0.54	
		FR1 n7	0.97	0.60	0.71	
		FR1 n26/n5	0.95	0.43	0.28	
		FR1 n66	0.97	0.75	0.48	
		FR1 n41/n38	**0.99**	0.68	0.56	
		FR1 n77	0.98	0.50	0.61	
		FR1 n78	0.97	**0.78**	0.66	
DTS	WLAN	WLAN2.4GHz	0.87	0.46	0.19	1.39
NII		WLAN5GHz	0.92	0.56	0.78	1.25
DSS	Bluetooth	Bluetooth	0.21	0.14	<0.10	1.39

Highest 10g SAR Summary				
Equipment Class	Frequency Band		Product Specific 10g SAR (W/kg) (Separation 0mm)	Highest Simultaneous Transmission 10g SAR (W/kg)
Licensed	WCDMA	WCDMA II	2.30	3.47
	LTE	LTE Band 2	1.90	
		LTE Band 7	2.72	
		LTE Band 66/4	2.38	
		LTE Band 41/38	1.24	
	5G NR	FR1 n2	2.48	
		FR1 n7	1.99	
		FR1 n66	2.04	
		FR1 n41/n38	1.95	
		FR1 n77	2.73	
		FR1 n78	**2.76**	
NII	WLAN	WLAN5GHz	1.94	3.47
Date of Testing:			2024/3/8 ~ 2024/3/29	

Remark:

1. This device supports LTEB4/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 5GNR n5/n38 and n26/n41. Since the supported frequency span for 5GNR n5/n38 falls completely within the supports frequency span for n26/n41, both 5GNR bands have the same target power, and both 5GNR bands share the same transmission path; therefore, SAR was only assessed for n26/n41.

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. (Shenzhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Testing Laboratory			
Test Firm	Sporton International Inc. (Shenzhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	SAR02-SZ SAR03-SZ	CN1256	421272

Applicant	
Company Name	vivo Mobile Communication Co., Ltd.
Address	No.1, vivo Road, Chang'an, Dongguan, Guangdong, China

Manufacturer	
Company Name	vivo Mobile Communication Co., Ltd.
Address	No.1, vivo Road, Chang'an, Dongguan, Guangdong, China

3. Guidance Applied

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

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 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	vivo
Model Name	V2343
FCC ID	2AUCY-V2343
IMEI Code	IMEI 1: 864567079786912 IMEI 2: 864567079786904
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 n2: 1850 MHz ~ 1910 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n7: 2500 MHz ~ 2570 MHz 5G NR n26: 814 MHz ~ 849 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n38: 2570 MHz ~ 2620 MHz 5G NR n41: 2496 MHz ~ 2690 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
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+(16QAM uplink is supported) LTE: QPSK, 16QAM, 64QAM 5G NR : CP-OFDM / DFT-s-OFDM, PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 2.4GHz 802.11 VHT20/VHT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
HW Version	MP_0.1
SW Version	PD2354HF_EX_A_14.0.4.6.W30
GSM / (E)GPRS Dual Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype

Remark:

1. This device supports VoIP in GPRS, EGPRS, WCDMA, and LTE and 5GNR (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
2. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.
3. This device 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).

4. This device does not support DTM operation and support GRPS/EGRPS mode up to multi-slot class 33.
5. 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.
6. The device implements proximity sensor and receiver detection/hotspot mode for SAR compliance at different exposure conditions (head, body-worn, hotspot/extremity) and the Qualcomm smart transmit will manage to ensure the power level not exceeding the associated power table. It uses the receiver to indicate whether the user is making a call in head scenario or not. The selection between head and body power levels is based on the receiver detection mechanism. It can determine proximity to head or body and set the relevant power level for 2G&3G&4G&5G and Wi-Fi/BTantennas accordingly. Details about the power management decision is provided in the operational description. And the device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to power table at appendix E.
7. For WLAN when transmit simultaneously together with WWAN, the device power will be reduced power at head, body-worn, hotspot and extremity conditions.
8. 5GNR n78 supports HPUE only, HPUE power and SAR testing performed separately.
9. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
10. This device supports 5GNR FR1 bands as following table, including NSA mode and SA mode. NSA and SA mode performed SAR separately.

<5G NR>

Mode	Band	Duplex	SCS(KHz)	Bandwidths(BW)
NSA	n2	FDD	15	5, 10, 15, 20
	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20, 25, 30, 40
	n66	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n38	FDD	15	10, 15, 20, 30, 40
	n41	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
	n77	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
	n78	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
SA	n2	FDD	15	5, 10, 15, 20
	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20, 25, 30, 40
	n26	FDD	15	5, 10, 15, 20
	n66	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n38	FDD	15	10, 15, 20, 30, 40
	n41	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
	n77	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
	n78	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100

4.2 General LTE SAR Test and Reporting Considerations

<table>
<tr><th colspan="2">Summarized necessary items addressed in KDB 941225 D05 v02r05</th></tr>
<tr><td>FCC ID</td><td>2AUCY-V2343</td></tr>
<tr><td>Equipment Name</td><td>Mobile Phone</td></tr>
<tr><td>Operating Frequency Range of each LTE transmission band</td><td>LTE Band 2: 1850 MHz ~ 1910 MHz
LTE Band 4: 1710 MHz ~ 1755 MHz
LTE Band 5: 824 MHz ~ 849 MHz
LTE Band 7: 2500 MHz ~ 2570 MHz
LTE Band 12: 699 MHz ~ 716 MHz
LTE Band 13: 777 MHz ~ 787 MHz
LTE Band 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</td></tr>
<tr><td>Channel Bandwidth</td><td>LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 13: 5MHz, 10MHz
LTE Band 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</td></tr>
<tr><td>uplink modulations used</td><td>QPSK / 16QAM / 64QAM</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>Voice and Data</td></tr>
<tr><td>LTE Release Version</td><td>R15, Cat13</td></tr>
<tr><td>CA Support</td><td>Supported, Uplink and Downlink</td></tr>
<tr><td>LTE MPR permanently built-in by design</td><td>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr>
<tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr>
</table></td></tr>
<tr><td>LTE A-MPR</td><td>In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)</td></tr>
<tr><td>Spectrum plots for RB configuration</td><td>A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.</td></tr>
<tr><td>Power reduction applied to satisfy SAR compliance</td><td>Yes, when operating in Proximity sensors/receiver/hotspot 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 14.</td></tr>
<tr><td>LTE Carrier Aggregation Combinations</td><td>Inter-Band and Intra-Band possible combinations and the detail power verification please referred to section 14.</td></tr>
<tr><td>LTE Carrier Aggregation Additional Information</td><td>1. This device supports LTE Carrier Aggregation (CA) in the uplink for intra-band and inter-band with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance.
2. This device supports maximum of 4 carriers in the downlink and 2 carriers in the uplink.</td></tr>
</table>

Transmission (H, M, L) channel numbers and frequencies in each LTE band

LTE Band 2

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900

LTE Band 4

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745

LTE Band 5

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844

LTE Band 7

	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560

LTE Band 12

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5
H	23173	715.3	23165	714.5	23155	713.5	23130	711

LTE Band 13

	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	23205	779.5	23230	782
M	23230	782		
H	23255	784.5		

LTE Band 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

<For LTE Overlap Bands Description>

1. LTE Bands BW

Band	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
LTE Band 4	Yes	Yes	Yes	Yes	Yes	Yes
LTE Band 66	Yes	Yes	Yes	Yes	Yes	Yes
LTE Band 5	Yes	Yes	Yes	Yes		
LTE Band 26	Yes	Yes	Yes	Yes	Yes	
LTE Band 12	Yes	Yes	Yes	Yes		
LTE Band 17			Yes	Yes		
LTE Band 38			Yes	Yes	Yes	Yes
LTE Band 41			Yes	Yes	Yes	Yes

2. LTE Bands tune up:

Band	Ant	Full	DSI 2	DSI 3	DSI 4	DSI 5	DSI 8	DSI 9	DSI 10
		Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit
LTE Band 4	Ant.13	24.5	18.5	16	24.5	21.5	19	19	19
LTE Band 66	Ant.13	24.5	18.5	16	24.5	22.5	18	18	18
LTE Band 5	Ant.13	25	23	20	25	25	25	25	25
LTE Band 26	Ant.13	25	23	20	25	25	25	25	25
LTE Band 12	Ant.13	25	25	24.5	25	25	25	25	25
LTE Band 17	Ant.13	25	25	24.5	25	25	24.5	24.5	24.5
LTE Band 38	Ant.13	24.5	17.5	16.5	24	19.5	15.5	15.5	15.5
LTE Band 41	Ant.13	24.5	17.5	16.5	24	19.5	16.5	16.5	16.5

Band	Ant	Full	DSI 2	DSI 3	DSI 4	DSI 5	DSI 8	DSI 9	DSI 10
		Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit
LTE Band 4	Ant.31	24.5	24.5	24.5	22	22	22	22	22
LTE Band 66	Ant.31	24.5	24.5	24.5	22.5	22.5	22.5	22.5	22.5
LTE Band 5	Ant.31	25	25	25	24	24	24	24	24
LTE Band 26	Ant.31	25	25	25	25	25	25	25	25
LTE Band 12	Ant.31	25	25	25	25	25	25	25	25
LTE Band 17	Ant.31	25	25	25	25	25	25	25	25
LTE Band 38	Ant.31	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5
LTE Band 41	Ant.31	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5

Band	Ant	Full	DSI 2	DSI 3	DSI 4	DSI 5	DSI 8	DSI 9	DSI 10
		Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit
LTE Band 4	Ant.11	24.5	21	19.5	24.5	21.5	20	20	20
LTE Band 66	Ant.11	24.5	21.5	20	24.5	21.5	17.5	17.5	17.5
LTE Band 38	Ant.11	24.5	21	20	24.5	21.5	18.5	18.5	18.5
LTE Band 41	Ant.11	24.5	21	20	24.5	20.5	18.5	18.5	18.5

Note: For some bands/antennas at some exposure conditions which cannot be covered were fully tested for RF exposure compliance.

4.3 General 5G NR SAR Test and Reporting Considerations

5G NR Information	
Operating Frequency Range of each 5G NR transmission band	5G NR n2: 1850 MHz ~ 1910 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n7: 2500 MHz ~ 2570 MHz 5G NR n26: 814 MHz ~ 849 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n38: 2570 MHz ~ 2620 MHz 5G NR n41: 2496 MHz ~ 2690 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	The detail please refers to section 4.1 5GNR FR1 bands table.
SCS	FDD: SCS15KHz, TDD: SCS30KHz
uplink modulations used	DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM
A-MPR (Additional MPR) disabled for SAR Testing?	Yes
LTE Anchor Bands for n2	LTE B7
LTE Anchor Bands for n5	LTE B7
LTE Anchor Bands for n7	LTE B2/4/5/66
LTE Anchor Bands for n38	LTE B2/4/5/66
LTE Anchor Bands for n41	LTE B2/4/26/66
LTE Anchor Bands for n66	LTE B2/5/7
LTE Anchor Bands for n77	LTE B7
LTE Anchor Bands for n78	LTE B2/4/5/7/26/38/41/66

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

NR Band 2

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

NR Band 5

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

NR Band 7

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

NR Band 26

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

NR Band 66

	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	342500	1712.5	343000	1715	343500	1717.5	344000	1720	344500	1722.5	345000	1725	345500	1727.5	346000	1730
M	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770	353500	1767.5	353000	1765	352500	1762.5	352000	1760

NR Band 38										
	Bandwidth10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	515004	2575.02	515502	2577.51	516000	2580	517002	2585.01	518004	2590.02
M	519000	2595	519000	2595	519000	2595	519000	2595	519000	2595
H	522996	2614.98	522498	2612.49	522000	2610	520998	2604.99	519996	2599.98

NR Band 41																						
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500202	2501.01	500700	2503.5	501204	2506.02	502200	2511	503202	2516.01	504204	2521.02	505200	2526	500202	2501.01	507204	2536.02	508200	2541	509202	2546.01
M	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99
H	537000	2685	536496	2682.48	535998	2679.99	534996	2674.98	534000	2670	532998	2664.99	531996	2659.98	537000	2685	529998	2649.99	528996	2644.98	528000	2640

NR Band 77																						
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	647000	3705	647168	3707.52	647334	3710.01	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02	650000	3750
M	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840
H	665000	3975	664832	3972.48	664666	3969.99	664332	3964.98	664000	3960	663666	3954.99	663332	3949.98	663000	3945	662666	3939.99	662332	3934.98	662000	3930

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

For <3450 MHz ~ 3550 MHz >

NR Band 77 SCS30KHz																						
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	630334	3455.01	630550	3457.5	630668	3460.02	631000	3465	631334	3470.01	631668	3475.02	632000	3480	632334	3485.01	632668	3490.02	633000	3495		
M	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98
H	636332	3544.98	636166	3542.49	636000	3540	635666	3534.99	635332	3529.98	635000	3525	634666	3519.99	634332	3514.98	634000	3510	633666	3504.99		

NR Band 78																						
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	630334	3455.01	630500	3457.5	630668	3460.02	631000	3465	631334	3470.01	631668	3475.02	632000	3480	632334	3485.01	632668	3490.02	633000	3495		
M	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98
H	636332	3544.98	636166	3542.49	636000	3540	635666	3534.99	635332	3529.98	635000	3525	634666	3519.99	634332	3514.98	634000	3510	633666	3504.99		

<For NR Overlap Bands Description>

1. NR Bands BW

Band	Duplex	SCS(KHz)	Bandwidths(BW)
n5	FDD	15	5, 10, 15, 20
n26	FDD	15	5, 10, 15, 20
n38	TDD	30	10, 15, 20, 30, 40
n41	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
n77	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
n78	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100

2. NR Bands Tune up:

Band	Ant	Full	DSI 2	DSI 3	DSI 4	DSI 5	DSI 8	DSI 9	DSI 10
		Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit
FR1 n5	Ant 13	25	22.5	21	25	25	25	25	25
FR1 n26	Ant 13	25	22.5	21	25	25	25	25	25
FR1 n38	Ant 11	24.5	22	21	24.5	20.5	18.5	18.5	18.5
FR1 n41	Ant 11	25	22	21	24	20.5	19	19	19
FR1 n77	Ant 11	24	22	21.5	23.5	20	16.5	16.5	16.5
FR1 n78	Ant 11	26.5	22	21.5	23.5	20	17.5	17.5	17.5

Band	Ant	Full	DSI 2	DSI 3	DSI 4	DSI 5	DSI 8	DSI 9	DSI 10
		Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit
FR1 n5	Ant 31	25	25	25	25	25	25	25	25
FR1 n26	Ant 31	25	25	25	25	25	25	25	25
FR1 n38	Ant 13	24.5	16.5	15.5	20.5	17.5	15	15	15
FR1 n41	Ant 13	25	16.5	15.5	20.5	17.5	15	15	15
FR1 n77	Ant 12	24	19	14.5	20.5	20.5	18	18	18
FR1 n78	Ant 12	26.5	19	17.5	21	21	19	19	19

Band	Ant	Full	DSI 2	DSI 3	DSI 4	DSI 5	DSI 8	DSI 9	DSI 10
		Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit
FR1 n38	Ant 31	24.5	24.5	24.5	24	24	24	24	24
FR1 n41	Ant 31	25	25	25	23	23	23	23	23
FR1 n77	Ant 23	22	21.5	19.5	18.5	18.5	17	17	17
FR1 n78	Ant 23	24	23.5	21.5	19.5	19.5	18	18	18

Band	Ant	Full	DSI 2	DSI 3	DSI 4	DSI 5	DSI 8	DSI 9	DSI 10
		Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit
FR1 n77	Ant 21	22	16.5	14.5	18.5	18.5	15.5	15.5	15.5
FR1 n78	Ant 21	24	18	16	21	21	20	20	20

5. Smart Transmit feature for RF Exposure compliance

The RF exposure limit is defined based on time-averaged RF exposure. The product implements Qualcomm Smart Transmit feature which controls the instantaneous transmitting power for WWAN transmitter to ensure the product in compliance with RF exposure limit over a defined time window, for SAR (transmit frequency ≤ 6GHz). To control and manage transmitting power in real time and to ensure at all times the time-averaged RF exposure is compliant to the regulation requirement.

Note that WLAN/BT operations are not enabled with Smart Transmit.

This report describes the procedures for the SAR char generation, and the parameters obtained from SAR characterization (referred to as SAR char, respectively) will be used as input for Smart Transmit. SAR char will be entered via the Embedded File System (EFS) version 20 to enable the Smart Transmit first generation (GEN1) Feature.

<Terminologies in this report>

P_{limit}	The time-averaged RF power which corresponds to SAR_design_target.
P_{max}	Maximum target power level
SAR_design_target:	The design target for SAR compliance. It should be less than regulatory SAR limit to account for all device design related uncertainty.
SAR char	P_{limit} for all the technologies/bands for all applicable DSI

<SAR Characterization>

SAR char must be generated to cover all radio configurations and usage scenarios that the wireless device supports for operating at 6 GHz or below. It will then be used as input for Smart Transmit to control and manage RF exposure for f < 6 GHz. And the reserve power margin is 3 dB.

<SAR design target >

To account for total uncertainty, SAR_design_target should be determined as:

$$SAR_design_target < SAR_{regulatory_limit} \times 10^{\frac{-total\ uncertainty}{10}}$$

The Smart Transmit algorithm maintains the time-averaged transmit power, in turn, time-averaged RF exposure of SAR_design_target, below the predefined time-averaged power limit, for each characterized technology and band.

Smart Transmit allows the device to transmit at higher power instantaneously, as high as Pmax, when needed, but enforces power limiting to maintain time-averaged transmit power to Plimit. Below table shows Plimit EFS settings and maximum tune up output power Pmax configured for this EUT for various transmit conditions (Device State Index DSI).

<P_{limit} for supported technologies and bands>

Band	Antenna	(DSI2)	(DSI3)	(DSI4)	(DSI5)	(DSI8)	(DSI9)	(DSI10)	Pmax*	Total Uncertainty dB (k=2)
GSM850	Ant 13	22.0	20.5	30.7	24.5	29.7	29.7	28.3	24.5	1.0
	Ant 31	32.7	31.7	24.5	32.1	31.1	31.1	31.4	24.5	1.0
GSM1900	Ant 13	18.5	17.0	27.9	21.5	26.9	26.9	27.6	21.5	1.0
	Ant 31	38.2	37.2	21.0	20.0	18.5	18.5	18.5	21.5	1.0
WCDMA II	Ant 13	17.5	15.5	26.2	20.0	15.5	15.5	15.5	23.5	1.0
	Ant 31	31.2	30.2	20.0	20.0	20.0	20.0	20.0	23.5	1.0
WCDMA IV	Ant 13	18.0	15.0	26.6	21.0	16.5	16.5	16.5	23.5	1.0
	Ant 31	33.6	32.6	20.5	20.5	20.5	20.5	20.5	23.5	1.0
WCDMA V	Ant 13	21.0	19.5	29.8	24.0	28.8	28.8	27.6	24.0	1.0
	Ant 31	33.3	32.3	24.0	34.2	31.2	31.2	31.0	24.0	1.0
LTE Band 2	Ant 13	17.5	16.5	25.7	19.5	17.5	17.5	17.5	23.5	1.0
	Ant 31	31.9	30.9	20.5	20.5	20.5	20.5	20.5	23.5	1.0
LTE Band 4	Ant 13	17.5	15.0	27.3	20.5	18.0	18.0	18.0	23.5	1.0
	Ant 31	34.3	33.3	21.0	21.0	21.0	21.0	21.0	23.5	1.0
	Ant 11	20.0	18.5	34.7	20.5	19.0	19.0	19.0	23.5	1.0
LTE Band 5	Ant 13	22.0	19.0	30.3	24.0	28.3	28.3	28.3	24.0	1.0
	Ant 31	33.4	32.4	23.0	23.0	23.0	23.0	23.0	24.0	1.0
LTE Band 7	Ant 13	14.5	13.5	21.0	16.5	10.0	10.0	10.0	24.0	1.0
	Ant 31	28.4	27.4	21.0	21.0	21.0	21.0	21.0	23.0	1.0
	Ant 11	20.0	18.5	26.4	19.5	15.5	15.5	15.5	23.0	1.0
LTE Band 12	Ant 13	24.0	23.5	32.0	24.0	31.0	31.0	31.1	24.0	1.0
	Ant 31	35.0	34.0	24.0	34.5	33.5	33.5	33.6	24.0	1.0
LTE Band 13	Ant 13	24.0	24.0	29.7	24.0	28.7	28.7	29.8	24.0	1.0
	Ant 31	34.5	33.5	24.0	33.1	32.1	32.1	32.4	24.0	1.0
LTE Band 17	Ant 13	24.0	23.5	32.0	24.0	23.5	23.5	23.5	24.0	1.0
	Ant 31	35.0	34.0	24.0	34.5	33.5	33.5	33.6	24.0	1.0
LTE Band 26	Ant 13	22.0	19.0	30.3	24.0	28.3	28.3	28.3	24.0	1.0
	Ant 31	33.4	32.4	24.0	34.9	33.9	33.9	31.6	24.0	1.0
LTE Band 66	Ant 13	17.5	15.0	26.9	21.5	17.0	17.0	17.0	23.5	1.0
	Ant 31	34.3	33.3	21.5	21.5	21.5	21.5	21.5	23.5	1.0
	Ant 11	20.5	19.0	26.3	20.5	16.5	16.5	16.5	23.5	1.0
LTE Band 38	Ant 13	14.5	13.5	21.0	16.5	12.5	12.5	12.5	21.5	1.0
	Ant 31	27.7	26.7	21.5	27.4	25.7	25.7	25.7	21.5	1.0
	Ant 11	18.0	17.0	27.5	18.5	15.5	15.5	15.5	21.5	1.0
LTE Band 41	Ant 13	14.5	13.5	21.0	16.5	13.5	13.5	13.5	21.5	1.0
	Ant 31	27.7	26.7	21.5	27.4	25.7	25.7	25.7	21.5	1.0
	Ant 11	18.5	17.0	27.5	17.5	15.5	15.5	15.5	21.5	1.0
FR1 n2	Ant 13	17.5	16.0	26.1	20.0	17.5	17.5	17.5	23.5	1.0
	Ant 11	18.0	17.5	22.5	19.0	16.5	16.5	16.5	23.5	1.0
FR1 n5	Ant 13	21.5	20.0	29.5	24.0	27.6	27.6	27.6	24.0	1.0
	Ant 31	33.0	32.0	24.0	33.2	30.3	30.3	30.3	24.0	1.0
FR1 n7	Ant 13	15.0	14.0	20.0	16.0	13.5	13.5	13.5	23.0	1.0
	Ant 31	26.8	25.8	22.0	22.0	22.0	22.0	22.0	23.0	1.0
	Ant 11	20.0	19.0	25.8	19.0	17.5	17.5	17.5	23.0	1.0
FR1 n26	Ant 13	21.5	20.0	29.5	24.0	27.6	27.6	27.6	24.0	1.0
	Ant 31	33.0	32.0	24.0	33.2	30.3	30.3	30.3	24.0	1.0

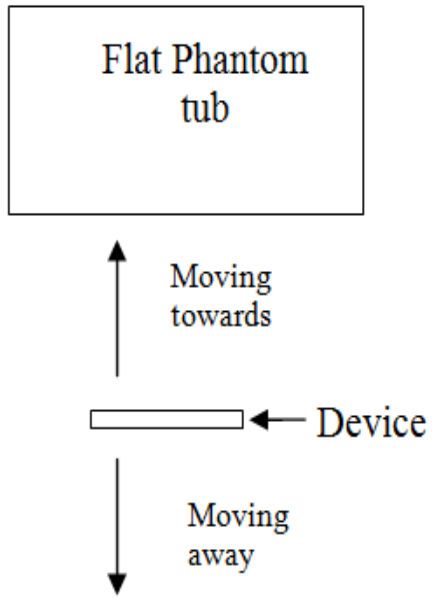
FR1 n66	Ant 13	17.5	16.5	26.7	21.0	18.5	18.5	18.5	23.5	1.0
	Ant 31	34.3	33.3	21.0	21.0	21.0	21.0	21.0	23.5	1.0
	Ant 11	20.0	19.0	23.0	20.0	19.0	19.0	19.0	23.5	1.0
FR1 n38	Ant 13	15.5	14.5	19.5	16.5	14.0	14.0	14.0	23.5	1.0
	Ant 31	27.2	26.2	23.0	23.0	23.0	23.0	23.0	23.5	1.0
	Ant 11	21.0	20.0	25.9	19.5	17.5	17.5	17.5	23.5	1.0
FR1 n41	Ant 13	15.5	14.5	19.5	16.5	14.0	14.0	14.0	24.0	1.0
	Ant 31	27.2	26.2	22.0	22.0	22.0	22.0	22.0	24.0	1.0
	Ant 11	21.0	20.0	25.9	19.5	18.0	18.0	18.0	24.0	1.0
FR1 n77	Ant 11	21.0	20.5	22.5	19.0	15.5	15.5	15.5	23.0	1.0
	Ant 12	18.0	13.5	19.5	19.5	17.0	17.0	17.0	23.0	1.0
	Ant 23	20.0	18.0	17.0	17.0	15.5	15.5	15.5	20.5	1.5
	Ant 21	15.0	13.0	17.0	17.0	14.0	14.0	14.0	20.5	1.5
FR1 n78	Ant 11	21.0	20.5	22.5	19.0	16.5	16.5	16.5	25.5	1.0
	Ant 12	18.0	13.5	20.0	20.0	18.0	18.0	18.0	25.5	1.0
	Ant 23	22.0	20.0	18.0	18.0	16.5	16.5	16.5	22.5	1.5
	Ant 21	16.5	14.5	19.5	19.5	18.5	18.5	18.5	22.5	1.5

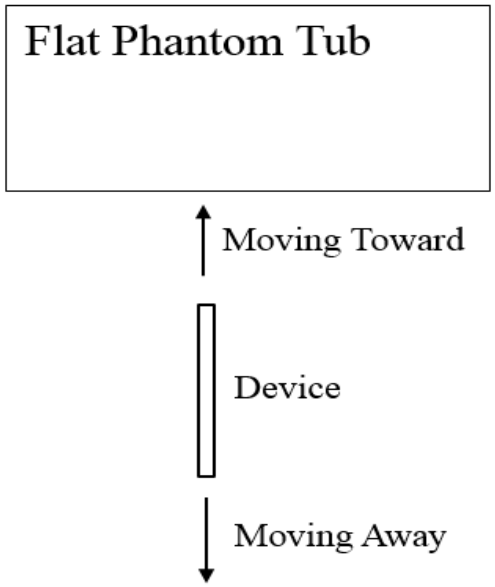
Note: 1) *P_{max} is used for RF tune up procedure. The maximum allowed output power is equal to Pmax +total uncertainty.
2) **All P_{limit} power levels entered in the Table correspond to average power levels after accounting for duty cycle in the case TDD modulation schemes (for e.g., GSM & LTE TDD & NR TDD).
3) The max allowed output power is the Plimit + tatal uncertainty, and if Plimit is higher than Pmax, the device output power will be Pmax instead.

6. Proximity Sensor Triggering Test

6.1 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 and the tissue-equivalent medium for highest frequency (3980MHz) and lowest (750MHz) frequency was used for proximity sensor triggering testing.
2. Capacitive proximity sensors placed coincident with antenna elements at the top end and the top left corners of the top 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 top or left sides of the device.
3. The device employs proximity sensors that detect the presence of the user's body or handheld states at the front, back, top, left sides of the device. When front, back, top, left sides of body condition or handheld states are detected reduced power will be active. The data shown in the sections below shows the distance(s).
4. 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/Handheld detection test set-up, Front and Back sides	Handheld detection test set-up, Left Side and Top Side

<Sensor B for ANT 11>

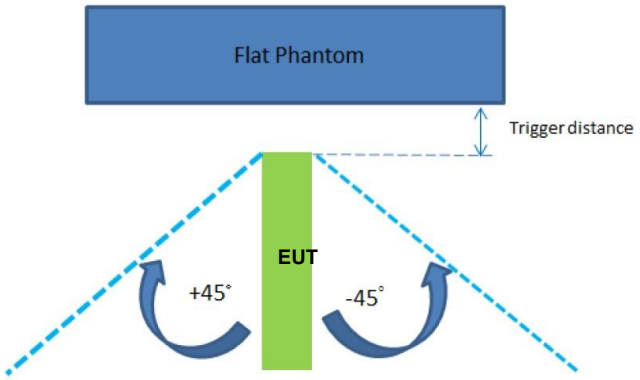
Proximity Sensor Triggering Distance (mm)						
Position	Front		Back		Left Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	5	5	13	13	10	10

<Sensor A for ANT13>

Proximity Sensor Triggering Distance (mm)						
Position	Front		Back		Top Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	9	9	13	13	14	14

6.2 proximity sensor triggering (KDB 616217 D04 section 6.4):

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



The Sensor Trigger Distance (mm)		
Position	Left Side for Antenna 11	Top Side for Antenna 13
Minimum	10	14

7. RF Exposure Limits

7.1 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.

7.2 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.

8. Specific Absorption Rate (SAR)

8.1 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.

8.2 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:

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

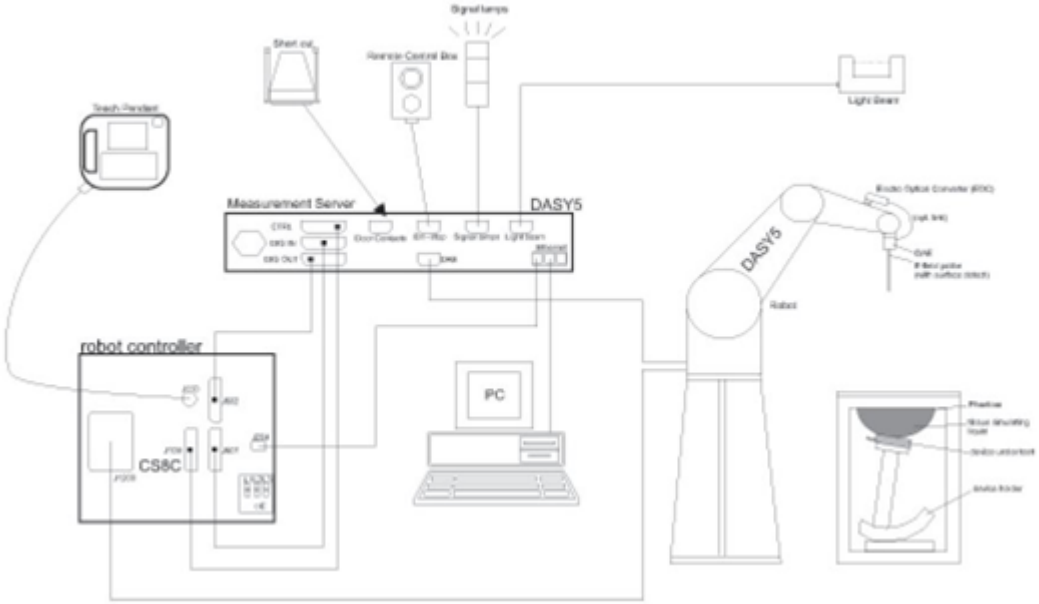
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

9. System Description and Setup

The DASY5 system used for performing compliance tests consists of the following items:



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

9.1 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	

9.2 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.

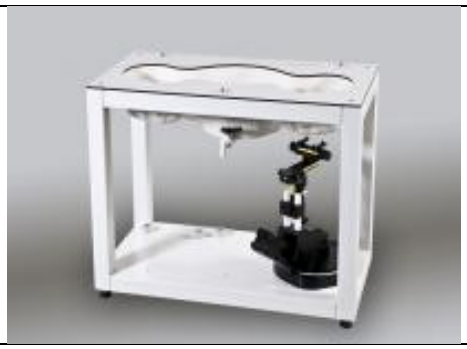
The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Photo of DAE

9.3 Phantom

<SAM Twin Phantom>

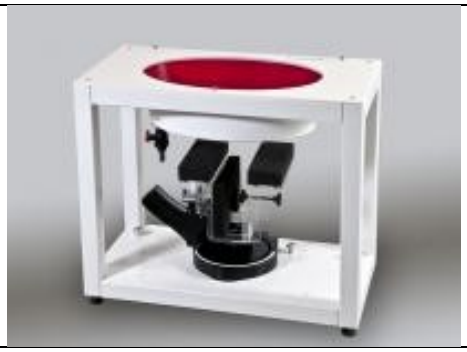
Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom



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

<ELI Phantom>

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



The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices or for evaluating transmitters operating at low frequencies. ELI is fully compatible with standard and all known tissue simulating liquids.

9.4 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

10. 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

10.1 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

10.2 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.

10.3 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.	

10.4 Zoom Scan

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

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

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

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

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

10.5 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.

10.6 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.

11. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1099	Dec. 15, 2021	Dec. 13, 2024
SPEAG	835MHz System Validation Kit	D835V2	4d162	Dec. 17, 2021	Dec. 15, 2024
SPEAG	1750MHz System Validation Kit	D1750V2	1137	Oct. 19, 2021	Oct. 17, 2024
SPEAG	1900MHz System Validation Kit	D1900V2	5d182	Dec. 20, 2021	Dec. 18, 2024
SPEAG	2450MHz System Validation Kit	D2450V2	924	Nov. 03, 2023	Nov. 02, 2024
SPEAG	2600MHz System Validation Kit	D2600V2	1070	Dec. 20, 2021	Dec. 18, 2024
SPEAG	3500MHz System Validation Kit	D3500V2	1076	May 09, 2022	May 08, 2025
SPEAG	3700MHz System Validation Kit	D3700V2	1037	May 09, 2022	May 08, 2025
SPEAG	3900MHz System Validation Kit	D3900V2	1022	Aug. 18, 2022	Aug. 17, 2025
SPEAG	5000MHz System Validation Kit	D5GHzV2	1341	Dec. 13, 2021	Dec. 11, 2024
SPEAG	Data Acquisition Electronics	DAE4	715	Jan. 25, 2024	Jan. 24, 2025
SPEAG	Data Acquisition Electronics	DAE4	1210	Jan. 15, 2024	Jan. 14, 2025
SPEAG	Dosimetric E-Field Probe	EX3DV4	3819	Jun. 06, 2023	Jun. 05, 2024
SPEAG	Dosimetric E-Field Probe	EX3DV4	7577	Dec. 13, 2023	Dec. 12, 2024
SPEAG	SAM Twin Phantom	QD 000 P40 CD	1670	NCR	NCR
SPEAG	SAM Twin Phantom	QD 000 P40 CD	1795	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio communication analyzer	MT8820C	6201300653	Jul. 05, 2023	Jul. 04, 2024
Anritsu	Radio communication analyzer	MT8820C	6201341952	Dec. 28, 2023	Dec. 27, 2024
Anritsu	Radio communication analyzer	MT8820C	6201563813	Dec. 28, 2023	Dec. 27, 2024
Anritsu	Radio communication analyzer	MT8821C	6262314715	Jul. 05, 2023	Jul. 04, 2024
Anritsu	Radio communication analyzer	MT8821C	6272278319	Jul. 05, 2023	Jul. 04, 2024
Anritsu	Radio communication analyzer	MT8821C	6272416846	Apr. 06, 2023	Apr. 05, 2024
Agilent	Wireless Communication Test Set	E5515C	MY50267224	Jul. 05, 2023	Jul. 04, 2024
Keysight	Network Analyzer	E5071C	MY46523671	Oct. 16, 2023	Oct. 15, 2024
Speag	Dielectric Assessment KIT	DAK-3.5	1144	Aug. 17, 2023	Aug. 16, 2024
Agilent	Signal Generator	N5181A	MY50145381	Dec. 28, 2023	Dec. 27, 2024
R&S	Signal Generator	SMB100A	175779	Dec. 28, 2023	Dec. 27, 2024
Anritsu	Power Senor	MA2411B	1306099	Oct. 16, 2023	Oct. 15, 2024
Anritsu	Power Meter	ML2495A	1349001	Oct. 16, 2023	Oct. 15, 2024
Anritsu	Power Sensor	MA2411B	1542004	Dec. 28, 2023	Dec. 27, 2024
Anritsu	Power Meter	ML2495A	1339473	Dec. 28, 2023	Dec. 27, 2024
R&S	Power Sensor	NRP50S	101254	Apr. 06, 2023	Apr. 05, 2024
R&S	Power Sensor	NRP8S	109228	Apr. 06, 2023	Apr. 05, 2024
R&S	CBT BLUETOOTH TESTER	CBT	100963	Dec. 28, 2023	Dec. 27, 2024
R&S	Spectrum Analyzer	FSP7	100818	Jul. 05, 2023	Jul. 04, 2024
TES	Hygrometer	1310	200505600	Jul. 08, 2023	Jul. 07, 2024
Anymetre	Thermo-Hygrometer	JR593	2015102801	Jan. 02, 2024	Jan. 01, 2025
Anymetre	Thermo-Hygrometer	JR593	2018100802	Oct. 19, 2023	Oct. 18, 2024
SPEAG	Device Holder	N/A	N/A	N/A	N/A
AR	Amplifier	5S1G4	0333096	Note 1	

Mini-Circuits	Amplifier	ZVE-3W-83+	599201528	Note 1
Mini-Circuits	Amplifier	ZVA-183W-S+	726202215	Note 1
ARRA	Power Divider	A3200-2	N/A	Note 1
ET Industries	Dual Directional Coupler	C-058-10	N/A	Note 1
Jinkexinhua	Attenuator	10db-8G	N/A	Note 1

Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.
2. The dipole calibration interval can be extended to 3 years with justification according to KDB 865664 D01. The dipoles are also not physically damaged, or repaired during the interval. The justification data in appendix C can be found which the return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration for each dipole.

12. System Verification

12.1 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.

