

FCC SAR Test Report

APPLICANT : Motorola Mobility LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola
MODEL NAME : XT2245-1
FCC ID : IHDT56AF9
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.



Approved by: Si Zhang

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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 13
5. Smart Transmit feature for RF Exposure compliance 15
6. Proximity Sensor Triggering Test 17
7. RF Exposure Limits 19
7.1 Uncontrolled Environment 19
7.2 Controlled Environment 19
8. Specific Absorption Rate (SAR) 20
8.1 Introduction 20
8.2 SAR Definition 20
9. System Description and Setup 21
9.1 E-Field Probe 22
9.2 Data Acquisition Electronics (DAE) 22
9.3 Phantom 23
9.4 Device Holder 24
10. Measurement Procedures 25
10.1 Spatial Peak SAR Evaluation 25
10.2 Power Reference Measurement 26
10.3 Area Scan 26
10.4 Zoom Scan 27
10.5 Volume Scan Procedures 27
10.6 Power Drift Monitoring 27
11. Test Equipment List 28
12. System Verification 29
12.1 Tissue Simulating Liquids 29
12.2 Tissue Verification 30
12.3 System Performance Check Results 31
13. RF Exposure Positions 33
13.1 Ear and handset reference point 33
13.2 Definition of the cheek position 34
13.3 Definition of the tilt position 35
13.4 Body Worn Accessory 36
13.5 Product Specific 10g SAR Exposure 37
13.6 Wireless Router 37
14. Conducted RF Output Power (Unit: dBm) 38
15. Antenna Location 53
16. SAR Test Results 54
16.1 Head SAR 57
16.2 Hotspot SAR 64
16.3 Body Worn Accessory SAR 71
16.4 Product specific 10g SAR 79
16.5 Repeated SAR Measurement 86
17. Simultaneous Transmission Analysis 87
17.1 5G NR + LTE + WLAN + BT Sim-Tx analysis 88
17.2 Head Exposure Conditions 89
17.3 Hotspot Exposure Conditions 92
17.4 Body-Worn Accessory Exposure Conditions 96
17.5 Product specific 10g SAR Exposure Conditions 99
17.6 SPLSR Evaluation and Analysis 103
18. Supplemental tuner tests results 105
18.1 Supplemental Tuner Head & Body SAR Results 105
19. Uncertainty Assessment 106
20. References 107
Appendix A. Plots of System Performance Check
Appendix B. Plots of High SAR Measurement
Appendix C. DASYS Calibration Certificate
Appendix D. Test Setup Photos

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Motorola Mobility LLC, Mobile Cellular Phone, XT2245-1**, are as follows.

Highest 1g SAR Summary						
Equipment Class	Frequency Band		Head (Separation 0mm)	Hotspot (Separation 5mm)	Body-worn (Separation 5mm)	Highest Simultaneous Transmission 1g SAR (W/kg)
			1g SAR (W/kg)			
Licensed	GSM	GSM850	0.20	1.01	1.01	1.59
		GSM1900	<0.10	0.95	1.13	
	WCDMA	WCDMA V	0.27	1.18	1.18	
		WCDMA IV	0.18	1.26	1.25	
		WCDMA II	0.10	1.23	1.24	
	LTE	LTE Band 12/17	<0.10	0.39	0.39	
		LTE Band 13	0.16	0.68	0.68	
		LTE Band 26/5	0.15	0.77	0.77	
		LTE Band 66/4	1.09	1.05	1.25	
		LTE Band 25/2	1.17	1.18	1.14	
		LTE Band 7	1.18	0.98	1.25	
		LTE Band 41/38	1.13	1.21	1.13	
		LTE Band 42	1.16	0.57	1.13	
	5G NR	FR1 n5	0.17	0.73	0.73	
		FR1 n66	0.18	1.18	1.19	
		FR1 n2	0.11	1.24	1.22	
		FR1 n7	1.16	1.14	1.25	
		FR1 n38	0.13	1.25	1.25	
FR1 n78		1.24	1.19	1.20		
DTS	WLAN	2.4GHz WLAN	1.44	0.70	1.32	1.54
NII		5GHz WLAN	1.20	0.44	1.12	1.59
DSS	Bluetooth	2.4GHz Bluetooth	0.28	0.25	0.22	1.59



Highest 10g SAR Summary				
Equipment Class	Frequency Band		Product Specific 10g SAR (W/kg) (Separation 0mm)	Highest Simultaneous Transmission 10g SAR (W/kg)
Licensed	GSM	GSM1900	3.06	3.64
		WCDMA	WCDMA V	
	WCDMA IV		3.15	
	WCDMA II		2.96	
	LTE	LTE Band 66/4	3.12	
		LTE Band 25/2	3.13	
		LTE Band 7	3.11	
		LTE Band 41/38	3.14	
		LTE Band 42	2.82	
		LTE Band 66/4	3.12	
	5G NR	FR1 n66	3.14	
		FR1 n2	3.14	
		FR1 n7	3.10	
		FR1 n38	3.05	
FR1 n78		3.07		
DTS	WLAN	2.4GHz WLAN	1.91	3.64
NII		5GHz WLAN	1.84	3.41
Date of Testing:			2022/6/23 ~ 2022/8/4	

Remark: This device supports LTE B2 / B4 / B5 / B17 / B38 and B25 / B66 / B26 / B12 / B41. Since the supported frequency span for LTE B2 / B4 / B5 / B17 / B38 falls completely within the supports frequency span for LTE B25 / 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 B25 / B66 / B26 / B12 / B41.

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	CN1256	421272

Applicant	
Company Name	Motorola Mobility LLC
Address	222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

Manufacturer	
Company Name	Motorola Mobility LLC
Address	222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

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 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
- FCC KDB 447498 D04 Interim General RF Exposure Guidance v01



4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2245-1
FCC ID	IHDT56AF9
IMEI Code	Sample1: 357398930011504 Sample2: IMEI 1 : 355222700019376 IMEI 2 : 355222700019384
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 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 42: 3450 MHz ~ 3550MHz 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 n38: 2570 MHz ~ 2620 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n78: 3450 MHz ~ 3550 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 ~ 5700 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC: 13.56 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+(16QAM uplink is not supported) LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR : CP-OFDM / DFT-s-OFDM, PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE NFC: ASK
HW Version	DVT2
SW Version	S3SSM32.29



GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype
Remark:	
<ol style="list-style-type: none"> 1. This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (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 supports GPRS/EGPRS mode up to multi-slot class 12. 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). 6. There are two different types of EUT. They are single SIM card mobile and dual SIM card mobile. The difference that is only SIM Slots, all the other are same. It is special to declare. After pre-scan two types of EUT, we found test result of the sample that single SIM was the worst, so we chose single SIM card mobile to perform all tests. 7. There are two samples, the different between them refer to the XT2245-1_Operational Description of Product Equality Declaration which is exhibit separately. According to the differences, we choose sample 1 to perform full SAR testing and sample 1 to verify the worst case of sample 2. 8. The device implements the power management and proximity sensor /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. Details about the power management decision and sensor detection are 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. 9. For WLAN when transmit simultaneous with WWAN, power reduction will be activated to head. For WLAN when transmit simultaneous with WWAN and Proximity sensors trigger, power reduction will be activated to body-worn and Handheld. 10. For some WWAN bands, sensor on reduced power level is higher than hotspot reduced power level, so front/back sensor on SAR can represent hotspot conservatively. 11. This device implements antenna tuning techniques for several WWAN (cellular) operating modes and frequencies for the purpose of improving antenna efficiency over a broad range of frequencies. Specifically, these techniques are employed in the WCDMA, LTE and 5G NR modes. In this report SAR was measured according to the normally required SAR configurations with the tuner active and worst tune state (auto tune) was used for SAR testing. The detail descriptions of the antenna tuner and supplemental data for additional information can be referred to section 18 and appendix F. 12. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission. 13. LTE band 38/41 and 5G NR n78 supports HPUE, HPUE power and SAR testing performed separately. 14. LTE band 38/41 and 5G NR n78 HUPE with higher power, LTE band 38/41 and 5G NR n78 HUPE SAR can represent power class 3 level SAR. 15. 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. 16. 5G NR NSA mode, the power level is the same as 5G NR SA mode, so 5G NR NSA mode and SA mode power table only show one time. 17. 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. 18. 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. 19. This device has NFC function and the NFC SAR report will be separately submitted. 20. This device supports 5G NR 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, 30, 40
	n38	TDD	30	20, 30, 40
	n78	TDD	30	20, 30, 40, 50, 60, 70, 80, 90, 100
SA	n7	FDD	15	5, 10, 15, 20, 25, 30, 40
	n66	FDD	15	5, 10, 15, 20, 30, 40
	n38	TDD	30	20, 30, 40
	n78	TDD	30	20, 30, 40, 50, 60, 70, 80, 90, 100

4.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05																																																															
FCC ID	IHDT56AF9																																																														
Equipment Name	Mobile Cellular Phone																																																														
Operating Frequency Range of each LTE transmission band	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 42: 3450 MHz ~ 3550MHz LTE Band 66: 1710 MHz ~ 1780 MHz																																																														
Channel Bandwidth	LTE Band 2: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 4: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 5: 1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 12: 1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 13: 5MHz, 10MHz LTE Band 17: 5MHz, 10MHz LTE Band 25: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 26: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 42: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz																																																														
uplink modulations used	QPSK / 16QAM / 64QAM / 256QAM																																																														
LTE Voice / Data requirements	Voice and Data																																																														
LTE Release Version	R15, Cat18																																																														
CA Support	Supported, Uplink and Downlink																																																														
LTE MPR permanently built-in by design	<p>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3</p> <table border="1"> <thead> <tr> <th rowspan="2">Modulation</th> <th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th> <th rowspan="2">MPR (dB)</th> </tr> <tr> <th>1.4 MHz</th> <th>3.0 MHz</th> <th>5 MHz</th> <th>10 MHz</th> <th>15 MHz</th> <th>20 MHz</th> </tr> </thead> <tbody> <tr> <td>QPSK</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 1</td> </tr> <tr> <td>16 QAM</td> <td>≤ 5</td> <td>≤ 4</td> <td>≤ 8</td> <td>≤ 12</td> <td>≤ 16</td> <td>≤ 18</td> <td>≤ 1</td> </tr> <tr> <td>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>≤ 2</td> </tr> <tr> <td>256 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></td> <td colspan="6" style="text-align: center;">≥ 1</td> <td>≤ 5</td> </tr> </tbody> </table>	Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1	16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1	64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2	64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2	256 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3		≥ 1						≤ 5
Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)																																																								
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	≥ 1						≤ 5																																																								
LTE A-MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)																																																														



Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.
Power reduction applied to satisfy SAR compliance	Yes, when operating in Proximity sensors/receiver/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.
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power verification please referred to section 14.
LTE Carrier Aggregation Additional Information	1. This device supports LTE Carrier Aggregation (CA) in the uplink for intra-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.