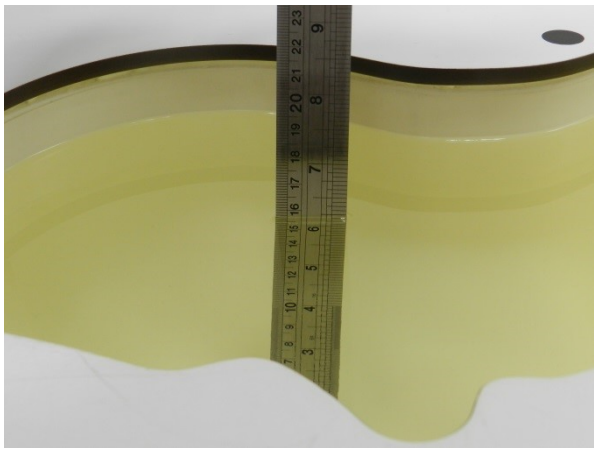


Fig 11.1 Photo of Liquid Height for Head SAR

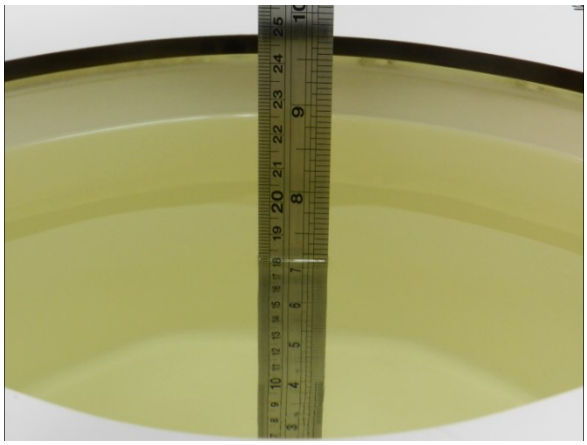


Fig 11.2 Photo of Liquid Height for Body SAR

12.2 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)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	Head	22.4	0.909	41.051	0.89	41.90	2.13	-2.03	±5	2024/3/10
835	Head	22.6	0.914	43.281	0.90	41.50	1.56	4.29	±5	2024/3/8
1750	Head	22.2	1.362	40.471	1.37	40.10	-0.58	0.93	±5	2024/3/14
1900	Head	22.5	1.433	40.643	1.40	40.00	2.36	1.61	±5	2024/3/11
2450	Head	22.1	1.826	39.430	1.80	39.20	1.44	0.59	±5	2024/3/23
2600	Head	22.1	1.895	37.662	1.96	39.00	-3.32	-3.43	±5	2024/3/12
3500	Head	22.4	2.847	37.160	2.91	37.90	-2.16	-1.95	±5	2024/3/25
3700	Head	22.3	3.002	36.879	3.12	37.70	-3.78	-2.18	±5	2024/3/18
3900	Head	22.4	3.260	36.715	3.33	37.51	-2.10	-2.12	±5	2024/3/22
5250	Head	22.3	4.514	34.949	4.71	35.95	-4.16	-2.78	±5	2024/3/24
5600	Head	22.6	4.855	34.483	5.07	35.50	-4.24	-2.86	±5	2024/3/27
5750	Head	22.6	5.005	34.296	5.22	35.35	-4.12	-2.98	±5	2024/3/23
750	Head	22.3	0.912	42.087	0.89	41.90	2.47	0.45	±5	2024/3/29
835	Head	22.2	0.875	40.675	0.90	41.50	-2.78	-1.99	±5	2024/3/26
1750	Head	22.3	1.383	41.900	1.37	40.10	0.95	4.49	±5	2024/3/22
1900	Head	22.2	1.387	41.154	1.40	40.00	-0.93	2.89	±5	2024/3/27
2450	Head	22.2	1.869	37.944	1.80	39.20	3.83	-3.20	±5	2024/3/26
2600	Head	22.3	1.915	39.536	1.96	39.00	-2.30	1.37	±5	2024/3/25
3500	Head	22.3	2.980	39.215	2.91	37.90	2.41	3.47	±5	2024/3/23
3700	Head	22.4	3.141	38.960	3.12	37.70	0.67	3.34	±5	2024/3/26
3900	Head	22.3	3.313	38.756	3.33	37.51	-0.51	3.32	±5	2024/3/28
5250	Head	22.4	4.668	36.853	4.71	35.95	-0.89	2.51	±5	2024/3/26
5600	Head	22.4	5.035	36.351	5.07	35.50	-0.69	2.40	±5	2024/3/21
5750	Head	22.3	5.197	36.138	5.22	35.35	-0.44	2.23	±5	2024/3/23

12.3 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)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2024/3/10	750	Head	250	1099	3819	715	2.280	8.540	9.12	6.79
2024/3/8	835	Head	250	4d162	3819	715	2.560	9.640	10.24	6.22
2024/3/14	1750	Head	250	1137	3819	715	8.410	36.500	33.64	-7.84
2024/3/11	1900	Head	250	5d182	3819	715	10.600	39.600	42.4	7.07
2024/3/23	2450	Head	250	924	3819	715	12.100	52.300	48.4	-7.46
2024/3/12	2600	Head	250	1070	3819	715	13.700	56.200	54.8	-2.49
2024/3/25	3500	Head	100	1076	3819	715	7.010	66.200	70.1	5.89
2024/3/18	3700	Head	100	1037	3819	715	7.190	66.700	71.9	7.80
2024/3/22	3900	Head	100	1022	3819	715	6.550	66.400	65.5	-1.36
2024/3/24	5250	Head	100	1341	3819	715	8.310	80.700	83.1	2.97
2024/3/27	5600	Head	100	1341	3819	715	8.290	84.500	82.9	-1.89
2024/3/23	5750	Head	100	1341	3819	715	8.230	80.600	82.3	2.11
2024/3/29	750	Head	250	1099	7577	1210	2.290	8.540	9.16	7.26
2024/3/26	835	Head	250	4d162	7577	1210	2.520	9.640	10.08	4.56
2024/3/22	1750	Head	250	1137	7577	1210	9.190	36.500	36.76	0.71
2024/3/27	1900	Head	250	5d182	7577	1210	10.000	39.600	40	1.01
2024/3/26	2450	Head	250	924	7577	1210	13.800	52.300	55.2	5.54
2024/3/25	2600	Head	250	1070	7577	1210	14.300	56.200	57.2	1.78
2024/3/23	3500	Head	100	1076	7577	1210	6.540	66.200	65.4	-1.21
2024/3/26	3700	Head	100	1037	7577	1210	6.460	66.700	64.6	-3.15
2024/3/28	3900	Head	100	1022	7577	1210	6.340	66.400	63.4	-4.52
2024/3/26	5250	Head	100	1341	7577	1210	8.020	80.700	80.2	-0.62
2024/3/21	5600	Head	100	1341	7577	1210	9.070	84.500	90.7	7.34
2024/3/23	5750	Head	100	1341	7577	1210	8.630	80.600	86.3	7.07

<10g SAR>

Date	Frequency (MHz)	Tissue Type	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 (%)
2024/3/10	750	Head	250	1099	3819	715	1.510	5.650	6.04	6.90
2024/3/8	835	Head	250	4d162	3819	715	1.670	6.260	6.68	6.71
2024/3/14	1750	Head	250	1137	3819	715	4.490	19.200	17.96	-6.46
2024/3/11	1900	Head	250	5d182	3819	715	5.410	20.200	21.64	7.13
2024/3/23	2450	Head	250	924	3819	715	5.710	24.500	22.84	-6.78
2024/3/12	2600	Head	250	1070	3819	715	6.050	24.600	24.2	-1.63
2024/3/25	3500	Head	100	1076	3819	715	2.670	25.500	26.7	4.71
2024/3/18	3700	Head	100	1037	3819	715	2.570	24.600	25.7	4.47
2024/3/22	3900	Head	100	1022	3819	715	2.350	23.700	23.5	-0.84
2024/3/24	5250	Head	100	1341	3819	715	2.390	23.100	23.9	3.46
2024/3/27	5600	Head	100	1341	3819	715	2.410	24.000	24.1	0.42
2024/3/23	5750	Head	100	1341	3819	715	2.260	22.700	22.6	-0.44
2024/3/29	750	Head	250	1099	7577	1210	1.510	5.650	6.04	6.90
2024/3/26	835	Head	250	4d162	7577	1210	1.650	6.260	6.6	5.43
2024/3/22	1750	Head	250	1137	7577	1210	4.900	19.200	19.6	2.08
2024/3/27	1900	Head	250	5d182	7577	1210	5.230	20.200	20.92	3.56
2024/3/26	2450	Head	250	924	7577	1210	6.430	24.500	25.72	4.98
2024/3/25	2600	Head	250	1070	7577	1210	6.460	24.600	25.84	5.04
2024/3/23	3500	Head	100	1076	7577	1210	2.520	25.500	25.2	-1.18
2024/3/26	3700	Head	100	1037	7577	1210	2.400	24.600	24	-2.44
2024/3/28	3900	Head	100	1022	7577	1210	2.260	23.700	22.6	-4.64
2024/3/26	5250	Head	100	1341	7577	1210	2.260	23.100	22.6	-2.16
2024/3/21	5600	Head	100	1341	7577	1210	2.560	24.000	25.6	6.67
2024/3/23	5750	Head	100	1341	7577	1210	2.410	22.700	24.1	6.17

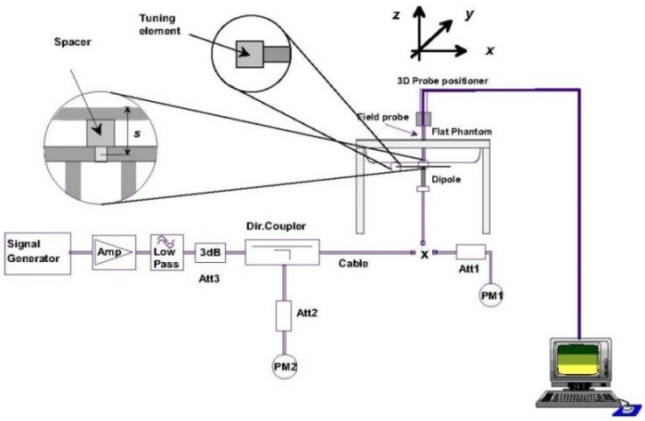


Fig 11.3.1 System Performance Check Setup

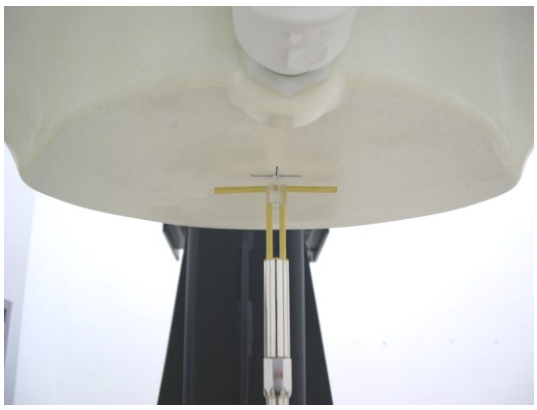


Fig 11.3.2 Setup Photo

13. RF Exposure Positions

13.1 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.

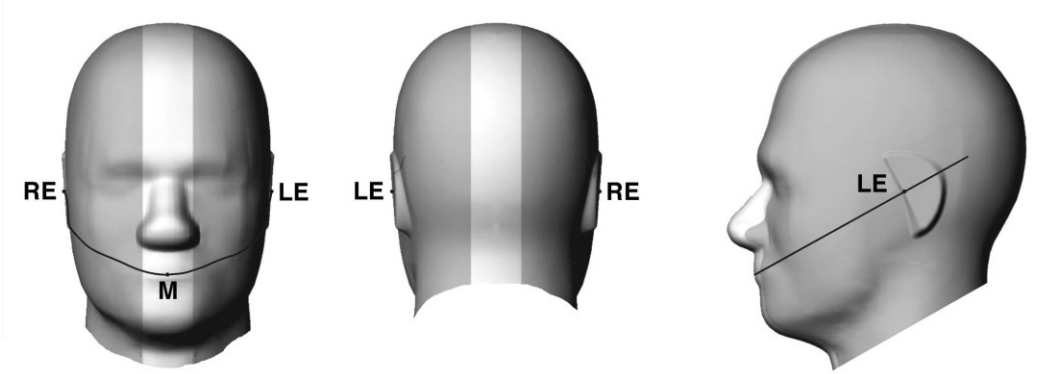


Fig 12.1.1 Front, back, and side views of SAM twin phantom

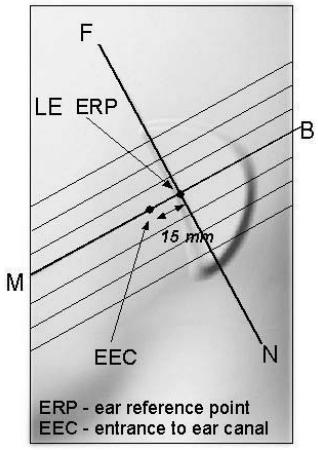


Fig 12.1.2 Close-up side view of phantom showing the ear region.

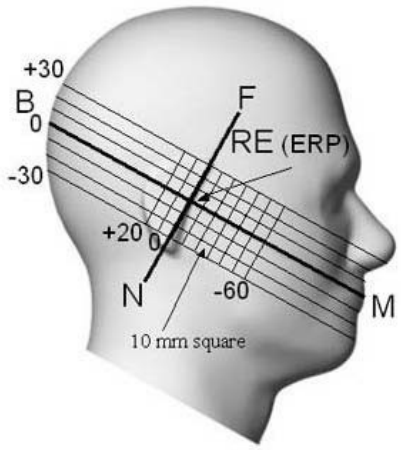


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

13.2 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.

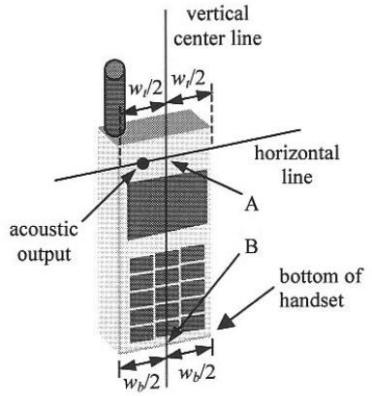


Fig 12.2.1 Handset vertical and horizontal reference lines—"fixed case

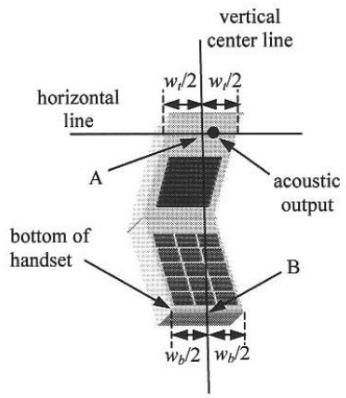


Fig 12.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

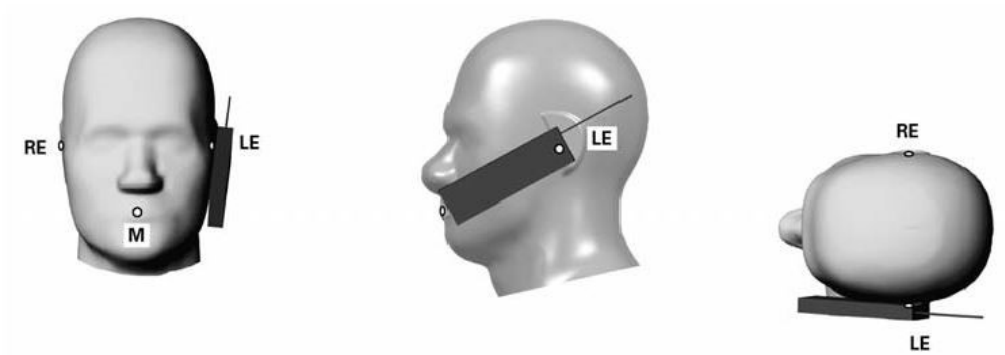


Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

13.3 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

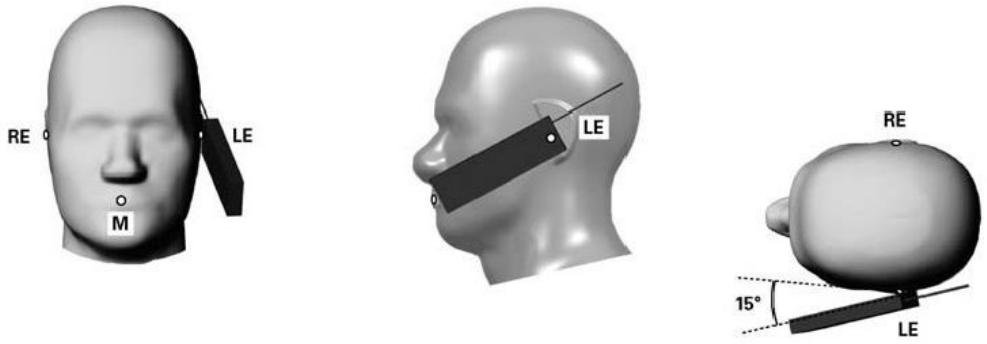


Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

13.4 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 11.4). 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. 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.

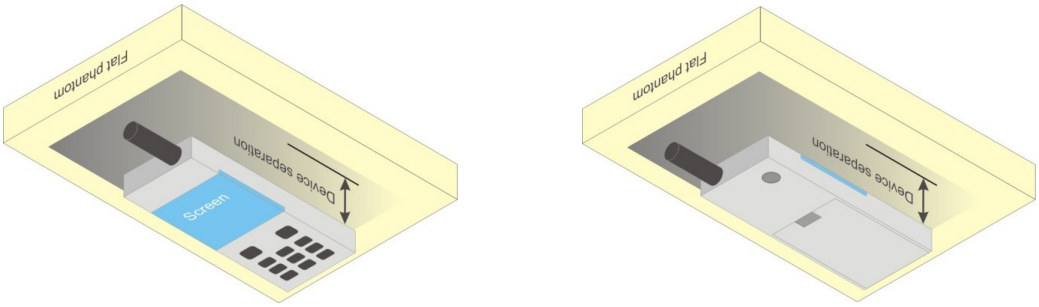


Fig 12.4 Body Worn Position

13.5 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 can provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets and 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.

13.6 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.

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

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

C.8.1.12 Fixed Reference Channel Definition H-Set 12

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

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

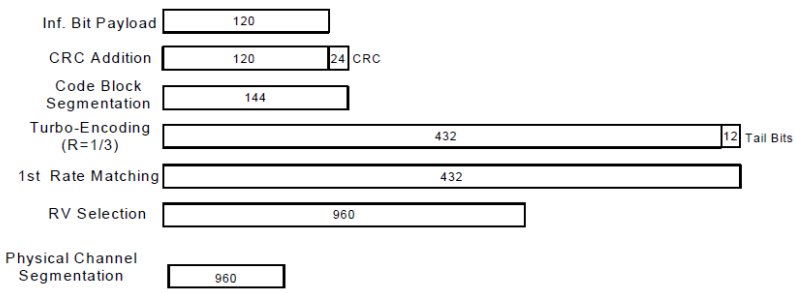


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

HSPA+ 3GPP release 7 (uplink category 7) 16QAM, Setup Configuration:

1. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
2. The RF path losses were compensated into the measurements.
3. A call was established between EUT and Base Station with following setting * :
   1. Call Configs = 5.2E:HSPA+:UL with 16QAM
   2. 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
   3. Set Channel Parms
   4. Set Cell Power = -86 dBm
   5. Set Channel Type = HSPA
   6. Set UE Target Power =21 dBm
   7. Power Ctrl Mode= All Up Bits
   8. Set Manual Uplink DPCH Bc/Bd = Manual
   9. Set Manual Uplink DPCH Bc and Bd=15,15(for 34.121-1 v8.10.0 table C11.1.4 sub-test 1)
   10. Set HSPA Conn DL Channel Levels
   11. Set HS-SCCH Configs
   12. Set RB Test Mode Setup
   13. Set Common HSUPA Parameters
   14. Set Serving Grant
   15. Confirm that E-TFCI is equal to the target E-TFCI of 105 for sub-test 1, and other subtest's E-TFCI
4. 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	$\beta_{ed}1$: 30/15 $\beta_{ed}2$: 30/15	$\beta_{ed}3$: 24/15 $\beta_{ed}4$: 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>

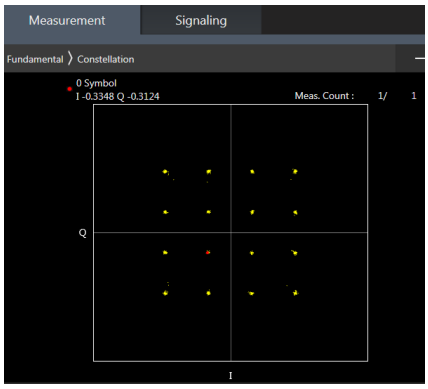
General Note:

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+.

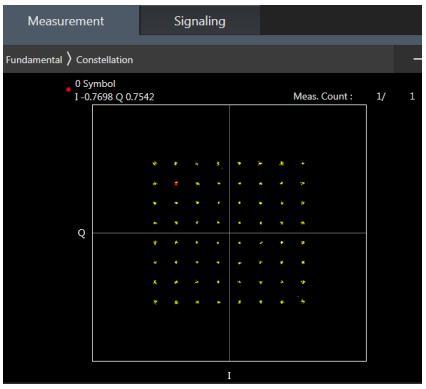
<LTE Conducted Power>

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 May 2017 TCB workshop, for 16QAM and 64QAM 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.



16QAM



64QAM

<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.

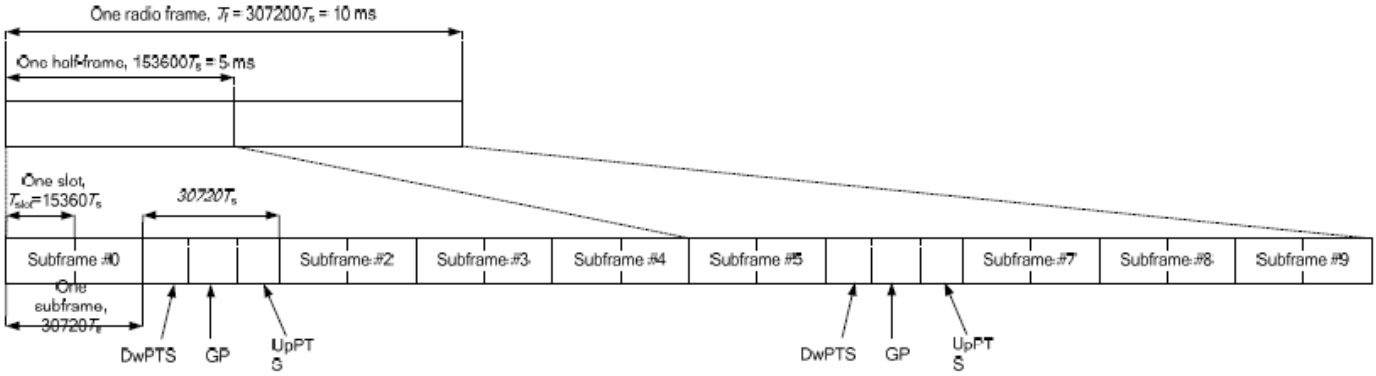


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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:

For LTE TDD Power class 3

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. All permutations exist. No restrictions on Pcell & Scell combinations.

2CC Downlink Carrier Aggregation				3CC Downlink Carrier Aggregation				4CC Downlink Carrier Aggregation			
Number	Combination	4X4 MIMO	Covered by Measurement Superset	Number	Combination	4X4 MIMO	Covered by Measurement Superset	Number	Combination	4X4 MIMO	Covered by Measurement Superset
1	CA_7C	7C	3CC-10	1	CA_2A-4A-7A			1	CA_5A-7C-66A		
2	CA_38C	38C		2	CA_2A-5A-7A			2	CA_5A-7A-66A-66A		
3	CA_41C	41C		3	CA_2A-7A-7A			3	CA_7C-66A-66A		
4	CA_66C	66C	3CC-13	4	CA_4A-4A-5A	4A		4			
5	CA_66B	66B		5	CA_4A-4A-7A	4A,7A		5			
6	CA_2A-2A			6	CA_5A-7A-66A		3CC-2	6			
7	CA_4A-4A	4A-4A	3CC-4	7	CA_5A-66A-66A	66A	3CC-2	7			
8	CA_5A-5A			8	CA_7A-66A-66A	7A,66A	3CC-2	8			
9	CA_7A-7A	7A-7A	3CC-3	9	CA_41A-41A-41A			9			
10	CA_41A-41A	41A	3CC-9	10	CA_2A-7C			10			
11	CA_66A-66A	66A-66A	3CC-7	11	CA_4A-7C	4A		11			
12	CA_2A-4A		3CC-1	12	CA_5A-7C		3CC-1	12			
13	CA_2A-5A		3CC-2	13	CA_5A-66C			13			
14	CA_2A-7A		3CC-3	14	CA_41D			14			
15	CA_2A-26A			15	CA_2A-4A-5A			15			
16	CA_2A-38A			16	CA_2A-5A-66A			16			
17	CA_4A-5A	4A	3CC-4	17	CA_2A-7A-66A			17			
18	CA_4A-7A	7A	3CC-5	18				18			
19	CA_5A-7A	7A	3CC-2	19				19			
20	CA_5A-38A	38A		20				20			
21	CA_5A-41A	41A		21				21			
22	CA_5A-66A	66A	3CC-6	22				22			
23	CA_7A-26A	7A		23				23			
24	CA_7A-66A	7A,66A	3CC-6	24				24			
25	CA_26A-41A	41A		25				25			
26	CA_2A-66A		3CC-16	26				26			

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 four 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.

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

LTE Carrier Aggregation Conducted Power (Uplink)

Intra CA	TX Ant		
CA_7C	Ant 13	Ant 31	Ant 11
CA_38C	Ant 13	Ant 31	Ant 11
CA_41C	Ant 13	Ant 31	Ant 11
CA_66C	Ant 13	Ant 31	Ant 11
CA_66B	Ant 13	Ant 31	Ant 11

<Intra-band>

General Note:

i. The device supports intra-band uplink carrier aggregation for LTE B7/B38/B41/B66 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 Nov. 2017 TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.

iv. Additional SAR measurement for LTE UL CA with 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

v. LTE CA_66B test was covered by CA_66C; therefore, SAR was only assessed for CA_66C.

<Inter-band uplink carrier aggregation consideration>

Band	LTE TX	LTE TX
CA_2A-4A	Ant31	Ant11
	Ant13	
CA_2A-7A	Ant31	Ant11
	Ant13	
CA_2A-66A	Ant31	Ant11
	Ant13	
CA_4A-5A	Ant11	Ant13
	Ant13	Ant31
CA_4A-7A	Ant31	Ant11
	Ant13	
CA_5A-7A	Ant13	Ant11
	Ant31	Ant13
CA_5A-66A	Ant13	Ant11
	Ant31	Ant13
CA_7A-26A	Ant11	Ant13
	Ant13	Ant31

General Note:

1 The LTE inter band total power is the same as LTE standalone power.

2 The product implements Qualcomm Smart Transmit feature which controls the instantaneous transmitting power for WWAN transmitter to ensure the product in compliance with FCC RF exposure limit over a defined time window, for SAR (transmit frequency ≤ 6GHz). To control and manage transmitting power in real time and to ensure at all times the time-averaged RF exposure is compliant to the regulation requirement.

3 For LTE inter-band CA mode, Qualcomm Smart Transmit algorithm in WWAN adds directly the time-averaged RF exposure between two LTE bands. Smart Transmit algorithm controls the total RF exposure base on LTE inter CA bands to not exceed FCC limit. In Part 1 Report, simultaneous transmission compliance was evaluated with other Radios (WLAN or BT) using standalone LTE SAR mode.

5G NR Output Power (Unit: dBm)

General Note:

1. 5G NR n2/n5/n7/n66/n38/n41/n77/n78 is NSA mode.
2. 5G NR n2/n5/n7/n26/n66/n38/n41/n77/n78 is SA mode.
3. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
   a. For DFT-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KDB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-s QPSK and the reported SAR for the DFT-s QPSK configuration is ≤ 1.45 W/kg; CP-OFDM testing is not required.
   b. For DFT-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, for 16QAM/64QAM/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the 16QAM/64QAM/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.
   c. SAR testing start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel
   d. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
   e. QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested
   f. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK /16QAM/64QAM/256QAM SAR testing are not required.
   g. Smaller bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
4. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
5. 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.
6. 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.
7. 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.
8. 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.
9. 5GNR n78 supports HPUE only, HPUE power and SAR testing performed separately.

<3GPP 38.101 MPR for EN-DC>

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

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	Pi/2 BPSK	≤ 3.5[1]	≤ 1.2[1]	≤ 0.2[1]
		≤ 0.5[2]	≤ 0.5[2]	0[2]
	QPSK	≤ 1		0
	16 QAM	≤ 2		≤ 1
	64 QAM	≤ 2.5		
	256 QAM	≤ 4.5		
CP-OFDM	QPSK	≤ 3		≤ 1.5
	16 QAM	≤ 3		≤ 2
	64 QAM	≤ 3.5		
	256 QAM	≤ 6.5		

NOTE 1: Applicable for UE operating in TDD mode with Pi/2 BPSK modulation and UE indicates support for UE capability *powerBoosting-pi2BPSK* and if the IE *powerBoostPi2BPSK* is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0 dB MPR is 26 dBm.

NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 with Pi/2 BPSK modulation and if the IE *powerBoostPi2BPSK* is set to 0 and if more than 40 % of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.

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

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

<EN-DC combination>

Band	LTE TX	NR TX
DC_7A_n2A	Ant31	Ant13
		Ant11
DC_7A_n5A	Ant11	Ant13
	Ant13	Ant31
DC_2A_n66A	Ant31	Ant13
		Ant11
DC_5A_n66A	Ant13	Ant11
	Ant31	Ant13
DC_7A_n66A	Ant31	Ant13
		Ant11
DC_2A_n7A	Ant31	Ant13
		Ant11
DC_4A_n7A	Ant31	Ant13
		Ant11
DC_5A_n7A	Ant13	Ant11
	Ant31	Ant13
DC_66A_n7A	Ant31	Ant13
		Ant11
DC_2A_n38A	Ant31	Ant13
		Ant11
DC_4A_n38A	Ant31	Ant13
		Ant11
DC_5A_n38A	Ant13	Ant11
	Ant31	Ant13
DC_66A_n38A	Ant31	Ant13
		Ant11
DC_2A_n41A	Ant31	Ant13
		Ant11

DC_4A_n41A	Ant31	Ant13
		Ant11
DC_26A_n41A	Ant13	Ant11
	Ant31	Ant13
DC_66A_n41A	Ant31	Ant13
		Ant11
DC_7A_n77A	Ant13 Ant 31	Ant11
		Ant12
		Ant21
		Ant23
DC_2A_n78A	Ant13 Ant 31	Ant11
		Ant12
		Ant21
		Ant23
DC_4A_n78A	Ant13 Ant 31	Ant11
		Ant12
		Ant21
		Ant23
DC_5A_n78A	Ant13 Ant 31	Ant11
		Ant12
		Ant21
		Ant23
DC_7A_n78A	Ant13 Ant 31	Ant11
		Ant12
		Ant21
		Ant23
DC_26A_n78A	Ant13 Ant 31	Ant11
		Ant12
		Ant21
		Ant23
DC_38A_n78A	Ant13 Ant 31	Ant11
		Ant12
		Ant21
		Ant23
DC_41A_n78A	Ant13 Ant 31	Ant11
		Ant12
		Ant21
		Ant23
DC_66A_n78A	Ant13 Ant 31	Ant11
		Ant12
		Ant21
		Ant23

<WLAN Conducted Power>

General Note:

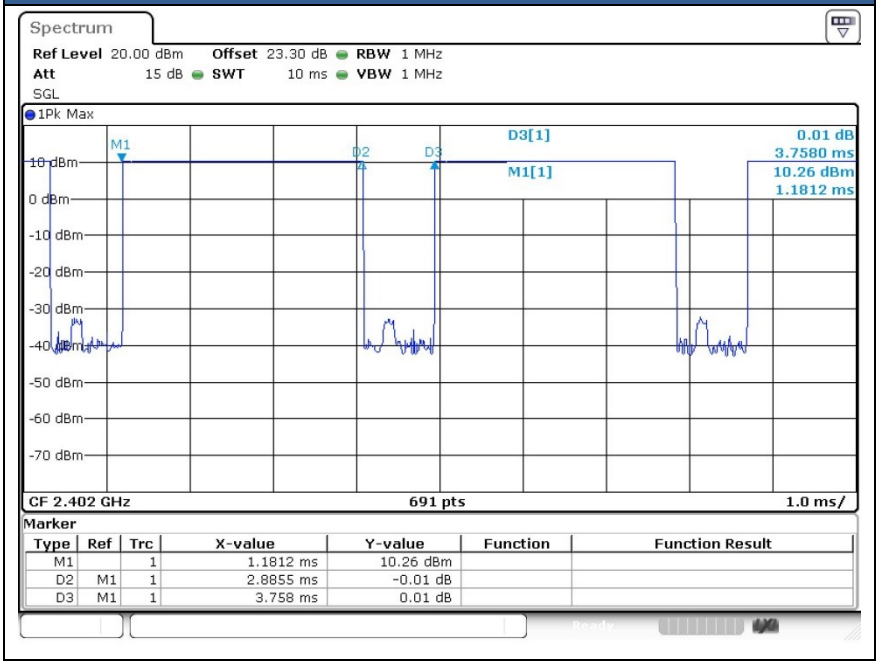
1. The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default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

<2.4GHz Bluetooth>

General Note:

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps, due to its highest average power.
2. The Bluetooth duty cycle are 76.78% as following figure, Bluetooth SAR scaling need further consideration and the theoretical duty cycle is 100%, therefore the actual duty cycle will be scaled up to the theoretical value of Bluetooth reported SAR calculation

Bluetooth time-domain plot



15. Antenna Location

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

16. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN/BT 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 of power class 3, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The reported TDD LTE SAR (W/kg) = Measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required 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. The device implements Proximity sensors/receiver/hotspot detect for SAR compliance at different exposure conditions (head, body-worn, hotspot/extremity) and the Qualcomm smart transmit will manage to ensure the power level not exceeding the associated power table. It uses the receiver to indicate whether the user is making a call in head scenario or not. The selection between head and body power levels is based on the receiver detection mechanism. It can determine proximity to head or body and set the relevant power level for 2G&3G&4G&5G and Wi-Fi antennas accordingly. Details about the power management decision is provided in the operational description. And the device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to power table at appendix E.
5. For WLAN when transmit simultaneously together with WWAN, the device power will be reduced power at head, body-worn, hotspot and extremity conditions.
6. 5GNR n78 supports HPUE only, HPUE power and SAR testing performed separately.
7. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
8. 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. For this device SAR for WWAN transmitter scaled to maximum output power mode for product specific 10g SAR is higher than 1.2W/kg of WCDMA II, LTE Band 2/4/7/66/38/41, 5GNR n2/n7/n66/n38/n41/n77/n78, therefore product specific 10g SAR is necessary.
   b. WLAN 5.3/5.5GHz tested the product specific 10g SAR since it has no hotspot mode.
   c. 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.
9. According to Nov. 2017 TCB workshop, when the reported 1gSAR for UL CA configuration is <1.2 W/kg, UL CA 1gSAR is not required for all required test channels (PCC based).
10. The following table “n/a” in the result means the SAR cube is too small to be detected.

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:

For 5G NR test procedure was following step similar FCC KDB 941225 D05:

a. SAR testing start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.

b. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure

c. QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

d. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK /16QAM/64QAM/256QAM SAR testing are not required.

e. Smaller bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device

f. For 5G FR1 n5/n7/n25/n38/n41/n66/n77 the maximum bandwidth does not support three non-overlapping channels, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

WLAN/Bluetooth Note:

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

DSI status description:

The device has the following DSI state which used at different exposure condition.

This WWAN bands enabled with Qualcomm Smart Transmit feature which located at chapter 5. The default power is Pmax power, When Plimit power higher than Pmax power, the output power will be limited at Pmax, and so the SAR will use Pmax power to do the testing.

DSI	Trigger Conditions	Antenna No.	Exposure conditions	
DSI2	Receiver on	All Ant	Head Standalone	Head all Position
DSI3	Receiver on+WLAN	All Ant	Head Simultaneous	Head all Position
DSI4	Receiver off/Sensor off	Ant 11/13	Sensor Trigger Distance -1mm	See by section 5
	Receiver off/Sensor off	Ant 11/13	Body/Extremity Standalone	No Sensor Position
DSI5	Receiver off/Sensor A +B on	Ant 13	Body/Extremity Standalone	See by section 5
	Receiver off/Sensor A+B on	Ant 11	Body/Extremity Standalone	See by section 5
	Receiver off/Sensor off	Ant 12/21/22/23/31	Body/Extremity Standalone	Body all Position
DSI8	Receiver off/Sensor A +B on+WLAN	Ant 13	Body/Extremity Simultaneous	See by section 5
	Receiver off/Sensor A +B on+WLAN	Ant 11	Body/Extremity Simultaneous	See by section 5
	Receiver off/Sensor off+WLAN	Ant 12/21/22/23/31	Body/Extremity Simultaneous	Body all Position
DSI9	Receiver off/Sensor A on+B off +WLAN	Ant 11	Body/Extremity Simultaneous	No Sensor Position
DSI10	Receiver off/Sensor A off +WLAN	Ant 13	Body/Extremity Simultaneous	No Sensor Position
	Hotspot	All ant	Hotspot	Body all Position

16.1 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	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750MHz																				
01	LTE Band 12	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 13	DSI 2	23095	707.5	24.30	25.00	1.175	-	-	-0.07	0.683	**0.802**
	LTE Band 12	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	23095	707.5	24.30	25.00	1.175	-	-	-0.11	0.656	0.771
	LTE Band 12	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 13	DSI 2	23095	707.5	24.30	25.00	1.175	-	-	-0.03	0.464	0.545
	LTE Band 12	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 13	DSI 2	23095	707.5	24.30	25.00	1.175	-	-	-0.08	0.467	0.549
	LTE Band 12	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 13	DSI 2	23095	707.5	23.41	24.00	1.146	-	-	-0.15	0.566	0.648
	LTE Band 12	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 13	DSI 2	23095	707.5	23.41	24.00	1.146	-	-	-0.12	0.541	0.620
	LTE Band 12	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 13	DSI 2	23095	707.5	23.41	24.00	1.146	-	-	-0.12	0.386	0.442
	LTE Band 12	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 13	DSI 2	23095	707.5	23.41	24.00	1.146	-	-	-0.06	0.390	0.447
	LTE Band 12	10M	QPSK	50	0	-	Right Cheek	0mm	Ant 13	DSI 2	23095	707.5	23.33	24.00	1.167	-	-	0.13	0.586	0.684
	LTE Band 12	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 31	DSI 2	23095	707.5	24.39	25.00	1.151	-	-	-0.05	0.053	0.061
	LTE Band 12	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 31	DSI 2	23095	707.5	24.39	25.00	1.151	-	-	0.01	0.040	0.046
	LTE Band 12	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 31	DSI 2	23095	707.5	24.39	25.00	1.151	-	-	-0.03	0.068	0.078
	LTE Band 12	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 31	DSI 2	23095	707.5	24.39	25.00	1.151	-	-	0.01	0.041	0.047
	LTE Band 12	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 31	DSI 2	23095	707.5	23.49	24.00	1.125	-	-	-0.1	0.047	0.053
	LTE Band 12	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 31	DSI 2	23095	707.5	23.49	24.00	1.125	-	-	-0.11	0.032	0.036
	LTE Band 12	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 31	DSI 2	23095	707.5	23.49	24.00	1.125	-	-	0.18	0.060	0.067
	LTE Band 12	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 31	DSI 2	23095	707.5	23.49	24.00	1.125	-	-	0.1	0.034	0.038
02	LTE Band 13	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 13	DSI 2	23230	782	24.17	25.00	1.211	-	-	0.16	0.557	**0.674**
	LTE Band 13	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	23230	782	24.17	25.00	1.211	-	-	-0.12	0.520	0.630
	LTE Band 13	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 13	DSI 2	23230	782	24.17	25.00	1.211	-	-	0.11	0.405	0.490
	LTE Band 13	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 13	DSI 2	23230	782	24.17	25.00	1.211	-	-	0.08	0.390	0.472
	LTE Band 13	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 13	DSI 2	23230	782	23.11	24.00	1.227	-	-	-0.03	0.451	0.554
	LTE Band 13	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 13	DSI 2	23230	782	23.11	24.00	1.227	-	-	0.12	0.415	0.509
	LTE Band 13	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 13	DSI 2	23230	782	23.11	24.00	1.227	-	-	0.17	0.322	0.395
	LTE Band 13	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 13	DSI 2	23230	782	23.11	24.00	1.227	-	-	0.1	0.311	0.382
	LTE Band 13	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 31	DSI 2	23230	782	24.16	25.00	1.213	-	-	0.02	0.067	0.081
	LTE Band 13	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 31	DSI 2	23230	782	24.16	25.00	1.213	-	-	0.07	0.040	0.049
	LTE Band 13	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 31	DSI 2	23230	782	24.16	25.00	1.213	-	-	0.14	0.092	0.112
	LTE Band 13	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 31	DSI 2	23230	782	24.16	25.00	1.213	-	-	-0.16	0.054	0.066
	LTE Band 13	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 31	DSI 2	23230	782	23.17	24.00	1.211	-	-	-0.09	0.054	0.065
	LTE Band 13	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 31	DSI 2	23230	782	23.17	24.00	1.211	-	-	-0.1	0.035	0.042
	LTE Band 13	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 31	DSI 2	23230	782	23.17	24.00	1.211	-	-	-0.14	0.073	0.088
	LTE Band 13	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 31	DSI 2	23230	782	23.17	24.00	1.211	-	-	-0.12	0.044	0.053
835MHz																				
03	GSM850	-	-	-	-	GPRS(2 Tx slots)	Right Cheek	0mm	Ant 13	DSI 2	189	836.4	27.17	29.00	1.524	-	-	0.08	0.516	**0.786**
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Right Tilted	0mm	Ant 13	DSI 2	189	836.4	27.17	29.00	1.524	-	-	-0.11	0.468	0.713
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Left Cheek	0mm	Ant 13	DSI 2	189	836.4	27.17	29.00	1.524	-	-	0.16	0.315	0.480
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Left Tilted	0mm	Ant 13	DSI 2	189	836.4	27.17	29.00	1.524	-	-	-0.17	0.288	0.439
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Right Cheek	0mm	Ant 31	DSI 2	189	836.4	30.56	31.50	1.242	-	-	0.14	0.099	0.123
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Right Tilted	0mm	Ant 31	DSI 2	189	836.4	30.56	31.50	1.242	-	-	0.1	0.063	0.078
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Left Cheek	0mm	Ant 31	DSI 2	189	836.4	30.56	31.50	1.242	-	-	-0.14	0.121	0.150
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Left Tilted	0mm	Ant 31	DSI 2	189	836.4	30.56	31.50	1.242	-	-	0.15	0.066	0.082
04	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 13	DSI 2	4182	836.4	21.29	22.00	1.178	-	-	0.07	0.664	**0.782**
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 13	DSI 2	4182	836.4	21.29	22.00	1.178	-	-	-0.06	0.621	0.731
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 13	DSI 2	4182	836.4	21.29	22.00	1.178	-	-	0.02	0.449	0.529
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 13	DSI 2	4182	836.4	21.29	22.00	1.178	-	-	-0.08	0.430	0.506
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 31	DSI 2	4182	836.4	24.39	25.00	1.151	-	-	0.14	0.093	0.107
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 31	DSI 2	4182	836.4	24.39	25.00	1.151	-	-	-0.04	0.052	0.060
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 31	DSI 2	4182	836.4	24.39	25.00	1.151	-	-	0.14	0.102	0.117
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 31	DSI 2	4182	836.4	24.39	25.00	1.151	-	-	-0.05	0.058	0.067
	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 13	DSI 2	26865	831.5	22.11	23.00	1.227	-	-	-0.02	0.680	0.835

	LTE Band 26	15M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	26865	831.5	22.11	23.00	1.227	-	-	-0.16	0.646	0.793
	LTE Band 26	15M	QPSK	1	0	-	Left Cheek	0mm	Ant 13	DSI 2	26865	831.5	22.11	23.00	1.227	-	-	-0.04	0.485	0.595
	LTE Band 26	15M	QPSK	1	0	-	Left Tilted	0mm	Ant 13	DSI 2	26865	831.5	22.11	23.00	1.227	-	-	0.13	0.508	0.624
05	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 13	DSI 2	26865	831.5	22.01	23.00	1.256	-	-	0.17	0.719	**0.903**
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	0mm	Ant 13	DSI 2	26865	831.5	22.01	23.00	1.256	-	-	-0.06	0.664	0.834
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	0mm	Ant 13	DSI 2	26865	831.5	22.01	23.00	1.256	-	-	0.08	0.497	0.624
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	0mm	Ant 13	DSI 2	26865	831.5	22.01	23.00	1.256	-	-	0.18	0.520	0.653
	LTE Band 26	15M	QPSK	75	0	-	Right Cheek	0mm	Ant 13	DSI 2	26865	831.5	21.98	23.00	1.265	-	-	-0.13	0.687	0.869
	LTE Band 26	15M	QPSK	75	0	-	Right Tilted	0mm	Ant 13	DSI 2	26865	831.5	21.98	23.00	1.265	-	-	0.08	0.622	0.787
	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 13	DSI 3	26865	831.5	19.04	20.00	1.247	-	-	0.18	0.341	0.425
	LTE Band 26	15M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 3	26865	831.5	19.04	20.00	1.247	-	-	-0.04	0.324	0.404
	LTE Band 26	15M	QPSK	1	0	-	Left Cheek	0mm	Ant 13	DSI 3	26865	831.5	19.04	20.00	1.247	-	-	-0.07	0.243	0.303
	LTE Band 26	15M	QPSK	1	0	-	Left Tilted	0mm	Ant 13	DSI 3	26865	831.5	19.04	20.00	1.247	-	-	-0.16	0.255	0.318
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 13	DSI 3	26865	831.5	18.96	20.00	1.271	-	-	0.07	0.360	0.457
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	0mm	Ant 13	DSI 3	26865	831.5	18.96	20.00	1.271	-	-	0.13	0.333	0.423
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	0mm	Ant 13	DSI 3	26865	831.5	18.96	20.00	1.271	-	-	0.18	0.249	0.316
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	0mm	Ant 13	DSI 3	26865	831.5	18.96	20.00	1.271	-	-	-0.18	0.261	0.332
	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 31	DSI 2	26865	831.5	23.91	25.00	1.285	-	-	-0.12	0.074	0.095
	LTE Band 26	15M	QPSK	1	0	-	Right Tilted	0mm	Ant 31	DSI 2	26865	831.5	23.91	25.00	1.285	-	-	0.01	0.045	0.058
	LTE Band 26	15M	QPSK	1	0	-	Left Cheek	0mm	Ant 31	DSI 2	26865	831.5	23.91	25.00	1.285	-	-	-0.04	0.088	0.113
	LTE Band 26	15M	QPSK	1	0	-	Left Tilted	0mm	Ant 31	DSI 2	26865	831.5	23.91	25.00	1.285	-	-	0.13	0.046	0.059
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 31	DSI 2	26865	831.5	22.91	24.00	1.285	-	-	-0.06	0.063	0.081
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	0mm	Ant 31	DSI 2	26865	831.5	22.91	24.00	1.285	-	-	0.08	0.040	0.051
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	0mm	Ant 31	DSI 2	26865	831.5	22.91	24.00	1.285	-	-	-0.15	0.075	0.096
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	0mm	Ant 31	DSI 2	26865	831.5	22.91	24.00	1.285	-	-	0.03	0.035	0.045
	FR1 n26	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 13	DSI 2	166300	831.5	21.60	22.50	1.230	-	-	-0.15	0.726	0.893
	FR1 n26	20M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 13	DSI 2	166300	831.5	21.60	22.50	1.230	-	-	-0.04	0.564	0.694
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 13	DSI 2	166300	831.5	21.60	22.50	1.230	-	-	-0.07	0.465	0.572
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 13	DSI 2	166300	831.5	21.60	22.50	1.230	-	-	0.04	0.404	0.497
06	FR1 n26	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 13	DSI 2	166300	831.5	21.47	22.50	1.268	-	-	-0.18	0.750	**0.951**
	FR1 n26	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 13	DSI 2	166300	831.5	21.47	22.50	1.268	-	-	-0.06	0.603	0.764
	FR1 n26	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 13	DSI 2	166300	831.5	21.47	22.50	1.268	-	-	-0.13	0.489	0.620
	FR1 n26	20M	QPSK	50	28	DFT-15	Left Tilted	0mm	Ant 13	DSI 2	166300	831.5	21.47	22.50	1.268	-	-	-0.1	0.445	0.564
	FR1 n26	20M	QPSK	100	0	DFT-15	Right Cheek	0mm	Ant 13	DSI 2	166300	831.5	21.44	22.50	1.276	-	-	0.05	0.731	0.933
	FR1 n26	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 13	DSI 3	166300	831.5	19.99	21.00	1.262	-	-	-0.19	0.514	0.649
	FR1 n26	20M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 13	DSI 3	166300	831.5	19.99	21.00	1.262	-	-	0.02	0.399	0.503
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 13	DSI 3	166300	831.5	19.99	21.00	1.262	-	-	0.11	0.329	0.415
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 13	DSI 3	166300	831.5	19.99	21.00	1.262	-	-	0.08	0.286	0.361
	FR1 n26	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 13	DSI 3	166300	831.5	19.97	21.00	1.268	-	-	-0.14	0.531	0.673
	FR1 n26	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 13	DSI 3	166300	831.5	19.97	21.00	1.268	-	-	-0.07	0.427	0.541
	FR1 n26	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 13	DSI 3	166300	831.5	19.97	21.00	1.268	-	-	0.14	0.346	0.439
	FR1 n26	20M	QPSK	50	28	DFT-15	Left Tilted	0mm	Ant 13	DSI 3	166300	831.5	19.97	21.00	1.268	-	-	0.02	0.315	0.399
	FR1 n26	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 31	DSI 2	166300	831.5	23.83	25.00	1.309	-	-	-0.19	0.078	0.102
	FR1 n26	20M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 31	DSI 2	166300	831.5	23.83	25.00	1.309	-	-	-0.06	0.045	0.059
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 31	DSI 2	166300	831.5	23.83	25.00	1.309	-	-	0.16	0.096	0.126
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 31	DSI 2	166300	831.5	23.83	25.00	1.309	-	-	0.01	0.048	0.063
	FR1 n26	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 31	DSI 2	166300	831.5	23.69	25.00	1.352	-	-	0.13	0.092	0.124
	FR1 n26	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 31	DSI 2	166300	831.5	23.69	25.00	1.352	-	-	-0.07	0.048	0.065
	FR1 n26	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 31	DSI 2	166300	831.5	23.69	25.00	1.352	-	-	0.08	0.107	0.145
	FR1 n26	20M	QPSK	50	28	DFT-15	Left Tilted	0mm	Ant 31	DSI 2	166300	831.5	23.69	25.00	1.352	-	-	-0.16	0.054	0.073
1750MHz																				
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 13	DSI 2	1413	1732.6	18.42	19.00	1.143	-	-	-0.02	0.803	0.918
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 13	DSI 2	1413	1732.6	18.42	19.00	1.143	-	-	0.04	0.851	0.973
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 13	DSI 2	1413	1732.6	18.42	19.00	1.143	-	-	-0.03	0.417	0.477
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 13	DSI 2	1413	1732.6	18.42	19.00	1.143	-	-	0.07	0.514	0.587
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 13	DSI 2	1312	1712.4	18.37	19.00	1.156	-	-	-0.08	0.855	0.988
07	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 13	DSI 2	1513	1752.6	18.39	19.00	1.151	-	-	-0.04	0.862	**0.992**

	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 31	DSI 2	1413	1732.6	23.97	24.50	1.130	-	-	-0.17	0.055	0.062
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 31	DSI 2	1413	1732.6	23.97	24.50	1.130	-	-	-0.12	0.047	0.053
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 31	DSI 2	1413	1732.6	23.97	24.50	1.130	-	-	0.09	0.085	0.096
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 31	DSI 2	1413	1732.6	23.97	24.50	1.130	-	-	-0.07	0.043	0.049
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 13	DSI 2	132322	1745	17.58	18.50	1.236	-	-	-0.18	0.670	0.828
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	132322	1745	17.58	18.50	1.236	-	-	0.18	0.717	0.886
	LTE Band 66	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 13	DSI 2	132322	1745	17.58	18.50	1.236	-	-	0.13	0.373	0.461
	LTE Band 66	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 13	DSI 2	132322	1745	17.58	18.50	1.236	-	-	-0.19	0.461	0.570
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 13	DSI 2	132072	1720	17.49	18.50	1.262	-	-	0.11	0.643	0.811
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 13	DSI 2	132572	1770	17.50	18.50	1.259	-	-	-0.13	0.647	0.815
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	132072	1720	17.49	18.50	1.262	-	-	0.09	0.692	0.873
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	132572	1770	17.50	18.50	1.259	-	-	-0.05	0.697	0.877
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 13	DSI 2	132322	1745	17.50	18.50	1.259	-	-	-0.13	0.652	0.821
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 13	DSI 2	132322	1745	17.50	18.50	1.259	-	-	0.14	0.724	0.911
	LTE Band 66C	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	132322 +132124	1745 +1725.2	17.03	18.50	1.403	-	-	0.11	0.611	0.857
	LTE Band 66	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 13	DSI 2	132322	1745	17.50	18.50	1.259	-	-	0.01	0.379	0.477
	LTE Band 66	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 13	DSI 2	132322	1745	17.50	18.50	1.259	-	-	0.13	0.470	0.592
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 13	DSI 2	132072	1720	17.47	18.50	1.268	-	-	0.04	0.659	0.835
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 13	DSI 2	132572	1770	17.48	18.50	1.265	-	-	-0.18	0.649	0.821
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 13	DSI 2	132072	1720	17.47	18.50	1.268	-	-	0.06	0.653	0.828
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 13	DSI 2	132572	1770	17.48	18.50	1.265	-	-	0.02	0.662	0.837
	LTE Band 66	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 13	DSI 2	132322	1745	17.49	18.50	1.262	-	-	-0.02	0.644	0.813
	LTE Band 66	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 13	DSI 2	132322	1745	17.49	18.50	1.262	-	-	0.08	0.670	0.845
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 31	DSI 2	132322	1745	23.52	24.50	1.253	-	-	0.13	0.048	0.060
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 31	DSI 2	132322	1745	23.52	24.50	1.253	-	-	0.17	0.030	0.038
	LTE Band 66	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 31	DSI 2	132322	1745	23.52	24.50	1.253	-	-	0.19	0.066	0.083
	LTE Band 66C	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 31	DSI 2	132322 +132124	1745 +1725.2	23.01	24.50	1.409	-	-	0.19	0.052	0.073
	LTE Band 66	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 31	DSI 2	132322	1745	23.52	24.50	1.253	-	-	0.08	0.031	0.039
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 31	DSI 2	132322	1745	22.62	23.50	1.225	-	-	-0.18	0.038	0.047
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 31	DSI 2	132322	1745	22.62	23.50	1.225	-	-	-0.05	0.025	0.031
	LTE Band 66	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 31	DSI 2	132322	1745	22.62	23.50	1.225	-	-	0.05	0.057	0.070
	LTE Band 66	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 31	DSI 2	132322	1745	22.62	23.50	1.225	-	-	-0.02	0.026	0.032
08	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 11	DSI 2	132322	1745	20.63	21.50	1.222	-	-	0.04	0.762	**0.931**
	LTE Band 66C	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 11	DSI 2	132322 +132124	1745 +1725.2	19.97	21.50	1.422	-	-	0.04	0.621	0.883
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 11	DSI 2	132322	1745	20.63	21.50	1.222	-	-	-0.04	0.146	0.178
	LTE Band 66	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 11	DSI 2	132322	1745	20.63	21.50	1.222	-	-	0.18	0.404	0.494
	LTE Band 66	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 11	DSI 2	132322	1745	20.63	21.50	1.222	-	-	0.05	0.087	0.106
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 11	DSI 2	132072	1720	20.61	21.50	1.227	-	-	-0.17	0.711	0.873
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 11	DSI 2	132572	1770	20.60	21.50	1.230	-	-	0.18	0.702	0.864
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 11	DSI 2	132322	1745	20.59	21.50	1.233	-	-	-0.14	0.712	0.878
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 11	DSI 2	132322	1745	20.59	21.50	1.233	-	-	-0.12	0.144	0.178
	LTE Band 66	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 11	DSI 2	132322	1745	20.59	21.50	1.233	-	-	0.16	0.397	0.490
	LTE Band 66	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 11	DSI 2	132322	1745	20.59	21.50	1.233	-	-	0.18	0.086	0.106
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 11	DSI 2	132072	1720	20.58	21.50	1.236	-	-	0.03	0.702	0.868
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 11	DSI 2	132572	1770	20.44	21.50	1.276	-	-	-0.11	0.682	0.871
	LTE Band 66	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 11	DSI 2	132322	1745	20.56	21.50	1.242	-	-	0.06	0.702	0.872
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 13	DSI 2	349000	1745	17.55	18.50	1.245	-	-	0.11	0.619	0.770
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 13	DSI 2	349000	1745	17.55	18.50	1.245	-	-	-0.16	0.744	0.926
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 13	DSI 2	349000	1745	17.55	18.50	1.245	-	-	0.02	0.464	0.577
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 13	DSI 2	349000	1745	17.55	18.50	1.245	-	-	-0.06	0.527	0.656
	FR1 n66	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 13	DSI 2	349000	1745	17.48	18.50	1.265	-	-	-0.1	0.644	0.814
09	FR1 n66	40M	QPSK	108	54	DFT-15	Right Tilted	0mm	Ant 13	DSI 2	349000	1745	17.48	18.50	1.265	-	-	-0.09	0.768	**0.971**
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 13	DSI 2	349000	1745	17.48	18.50	1.265	-	-	0.05	0.464	0.587
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Tilted	0mm	Ant 13	DSI 2	349000	1745	17.48	18.50	1.265	-	-	-0.18	0.538	0.680
	FR1 n66	40M	QPSK	216	0	DFT-15	Right Tilted	0mm	Ant 13	DSI 2	349000	1745	17.44	18.50	1.276	-	-	0.05	0.731	0.933
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 13	DSI 3	349000	1745	16.49	17.50	1.262	-	-	-0.16	0.492	0.621

	FR1 n66	40M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 13	DSI 3	349000	1745	16.49	17.50	1.262	-	-	-0.03	0.591	0.746
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 13	DSI 3	349000	1745	16.49	17.50	1.262	-	-	0.06	0.369	0.466
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 13	DSI 3	349000	1745	16.49	17.50	1.262	-	-	0.19	0.419	0.529
	FR1 n66	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 13	DSI 3	349000	1745	16.41	17.50	1.285	-	-	-0.11	0.512	0.658
	FR1 n66	40M	QPSK	108	54	DFT-15	Right Tilted	0mm	Ant 13	DSI 3	349000	1745	16.41	17.50	1.285	-	-	-0.17	0.610	0.784
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 13	DSI 3	349000	1745	16.41	17.50	1.285	-	-	-0.19	0.369	0.474
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Tilted	0mm	Ant 13	DSI 3	349000	1745	16.41	17.50	1.285	-	-	-0.07	0.427	0.549
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 31	DSI 2	349000	1745	23.41	24.50	1.285	-	-	-0.15	0.048	0.062
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 31	DSI 2	349000	1745	23.41	24.50	1.285	-	-	-0.18	0.031	0.040
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 31	DSI 2	349000	1745	23.41	24.50	1.285	-	-	-0.12	0.064	0.082
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 31	DSI 2	349000	1745	23.41	24.50	1.285	-	-	0.15	0.030	0.039
	FR1 n66	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 31	DSI 2	349000	1745	23.19	24.50	1.352	-	-	0.11	0.046	0.062
	FR1 n66	40M	QPSK	108	54	DFT-15	Right Tilted	0mm	Ant 31	DSI 2	349000	1745	23.19	24.50	1.352	-	-	0.07	0.029	0.039
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 31	DSI 2	349000	1745	23.19	24.50	1.352	-	-	0.17	0.071	0.096
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Tilted	0mm	Ant 31	DSI 2	349000	1745	23.19	24.50	1.352	-	-	-0.17	0.028	0.038
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 11	DSI 2	349000	1745	20.19	21.00	1.205	-	-	-0.07	0.733	0.883
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 11	DSI 2	349000	1745	20.19	21.00	1.205	-	-	-0.13	0.152	0.183
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 11	DSI 2	349000	1745	20.19	21.00	1.205	-	-	-0.08	0.429	0.517
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 11	DSI 2	349000	1745	20.19	21.00	1.205	-	-	-0.14	0.104	0.125
	FR1 n66	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 11	DSI 2	349000	1745	20.18	21.00	1.208	-	-	0.13	0.803	0.970
	FR1 n66	40M	QPSK	108	54	DFT-15	Right Tilted	0mm	Ant 11	DSI 2	349000	1745	20.18	21.00	1.208	-	-	-0.15	0.166	0.200
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 11	DSI 2	349000	1745	20.18	21.00	1.208	-	-	0.18	0.396	0.478
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Tilted	0mm	Ant 11	DSI 2	349000	1745	20.18	21.00	1.208	-	-	-0.18	0.094	0.114
	FR1 n66	40M	QPSK	216	0	DFT-15	Right Cheek	0mm	Ant 11	DSI 2	349000	1745	20.06	21.00	1.242	-	-	0.05	0.770	0.956
1900MHz																				
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Right Cheek	0mm	Ant 13	DSI 2	512	1850.2	24.88	25.50	1.153	-	-	-0.09	0.681	0.786
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Right Tilted	0mm	Ant 13	DSI 2	512	1850.2	24.88	25.50	1.153	-	-	0.06	0.820	0.946
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Left Cheek	0mm	Ant 13	DSI 2	512	1850.2	24.88	25.50	1.153	-	-	0.15	0.420	0.484
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Left Tilted	0mm	Ant 13	DSI 2	512	1850.2	24.88	25.50	1.153	-	-	0.12	0.515	0.594
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Right Tilted	0mm	Ant 13	DSI 2	661	1880	24.74	25.50	1.191	-	-	0.04	0.802	0.955
10	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Right Tilted	0mm	Ant 13	DSI 2	810	1909.8	24.70	25.50	1.202	-	-	-0.15	0.822	**0.988**
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Right Cheek	0mm	Ant 31	DSI 2	661	1880	27.67	28.50	1.211	-	-	-0.06	0.053	0.064
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Right Tilted	0mm	Ant 31	DSI 2	661	1880	27.67	28.50	1.211	-	-	0.04	0.041	0.050
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Left Cheek	0mm	Ant 31	DSI 2	661	1880	27.67	28.50	1.211	-	-	-0.14	0.070	0.085
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Left Tilted	0mm	Ant 31	DSI 2	661	1880	27.67	28.50	1.211	-	-	-0.07	0.041	0.050
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 13	DSI 2	9400	1880	17.96	18.50	1.132	-	-	-0.01	0.753	0.853
11	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 13	DSI 2	9400	1880	17.96	18.50	1.132	-	-	0.01	0.810	**0.917**
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 13	DSI 2	9400	1880	17.96	18.50	1.132	-	-	-0.08	0.364	0.412
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 13	DSI 2	9400	1880	17.96	18.50	1.132	-	-	0.15	0.466	0.528
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 13	DSI 2	9262	1852.4	17.91	18.50	1.146	-	-	0.06	0.770	0.882
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 13	DSI 2	9538	1907.6	17.94	18.50	1.138	-	-	-0.08	0.762	0.867
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 13	DSI 2	9262	1852.4	17.91	18.50	1.146	-	-	-0.18	0.800	0.916
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 13	DSI 2	9538	1907.6	17.94	18.50	1.138	-	-	0.06	0.802	0.912
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 31	DSI 2	9400	1880	23.95	24.50	1.135	-	-	-0.1	0.100	0.114
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 31	DSI 2	9400	1880	23.95	24.50	1.135	-	-	-0.15	0.081	0.092
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 31	DSI 2	9400	1880	23.95	24.50	1.135	-	-	-0.16	0.118	0.134
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 31	DSI 2	9400	1880	23.95	24.50	1.135	-	-	-0.09	0.066	0.075
	LTE Band 2	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 13	DSI 2	18900	1880	17.69	18.50	1.205	-	-	0.06	0.513	0.618
	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	18900	1880	17.69	18.50	1.205	-	-	-0.06	0.690	0.831
	LTE Band 2	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 13	DSI 2	18900	1880	17.69	18.50	1.205	-	-	0.08	0.324	0.390
	LTE Band 2	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 13	DSI 2	18900	1880	17.69	18.50	1.205	-	-	-0.04	0.420	0.506
	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	18700	1860	17.65	18.50	1.216	-	-	0.14	0.667	0.811
	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	19100	1900	17.60	18.50	1.230	-	-	0.09	0.609	0.749
	LTE Band 2	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 13	DSI 2	18900	1880	17.61	18.50	1.227	-	-	-0.05	0.514	0.631
	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 13	DSI 2	18900	1880	17.61	18.50	1.227	-	-	-0.05	0.700	0.859
	LTE Band 2	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 13	DSI 2	18900	1880	17.61	18.50	1.227	-	-	0.12	0.322	0.395
	LTE Band 2	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 13	DSI 2	18900	1880	17.61	18.50	1.227	-	-	-0.03	0.419	0.514

12	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 13	DSI 2	18700	1860	17.59	18.50	1.233	-	-	0.07	0.762	**0.940**
	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 13	DSI 2	19100	1900	17.58	18.50	1.236	-	-	0.05	0.659	0.814
	LTE Band 2	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 13	DSI 2	18900	1880	17.58	18.50	1.236	-	-	0.14	0.656	0.811
	LTE Band 2	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 31	DSI 2	18900	1880	23.75	24.50	1.189	-	-	0.08	0.086	0.102
	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 31	DSI 2	18900	1880	23.75	24.50	1.189	-	-	-0.1	0.053	0.063
	LTE Band 2	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 31	DSI 2	18900	1880	23.75	24.50	1.189	-	-	-0.12	0.121	0.144
	LTE Band 2	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 31	DSI 2	18900	1880	23.75	24.50	1.189	-	-	0.03	0.057	0.068
	LTE Band 2	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 31	DSI 2	18900	1880	22.71	23.50	1.199	-	-	0.1	0.072	0.086
	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 31	DSI 2	18900	1880	22.71	23.50	1.199	-	-	-0.12	0.044	0.053
	LTE Band 2	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 31	DSI 2	18900	1880	22.71	23.50	1.199	-	-	-0.14	0.097	0.116
	LTE Band 2	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 31	DSI 2	18900	1880	22.71	23.50	1.199	-	-	-0.01	0.050	0.060
	FR1 n2	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 13	DSI 2	376000	1880	17.56	18.50	1.242	-	-	0.05	0.575	0.714
	FR1 n2	20M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 13	DSI 2	376000	1880	17.56	18.50	1.242	-	-	0	0.684	0.849
	FR1 n2	20M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 13	DSI 2	376000	1880	17.56	18.50	1.242	-	-	0.14	0.383	0.476
	FR1 n2	20M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 13	DSI 2	376000	1880	17.56	18.50	1.242	-	-	0.14	0.462	0.574
	FR1 n2	20M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 13	DSI 2	372000	1860	17.48	18.50	1.265	-	-	-0.17	0.713	0.902
	FR1 n2	20M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 13	DSI 2	380000	1900	17.52	18.50	1.253	-	-	0.12	0.699	0.876
	FR1 n2	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 13	DSI 2	376000	1880	17.52	18.50	1.253	-	-	0.03	0.573	0.718
	FR1 n2	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 13	DSI 2	376000	1880	17.52	18.50	1.253	-	-	0.1	0.675	0.846
	FR1 n2	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 13	DSI 2	376000	1880	17.52	18.50	1.253	-	-	-0.1	0.383	0.480
	FR1 n2	20M	QPSK	50	28	DFT-15	Left Tilted	0mm	Ant 13	DSI 2	376000	1880	17.52	18.50	1.253	-	-	0.19	0.478	0.599
	FR1 n2	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 13	DSI 2	372000	1860	17.44	18.50	1.276	-	-	0.05	0.700	0.894
	FR1 n2	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 13	DSI 2	380000	1900	17.51	18.50	1.256	-	-	0.06	0.675	0.848
	FR1 n2	20M	QPSK	100	0	DFT-15	Right Tilted	0mm	Ant 13	DSI 2	376000	1880	17.51	18.50	1.256	-	-	0.06	0.620	0.779
	FR1 n2	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 11	DSI 2	376000	1880	18.58	19.50	1.236	-	-	-0.16	0.648	0.801
	FR1 n2	20M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 11	DSI 2	376000	1880	18.58	19.50	1.236	-	-	-0.03	0.151	0.187
	FR1 n2	20M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 11	DSI 2	376000	1880	18.58	19.50	1.236	-	-	-0.07	0.365	0.451
	FR1 n2	20M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 11	DSI 2	376000	1880	18.58	19.50	1.236	-	-	-0.18	0.090	0.111
	FR1 n2	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 11	DSI 2	372000	1860	18.52	19.50	1.253	-	-	-0.07	0.695	0.871
13	FR1 n2	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 11	DSI 2	380000	1900	18.56	19.50	1.242	-	-	0	0.727	**0.903**
	FR1 n2	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 11	DSI 2	376000	1880	18.55	19.50	1.245	-	-	0.17	0.630	0.784
	FR1 n2	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 11	DSI 2	376000	1880	18.55	19.50	1.245	-	-	-0.05	0.161	0.200
	FR1 n2	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 11	DSI 2	376000	1880	18.55	19.50	1.245	-	-	-0.12	0.394	0.490
	FR1 n2	20M	QPSK	50	28	DFT-15	Left Tilted	0mm	Ant 11	DSI 2	376000	1880	18.55	19.50	1.245	-	-	0.19	0.095	0.118
	FR1 n2	20M	QPSK	100	0	DFT-15	Right Cheek	0mm	Ant 11	DSI 2	376000	1880	18.49	19.50	1.262	-	-	0.01	0.615	0.776
2600MHz																				
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 13	DSI 2	21100	2535	14.22	15.50	1.343	-	-	0.14	0.480	0.645
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	21100	2535	14.22	15.50	1.343	-	-	0.08	0.600	0.806
	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 13	DSI 2	21100	2535	14.22	15.50	1.343	-	-	0.13	0.198	0.266
	LTE Band 7	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 13	DSI 2	21100	2535	14.22	15.50	1.343	-	-	0.17	0.258	0.346
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	20850	2510	14.15	15.50	1.365	-	-	-0.06	0.545	0.744
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	21350	2560	14.18	15.50	1.355	-	-	-0.1	0.554	0.751
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 13	DSI 2	21100	2535	14.18	15.50	1.355	-	-	-0.06	0.495	0.671
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 13	DSI 2	21100	2535	14.18	15.50	1.355	-	-	-0.02	0.620	0.840
	LTE Band 7	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 13	DSI 2	21100	2535	14.18	15.50	1.355	-	-	0.1	0.199	0.270
	LTE Band 7	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 13	DSI 2	21100	2535	14.18	15.50	1.355	-	-	-0.15	0.264	0.358
14	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 13	DSI 2	20850	2510	14.14	15.50	1.368	-	-	-0.03	0.620	**0.848**
	LTE Band 7C	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	20850 +21048	2510 +2529.8	14.02	15.50	1.406	-	-	-0.03	0.570	0.801
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 13	DSI 2	21350	2560	14.13	15.50	1.371	-	-	-0.07	0.563	0.772
	LTE Band 7	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 13	DSI 2	21100	2535	14.08	15.50	1.387	-	-	0.05	0.561	0.778
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 31	DSI 2	21100	2535	23.08	24.00	1.236	-	-	-0.06	0.232	0.287
	LTE Band 7C	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 31	DSI 2	21100 +20902	2535 +2515.2	22.77	24.00	1.327	-	-	-0.06	0.213	0.283
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 31	DSI 2	21100	2535	23.08	24.00	1.236	-	-	-0.06	0.132	0.163
	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 31	DSI 2	21100	2535	23.08	24.00	1.236	-	-	-0.08	0.110	0.136
	LTE Band 7	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 31	DSI 2	21100	2535	23.08	24.00	1.236	-	-	0.09	0.082	0.101
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 31	DSI 2	21100	2535	22.14	23.00	1.219	-	-	-0.15	0.203	0.247
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 31	DSI 2	21100	2535	22.14	23.00	1.219	-	-	0.12	0.111	0.135

	LTE Band 7	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 31	DSI 2	21100	2535	22.14	23.00	1.219	-	-	-0.17	0.091	0.111
	LTE Band 7	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 31	DSI 2	21100	2535	22.14	23.00	1.219	-	-	0.14	0.071	0.087
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 11	DSI 2	21100	2535	19.65	21.00	1.365	-	-	0.13	0.591	0.806
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 11	DSI 2	21100	2535	19.65	21.00	1.365	-	-	-0.07	0.100	0.136
	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 11	DSI 2	21100	2535	19.65	21.00	1.365	-	-	-0.16	0.289	0.394
	LTE Band 7	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 11	DSI 2	21100	2535	19.65	21.00	1.365	-	-	-0.03	0.064	0.087
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 11	DSI 2	20850	2510	19.55	21.00	1.396	-	-	0.15	0.597	0.834
	LTE Band 7C	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 11	DSI 2	20850 +21048	2510 +2529.8	19.19	21.00	1.517	-	-	0.15	0.512	0.777
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 11	DSI 2	21350	2560	19.61	21.00	1.377	-	-	0.01	0.604	0.832
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 11	DSI 2	21100	2535	19.58	21.00	1.387	-	-	0.1	0.577	0.800
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 11	DSI 2	21100	2535	19.58	21.00	1.387	-	-	0.05	0.096	0.133
	LTE Band 7	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 11	DSI 2	21100	2535	19.58	21.00	1.387	-	-	-0.19	0.287	0.398
	LTE Band 7	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 11	DSI 2	21100	2535	19.58	21.00	1.387	-	-	0.13	0.063	0.087
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 11	DSI 2	20850	2510	19.50	21.00	1.413	-	-	0.06	0.568	0.802
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 11	DSI 2	21350	2560	19.57	21.00	1.390	-	-	0.02	0.580	0.806
	LTE Band 7	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 11	DSI 2	21100	2535	19.48	21.00	1.419	-	-	0.08	0.566	0.803
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 13	DSI 2	40620	2593	16.28	17.50	1.324	62.9	1.006	0.04	0.500	0.666
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	40620	2593	16.28	17.50	1.324	62.9	1.006	-0.16	0.632	0.842
	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 13	DSI 2	40620	2593	16.28	17.50	1.324	62.9	1.006	-0.05	0.201	0.268
	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 13	DSI 2	40620	2593	16.28	17.50	1.324	62.9	1.006	-0.06	0.263	0.350
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 13	DSI 2	39750	2506	16.27	17.50	1.327	62.9	1.006	0.18	0.526	0.702
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 13	DSI 2	40185	2549.5	16.24	17.50	1.337	62.9	1.006	0.11	0.515	0.692
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 13	DSI 2	41055	2636.5	16.18	17.50	1.355	62.9	1.006	0.13	0.461	0.628
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 13	DSI 2	41490	2680	16.19	17.50	1.352	62.9	1.006	-0.03	0.419	0.570
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	39750	2506	16.27	17.50	1.327	62.9	1.006	0.04	0.661	0.883
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	40185	2549.5	16.24	17.50	1.337	62.9	1.006	-0.09	0.667	0.897
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	41055	2636.5	16.18	17.50	1.355	62.9	1.006	-0.12	0.599	0.817
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	41490	2680	16.19	17.50	1.352	62.9	1.006	0.11	0.533	0.725
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 13	DSI 2	40620	2593	16.23	17.50	1.340	62.9	1.006	0.04	0.483	0.651
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 13	DSI 2	40620	2593	16.23	17.50	1.340	62.9	1.006	0.05	0.628	0.846
	LTE Band 41	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 13	DSI 2	40620	2593	16.23	17.50	1.340	62.9	1.006	-0.17	0.196	0.264
	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 13	DSI 2	40620	2593	16.23	17.50	1.340	62.9	1.006	0.02	0.257	0.346
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 13	DSI 2	39750	2506	16.17	17.50	1.358	62.9	1.006	-0.18	0.536	0.732
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 13	DSI 2	40185	2549.5	16.15	17.50	1.365	62.9	1.006	-0.12	0.525	0.721
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 13	DSI 2	41055	2636.5	16.09	17.50	1.384	62.9	1.006	0.09	0.461	0.642
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 13	DSI 2	41490	2680	16.12	17.50	1.374	62.9	1.006	-0.1	0.402	0.556
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 13	DSI 2	39750	2506	16.17	17.50	1.358	62.9	1.006	0.05	0.660	0.902
15	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 13	DSI 2	40185	2549.5	16.15	17.50	1.365	62.9	1.006	0.06	0.668	**0.917**
	LTE Band 41C	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 13	DSI 2	40185 +39987	2549.5 +2529.7	15.70	17.50	1.514	62.9	1.006	0.06	0.523	0.796
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 13	DSI 2	41055	2636.5	16.09	17.50	1.384	62.9	1.006	0.1	0.593	0.825
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 13	DSI 2	41490	2680	16.12	17.50	1.374	62.9	1.006	0.14	0.525	0.726
	LTE Band 41	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 13	DSI 2	40620	2593	16.20	17.50	1.349	62.9	1.006	0.05	0.475	0.645
	LTE Band 41	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 13	DSI 2	40620	2593	16.20	17.50	1.349	62.9	1.006	-0.07	0.615	0.835
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 31	DSI 2	40620	2593	23.72	24.50	1.197	62.9	1.006	0.07	0.197	0.237
	LTE Band 41C	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 31	DSI 2	40620 +40422	2593 +2573.2	23.18	24.50	1.355	62.9	1.006	0.07	0.166	0.226
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 31	DSI 2	40620	2593	23.72	24.50	1.197	62.9	1.006	0.15	0.115	0.138
	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 31	DSI 2	40620	2593	23.72	24.50	1.197	62.9	1.006	0.07	0.089	0.107
	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 31	DSI 2	40620	2593	23.72	24.50	1.197	62.9	1.006	-0.19	0.076	0.091
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 31	DSI 2	40620	2593	22.70	23.50	1.202	62.9	1.006	-0.11	0.156	0.189
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 31	DSI 2	40620	2593	22.70	23.50	1.202	62.9	1.006	0.06	0.084	0.102
	LTE Band 41	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 31	DSI 2	40620	2593	22.70	23.50	1.202	62.9	1.006	0.17	0.081	0.098
	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 31	DSI 2	40620	2593	22.70	23.50	1.202	62.9	1.006	0.08	0.061	0.074
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 11	DSI 2	40620	2593	20.20	21.00	1.202	62.9	1.006	0.1	0.344	0.416
	LTE Band 41C	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 11	DSI 2	40620 +40422	2593 +2573.2	19.83	21.00	1.309	62.9	1.006	0.1	0.298	0.392
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 11	DSI 2	40620	2593	20.20	21.00	1.202	62.9	1.006	0.16	0.075	0.091
	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 11	DSI 2	40620	2593	20.20	21.00	1.202	62.9	1.006	-0.11	0.169	0.204