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)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829	20450	829	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844	20600	844	20600	844
LTE Band 7												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510	20850	2510	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560	21350	2560	21350	2560
LTE Band 12												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704	23060	704	23060	704
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5	23095	707.5	23095	707.5
H	23173	715.3	23165	714.5	23155	713.5	23130	711	23130	711	23130	711
LTE Band 13												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Freq.(MHz)		Channel #		Freq.(MHz)		Channel #		Freq.(MHz)	
L	23205		779.5		23230		782		23230		782	
M	23230		782		23230		782		23230		782	
H	23255		784.5		23230		782		23230		782	
LTE Band 17												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Freq.(MHz)		Channel #		Freq.(MHz)		Channel #		Freq.(MHz)	
L	23755		706.5		23780		709		23780		709	
M	23790		710		23790		710		23790		710	
H	23825		713.5		23800		711		23800		711	



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

LTE Band 26										
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz	
	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 42									
	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	42115	3452.5	42140	3455	42165	3457.5	42190	3460	
M	42590	3500	42590	3500	42590	3500	42590	3500	
H	43065	3547.5	43040	3545	43015	3542.5	42990	3540	

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

LTE Band 42									
	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	43115	3552.5	43140	3555	43165	3557.5	43190	3560	
M	43340	3575	43340	3575	43340	3575	43340	3575	
H	43565	3597.5	43540	3595	43515	3592.5	43490	3590	

<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 2	Yes	Yes	Yes	Yes	Yes	Yes
LTE Band 25	Yes	Yes	Yes	Yes	Yes	Yes
LTE Band 4	Yes	Yes	Yes	Yes	Yes	Yes
LTE Band 66	Yes	Yes	Yes	Yes	Yes	Yes
LTE Band 12	Yes	Yes	Yes	Yes		
LTE Band 17			Yes	Yes		
LTE Band 5	Yes	Yes	Yes	Yes		
LTE Band 26	Yes	Yes	Yes	Yes	Yes	
LTE Band 38			Yes	Yes	Yes	Yes
LTE Band 41			Yes	Yes	Yes	Yes

2) LTE Bands Tune up Limit

Band	Antenna	Head	Head	Body worn	Body worn&Hotspot	Extremity	Extremity	Default
		DSI2 (Standalone)	DSI2 (Simultaneous)	DSI3 (Standalone)	DSI3 (Simultaneous)	DSI6 (Standalone)	DSI6 (Simultaneous)	DSI4
		Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit
LTE Band 17	Ant 0	24	24	24	24	24	24	24
LTE Band 12	Ant 0	24	24	24	24	24	24	24
LTE Band 2	Ant 0	24	24	19.5	18	22.6	22.6	24
LTE Band 25	Ant 0	24	24	19.5	18	22.6	22.6	24
LTE Band 5	Ant 0	24	24	24	24	24	24	24
LTE Band 26	Ant 0	24	24	24	24	24	24	24
LTE Band 4	Ant 0	24	24	19.6	17	21.5	21.5	24
LTE Band 66	Ant 0	24	24	19.6	17	21.5	21.5	24
LTE Band 38	Ant 0	24	24	21.4	17.9	23.5	23.5	24
LTE Band 41	Ant 0	24	24	21.4	17.9	23.5	23.5	24
LTE Band 38(HPUE)	Ant 0	27	27	23	19.5	25.1	25.1	27
LTE Band 41(HPUE)	Ant 0	27	27	23	19.5	25.1	25.1	27

Band	Antenna	Head	Head	Body worn	Body worn&Hotspot	Extremity	Extremity	Default
		DSI2 (Standalone)	DSI2 (Simultaneous)	DSI3 (Standalone)	DSI3 (Simultaneous)	DSI6 (Standalone)	DSI6 (Simultaneous)	DSI4
		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 1	20.5	18.5	22.1	19	24	24	24
LTE Band 66	Ant 1	20.5	18.5	22.1	19	24	24	24



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 n38: 2570 MHz ~ 2620 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n78: 3450 MHz ~ 3550 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 B7/66
LTE Anchor Bands for n5	LTE B7
LTE Anchor Bands for n7	LTE B2/5/66
LTE Anchor Bands for n38	LTE B2/5/7
LTE Anchor Bands for n66	LTE B2/7
LTE Anchor Bands for n78	LTE B2/4/5/7/38/41/66

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

NR Band 38						
	Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	516000	2580	517002	2585.01	518004	2590.02
M	519000	2595	519000	2595	519000	2595
H	522000	2610	520998	2604.99	519996	2599.98



For <3450 MHz ~ 3550 MHz >

NR Band 78																		
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)	
L	630668	3460.02	631000	3465	631334	3470.01	631668	3475.02	632000	3480	632334	3485.01	632668	3490.02	633000	3495		
M	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01
H	636000	3540	635668	3535.02	635334	3530.01	635000	3525	634668	3520.02	634334	3515.01	634000	3510	633668	3505.02		

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.

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) to enable the Smart Transmit 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.

<SAR design target and uncertainty>

	Uncertainty dB (k=2)
Total uncertainty	1.5

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 (P_{limit} in EFS file)>

Band	Antenna	Head	Head	Body Worn	Body Worn&Hotspot	Extremity	Extremity	Body Worn&Extremity	Pmax*
		DSI 2 Standalone	DSI 2 Simultaneous	DSI 3 Standalone	DSI 3 Simultaneous	DSI6 Standalone	DSI6 Simultaneous	DSI4 (Sensor off)	
LTE Band 66/4	ANT 1	19.5	17.5	21.1	18.0	24.9	24.3	23.0	23.0
LTE Band 2	ANT 1	22.0	19.5	23.8	19.5	26.3	25.7	23.0	23.0
LTE Band 7	ANT 1	18.6	16.0	19.4	16.0	20.6	20.0	23.0	23.0
LTE Band 38(PC3)**	ANT 1	17.5	15.1	17.6	15.4	20.9	20.0	20.9	20.0
LTE Band 38(PC2)**	ANT 1	17.5	15.1	17.6	15.4	20.9	20.0	20.9	20.9
LTE Band 42	ANT 2	16.0	13.5	17.0	13.3	18.5	18.0	21.0	21.0
n7	ANT 1	18.5	16.0	19.5	16.0	21.0	20.5	23.0	23.0
n78(PC3)	ANT 2	18.5	16.0	20.0	16.0	20.0	19.5	26.0	23.0
n78(PC2)	ANT 2	18.5	16.0	20.0	16.0	20.0	19.5	26.0	26.0
n78(PC3)	ANT 4	18.5	16.0	17.0	11.5	17.5	17.5	17.5	23.0
n78(PC2)	ANT 4	18.5	16.0	17.0	11.5	17.5	17.5	17.5	26.0
n78(PC3)	ANT 5	18.0	15.5	21.0	18.0	23.0	22.5	26.0	23.0
n78(PC2)	ANT 5	18.0	15.5	21.0	18.0	23.0	22.5	26.0	26.0

Band	Antenna	Head	Head	Body Worn	Body Worn&Hotspot	Extremity	Extremity	Body Worn&Extremity	Pmax*
		DSI 2 Standalone	DSI 2 Simultaneous	DSI 3 Standalone	DSI 3 Simultaneous	DSI6 Standalone	DSI6 Simultaneous	DSI4 (Sensor off)	
GSM850(4 Tx slots)**	ANT 0	32.5	32.5	25.5	25.5	24.5	24.5	24.5	24.5
GSM1900(4 Tx slots)**	ANT 0	34.6	34.6	19.2	16.2	20.5	20.5	22.0	22.0
WCDMA V	ANT 0	29.7	29.7	23.3	23.3	24.8	24.8	23.0	23.0
WCDMA IV	ANT 0	31.4	31.4	18.8	17.0	20.0	20.0	23.0	23.0
WCDMA II	ANT 0	34.2	34.2	19.0	17.0	21.0	21.0	23.0	23.0
LTE Band 12/17	ANT 0	34.6	34.6	28.1	28.1	23.0	23.0	23.0	23.0
LTE Band 13	ANT 0	32.0	32.0	25.7	25.7	23.0	23.0	23.0	23.0
LTE Band 26/5	ANT 0	32.3	32.3	25.1	25.1	23.0	23.0	23.0	23.0
LTE Band 66/4	ANT 0	30.0	30.0	18.6	16.0	20.5	20.5	23.0	23.0
LTE Band 25/2	ANT 0	34.9	34.9	18.5	17.0	21.6	21.6	23.0	23.0
LTE Band 7	ANT 0	33.5	33.5	18.2	15.0	20.9	20.9	23.0	23.0
LTE Band 41/38(PC3)**	ANT 0	35.5	35.5	18.4	14.9	20.5	20.5	22.4	21.0
LTE Band 41/38(PC2)**	ANT 0	35.5	35.5	18.4	14.9	20.5	20.5	22.4	22.4
n5	ANT 0	31.8	31.8	25.4	25.4	23.0	23.0	23.0	23.0
n66	ANT 0	31.4	31.4	18.5	16.5	20.5	20.5	23.0	23.0
n2	ANT 0	33.6	33.6	18.5	17.0	21.0	21.0	23.0	23.0
n7	ANT 0	33.4	33.4	18.0	15.5	21.0	21.0	23.0	23.0
n38	ANT 0	33.0	33.0	18.5	15.5	21.5	21.5	23.0	23.0
n78(PC3)	ANT 7	30.4	30.4	19.5	19.5	21.5	21.5	21.5	23.0
n78(PC2)	ANT 7	30.4	30.4	19.5	19.5	21.5	21.5	21.5	24.0

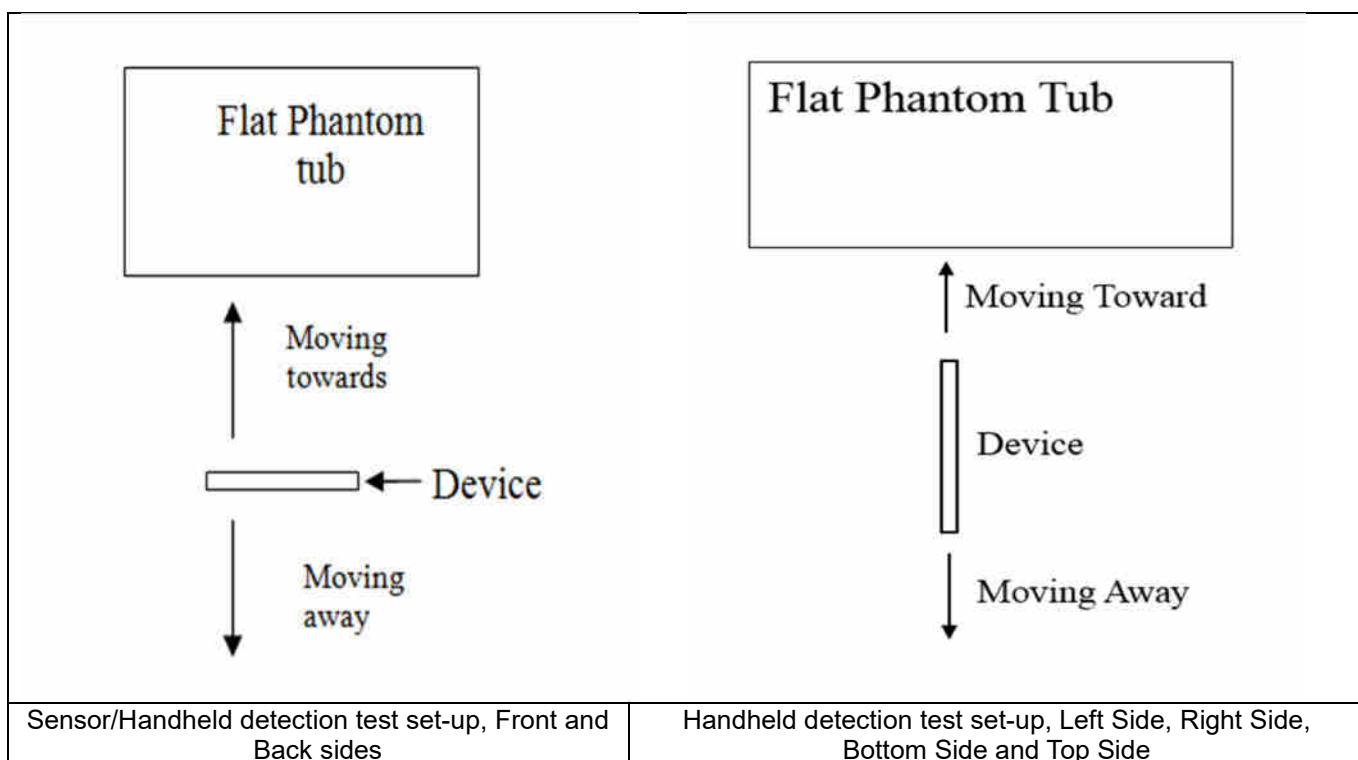
Note:

- 1) *P_{max} is used for RF tune up procedure. The maximum allowed output power is equal to Pmax + 1.0 dB device 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).
- 3) The max allowed output power is the P_{limit} + 1.0 dB device uncertainty, and if P_{limit} is higher than Pmax, the device output power will be Pmax instead.
- 4) LTE B 2/66 ant 1 only for EN-DC combination and inter-band uplink CA, and LTE B4 ant 1 only for inter-band uplink CA.

6. Proximity Sensor Triggering Test

<Proximity Sensor Triggering Distance>:

1. Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed and the tissue-equivalent medium for highest frequency (5825MHz) and lowest (750MHz) frequency was used for proximity sensor triggering testing.
2. Capacitive proximity sensors placed coincident with antenna elements at the top and bottom ends of the phone are utilized to determine when the device comes in proximity of the user's body at the front or back of the device.
3. The output power will reduce to body worn power level when top and bottom sensor pad be detected.
4. The sensors used to detect the proximity of the user's body at the front or back surface of the device use a detection threshold distance. The data shown in the sections below shows the distance(s). When front or back body worn condition is detected reduced power will be active.
5. The device employs proximity sensors also can detect the presence of the user's a finger or hand when handheld state at the front/back/top/bottom/left/right sides of the device. When front/back/top/bottom/left/right sides of handheld condition is detected reduced power will be active.
6. 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:



<P-Sensor>

Proximity Sensor Triggering Distance (mm)				
Position	Front		Back	
	Moving towards	Moving away	Moving towards	Moving away
Minimum	15	19	20	25

<Handheld for ANT0>

Proximity Sensor Triggering Distance (mm)						
Position	Front		Back		Bottom Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	8	12	10	14	13	17

<Handheld for ANT 1>

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Left Side		Top Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	7	10	14	17	8	11	10	11

<Handheld for ANT 2>

Proximity Sensor Triggering Distance (mm)						
Position	Front		Back		Left Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	5	8	8	12	13	16

<Handheld for ANT 3>

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Right Side		Top Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	6	8	7	10	7	10	8	11

<Handheld for ANT 5>

Proximity Sensor Triggering Distance (mm)						
Position	Front		Back		Right Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	5	8	6	8	11	15

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:

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

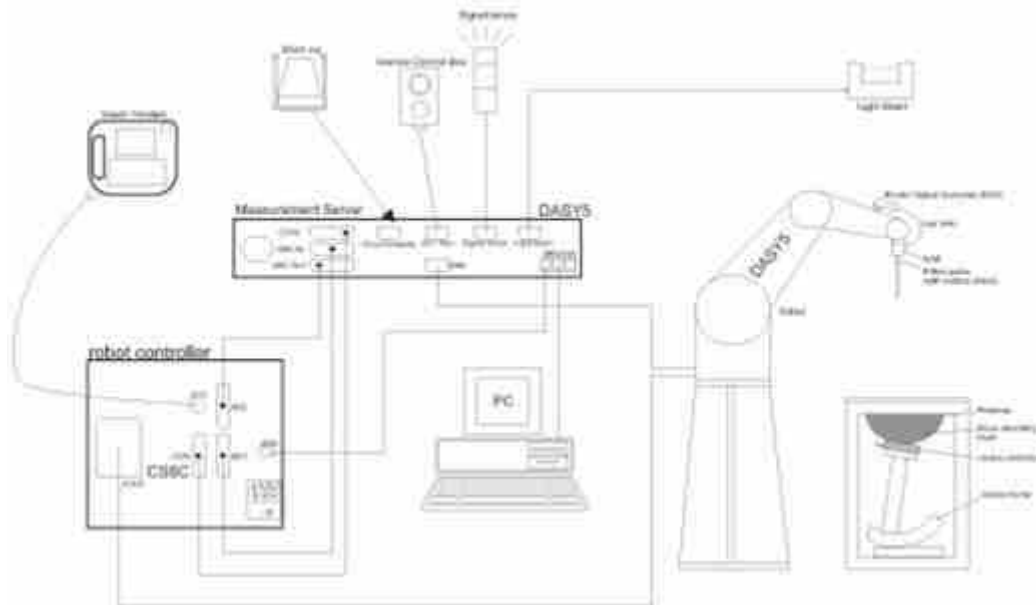
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

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 Win10 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

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

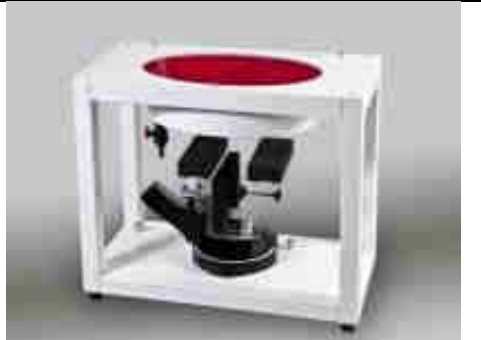
9.3 Phantom

<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 in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

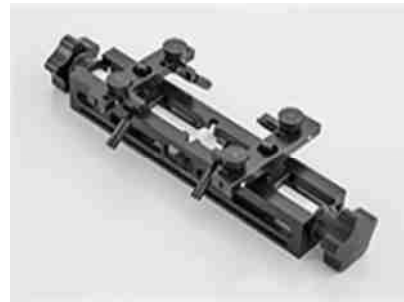
9.4 Device Holder

<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 from the measurement grid to the high-resolution grid
- (e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
- (f) Calculation of the averaged SAR within masses of 1g and 10g

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

10.5 Volume Scan Procedures

The volume scan is used to 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. 14, 2022
SPEAG	835MHz System Validation Kit	D835V2	4d162	Dec. 17, 2021	Dec. 16, 2022
SPEAG	1750MHz System Validation Kit	D1750V2	1137	Oct. 19, 2021	Oct. 18, 2022
SPEAG	1900MHz System Validation Kit	D1900V2	5d182	Dec. 20, 2021	Dec. 19, 2022
SPEAG	2450MHz System Validation Kit	D2450V2	924	Sep. 02, 2020	Sep. 01, 2023
SPEAG	2600MHz System Validation Kit	D2600V2	1070	Dec. 20, 2021	Dec. 19, 2022
SPEAG	3500MHz System Validation Kit	D3500V2	1076	May. 09, 2022	May. 08, 2023
SPEAG	3700MHz System Validation Kit	D3700V2	1037	May. 09, 2022	May. 08, 2023
SPEAG	5000MHz System Validation Kit	D5GHzV2	1341	Dec. 13, 2021	Dec. 12, 2022
SPEAG	Data Acquisition Electronics	DAE4	1210	Apr. 12, 2022	Apr. 11, 2023
SPEAG	Dosimetric E-Field Probe	EX3DV4	7641	Apr. 11, 2022	Apr. 10, 2023
SPEAG	SAM Twin Phantom	QD 000 P40 CD	1670	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio communication analyzer	MT8820C	6201563813	Dec. 28, 2021	Dec. 27, 2022
Anritsu	Radio communication analyzer	MT8821C	6272416837	Apr. 06, 2022	Apr. 05, 2023
Keysight	Network Analyzer	E5071C	MY46523671	Oct. 25, 2021	Oct. 24, 2022
Speag	Dielectric Assessment KIT	DAK-3.5	1071	Jan. 24, 2022	Jan. 23, 2023
Agilent	Signal Generator	N5181A	MY50145381	Dec. 28, 2021	Dec. 27, 2022
Anritsu	Power Sensor	MA2411B	1306099	Sep. 29, 2021	Sep. 28, 2022
Anritsu	Power Meter	ML2495A	1349001	Sep. 29, 2021	Sep. 28, 2022
Anritsu	Power Sensor	MA2411B	1542004	Dec. 28, 2021	Dec. 27, 2022
Anritsu	Power Meter	ML2495A	1339473	Dec. 28, 2021	Dec. 27, 2022
R&S	CBT BLUETOOTH TESTER	CBT	100963	Dec. 28, 2021	Dec. 27, 2022
EXA	Spectrum Analyzer	FSV7	101631	Oct. 14, 2021	Oct. 13, 2022
FLUKE	DIGTIAC THERMOMETER	51II	97240029	Oct. 23, 2021	Oct. 22, 2022
Anymetre	Thermo-Hygrometer	JR593	2015030903	Dec. 30, 2021	Dec. 29, 2022
ARRA	Power Divider	A3200-2	N/A	Note 1	
Weinschel	Attenuator 1	3M-10	N/A	Note 1	
Weinschel	Attenuator 2	3M-20	N/A	Note 1	
AR	Amplifier	5S1G4	0333096	Note 1	
mini-circuits	Amplifier	ZVE-3W-83+	599201528	Note 1	
ET Industries	Dual Directional Coupler	C-058-10	N/A	Note 1	

Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check.
2. Referring to KDB 865664 D01v01r04, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
3. The justification data of dipole can be found in appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.