	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 11	DSI 2	40620	2593	20.20	21.00	1.202	62.9	1.006	-0.04	0.044	0.053
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 11	DSI 2	40620	2593	20.18	21.00	1.208	62.9	1.006	0.07	0.338	0.411
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 11	DSI 2	40620	2593	20.18	21.00	1.208	62.9	1.006	0.15	0.075	0.091
	LTE Band 41	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 11	DSI 2	40620	2593	20.18	21.00	1.208	62.9	1.006	-0.09	0.173	0.210
	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 11	DSI 2	40620	2593	20.18	21.00	1.208	62.9	1.006	0.06	0.048	0.058
	FR1 n7	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 13	DSI 2	507000	2535	15.05	16.00	1.245	-	-	0.05	0.602	0.749
16	FR1 n7	40M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 13	DSI 2	507000	2535	15.05	16.00	1.245	-	-	-0.01	0.783	**0.974**
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 13	DSI 2	507000	2535	15.05	16.00	1.245	-	-	0.16	0.277	0.345
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 13	DSI 2	507000	2535	15.05	16.00	1.245	-	-	0.14	0.357	0.444
	FR1 n7	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 13	DSI 2	507000	2535	15.02	16.00	1.253	-	-	-0.06	0.556	0.697
	FR1 n7	40M	QPSK	108	54	DFT-15	Right Tilted	0mm	Ant 13	DSI 2	507000	2535	15.02	16.00	1.253	-	-	0.1	0.759	0.951
	FR1 n7	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 13	DSI 2	507000	2535	15.02	16.00	1.253	-	-	-0.14	0.259	0.325
	FR1 n7	40M	QPSK	108	54	DFT-15	Left Tilted	0mm	Ant 13	DSI 2	507000	2535	15.02	16.00	1.253	-	-	0.04	0.340	0.426
	FR1 n7	40M	QPSK	216	0	DFT-15	Right Tilted	0mm	Ant 13	DSI 2	507000	2535	14.96	16.00	1.271	-	-	0.05	0.750	0.953
	FR1 n7	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 31	DSI 2	507000	2535	22.46	24.00	1.426	-	-	0.18	0.288	0.411
	FR1 n7	40M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 31	DSI 2	507000	2535	22.46	24.00	1.426	-	-	-0.03	0.164	0.234
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 31	DSI 2	507000	2535	22.46	24.00	1.426	-	-	-0.15	0.136	0.194
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 31	DSI 2	507000	2535	22.46	24.00	1.426	-	-	0.06	0.103	0.147
	FR1 n7	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 31	DSI 2	507000	2535	22.19	24.00	1.517	-	-	-0.12	0.280	0.425
	FR1 n7	40M	QPSK	108	54	DFT-15	Right Tilted	0mm	Ant 31	DSI 2	507000	2535	22.19	24.00	1.517	-	-	-0.04	0.161	0.244
	FR1 n7	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 31	DSI 2	507000	2535	22.19	24.00	1.517	-	-	-0.09	0.132	0.200
	FR1 n7	40M	QPSK	108	54	DFT-15	Left Tilted	0mm	Ant 31	DSI 2	507000	2535	22.19	24.00	1.517	-	-	-0.02	0.101	0.153
	FR1 n7	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 11	DSI 2	507000	2535	19.60	21.00	1.380	-	-	0.19	0.662	0.914
	FR1 n7	40M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 11	DSI 2	507000	2535	19.60	21.00	1.380	-	-	-0.16	0.143	0.197
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 11	DSI 2	507000	2535	19.60	21.00	1.380	-	-	-0.04	0.360	0.497
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 11	DSI 2	507000	2535	19.60	21.00	1.380	-	-	0.09	0.087	0.120
	FR1 n7	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 11	DSI 2	507000	2535	19.51	21.00	1.409	-	-	-0.09	0.613	0.864
	FR1 n7	40M	QPSK	108	54	DFT-15	Right Tilted	0mm	Ant 11	DSI 2	507000	2535	19.51	21.00	1.409	-	-	0.17	0.133	0.187
	FR1 n7	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 11	DSI 2	507000	2535	19.51	21.00	1.409	-	-	0.09	0.356	0.502
	FR1 n7	40M	QPSK	108	54	DFT-15	Left Tilted	0mm	Ant 11	DSI 2	507000	2535	19.51	21.00	1.409	-	-	-0.08	0.089	0.125
	FR1 n7	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 11	DSI 2	507000	2535	19.50	21.00	1.413	-	-	-0.06	0.608	0.859
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 13	DSI 2	518598	2592.99	15.59	16.50	1.233	-	-	-0.16	0.624	0.769
17	FR1 n41	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 13	DSI 2	518598	2592.99	15.59	16.50	1.233	-	-	-0.12	0.805	**0.993**
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 13	DSI 2	518598	2592.99	15.59	16.50	1.233	-	-	0.09	0.267	0.329
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 13	DSI 2	518598	2592.99	15.59	16.50	1.233	-	-	-0.01	0.344	0.424
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 13	DSI 3	518598	2592.99	14.60	15.50	1.230	-	-	0.09	0.632	0.778
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 13	DSI 2	518598	2592.99	15.53	16.50	1.250	-	-	0.13	0.581	0.726
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 13	DSI 2	518598	2592.99	15.53	16.50	1.250	-	-	-0.12	0.748	0.935
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 13	DSI 2	518598	2592.99	15.53	16.50	1.250	-	-	0.09	0.246	0.308
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 13	DSI 2	518598	2592.99	15.53	16.50	1.250	-	-	0.04	0.311	0.389
	FR1 n41	100M	QPSK	270	0	DFT-30	Right Cheek	0mm	Ant 13	DSI 2	518598	2592.99	15.49	16.50	1.262	-	-	0.03	0.681	0.859
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 31	DSI 2	518598	2592.99	23.91	25.00	1.285	-	-	-0.15	0.366	0.470
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 31	DSI 2	518598	2592.99	23.91	25.00	1.285	-	-	0.04	0.205	0.263
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 31	DSI 2	518598	2592.99	23.91	25.00	1.285	-	-	-0.04	0.170	0.218
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 31	DSI 2	518598	2592.99	23.91	25.00	1.285	-	-	0.06	0.136	0.175
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 31	DSI 2	518598	2592.99	23.85	25.00	1.303	-	-	0.18	0.349	0.455
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 31	DSI 2	518598	2592.99	23.85	25.00	1.303	-	-	0.06	0.174	0.227
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 31	DSI 2	518598	2592.99	23.85	25.00	1.303	-	-	0.18	0.153	0.199
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 31	DSI 2	518598	2592.99	23.85	25.00	1.303	-	-	-0.15	0.130	0.169
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 11	DSI 2	518598	2592.99	21.29	22.00	1.178	-	-	-0.01	0.842	0.992
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 11	DSI 2	518598	2592.99	21.29	22.00	1.178	-	-	-0.17	0.178	0.210
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 11	DSI 2	518598	2592.99	21.29	22.00	1.178	-	-	0.01	0.448	0.528
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 11	DSI 2	518598	2592.99	21.29	22.00	1.178	-	-	0.04	0.099	0.117
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 11	DSI 2	518598	2592.99	21.10	22.00	1.230	-	-	-0.06	0.783	0.963
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 11	DSI 2	518598	2592.99	21.10	22.00	1.230	-	-	0.18	0.165	0.203
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 11	DSI 2	518598	2592.99	21.10	22.00	1.230	-	-	0.18	0.420	0.517
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 11	DSI 2	518598	2592.99	21.10	22.00	1.230	-	-	0.13	0.091	0.112

	FR1 n41	100M	QPSK	270	0	DFT-30	Right Cheek	0mm	Ant 11	DSI 2	518598	2592.99	21.03	22.00	1.250	-	-	0.02	0.755	0.944
3000MHz																				
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 11	DSI 2	633332	3499.98	20.97	22.00	1.268	-	-	-0.05	0.714	0.905
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 11	DSI 2	633332	3499.98	20.97	22.00	1.268	-	-	0.18	0.181	0.229
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 11	DSI 2	633332	3499.98	20.97	22.00	1.268	-	-	0.18	0.358	0.454
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 11	DSI 2	633332	3499.98	20.97	22.00	1.268	-	-	0.17	0.109	0.138
18	FR1 n77	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 11	DSI 2	633332	3499.98	20.86	22.00	1.300	-	-	-0.16	0.750	**0.975**
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 11	DSI 2	633332	3499.98	20.86	22.00	1.300	-	-	-0.04	0.203	0.264
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 11	DSI 2	633332	3499.98	20.86	22.00	1.300	-	-	0.11	0.317	0.412
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 11	DSI 2	633332	3499.98	20.86	22.00	1.300	-	-	-0.13	0.104	0.135
	FR1 n77	100M	QPSK	270	0	DFT-30	Right Cheek	0mm	Ant 11	DSI 2	633332	3499.98	20.85	22.00	1.303	-	-	-0.17	0.733	0.955
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 11	DSI 2	656000	3840	20.99	22.00	1.262	-	-	0.03	0.722	0.911
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 11	DSI 2	656000	3840	20.99	22.00	1.262	-	-	0.08	0.203	0.256
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 11	DSI 2	656000	3840	20.99	22.00	1.262	-	-	-0.08	0.289	0.365
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 11	DSI 2	656000	3840	20.99	22.00	1.262	-	-	-0.05	0.104	0.131
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 11	DSI 2	656000	3840	20.98	22.00	1.265	-	-	0.02	0.693	0.876
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 11	DSI 2	656000	3840	20.98	22.00	1.265	-	-	0.17	0.183	0.231
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 11	DSI 2	656000	3840	20.98	22.00	1.265	-	-	0.04	0.292	0.369
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 11	DSI 2	656000	3840	20.98	22.00	1.265	-	-	-0.08	0.104	0.132
	FR1 n77	100M	QPSK	270	0	DFT-30	Right Cheek	0mm	Ant 11	DSI 2	656000	3840	20.89	22.00	1.291	-	-	0.04	0.689	0.890
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 12	DSI 2	633332	3499.98	18.39	19.00	1.151	-	-	-0.13	0.819	0.943
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 12	DSI 2	633332	3499.98	18.39	19.00	1.151	-	-	0.09	0.804	0.925
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 12	DSI 2	633332	3499.98	18.39	19.00	1.151	-	-	0.04	0.568	0.654
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 12	DSI 2	633332	3499.98	18.39	19.00	1.151	-	-	0.12	0.314	0.361
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 12	DSI 2	633332	3499.98	18.39	19.00	1.151	-	-	-0.04	0.256	0.295
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 12	DSI 2	633332	3499.98	18.29	19.00	1.178	-	-	-0.15	0.809	0.953
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 12	DSI 2	633332	3499.98	18.29	19.00	1.178	-	-	-0.04	0.566	0.667
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 12	DSI 2	633332	3499.98	18.29	19.00	1.178	-	-	-0.09	0.321	0.378
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 12	DSI 2	633332	3499.98	18.29	19.00	1.178	-	-	0.1	0.258	0.304
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 12	DSI 3	633332	3499.98	13.98	14.50	1.127	-	-	0.08	0.284	0.320
	FR1 n77	100M	QPSK	270	0	DFT-30	Right Cheek	0mm	Ant 12	DSI 2	633332	3499.98	18.26	19.00	1.186	-	-	-0.03	0.788	0.934
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 12	DSI 2	656000	3840	18.43	19.00	1.140	-	-	-0.16	0.545	0.621
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 12	DSI 2	656000	3840	18.43	19.00	1.140	-	-	0.13	0.293	0.334
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 12	DSI 2	656000	3840	18.43	19.00	1.140	-	-	-0.14	0.186	0.212
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 12	DSI 2	656000	3840	18.43	19.00	1.140	-	-	-0.12	0.142	0.162
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 12	DSI 2	656000	3840	18.35	19.00	1.161	-	-	0.17	0.592	0.688
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 12	DSI 2	656000	3840	18.35	19.00	1.161	-	-	-0.07	0.370	0.430
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 12	DSI 2	656000	3840	18.35	19.00	1.161	-	-	-0.15	0.210	0.244
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 12	DSI 2	656000	3840	18.35	19.00	1.161	-	-	-0.1	0.172	0.200
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 12	DSI 2	656000	3840	13.89	14.50	1.151	-	-	0.03	0.200	0.230
	FR1 n77	100M	QPSK	270	0	DFT-30	Right Cheek	0mm	Ant 12	DSI 2	656000	3840	18.34	19.00	1.164	-	-	0.08	0.545	0.634
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 21	DSI 2	633332	3499.98	15.77	16.50	1.183	-	-	0.06	0.367	0.434
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 21	DSI 2	633332	3499.98	15.77	16.50	1.183	-	-	0	0.523	0.619
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 21	DSI 2	633332	3499.98	15.77	16.50	1.183	-	-	-0.17	0.664	0.786
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 21	DSI 2	633332	3499.98	15.77	16.50	1.183	-	-	-0.02	0.774	0.916
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 21	DSI 2	633332	3499.98	15.71	16.50	1.199	-	-	0.18	0.323	0.387
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 21	DSI 2	633332	3499.98	15.71	16.50	1.199	-	-	-0.12	0.493	0.591
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 21	DSI 2	633332	3499.98	15.71	16.50	1.199	-	-	-0.01	0.620	0.744
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 21	DSI 2	633332	3499.98	15.71	16.50	1.199	-	-	-0.15	0.761	0.913
	FR1 n77	100M	QPSK	270	0	DFT-30	Left Tilted	0mm	Ant 21	DSI 2	633332	3499.98	15.68	16.50	1.208	-	-	0.18	0.752	0.908
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 21	DSI 3	633332	3499.98	13.31	14.50	1.315	-	-	0.04	0.232	0.305
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 21	DSI 3	633332	3499.98	13.31	14.50	1.315	-	-	-0.11	0.330	0.434
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 21	DSI 3	633332	3499.98	13.31	14.50	1.315	-	-	0.05	0.419	0.551
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 21	DSI 3	633332	3499.98	13.31	14.50	1.315	-	-	0.03	0.488	0.642
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 21	DSI 3	633332	3499.98	13.22	14.50	1.343	-	-	0.15	0.204	0.274
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 21	DSI 3	633332	3499.98	13.22	14.50	1.343	-	-	0.15	0.311	0.418
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 21	DSI 3	633332	3499.98	13.22	14.50	1.343	-	-	0.01	0.391	0.525
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 21	DSI 3	633332	3499.98	13.22	14.50	1.343	-	-	-0.14	0.480	0.645

	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 21	DSI 2	656000	3840	15.82	16.50	1.169	-	-	-0.02	0.192	0.225
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 21	DSI 2	656000	3840	15.82	16.50	1.169	-	-	-0.07	0.254	0.297
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 21	DSI 2	656000	3840	15.82	16.50	1.169	-	-	-0.04	0.270	0.316
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 21	DSI 2	656000	3840	15.82	16.50	1.169	-	-	0.13	0.342	0.400
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 21	DSI 2	656000	3840	15.77	16.50	1.183	-	-	-0.08	0.151	0.179
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 21	DSI 2	656000	3840	15.77	16.50	1.183	-	-	0.02	0.233	0.276
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 21	DSI 2	656000	3840	15.77	16.50	1.183	-	-	-0.18	0.240	0.284
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 21	DSI 2	656000	3840	15.77	16.50	1.183	-	-	0.06	0.283	0.335
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 21	DSI 3	656000	3840	13.33	14.50	1.309	-	-	0.17	0.121	0.158
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 21	DSI 3	656000	3840	13.33	14.50	1.309	-	-	0.01	0.160	0.209
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 21	DSI 3	656000	3840	13.33	14.50	1.309	-	-	-0.19	0.170	0.223
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 21	DSI 3	656000	3840	13.33	14.50	1.309	-	-	0.05	0.216	0.283
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 21	DSI 3	656000	3840	13.32	14.50	1.312	-	-	-0.19	0.095	0.125
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 21	DSI 3	656000	3840	13.32	14.50	1.312	-	-	0.08	0.147	0.193
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 21	DSI 3	656000	3840	13.32	14.50	1.312	-	-	-0.09	0.151	0.198
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 21	DSI 3	656000	3840	13.32	14.50	1.312	-	-	-0.08	0.179	0.235
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 23	DSI 2	633332	3499.98	20.74	21.50	1.191	-	-	-0.03	0.338	0.403
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 23	DSI 2	633332	3499.98	20.74	21.50	1.191	-	-	-0.16	0.151	0.180
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 23	DSI 2	633332	3499.98	20.74	21.50	1.191	-	-	-0.12	0.524	0.624
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 23	DSI 2	633332	3499.98	20.74	21.50	1.191	-	-	0.09	0.276	0.329
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 23	DSI 2	633332	3499.98	20.66	21.50	1.213	-	-	0.16	0.350	0.425
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 23	DSI 2	633332	3499.98	20.66	21.50	1.213	-	-	-0.01	0.149	0.181
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 23	DSI 2	633332	3499.98	20.66	21.50	1.213	-	-	-0.13	0.573	0.695
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 23	DSI 2	633332	3499.98	20.66	21.50	1.213	-	-	-0.07	0.258	0.313
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 23	DSI 3	633332	3499.98	18.70	19.50	1.202	-	-	0.13	0.213	0.256
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 23	DSI 3	633332	3499.98	18.70	19.50	1.202	-	-	0.02	0.095	0.114
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 23	DSI 3	633332	3499.98	18.70	19.50	1.202	-	-	0.19	0.331	0.398
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 23	DSI 3	633332	3499.98	18.70	19.50	1.202	-	-	-0.08	0.174	0.209
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 23	DSI 3	633332	3499.98	18.59	19.50	1.233	-	-	0.19	0.221	0.273
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 23	DSI 3	633332	3499.98	18.59	19.50	1.233	-	-	0.03	0.094	0.116
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 23	DSI 3	633332	3499.98	18.59	19.50	1.233	-	-	0.15	0.362	0.446
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 23	DSI 3	633332	3499.98	18.59	19.50	1.233	-	-	-0.1	0.163	0.201
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 23	DSI 2	656000	3840	20.31	21.50	1.315	-	-	-0.16	0.091	0.120
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 23	DSI 2	656000	3840	20.31	21.50	1.315	-	-	-0.05	0.059	0.078
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 23	DSI 2	656000	3840	20.31	21.50	1.315	-	-	0.02	0.212	0.279
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 23	DSI 2	656000	3840	20.31	21.50	1.315	-	-	-0.16	0.097	0.128
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 23	DSI 2	656000	3840	20.27	21.50	1.327	-	-	-0.03	0.058	0.077
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 23	DSI 2	656000	3840	20.27	21.50	1.327	-	-	-0.05	0.040	0.053
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 23	DSI 2	656000	3840	20.27	21.50	1.327	-	-	-0.06	0.188	0.250
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 23	DSI 2	656000	3840	20.27	21.50	1.327	-	-	0.12	0.089	0.118
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 23	DSI 3	656000	3840	18.28	19.50	1.324	-	-	-0.1	0.057	0.075
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 23	DSI 3	656000	3840	18.28	19.50	1.324	-	-	0.05	0.037	0.049
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 23	DSI 3	656000	3840	18.28	19.50	1.324	-	-	0.16	0.134	0.177
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 23	DSI 3	656000	3840	18.28	19.50	1.324	-	-	-0.16	0.061	0.081
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 23	DSI 3	656000	3840	18.25	19.50	1.334	-	-	0	0.037	0.049
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 23	DSI 3	656000	3840	18.25	19.50	1.334	-	-	0.15	0.025	0.033
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 23	DSI 3	656000	3840	18.25	19.50	1.334	-	-	0.13	0.119	0.159
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 23	DSI 3	656000	3840	18.25	19.50	1.334	-	-	-0.02	0.056	0.075
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 21	DSI 2	633332	3499.98	16.89	18.00	1.291	-	-	0.04	0.334	0.431
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 21	DSI 2	633332	3499.98	16.89	18.00	1.291	-	-	0.01	0.552	0.713
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 21	DSI 2	633332	3499.98	16.89	18.00	1.291	-	-	-0.06	0.657	0.848
19	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 21	DSI 2	633332	3499.98	16.89	18.00	1.291	-	-	0.04	0.751	**0.970**
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 21	DSI 2	633332	3499.98	16.77	18.00	1.327	-	-	-0.1	0.320	0.425
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 21	DSI 2	633332	3499.98	16.77	18.00	1.327	-	-	-0.03	0.528	0.701
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 21	DSI 2	633332	3499.98	16.77	18.00	1.327	-	-	-0.03	0.619	0.822
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 21	DSI 2	633332	3499.98	16.77	18.00	1.327	-	-	-0.14	0.721	0.957
	FR1 n78-PC2	100M	QPSK	270	0	DFT-30	Left Cheek	0mm	Ant 21	DSI 2	633332	3499.98	16.73	18.00	1.340	-	-	-0.17	0.595	0.797

	FR1 n78-PC2	100M	QPSK	270	0	DFT-30	Left Tilted	0mm	Ant 21	DSI 2	633332	3499.98	16.73	18.00	1.340	-	-	-0.09	0.709	0.950
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 21	DSI 3	633332	3499.98	14.92	16.00	1.282	-	-	-0.04	0.211	0.271
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 21	DSI 3	633332	3499.98	14.92	16.00	1.282	-	-	-0.04	0.348	0.446
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 21	DSI 3	633332	3499.98	14.92	16.00	1.282	-	-	0.19	0.415	0.532
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 21	DSI 3	633332	3499.98	14.92	16.00	1.282	-	-	-0.06	0.474	0.608
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 21	DSI 3	633332	3499.98	14.79	16.00	1.321	-	-	-0.19	0.202	0.267
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 21	DSI 3	633332	3499.98	14.79	16.00	1.321	-	-	-0.11	0.333	0.440
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 21	DSI 3	633332	3499.98	14.79	16.00	1.321	-	-	0.13	0.391	0.517
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 21	DSI 3	633332	3499.98	14.79	16.00	1.321	-	-	0.14	0.455	0.601
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 21	DSI 2	650000	3750	16.82	18.00	1.312	-	-	-0.07	0.188	0.247
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 21	DSI 2	650000	3750	16.82	18.00	1.312	-	-	0.07	0.255	0.335
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 21	DSI 2	650000	3750	16.82	18.00	1.312	-	-	-0.18	0.298	0.391
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 21	DSI 2	650000	3750	16.82	18.00	1.312	-	-	0.01	0.350	0.459
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 21	DSI 2	650000	3750	16.65	18.00	1.365	-	-	-0.11	0.179	0.244
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 21	DSI 2	650000	3750	16.65	18.00	1.365	-	-	0.05	0.246	0.336
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 21	DSI 2	650000	3750	16.65	18.00	1.365	-	-	-0.01	0.279	0.381
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 21	DSI 2	650000	3750	16.65	18.00	1.365	-	-	0.13	0.326	0.445
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 21	DSI 3	650000	3750	14.88	16.00	1.294	-	-	-0.13	0.119	0.154
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 21	DSI 3	650000	3750	14.88	16.00	1.294	-	-	-0.18	0.161	0.208
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 21	DSI 3	650000	3750	14.88	16.00	1.294	-	-	-0.12	0.188	0.243
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 21	DSI 3	650000	3750	14.88	16.00	1.294	-	-	0.11	0.221	0.286
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 21	DSI 3	650000	3750	14.66	16.00	1.361	-	-	0.08	0.113	0.154
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 21	DSI 3	650000	3750	14.66	16.00	1.361	-	-	0.07	0.155	0.211
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 21	DSI 3	650000	3750	14.66	16.00	1.361	-	-	-0.15	0.176	0.240
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 21	DSI 3	650000	3750	14.66	16.00	1.361	-	-	0.19	0.206	0.280
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 23	DSI 2	633332	3499.98	22.68	23.50	1.208	-	-	0.06	0.347	0.419
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 23	DSI 2	633332	3499.98	22.68	23.50	1.208	-	-	0.09	0.155	0.187
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 23	DSI 2	633332	3499.98	22.68	23.50	1.208	-	-	0.18	0.673	0.813
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 23	DSI 2	633332	3499.98	22.68	23.50	1.208	-	-	0.02	0.309	0.373
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 23	DSI 2	633332	3499.98	22.41	23.50	1.285	-	-	-0.07	0.388	0.499
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 23	DSI 2	633332	3499.98	22.41	23.50	1.285	-	-	0.03	0.165	0.212
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 23	DSI 2	633332	3499.98	22.41	23.50	1.285	-	-	0.11	0.707	0.909
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 23	DSI 2	633332	3499.98	22.41	23.50	1.285	-	-	-0.12	0.292	0.375
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 23	DSI 3	633332	3499.98	20.68	21.50	1.208	-	-	0.11	0.219	0.265
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 23	DSI 3	633332	3499.98	20.68	21.50	1.208	-	-	0.16	0.098	0.118
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 23	DSI 3	633332	3499.98	20.68	21.50	1.208	-	-	-0.09	0.421	0.508
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 23	DSI 3	633332	3499.98	20.68	21.50	1.208	-	-	-0.15	0.195	0.236
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 23	DSI 3	633332	3499.98	20.41	21.50	1.285	-	-	-0.1	0.245	0.315
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 23	DSI 3	633332	3499.98	20.41	21.50	1.285	-	-	0.13	0.104	0.134
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 23	DSI 3	633332	3499.98	20.41	21.50	1.285	-	-	0.06	0.436	0.560
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 23	DSI 3	633332	3499.98	20.41	21.50	1.285	-	-	-0.07	0.184	0.236
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 23	DSI 2	650000	3750	22.06	23.50	1.393	-	-	0.13	0.173	0.241
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 23	DSI 2	650000	3750	22.06	23.50	1.393	-	-	0.06	0.151	0.210
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 23	DSI 2	650000	3750	22.06	23.50	1.393	-	-	0.15	0.386	0.538
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 23	DSI 2	650000	3750	22.06	23.50	1.393	-	-	0	0.176	0.245
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 23	DSI 2	650000	3750	21.98	23.50	1.419	-	-	0.01	0.139	0.197
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 23	DSI 2	650000	3750	21.98	23.50	1.419	-	-	0.05	0.140	0.199
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 23	DSI 2	650000	3750	21.98	23.50	1.419	-	-	-0.1	0.303	0.430
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 23	DSI 2	650000	3750	21.98	23.50	1.419	-	-	0.06	0.129	0.183
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 23	DSI 3	650000	3750	20.48	21.50	1.265	-	-	0.09	0.109	0.138
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 23	DSI 3	650000	3750	20.48	21.50	1.265	-	-	-0.15	0.095	0.120
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 23	DSI 3	650000	3750	20.48	21.50	1.265	-	-	-0.14	0.243	0.307
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 23	DSI 3	650000	3750	20.48	21.50	1.265	-	-	0.13	0.111	0.140
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 23	DSI 3	650000	3750	20.41	21.50	1.285	-	-	-0.08	0.087	0.112
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 23	DSI 3	650000	3750	20.41	21.50	1.285	-	-	0.08	0.088	0.113
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 23	DSI 3	650000	3750	20.41	21.50	1.285	-	-	0.09	0.192	0.247
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 23	DSI 3	650000	3750	20.41	21.50	1.285	-	-	-0.15	0.081	0.104

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 22	Standalone	1	2412	16.80	17.50	1.175	98.6	1.014	0.12	0.297	0.354
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 22	Standalone	1	2412	16.80	17.50	1.175	98.6	1.014	-0.18	0.307	0.366
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 22	Standalone	1	2412	16.80	17.50	1.175	98.6	1.014	0.05	0.675	0.804
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 22	Standalone	1	2412	16.80	17.50	1.175	98.6	1.014	-0.08	0.437	0.521
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 22	Standalone	6	2437	16.50	17.50	1.259	98.6	1.014	0.14	0.670	0.855
20	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 22	Standalone	11	2462	16.70	17.50	1.202	98.6	1.014	-0.12	0.714	**0.870**
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 22	Simultaneous	1	2412	14.40	15.50	1.288	98.6	1.014	0.12	0.193	0.252
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 22	Simultaneous	1	2412	14.40	15.50	1.288	98.6	1.014	-0.18	0.199	0.260
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 22	Simultaneous	1	2412	14.40	15.50	1.288	98.6	1.014	0.05	0.440	0.575
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 22	Simultaneous	1	2412	14.40	15.50	1.288	98.6	1.014	-0.08	0.283	0.370
	Bluetooth	DH5 1Mbps	Right Cheek	0mm	Ant 22	Standalone	39	2441	13.10	14.00	1.230	76.78	1.302	-0.04	0.044	0.070
	Bluetooth	DH5 1Mbps	Right Tilted	0mm	Ant 22	Standalone	39	2441	13.10	14.00	1.230	76.78	1.302	-0.03	0.046	0.074
21	Bluetooth	DH5 1Mbps	Left Cheek	0mm	Ant 22	Standalone	39	2441	13.10	14.00	1.230	76.78	1.302	-0.14	0.133	**0.213**
	Bluetooth	DH5 1Mbps	Left Tilted	0mm	Ant 22	Standalone	39	2441	13.10	14.00	1.230	76.78	1.302	-0.16	0.063	0.101
5000MHz																
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 22	Standalone	58	5290	12.83	13.50	1.167	92.35	1.083	0.1	0.239	0.302
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 22	Standalone	58	5290	12.83	13.50	1.167	92.35	1.083	-0.11	0.298	0.377
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 22	Standalone	58	5290	12.83	13.50	1.167	92.35	1.083	0.04	0.543	0.686
22	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 22	Standalone	58	5290	12.83	13.50	1.167	92.35	1.083	0.14	0.700	**0.885**
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 22	Simultaneous	58	5290	11.27	12.00	1.183	92.35	1.083	0.09	0.167	0.214
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 22	Simultaneous	58	5290	11.27	12.00	1.183	92.35	1.083	-0.05	0.208	0.266
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 22	Simultaneous	58	5290	11.27	12.00	1.183	92.35	1.083	0.06	0.379	0.486
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 22	Simultaneous	58	5290	11.27	12.00	1.183	92.35	1.083	0.08	0.488	0.625
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 22	Standalone	122	5610	15.66	16.50	1.215	92.35	1.083	0.06	0.147	0.193
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 22	Standalone	122	5610	15.66	16.50	1.215	92.35	1.083	0.18	0.130	0.171
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 22	Standalone	122	5610	15.66	16.50	1.215	92.35	1.083	0.15	0.645	0.848
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 22	Standalone	122	5610	15.66	16.50	1.215	92.35	1.083	0.04	0.303	0.399
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 22	Standalone	106	5530	14.19	15.00	1.205	92.35	1.083	-0.11	0.456	0.595
23	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 22	Standalone	138	5690	15.40	16.50	1.290	92.35	1.083	-0.14	0.657	**0.918**
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 22	Simultaneous	122	5610	14.20	15.00	1.202	92.35	1.083	0.04	0.105	0.137
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 22	Simultaneous	122	5610	14.20	15.00	1.202	92.35	1.083	-0.07	0.093	0.121
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 22	Simultaneous	122	5610	14.20	15.00	1.202	92.35	1.083	0.09	0.460	0.599
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 22	Simultaneous	122	5610	14.20	15.00	1.202	92.35	1.083	0.02	0.217	0.283
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 22	Standalone	155	5775	12.79	14.00	1.323	92.35	1.083	-0.18	0.177	0.254
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 22	Standalone	155	5775	12.79	14.00	1.323	92.35	1.083	-0.03	0.084	0.120
24	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 22	Standalone	155	5775	12.79	14.00	1.323	92.35	1.083	-0.18	0.396	**0.567**
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 22	Standalone	155	5775	12.79	14.00	1.323	92.35	1.083	-0.17	0.153	0.219
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 22	Simultaneous	155	5775	11.36	12.50	1.302	92.35	1.083	0.06	0.127	0.179
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 22	Simultaneous	155	5775	11.36	12.50	1.302	92.35	1.083	0.05	0.060	0.085
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 22	Simultaneous	155	5775	11.36	12.50	1.302	92.35	1.083	0.12	0.284	0.400
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 22	Simultaneous	155	5775	11.36	12.50	1.302	92.35	1.083	0.07	0.110	0.155

16.2 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	Duty Cycle %	Duty Cycle 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 13	DSI 10	23095	707.5	24.30	25.00	1.175	-	-	0.03	0.103	0.121
25	LTE Band 12	10M	QPSK	1	0	-	Back	10mm	Ant 13	DSI 10	23095	707.5	24.30	25.00	1.175	-	-	0.03	0.166	**0.195**
	LTE Band 12	10M	QPSK	1	0	-	Left Side	10mm	Ant 13	DSI 10	23095	707.5	24.30	25.00	1.175	-	-	0.04	0.124	0.146
	LTE Band 12	10M	QPSK	1	0	-	Top Side	10mm	Ant 13	DSI 10	23095	707.5	24.30	25.00	1.175	-	-	0.02	0.090	0.106
	LTE Band 12	10M	QPSK	25	0	-	Front	10mm	Ant 13	DSI 10	23095	707.5	23.41	24.00	1.146	-	-	0.13	0.078	0.089
	LTE Band 12	10M	QPSK	25	0	-	Back	10mm	Ant 13	DSI 10	23095	707.5	23.41	24.00	1.146	-	-	-0.18	0.118	0.135
	LTE Band 12	10M	QPSK	25	0	-	Left Side	10mm	Ant 13	DSI 10	23095	707.5	23.41	24.00	1.146	-	-	0.17	0.100	0.115
	LTE Band 12	10M	QPSK	25	0	-	Top Side	10mm	Ant 13	DSI 10	23095	707.5	23.41	24.00	1.146	-	-	0.08	0.071	0.081
	LTE Band 12	10M	QPSK	1	0	-	Front	10mm	Ant 31	DSI 10	23095	707.5	24.39	25.00	1.151	-	-	-0.03	0.059	0.068
	LTE Band 12	10M	QPSK	1	0	-	Back	10mm	Ant 31	DSI 10	23095	707.5	24.39	25.00	1.151	-	-	-0.07	0.076	0.087
	LTE Band 12	10M	QPSK	1	0	-	Left Side	10mm	Ant 31	DSI 10	23095	707.5	24.39	25.00	1.151	-	-	-0.07	0.095	0.109
	LTE Band 12	10M	QPSK	1	0	-	Right Side	10mm	Ant 31	DSI 10	23095	707.5	24.39	25.00	1.151	-	-	-0.03	0.053	0.061
	LTE Band 12	10M	QPSK	1	0	-	Bottom Side	10mm	Ant 31	DSI 10	23095	707.5	24.39	25.00	1.151	-	-	0.02	0.050	0.058
	LTE Band 12	10M	QPSK	25	0	-	Front	10mm	Ant 31	DSI 10	23095	707.5	23.49	24.00	1.125	-	-	0.06	0.051	0.057
	LTE Band 12	10M	QPSK	25	0	-	Back	10mm	Ant 31	DSI 10	23095	707.5	23.49	24.00	1.125	-	-	0.02	0.077	0.087
	LTE Band 12	10M	QPSK	25	0	-	Left Side	10mm	Ant 31	DSI 10	23095	707.5	23.49	24.00	1.125	-	-	-0.1	0.085	0.096
	LTE Band 12	10M	QPSK	25	0	-	Right Side	10mm	Ant 31	DSI 10	23095	707.5	23.49	24.00	1.125	-	-	-0.1	0.046	0.052
	LTE Band 12	10M	QPSK	25	0	-	Bottom Side	10mm	Ant 31	DSI 10	23095	707.5	23.49	24.00	1.125	-	-	0.18	0.045	0.051
	LTE Band 13	10M	QPSK	1	0	-	Front	10mm	Ant 13	DSI 10	23230	782	24.17	25.00	1.211	-	-	0.14	0.122	0.148
26	LTE Band 13	10M	QPSK	1	0	-	Back	10mm	Ant 13	DSI 10	23230	782	24.17	25.00	1.211	-	-	0.15	0.216	**0.261**
	LTE Band 13	10M	QPSK	1	0	-	Left Side	10mm	Ant 13	DSI 10	23230	782	24.17	25.00	1.211	-	-	-0.13	0.137	0.166
	LTE Band 13	10M	QPSK	1	0	-	Top Side	10mm	Ant 13	DSI 10	23230	782	24.17	25.00	1.211	-	-	0.18	0.121	0.146
	LTE Band 13	10M	QPSK	25	0	-	Front	10mm	Ant 13	DSI 10	23230	782	23.11	24.00	1.227	-	-	0.1	0.100	0.123
	LTE Band 13	10M	QPSK	25	0	-	Back	10mm	Ant 13	DSI 10	23230	782	23.11	24.00	1.227	-	-	0.09	0.140	0.172
	LTE Band 13	10M	QPSK	25	0	-	Left Side	10mm	Ant 13	DSI 10	23230	782	23.11	24.00	1.227	-	-	0.04	0.107	0.131
	LTE Band 13	10M	QPSK	25	0	-	Top Side	10mm	Ant 13	DSI 10	23230	782	23.11	24.00	1.227	-	-	0.03	0.097	0.119
	LTE Band 13	10M	QPSK	1	0	-	Front	10mm	Ant 31	DSI 10	23230	782	24.16	25.00	1.213	-	-	0.15	0.084	0.102
	LTE Band 13	10M	QPSK	1	0	-	Back	10mm	Ant 31	DSI 10	23230	782	24.16	25.00	1.213	-	-	-0.12	0.117	0.142
	LTE Band 13	10M	QPSK	1	0	-	Left Side	10mm	Ant 31	DSI 10	23230	782	24.16	25.00	1.213	-	-	-0.14	0.125	0.152
	LTE Band 13	10M	QPSK	1	0	-	Right Side	10mm	Ant 31	DSI 10	23230	782	24.16	25.00	1.213	-	-	0.04	0.063	0.076
	LTE Band 13	10M	QPSK	1	0	-	Bottom Side	10mm	Ant 31	DSI 10	23230	782	24.16	25.00	1.213	-	-	0.08	0.126	0.153
	LTE Band 13	10M	QPSK	25	0	-	Front	10mm	Ant 31	DSI 10	23230	782	23.17	24.00	1.211	-	-	0.17	0.067	0.081
	LTE Band 13	10M	QPSK	25	0	-	Back	10mm	Ant 31	DSI 10	23230	782	23.17	24.00	1.211	-	-	0.07	0.092	0.111
	LTE Band 13	10M	QPSK	25	0	-	Left Side	10mm	Ant 31	DSI 10	23230	782	23.17	24.00	1.211	-	-	-0.16	0.101	0.122
	LTE Band 13	10M	QPSK	25	0	-	Right Side	10mm	Ant 31	DSI 10	23230	782	23.17	24.00	1.211	-	-	0.14	0.050	0.061
	LTE Band 13	10M	QPSK	25	0	-	Bottom Side	10mm	Ant 31	DSI 10	23230	782	23.17	24.00	1.211	-	-	-0.15	0.109	0.132
835MHz																				
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Front	10mm	Ant 13	DSI 10	189	836.4	30.53	31.50	1.250	-	-	-0.02	0.162	0.203
27	GSM850	-	-	-	-	GPRS(2 Tx slots)	Back	10mm	Ant 13	DSI 10	189	836.4	30.53	31.50	1.250	-	-	-0.02	0.326	**0.408**
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Left Side	10mm	Ant 13	DSI 10	189	836.4	30.53	31.50	1.250	-	-	-0.17	0.053	0.066
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Top Side	10mm	Ant 13	DSI 10	189	836.4	30.53	31.50	1.250	-	-	-0.13	0.217	0.271
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Front	10mm	Ant 31	DSI 10	189	836.4	30.56	31.50	1.242	-	-	-0.18	0.103	0.128
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Back	10mm	Ant 31	DSI 10	189	836.4	30.56	31.50	1.242	-	-	-0.03	0.161	0.200
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Left Side	10mm	Ant 31	DSI 10	189	836.4	30.56	31.50	1.242	-	-	0.01	0.100	0.124
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Right Side	10mm	Ant 31	DSI 10	189	836.4	30.56	31.50	1.242	-	-	0.13	0.050	0.062
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Bottom Side	10mm	Ant 31	DSI 10	189	836.4	30.56	31.50	1.242	-	-	-0.03	0.117	0.145
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 13	DSI 10	4182	836.4	24.40	25.00	1.148	-	-	-0.01	0.215	0.247
28	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 13	DSI 10	4182	836.4	24.40	25.00	1.148	-	-	-0.16	0.376	**0.432**
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 13	DSI 10	4182	836.4	24.40	25.00	1.148	-	-	-0.04	0.099	0.114
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Top Side	10mm	Ant 13	DSI 10	4182	836.4	24.40	25.00	1.148	-	-	-0.14	0.294	0.338

	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 31	DSI 10	4182	836.4	24.39	25.00	1.151	-	-	0.15	0.114	0.131
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 31	DSI 10	4182	836.4	24.39	25.00	1.151	-	-	0	0.171	0.197
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 31	DSI 10	4182	836.4	24.39	25.00	1.151	-	-	-0.11	0.118	0.136
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Side	10mm	Ant 31	DSI 10	4182	836.4	24.39	25.00	1.151	-	-	0.07	0.088	0.101
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 31	DSI 10	4182	836.4	24.39	25.00	1.151	-	-	0.13	0.132	0.152
	LTE Band 26	15M	QPSK	1	0	-	Front	10mm	Ant 13	DSI 10	26865	831.5	24.06	25.00	1.242	-	-	0.02	0.176	0.219
29	LTE Band 26	15M	QPSK	1	0	-	Back	10mm	Ant 13	DSI 10	26865	831.5	24.06	25.00	1.242	-	-	0	0.295	**0.366**
	LTE Band 26	15M	QPSK	1	0	-	Left Side	10mm	Ant 13	DSI 10	26865	831.5	24.06	25.00	1.242	-	-	-0.16	0.108	0.134
	LTE Band 26	15M	QPSK	1	0	-	Top Side	10mm	Ant 13	DSI 10	26865	831.5	24.06	25.00	1.242	-	-	0	0.204	0.253
	LTE Band 26	15M	QPSK	36	0	-	Front	10mm	Ant 13	DSI 10	26865	831.5	22.92	24.00	1.282	-	-	-0.06	0.155	0.199
	LTE Band 26	15M	QPSK	36	0	-	Back	10mm	Ant 13	DSI 10	26865	831.5	22.92	24.00	1.282	-	-	0.12	0.217	0.278
	LTE Band 26	15M	QPSK	36	0	-	Left Side	10mm	Ant 13	DSI 10	26865	831.5	22.92	24.00	1.282	-	-	0.09	0.089	0.114
	LTE Band 26	15M	QPSK	36	0	-	Top Side	10mm	Ant 13	DSI 10	26865	831.5	22.92	24.00	1.282	-	-	-0.1	0.177	0.227
	LTE Band 26	15M	QPSK	1	0	-	Front	10mm	Ant 31	DSI 10	26865	831.5	23.91	25.00	1.285	-	-	0.09	0.085	0.109
	LTE Band 26	15M	QPSK	1	0	-	Back	10mm	Ant 31	DSI 10	26865	831.5	23.91	25.00	1.285	-	-	0.17	0.134	0.172
	LTE Band 26	15M	QPSK	1	0	-	Left Side	10mm	Ant 31	DSI 10	26865	831.5	23.91	25.00	1.285	-	-	-0.08	0.083	0.107
	LTE Band 26	15M	QPSK	1	0	-	Right Side	10mm	Ant 31	DSI 10	26865	831.5	23.91	25.00	1.285	-	-	-0.08	0.051	0.066
	LTE Band 26	15M	QPSK	1	0	-	Bottom Side	10mm	Ant 31	DSI 10	26865	831.5	23.91	25.00	1.285	-	-	-0.03	0.096	0.123
	LTE Band 26	15M	QPSK	36	0	-	Front	10mm	Ant 31	DSI 10	26865	831.5	22.91	24.00	1.285	-	-	0.14	0.072	0.093
	LTE Band 26	15M	QPSK	36	0	-	Back	10mm	Ant 31	DSI 10	26865	831.5	22.91	24.00	1.285	-	-	-0.02	0.113	0.145
	LTE Band 26	15M	QPSK	36	0	-	Left Side	10mm	Ant 31	DSI 10	26865	831.5	22.91	24.00	1.285	-	-	0.05	0.067	0.086
	LTE Band 26	15M	QPSK	36	0	-	Right Side	10mm	Ant 31	DSI 10	26865	831.5	22.91	24.00	1.285	-	-	0.11	0.044	0.057
	LTE Band 26	15M	QPSK	36	0	-	Bottom Side	10mm	Ant 31	DSI 10	26865	831.5	22.91	24.00	1.285	-	-	-0.08	0.082	0.105
	FR1 n26	20M	QPSK	1	1	DFT-15	Front	10mm	Ant 13	DSI 10	166300	831.5	24.06	25.00	1.242	-	-	0.08	0.197	0.245
	FR1 n26	20M	QPSK	1	1	DFT-15	Back	10mm	Ant 13	DSI 10	166300	831.5	24.06	25.00	1.242	-	-	0.01	0.297	0.369
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Side	10mm	Ant 13	DSI 10	166300	831.5	24.06	25.00	1.242	-	-	0.07	0.114	0.142
	FR1 n26	20M	QPSK	1	1	DFT-15	Top Side	10mm	Ant 13	DSI 10	166300	831.5	24.06	25.00	1.242	-	-	0.13	0.254	0.315
	FR1 n26	20M	QPSK	50	28	DFT-15	Front	10mm	Ant 13	DSI 10	166300	831.5	23.95	25.00	1.274	-	-	-0.13	0.216	0.275
30	FR1 n26	20M	QPSK	50	28	DFT-15	Back	10mm	Ant 13	DSI 10	166300	831.5	23.95	25.00	1.274	-	-	-0.01	0.340	**0.433**
	FR1 n26	20M	QPSK	50	28	DFT-15	Left Side	10mm	Ant 13	DSI 10	166300	831.5	23.95	25.00	1.274	-	-	-0.07	0.111	0.141
	FR1 n26	20M	QPSK	50	28	DFT-15	Top Side	10mm	Ant 13	DSI 10	166300	831.5	23.95	25.00	1.274	-	-	0.11	0.311	0.396
	FR1 n26	20M	QPSK	1	1	DFT-15	Front	10mm	Ant 31	DSI 10	166300	831.5	23.83	25.00	1.309	-	-	-0.13	0.098	0.128
	FR1 n26	20M	QPSK	1	1	DFT-15	Back	10mm	Ant 31	DSI 10	166300	831.5	23.83	25.00	1.309	-	-	-0.1	0.157	0.206
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Side	10mm	Ant 31	DSI 10	166300	831.5	23.83	25.00	1.309	-	-	0.06	0.073	0.096
	FR1 n26	20M	QPSK	1	1	DFT-15	Right Side	10mm	Ant 31	DSI 10	166300	831.5	23.83	25.00	1.309	-	-	-0.16	0.095	0.124
	FR1 n26	20M	QPSK	1	1	DFT-15	Bottom Side	10mm	Ant 31	DSI 10	166300	831.5	23.83	25.00	1.309	-	-	0.17	0.124	0.162
	FR1 n26	20M	QPSK	50	28	DFT-15	Front	10mm	Ant 31	DSI 10	166300	831.5	23.69	25.00	1.352	-	-	0.08	0.109	0.147
	FR1 n26	20M	QPSK	50	28	DFT-15	Back	10mm	Ant 31	DSI 10	166300	831.5	23.69	25.00	1.352	-	-	-0.05	0.173	0.234
	FR1 n26	20M	QPSK	50	28	DFT-15	Left Side	10mm	Ant 31	DSI 10	166300	831.5	23.69	25.00	1.352	-	-	0.05	0.071	0.096
	FR1 n26	20M	QPSK	50	28	DFT-15	Right Side	10mm	Ant 31	DSI 10	166300	831.5	23.69	25.00	1.352	-	-	-0.16	0.093	0.126
	FR1 n26	20M	QPSK	50	28	DFT-15	Bottom Side	10mm	Ant 31	DSI 10	166300	831.5	23.69	25.00	1.352	-	-	0.13	0.149	0.201
1750MHz																				
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 13	DSI 10	1413	1732.6	16.98	17.50	1.127	-	-	0.08	0.125	0.141
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 13	DSI 10	1413	1732.6	16.98	17.50	1.127	-	-	0	0.150	0.169
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 13	DSI 10	1413	1732.6	16.98	17.50	1.127	-	-	0.02	0.029	0.033
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Top Side	10mm	Ant 13	DSI 10	1413	1732.6	16.98	17.50	1.127	-	-	0.02	0.186	0.210
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 31	DSI 10	1413	1732.6	20.89	21.50	1.151	-	-	0.08	0.192	0.221
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 31	DSI 10	1413	1732.6	20.89	21.50	1.151	-	-	0.14	0.339	0.390
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 31	DSI 10	1413	1732.6	20.89	21.50	1.151	-	-	0.05	0.132	0.152
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Side	10mm	Ant 31	DSI 10	1413	1732.6	20.89	21.50	1.151	-	-	-0.17	0.081	0.093
31	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 31	DSI 10	1413	1732.6	20.89	21.50	1.151	-	-	-0.01	0.533	**0.613**
	LTE Band 4	20M	QPSK	1	0	-	Front	10mm	Ant 13	DSI 10	20175	1732.5	18.31	19.00	1.172	-	-	-0.18	0.150	0.176
	LTE Band 4	20M	QPSK	1	0	-	Back	10mm	Ant 13	DSI 10	20175	1732.5	18.31	19.00	1.172	-	-	0.1	0.194	0.227
	LTE Band 4	20M	QPSK	1	0	-	Left Side	10mm	Ant 13	DSI 10	20175	1732.5	18.31	19.00	1.172	-	-	0.05	0.041	0.048
	LTE Band 4	20M	QPSK	1	0	-	Top Side	10mm	Ant 13	DSI 10	20175	1732.5	18.31	19.00	1.172	-	-	-0.05	0.267	0.313
	LTE Band 4	20M	QPSK	50	0	-	Front	10mm	Ant 13	DSI 10	20175	1732.5	18.27	19.00	1.183	-	-	0.12	0.147	0.174

	LTE Band 4	20M	QPSK	50	0	-	Back	10mm	Ant 13	DSI 10	20175	1732.5	18.27	19.00	1.183	-	-	-0.07	0.196	0.232
	LTE Band 4	20M	QPSK	50	0	-	Left Side	10mm	Ant 13	DSI 10	20175	1732.5	18.27	19.00	1.183	-	-	-0.07	0.043	0.051
	LTE Band 4	20M	QPSK	50	0	-	Top Side	10mm	Ant 13	DSI 10	20175	1732.5	18.27	19.00	1.183	-	-	-0.08	0.250	0.296
	LTE Band 4	20M	QPSK	1	0	-	Front	10mm	Ant 31	DSI 10	20175	1732.5	20.99	22.00	1.262	-	-	0.14	0.182	0.230
	LTE Band 4	20M	QPSK	1	0	-	Back	10mm	Ant 31	DSI 10	20175	1732.5	20.99	22.00	1.262	-	-	0.14	0.319	0.403
	LTE Band 4	20M	QPSK	1	0	-	Left Side	10mm	Ant 31	DSI 10	20175	1732.5	20.99	22.00	1.262	-	-	0.01	0.024	0.030
	LTE Band 4	20M	QPSK	1	0	-	Right Side	10mm	Ant 31	DSI 10	20175	1732.5	20.99	22.00	1.262	-	-	0.05	0.073	0.092
	LTE Band 4	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 31	DSI 10	20175	1732.5	20.99	22.00	1.262	-	-	0.1	0.476	0.601
	LTE Band 4	20M	QPSK	50	0	-	Front	10mm	Ant 31	DSI 10	20175	1732.5	20.96	22.00	1.271	-	-	0.17	0.184	0.234
	LTE Band 4	20M	QPSK	50	0	-	Back	10mm	Ant 31	DSI 10	20175	1732.5	20.96	22.00	1.271	-	-	0.05	0.319	0.405
	LTE Band 4	20M	QPSK	50	0	-	Left Side	10mm	Ant 31	DSI 10	20175	1732.5	20.96	22.00	1.271	-	-	-0.16	0.025	0.032
	LTE Band 4	20M	QPSK	50	0	-	Right Side	10mm	Ant 31	DSI 10	20175	1732.5	20.96	22.00	1.271	-	-	-0.08	0.075	0.095
32	LTE Band 4	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 31	DSI 10	20175	1732.5	20.96	22.00	1.271	-	-	-0.1	0.539	**0.685**
	LTE Band 4	20M	QPSK	1	0	-	Front	10mm	Ant 11	DSI 10	20175	1732.5	19.15	20.00	1.216	-	-	-0.17	0.036	0.044
	LTE Band 4	20M	QPSK	1	0	-	Back	10mm	Ant 11	DSI 10	20175	1732.5	19.15	20.00	1.216	-	-	0.16	0.059	0.072
	LTE Band 4	20M	QPSK	1	0	-	Left Side	10mm	Ant 11	DSI 10	20175	1732.5	19.15	20.00	1.216	-	-	0.05	0.069	0.084
	LTE Band 4	20M	QPSK	1	0	-	Top Side	10mm	Ant 11	DSI 10	20175	1732.5	19.15	20.00	1.216	-	-	-	n/a	n/a
	LTE Band 4	20M	QPSK	50	0	-	Front	10mm	Ant 11	DSI 10	20175	1732.5	19.14	20.00	1.219	-	-	-0.05	0.033	0.040
	LTE Band 4	20M	QPSK	50	0	-	Back	10mm	Ant 11	DSI 10	20175	1732.5	19.14	20.00	1.219	-	-	0.11	0.028	0.034
	LTE Band 4	20M	QPSK	50	0	-	Left Side	10mm	Ant 11	DSI 10	20175	1732.5	19.14	20.00	1.219	-	-	-0.08	0.073	0.089
	LTE Band 4	20M	QPSK	50	0	-	Top Side	10mm	Ant 11	DSI 10	20175	1732.5	19.14	20.00	1.219	-	-	-	n/a	n/a
	LTE Band 66	20M	QPSK	1	0	-	Front	10mm	Ant 13	DSI 10	132322	1745	17.05	18.00	1.245	-	-	0.16	0.117	0.146
	LTE Band 66	20M	QPSK	1	0	-	Back	10mm	Ant 13	DSI 10	132322	1745	17.05	18.00	1.245	-	-	-0.09	0.159	0.198
	LTE Band 66	20M	QPSK	1	0	-	Left Side	10mm	Ant 13	DSI 10	132322	1745	17.05	18.00	1.245	-	-	0.06	0.043	0.054
	LTE Band 66	20M	QPSK	1	0	-	Top Side	10mm	Ant 13	DSI 10	132322	1745	17.05	18.00	1.245	-	-	-0.14	0.217	0.270
	LTE Band 66C	20M	QPSK	1	0	-	Top Side	10mm	Ant 13	DSI 10	132322 +132124	1745 +1725.2	16.53	18.00	1.403	-	-	-0.14	0.185	0.260
	LTE Band 66	20M	QPSK	50	0	-	Front	10mm	Ant 13	DSI 10	132322	1745	17.01	18.00	1.256	-	-	0.03	0.113	0.142
	LTE Band 66	20M	QPSK	50	0	-	Back	10mm	Ant 13	DSI 10	132322	1745	17.01	18.00	1.256	-	-	-0.17	0.159	0.200
	LTE Band 66	20M	QPSK	50	0	-	Left Side	10mm	Ant 13	DSI 10	132322	1745	17.01	18.00	1.256	-	-	0.02	0.042	0.053
	LTE Band 66	20M	QPSK	50	0	-	Top Side	10mm	Ant 13	DSI 10	132322	1745	17.01	18.00	1.256	-	-	-0.15	0.202	0.254
	LTE Band 66	20M	QPSK	1	0	-	Front	10mm	Ant 31	DSI 10	132322	1745	21.59	22.50	1.233	-	-	0.05	0.194	0.239
	LTE Band 66	20M	QPSK	1	0	-	Back	10mm	Ant 31	DSI 10	132322	1745	21.59	22.50	1.233	-	-	0.08	0.339	0.418
	LTE Band 66	20M	QPSK	1	0	-	Left Side	10mm	Ant 31	DSI 10	132322	1745	21.59	22.50	1.233	-	-	-	n/a	n/a
	LTE Band 66	20M	QPSK	1	0	-	Right Side	10mm	Ant 31	DSI 10	132322	1745	21.59	22.50	1.233	-	-	0.17	0.081	0.100
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 31	DSI 10	132322	1745	21.59	22.50	1.233	-	-	-0.12	0.513	0.633
	LTE Band 66	20M	QPSK	50	0	-	Front	10mm	Ant 31	DSI 10	132322	1745	21.55	22.50	1.245	-	-	-0.04	0.194	0.241
	LTE Band 66	20M	QPSK	50	0	-	Back	10mm	Ant 31	DSI 10	132322	1745	21.55	22.50	1.245	-	-	-0.18	0.343	0.427
	LTE Band 66	20M	QPSK	50	0	-	Left Side	10mm	Ant 31	DSI 10	132322	1745	21.55	22.50	1.245	-	-	-	n/a	n/a
	LTE Band 66	20M	QPSK	50	0	-	Right Side	10mm	Ant 31	DSI 10	132322	1745	21.55	22.50	1.245	-	-	-0.01	0.084	0.105
33	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 31	DSI 10	132322	1745	21.55	22.50	1.245	-	-	0.04	0.565	**0.703**
	LTE Band 66C	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 31	DSI 10	132322 +132124	1745 +1725.2	20.98	22.50	1.419	-	-	0.04	0.438	0.622
	LTE Band 66	20M	QPSK	1	0	-	Front	10mm	Ant 11	DSI 10	132322	1745	16.61	17.50	1.227	-	-	-0.07	0.094	0.115
	LTE Band 66	20M	QPSK	1	0	-	Back	10mm	Ant 11	DSI 10	132322	1745	16.61	17.50	1.227	-	-	-0.17	0.191	0.234
	LTE Band 66	20M	QPSK	1	0	-	Left Side	10mm	Ant 11	DSI 10	132322	1745	16.61	17.50	1.227	-	-	-0.1	0.278	0.341
	LTE Band 66C	20M	QPSK	1	0	-	Left Side	10mm	Ant 11	DSI 10	132322 +132124	1745 +1725.2	15.98	17.50	1.419	-	-	-0.1	0.231	0.328
	LTE Band 66	20M	QPSK	1	0	-	Top Side	10mm	Ant 11	DSI 10	132322	1745	16.61	17.50	1.227	-	-	-	n/a	n/a
	LTE Band 66	20M	QPSK	50	0	-	Front	10mm	Ant 11	DSI 10	132322	1745	16.55	17.50	1.245	-	-	-0.03	0.087	0.108
	LTE Band 66	20M	QPSK	50	0	-	Back	10mm	Ant 11	DSI 10	132322	1745	16.55	17.50	1.245	-	-	-0.07	0.175	0.218
	LTE Band 66	20M	QPSK	50	0	-	Left Side	10mm	Ant 11	DSI 10	132322	1745	16.55	17.50	1.245	-	-	0.14	0.250	0.311
	LTE Band 66	20M	QPSK	50	0	-	Top Side	10mm	Ant 11	DSI 10	132322	1745	16.55	17.50	1.245	-	-	-	n/a	n/a
	FR1 n66	40M	QPSK	1	1	DFT-15	Front	10mm	Ant 13	DSI 10	349000	1745	18.53	19.50	1.250	-	-	-0.12	0.172	0.215
	FR1 n66	40M	QPSK	1	1	DFT-15	Back	10mm	Ant 13	DSI 10	349000	1745	18.53	19.50	1.250	-	-	0.09	0.234	0.293
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Side	10mm	Ant 13	DSI 10	349000	1745	18.53	19.50	1.250	-	-	-0.14	0.060	0.075
	FR1 n66	40M	QPSK	1	1	DFT-15	Top Side	10mm	Ant 13	DSI 10	349000	1745	18.53	19.50	1.250	-	-	-0.07	0.305	0.381
	FR1 n66	40M	QPSK	108	54	DFT-15	Front	10mm	Ant 13	DSI 10	349000	1745	18.47	19.50	1.268	-	-	0.03	0.185	0.235

	FR1 n66	40M	QPSK	108	54	DFT-15	Back	10mm	Ant 13	DSI 10	349000	1745	18.47	19.50	1.268	-	-	-0.06	0.245	0.311
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Side	10mm	Ant 13	DSI 10	349000	1745	18.47	19.50	1.268	-	-	0.17	0.056	0.071
	FR1 n66	40M	QPSK	108	54	DFT-15	Top Side	10mm	Ant 13	DSI 10	349000	1745	18.47	19.50	1.268	-	-	0.04	0.301	0.382
	FR1 n66	40M	QPSK	1	1	DFT-15	Front	10mm	Ant 31	DSI 10	349000	1745	20.82	22.00	1.312	-	-	0.13	0.186	0.244
	FR1 n66	40M	QPSK	1	1	DFT-15	Back	10mm	Ant 31	DSI 10	349000	1745	20.82	22.00	1.312	-	-	0.01	0.319	0.419
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Side	10mm	Ant 31	DSI 10	349000	1745	20.82	22.00	1.312	-	-	-	n/a	n/a
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Side	10mm	Ant 31	DSI 10	349000	1745	20.82	22.00	1.312	-	-	-0.1	0.074	0.097
	FR1 n66	40M	QPSK	1	1	DFT-15	Bottom Side	10mm	Ant 31	DSI 10	349000	1745	20.82	22.00	1.312	-	-	0.11	0.498	0.653
	FR1 n66	40M	QPSK	108	54	DFT-15	Front	10mm	Ant 31	DSI 10	349000	1745	20.79	22.00	1.321	-	-	0.09	0.188	0.248
	FR1 n66	40M	QPSK	108	54	DFT-15	Back	10mm	Ant 31	DSI 10	349000	1745	20.79	22.00	1.321	-	-	0.15	0.335	0.443
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Side	10mm	Ant 31	DSI 10	349000	1745	20.79	22.00	1.321	-	-	-	n/a	n/a
	FR1 n66	40M	QPSK	108	54	DFT-15	Right Side	10mm	Ant 31	DSI 10	349000	1745	20.79	22.00	1.321	-	-	0	0.077	0.102
34	FR1 n66	40M	QPSK	108	54	DFT-15	Bottom Side	10mm	Ant 31	DSI 10	349000	1745	20.79	22.00	1.321	-	-	-0.14	0.569	**0.752**
	FR1 n66	40M	QPSK	1	1	DFT-15	Front	10mm	Ant 11	DSI 10	349000	1745	19.10	20.00	1.230	-	-	-0.05	0.168	0.207
	FR1 n66	40M	QPSK	1	1	DFT-15	Back	10mm	Ant 11	DSI 10	349000	1745	19.10	20.00	1.230	-	-	0.16	0.348	0.428
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Side	10mm	Ant 11	DSI 10	349000	1745	19.10	20.00	1.230	-	-	-0.13	0.501	0.616
	FR1 n66	40M	QPSK	1	1	DFT-15	Top Side	10mm	Ant 11	DSI 10	349000	1745	19.10	20.00	1.230	-	-	-	n/a	n/a
	FR1 n66	40M	QPSK	108	54	DFT-15	Front	10mm	Ant 11	DSI 10	349000	1745	19.04	20.00	1.247	-	-	-0.05	0.168	0.210
	FR1 n66	40M	QPSK	108	54	DFT-15	Back	10mm	Ant 11	DSI 10	349000	1745	19.04	20.00	1.247	-	-	0.01	0.343	0.428
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Side	10mm	Ant 11	DSI 10	349000	1745	19.04	20.00	1.247	-	-	0.17	0.499	0.622
	FR1 n66	40M	QPSK	108	54	DFT-15	Top Side	10mm	Ant 11	DSI 10	349000	1745	19.04	20.00	1.247	-	-	-	n/a	n/a
1900MHz																				
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Front	10mm	Ant 13	DSI 10	661	1880	23.96	25.50	1.426	-	-	-0.15	0.110	0.157
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Back	10mm	Ant 13	DSI 10	661	1880	23.96	25.50	1.426	-	-	-0.02	0.171	0.244
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Left Side	10mm	Ant 13	DSI 10	661	1880	23.96	25.50	1.426	-	-	-	n/a	n/a
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Top Side	10mm	Ant 13	DSI 10	661	1880	23.96	25.50	1.426	-	-	-0.09	0.262	0.374
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Front	10mm	Ant 31	DSI 10	661	1880	26.58	28.00	1.387	-	-	-0.02	0.174	0.241
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Back	10mm	Ant 31	DSI 10	661	1880	26.58	28.00	1.387	-	-	-0.13	0.311	0.431
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Left Side	10mm	Ant 31	DSI 10	661	1880	26.58	28.00	1.387	-	-	-0.07	0.096	0.133
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Right Side	10mm	Ant 31	DSI 10	661	1880	26.58	28.00	1.387	-	-	-0.15	0.099	0.137
35	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Bottom Side	10mm	Ant 31	DSI 10	661	1880	26.58	28.00	1.387	-	-	-0.07	0.558	**0.774**
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 13	DSI 10	9400	1880	15.98	16.50	1.127	-	-	0.11	0.088	0.099
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 13	DSI 10	9400	1880	15.98	16.50	1.127	-	-	0.09	0.130	0.147
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 13	DSI 10	9400	1880	15.98	16.50	1.127	-	-	-	n/a	n/a
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	10mm	Ant 13	DSI 10	9400	1880	15.98	16.50	1.127	-	-	0.15	0.200	0.225
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 31	DSI 10	9400	1880	20.44	21.00	1.138	-	-	-0.11	0.215	0.245
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 31	DSI 10	9400	1880	20.44	21.00	1.138	-	-	-0.12	0.397	0.452
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 31	DSI 10	9400	1880	20.44	21.00	1.138	-	-	0.17	0.138	0.157
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Side	10mm	Ant 31	DSI 10	9400	1880	20.44	21.00	1.138	-	-	0.16	0.130	0.148
36	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 31	DSI 10	9400	1880	20.44	21.00	1.138	-	-	0.06	0.587	**0.668**
	LTE Band 2	20M	QPSK	1	0	-	Front	10mm	Ant 13	DSI 10	18900	1880	17.48	18.50	1.265	-	-	-0.01	0.112	0.142
	LTE Band 2	20M	QPSK	1	0	-	Back	10mm	Ant 13	DSI 10	18900	1880	17.48	18.50	1.265	-	-	0.11	0.222	0.281
	LTE Band 2	20M	QPSK	1	0	-	Left Side	10mm	Ant 13	DSI 10	18900	1880	17.48	18.50	1.265	-	-	-0.1	0.058	0.073
	LTE Band 2	20M	QPSK	1	0	-	Top Side	10mm	Ant 13	DSI 10	18900	1880	17.48	18.50	1.265	-	-	-0.09	0.284	0.359
	LTE Band 2	20M	QPSK	50	0	-	Front	10mm	Ant 13	DSI 10	18900	1880	17.43	18.50	1.279	-	-	-0.02	0.110	0.141
	LTE Band 2	20M	QPSK	50	0	-	Back	10mm	Ant 13	DSI 10	18900	1880	17.43	18.50	1.279	-	-	0.13	0.223	0.285
	LTE Band 2	20M	QPSK	50	0	-	Left Side	10mm	Ant 13	DSI 10	18900	1880	17.43	18.50	1.279	-	-	-0.14	0.060	0.077
	LTE Band 2	20M	QPSK	50	0	-	Top Side	10mm	Ant 13	DSI 10	18900	1880	17.43	18.50	1.279	-	-	0.18	0.284	0.363
	LTE Band 2	20M	QPSK	1	0	-	Front	10mm	Ant 31	DSI 10	18900	1880	20.62	21.50	1.225	-	-	0.16	0.223	0.273
	LTE Band 2	20M	QPSK	1	0	-	Back	10mm	Ant 31	DSI 10	18900	1880	20.62	21.50	1.225	-	-	0.18	0.370	0.453
	LTE Band 2	20M	QPSK	1	0	-	Left Side	10mm	Ant 31	DSI 10	18900	1880	20.62	21.50	1.225	-	-	0.06	0.050	0.061
	LTE Band 2	20M	QPSK	1	0	-	Right Side	10mm	Ant 31	DSI 10	18900	1880	20.62	21.50	1.225	-	-	-0.15	0.119	0.146
	LTE Band 2	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 31	DSI 10	18900	1880	20.62	21.50	1.225	-	-	0.16	0.547	0.670
	LTE Band 2	20M	QPSK	50	0	-	Front	10mm	Ant 31	DSI 10	18900	1880	20.55	21.50	1.245	-	-	-0.14	0.226	0.281
	LTE Band 2	20M	QPSK	50	0	-	Back	10mm	Ant 31	DSI 10	18900	1880	20.55	21.50	1.245	-	-	-0.1	0.377	0.469
	LTE Band 2	20M	QPSK	50	0	-	Left Side	10mm	Ant 31	DSI 10	18900	1880	20.55	21.50	1.245	-	-	-0.15	0.053	0.066

	LTE Band 2	20M	QPSK	50	0	-	Right Side	10mm	Ant 31	DSI 10	18900	1880	20.55	21.50	1.245	-	-	0.13	0.120	0.149
37	LTE Band 2	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 31	DSI 10	18900	1880	20.55	21.50	1.245	-	-	-0.16	0.570	**0.709**
	FR1 n2	20M	QPSK	1	1	DFT-15	Front	10mm	Ant 13	DSI 10	376000	1880	17.01	18.50	1.409	-	-	0.11	0.129	0.182
	FR1 n2	20M	QPSK	1	1	DFT-15	Back	10mm	Ant 13	DSI 10	376000	1880	17.01	18.50	1.409	-	-	-0.01	0.178	0.251
	FR1 n2	20M	QPSK	1	1	DFT-15	Left Side	10mm	Ant 13	DSI 10	376000	1880	17.01	18.50	1.409	-	-	0.05	0.042	0.059
	FR1 n2	20M	QPSK	1	1	DFT-15	Top Side	10mm	Ant 13	DSI 10	376000	1880	17.01	18.50	1.409	-	-	0.12	0.282	0.397
	FR1 n2	20M	QPSK	50	28	DFT-15	Front	10mm	Ant 13	DSI 10	376000	1880	16.97	18.50	1.422	-	-	-0.12	0.123	0.175
	FR1 n2	20M	QPSK	50	28	DFT-15	Back	10mm	Ant 13	DSI 10	376000	1880	16.97	18.50	1.422	-	-	0.1	0.173	0.246
	FR1 n2	20M	QPSK	50	28	DFT-15	Left Side	10mm	Ant 13	DSI 10	376000	1880	16.97	18.50	1.422	-	-	0.09	0.042	0.060
	FR1 n2	20M	QPSK	50	28	DFT-15	Top Side	10mm	Ant 13	DSI 10	376000	1880	16.97	18.50	1.422	-	-	-0.09	0.280	0.398
	FR1 n2	20M	QPSK	1	1	DFT-15	Front	10mm	Ant 11	DSI 10	376000	1880	16.05	17.50	1.396	-	-	-0.09	0.087	0.121
	FR1 n2	20M	QPSK	1	1	DFT-15	Back	10mm	Ant 11	DSI 10	376000	1880	16.05	17.50	1.396	-	-	-0.11	0.162	0.226
38	FR1 n2	20M	QPSK	1	1	DFT-15	Left Side	10mm	Ant 11	DSI 10	376000	1880	16.05	17.50	1.396	-	-	-0.16	0.365	**0.510**
	FR1 n2	20M	QPSK	1	1	DFT-15	Top Side	10mm	Ant 11	DSI 10	376000	1880	16.05	17.50	1.396	-	-	-	n/a	n/a
	FR1 n2	20M	QPSK	50	28	DFT-15	Front	10mm	Ant 11	DSI 10	376000	1880	15.91	17.50	1.442	-	-	-0.07	0.098	0.141
	FR1 n2	20M	QPSK	50	28	DFT-15	Back	10mm	Ant 11	DSI 10	376000	1880	15.91	17.50	1.442	-	-	-0.08	0.184	0.265
	FR1 n2	20M	QPSK	50	28	DFT-15	Left Side	10mm	Ant 11	DSI 10	376000	1880	15.91	17.50	1.442	-	-	0.1	0.319	0.460
	FR1 n2	20M	QPSK	50	28	DFT-15	Top Side	10mm	Ant 11	DSI 10	376000	1880	15.91	17.50	1.442	-	-	-	n/a	n/a
2600MHz																				
	LTE Band 7	20M	QPSK	1	0	-	Front	10mm	Ant 13	DSI 10	21100	2535	10.24	11.00	1.191	-	-	0.14	0.043	0.051
	LTE Band 7	20M	QPSK	1	0	-	Back	10mm	Ant 13	DSI 10	21100	2535	10.24	11.00	1.191	-	-	-0.08	0.133	0.158
	LTE Band 7	20M	QPSK	1	0	-	Left Side	10mm	Ant 13	DSI 10	21100	2535	10.24	11.00	1.191	-	-	-	n/a	n/a
	LTE Band 7	20M	QPSK	1	0	-	Top Side	10mm	Ant 13	DSI 10	21100	2535	10.24	11.00	1.191	-	-	-0.14	0.168	0.200
	LTE Band 7C	20M	QPSK	1	0	-	Top Side	10mm	Ant 13	DSI 10	21100 20902	2535 2515.2	9.87	11.00	1.297	-	-	-0.14	0.141	0.183
	LTE Band 7	20M	QPSK	50	0	-	Front	10mm	Ant 13	DSI 10	21100	2535	10.22	11.00	1.197	-	-	-0.01	0.045	0.054
	LTE Band 7	20M	QPSK	50	0	-	Back	10mm	Ant 13	DSI 10	21100	2535	10.22	11.00	1.197	-	-	-0.16	0.133	0.159
	LTE Band 7	20M	QPSK	50	0	-	Left Side	10mm	Ant 13	DSI 10	21100	2535	10.22	11.00	1.197	-	-	-	n/a	n/a
	LTE Band 7	20M	QPSK	50	0	-	Top Side	10mm	Ant 13	DSI 10	21100	2535	10.22	11.00	1.197	-	-	0.02	0.167	0.200
	LTE Band 7	20M	QPSK	1	0	-	Front	10mm	Ant 31	DSI 10	21100	2535	21.13	22.00	1.222	-	-	-0.03	0.208	0.254
	LTE Band 7	20M	QPSK	1	0	-	Back	10mm	Ant 31	DSI 10	21100	2535	21.13	22.00	1.222	-	-	-0.13	0.319	0.390
	LTE Band 7	20M	QPSK	1	0	-	Left Side	10mm	Ant 31	DSI 10	21100	2535	21.13	22.00	1.222	-	-	-	n/a	n/a
	LTE Band 7	20M	QPSK	1	0	-	Right Side	10mm	Ant 31	DSI 10	21100	2535	21.13	22.00	1.222	-	-	0.08	0.154	0.188
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 31	DSI 10	21100	2535	21.13	22.00	1.222	-	-	0.06	0.157	0.192
	LTE Band 7	20M	QPSK	50	0	-	Front	10mm	Ant 31	DSI 10	21100	2535	21.07	22.00	1.239	-	-	-0.07	0.213	0.264
39	LTE Band 7	20M	QPSK	50	0	-	Back	10mm	Ant 31	DSI 10	21100	2535	21.07	22.00	1.239	-	-	-0.12	0.338	**0.419**
	LTE Band 7C	20M	QPSK	50	0	-	Back	10mm	Ant 31	DSI 10	21100 20902	2535 2515.2	20.78	22.00	1.324	-	-	-0.12	0.284	0.376
	LTE Band 7	20M	QPSK	50	0	-	Left Side	10mm	Ant 31	DSI 10	21100	2535	21.07	22.00	1.239	-	-	-	n/a	n/a
	LTE Band 7	20M	QPSK	50	0	-	Right Side	10mm	Ant 31	DSI 10	21100	2535	21.07	22.00	1.239	-	-	0.1	0.164	0.203
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 31	DSI 10	21100	2535	21.07	22.00	1.239	-	-	0.14	0.168	0.208
	LTE Band 7	20M	QPSK	1	0	-	Front	10mm	Ant 11	DSI 10	21100	2535	15.21	16.50	1.346	-	-	-0.06	0.054	0.073
	LTE Band 7	20M	QPSK	1	0	-	Back	10mm	Ant 11	DSI 10	21100	2535	15.21	16.50	1.346	-	-	-0.12	0.129	0.174
	LTE Band 7	20M	QPSK	1	0	-	Left Side	10mm	Ant 11	DSI 10	21100	2535	15.21	16.50	1.346	-	-	-0.06	0.193	0.260
	LTE Band 7	20M	QPSK	1	0	-	Top Side	10mm	Ant 11	DSI 10	21100	2535	15.21	16.50	1.346	-	-	-	n/a	n/a
	LTE Band 7	20M	QPSK	50	0	-	Front	10mm	Ant 11	DSI 10	21100	2535	15.14	16.50	1.368	-	-	-0.04	0.056	0.077
	LTE Band 7	20M	QPSK	50	0	-	Back	10mm	Ant 11	DSI 10	21100	2535	15.14	16.50	1.368	-	-	-0.01	0.128	0.175
	LTE Band 7	20M	QPSK	50	0	-	Left Side	10mm	Ant 11	DSI 10	21100	2535	15.14	16.50	1.368	-	-	0.07	0.223	0.305
	LTE Band 7C	20M	QPSK	50	0	-	Left Side	10mm	Ant 11	DSI 10	21100 20902	2535 2515.2	14.65	16.50	1.531	-	-	0.07	0.197	0.302
	LTE Band 7	20M	QPSK	50	0	-	Top Side	10mm	Ant 11	DSI 10	21100	2535	15.14	16.50	1.368	-	-	-	n/a	n/a
	LTE Band 38	20M	QPSK	1	0	-	Front	10mm	Ant 13	DSI 10	38000	2595	14.58	15.50	1.236	62.9	1.006	0.16	0.080	0.099
	LTE Band 38	20M	QPSK	1	0	-	Back	10mm	Ant 13	DSI 10	38000	2595	14.58	15.50	1.236	62.9	1.006	0	0.242	0.301
	LTE Band 38	20M	QPSK	1	0	-	Left Side	10mm	Ant 13	DSI 10	38000	2595	14.58	15.50	1.236	62.9	1.006	-	n/a	n/a
	LTE Band 38	20M	QPSK	1	0	-	Top Side	10mm	Ant 13	DSI 10	38000	2595	14.58	15.50	1.236	62.9	1.006	0.16	0.293	0.364
	LTE Band 38	20M	QPSK	50	0	-	Front	10mm	Ant 13	DSI 10	38000	2595	14.56	15.50	1.242	62.9	1.006	0.02	0.074	0.092
	LTE Band 38	20M	QPSK	50	0	-	Back	10mm	Ant 13	DSI 10	38000	2595	14.56	15.50	1.242	62.9	1.006	0.17	0.240	0.300
	LTE Band 38	20M	QPSK	50	0	-	Left Side	10mm	Ant 13	DSI 10	38000	2595	14.56	15.50	1.242	62.9	1.006	-	n/a	n/a