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

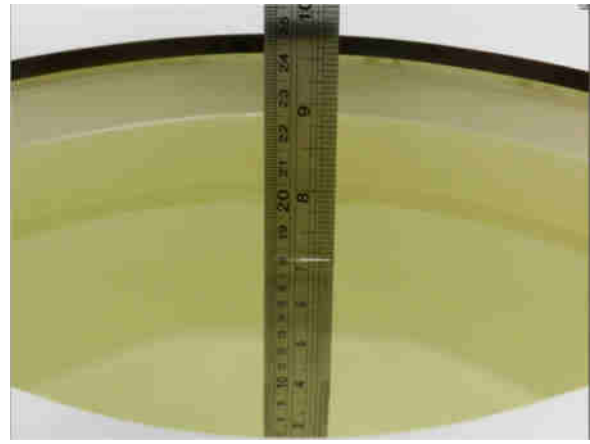


Fig 11.2 Photo of Liquid Height for Body SAR



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 (ε _r)
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. (°C)	Conductivity (σ)	Permittivity (ε _r)	Conductivity Target (σ)	Permittivity Target (ε _r)	Delta (σ) (%)	Delta (ε _r) (%)	Limit (%)	Date
750	Head	22.1	0.885	40.799	0.89	41.90	-0.56	-2.63	±5	2022/6/23
750	Head	22.6	0.879	40.957	0.89	41.90	-1.24	-2.25	±5	2022/7/6
835	Head	22.1	0.911	42.404	0.90	41.50	1.22	2.18	±5	2022/6/24
835	Head	22.6	0.897	41.605	0.90	41.50	-0.33	0.25	±5	2022/7/7
1750	Head	22.7	1.378	40.204	1.37	40.10	0.58	0.26	±5	2022/6/25
1750	Head	22.5	1.355	38.395	1.37	40.10	-1.09	-4.25	±5	2022/7/8
1900	Head	22.3	1.402	40.459	1.40	40.00	0.14	1.15	±5	2022/6/26
1900	Head	22.1	1.416	41.125	1.40	40.00	1.14	2.81	±5	2022/7/9
2450	Head	22.4	1.856	37.685	1.80	39.20	3.11	-3.86	±5	2022/6/26
2450	Head	22.2	1.878	40.464	1.80	39.20	4.33	3.22	±5	2022/7/15
2600	Head	22.2	1.992	40.445	1.96	39.00	1.63	3.71	±5	2022/6/27
2600	Head	22.7	1.981	38.254	1.96	39.00	1.07	-1.91	±5	2022/7/10
3500	Head	22.7	2.933	39.225	2.91	37.90	0.79	3.50	±5	2022/6/29
3500	Head	22.5	2.935	39.303	2.91	37.90	0.86	3.70	±5	2022/7/12
3700	Head	22.3	3.011	36.767	3.12	37.70	-3.49	-2.47	±5	2022/6/30
3700	Head	22.1	3.063	39.332	3.12	37.70	-1.83	4.33	±5	2022/7/13
5250	Head	22.6	4.748	36.881	4.71	35.95	0.81	2.59	±5	2022/7/1
5250	Head	22.4	4.502	36.248	4.71	35.95	-4.42	0.83	±5	2022/7/17
5600	Head	22.4	5.004	36.093	5.07	35.50	-1.30	1.67	±5	2022/7/2
5600	Head	22.3	5.014	36.912	5.07	35.50	-1.10	3.98	±5	2022/7/19
5750	Head	22.2	5.176	36.809	5.22	35.35	-0.84	4.13	±5	2022/7/3
5750	Head	22.5	5.185	36.803	5.22	35.35	-0.67	4.11	±5	2022/7/21
5250	Head	22.3	4.597	36.617	4.71	35.95	-2.40	1.86	±5	2022/8/4
5600	Head	22.2	5.006	36.080	5.07	35.50	-1.26	1.63	±5	2022/8/4
5750	Head	22.7	5.175	35.814	5.22	35.35	-0.86	1.31	±5	2022/8/4

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 (%)
2022/6/23	750	Head	250	1099	7641	1210	2.170	8.54	8.68	1.64
2022/7/6	750	Head	250	1099	7641	1210	2.210	8.54	8.84	3.51
2022/6/24	835	Head	250	4d162	7641	1210	2.480	9.64	9.92	2.90
2022/7/7	835	Head	250	4d162	7641	1210	2.470	9.64	9.88	2.49
2022/6/25	1750	Head	250	1137	7641	1210	9.200	36.50	36.8	0.82
2022/7/8	1750	Head	250	1137	7641	1210	8.850	36.50	35.4	-3.01
2022/6/26	1900	Head	250	5d182	7641	1210	9.590	39.60	38.36	-3.13
2022/7/9	1900	Head	250	5d182	7641	1210	9.620	39.60	38.48	-2.83
2022/6/26	2450	Head	250	924	7641	1210	13.100	51.40	52.4	1.95
2022/7/15	2450	Head	250	924	7641	1210	13.400	51.40	53.6	4.28
2022/6/27	2600	Head	250	1070	7641	1210	13.800	56.20	55.2	-1.78
2022/7/10	2600	Head	250	1070	7641	1210	14.600	56.20	58.4	3.91
2022/6/29	3500	Head	100	1076	7641	1210	6.600	66.20	66	-0.30
2022/7/12	3500	Head	100	1076	7641	1210	6.760	66.20	67.6	2.11
2022/6/30	3700	Head	100	1037	7641	1210	6.680	66.70	66.8	0.15
2022/7/13	3700	Head	100	1037	7641	1210	6.890	66.70	68.9	3.30
2022/7/1	5250	Head	100	1341	7641	1210	7.860	80.70	78.6	-2.60
2022/7/17	5250	Head	100	1341	7641	1210	7.750	80.70	77.5	-3.97
2022/7/2	5600	Head	100	1341	7641	1210	8.820	84.50	88.2	4.38
2022/7/19	5600	Head	100	1341	7641	1210	8.570	84.50	85.7	1.42
2022/7/3	5750	Head	100	1341	7641	1210	8.050	80.60	80.5	-0.12
2022/7/21	5750	Head	100	1341	7641	1210	8.130	80.60	81.3	0.87
2022/8/4	5250	Head	100	1341	7641	1210	7.820	80.70	78.2	-3.10
2022/8/4	5600	Head	100	1341	7641	1210	8.890	84.50	88.9	5.21
2022/8/4	5750	Head	100	1341	7641	1210	7.840	80.60	78.4	-2.73

<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 (%)
2022/6/23	750	Head	250	1099	7641	1210	1.450	5.65	5.8	2.65
2022/7/6	750	Head	250	1099	7641	1210	1.470	5.65	5.88	4.07
2022/6/24	835	Head	250	4d162	7641	1210	1.620	6.26	6.48	3.51
2022/7/7	835	Head	250	4d162	7641	1210	1.640	6.26	6.56	4.79
2022/6/25	1750	Head	250	1137	7641	1210	4.990	19.20	19.96	3.96
2022/7/8	1750	Head	250	1137	7641	1210	4.660	19.20	18.64	-2.92
2022/6/26	1900	Head	250	5d182	7641	1210	5.000	20.20	20	-0.99
2022/7/9	1900	Head	250	5d182	7641	1210	4.910	20.20	19.64	-2.77
2022/6/26	2450	Head	250	924	7641	1210	6.200	24.00	24.8	3.33
2022/7/15	2450	Head	250	924	7641	1210	6.240	24.00	24.96	4.00
2022/6/27	2600	Head	250	1070	7641	1210	5.910	24.60	23.64	-3.90
2022/7/10	2600	Head	250	1070	7641	1210	6.360	24.60	25.44	3.41
2022/6/29	3500	Head	100	1076	7641	1210	2.490	25.50	24.9	-2.35
2022/7/12	3500	Head	100	1076	7641	1210	2.530	25.50	25.3	-0.78
2022/6/30	3700	Head	100	1037	7641	1210	2.440	24.60	24.4	-0.81
2022/7/13	3700	Head	100	1037	7641	1210	2.500	24.60	25	1.63
2022/7/1	5250	Head	100	1341	7641	1210	2.250	23.10	22.5	-2.60
2022/7/17	5250	Head	100	1341	7641	1210	2.210	23.10	22.1	-4.33
2022/7/2	5600	Head	100	1341	7641	1210	2.510	24.00	25.1	4.58
2022/7/19	5600	Head	100	1341	7641	1210	2.360	24.00	23.6	-1.67
2022/7/3	5750	Head	100	1341	7641	1210	2.280	22.70	22.8	0.44
2022/7/21	5750	Head	100	1341	7641	1210	2.160	22.70	21.6	-4.85
2022/8/4	5250	Head	100	1341	7641	1210	2.140	23.10	21.4	-7.36
2022/8/4	5600	Head	100	1341	7641	1210	2.420	24.00	24.2	0.83
2022/8/4	5750	Head	100	1341	7641	1210	2.150	22.70	21.5	-5.29

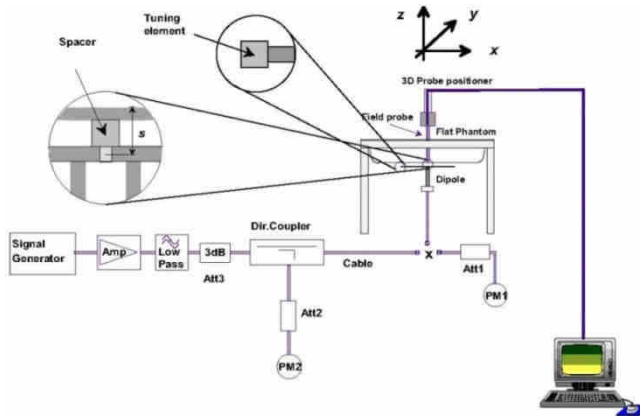


Fig 11.3.1 System Performance Check Setup



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.

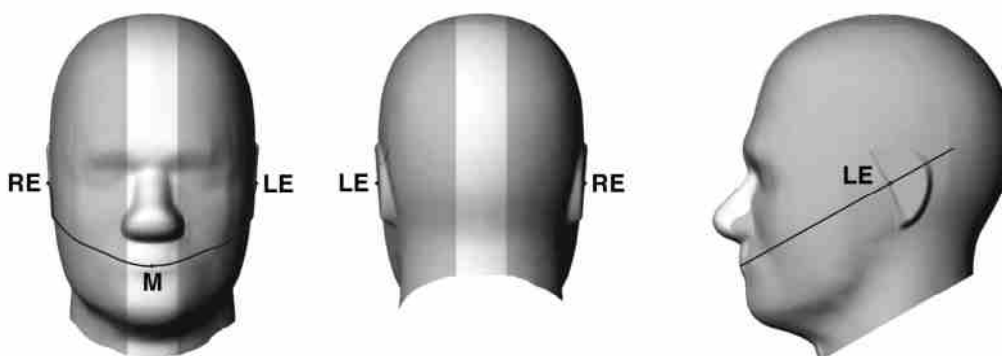


Fig 12.1.1 Front, back, and side views of SAM twin phantom

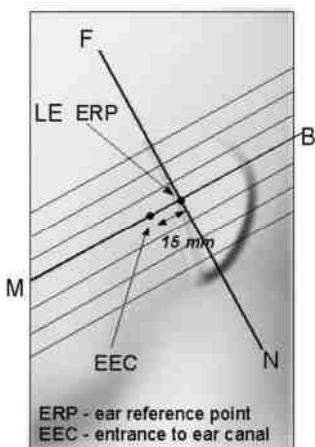


Fig 12.1.2 Close-up side view of phantom showing the ear region.

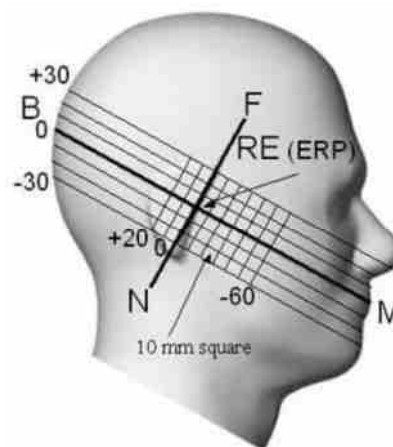


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

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 w_t 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 w_b 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.