40	LTE Band 38	20M	QPSK	50	0	-	Top Side	10mm	Ant 13	DSI 10	38000	2595	14.56	15.50	1.242	62.9	1.006	0.02	0.320	**0.400**
	LTE Band 38C	20M	QPSK	50	0	-	Top Side	10mm	Ant 13	DSI 10	37901 +38099	2585.1 +2604.9	13.95	15.50	1.429	62.9	1.006	0.02	0.245	0.352
	LTE Band 38	20M	QPSK	1	0	-	Front	10mm	Ant 31	DSI 10	38000	2595	23.65	24.50	1.216	62.9	1.006	0.03	0.197	0.241
	LTE Band 38	20M	QPSK	1	0	-	Back	10mm	Ant 31	DSI 10	38000	2595	23.65	24.50	1.216	62.9	1.006	-0.11	0.245	0.300
	LTE Band 38C	20M	QPSK	1	0	-	Back	10mm	Ant 31	DSI 10	37901 +38099	2585.1 +2604.9	22.92	24.50	1.439	62.9	1.006	-0.11	0.201	0.291
	LTE Band 38	20M	QPSK	1	0	-	Left Side	10mm	Ant 31	DSI 10	38000	2595	23.65	24.50	1.216	62.9	1.006	-0.1	0.114	0.139
	LTE Band 38	20M	QPSK	1	0	-	Right Side	10mm	Ant 31	DSI 10	38000	2595	23.65	24.50	1.216	62.9	1.006	-0.14	0.179	0.219
	LTE Band 38	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 31	DSI 10	38000	2595	23.65	24.50	1.216	62.9	1.006	-0.09	0.131	0.160
	LTE Band 38	20M	QPSK	50	0	-	Front	10mm	Ant 31	DSI 10	38000	2595	22.79	23.50	1.178	62.9	1.006	0.09	0.160	0.190
	LTE Band 38	20M	QPSK	50	0	-	Back	10mm	Ant 31	DSI 10	38000	2595	22.79	23.50	1.178	62.9	1.006	-0.17	0.209	0.248
	LTE Band 38	20M	QPSK	50	0	-	Left Side	10mm	Ant 31	DSI 10	38000	2595	22.79	23.50	1.178	62.9	1.006	0.15	0.068	0.081
	LTE Band 38	20M	QPSK	50	0	-	Right Side	10mm	Ant 31	DSI 10	38000	2595	22.79	23.50	1.178	62.9	1.006	-0.16	0.130	0.154
	LTE Band 38	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 31	DSI 10	38000	2595	22.79	23.50	1.178	62.9	1.006	-0.06	0.105	0.124
	LTE Band 38	20M	QPSK	1	0	-	Front	10mm	Ant 11	DSI 10	38000	2595	17.11	18.50	1.377	62.9	1.006	-0.04	0.052	0.072
	LTE Band 38	20M	QPSK	1	0	-	Back	10mm	Ant 11	DSI 10	38000	2595	17.11	18.50	1.377	62.9	1.006	0.01	0.126	0.175
	LTE Band 38	20M	QPSK	1	0	-	Left Side	10mm	Ant 11	DSI 10	38000	2595	17.11	18.50	1.377	62.9	1.006	-0.16	0.192	0.266
	LTE Band 38C	20M	QPSK	1	0	-	Left Side	10mm	Ant 11	DSI 10	37901 +38099	2585.1 +2604.9	16.75	18.50	1.496	62.9	1.006	-0.16	0.166	0.250
	LTE Band 38	20M	QPSK	1	0	-	Top Side	10mm	Ant 11	DSI 10	38000	2595	17.11	18.50	1.377	62.9	1.006	-	n/a	n/a
	LTE Band 38	20M	QPSK	50	0	-	Front	10mm	Ant 11	DSI 10	38000	2595	17.08	18.50	1.387	62.9	1.006	-0.11	0.053	0.074
	LTE Band 38	20M	QPSK	50	0	-	Back	10mm	Ant 11	DSI 10	38000	2595	17.08	18.50	1.387	62.9	1.006	-0.13	0.124	0.173
	LTE Band 38	20M	QPSK	50	0	-	Left Side	10mm	Ant 11	DSI 10	38000	2595	17.08	18.50	1.387	62.9	1.006	0.16	0.190	0.265
	LTE Band 38	20M	QPSK	50	0	-	Top Side	10mm	Ant 11	DSI 10	38000	2595	17.08	18.50	1.387	62.9	1.006	-	n/a	n/a
	LTE Band 41	20M	QPSK	1	0	-	Front	10mm	Ant 13	DSI 10	40620	2593	15.66	16.50	1.213	62.9	1.006	0.04	0.097	0.118
	LTE Band 41	20M	QPSK	1	0	-	Back	10mm	Ant 13	DSI 10	40620	2593	15.66	16.50	1.213	62.9	1.006	0	0.304	0.371
	LTE Band 41	20M	QPSK	1	0	-	Left Side	10mm	Ant 13	DSI 10	40620	2593	15.66	16.50	1.213	62.9	1.006	0.08	0.040	0.049
41	LTE Band 41	20M	QPSK	1	0	-	Top Side	10mm	Ant 13	DSI 10	40620	2593	15.66	16.50	1.213	62.9	1.006	-0.02	0.416	**0.508**
	LTE Band 41C	20M	QPSK	1	0	-	Top Side	10mm	Ant 13	DSI 10	40620 +40422	2593 +2573.2	15.22	16.50	1.343	62.9	1.006	-0.02	0.353	0.477
	LTE Band 41	20M	QPSK	50	0	-	Front	10mm	Ant 13	DSI 10	40620	2593	15.63	16.50	1.222	62.9	1.006	0.06	0.095	0.117
	LTE Band 41	20M	QPSK	50	0	-	Back	10mm	Ant 13	DSI 10	40620	2593	15.63	16.50	1.222	62.9	1.006	0.09	0.297	0.365
	LTE Band 41	20M	QPSK	50	0	-	Left Side	10mm	Ant 13	DSI 10	40620	2593	15.63	16.50	1.222	62.9	1.006	-0.01	0.035	0.043
	LTE Band 41	20M	QPSK	50	0	-	Top Side	10mm	Ant 13	DSI 10	40620	2593	15.63	16.50	1.222	62.9	1.006	0.01	0.384	0.472
	LTE Band 41	20M	QPSK	1	0	-	Front	10mm	Ant 31	DSI 10	40620	2593	23.72	24.50	1.197	62.9	1.006	0.16	0.198	0.238
	LTE Band 41	20M	QPSK	1	0	-	Back	10mm	Ant 31	DSI 10	40620	2593	23.72	24.50	1.197	62.9	1.006	-0.01	0.274	0.330
	LTE Band 41C	20M	QPSK	1	0	-	Back	10mm	Ant 31	DSI 10	40620 +40422	2593 +2573.2	23.18	24.50	1.355	62.9	1.006	-0.01	0.241	0.329
	LTE Band 41	20M	QPSK	1	0	-	Left Side	10mm	Ant 31	DSI 10	40620	2593	23.72	24.50	1.197	62.9	1.006	-0.07	0.105	0.126
	LTE Band 41	20M	QPSK	1	0	-	Right Side	10mm	Ant 31	DSI 10	40620	2593	23.72	24.50	1.197	62.9	1.006	-0.01	0.126	0.152
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 31	DSI 10	40620	2593	23.72	24.50	1.197	62.9	1.006	0.07	0.146	0.176
	LTE Band 41	20M	QPSK	50	0	-	Front	10mm	Ant 31	DSI 10	40620	2593	22.70	23.50	1.202	62.9	1.006	-0.1	0.155	0.187
	LTE Band 41	20M	QPSK	50	0	-	Back	10mm	Ant 31	DSI 10	40620	2593	22.70	23.50	1.202	62.9	1.006	-0.12	0.215	0.260
	LTE Band 41	20M	QPSK	50	0	-	Left Side	10mm	Ant 31	DSI 10	40620	2593	22.70	23.50	1.202	62.9	1.006	0.06	0.054	0.065
	LTE Band 41	20M	QPSK	50	0	-	Right Side	10mm	Ant 31	DSI 10	40620	2593	22.70	23.50	1.202	62.9	1.006	-0.04	0.106	0.128
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 31	DSI 10	40620	2593	22.70	23.50	1.202	62.9	1.006	0.1	0.115	0.139
	LTE Band 41	20M	QPSK	1	0	-	Front	10mm	Ant 11	DSI 10	40620	2593	17.31	18.50	1.315	62.9	1.006	-0.04	0.055	0.073
	LTE Band 41	20M	QPSK	1	0	-	Back	10mm	Ant 11	DSI 10	40620	2593	17.31	18.50	1.315	62.9	1.006	-0.11	0.121	0.160
	LTE Band 41	20M	QPSK	1	0	-	Left Side	10mm	Ant 11	DSI 10	40620	2593	17.31	18.50	1.315	62.9	1.006	0.15	0.199	0.263
	LTE Band 41C	20M	QPSK	1	0	-	Left Side	10mm	Ant 11	DSI 10	40620 +40422	2593 +2573.2	16.90	18.50	1.445	62.9	1.006	0.15	0.172	0.250
	LTE Band 41	20M	QPSK	1	0	-	Top Side	10mm	Ant 11	DSI 10	40620	2593	17.31	18.50	1.315	62.9	1.006	-	n/a	n/a
	LTE Band 41	20M	QPSK	50	0	-	Front	10mm	Ant 11	DSI 10	40620	2593	17.22	18.50	1.343	62.9	1.006	-0.01	0.054	0.073
	LTE Band 41	20M	QPSK	50	0	-	Back	10mm	Ant 11	DSI 10	40620	2593	17.22	18.50	1.343	62.9	1.006	0.16	0.126	0.170
	LTE Band 41	20M	QPSK	50	0	-	Left Side	10mm	Ant 11	DSI 10	40620	2593	17.22	18.50	1.343	62.9	1.006	0.17	0.190	0.257
	LTE Band 41	20M	QPSK	50	0	-	Top Side	10mm	Ant 11	DSI 10	40620	2593	17.22	18.50	1.343	62.9	1.006	-	n/a	n/a
	FR1 n7	40M	QPSK	1	1	DFT-15	Front	10mm	Ant 13	DSI 10	507000	2535	13.60	14.50	1.230	-	-	-0.05	0.096	0.118
	FR1 n7	40M	QPSK	1	1	DFT-15	Back	10mm	Ant 13	DSI 10	507000	2535	13.60	14.50	1.230	-	-	0.02	0.267	0.328
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Side	10mm	Ant 13	DSI 10	507000	2535	13.60	14.50	1.230	-	-	0.16	0.048	0.059

	FR1 n7	40M	QPSK	1	1	DFT-15	Top Side	10mm	Ant 13	DSI 10	507000	2535	13.60	14.50	1.230	-	-	0.02	0.362	0.445
	FR1 n7	40M	QPSK	108	54	DFT-15	Front	10mm	Ant 13	DSI 10	507000	2535	13.55	14.50	1.245	-	-	0.04	0.092	0.114
	FR1 n7	40M	QPSK	108	54	DFT-15	Back	10mm	Ant 13	DSI 10	507000	2535	13.55	14.50	1.245	-	-	0.09	0.261	0.325
	FR1 n7	40M	QPSK	108	54	DFT-15	Left Side	10mm	Ant 13	DSI 10	507000	2535	13.55	14.50	1.245	-	-	-0.13	0.048	0.060
	FR1 n7	40M	QPSK	108	54	DFT-15	Top Side	10mm	Ant 13	DSI 10	507000	2535	13.55	14.50	1.245	-	-	-0.13	0.339	0.422
	FR1 n7	40M	QPSK	1	1	DFT-15	Front	10mm	Ant 31	DSI 10	507000	2535	21.65	23.00	1.365	-	-	-0.14	0.286	0.390
42	FR1 n7	40M	QPSK	1	1	DFT-15	Back	10mm	Ant 31	DSI 10	507000	2535	21.65	23.00	1.365	-	-	-0.02	0.441	**0.602**
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Side	10mm	Ant 31	DSI 10	507000	2535	21.65	23.00	1.365	-	-	-0.17	0.047	0.064
	FR1 n7	40M	QPSK	1	1	DFT-15	Right Side	10mm	Ant 31	DSI 10	507000	2535	21.65	23.00	1.365	-	-	0.03	0.226	0.308
	FR1 n7	40M	QPSK	1	1	DFT-15	Bottom Side	10mm	Ant 31	DSI 10	507000	2535	21.65	23.00	1.365	-	-	0.07	0.263	0.359
	FR1 n7	40M	QPSK	108	54	DFT-15	Front	10mm	Ant 31	DSI 10	507000	2535	21.62	23.00	1.374	-	-	-0.01	0.274	0.376
	FR1 n7	40M	QPSK	108	54	DFT-15	Back	10mm	Ant 31	DSI 10	507000	2535	21.62	23.00	1.374	-	-	0.02	0.437	0.600
	FR1 n7	40M	QPSK	108	54	DFT-15	Left Side	10mm	Ant 31	DSI 10	507000	2535	21.62	23.00	1.374	-	-	0.14	0.045	0.062
	FR1 n7	40M	QPSK	108	54	DFT-15	Right Side	10mm	Ant 31	DSI 10	507000	2535	21.62	23.00	1.374	-	-	-0.13	0.220	0.302
	FR1 n7	40M	QPSK	108	54	DFT-15	Bottom Side	10mm	Ant 31	DSI 10	507000	2535	21.62	23.00	1.374	-	-	0.11	0.242	0.333
	FR1 n7	40M	QPSK	1	1	DFT-15	Front	10mm	Ant 11	DSI 10	507000	2535	17.33	18.50	1.309	-	-	-0.02	0.106	0.139
	FR1 n7	40M	QPSK	1	1	DFT-15	Back	10mm	Ant 11	DSI 10	507000	2535	17.33	18.50	1.309	-	-	0.11	0.215	0.281
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Side	10mm	Ant 11	DSI 10	507000	2535	17.33	18.50	1.309	-	-	0.11	0.362	0.474
	FR1 n7	40M	QPSK	1	1	DFT-15	Top Side	10mm	Ant 11	DSI 10	507000	2535	17.33	18.50	1.309	-	-	0.09	0.042	0.055
	FR1 n7	40M	QPSK	108	54	DFT-15	Front	10mm	Ant 11	DSI 10	507000	2535	17.29	18.50	1.321	-	-	0.17	0.108	0.143
	FR1 n7	40M	QPSK	108	54	DFT-15	Back	10mm	Ant 11	DSI 10	507000	2535	17.29	18.50	1.321	-	-	-0.03	0.227	0.300
	FR1 n7	40M	QPSK	108	54	DFT-15	Left Side	10mm	Ant 11	DSI 10	507000	2535	17.29	18.50	1.321	-	-	0.13	0.371	0.490
	FR1 n7	40M	QPSK	108	54	DFT-15	Top Side	10mm	Ant 11	DSI 10	507000	2535	17.29	18.50	1.321	-	-	-0.13	0.046	0.061
	FR1 n38	40M	QPSK	1	1	DFT-30	Front	10mm	Ant 13	DSI 10	519000	2595	14.04	15.00	1.247	-	-	-0.03	0.093	0.116
	FR1 n38	40M	QPSK	1	1	DFT-30	Back	10mm	Ant 13	DSI 10	519000	2595	14.04	15.00	1.247	-	-	0.02	0.254	0.317
	FR1 n38	40M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 13	DSI 10	519000	2595	14.04	15.00	1.247	-	-	-0.05	0.063	0.079
	FR1 n38	40M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 13	DSI 10	519000	2595	14.04	15.00	1.247	-	-	-0.06	0.351	0.438
	FR1 n38	40M	QPSK	50	28	DFT-30	Front	10mm	Ant 13	DSI 10	519000	2595	13.98	15.00	1.265	-	-	0.14	0.084	0.106
	FR1 n38	40M	QPSK	50	28	DFT-30	Back	10mm	Ant 13	DSI 10	519000	2595	13.98	15.00	1.265	-	-	-0.11	0.233	0.295
	FR1 n38	40M	QPSK	50	28	DFT-30	Left Side	10mm	Ant 13	DSI 10	519000	2595	13.98	15.00	1.265	-	-	-0.14	0.054	0.068
	FR1 n38	40M	QPSK	50	28	DFT-30	Top Side	10mm	Ant 13	DSI 10	519000	2595	13.98	15.00	1.265	-	-	0.01	0.331	0.419
	FR1 n38	40M	QPSK	1	1	DFT-30	Front	10mm	Ant 31	DSI 10	519000	2595	23.00	24.00	1.259	-	-	0.01	0.359	0.452
43	FR1 n38	40M	QPSK	1	1	DFT-30	Back	10mm	Ant 31	DSI 10	519000	2595	23.00	24.00	1.259	-	-	0.07	0.541	**0.681**
	FR1 n38	40M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 31	DSI 10	519000	2595	23.00	24.00	1.259	-	-	-0.01	0.054	0.068
	FR1 n38	40M	QPSK	1	1	DFT-30	Right Side	10mm	Ant 31	DSI 10	519000	2595	23.00	24.00	1.259	-	-	-0.08	0.274	0.345
	FR1 n38	40M	QPSK	1	1	DFT-30	Bottom Side	10mm	Ant 31	DSI 10	519000	2595	23.00	24.00	1.259	-	-	-0.02	0.269	0.339
	FR1 n38	40M	QPSK	50	28	DFT-30	Front	10mm	Ant 31	DSI 10	519000	2595	22.89	24.00	1.291	-	-	-0.15	0.337	0.435
	FR1 n38	40M	QPSK	50	28	DFT-30	Back	10mm	Ant 31	DSI 10	519000	2595	22.89	24.00	1.291	-	-	0.09	0.482	0.622
	FR1 n38	40M	QPSK	50	28	DFT-30	Left Side	10mm	Ant 31	DSI 10	519000	2595	22.89	24.00	1.291	-	-	0.17	0.053	0.068
	FR1 n38	40M	QPSK	50	28	DFT-30	Right Side	10mm	Ant 31	DSI 10	519000	2595	22.89	24.00	1.291	-	-	0.07	0.267	0.345
	FR1 n38	40M	QPSK	50	28	DFT-30	Bottom Side	10mm	Ant 31	DSI 10	519000	2595	22.89	24.00	1.291	-	-	-0.11	0.257	0.332
	FR1 n38	40M	QPSK	1	1	DFT-30	Front	10mm	Ant 11	DSI 10	519000	2595	17.49	18.50	1.262	-	-	0.09	0.116	0.146
	FR1 n38	40M	QPSK	1	1	DFT-30	Back	10mm	Ant 11	DSI 10	519000	2595	17.49	18.50	1.262	-	-	0.13	0.240	0.303
	FR1 n38	40M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 11	DSI 10	519000	2595	17.49	18.50	1.262	-	-	0.1	0.432	0.545
	FR1 n38	40M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 11	DSI 10	519000	2595	17.49	18.50	1.262	-	-	-	n/a	n/a
	FR1 n38	40M	QPSK	50	28	DFT-30	Front	10mm	Ant 11	DSI 10	519000	2595	17.40	18.50	1.288	-	-	-0.05	0.112	0.144
	FR1 n38	40M	QPSK	50	28	DFT-30	Back	10mm	Ant 11	DSI 10	519000	2595	17.40	18.50	1.288	-	-	0.14	0.231	0.298
	FR1 n38	40M	QPSK	50	28	DFT-30	Left Side	10mm	Ant 11	DSI 10	519000	2595	17.40	18.50	1.288	-	-	0.14	0.383	0.493
	FR1 n38	40M	QPSK	50	28	DFT-30	Top Side	10mm	Ant 11	DSI 10	519000	2595	17.40	18.50	1.288	-	-	-	n/a	n/a
	FR1 n41	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 13	DSI 10	518598	2592.99	14.10	15.00	1.230	-	-	0.07	0.096	0.118
	FR1 n41	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 13	DSI 10	518598	2592.99	14.10	15.00	1.230	-	-	-0.05	0.179	0.220
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 13	DSI 10	518598	2592.99	14.10	15.00	1.230	-	-	-0.09	0.052	0.064
	FR1 n41	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 13	DSI 10	518598	2592.99	14.10	15.00	1.230	-	-	-0.07	0.352	0.433
	FR1 n41	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 13	DSI 10	518598	2592.99	14.05	15.00	1.245	-	-	-0.03	0.086	0.107
	FR1 n41	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 13	DSI 10	518598	2592.99	14.05	15.00	1.245	-	-	0.11	0.173	0.215
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Side	10mm	Ant 13	DSI 10	518598	2592.99	14.05	15.00	1.245	-	-	-0.04	0.062	0.077

	FR1 n41	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 13	DSI 10	518598	2592.99	14.05	15.00	1.245	-	-	-0.04	0.302	0.376
	FR1 n41	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 31	DSI 10	518598	2592.99	21.95	23.00	1.274	-	-	-0.18	0.287	0.365
	FR1 n41	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 31	DSI 10	518598	2592.99	21.95	23.00	1.274	-	-	-0.16	0.429	0.546
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 31	DSI 10	518598	2592.99	21.95	23.00	1.274	-	-	0.15	0.051	0.065
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Side	10mm	Ant 31	DSI 10	518598	2592.99	21.95	23.00	1.274	-	-	-0.05	0.221	0.281
	FR1 n41	100M	QPSK	1	1	DFT-30	Bottom Side	10mm	Ant 31	DSI 10	518598	2592.99	21.95	23.00	1.274	-	-	0.03	0.230	0.293
	FR1 n41	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 31	DSI 10	518598	2592.99	21.90	23.00	1.288	-	-	0.08	0.266	0.343
	FR1 n41	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 31	DSI 10	518598	2592.99	21.90	23.00	1.288	-	-	-0.18	0.415	0.535
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Side	10mm	Ant 31	DSI 10	518598	2592.99	21.90	23.00	1.288	-	-	-	n/a	n/a
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Side	10mm	Ant 31	DSI 10	518598	2592.99	21.90	23.00	1.288	-	-	-0.09	0.200	0.258
	FR1 n41	100M	QPSK	135	69	DFT-30	Bottom Side	10mm	Ant 31	DSI 10	518598	2592.99	21.90	23.00	1.288	-	-	0.12	0.208	0.268
	FR1 n41	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 11	DSI 10	518598	2592.99	18.04	19.00	1.247	-	-	-0.13	0.126	0.157
	FR1 n41	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 11	DSI 10	518598	2592.99	18.04	19.00	1.247	-	-	-0.11	0.256	0.319
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 11	DSI 10	518598	2592.99	18.04	19.00	1.247	-	-	-0.01	0.446	0.556
	FR1 n41	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 11	DSI 10	518598	2592.99	18.04	19.00	1.247	-	-	0.02	0.040	0.050
	FR1 n41	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 11	DSI 10	518598	2592.99	17.99	19.00	1.262	-	-	0.01	0.124	0.156
	FR1 n41	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 11	DSI 10	518598	2592.99	17.99	19.00	1.262	-	-	-0.16	0.247	0.312
44	FR1 n41	100M	QPSK	135	69	DFT-30	Left Side	10mm	Ant 11	DSI 10	518598	2592.99	17.99	19.00	1.262	-	-	0.12	0.472	**0.596**
	FR1 n41	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 11	DSI 10	518598	2592.99	17.99	19.00	1.262	-	-	-	n/a	n/a
3000MHz																				
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 11	DSI 10	633332	3499.98	15.52	16.50	1.253	-	-	-0.13	0.058	0.073
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 11	DSI 10	633332	3499.98	15.52	16.50	1.253	-	-	-0.12	0.189	0.237
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 11	DSI 10	633332	3499.98	15.52	16.50	1.253	-	-	-0.01	0.257	0.322
	FR1 n77	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 11	DSI 10	633332	3499.98	15.52	16.50	1.253	-	-	-	n/a	n/a
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 11	DSI 10	633332	3499.98	15.42	16.50	1.282	-	-	-0.09	0.057	0.073
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 11	DSI 10	633332	3499.98	15.42	16.50	1.282	-	-	0.16	0.167	0.214
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Side	10mm	Ant 11	DSI 10	633332	3499.98	15.42	16.50	1.282	-	-	-0.07	0.248	0.318
	FR1 n77	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 11	DSI 10	633332	3499.98	15.42	16.50	1.282	-	-	-	n/a	n/a
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 11	DSI 10	656000	3840	15.51	16.50	1.256	-	-	0.04	0.064	0.080
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 11	DSI 10	656000	3840	15.51	16.50	1.256	-	-	0.07	0.141	0.177
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 11	DSI 10	656000	3840	15.51	16.50	1.256	-	-	-0.18	0.202	0.254
	FR1 n77	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 11	DSI 10	656000	3840	15.51	16.50	1.256	-	-	-	n/a	n/a
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 11	DSI 10	656000	3840	15.43	16.50	1.279	-	-	-	n/a	n/a
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 11	DSI 10	656000	3840	15.43	16.50	1.279	-	-	-0.13	0.135	0.173
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Side	10mm	Ant 11	DSI 10	656000	3840	15.43	16.50	1.279	-	-	0.12	0.195	0.249
	FR1 n77	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 11	DSI 10	656000	3840	15.43	16.50	1.279	-	-	-	n/a	n/a
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 12	DSI 10	633332	3499.98	17.40	18.00	1.148	-	-	0.03	0.172	0.197
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 12	DSI 10	633332	3499.98	17.40	18.00	1.148	-	-	0.15	0.202	0.232
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 12	DSI 10	633332	3499.98	17.40	18.00	1.148	-	-	0.18	0.155	0.178
	FR1 n77	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 12	DSI 10	633332	3499.98	17.40	18.00	1.148	-	-	-0.12	0.099	0.114
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 12	DSI 10	633332	3499.98	17.37	18.00	1.156	-	-	-0.09	0.178	0.206
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 12	DSI 10	633332	3499.98	17.37	18.00	1.156	-	-	-0.1	0.176	0.203
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Side	10mm	Ant 12	DSI 10	633332	3499.98	17.37	18.00	1.156	-	-	-0.12	0.160	0.185
	FR1 n77	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 12	DSI 10	633332	3499.98	17.37	18.00	1.156	-	-	0.03	0.101	0.117
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 12	DSI 10	656000	3840	17.43	18.00	1.140	-	-	0.09	0.090	0.103
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 12	DSI 10	656000	3840	17.43	18.00	1.140	-	-	0.13	0.129	0.147
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 12	DSI 10	656000	3840	17.43	18.00	1.140	-	-	-0.17	0.057	0.065
	FR1 n77	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 12	DSI 10	656000	3840	17.43	18.00	1.140	-	-	-0.16	0.063	0.072
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 12	DSI 10	656000	3840	17.41	18.00	1.146	-	-	-0.14	0.099	0.113
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 12	DSI 10	656000	3840	17.41	18.00	1.146	-	-	0.09	0.130	0.149
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Side	10mm	Ant 12	DSI 10	656000	3840	17.41	18.00	1.146	-	-	-0.14	0.095	0.109
	FR1 n77	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 12	DSI 10	656000	3840	17.41	18.00	1.146	-	-	0	0.079	0.090
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 21	DSI 10	633332	3499.98	14.81	15.50	1.172	-	-	0.12	0.124	0.145
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 21	DSI 10	633332	3499.98	14.81	15.50	1.172	-	-	-0.12	0.358	0.420
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Side	10mm	Ant 21	DSI 10	633332	3499.98	14.81	15.50	1.172	-	-	-	n/a	n/a
45	FR1 n77	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 21	DSI 10	633332	3499.98	14.81	15.50	1.172	-	-	0.06	0.430	**0.504**

	FR1 n77	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 21	DSI 10	633332	3499.98	14.76	15.50	1.186	-	-	0.02	0.105	0.125
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 21	DSI 10	633332	3499.98	14.76	15.50	1.186	-	-	0.01	0.331	0.392
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Side	10mm	Ant 21	DSI 10	633332	3499.98	14.76	15.50	1.186	-	-	-0.14	0.045	0.053
	FR1 n77	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 21	DSI 10	633332	3499.98	14.76	15.50	1.186	-	-	0.14	0.367	0.435
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 21	DSI 10	656000	3840	14.85	15.50	1.161	-	-	0.05	0.050	0.058
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 21	DSI 10	656000	3840	14.85	15.50	1.161	-	-	-0.08	0.118	0.137
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Side	10mm	Ant 21	DSI 10	656000	3840	14.85	15.50	1.161	-	-	-	n/a	n/a
	FR1 n77	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 21	DSI 10	656000	3840	14.85	15.50	1.161	-	-	0.1	0.158	0.184
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 21	DSI 10	656000	3840	14.79	15.50	1.178	-	-	0.06	0.051	0.060
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 21	DSI 10	656000	3840	14.79	15.50	1.178	-	-	0.15	0.125	0.147
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Side	10mm	Ant 21	DSI 10	656000	3840	14.79	15.50	1.178	-	-	-	n/a	n/a
	FR1 n77	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 21	DSI 10	656000	3840	14.79	15.50	1.178	-	-	0.05	0.142	0.167
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 23	DSI 10	633332	3499.98	16.28	17.00	1.180	-	-	0	0.045	0.053
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 23	DSI 10	633332	3499.98	16.28	17.00	1.180	-	-	0.12	0.101	0.119
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Side	10mm	Ant 23	DSI 10	633332	3499.98	16.28	17.00	1.180	-	-	-0.08	0.100	0.118
	FR1 n77	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 23	DSI 10	633332	3499.98	16.28	17.00	1.180	-	-	0.05	0.046	0.054
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 23	DSI 10	633332	3499.98	16.24	17.00	1.191	-	-	-0.02	0.048	0.057
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 23	DSI 10	633332	3499.98	16.24	17.00	1.191	-	-	0.02	0.107	0.127
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Side	10mm	Ant 23	DSI 10	633332	3499.98	16.24	17.00	1.191	-	-	0.02	0.104	0.124
	FR1 n77	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 23	DSI 10	633332	3499.98	16.24	17.00	1.191	-	-	-0.07	0.047	0.056
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 23	DSI 10	656000	3840	15.80	17.00	1.318	-	-	0.06	0.023	0.030
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 23	DSI 10	656000	3840	15.80	17.00	1.318	-	-	0.15	0.050	0.066
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Side	10mm	Ant 23	DSI 10	656000	3840	15.80	17.00	1.318	-	-	0.14	0.065	0.086
	FR1 n77	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 23	DSI 10	656000	3840	15.80	17.00	1.318	-	-	-	n/a	n/a
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 23	DSI 10	656000	3840	15.74	17.00	1.337	-	-	0.06	0.021	0.028
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 23	DSI 10	656000	3840	15.74	17.00	1.337	-	-	-0.07	0.044	0.059
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Side	10mm	Ant 23	DSI 10	656000	3840	15.74	17.00	1.337	-	-	-0.09	0.061	0.082
	FR1 n77	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 23	DSI 10	656000	3840	15.74	17.00	1.337	-	-	-	n/a	n/a
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 11	DSI 10	633332	3499.98	16.11	17.50	1.377	-	-	0.17	0.085	0.117
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 11	DSI 10	633332	3499.98	16.11	17.50	1.377	-	-	0.11	0.245	0.337
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 11	DSI 10	633332	3499.98	16.11	17.50	1.377	-	-	0.09	0.321	0.442
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 11	DSI 10	633332	3499.98	16.11	17.50	1.377	-	-	-	n/a	n/a
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 11	DSI 10	633332	3499.98	16.07	17.50	1.390	-	-	-0.15	0.079	0.110
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 11	DSI 10	633332	3499.98	16.07	17.50	1.390	-	-	0.08	0.217	0.302
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Side	10mm	Ant 11	DSI 10	633332	3499.98	16.07	17.50	1.390	-	-	0	0.307	0.427
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 11	DSI 10	633332	3499.98	16.07	17.50	1.390	-	-	-	n/a	n/a
	FR1 n78-PC2	100M	QPSK	270	0	DFT-30	Left Side	10mm	Ant 11	DSI 10	633332	3499.98	16.04	17.50	1.400	-	-	-0.03	0.317	0.444
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 11	DSI 10	650000	3750	16.23	17.50	1.340	-	-	0.1	0.080	0.107
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 11	DSI 10	650000	3750	16.23	17.50	1.340	-	-	-0.17	0.174	0.233
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 11	DSI 10	650000	3750	16.23	17.50	1.340	-	-	0.14	0.263	0.352
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 11	DSI 10	650000	3750	16.23	17.50	1.340	-	-	-	n/a	n/a
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 11	DSI 10	650000	3750	16.18	17.50	1.355	-	-	-0.03	0.082	0.111
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 11	DSI 10	650000	3750	16.18	17.50	1.355	-	-	0.13	0.165	0.224
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Side	10mm	Ant 11	DSI 10	650000	3750	16.18	17.50	1.355	-	-	-0.06	0.250	0.339
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 11	DSI 10	650000	3750	16.18	17.50	1.355	-	-	-	n/a	n/a
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 12	DSI 10	633332	3499.98	18.30	19.00	1.175	-	-	0.05	0.205	0.241
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 12	DSI 10	633332	3499.98	18.30	19.00	1.175	-	-	0.04	0.229	0.269
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 12	DSI 10	633332	3499.98	18.30	19.00	1.175	-	-	0.16	0.154	0.181
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 12	DSI 10	633332	3499.98	18.30	19.00	1.175	-	-	0.04	0.127	0.149
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 12	DSI 10	633332	3499.98	18.25	19.00	1.189	-	-	-0.02	0.216	0.257
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 12	DSI 10	633332	3499.98	18.25	19.00	1.189	-	-	-0.01	0.225	0.267
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Side	10mm	Ant 12	DSI 10	633332	3499.98	18.25	19.00	1.189	-	-	0.11	0.209	0.248
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 12	DSI 10	633332	3499.98	18.25	19.00	1.189	-	-	0.14	0.125	0.149
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 12	DSI 10	650000	3750	18.23	19.00	1.194	-	-	0.14	0.132	0.158
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 12	DSI 10	650000	3750	18.23	19.00	1.194	-	-	-0.12	0.147	0.176
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Side	10mm	Ant 12	DSI 10	650000	3750	18.23	19.00	1.194	-	-	-0.03	0.131	0.156

	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 12	DSI 10	650000	3750	18.23	19.00	1.194	-	-	0.17	0.101	0.121
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 12	DSI 10	650000	3750	18.17	19.00	1.211	-	-	-0.1	0.116	0.140
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 12	DSI 10	650000	3750	18.17	19.00	1.211	-	-	0.14	0.140	0.169
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Side	10mm	Ant 12	DSI 10	650000	3750	18.17	19.00	1.211	-	-	0.02	0.105	0.127
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 12	DSI 10	650000	3750	18.17	19.00	1.211	-	-	0.04	0.080	0.097
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 21	DSI 10	633332	3499.98	18.95	20.00	1.274	-	-	-0.13	0.196	0.250
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 21	DSI 10	633332	3499.98	18.95	20.00	1.274	-	-	0.11	0.610	0.777
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Side	10mm	Ant 21	DSI 10	633332	3499.98	18.95	20.00	1.274	-	-	0.15	0.076	0.097
46	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 21	DSI 10	633332	3499.98	18.95	20.00	1.274	-	-	0.11	0.613	**0.781**
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 21	DSI 10	633332	3499.98	18.85	20.00	1.303	-	-	0.03	0.162	0.211
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 21	DSI 10	633332	3499.98	18.85	20.00	1.303	-	-	-0.16	0.520	0.678
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Side	10mm	Ant 21	DSI 10	633332	3499.98	18.85	20.00	1.303	-	-	0.17	0.078	0.102
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 21	DSI 10	633332	3499.98	18.85	20.00	1.303	-	-	-0.1	0.562	0.732
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 21	DSI 10	650000	3750	18.89	20.00	1.291	-	-	0.14	0.075	0.097
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 21	DSI 10	650000	3750	18.89	20.00	1.291	-	-	0.03	0.160	0.207
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Side	10mm	Ant 21	DSI 10	650000	3750	18.89	20.00	1.291	-	-	0.01	0.040	0.052
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 21	DSI 10	650000	3750	18.89	20.00	1.291	-	-	0.05	0.283	0.365
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 21	DSI 10	650000	3750	18.80	20.00	1.318	-	-	0.07	0.052	0.069
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 21	DSI 10	650000	3750	18.80	20.00	1.318	-	-	0.16	0.204	0.269
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Side	10mm	Ant 21	DSI 10	650000	3750	18.80	20.00	1.318	-	-	-0.07	0.041	0.054
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 21	DSI 10	650000	3750	18.80	20.00	1.318	-	-	-0.03	0.231	0.305
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 23	DSI 10	633332	3499.98	17.16	18.00	1.213	-	-	0.14	0.047	0.057
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 23	DSI 10	633332	3499.98	17.16	18.00	1.213	-	-	0.11	0.087	0.106
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Side	10mm	Ant 23	DSI 10	633332	3499.98	17.16	18.00	1.213	-	-	0	0.083	0.101
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 23	DSI 10	633332	3499.98	17.16	18.00	1.213	-	-	-0.01	0.036	0.044
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 23	DSI 10	633332	3499.98	17.08	18.00	1.236	-	-	0.16	0.044	0.054
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 23	DSI 10	633332	3499.98	17.08	18.00	1.236	-	-	-0.11	0.089	0.110
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Side	10mm	Ant 23	DSI 10	633332	3499.98	17.08	18.00	1.236	-	-	0.11	0.091	0.112
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 23	DSI 10	633332	3499.98	17.08	18.00	1.236	-	-	-0.01	0.039	0.048
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Front	10mm	Ant 23	DSI 10	650000	3750	17.15	18.00	1.216	-	-	0.17	0.035	0.043
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	10mm	Ant 23	DSI 10	650000	3750	17.15	18.00	1.216	-	-	0.15	0.067	0.081
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Right Side	10mm	Ant 23	DSI 10	650000	3750	17.15	18.00	1.216	-	-	0	0.065	0.079
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Top Side	10mm	Ant 23	DSI 10	650000	3750	17.15	18.00	1.216	-	-	-	n/a	n/a
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Front	10mm	Ant 23	DSI 10	650000	3750	17.12	18.00	1.225	-	-	-0.06	0.035	0.043
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	10mm	Ant 23	DSI 10	650000	3750	17.12	18.00	1.225	-	-	0.14	0.049	0.060
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Right Side	10mm	Ant 23	DSI 10	650000	3750	17.12	18.00	1.225	-	-	-0.06	0.051	0.062
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Top Side	10mm	Ant 23	DSI 10	650000	3750	17.12	18.00	1.225	-	-	-	n/a	n/a

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 22	Hotspot on	1	2412	19.40	20.00	1.148	98.6	1.014	0.11	0.203	0.236
47	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 22	Hotspot on	1	2412	19.40	20.00	1.148	98.6	1.014	0.13	0.392	**0.456**
	WLAN2.4GHz	802.11b 1Mbps	Right Side	10mm	Ant 22	Hotspot on	1	2412	19.40	20.00	1.148	98.6	1.014	0.1	0.237	0.276
	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Ant 22	Hotspot on	1	2412	19.40	20.00	1.148	98.6	1.014	0.09	0.231	0.269
	Bluetooth	DH5 1Mbps	Front	10mm	Ant 22	Full	39	2441	13.10	14.00	1.230	76.78	1.302	-0.03	0.052	0.083
48	Bluetooth	DH5 1Mbps	Back	10mm	Ant 22	Full	39	2441	13.10	14.00	1.230	76.78	1.302	0.08	0.086	**0.138**
	Bluetooth	DH5 1Mbps	Right Side	10mm	Ant 22	Full	39	2441	13.10	14.00	1.230	76.78	1.302	-0.18	0.050	0.080
	Bluetooth	DH5 1Mbps	Top Side	10mm	Ant 22	Full	39	2441	13.10	14.00	1.230	76.78	1.302	0.18	0.046	0.074
5000MHz																
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Front	10mm	Ant 22	Hotspot on	42	5210	15.59	16.50	1.234	92.35	1.083	0.1	0.201	0.269
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 22	Hotspot on	42	5210	15.59	16.50	1.234	92.35	1.083	0.09	0.320	0.428
49	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Side	10mm	Ant 22	Hotspot on	42	5210	15.59	16.50	1.234	92.35	1.083	-0.17	0.422	**0.564**
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Top Side	10mm	Ant 22	Hotspot on	42	5210	15.59	16.50	1.234	92.35	1.083	-0.12	0.400	0.535
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	10mm	Ant 22	Hotspot on	155	5775	10.90	12.00	1.290	92.35	1.083	0.18	0.093	0.130
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 22	Hotspot on	155	5775	10.90	12.00	1.290	92.35	1.083	0.08	0.300	0.419
50	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Side	10mm	Ant 22	Hotspot on	155	5775	10.90	12.00	1.290	92.35	1.083	-0.11	0.343	**0.479**
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Top Side	10mm	Ant 22	Hotspot on	155	5775	10.90	12.00	1.290	92.35	1.083	0.16	0.136	0.190

16.3 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	Duty Cycle %	Duty Cycle 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 13	DSI 4	23095	707.5	24.30	25.00	1.175	-	-	0.09	0.086	0.101
51	LTE Band 12	10M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	23095	707.5	24.30	25.00	1.175	-	-	-0.02	0.167	**0.196**
	LTE Band 12	10M	QPSK	25	0	-	Front	15mm	Ant 13	DSI 4	23095	707.5	23.41	24.00	1.146	-	-	0.14	0.073	0.084
	LTE Band 12	10M	QPSK	25	0	-	Back	15mm	Ant 13	DSI 4	23095	707.5	23.41	24.00	1.146	-	-	0.17	0.084	0.096
	LTE Band 12	10M	QPSK	1	0	-	Front	15mm	Ant 31	DSI 5	23095	707.5	24.39	25.00	1.151	-	-	0.09	0.068	0.078
	LTE Band 12	10M	QPSK	1	0	-	Back	15mm	Ant 31	DSI 5	23095	707.5	24.39	25.00	1.151	-	-	-0.16	0.076	0.087
	LTE Band 12	10M	QPSK	25	0	-	Front	15mm	Ant 31	DSI 5	23095	707.5	23.49	24.00	1.125	-	-	-0.11	0.060	0.067
	LTE Band 12	10M	QPSK	25	0	-	Back	15mm	Ant 31	DSI 5	23095	707.5	23.49	24.00	1.125	-	-	0.17	0.069	0.078
	LTE Band 13	10M	QPSK	1	0	-	Front	15mm	Ant 13	DSI 4	23230	782	24.17	25.00	1.211	-	-	-0.02	0.117	0.142
52	LTE Band 13	10M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	23230	782	24.17	25.00	1.211	-	-	-0.08	0.220	**0.266**
	LTE Band 13	10M	QPSK	25	0	-	Front	15mm	Ant 13	DSI 4	23230	782	23.11	24.00	1.227	-	-	-0.06	0.093	0.114
	LTE Band 13	10M	QPSK	25	0	-	Back	15mm	Ant 13	DSI 4	23230	782	23.11	24.00	1.227	-	-	0.07	0.130	0.160
	LTE Band 13	10M	QPSK	1	0	-	Front	15mm	Ant 31	DSI 5	23230	782	24.16	25.00	1.213	-	-	-0.02	0.090	0.109
	LTE Band 13	10M	QPSK	1	0	-	Back	15mm	Ant 31	DSI 5	23230	782	24.16	25.00	1.213	-	-	0.1	0.100	0.121
	LTE Band 13	10M	QPSK	25	0	-	Front	15mm	Ant 31	DSI 5	23230	782	23.17	24.00	1.211	-	-	0.09	0.070	0.085
	LTE Band 13	10M	QPSK	25	0	-	Back	15mm	Ant 31	DSI 5	23230	782	23.17	24.00	1.211	-	-	-0.02	0.081	0.098
835MHz																				
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Front	15mm	Ant 13	DSI 4	189	836.4	30.53	31.50	1.250	-	-	-0.13	0.112	0.140
53	GSM850	-	-	-	-	GPRS(2 Tx slots)	Back	15mm	Ant 13	DSI 4	189	836.4	30.53	31.50	1.250	-	-	-0.08	0.188	**0.235**
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Front	15mm	Ant 31	DSI 5	189	836.4	30.56	31.50	1.242	-	-	-0.14	0.129	0.160
	GSM850	-	-	-	-	GPRS(2 Tx slots)	Back	15mm	Ant 31	DSI 5	189	836.4	30.56	31.50	1.242	-	-	0.08	0.140	0.174
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 13	DSI 4	4182	836.4	24.40	25.00	1.148	-	-	-0.07	0.179	0.206
54	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 13	DSI 4	4182	836.4	24.40	25.00	1.148	-	-	0.01	0.224	**0.257**
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 31	DSI 5	4182	836.4	24.39	25.00	1.151	-	-	0	0.077	0.089
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 31	DSI 5	4182	836.4	24.39	25.00	1.151	-	-	-0.18	0.081	0.093
	LTE Band 26	15M	QPSK	1	0	-	Front	15mm	Ant 13	DSI 4	26865	831.5	24.06	25.00	1.242	-	-	0.04	0.113	0.140
55	LTE Band 26	15M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	26865	831.5	24.06	25.00	1.242	-	-	0.03	0.187	**0.232**
	LTE Band 26	15M	QPSK	36	0	-	Front	15mm	Ant 13	DSI 4	26865	831.5	22.92	24.00	1.282	-	-	0.05	0.093	0.119
	LTE Band 26	15M	QPSK	36	0	-	Back	15mm	Ant 13	DSI 4	26865	831.5	22.92	24.00	1.282	-	-	-0.05	0.125	0.160
	LTE Band 26	15M	QPSK	1	0	-	Front	15mm	Ant 31	DSI 5	26865	831.5	23.91	25.00	1.285	-	-	-0.14	0.062	0.080
	LTE Band 26	15M	QPSK	1	0	-	Back	15mm	Ant 31	DSI 5	26865	831.5	23.91	25.00	1.285	-	-	0.18	0.063	0.081
	LTE Band 26	15M	QPSK	36	0	-	Front	15mm	Ant 31	DSI 5	26865	831.5	22.91	24.00	1.285	-	-	0.17	0.051	0.066
	LTE Band 26	15M	QPSK	36	0	-	Back	15mm	Ant 31	DSI 5	26865	831.5	22.91	24.00	1.285	-	-	-0.18	0.053	0.068
	FR1 n26	20M	QPSK	1	1	DFT-15	Front	15mm	Ant 13	DSI 4	166300	831.5	24.06	25.00	1.242	-	-	-0.16	0.133	0.165
	FR1 n26	20M	QPSK	1	1	DFT-15	Back	15mm	Ant 13	DSI 4	166300	831.5	24.06	25.00	1.242	-	-	0.13	0.180	0.223
	FR1 n26	20M	QPSK	50	28	DFT-15	Front	15mm	Ant 13	DSI 4	166300	831.5	23.95	25.00	1.274	-	-	0.03	0.142	0.181
56	FR1 n26	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 13	DSI 4	166300	831.5	23.95	25.00	1.274	-	-	-0.18	0.219	**0.279**
	FR1 n26	20M	QPSK	1	1	DFT-15	Front	15mm	Ant 31	DSI 5	166300	831.5	23.83	25.00	1.309	-	-	-0.01	0.070	0.092
	FR1 n26	20M	QPSK	1	1	DFT-15	Back	15mm	Ant 31	DSI 5	166300	831.5	23.83	25.00	1.309	-	-	0.02	0.075	0.098
	FR1 n26	20M	QPSK	50	28	DFT-15	Front	15mm	Ant 31	DSI 5	166300	831.5	23.69	25.00	1.352	-	-	0.12	0.082	0.111
	FR1 n26	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 31	DSI 5	166300	831.5	23.69	25.00	1.352	-	-	-0.02	0.087	0.118
1750MHz																				
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 13	DSI 4	1413	1732.6	23.97	24.50	1.130	-	-	0.05	0.319	0.360
57	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 13	DSI 4	1413	1732.6	23.97	24.50	1.130	-	-	-0.08	0.425	**0.480**
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 31	DSI 5	1413	1732.6	20.89	21.50	1.151	-	-	-0.16	0.117	0.135
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 31	DSI 5	1413	1732.6	20.89	21.50	1.151	-	-	-0.05	0.176	0.203
	LTE Band 4	20M	QPSK	1	0	-	Front	15mm	Ant 13	DSI 4	20175	1732.5	23.75	24.50	1.189	-	-	0.1	0.285	0.339
58	LTE Band 4	20M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	20175	1732.5	23.75	24.50	1.189	-	-	-0.07	0.348	**0.414**
	LTE Band 4	20M	QPSK	50	0	-	Front	15mm	Ant 13	DSI 4	20175	1732.5	22.64	23.50	1.219	-	-	-0.02	0.223	0.272
	LTE Band 4	20M	QPSK	50	0	-	Back	15mm	Ant 13	DSI 4	20175	1732.5	22.64	23.50	1.219	-	-	0.1	0.280	0.341
	LTE Band 4	20M	QPSK	1	0	-	Front	15mm	Ant 31	DSI 5	20175	1732.5	20.99	22.00	1.262	-	-	0.09	0.106	0.134

	LTE Band 4	20M	QPSK	1	0	-	Back	15mm	Ant 31	DSI 5	20175	1732.5	20.99	22.00	1.262	-	-	0.13	0.174	0.220
	LTE Band 4	20M	QPSK	50	0	-	Front	15mm	Ant 31	DSI 5	20175	1732.5	20.96	22.00	1.271	-	-	-0.16	0.109	0.138
	LTE Band 4	20M	QPSK	50	0	-	Back	15mm	Ant 31	DSI 5	20175	1732.5	20.96	22.00	1.271	-	-	0.08	0.173	0.220
	LTE Band 4	20M	QPSK	1	0	-	Front	15mm	Ant 11	DSI 4	20175	1732.5	23.64	24.50	1.219	-	-	-0.11	0.036	0.044
	LTE Band 4	20M	QPSK	1	0	-	Back	15mm	Ant 11	DSI 4	20175	1732.5	23.64	24.50	1.219	-	-	-0.12	0.062	0.076
	LTE Band 4	20M	QPSK	50	0	-	Front	15mm	Ant 11	DSI 4	20175	1732.5	22.65	23.50	1.216	-	-	-0.06	0.030	0.036
	LTE Band 4	20M	QPSK	50	0	-	Back	15mm	Ant 11	DSI 4	20175	1732.5	22.65	23.50	1.216	-	-	0.15	0.055	0.067
	LTE Band 66	20M	QPSK	1	0	-	Front	15mm	Ant 13	DSI 4	132322	1745	23.49	24.50	1.262	-	-	-0.05	0.264	0.333
	LTE Band 66	20M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	132322	1745	23.49	24.50	1.262	-	-	-0.11	0.362	0.457
	LTE Band 66C	20M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	132322 +132229	1745 +1735.7	22.98	24.50	1.419	-	-	-0.11	0.284	0.403
	LTE Band 66	20M	QPSK	50	0	-	Front	15mm	Ant 13	DSI 4	132322	1745	22.51	23.50	1.256	-	-	0.17	0.224	0.281
	LTE Band 66	20M	QPSK	50	0	-	Back	15mm	Ant 13	DSI 4	132322	1745	22.51	23.50	1.256	-	-	0.03	0.275	0.345
	LTE Band 66	20M	QPSK	1	0	-	Front	15mm	Ant 31	DSI 5	132322	1745	21.59	22.50	1.233	-	-	-0.02	0.115	0.142
	LTE Band 66	20M	QPSK	1	0	-	Back	15mm	Ant 31	DSI 5	132322	1745	21.59	22.50	1.233	-	-	0.18	0.184	0.227
	LTE Band 66C	20M	QPSK	1	0	-	Back	15mm	Ant 31	DSI 5	132322 +132229	1745 +1735.7	20.88	22.50	1.452	-	-	-0.03	0.137	0.199
	LTE Band 66	20M	QPSK	50	0	-	Front	15mm	Ant 31	DSI 5	132322	1745	21.55	22.50	1.245	-	-	0.09	0.120	0.149
	LTE Band 66	20M	QPSK	50	0	-	Back	15mm	Ant 31	DSI 5	132322	1745	21.55	22.50	1.245	-	-	-0.03	0.180	0.224
	LTE Band 66	20M	QPSK	1	0	-	Front	15mm	Ant 11	DSI 4	132322	1745	23.53	24.50	1.250	-	-	0.03	0.193	0.241
59	LTE Band 66	20M	QPSK	1	0	-	Back	15mm	Ant 11	DSI 4	132322	1745	23.53	24.50	1.250	-	-	-0.03	0.413	**0.516**
	LTE Band 66C	20M	QPSK	1	0	-	Back	15mm	Ant 11	DSI 4	132322 +132229	1745 +1735.7	22.85	24.50	1.462	-	-	-0.03	0.335	0.490
	LTE Band 66	20M	QPSK	50	0	-	Front	15mm	Ant 11	DSI 4	132322	1745	22.59	23.50	1.233	-	-	-0.04	0.104	0.128
	LTE Band 66	20M	QPSK	50	0	-	Back	15mm	Ant 11	DSI 4	132322	1745	22.59	23.50	1.233	-	-	-0.04	0.310	0.382
	FR1 n66	40M	QPSK	1	1	DFT-15	Front	15mm	Ant 13	DSI 4	349000	1745	23.53	24.50	1.250	-	-	-0.13	0.293	0.366
	FR1 n66	40M	QPSK	1	1	DFT-15	Back	15mm	Ant 13	DSI 4	349000	1745	23.53	24.50	1.250	-	-	0.13	0.358	0.448
	FR1 n66	40M	QPSK	108	54	DFT-15	Front	15mm	Ant 13	DSI 4	349000	1745	23.43	24.50	1.279	-	-	-0.14	0.290	0.371
60	FR1 n66	40M	QPSK	108	54	DFT-15	Back	15mm	Ant 13	DSI 4	349000	1745	23.43	24.50	1.279	-	-	0.13	0.373	**0.477**
	FR1 n66	40M	QPSK	1	1	DFT-15	Front	15mm	Ant 31	DSI 5	349000	1745	20.82	22.00	1.312	-	-	0.07	0.112	0.147
	FR1 n66	40M	QPSK	1	1	DFT-15	Back	15mm	Ant 31	DSI 5	349000	1745	20.82	22.00	1.312	-	-	0.08	0.178	0.234
	FR1 n66	40M	QPSK	108	54	DFT-15	Front	15mm	Ant 31	DSI 5	349000	1745	20.79	22.00	1.321	-	-	0	0.108	0.143
	FR1 n66	40M	QPSK	108	54	DFT-15	Back	15mm	Ant 31	DSI 5	349000	1745	20.79	22.00	1.321	-	-	-0.14	0.177	0.234
	FR1 n66	40M	QPSK	1	1	DFT-15	Front	15mm	Ant 11	DSI 4	349000	1745	23.05	24.00	1.245	-	-	-0.07	0.082	0.102
	FR1 n66	40M	QPSK	1	1	DFT-15	Back	15mm	Ant 11	DSI 4	349000	1745	23.05	24.00	1.245	-	-	-0.17	0.144	0.179
	FR1 n66	40M	QPSK	108	54	DFT-15	Front	15mm	Ant 11	DSI 4	349000	1745	22.99	24.00	1.262	-	-	0.18	0.081	0.102
	FR1 n66	40M	QPSK	108	54	DFT-15	Back	15mm	Ant 11	DSI 4	349000	1745	22.99	24.00	1.262	-	-	0.13	0.154	0.194
1900MHz																				
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Front	15mm	Ant 13	DSI 4	661	1880	27.73	28.50	1.194	-	-	0.18	0.129	0.154
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Back	15mm	Ant 13	DSI 4	661	1880	27.73	28.50	1.194	-	-	-0.18	0.189	0.226
	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Front	15mm	Ant 31	DSI 5	661	1880	26.58	28.00	1.387	-	-	0	0.153	0.212
61	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Back	15mm	Ant 31	DSI 5	661	1880	26.58	28.00	1.387	-	-	0.06	0.182	**0.252**
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 13	DSI 4	9400	1880	23.91	24.50	1.146	-	-	0.1	0.284	0.325
62	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 13	DSI 4	9400	1880	23.91	24.50	1.146	-	-	-0.09	0.459	**0.526**
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 31	DSI 5	9400	1880	20.44	21.00	1.138	-	-	0.02	0.137	0.156
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 31	DSI 5	9400	1880	20.44	21.00	1.138	-	-	-0.15	0.213	0.242
	LTE Band 2	20M	QPSK	1	0	-	Front	15mm	Ant 13	DSI 4	18900	1880	23.54	24.50	1.247	-	-	0.07	0.253	0.316
63	LTE Band 2	20M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	18900	1880	23.54	24.50	1.247	-	-	0.06	0.481	**0.600**
	LTE Band 2	20M	QPSK	50	0	-	Front	15mm	Ant 13	DSI 4	18900	1880	22.66	23.50	1.213	-	-	-0.1	0.211	0.256
	LTE Band 2	20M	QPSK	50	0	-	Back	15mm	Ant 13	DSI 4	18900	1880	22.66	23.50	1.213	-	-	-0.18	0.355	0.431
	LTE Band 2	20M	QPSK	1	0	-	Front	15mm	Ant 31	DSI 5	18900	1880	20.62	21.50	1.225	-	-	-0.13	0.124	0.152
	LTE Band 2	20M	QPSK	1	0	-	Back	15mm	Ant 31	DSI 5	18900	1880	20.62	21.50	1.225	-	-	-0.07	0.218	0.267
	LTE Band 2	20M	QPSK	50	0	-	Front	15mm	Ant 31	DSI 5	18900	1880	20.55	21.50	1.245	-	-	-0.15	0.134	0.167
	LTE Band 2	20M	QPSK	50	0	-	Back	15mm	Ant 31	DSI 5	18900	1880	20.55	21.50	1.245	-	-	-0.08	0.215	0.268
	FR1 n2	20M	QPSK	1	1	DFT-15	Front	15mm	Ant 13	DSI 4	376000	1880	23.05	24.50	1.396	-	-	0.07	0.264	0.369
	FR1 n2	20M	QPSK	1	1	DFT-15	Back	15mm	Ant 13	DSI 4	376000	1880	23.05	24.50	1.396	-	-	-0.05	0.351	0.490
	FR1 n2	20M	QPSK	50	28	DFT-15	Front	15mm	Ant 13	DSI 4	376000	1880	22.84	24.50	1.466	-	-	-0.03	0.252	0.369
64	FR1 n2	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 13	DSI 4	376000	1880	22.84	24.50	1.466	-	-	-0.14	0.368	**0.539**
	FR1 n2	20M	QPSK	1	1	DFT-15	Front	15mm	Ant 11	DSI 4	376000	1880	21.93	23.50	1.435	-	-	0.04	0.168	0.241

	FR1 n2	20M	QPSK	1	1	DFT-15	Back	15mm	Ant 11	DSI 4	376000	1880	21.93	23.50	1.435	-	-	-0.08	0.322	0.462
	FR1 n2	20M	QPSK	50	28	DFT-15	Front	15mm	Ant 11	DSI 4	376000	1880	21.92	23.50	1.439	-	-	-0.16	0.151	0.217
	FR1 n2	20M	QPSK	50	28	DFT-15	Back	15mm	Ant 11	DSI 4	376000	1880	21.92	23.50	1.439	-	-	0.12	0.307	0.442
2600MHz																				
	LTE Band 7	20M	QPSK	1	0	-	Front	15mm	Ant 13	DSI 4	21100	2535	21.25	22.00	1.189	-	-	-0.12	0.276	0.328
	LTE Band 7	20M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	21100	2535	21.25	22.00	1.189	-	-	-0.03	0.721	0.857
	LTE Band 7	20M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	20850	2510	21.24	22.00	1.191	-	-	-0.16	0.703	0.837
	LTE Band 7	20M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	21350	2560	21.20	22.00	1.202	-	-	-0.16	0.685	0.824
	LTE Band 7	20M	QPSK	50	0	-	Front	15mm	Ant 13	DSI 4	21100	2535	21.23	22.00	1.194	-	-	0.07	0.281	0.336
	LTE Band 7	20M	QPSK	50	0	-	Back	15mm	Ant 13	DSI 4	21100	2535	21.23	22.00	1.194	-	-	0.13	0.729	0.870
65	LTE Band 7	20M	QPSK	50	0	-	Back	15mm	Ant 13	DSI 4	20850	2510	21.14	22.00	1.219	-	-	-0.13	0.755	**0.920**
	LTE Band 7C	20M	QPSK	50	0	-	Back	15mm	Ant 13	DSI 4	20850 +21048	2510 +2529.8	20.88	22.00	1.294	-	-	-0.13	0.710	0.919
	LTE Band 7	20M	QPSK	50	0	-	Back	15mm	Ant 13	DSI 4	21350	2560	21.17	22.00	1.211	-	-	0.02	0.700	0.847
	LTE Band 7	20M	QPSK	100	0	-	Back	15mm	Ant 13	DSI 4	21100	2535	21.17	22.00	1.211	-	-	-0.09	0.711	0.861
	LTE Band 7	20M	QPSK	1	0	-	Front	15mm	Ant 31	DSI 5	21100	2535	21.13	22.00	1.222	-	-	0.02	0.111	0.136
	LTE Band 7	20M	QPSK	1	0	-	Back	15mm	Ant 31	DSI 5	21100	2535	21.13	22.00	1.222	-	-	0.06	0.153	0.187
	LTE Band 7	20M	QPSK	50	0	-	Front	15mm	Ant 31	DSI 5	21100	2535	21.07	22.00	1.239	-	-	-0.12	0.117	0.145
	LTE Band 7	20M	QPSK	50	0	-	Back	15mm	Ant 31	DSI 5	21100	2535	21.07	22.00	1.239	-	-	-0.02	0.160	0.198
	LTE Band 7C	20M	QPSK	50	0	-	Back	15mm	Ant 31	DSI 5	21100 +20902	2535 +2515.2	20.78	22.00	1.324	-	-	-0.02	0.121	0.160
	LTE Band 7	20M	QPSK	1	0	-	Front	15mm	Ant 11	DSI 4	21100	2535	22.60	24.00	1.380	-	-	-0.05	0.144	0.199
	LTE Band 7	20M	QPSK	1	0	-	Back	15mm	Ant 11	DSI 4	21100	2535	22.60	24.00	1.380	-	-	-0.17	0.326	0.450
	LTE Band 7C	20M	QPSK	1	0	-	Back	15mm	Ant 11	DSI 4	21100 +20902	2535 +2515.2	22.18	24.00	1.521	-	-	-0.17	0.263	0.400
	LTE Band 7	20M	QPSK	50	0	-	Front	15mm	Ant 11	DSI 4	21100	2535	21.62	23.00	1.374	-	-	0.12	0.126	0.173
	LTE Band 7	20M	QPSK	50	0	-	Back	15mm	Ant 11	DSI 4	21100	2535	21.62	23.00	1.374	-	-	0.08	0.269	0.370
	LTE Band 38	20M	QPSK	1	0	-	Front	15mm	Ant 13	DSI 4	38000	2595	23.09	24.00	1.233	62.9	1.006	-0.04	0.183	0.227
66	LTE Band 38	20M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	38000	2595	23.09	24.00	1.233	62.9	1.006	-0.12	0.683	**0.847**
	LTE Band 38C	20M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	37901 +38099	2585.1 +2604.9	22.43	24.00	1.435	62.9	1.006	-0.12	0.576	0.832
	LTE Band 38	20M	QPSK	50	0	-	Front	15mm	Ant 13	DSI 4	38000	2595	22.56	23.50	1.242	62.9	1.006	0.13	0.149	0.186
	LTE Band 38	20M	QPSK	50	0	-	Back	15mm	Ant 13	DSI 4	38000	2595	22.56	23.50	1.242	62.9	1.006	0.01	0.421	0.526
	LTE Band 38	20M	QPSK	1	0	-	Front	15mm	Ant 31	DSI 5	38000	2595	23.65	24.50	1.216	62.9	1.006	-0.13	0.093	0.114
	LTE Band 38C	20M	QPSK	1	0	-	Back	15mm	Ant 31	DSI 5	37901 +38099	2585.1 +2604.9	22.92	24.50	1.439	62.9	1.006	0	0.071	0.103
	LTE Band 38	20M	QPSK	50	0	-	Front	15mm	Ant 31	DSI 5	38000	2595	22.79	23.50	1.178	62.9	1.006	-0.06	0.077	0.091
	LTE Band 38	20M	QPSK	50	0	-	Back	15mm	Ant 31	DSI 5	38000	2595	22.79	23.50	1.178	62.9	1.006	0.11	0.107	0.127
	LTE Band 38	20M	QPSK	1	0	-	Front	15mm	Ant 11	DSI 4	38000	2595	23.06	24.50	1.393	62.9	1.006	-0.18	0.063	0.088
	LTE Band 38	20M	QPSK	1	0	-	Back	15mm	Ant 11	DSI 4	38000	2595	23.06	24.50	1.393	62.9	1.006	0.12	0.144	0.202
	LTE Band 38C	20M	QPSK	1	0	-	Back	15mm	Ant 11	DSI 4	37901 +38099	2585.1 +2604.9	22.76	24.50	1.493	62.9	1.006	0.12	0.114	0.171
	LTE Band 38	20M	QPSK	50	0	-	Front	15mm	Ant 11	DSI 4	38000	2595	22.27	23.50	1.327	62.9	1.006	-0.15	0.051	0.068
	LTE Band 38	20M	QPSK	50	0	-	Back	15mm	Ant 11	DSI 4	38000	2595	22.27	23.50	1.327	62.9	1.006	0.13	0.118	0.158
	LTE Band 41	20M	QPSK	1	0	-	Front	15mm	Ant 13	DSI 4	40620	2593	23.21	24.00	1.199	62.9	1.006	-0.07	0.182	0.220
	LTE Band 41	20M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	40620	2593	23.21	24.00	1.199	62.9	1.006	-0.02	0.527	0.636
	LTE Band 41	20M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	39750	2506	23.14	24.00	1.219	62.9	1.006	0.06	0.550	0.674
67	LTE Band 41	20M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	40185	2549.5	23.17	24.00	1.211	62.9	1.006	0.12	0.736	**0.896**
	LTE Band 41C	20M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	40185 +39987	2549.5 +2529.7	22.75	24.00	1.334	62.9	1.006	0.12	0.654	0.877
	LTE Band 41	20M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	41055	2636.5	23.12	24.00	1.225	62.9	1.006	-0.13	0.509	0.627
	LTE Band 41	20M	QPSK	1	0	-	Back	15mm	Ant 13	DSI 4	41490	2680	23.15	24.00	1.216	62.9	1.006	-0.04	0.439	0.537
	LTE Band 41	20M	QPSK	50	0	-	Front	15mm	Ant 13	DSI 4	40620	2593	22.63	23.50	1.222	62.9	1.006	-0.17	0.155	0.191
	LTE Band 41	20M	QPSK	50	0	-	Back	15mm	Ant 13	DSI 4	40620	2593	22.63	23.50	1.222	62.9	1.006	0.08	0.439	0.540
	LTE Band 41	20M	QPSK	1	0	-	Front	15mm	Ant 31	DSI 5	40620	2593	23.72	24.50	1.197	62.9	1.006	0.11	0.101	0.122
	LTE Band 41	20M	QPSK	1	0	-	Back	15mm	Ant 31	DSI 5	40620	2593	23.72	24.50	1.197	62.9	1.006	0.17	0.132	0.159
	LTE Band 41C	20M	QPSK	1	0	-	Back	15mm	Ant 31	DSI 5	40620 +40422	2593 +2573.2	23.18	24.50	1.355	62.9	1.006	0.17	0.108	0.147
	LTE Band 41	20M	QPSK	50	0	-	Front	15mm	Ant 31	DSI 5	40620	2593	22.70	23.50	1.202	62.9	1.006	0.01	0.085	0.103
	LTE Band 41	20M	QPSK	50	0	-	Back	15mm	Ant 31	DSI 5	40620	2593	22.70	23.50	1.202	62.9	1.006	0.13	0.101	0.122
	LTE Band 41	20M	QPSK	1	0	-	Front	15mm	Ant 11	DSI 4	40620	2593	23.23	24.50	1.340	62.9	1.006	-0.03	0.066	0.089
	LTE Band 41	20M	QPSK	1	0	-	Back	15mm	Ant 11	DSI 4	40620	2593	23.23	24.50	1.340	62.9	1.006	0.06	0.147	0.198

	LTE Band 41C	20M	QPSK	1	0	-	Back	15mm	Ant 11	DSI 4	40620 +40422	2593 +2573.2	22.88	24.50	1.452	62.9	1.006	0.06	0.131	0.191
	LTE Band 41	20M	QPSK	50	0	-	Front	15mm	Ant 11	DSI 4	40620	2593	22.27	23.50	1.327	62.9	1.006	0.06	0.052	0.069
	LTE Band 41	20M	QPSK	50	0	-	Back	15mm	Ant 11	DSI 4	40620	2593	22.27	23.50	1.327	62.9	1.006	-0.17	0.121	0.162
	FR1 n7	40M	QPSK	1	1	DFT-15	Front	15mm	Ant 13	DSI 4	507000	2535	20.11	21.00	1.227	-	-	-0.06	0.211	0.259
68	FR1 n7	40M	QPSK	1	1	DFT-15	Back	15mm	Ant 13	DSI 4	507000	2535	20.11	21.00	1.227	-	-	0.06	0.578	**0.709**
	FR1 n7	40M	QPSK	108	54	DFT-15	Front	15mm	Ant 13	DSI 4	507000	2535	20.02	21.00	1.253	-	-	-0.16	0.200	0.251
	FR1 n7	40M	QPSK	108	54	DFT-15	Back	15mm	Ant 13	DSI 4	507000	2535	20.02	21.00	1.253	-	-	0.14	0.514	0.644
	FR1 n7	40M	QPSK	1	1	DFT-15	Front	15mm	Ant 31	DSI 5	507000	2535	21.65	23.00	1.365	-	-	0.06	0.162	0.221
	FR1 n7	40M	QPSK	1	1	DFT-15	Back	15mm	Ant 31	DSI 5	507000	2535	21.65	23.00	1.365	-	-	-0.16	0.223	0.304
	FR1 n7	40M	QPSK	108	54	DFT-15	Front	15mm	Ant 31	DSI 5	507000	2535	21.62	23.00	1.374	-	-	-0.18	0.143	0.196
	FR1 n7	40M	QPSK	108	54	DFT-15	Back	15mm	Ant 31	DSI 5	507000	2535	21.62	23.00	1.374	-	-	-0.14	0.222	0.305
	FR1 n7	40M	QPSK	1	1	DFT-15	Front	15mm	Ant 11	DSI 4	507000	2535	22.65	24.00	1.365	-	-	0.03	0.178	0.243
	FR1 n7	40M	QPSK	1	1	DFT-15	Back	15mm	Ant 11	DSI 4	507000	2535	22.65	24.00	1.365	-	-	0.09	0.353	0.482
	FR1 n7	40M	QPSK	108	54	DFT-15	Front	15mm	Ant 11	DSI 4	507000	2535	22.41	24.00	1.442	-	-	0.03	0.182	0.262
	FR1 n7	40M	QPSK	108	54	DFT-15	Back	15mm	Ant 11	DSI 4	507000	2535	22.41	24.00	1.442	-	-	0.14	0.355	0.512
	FR1 n38	40M	QPSK	1	1	DFT-30	Front	15mm	Ant 13	DSI 4	519000	2595	19.60	20.50	1.230	-	-	0.08	0.156	0.192
	FR1 n38	40M	QPSK	1	1	DFT-30	Back	15mm	Ant 13	DSI 4	519000	2595	19.60	20.50	1.230	-	-	-0.04	0.413	0.508
	FR1 n38	40M	QPSK	50	28	DFT-30	Front	15mm	Ant 13	DSI 4	519000	2595	19.56	20.50	1.242	-	-	-0.17	0.145	0.180
	FR1 n38	40M	QPSK	50	28	DFT-30	Back	15mm	Ant 13	DSI 4	519000	2595	19.56	20.50	1.242	-	-	-0.11	0.373	0.463
	FR1 n38	40M	QPSK	1	1	DFT-30	Front	15mm	Ant 31	DSI 5	519000	2595	23.00	24.00	1.259	-	-	0.18	0.199	0.251
	FR1 n38	40M	QPSK	1	1	DFT-30	Back	15mm	Ant 31	DSI 5	519000	2595	23.00	24.00	1.259	-	-	-0.05	0.245	0.308
	FR1 n38	40M	QPSK	50	28	DFT-30	Front	15mm	Ant 31	DSI 5	519000	2595	22.89	24.00	1.291	-	-	-0.06	0.202	0.261
	FR1 n38	40M	QPSK	50	28	DFT-30	Back	15mm	Ant 31	DSI 5	519000	2595	22.89	24.00	1.291	-	-	0.03	0.252	0.325
	FR1 n38	40M	QPSK	1	1	DFT-30	Front	15mm	Ant 11	DSI 4	519000	2595	23.32	24.50	1.312	-	-	0.08	0.230	0.302
69	FR1 n38	40M	QPSK	1	1	DFT-30	Back	15mm	Ant 11	DSI 4	519000	2595	23.32	24.50	1.312	-	-	0.08	0.430	**0.564**
	FR1 n38	40M	QPSK	50	28	DFT-30	Front	15mm	Ant 11	DSI 4	519000	2595	23.30	24.50	1.318	-	-	-0.13	0.212	0.279
	FR1 n38	40M	QPSK	50	28	DFT-30	Back	15mm	Ant 11	DSI 4	519000	2595	23.30	24.50	1.318	-	-	0.09	0.414	0.546
	FR1 n41	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 13	DSI 4	518598	2592.99	19.63	20.50	1.222	-	-	-0.1	0.161	0.197
70	FR1 n41	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 13	DSI 4	518598	2592.99	19.63	20.50	1.222	-	-	0.03	0.460	**0.562**
	FR1 n41	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 13	DSI 4	518598	2592.99	19.58	20.50	1.236	-	-	0.03	0.136	0.168
	FR1 n41	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 13	DSI 4	518598	2592.99	19.58	20.50	1.236	-	-	0.13	0.379	0.468
	FR1 n41	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 31	DSI 5	518598	2592.99	21.95	23.00	1.274	-	-	-0.05	0.152	0.194
	FR1 n41	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 31	DSI 5	518598	2592.99	21.95	23.00	1.274	-	-	-0.01	0.221	0.281
	FR1 n41	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 31	DSI 5	518598	2592.99	21.90	23.00	1.288	-	-	-0.11	0.147	0.189
	FR1 n41	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 31	DSI 5	518598	2592.99	21.90	23.00	1.288	-	-	-0.09	0.201	0.259
	FR1 n41	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 11	DSI 4	518598	2592.99	23.05	24.00	1.245	-	-	-0.01	0.202	0.251
	FR1 n41	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 11	DSI 4	518598	2592.99	23.05	24.00	1.245	-	-	0.03	0.364	0.453
	FR1 n41	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 11	DSI 4	518598	2592.99	22.98	24.00	1.265	-	-	-0.18	0.183	0.231
	FR1 n41	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 11	DSI 4	518598	2592.99	22.98	24.00	1.265	-	-	-0.02	0.332	0.420
3000MHz																				
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 11	DSI 4	633332	3499.98	22.47	23.50	1.268	-	-	0.01	0.163	0.207
71	FR1 n77	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 11	DSI 4	633332	3499.98	22.47	23.50	1.268	-	-	-0.1	0.484	**0.614**
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 11	DSI 4	633332	3499.98	22.46	23.50	1.271	-	-	0.03	0.165	0.210
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 11	DSI 4	633332	3499.98	22.46	23.50	1.271	-	-	0.12	0.393	0.499
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 11	DSI 4	656000	3840	22.53	23.50	1.250	-	-	-0.05	0.164	0.205
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 11	DSI 4	656000	3840	22.53	23.50	1.250	-	-	-0.06	0.363	0.454
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 11	DSI 4	656000	3840	22.45	23.50	1.274	-	-	-0.16	0.167	0.213
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 11	DSI 4	656000	3840	22.45	23.50	1.274	-	-	-0.05	0.338	0.430
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 12	DSI 5	633332	3499.98	19.92	20.50	1.143	-	-	0.09	0.169	0.193
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 12	DSI 5	633332	3499.98	19.92	20.50	1.143	-	-	-0.11	0.167	0.191
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 12	DSI 5	633332	3499.98	19.85	20.50	1.161	-	-	-0.13	0.175	0.203
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 12	DSI 5	633332	3499.98	19.85	20.50	1.161	-	-	-0.16	0.157	0.182
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 12	DSI 5	656000	3840	19.92	20.50	1.143	-	-	0.06	0.076	0.087
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 12	DSI 5	656000	3840	19.92	20.50	1.143	-	-	0.14	0.076	0.087
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 12	DSI 5	656000	3840	19.89	20.50	1.151	-	-	-0.14	0.102	0.117
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 12	DSI 5	656000	3840	19.89	20.50	1.151	-	-	0.16	0.091	0.105
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 21	DSI 5	633332	3499.98	17.94	18.50	1.138	-	-	-0.08	0.143	0.163

	FR1 n77	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 21	DSI 5	633332	3499.98	17.94	18.50	1.138	-	-	-0.16	0.345	0.392
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 21	DSI 5	633332	3499.98	17.92	18.50	1.143	-	-	0.07	0.109	0.125
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 21	DSI 5	633332	3499.98	17.92	18.50	1.143	-	-	-0.16	0.311	0.355
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 21	DSI 5	656000	3840	17.92	18.50	1.143	-	-	0.11	0.040	0.046
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 21	DSI 5	656000	3840	17.92	18.50	1.143	-	-	0.12	0.136	0.155
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 21	DSI 5	656000	3840	17.81	18.50	1.172	-	-	0.04	0.036	0.042
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 21	DSI 5	656000	3840	17.81	18.50	1.172	-	-	0.02	0.111	0.130
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 23	DSI 5	633332	3499.98	17.73	18.50	1.194	-	-	0.16	0.051	0.061
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 23	DSI 5	633332	3499.98	17.73	18.50	1.194	-	-	0.13	0.062	0.074
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 23	DSI 5	633332	3499.98	17.66	18.50	1.213	-	-	0.06	0.042	0.051
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 23	DSI 5	633332	3499.98	17.66	18.50	1.213	-	-	0.16	0.066	0.080
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 23	DSI 5	656000	3840	17.32	18.50	1.312	-	-	0.07	0.016	0.021
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 23	DSI 5	656000	3840	17.32	18.50	1.312	-	-	0.09	0.036	0.047
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 23	DSI 5	656000	3840	17.21	18.50	1.346	-	-	0.01	0.015	0.020
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 23	DSI 5	656000	3840	17.21	18.50	1.346	-	-	-0.08	0.036	0.048
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 11	DSI 4	633332	3499.98	22.17	23.50	1.358	-	-	-0.07	0.172	0.234
72	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 11	DSI 4	633332	3499.98	22.17	23.50	1.358	-	-	-0.18	0.484	**0.657**
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 11	DSI 4	633332	3499.98	22.10	23.50	1.380	-	-	-0.17	0.170	0.235
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 11	DSI 4	633332	3499.98	22.10	23.50	1.380	-	-	-0.04	0.429	0.592
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 11	DSI 4	650000	3750	22.26	23.50	1.330	-	-	0.03	0.173	0.230
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 11	DSI 4	650000	3750	22.26	23.50	1.330	-	-	0.1	0.335	0.446
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 11	DSI 4	650000	3750	22.22	23.50	1.343	-	-	0.06	0.150	0.201
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 11	DSI 4	650000	3750	22.22	23.50	1.343	-	-	0.15	0.329	0.442
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 12	DSI 5	633332	3499.98	20.30	21.00	1.175	-	-	-0.07	0.179	0.210
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 12	DSI 5	633332	3499.98	20.30	21.00	1.175	-	-	0.06	0.210	0.247
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 12	DSI 5	633332	3499.98	20.21	21.00	1.199	-	-	-0.18	0.187	0.224
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 12	DSI 5	633332	3499.98	20.21	21.00	1.199	-	-	0.11	0.185	0.222
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 12	DSI 5	650000	3750	20.25	21.00	1.189	-	-	0.13	0.103	0.122
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 12	DSI 5	650000	3750	20.25	21.00	1.189	-	-	0.07	0.126	0.150
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 12	DSI 5	650000	3750	20.14	21.00	1.219	-	-	-0.14	0.078	0.095
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 12	DSI 5	650000	3750	20.14	21.00	1.219	-	-	0.16	0.105	0.128
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 21	DSI 5	633332	3499.98	20.10	21.00	1.230	-	-	0.01	0.166	0.204
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 21	DSI 5	633332	3499.98	20.10	21.00	1.230	-	-	0.16	0.470	0.578
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 21	DSI 5	633332	3499.98	20.09	21.00	1.233	-	-	0.05	0.139	0.171
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 21	DSI 5	633332	3499.98	20.09	21.00	1.233	-	-	0.09	0.436	0.538
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Front		Ant 21	DSI 5	650000	3750	20.08	21.00	1.236	-	-	-0.17	0.057	0.070
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 21	DSI 5	650000	3750	20.08	21.00	1.236	-	-	-0.05	0.214	0.264
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 21	DSI 5	650000	3750	20.04	21.00	1.247	-	-	0	0.048	0.060
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 21	DSI 5	650000	3750	20.04	21.00	1.247	-	-	0.16	0.160	0.200
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 23	DSI 5	633332	3499.98	18.57	19.50	1.239	-	-	0.17	0.059	0.073
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 23	DSI 5	633332	3499.98	18.57	19.50	1.239	-	-	0.05	0.106	0.131
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 23	DSI 5	633332	3499.98	18.56	19.50	1.242	-	-	0.06	0.077	0.096
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 23	DSI 5	633332	3499.98	18.56	19.50	1.242	-	-	0.07	0.118	0.147
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 23	DSI 5	650000	3750	18.56	19.50	1.242	-	-	-0.07	0.048	0.060
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	15mm	Ant 23	DSI 5	650000	3750	18.56	19.50	1.242	-	-	0.15	0.062	0.077
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 23	DSI 5	650000	3750	18.54	19.50	1.247	-	-	-0.04	0.044	0.055
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	15mm	Ant 23	DSI 5	650000	3750	18.54	19.50	1.247	-	-	0.14	0.055	0.069