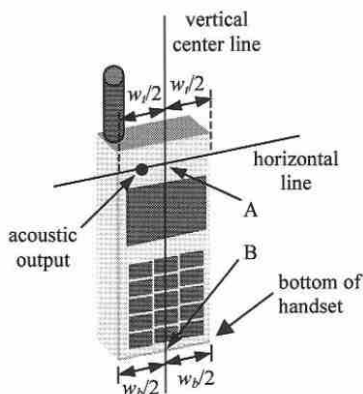


Fig 12.2.1 Handset vertical and horizontal reference lines—“fixed case”

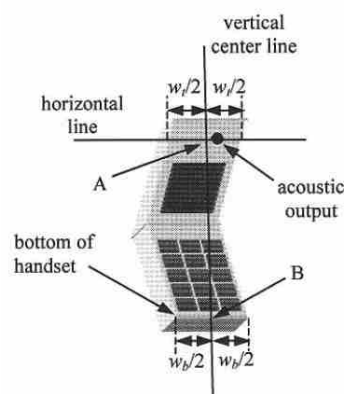


Fig 12.2.2 Handset vertical and horizontal reference lines—“clam-shell case”

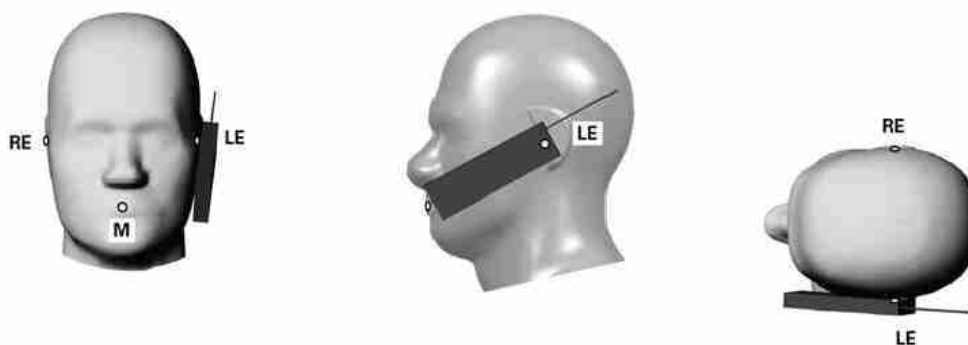


Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

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

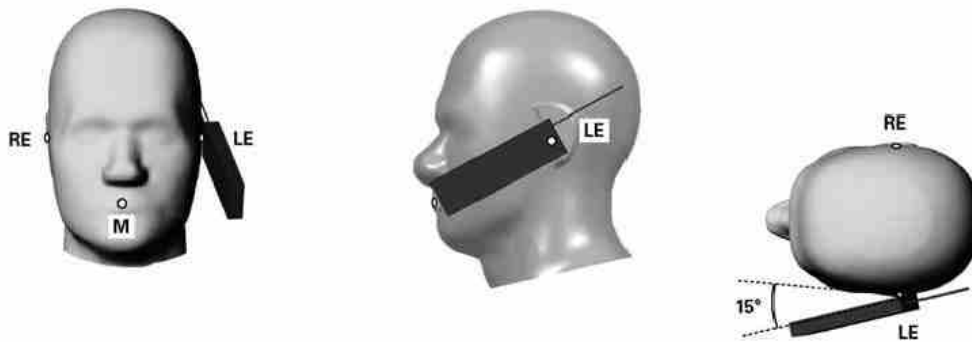


Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

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 12.4). Per KDB648474 D04v01r03, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D04 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 $> 1.2 \text{ W/kg}$, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset 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 tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

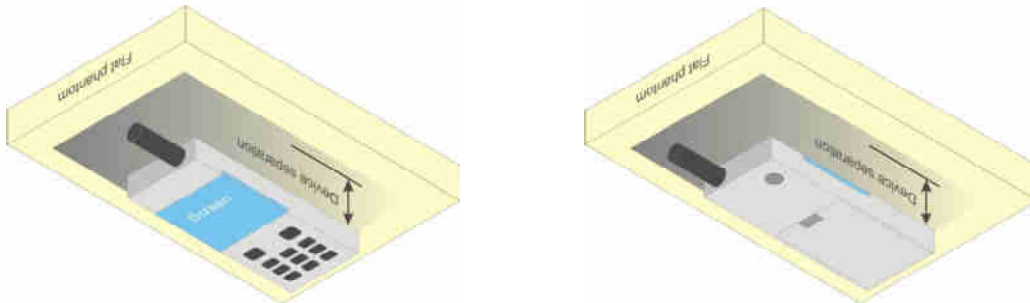


Fig 12.4 Body Worn Position



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

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

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 ($L \times W \geq 9$ 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 from 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 D04 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 D04, 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 $\leq \frac{1}{4}$ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

<WCDMA Conducted Power>

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
2. The procedures in KDB 941225 D01v03r01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.
3. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

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

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

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

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

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

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

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

Setup Configuration

HSUPA Setup Configuration:

- a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
- b. The RF path losses were compensated into the measurements.
- c. A call was established between EUT and Base Station with following setting * :
 - i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
 - ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
 - iii. Set Cell Power = -86 dBm
 - iv. Set Channel Type = 12.2k + HSPA
 - v. Set UE Target Power
 - vi. Power Ctrl Mode= Alternating bits
 - vii. Set and observe the E-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_{sf} (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	209/25	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1} : 47/15 β_{ed2} : 47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

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

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

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

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

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

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

Setup Configuration

DC-HSDPA 3GPP release 8 Setup Configuration:

- a. The EUT was connected to Base Station referred to the Setup Configuration below
- b. The RF path losses were compensated into the measurements.
- c. A call was established between EUT and Base Station with following setting:
 - i. Set RMC 12.2Kbps + HSDPA mode.
 - ii. Set Cell Power = -25 dBm
 - iii. Set HS-DSCH Configuration Type to FRC (H-set 12, QPSK)
 - iv. Select HSDPA Uplink Parameters
 - v. Set Gain Factors (β_c and β_d) and parameters were set according to each Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
 - a). Subtest 1: $\beta_c/\beta_d=2/15$
 - b). Subtest 2: $\beta_c/\beta_d=12/15$
 - c). Subtest 3: $\beta_c/\beta_d=15/8$
 - d). Subtest 4: $\beta_c/\beta_d=15/4$
 - 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_{IP})	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.		

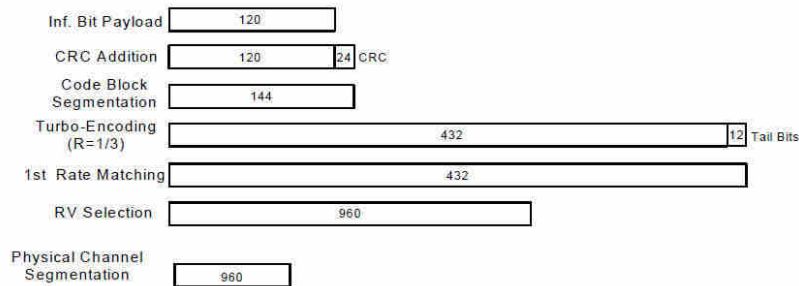


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK) Setup Configuration



<WCDMA Conducted Power>

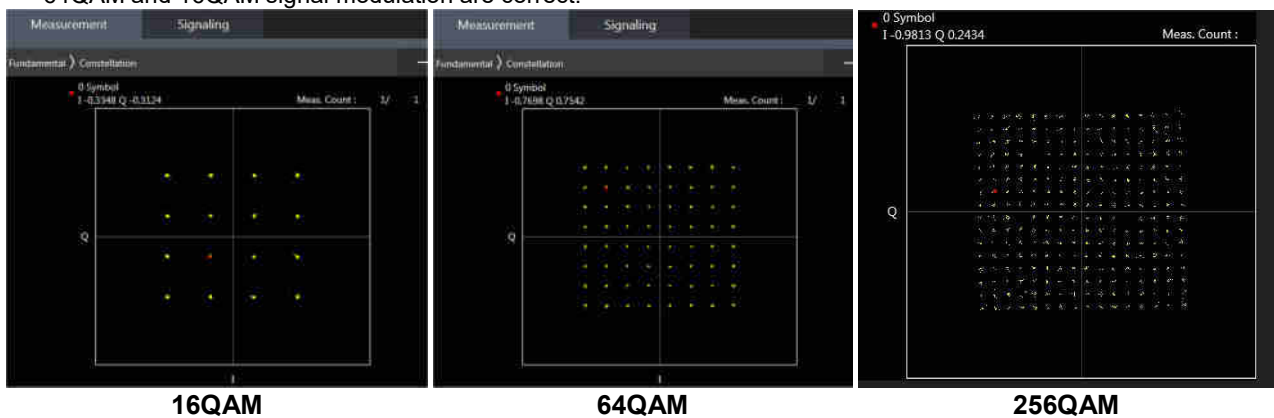
General Note:

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 is $\leq \frac{1}{4}$ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA) are less than $\frac{1}{4}$ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, for QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4 / B5 / B12 / B17 / B26 / B38 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 B2 / B4 / B5 / B17 / B38 SAR test was covered by B25 / 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 \leq the larger band to qualify for the SAR test exclusion
 - b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band
10. According to May 2017 TCB workshop, for 16QAM and 64QAM, 256QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 256QAM, 64QAM and 16QAM signal modulation are correct.



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 Power class 2

- i. Uplink-downlink configuration: 1. In a half-frame consisted of 5 subframes, uplink operation is in 2 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: $(2+0.167)/5 = 43.3\%$
- iv. for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: $(2+0.143)/5 = 42.9\%$
- v. For TDD LTE SAR measurement, the duty cycle 1:2.33 (42.9 %) was used perform testing and considering the theoretical duty cycle of 43.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 42.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix $43.3\%/42.9\% = 1.009$ 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.

For Power class 3

- i. Uplink-downlink configuration: 0. In a half-frame consisted of 5 subframes, uplink operation is in 3 uplink subframes and 1 special subframe.
- ii. special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink
- iii. for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is: $(3+0.167)/5 = 63.3\%$
- iv. for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: $(3+0.143)/5 = 62.9\%$
- v. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix $63.3\%/62.9\% = 1.006$ is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

The device can adjust uplink/downlink configuration automatically according to the transmitting power class level, as followings:

LTE TDD Band	Power Class level	support uplink/downlink configuration
LTE Band 38/41	> 23	1,2,3,4,5
	=23	0,1,2,3,4,5,6
	< 23	0,1,2,3,4,5,6



<LTE Carrier Aggregation>

General Note:

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

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_2C			1	CA_2A-4A-5A	2A,4A		1	CA_41C-41C		
2	CA_2A-4A		3CC-1	2	CA_2A-4A-7A	2A,4A,7A		2	CA_41E		
3	CA_2A-5A		3CC-1	3	CA_2A-5A-66A	2A,66A		3	CA_41A-41D		
4	CA_2A-7A	2A,7A	3CC-2	4	CA_2A-7C	2A		4	CA_41A-41A-41C		
5	CA_2A-66A		3CC-3	5	CA_2A-7A-7A	2A,7A		5			
6	CA_4A-5A			6	CA_2A-7A-66A	2A,7A,66A		6			
7	CA_4A-7A		3CC-2	7	CA_2A-66A-66A	2A,66A		7			
8	CA_5A-7A	7A	3CC-10	8	CA_4A-7C	4A		8			
9	CA_5A-41A			9	CA_5A-7C			9			
10	CA_5A-66A		3CC-10	10	CA_5A-7A-66A	7A,66A		10			
11	CA_7B	7B		11	CA_5A-66A-66A	66A		11			
12	CA_7C	7C	3CC-4	12	CA_7A-66A-66A	7A,66A		12			
13	CA_7A-7A	7A	3CC-5	13	CA_41D	41A	4CC-3	13			
14	CA_7A-26A			14	CA_41A-41C	41A	4CC-4	14			
15	CA_7A-66A	7A,66A	3CC-6	15	CA_41A-41A-41A	41A		15			
16	CA_26A-41A			16				16			
17	CA_26A-66A			17				17			
18	CA_38C	38C		18				18			
19	CA_38A-66A			19				19			
20	CA_41C	41C	4CC1	20				20			
21	CA_41A-41A	41A	4CC-4	21				21			
22	CA_66B			22				22			
23	CA_66C			23				23			
24	CA_66A-66A	66A	3CC-7	24				24			
25	CA_7A-42A			25				25			
26	CA_41A-42A			26				26			
27	CA_42C			27				27			
28				28				28			
29				29				29			

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.

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

LTE 4x4 MIMO (Downlink)

This device supports downlink 4x4 MIMO operations for LTE Band 2/7/38/41/66 only. Uplink transmission is limited to a single output stream. Power measurements were performed with downlink 4x4 MIMO active for the configuration with highest measured maximum conducted power with 4x4 downlink MIMO inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.

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

4X4 MIMO	Band
	LTE Band 2/7/38/41/66

LTE Carrier Aggregation Conducted Power (Uplink)

2CC Uplink Carrier Aggregation		
Number	Combination	Ant No.
1	CA_7C	ANT0/1
2	CA_38C	ANT0/1
3	CA_41C	ANT0

<Intra-band>

General Note:

- i. The device supports intra-band uplink carrier aggregation for LTE B7/38/41 with a maximum of two uplink component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre 3GPP requirement.
- ii. The device supports uplink carrier aggregation with a maximum of two uplink component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre the 3GPP requirement.
- iii. According November 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.

<Inter-band uplink carrier aggregation consideration>

LTE Uplink CA	Main Antenna Tx	ASDiv Antenna Tx
CA_2A-4A	Ant0	Ant 1
CA_2A-7A	Ant1	Ant 0
CA_2A-66A	Ant0	Ant 1
CA_4A-5A	Ant1	Ant 0
CA_4A-7A	Ant1	Ant 0
CA_5A-7A	Ant0	Ant 1

General Note:

1. The single carrier of inter band CA uplink power level is the same as Non-CA standalone LTE power level.
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 based 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 / n78 is NSA mode.
2. 5G NR n7 / n66 / n38 / 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. 5G NR n78 HPUE with higher power, n41/n77/n78 HPUE SAR can represent power class 3 level SAR.
5. 5G NR n78 supports HPUE, HPUE power and SAR testing performed separately.
6. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
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. 5G NR NSA mode, the power level is the same as 5G NR SA mode, so 5G NR NSA mode and SA mode power table only show one time.
9. 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.
10. 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.

<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	$\leq 3.5^1$	$\leq 1.2^1$	$\leq 0.2^1$
		$\leq 0.5^2$	$\leq 0.5^2$	0 ²
	QPSK	≤ 1		0
	16 QAM	≤ 2		≤ 1
	64 QAM		≤ 2.5	
CP-OFDM	256 QAM		≤ 4.5	
	QPSK	≤ 3		≤ 1.5
	16 QAM	≤ 3		≤ 2
	64 QAM		≤ 3.5	
	256 QAM		≤ 6.5	

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

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

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

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

ENDC	LTE TX	NR TX
DC_7A-n2	Ant 1	Ant 0
DC_66A-n2	Ant 1	Ant 0
DC_7A-n5	Ant 1	Ant 0
DC_2A-n66	Ant 1	Ant 0
DC_7A-n66	Ant 1	Ant 0
DC_2A-n7	Ant 1	Ant 0
DC_5A-n7	Ant 0	Ant 1
DC_66A-n7	Ant 1	Ant 0
DC_2A-n78	Ant 0	Ant 2
DC_4A-n78	Ant 0	Ant 2
DC_5A-n78	Ant 0	Ant 2
DC_7A-n78	Ant 0	Ant 2
DC_66A-n78	Ant 0	Ant 2
DC_38A-n78	Ant 0	Ant 2
DC_41A-n78	Ant 0	Ant 2

<WLAN Conducted Power>**General Note:**

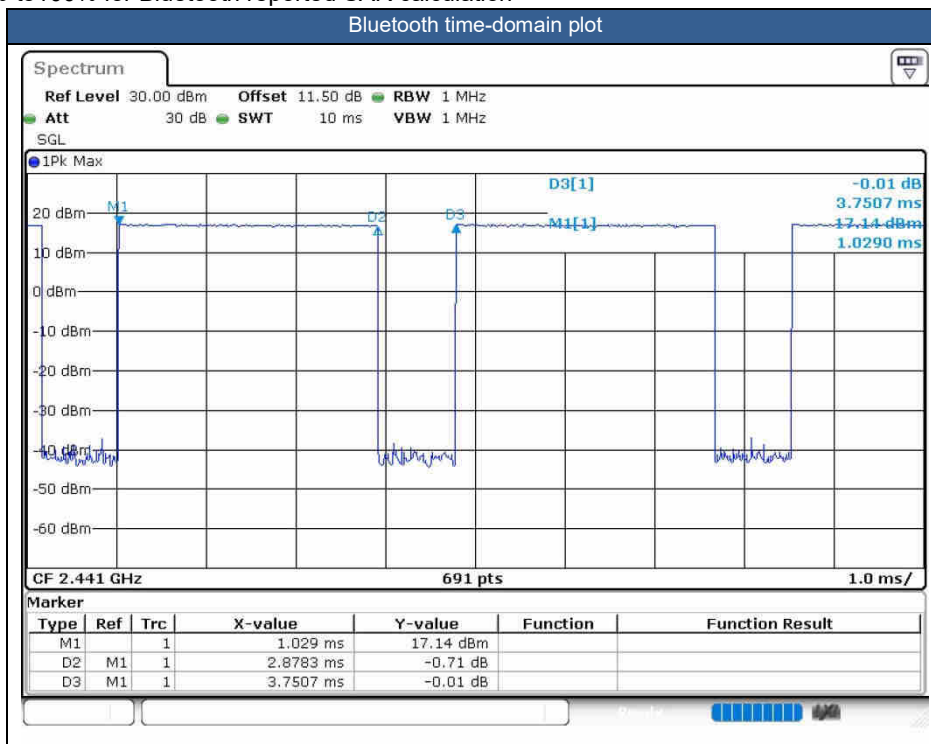
1. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements.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



<2.4GHz Bluetooth>

General Note:

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps, due to its highest average power.
2. The Bluetooth duty cycle are 76.74% as following figure, according to 2016 Oct. TCB workshop for Bluetooth SAR scaling need further consideration and the maximum duty cycle is 100%, therefore the actual duty cycle will be scaled up to100% for Bluetooth reported SAR calculation





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 D04, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
 - a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
 - b. For SAR testing of BT/WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
 - c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
 - d. For BT/WLAN: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
 - e. For TDD LTE SAR measurement 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.
 - f. For TDD LTE SAR measurement of power class 2, the duty cycle 1:2.33 (42.9 %) was used perform testing and considering the theoretical duty cycle of 43.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 42.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 43.3%/42.9% = 1.009 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 D04, 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 ≥ 0.8 W/kg. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. For dual SIM card mobile has two SIM slots and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (single active).
5. There are two different types of EUT. They are single SIM card mobile and dual SIM card mobile. The difference that is only SIM Slots, all the other are same. It is special to declare. After pre-scan two types of EUT, we found test result of the sample that single SIM was the worst, so we chose single SIM card mobile to perform all tests.
6. There are two samples, the different between them refer to the XT2245-1_Operational Description of Product Equality Declaration which is exhibit separately. According to the differences, we choose sample 1 to perform full SAR testing and sample 1 to verify the worst case of sample 2.
7. The device implements the power management and proximity sensor /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. Details about the power management decision and sensor detection are 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.
8. For WLAN when transmit simultaneous with WWAN, power reduction will be activated to head. For WLAN when transmit simultaneous with WWAN and Proximity sensors trigger, power reduction will be activated to body-worn and Handheld.
9. For some WWAN bands, sensor on reduced power level is higher than hotspot reduced power level, so front/back sensor on SAR can represent hotspot conservatively.
10. LTE band 38/41 and 5G NR n78 supports HPUE, HPUE power and SAR testing performed separately.
11. LTE band 38/41 and 5G NR n78 HUPE with higher power, LTE band 38/41 and 5G NR n78 HUPE SAR can represent power class 3 level SAR.
12. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
13. 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.
14. 5G NR NSA mode, the power level is the same as 5G NR SA mode, so 5G NR NSA mode and SA mode power table only show one time.
15. 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.



16. 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.
17. 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/WLAN transmitter scaled to maximum output power mode for product specific 10g SAR is higher than 1.2W/kg of GSM1900, WCDMA Band II/IV/V, LTE Band 2/4/7/12/17/25/66/38/41/42, 5GNR n2/n7/n66/n38/n78, WLAN2.4/5.2/5.8GHz, 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.
18. For extremity exposure conditions, WLAN 2.4GHz SAR test at Back/Top side 0mm and WLAN 5GHz SAR test at Front/Back/Right side 0mm used full power SAR testing, so WLAN 2.4GHz/5GHz distance SAR test is not required.

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 \leq 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 is \leq ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is \leq 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

LTE Note:

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, for QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are \leq 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is \leq 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is \leq 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 B2 / B4 / B5 / B17 / B38 SAR test was covered by LTE B25 / 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 \leq the larger band to qualify for the SAR test

exclusion

- b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band

5G NR Note:

1. 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 $\frac{1}{2}$ 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 $\frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
 - f. For 5G FR1 n5 /n7/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.