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 22	Standalone	1	2412	19.40	20.00	1.148	98.6	1.014	-0.04	0.125	0.146
73	WLAN2.4GHz	802.11b 1Mbps	Back	15mm	Ant 22	Standalone	1	2412	19.40	20.00	1.148	98.6	1.014	0.08	0.167	**0.194**
	Bluetooth	DH5 1Mbps	Front	15mm	Ant 22	Standalone	39	2441	13.10	14.00	1.230	76.78	1.302	-0.04	0.020	0.032
74	Bluetooth	DH5 1Mbps	Back	15mm	Ant 22	Standalone	39	2441	13.10	14.00	1.230	76.78	1.302	0.07	0.037	**0.060**
5000MHz																
	WLAN5.3GHz	802.11a 6Mbps	Front	15mm	Ant 22	Standalone	48	5240	18.93	20.00	1.279	97.9	1.021	0.04	0.232	0.303
75	WLAN5.3GHz	802.11a 6Mbps	Back	15mm	Ant 22	Standalone	48	5240	18.93	20.00	1.279	97.9	1.021	-0.01	0.598	**0.781**
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 22	Simultaneous	42	5210	15.59	16.50	1.234	92.35	1.083	0.11	0.090	0.120
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Back	15mm	Ant 22	Simultaneous	42	5210	15.59	16.50	1.234	92.35	1.083	-0.03	0.150	0.201
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 22	Standalone	122	5610	16.19	17.00	1.206	92.35	1.083	0.05	0.087	0.114
76	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	15mm	Ant 22	Standalone	122	5610	16.19	17.00	1.206	92.35	1.083	0.11	0.460	**0.601**
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 22	Simultaneous	122	5610	14.61	15.50	1.229	92.35	1.083	-0.14	0.062	0.083
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	15mm	Ant 22	Simultaneous	122	5610	14.61	15.50	1.229	92.35	1.083	0.09	0.310	0.413
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 22	Standalone	155	5775	13.81	15.00	1.317	92.35	1.083	0.12	0.114	0.163
77	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	15mm	Ant 22	Standalone	155	5775	13.81	15.00	1.317	92.35	1.083	-0.02	0.353	**0.503**
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 22	Standalone	155	5775	10.90	12.00	1.290	92.35	1.083	-0.06	0.072	0.101
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	15mm	Ant 22	Standalone	155	5775	10.90	12.00	1.290	92.35	1.083	0.03	0.181	0.253

16.4 Product specific 10g 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	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
1750MHz																				
	LTE Band 66	20M	QPSK	1	0	-	Top Side	0mm	Ant 13	DSI 5	132322	1745	21.55	22.50	1.245	-	-	0.18	1.810	2.253
	LTE Band 66	20M	QPSK	1	0	-	Top Side	0mm	Ant 13	DSI 5	132072	1720	21.46	22.50	1.271	-	-	-0.03	1.780	2.262
	LTE Band 66	20M	QPSK	1	0	-	Top Side	0mm	Ant 13	DSI 5	132572	1770	21.47	22.50	1.268	-	-	0.17	1.790	2.269
	LTE Band 66	20M	QPSK	1	0	-	Top Side	13mm	Ant 13	DSI 4	132322	1745	23.49	24.50	1.262	-	-	0.05	0.298	0.376
	LTE Band 66	20M	QPSK	50	0	-	Top Side	0mm	Ant 13	DSI 5	132322	1745	21.51	22.50	1.256	-	-	-0.16	1.840	2.311
78	LTE Band 66	20M	QPSK	50	0	-	Top Side	0mm	Ant 13	DSI 5	132072	1720	21.39	22.50	1.291	-	-	-0.02	1.840	**2.376**
	LTE Band 66C	20M	QPSK	50	0	-	Top Side	0mm	Ant 13	DSI 5	132072 +132270	1720 +1739.8	21.08	22.50	1.387	-	-	-0.02	1.711	2.373
	LTE Band 66	20M	QPSK	50	0	-	Top Side	0mm	Ant 13	DSI 5	132572	1770	21.45	22.50	1.274	-	-	-0.13	1.840	2.343
	LTE Band 66	20M	QPSK	50	0	-	Top Side	13mm	Ant 13	DSI 4	132322	1745	22.51	23.50	1.256	-	-	0.03	0.247	0.310
	LTE Band 66	20M	QPSK	100	0	-	Top Side	0mm	Ant 13	DSI 5	132322	1745	21.47	22.50	1.268	-	-	-0.08	1.740	2.206
	LTE Band 66	20M	QPSK	1	0	-	Back	0mm	Ant 11	DSI 5	132322	1745	20.58	21.50	1.236	-	-	-0.05	1.620	2.002
	LTE Band 66	20M	QPSK	1	0	-	Back	0mm	Ant 11	DSI 5	132072	1720	20.53	21.50	1.250	-	-	0.11	1.410	1.763
	LTE Band 66	20M	QPSK	1	0	-	Back	0mm	Ant 11	DSI 5	132572	1770	20.57	21.50	1.239	-	-	0	1.550	1.920
	LTE Band 66	20M	QPSK	1	0	-	Left Side	0mm	Ant 11	DSI 5	132322	1745	20.58	21.50	1.236	-	-	-0.13	1.300	1.607
	LTE Band 66	20M	QPSK	1	0	-	Back	12mm	Ant 11	DSI 4	132322	1745	23.53	24.50	1.250	-	-	0.01	0.284	0.355
	LTE Band 66	20M	QPSK	1	0	-	Left Side	9mm	Ant 11	DSI 4	132322	1745	23.53	24.50	1.250	-	-	0.05	0.672	0.840
	LTE Band 66	20M	QPSK	50	0	-	Back	0mm	Ant 11	DSI 5	132322	1745	20.52	21.50	1.253	-	-	-0.08	1.630	2.043
	LTE Band 66C	20M	QPSK	50	0	-	Back	0mm	Ant 11	DSI 5	132322 +132124	1745 +1725.2	19.97	21.50	1.422	-	-	-0.08	1.380	1.963
	LTE Band 66	20M	QPSK	50	0	-	Back	0mm	Ant 11	DSI 5	132072	1720	20.50	21.50	1.259	-	-	0.01	1.450	1.825
	LTE Band 66	20M	QPSK	50	0	-	Back	0mm	Ant 11	DSI 5	132572	1770	20.51	21.50	1.256	-	-	0.12	1.580	1.985
	LTE Band 66	20M	QPSK	50	0	-	Left Side	0mm	Ant 11	DSI 5	132322	1745	20.52	21.50	1.253	-	-	-0.07	1.260	1.579
	LTE Band 66	20M	QPSK	50	0	-	Back	12mm	Ant 11	DSI 4	132322	1745	22.59	23.50	1.233	-	-	0.09	0.224	0.276
	LTE Band 66	20M	QPSK	50	0	-	Left Side	9mm	Ant 11	DSI 4	132322	1745	22.59	23.50	1.233	-	-	-0.18	0.536	0.661
	LTE Band 66	20M	QPSK	100	0	-	Back	0mm	Ant 11	DSI 5	132322	1745	20.48	21.50	1.265	-	-	0.05	1.610	2.036
79	FR1 n66	40M	QPSK	1	1	DFT-15	Top Side	0mm	Ant 13	DSI 5	349000	1745	21.06	22.00	1.242	-	-	-0.13	1.640	**2.036**
	FR1 n66	40M	QPSK	1	1	DFT-15	Top Side	13mm	Ant 13	DSI 4	349000	1745	23.53	24.50	1.250	-	-	-0.18	0.326	0.408
	FR1 n66	40M	QPSK	108	54	DFT-15	Top Side	0mm	Ant 13	DSI 5	349000	1745	20.99	22.00	1.262	-	-	0.09	1.610	2.032
	FR1 n66	40M	QPSK	216	0	DFT-15	Top Side	0mm	Ant 13	DSI 5	349000	1745	20.93	22.00	1.279	-	-	0.02	1.580	2.021
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Side	0mm	Ant 11	DSI 5	349000	1745	20.05	21.00	1.245	-	-	-0.05	1.220	1.518
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Side	9mm	Ant 11	DSI 4	349000	1745	23.05	24.00	1.245	-	-	0.13	0.649	0.808
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Side	0mm	Ant 11	DSI 5	349000	1745	20.02	21.00	1.253	-	-	-0.06	1.120	1.404
1900MHz																				
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	0mm	Ant 13	DSI 5	9400	1880	20.49	21.00	1.125	-	-	-0.05	1.740	1.957
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	0mm	Ant 13	DSI 5	9262	1852.4	20.48	21.00	1.127	-	-	0.1	1.670	1.882
80	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	0mm	Ant 13	DSI 5	9538	1907.6	20.46	21.00	1.132	-	-	-0.07	2.030	**2.299**
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	13mm	Ant 13	DSI 4	9400	1880	23.91	24.50	1.146	-	-	-0.08	0.467	0.535
	LTE Band 2	20M	QPSK	1	0	-	Top Side	0mm	Ant 13	DSI 5	18900	1880	19.71	20.50	1.199	-	-	0.1	1.440	1.727
	LTE Band 2	20M	QPSK	1	0	-	Top Side	13mm	Ant 13	DSI 4	18900	1880	23.54	24.50	1.247	-	-	-0.1	0.380	0.474
81	LTE Band 2	20M	QPSK	50	0	-	Top Side	0mm	Ant 13	DSI 5	18900	1880	19.62	20.50	1.225	-	-	0.17	1.550	**1.898**
	LTE Band 2	20M	QPSK	50	0	-	Top Side	13mm	Ant 13	DSI 4	18900	1880	22.66	23.50	1.213	-	-	0.02	0.306	0.371
	FR1 n2	20M	QPSK	1	1	DFT-15	Top Side	0mm	Ant 13	DSI 5	376000	1880	19.58	21.00	1.387	-	-	-0.11	1.460	2.025
	FR1 n2	20M	QPSK	1	1	DFT-15	Top Side	0mm	Ant 13	DSI 5	372000	1860	19.52	21.00	1.406	-	-	0.01	1.420	1.997
	FR1 n2	20M	QPSK	1	1	DFT-15	Top Side	0mm	Ant 13	DSI 5	380000	1900	19.55	21.00	1.396	-	-	-0.02	1.590	2.220
	FR1 n2	20M	QPSK	1	1	DFT-15	Top Side	13mm	Ant 13	DSI 4	376000	1880	23.05	24.50	1.396	-	-	0.13	0.377	0.526
	FR1 n2	20M	QPSK	50	28	DFT-15	Top Side	0mm	Ant 13	DSI 5	376000	1880	19.50	21.00	1.413	-	-	-0.01	1.530	2.161
	FR1 n2	20M	QPSK	50	28	DFT-15	Top Side	0mm	Ant 13	DSI 5	372000	1860	19.44	21.00	1.432	-	-	0.06	1.450	2.077
	FR1 n2	20M	QPSK	50	28	DFT-15	Top Side	0mm	Ant 13	DSI 5	380000	1900	19.48	21.00	1.419	-	-	0.02	1.560	2.214
	FR1 n2	20M	QPSK	50	28	DFT-15	Top Side	13mm	Ant 13	DSI 4	376000	1880	22.84	24.50	1.466	-	-	0.13	0.379	0.555
	FR1 n2	20M	QPSK	100	0	DFT-15	Top Side	0mm	Ant 13	DSI 5	376000	1880	19.47	21.00	1.422	-	-	0.06	1.440	2.048

	FR1 n2	20M	QPSK	1	1	DFT-15	Left Side	0mm	Ant 11	DSI 5	376000	1880	18.38	20.00	1.452	-	-	0.08	1.560	2.265
82	FR1 n2	20M	QPSK	1	1	DFT-15	Left Side	0mm	Ant 11	DSI 5	372000	1860	18.31	20.00	1.476	-	-	0.09	1.680	**2.479**
	FR1 n2	20M	QPSK	1	1	DFT-15	Left Side	0mm	Ant 11	DSI 5	380000	1900	18.35	20.00	1.462	-	-	0.04	1.320	1.930
	FR1 n2	20M	QPSK	1	1	DFT-15	Left Side	9mm	Ant 11	DSI 4	376000	1880	21.93	23.50	1.435	-	-	-0.18	0.653	0.937
	FR1 n2	20M	QPSK	50	28	DFT-15	Left Side	0mm	Ant 11	DSI 5	376000	1880	18.31	20.00	1.476	-	-	0.08	1.550	2.287
	FR1 n2	20M	QPSK	50	28	DFT-15	Left Side	0mm	Ant 11	DSI 5	372000	1860	18.29	20.00	1.483	-	-	-0.12	1.610	2.387
	FR1 n2	20M	QPSK	50	28	DFT-15	Left Side	0mm	Ant 11	DSI 5	380000	1900	18.27	20.00	1.489	-	-	0.15	1.300	1.936
	FR1 n2	20M	QPSK	100	0	DFT-15	Left Side	0mm	Ant 11	DSI 5	376000	1880	18.28	20.00	1.486	-	-	0.06	1.450	2.155
2600MHz																				
	LTE Band 7	20M	QPSK	1	0	-	Back	0mm	Ant 13	DSI 5	21100	2535	16.75	17.50	1.189	-	-	-0.16	1.110	1.319
	LTE Band 7	20M	QPSK	1	0	-	Top Side	0mm	Ant 13	DSI 5	21100	2535	16.75	17.50	1.189	-	-	0.09	1.090	1.295
	LTE Band 7	20M	QPSK	1	0	-	Top Side	13mm	Ant 13	DSI 4	21100	2535	21.25	22.00	1.189	-	-	-0.17	0.597	0.710
	LTE Band 7	20M	QPSK	50	0	-	Back	0mm	Ant 13	DSI 5	21100	2535	16.72	17.50	1.197	-	-	-0.01	1.140	1.364
	LTE Band 7C	20M	QPSK	50	0	-	Back	0mm	Ant 13	DSI 5	21100 +20902	2535 +2515.2	16.35	17.50	1.303	-	-	-0.01	0.988	1.288
	LTE Band 7	20M	QPSK	50	0	-	Top Side	0mm	Ant 13	DSI 5	21100	2535	16.72	17.50	1.197	-	-	0.01	1.100	1.316
	LTE Band 7	20M	QPSK	50	0	-	Top Side	13mm	Ant 13	DSI 4	21100	2535	21.23	22.00	1.194	-	-	0.14	0.598	0.714
	LTE Band 7	20M	QPSK	1	0	-	Left Side	0mm	Ant 11	DSI 5	21100	2535	19.15	20.50	1.365	-	-	-0.12	1.620	2.211
	LTE Band 7	20M	QPSK	1	0	-	Left Side	0mm	Ant 11	DSI 5	20850	2510	19.08	20.50	1.387	-	-	0.03	1.770	2.455
	LTE Band 7	20M	QPSK	1	0	-	Left Side	0mm	Ant 11	DSI 5	21350	2560	19.13	20.50	1.371	-	-	-0.1	1.630	2.235
	LTE Band 7	20M	QPSK	1	0	-	Left Side	9mm	Ant 11	DSI 4	21100	2535	22.60	24.00	1.380	-	-	0.11	0.576	0.795
	LTE Band 7	20M	QPSK	50	0	-	Left Side	0mm	Ant 11	DSI 5	21100	2535	19.13	20.50	1.371	-	-	0.12	1.650	2.262
83	LTE Band 7	20M	QPSK	50	0	-	Left Side	0mm	Ant 11	DSI 5	20850	2510	19.01	20.50	1.409	-	-	-0.06	1.930	**2.720**
	LTE Band 7C	20M	QPSK	50	0	-	Left Side	0mm	Ant 11	DSI 5	20850 +21048	2510 +2529.8	18.70	20.50	1.514	-	-	-0.06	1.710	2.588
	LTE Band 7	20M	QPSK	50	0	-	Left Side	0mm	Ant 11	DSI 5	21350	2560	19.10	20.50	1.380	-	-	-0.13	1.620	2.236
	LTE Band 7	20M	QPSK	50	0	-	Left Side	9mm	Ant 11	DSI 4	21100	2535	21.62	23.00	1.374	-	-	-0.03	0.480	0.660
	LTE Band 7	20M	QPSK	100	0	-	Left Side	0mm	Ant 11	DSI 5	21100	2535	19.05	20.50	1.396	-	-	-0.12	1.660	2.318
	LTE Band 38	20M	QPSK	1	0	-	Back	0mm	Ant 13	DSI 5	38000	2595	18.61	19.50	1.227	62.9	1.006	0.02	0.937	1.157
	LTE Band 38	20M	QPSK	1	0	-	Top Side	0mm	Ant 13	DSI 5	38000	2595	18.61	19.50	1.227	62.9	1.006	0.06	0.948	1.171
	LTE Band 38	20M	QPSK	1	0	-	Back	12mm	Ant 13	DSI 4	38000	2595	23.09	24.00	1.233	62.9	1.006	-0.08	0.436	0.541
	LTE Band 38	20M	QPSK	1	0	-	Top Side	13mm	Ant 13	DSI 4	38000	2595	23.09	24.00	1.233	62.9	1.006	0.14	0.523	0.649
	LTE Band 38	20M	QPSK	50	0	-	Back	0mm	Ant 13	DSI 5	38000	2595	18.57	19.50	1.239	62.9	1.006	0.11	0.935	1.165
84	LTE Band 38	20M	QPSK	50	0	-	Top Side	0mm	Ant 13	DSI 5	38000	2595	18.57	19.50	1.239	62.9	1.006	0.18	0.975	**1.215**
	LTE Band 38C	20M	QPSK	50	0	-	Top Side	0mm	Ant 13	DSI 5	37901 +38099	2585.1 +2604.9	17.95	19.50	1.429	62.9	1.006	0.18	0.817	1.174
	LTE Band 38	20M	QPSK	50	0	-	Back	12mm	Ant 13	DSI 4	38000	2595	22.56	23.50	1.242	62.9	1.006	0.11	0.374	0.467
	LTE Band 38	20M	QPSK	50	0	-	Top Side	13mm	Ant 13	DSI 4	38000	2595	22.56	23.50	1.242	62.9	1.006	-0.06	0.451	0.563
	LTE Band 41	20M	QPSK	1	0	-	Back	0mm	Ant 13	DSI 5	40620	2593	18.61	19.50	1.227	62.9	1.006	-0.15	0.983	1.214
	LTE Band 41	20M	QPSK	1	0	-	Top Side	0mm	Ant 13	DSI 5	40620	2593	18.61	19.50	1.227	62.9	1.006	-0.06	0.976	1.205
	LTE Band 41	20M	QPSK	1	0	-	Back	12mm	Ant 13	DSI 4	40620	2593	23.21	24.00	1.199	62.9	1.006	0.16	0.436	0.526
	LTE Band 41	20M	QPSK	1	0	-	Top Side	13mm	Ant 13	DSI 4	40620	2593	23.21	24.00	1.199	62.9	1.006	0.18	0.533	0.643
	LTE Band 41	20M	QPSK	50	0	-	Back	0mm	Ant 13	DSI 5	40620	2593	18.59	19.50	1.233	62.9	1.006	-0.13	0.981	1.217
85	LTE Band 41	20M	QPSK	50	0	-	Top Side	0mm	Ant 13	DSI 5	40620	2593	18.59	19.50	1.233	62.9	1.006	-0.03	1.000	**1.241**
	LTE Band 41C	20M	QPSK	50	0	-	Top Side	0mm	Ant 13	DSI 5	40620 +40422	2593 +2573.2	18.22	19.50	1.343	62.9	1.006	-0.03	0.840	1.135
	LTE Band 41	20M	QPSK	50	0	-	Back	12mm	Ant 13	DSI 4	40620	2593	22.63	23.50	1.222	62.9	1.006	-0.09	0.370	0.455
	LTE Band 41	20M	QPSK	50	0	-	Top Side	13mm	Ant 13	DSI 4	40620	2593	22.63	23.50	1.222	62.9	1.006	-0.16	0.450	0.553
	FR1 n7	40M	QPSK	1	1	DFT-15	Back	0mm	Ant 13	DSI 5	507000	2535	16.09	17.00	1.233	-	-	0.06	1.040	1.282
	FR1 n7	40M	QPSK	1	1	DFT-15	Top Side	0mm	Ant 13	DSI 5	507000	2535	16.09	17.00	1.233	-	-	-0.13	1.050	1.295
	FR1 n7	40M	QPSK	1	1	DFT-15	Back	12mm	Ant 13	DSI 4	507000	2535	20.11	21.00	1.227	-	-	-0.01	0.378	0.464
	FR1 n7	40M	QPSK	1	1	DFT-15	Top Side	13mm	Ant 13	DSI 4	507000	2535	20.11	21.00	1.227	-	-	-0.09	0.458	0.562
	FR1 n7	40M	QPSK	108	54	DFT-15	Back	0mm	Ant 13	DSI 5	507000	2535	16.01	17.00	1.256	-	-	0.03	0.987	1.240
	FR1 n7	40M	QPSK	108	54	DFT-15	Top Side	0mm	Ant 13	DSI 5	507000	2535	16.01	17.00	1.256	-	-	-0.06	0.997	1.252
86	FR1 n7	40M	QPSK	1	1	DFT-15	Left Side	0mm	Ant 11	DSI 5	507000	2535	18.89	20.00	1.291	-	-	-0.1	1.540	**1.988**
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Side	9mm	Ant 11	DSI 4	507000	2535	22.65	24.00	1.365	-	-	0.09	0.688	0.939
	FR1 n7	40M	QPSK	108	54	DFT-15	Left Side	0mm	Ant 11	DSI 5	507000	2535	18.79	20.00	1.321	-	-	0.08	1.430	1.889
	FR1 n38	40M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 13	DSI 5	519000	2595	16.60	17.50	1.230	-	-	0.08	1.070	1.316

	FR1 n38	40M	QPSK	1	1	DFT-30	Top Side	13mm	Ant 13	DSI 4	519000	2595	23.45	24.50	1.274	-	-	0.04	0.800	1.019
	FR1 n38	40M	QPSK	50	28	DFT-30	Top Side	0mm	Ant 13	DSI 5	519000	2595	16.55	17.50	1.245	-	-	-0.03	0.971	1.208
87	FR1 n38	40M	QPSK	1	1	DFT-30	Left Side	0mm	Ant 11	DSI 5	519000	2595	19.47	20.50	1.268	-	-	0.15	1.540	**1.952**
	FR1 n38	40M	QPSK	1	1	DFT-30	Left Side	9mm	Ant 11	DSI 4	519000	2595	23.32	24.50	1.312	-	-	0.06	0.857	1.125
	FR1 n38	40M	QPSK	50	28	DFT-30	Left Side	0mm	Ant 11	DSI 5	519000	2595	19.39	20.50	1.291	-	-	0.13	1.430	1.846
	FR1 n41	100M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 13	DSI 5	518598	2592.99	16.63	17.50	1.222	-	-	-0.11	1.050	1.283
	FR1 n41	100M	QPSK	1	1	DFT-30	Top Side	13mm	Ant 13	DSI 4	518598	2592.99	23.85	25.00	1.303	-	-	0.08	0.991	1.291
	FR1 n41	100M	QPSK	135	69	DFT-30	Top Side	0mm	Ant 13	DSI 5	518598	2592.99	16.54	17.50	1.247	-	-	-0.12	0.995	1.241
88	FR1 n41	100M	QPSK	1	1	DFT-30	Left Side	0mm	Ant 11	DSI 5	518598	2592.99	19.55	20.50	1.245	-	-	0.09	1.480	**1.842**
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Side	9mm	Ant 11	DSI 4	518598	2592.99	23.65	25.00	1.365	-	-	0.12	0.860	1.174
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Side	0mm	Ant 11	DSI 5	518598	2592.99	19.48	20.50	1.265	-	-	-0.11	1.340	1.695
	FR1 n41	100M	QPSK	270	0	DFT-30	Left Side	0mm	Ant 11	DSI 5	518598	2592.99	19.43	20.50	1.279	-	-	0.08	1.310	1.676
3500MHz																				
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Side	0mm	Ant 11	DSI 5	633332	3499.98	18.92	20.00	1.282	-	-	-0.16	1.340	1.718
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Side	9mm	Ant 11	DSI 4	633332	3499.98	22.47	23.50	1.268	-	-	-0.02	0.639	0.810
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Side	0mm	Ant 11	DSI 5	633332	3499.98	18.81	20.00	1.315	-	-	0.09	1.290	1.697
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Side	0mm	Ant 11	DSI 5	656000	3840	18.95	20.00	1.274	-	-	0.11	1.180	1.503
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Side	9mm	Ant 11	DSI 4	656000	3840	22.53	23.50	1.250	-	-	-0.03	0.452	0.565
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Side	0mm	Ant 11	DSI 5	656000	3840	18.84	20.00	1.306	-	-	0.04	1.140	1.489
89	FR1 n77	100M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 21	DSI 4	633332	3499.98	17.94	18.50	1.138	-	-	0.04	2.400	**2.730**
	FR1 n77	100M	QPSK	135	69	DFT-30	Top Side	0mm	Ant 21	DSI 4	633332	3499.98	17.92	18.50	1.143	-	-	0.14	2.210	2.526
	FR1 n77	100M	QPSK	270	0	DFT-30	Top Side	0mm	Ant 21	DSI 4	633332	3499.98	17.85	18.50	1.161	-	-	-0.13	2.220	2.578
	FR1 n77	100M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 21	DSI 8	633332	3499.98	14.81	15.50	1.172	-	-	-0.09	1.190	1.395
	FR1 n77	100M	QPSK	135	69	DFT-30	Top Side	0mm	Ant 21	DSI 8	633332	3499.98	14.76	15.50	1.186	-	-	0.03	1.130	1.340
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	0mm	Ant 11	DSI 5	633332	3499.98	18.56	20.00	1.393	-	-	0.11	1.880	2.619
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Side	0mm	Ant 11	DSI 5	633332	3499.98	18.56	20.00	1.393	-	-	-0.09	1.380	1.923
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	12mm	Ant 11	DSI 4	633332	3499.98	22.17	23.50	1.358	-	-	0.12	0.161	0.219
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Side	9mm	Ant 11	DSI 4	633332	3499.98	22.17	23.50	1.358	-	-	-0.05	0.315	0.428
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	0mm	Ant 11	DSI 5	633332	3499.98	18.51	20.00	1.409	-	-	-0.04	1.660	2.339
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Side	0mm	Ant 11	DSI 5	633332	3499.98	18.51	20.00	1.409	-	-	-0.18	1.350	1.903
	FR1 n78-PC2	100M	QPSK	270	0	DFT-30	Back	0mm	Ant 11	DSI 5	633332	3499.98	18.42	20.00	1.439	-	-	-0.1	1.640	2.360
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Side	0mm	Ant 11	DSI 5	650000	3750	18.72	20.00	1.343	-	-	-0.09	1.170	1.571
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Left Side	9mm	Ant 11	DSI 4	650000	3750	22.26	23.50	1.330	-	-	0.16	0.254	0.338
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Left Side	0mm	Ant 11	DSI 5	650000	3750	18.65	20.00	1.365	-	-	0	1.080	1.474
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	0mm	Ant 21	DSI 4	633332	3499.98	20.10	21.00	1.230	-	-	-0.14	1.670	2.055
90	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 21	DSI 4	633332	3499.98	20.10	21.00	1.230	-	-	-0.02	2.240	**2.756**
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	0mm	Ant 21	DSI 4	633332	3499.98	20.09	21.00	1.233	-	-	0.14	1.610	1.985
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Top Side	0mm	Ant 21	DSI 4	633332	3499.98	20.09	21.00	1.233	-	-	-0.15	2.150	2.651
	FR1 n78-PC2	100M	QPSK	270	0	DFT-30	Back	0mm	Ant 21	DSI 4	633332	3499.98	20.06	21.00	1.242	-	-	-0.07	1.600	1.987
	FR1 n78-PC2	100M	QPSK	270	0	DFT-30	Top Side	0mm	Ant 21	DSI 4	633332	3499.98	20.06	21.00	1.242	-	-	-0.15	2.080	2.583
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Back	0mm	Ant 21	DSI 8	633332	3499.98	18.95	20.00	1.274	-	-	0.06	1.320	1.681
	FR1 n78-PC2	100M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 21	DSI 8	633332	3499.98	18.95	20.00	1.274	-	-	-0.09	1.760	2.241
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Back	0mm	Ant 21	DSI 8	633332	3499.98	18.85	20.00	1.303	-	-	0.08	1.290	1.681
	FR1 n78-PC2	100M	QPSK	135	69	DFT-30	Top Side	0mm	Ant 21	DSI 8	633332	3499.98	18.85	20.00	1.303	-	-	0.01	1.750	2.281
	FR1 n78-PC2	100M	QPSK	270	0	DFT-30	Top Side	0mm	Ant 21	DSI 8	633332	3499.98	18.80	20.00	1.318	-	-	0.06	1.690	2.228

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	802.11ac-VHT80 MCS0	Front	0mm	Ant 22	Standalone	58	5290	15.41	16.50	1.285	92.35	1.083	-0.01	0.522	0.727
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Back	0mm	Ant 22	Standalone	58	5290	15.41	16.50	1.285	92.35	1.083	0	0.839	1.168
91	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Ant 22	Standalone	58	5290	15.41	16.50	1.285	92.35	1.083	0.14	1.390	**1.935**
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Top Side	0mm	Ant 22	Standalone	58	5290	15.41	16.50	1.285	92.35	1.083	0.05	1.030	1.434
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Front	0mm	Ant 22	Simultaneous	58	5290	14.32	15.00	1.171	92.35	1.083	0.04	0.417	0.529
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Back	0mm	Ant 22	Simultaneous	58	5290	14.32	15.00	1.171	92.35	1.083	0.05	0.669	0.848
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Ant 22	Simultaneous	58	5290	14.32	15.00	1.171	92.35	1.083	0.04	1.130	1.433
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Top Side	0mm	Ant 22	Simultaneous	58	5290	14.32	15.00	1.171	92.35	1.083	0.04	0.820	1.040
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	0mm	Ant 22	Standalone	106	5530	14.32	15.00	1.171	92.35	1.083	0.18	0.362	0.459
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	0mm	Ant 22	Standalone	106	5530	14.32	15.00	1.171	92.35	1.083	-0.18	0.639	0.810
92	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Ant 22	Standalone	106	5530	14.32	15.00	1.171	92.35	1.083	-0.05	0.782	**0.991**
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Top Side	0mm	Ant 22	Standalone	106	5530	14.32	15.00	1.171	92.35	1.083	0.15	0.297	0.377

16.5 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	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 13	DSI 2	1513	1752.6	18.39	19.00	1.151	-	-	-0.04	0.862	1	0.992
2nd	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 13	DSI 2	1513	1752.6	18.39	19.00	1.151	-	-	0.01	0.858	1.005	0.987
1st	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Right Tilted	0mm	Ant 13	DSI 2	810	1909.8	24.70	25.50	1.202	-	-	-0.15	0.822	1	0.988
2nd	GSM1900	-	-	-	-	GPRS(2 Tx slots)	Right Tilted	0mm	Ant 13	DSI 2	810	1909.8	24.70	25.50	1.202	-	-	0.01	0.815	1.009	0.980
1st	FR1 n41	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 11	DSI 2	518598	2592.99	21.29	22.00	1.178	-	-	-0.01	0.842	1	0.992
2nd	FR1 n41	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 11	DSI 2	518598	2592.99	21.29	22.00	1.178	-	-	0.09	0.836	1.007	0.984
1st	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 12	DSI 2	633332	3499.98	18.39	19.00	1.151	-	-	-0.13	0.819	1	0.943
2nd	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 12	DSI 2	633332	3499.98	18.39	19.00	1.151	-	-	0.09	0.804	1.019	0.925

<10g>

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 10g SAR (W/kg)	Ratio	Reported 10g SAR (W/kg)
1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	0mm	Ant 13	DSI 5	9538	1907.6	20.46	21.00	1.132	-	-	-0.07	2.030	1	2.299
2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	0mm	Ant 13	DSI 5	9538	1907.6	20.46	21.00	1.132	-	-	-0.01	2.010	1.010	2.276
1st	FR1 n77	100M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 21	DSI 4	633332	3499.98	17.94	18.50	1.138	-	-	0.04	2.400	1	2.730
2nd	FR1 n77	100M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 21	DSI 4	633332	3499.98	17.94	18.50	1.138	-	-	0.01	2.340	1.026	2.662

General Note:

1 Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.

2 Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR <1.45W/kg, only one repeated measurement is required.

3 Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.

4 The ratio is the difference in percentage between original and repeated *measured SAR*.

5 All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

17. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Portable Handset			
		Head	Body-worn	Hotspot	Product specific 10g SAR
1.	WWAN + WLAN2.4GHz	Yes	Yes	Yes	Yes
2.	WWAN + WLAN5GHz	Yes	Yes	Yes	Yes
3.	WWAN + Bluetooth	Yes	Yes	Yes	Yes
4.	WLAN5GHz+ Bluetooth	Yes	Yes	Yes	Yes
5.	WWAN + WLAN5GHz+ Bluetooth	Yes	Yes	Yes	Yes

General Note:

1. This device supports VoIP in GPRS, EGPRS, WCDMA, LTE and 5GNR (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
2. WWAN above includes 5G NR bands and EN-DC combination.
3. EUT will choose each GSM, WCDMA, LTE and 5GNR according to the network signal condition; therefore, they will not operate simultaneously at any moment.
4. For EN-DC mode, Qualcomm Smart Transmit algorithm in WWAN adds directly the time-averaged RF exposure from 4G(LTE) and time-averaged RF exposure from 5G NR. Smart Transmit algorithm controls the total RF exposure from both 4G and 5G NR to not exceed FCC limit. Therefore, simultaneous transmission compliance between 4G+5G NR operation is demonstrated in the Part 2 Report during algorithm validation. In Part 1 Report, simultaneous transmission compliance was evaluated individually with other Radios (WLAN or BT) using one of 4G or 5G NR.
5. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.
6. This device 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). WLAN6GHz has no hotspot function.
7. The worst case 5 GHz WLAN SAR for each configuration was used for SAR summation.
8. According to the EUT characteristic, WLAN 2.4GHz and Bluetooth cannot transmit simultaneously.
9. According to the EUT characteristic, WLAN 5GHz and Bluetooth can transmit simultaneously.
10. According to the EUT characteristic, WLAN 5GHz and WLAN 2.4GHz cannot transmit simultaneously.
11. When stand-alone SAR is not required for a transmitter or antenna, its SAR is considered zero in the SAR summing process to assess Multi-band transmission SAR compliance.
12. The maximum SAR summation is calculated based on the same configuration and test position.
13. For standalone WWAN, always choose the highest SAR among all WWAN bands within all antennas for each exposure position to perform simultaneous transmission analysis with WLAN/BT. This is the worst co-located analysis and can represent each bands.
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.

17.1 5G NR + LTE + WLAN + BT Sim-Tx analysis

In 5G NR + LTE + WLAN + BT simultaneous transmission, 5G NR and LTE transmission are managed and controlled by Qualcomm® Smart Transmit, while the RF exposure from WLAN and BT radios is managed using legacy approach, i.e., through a fixed power back-off if needed.

Since WLAN and BT do not employ time-averaging, 1gSAR and 10gSAR measurement for WLAN and BT need to be conducted at their corresponding rated power following current FCC test procedures to determine reported SAR values.

Smart Transmit current implementation assumes hotspots from 5G NR and LTE are collocated. Therefore, for a total of 100% exposure margin, if LTE uses x%, then the exposure margin left for 5G NR is capped to (100-x)%. Thus, the compliance equation for LTE + 5G NR is

$x\% * A + (100-x)\% * B \leq 1.0,$

Where, A is normalized reported time-averaged SAR exposure ratio from LTE, and A ≤ 1.0; B is normalized reported time-averaged exposure ratio from 5G NR (i.e. SAR exposure for 5G FR1), and B ≤1.0.

Let C = normalized reported SAR exposure ratio from WLAN+BT, then for compliance,

$x\% * A + (100-x)\% * B + C \leq 1.0$ (1)

$x\% * A + (100-x)\% * B \leq x\% * \max(A, B) + (100-x)\% * \max(A, B) \leq \max(A, B)$

$x\% * A + (100-x)\% * B + C \leq \max(A, B) + C \leq 1.0$ (2)

If A + C ≤ 1.0 and B + C ≤ 1.0 can be proven, then “x% * A + (100-x)% * B + C ≤ 1.0”. Therefore simultaneous transmission analysis for 5G NR + LTE + WLAN + BT can be performed in two steps

Step 1: Prove total exposure ratio (TER) of LTE + WLAN + BT < 1
Step 2: Prove total exposure ratio (TER) of 5G NR + WLAN + BT < 1

Else, if A + C > 1.0 and/or B + C > 1.0, then the followings need to hold true for compliance:
i. A and C are decoupled based on the SPLSR criteria, and
ii. (100-x)% * B + C ≤ 1.0, and
iii. x% * A + (100-x)% * B ≤ 1.0
Note iii. is covered in Part 2 report; i. and ii. should be addressed in Part 2 report.

Above analysis is also apply to LTE inter-band uplink CA, LTE1 + LTE2 + WLAN + BT simultaneous transmission, so inter-band uplink CA no need to do additional simultaneously analysis again. Only required comply with total exposure ratio (TER) of LTE + WLAN + BT < 1.

17.2 Head Exposure Conditions

WWAN Band	Exposure Position	1	3	4	5	1+3	1+4+5
		WWAN	WLAN2.4GHz Ant 22	WLAN5GHz Ant 22	Bluetooth Ant 22	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
All Bands	Right Cheek	0.992	0.252	0.214	0.070	1.24	1.28
	Right Tilted	0.993	0.260	0.266	0.074	**1.25**	1.33
	Left Cheek	0.560	0.575	0.599	0.213	1.14	1.37
	Left Tilted	0.645	0.370	0.625	0.101	1.02	1.37

17.3 Hotspot Exposure Conditions

WWAN Band	Exposure Position	1	3	4	5	1+3	1+4+5
		WWAN	WLAN2.4GHz Ant 22	WLAN5GHz Ant 22	Bluetooth Ant 22	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
All Bands	Front	0.452	0.236	0.269	0.083	0.69	0.80
	Back	0.777	0.456	0.428	0.138	1.23	1.34
	Left side	0.622				0.62	0.62
	Right side	0.345	0.276	0.564	0.080	0.62	0.99
	Top side	0.781	0.269	0.535	0.074	1.05	1.39
	Bottom side	0.774				0.77	0.77

17.4 Body-Worn Accessory Exposure Conditions

WWAN Band	Exposure Position	1	3	4	5	1+3	1+4+5
		WWAN	WLAN2.4GHz Ant 22	WLAN5GHz Ant 22	Bluetooth Ant 22	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
All Bands	Front	0.371	0.146	0.120	0.032	0.52	0.52
	Back	0.920	0.194	0.413	0.060	1.11	**1.39**

17.5 Product specific 10g SAR Exposure Conditions

Remark:

1. For WLAN2.4GHz/Bluetooth Product specific 10g stand-alone SAR is not required for a transmitter or antenna, due to 1g hotspot SAR is <1.2W/kg.

WWAN Band	Exposure Position	1	3	4	5	1+3	1+4+5
		WWAN	WLAN2.4GHz Ant 22	WLAN5GHz Ant 22	Bluetooth Ant 22	Summed	Summed
		10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)
All Bands	Front			0.529		0.00	0.53
	Back	2.619		0.848		2.62	**3.47**
	Left side	2.720				**2.72**	2.72
	Right side			1.433		0.00	1.43
	Top side	2.376		1.040		2.38	3.42
	Bottom side					0.00	0.00

Test Engineer : Hank Huang, Kevin Xu, David Dai, Bin He

18. 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.

19. 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 648474 D04 v01r03, “SAR Evaluation Considerations for Wireless Handsets”, Oct 2015.

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

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

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

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

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

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

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

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