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)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750MHz																					
01	LTE Band 12	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	23095	707.5	1	22.79	24.00	1.321	-	-	-0.07	0.067	0.088
	LTE Band 12	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	DSI 2	23095	707.5	1	22.79	24.00	1.321	-	-	-	n/a	n/a
	LTE Band 12	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	23095	707.5	1	22.79	24.00	1.321	-	-	0.01	0.060	0.079
	LTE Band 12	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	DSI 2	23095	707.5	1	22.79	24.00	1.321	-	-	-	n/a	n/a
	LTE Band 12	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 0	DSI 2	23095	707.5	1	21.82	23.00	1.312	-	-	-	n/a	n/a
	LTE Band 12	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 0	DSI 2	23095	707.5	1	21.82	23.00	1.312	-	-	-	n/a	n/a
	LTE Band 12	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 0	DSI 2	23095	707.5	1	21.82	23.00	1.312	-	-	-0.04	0.048	0.063
	LTE Band 12	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 0	DSI 2	23095	707.5	1	21.82	23.00	1.312	-	-	-	n/a	n/a
02	LTE Band 13	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	23230	782	1	22.65	24.00	1.365	-	-	0.03	0.116	0.158
	LTE Band 13	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	DSI 2	23230	782	1	22.65	24.00	1.365	-	-	0.11	0.089	0.121
	LTE Band 13	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	23230	782	1	22.65	24.00	1.365	-	-	0.18	0.095	0.130
	LTE Band 13	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	DSI 2	23230	782	1	22.65	24.00	1.365	-	-	0.16	0.083	0.113
	LTE Band 13	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 0	DSI 2	23230	782	1	21.68	23.00	1.355	-	-	0.13	0.096	0.130
	LTE Band 13	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 0	DSI 2	23230	782	1	21.68	23.00	1.355	-	-	-0.02	0.071	0.096
	LTE Band 13	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 0	DSI 2	23230	782	1	21.68	23.00	1.355	-	-	0.09	0.079	0.107
	LTE Band 13	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 0	DSI 2	23230	782	1	21.68	23.00	1.355	-	-	-0.11	0.066	0.089
835MHz																					
03	GSM850	-	-	-	-	GPRS 4 Tx slots	Right Cheek	0mm	Ant 0	DSI 2	189	836.4	1	26.84	28.50	1.466	-	-	0.07	0.137	0.201
	GSM850	-	-	-	-	GPRS 4 Tx slots	Right Tilted	0mm	Ant 0	DSI 2	189	836.4	1	26.84	28.50	1.466	-	-	0.17	0.096	0.141
	GSM850	-	-	-	-	GPRS 4 Tx slots	Left Cheek	0mm	Ant 0	DSI 2	189	836.4	1	26.84	28.50	1.466	-	-	-0.14	0.104	0.152
	GSM850	-	-	-	-	GPRS 4 Tx slots	Left Tilted	0mm	Ant 0	DSI 2	189	836.4	1	26.84	28.50	1.466	-	-	-0.04	0.101	0.148
04	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	DSI 2	4182	836.4	1	23.12	24.00	1.225	-	-	0.09	0.219	0.268
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	DSI 2	4182	836.4	2	23.12	24.00	1.225	-	-	0.03	0.183	0.224
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 0	DSI 2	4182	836.4	1	23.12	24.00	1.225	-	-	-0.03	0.148	0.181
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	DSI 2	4182	836.4	1	23.12	24.00	1.225	-	-	0.05	0.199	0.244
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 0	DSI 2	4182	836.4	1	23.12	24.00	1.225	-	-	-0.08	0.119	0.146
05	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	26865	831.5	1	22.58	24.00	1.387	-	-	0.08	0.107	0.148
	LTE Band 26	15M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	DSI 2	26865	831.5	1	22.58	24.00	1.387	-	-	-0.08	0.076	0.105
	LTE Band 26	15M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	26865	831.5	1	22.58	24.00	1.387	-	-	0.08	0.091	0.126
	LTE Band 26	15M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	DSI 2	26865	831.5	1	22.58	24.00	1.387	-	-	0.15	0.064	0.089
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 0	DSI 2	26865	831.5	1	21.91	23.00	1.285	-	-	-0.12	0.104	0.134
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	0mm	Ant 0	DSI 2	26865	831.5	1	21.91	23.00	1.285	-	-	0.15	0.066	0.085
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	0mm	Ant 0	DSI 2	26865	831.5	1	21.91	23.00	1.285	-	-	0.08	0.083	0.107
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	0mm	Ant 0	DSI 2	26865	831.5	1	21.91	23.00	1.285	-	-	0.04	0.051	0.066
	FR1 n5	20M	BPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	DSI 2	167300	836.5	1	23.19	24.00	1.205	-	-	-0.06	0.136	0.164
	FR1 n5	20M	BPSK	1	1	DFT-15	Right Tilted	0mm	Ant 0	DSI 2	167300	836.5	1	23.19	24.00	1.205	-	-	-0.14	0.086	0.104
	FR1 n5	20M	BPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	167300	836.5	1	23.19	24.00	1.205	-	-	0.09	0.107	0.129
	FR1 n5	20M	BPSK	1	1	DFT-15	Left Tilted	0mm	Ant 0	DSI 2	167300	836.5	1	23.19	24.00	1.205	-	-	0.18	0.075	0.090
06	FR1 n5	20M	BPSK	50	28	DFT-15	Right Cheek	0mm	Ant 0	DSI 2	167300	836.5	1	22.94	24.00	1.276	-	-	-0.04	0.131	0.167
	FR1 n5	20M	BPSK	50	28	DFT-15	Right Tilted	0mm	Ant 0	DSI 2	167300	836.5	1	22.94	24.00	1.276	-	-	0.15	0.087	0.111
	FR1 n5	20M	BPSK	50	28	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	167300	836.5	1	22.94	24.00	1.276	-	-	-0.18	0.112	0.143
	FR1 n5	20M	BPSK	50	28	DFT-15	Left Tilted	0mm	Ant 0	DSI 2	167300	836.5	1	22.94	24.00	1.276	-	-	0.16	0.074	0.094
1750MHz																					
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	DSI 2	1413	1732.6	1	23.42	24.00	1.143	-	-	0.1	0.141	0.161
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 0	DSI 2	1413	1732.6	1	23.42	24.00	1.143	-	-	-0.08	0.094	0.107
07	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	DSI 2	1413	1732.6	1	23.42	24.00	1.143	-	-	0.05	0.159	0.182



	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 0	DSI 2	1413	1732.6	1	23.42	24.00	1.143	-	-	0.12	0.085	0.097
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	132322	1745	1	23.09	24.00	1.233	-	-	-0.04	0.151	0.186
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	DSI 2	132322	1745	1	23.09	24.00	1.233	-	-	0.01	0.120	0.148
	LTE Band 66	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	132322	1745	1	23.09	24.00	1.233	-	-	0.15	0.204	0.252
	LTE Band 66	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	DSI 2	132322	1745	1	23.09	24.00	1.233	-	-	0.03	0.100	0.123
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 0	DSI 2	132322	1745	1	22.07	23.00	1.239	-	-	0.16	0.087	0.108
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 0	DSI 2	132322	1745	1	22.07	23.00	1.239	-	-	-0.14	0.071	0.088
	LTE Band 66	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 0	DSI 2	132322	1745	1	22.07	23.00	1.239	-	-	-0.03	0.110	0.136
	LTE Band 66	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 0	DSI 2	132322	1745	1	22.07	23.00	1.239	-	-	-0.07	0.062	0.077
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	132322	1745	1	19.59	20.50	1.233	-	-	-0.17	0.768	0.947
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	132322	1745	1	19.59	20.50	1.233	-	-	0.05	0.747	0.921
	LTE Band 66	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 2	132322	1745	1	19.59	20.50	1.233	-	-	-0.08	0.390	0.481
	LTE Band 66	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI 2	132322	1745	1	19.59	20.50	1.233	-	-	0.06	0.554	0.683
08	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	132072	1720	1	19.19	20.50	1.352	-	-	-0.03	0.806	1.090
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	132572	1770	1	19.38	20.50	1.294	-	-	-0.11	0.775	1.003
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	132072	1720	1	19.19	20.50	1.352	-	-	-0.05	0.736	0.995
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	132572	1770	1	19.38	20.50	1.294	-	-	-0.15	0.741	0.959
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2(Sim TX)	132072	1720	1	17.16	18.50	1.361	-	-	0.1	0.502	0.683
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 2	132322	1745	1	19.34	20.50	1.306	-	-	0	0.770	1.006
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	132322	1745	1	19.34	20.50	1.306	-	-	-0.17	0.763	0.997
	LTE Band 66	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	DSI 2	132322	1745	1	19.34	20.50	1.306	-	-	-0.1	0.387	0.505
	LTE Band 66	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	DSI 2	132322	1745	1	19.34	20.50	1.306	-	-	0.01	0.550	0.718
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 2	132072	1720	1	19.17	20.50	1.358	-	-	0.02	0.786	1.068
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 2	132572	1770	1	19.32	20.50	1.312	-	-	0.01	0.753	0.988
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	132072	1720	1	19.17	20.50	1.358	-	-	0.02	0.723	0.982
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	132572	1770	1	19.32	20.50	1.312	-	-	0.01	0.726	0.953
	LTE Band 66	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 1	DSI 2	132322	1745	1	19.45	20.50	1.274	-	-	-0.02	0.753	0.959
	LTE Band 66	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 1	DSI 2	132322	1745	1	19.45	20.50	1.274	-	-	-0.1	0.738	0.940
	FR1 n66	40M	BPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	DSI 2	349000	1745	1	23.48	24.00	1.127	-	-	0.09	0.135	0.152
	FR1 n66	40M	BPSK	1	1	DFT-15	Right Tilted	0mm	Ant 0	DSI 2	349000	1745	1	23.48	24.00	1.127	-	-	-0.15	0.107	0.121
09	FR1 n66	40M	BPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	349000	1745	1	23.48	24.00	1.127	-	-	0.04	0.161	0.181
	FR1 n66	40M	BPSK	1	1	DFT-15	Left Tilted	0mm	Ant 0	DSI 2	349000	1745	1	23.48	24.00	1.127	-	-	-0.19	0.080	0.090
	FR1 n66	40M	BPSK	108	54	DFT-15	Right Cheek	0mm	Ant 0	DSI 2	349000	1745	1	23.23	24.00	1.194	-	-	-0.15	0.122	0.146
	FR1 n66	40M	BPSK	108	54	DFT-15	Right Tilted	0mm	Ant 0	DSI 2	349000	1745	1	23.23	24.00	1.194	-	-	-0.08	0.087	0.104
	FR1 n66	40M	BPSK	108	54	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	349000	1745	1	23.23	24.00	1.194	-	-	-0.15	0.142	0.170
	FR1 n66	40M	BPSK	108	54	DFT-15	Left Tilted	0mm	Ant 0	DSI 2	349000	1745	1	23.23	24.00	1.194	-	-	0	0.078	0.093
1900MHz																					
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Right Cheek	0mm	Ant 0	DSI 2	661	1880	1	24.56	26.00	1.393	-	-	-	n/a	n/a
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Right Tilted	0mm	Ant 0	DSI 2	661	1880	1	24.56	26.00	1.393	-	-	-	n/a	n/a
10	GSM1900	-	-	-	-	GPRS 4 Tx slots	Left Cheek	0mm	Ant 0	DSI 2	661	1880	1	24.56	26.00	1.393	-	-	0.07	0.049	0.068
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Left Tilted	0mm	Ant 0	DSI 2	661	1880	1	24.56	26.00	1.393	-	-	-	n/a	n/a
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	DSI 2	9400	1880	1	23.50	24.00	1.122	-	-	-0.12	0.057	0.064
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 0	DSI 2	9400	1880	1	23.50	24.00	1.122	-	-	0.15	0.042	0.047
11	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	DSI 2	9400	1880	1	23.50	24.00	1.122	-	-	0.02	0.086	0.096
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 0	DSI 2	9400	1880	1	23.50	24.00	1.122	-	-	0.07	0.045	0.050
	LTE Band 25	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	26340	1880	1	23.03	24.00	1.250	-	-	0	0.047	0.059
	LTE Band 25	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	DSI 2	26340	1880	1	23.03	24.00	1.250	-	-	-	n/a	n/a
12	LTE Band 25	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	26340	1880	1	23.03	24.00	1.250	-	-	-0.09	0.066	0.082
	LTE Band 25	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	DSI 2	26340	1880	1	23.03	24.00	1.250	-	-	0.09	0.042	0.053
	LTE Band 25	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 0	DSI 2	26340	1880	1	22.15	23.00	1.216	-	-	-	n/a	n/a
	LTE Band 25	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 0	DSI 2	26340	1880	1	22.15	23.00	1.216	-	-	-	n/a	n/a
	LTE Band 25	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 0	DSI 2	26340	1880	1	22.15	23.00	1.216	-	-	0.17	0.054	0.066
	LTE Band 25	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 0	DSI 2	26340	1880	1	22.15	23.00	1.216	-	-	-	n/a	n/a



	LTE Band 2	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	18900	1880	1	21.98	23.00	1.265	-	-	-0.16	0.719	0.909
	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	18900	1880	1	21.98	23.00	1.265	-	-	0.07	0.755	0.955
	LTE Band 2	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 2	18900	1880	1	21.98	23.00	1.265	-	-	0.14	0.301	0.381
	LTE Band 2	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI 2	18900	1880	1	21.98	23.00	1.265	-	-	0.09	0.434	0.549
	LTE Band 2	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	18700	1860	1	21.85	23.00	1.303	-	-	0.02	0.848	1.105
	LTE Band 2	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	19100	1900	1	21.85	23.00	1.303	-	-	0	0.702	0.915
13	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	18700	1860	1	21.85	23.00	1.303	-	-	-0.11	0.898	1.170
	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	18700	1860	2	21.85	23.00	1.303	-	-	0.03	0.554	0.722
	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	19100	1900	1	21.85	23.00	1.303	-	-	-0.16	0.740	0.964
	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2(Sim TX)	18700	1860	1	19.24	20.50	1.337	-	-	-0.19	0.497	0.664
	LTE Band 2	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 2	18900	1880	1	21.71	23.00	1.346	-	-	-0.09	0.708	0.953
	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	18900	1880	1	21.71	23.00	1.346	-	-	-0.07	0.761	1.024
	LTE Band 2	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	DSI 2	18900	1880	1	21.71	23.00	1.346	-	-	-0.11	0.295	0.397
	LTE Band 2	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	DSI 2	18900	1880	1	21.71	23.00	1.346	-	-	-0.19	0.428	0.576
	LTE Band 2	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 2	18700	1860	1	21.57	23.00	1.390	-	-	0.01	0.837	1.163
	LTE Band 2	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 2	19100	1900	1	21.52	23.00	1.406	-	-	0.05	0.686	0.965
	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	18700	1860	1	21.57	23.00	1.390	-	-	0.01	0.818	1.137
	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	19100	1900	1	21.52	23.00	1.406	-	-	0.05	0.726	1.021
	LTE Band 2	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 1	DSI 2	18900	1880	1	21.65	23.00	1.365	-	-	-0.16	0.693	0.946
	LTE Band 2	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 1	DSI 2	18900	1880	1	21.65	23.00	1.365	-	-	-0.03	0.731	0.998
	FR1 n2	20M	BPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	DSI 2	376000	1880	1	23.29	24.00	1.178	-	-	0.11	0.060	0.071
	FR1 n2	20M	BPSK	1	1	DFT-15	Right Tilted	0mm	Ant 0	DSI 2	376000	1880	1	23.29	24.00	1.178	-	-	-0.19	0.045	0.053
14	FR1 n2	20M	BPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	376000	1880	1	23.29	24.00	1.178	-	-	0.03	0.094	0.110
	FR1 n2	20M	BPSK	1	1	DFT-15	Left Tilted	0mm	Ant 0	DSI 2	376000	1880	1	23.29	24.00	1.178	-	-	0.17	0.041	0.048
	FR1 n2	20M	BPSK	50	28	DFT-15	Right Cheek	0mm	Ant 0	DSI 2	376000	1880	1	23.16	24.00	1.213	-	-	-0.11	0.061	0.074
	FR1 n2	20M	BPSK	50	28	DFT-15	Right Tilted	0mm	Ant 0	DSI 2	376000	1880	1	23.16	24.00	1.213	-	-	-	n/a	n/a
	FR1 n2	20M	BPSK	50	28	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	376000	1880	1	23.16	24.00	1.213	-	-	0.1	0.082	0.099
	FR1 n2	20M	BPSK	50	28	DFT-15	Left Tilted	0mm	Ant 0	DSI 2	376000	1880	1	23.16	24.00	1.213	-	-	-	n/a	n/a
										2600MHz											
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	21100	2535	1	23.06	24.00	1.242	-	-	-0.09	0.081	0.101
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	DSI 2	21100	2535	1	23.06	24.00	1.242	-	-	0.14	0.059	0.073
	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	21100	2535	1	23.06	24.00	1.242	-	-	0.05	0.090	0.112
	LTE Band 7(UL CA)	20M	QPSK	1	99	-	Left Cheek	0mm	Ant 0	DSI 2	21100+21298	2535+2554.8	1	23.61	24.00	1.094	-	-	0.02	0.088	0.096
	LTE Band 7	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	DSI 2	21100	2535	1	23.06	24.00	1.242	-	-	-0.11	0.077	0.096
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 0	DSI 2	21100	2535	1	22.47	23.00	1.130	-	-	-0.03	0.064	0.072
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 0	DSI 2	21100	2535	1	22.47	23.00	1.130	-	-	-	n/a	n/a
	LTE Band 7	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 0	DSI 2	21100	2535	1	22.47	23.00	1.130	-	-	0.07	0.067	0.076
	LTE Band 7	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 0	DSI 2	21100	2535	1	22.47	23.00	1.130	-	-	-0.15	0.052	0.059
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	21100	2535	1	18.40	19.60	1.318	-	-	0.17	0.798	1.052
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	21100	2535	1	18.40	19.60	1.318	-	-	-0.13	0.828	1.092
	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 2	21100	2535	1	18.40	19.60	1.318	-	-	0.07	0.319	0.421
	LTE Band 7	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI 2	21100	2535	1	18.40	19.60	1.318	-	-	-0.15	0.355	0.468
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	20850	2510	1	18.24	19.60	1.368	-	-	-0.03	0.767	1.049
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	21350	2560	1	18.29	19.60	1.352	-	-	0.11	0.847	1.145
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	20850	2510	1	18.24	19.60	1.368	-	-	-0.16	0.809	1.106
15	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	21350	2560	1	18.29	19.60	1.352	-	-	0.07	0.875	1.183
	LTE Band 7C	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	21350+21152	2560+2540.2	1	17.04	18.60	1.432	-	-	0.03	0.782	1.120
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2(Sim TX)	21350	2560	1	15.62	17.00	1.374	-	-	-0.15	0.501	0.688
	LTE Band 7C	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2(Sim TX)	21350+21152	2560+2540.2	1	14.45	16.00	1.429	-	-	0.03	0.433	0.619
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 2	21100	2535	1	18.21	19.60	1.377	-	-	0.02	0.788	1.085
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	21100	2535	1	18.21	19.60	1.377	-	-	-0.15	0.836	1.151
	LTE Band 7	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	DSI 2	21100	2535	1	18.21	19.60	1.377	-	-	-0.09	0.320	0.441
	LTE Band 7	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	DSI 2	21100	2535	1	18.21	19.60	1.377	-	-	0.06	0.359	0.494
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 2	20850	2510	1	18.09	19.60	1.416	-	-	0.02	0.744	1.053
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 2	21350	2560	1	18.17	19.60	1.390	-	-	0.04	0.828	1.151



FCC SAR Test Report

Report No. : FA253001

	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	20850	2510	1	18.09	19.60	1.416	-	-	0.02	0.794	1.124
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	21350	2560	1	18.17	19.60	1.390	-	-	0.04	0.831	1.155
	LTE Band 7	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 1	DSI 2	21100	2535	1	18.24	19.60	1.368	-	-	0.14	0.778	1.064
	LTE Band 7	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 1	DSI 2	21100	2535	1	18.24	19.60	1.368	-	-	-0.04	0.831	1.137
16	LTE Band 38	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	38000	2595	1	18.69	20.50	1.517	62.9	1.006	-0.08	0.743	1.134
	LTE Band 38C	20M	QPSK	1	99	-	Right Cheek	0mm	Ant 1	DSI 2	37901+38099	2585.1+2604.9	1	18.90	20.50	1.445	62.9	1.006	0.02	0.655	0.952
	LTE Band 38	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	38000	2595	1	18.69	20.50	1.517	62.9	1.006	-0.02	0.696	1.062
	LTE Band 38	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 2	38000	2595	1	18.69	20.50	1.517	62.9	1.006	-0.1	0.294	0.449
	LTE Band 38	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI 2	38000	2595	1	18.69	20.50	1.517	62.9	1.006	-0.07	0.316	0.482
	LTE Band 38	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2(Sim TX)	38000	2595	1	16.51	18.10	1.442	62.9	1.006	0	0.481	0.698
	LTE Band 38C	20M	QPSK	1	99	-	Right Cheek	0mm	Ant 1	DSI 2(Sim TX)	37901+38099	2585.1+2604.9	1	16.52	18.10	1.439	62.9	1.006	0.01	0.379	0.549
	LTE Band 38	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 2	38000	2595	1	18.61	20.50	1.545	62.9	1.006	-0.17	0.712	1.107
	LTE Band 38	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	38000	2595	1	18.61	20.50	1.545	62.9	1.006	-0.13	0.652	1.014
	LTE Band 38	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	DSI 2	38000	2595	1	18.61	20.50	1.545	62.9	1.006	0.11	0.301	0.468
	LTE Band 38	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	DSI 2	38000	2595	1	18.61	20.50	1.545	62.9	1.006	0.13	0.325	0.505
	LTE Band 38	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 1	DSI 2	38000	2595	1	18.58	20.50	1.556	62.9	1.006	0.11	0.701	1.097
	LTE Band 38	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 1	DSI 2	38000	2595	1	18.58	20.50	1.556	62.9	1.006	0.05	0.695	1.088
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	38000	2595	1	20.48	22.10	1.452	42.9	1.009	0.08	0.771	1.130
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	38000	2595	1	20.48	22.10	1.452	42.9	1.009	0.02	0.678	0.993
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 2	38000	2595	1	20.48	22.10	1.452	42.9	1.009	-0.05	0.287	0.421
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI 2	38000	2595	1	20.48	22.10	1.452	42.9	1.009	0.11	0.311	0.456
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2(Sim TX)	38000	2595	1	18.09	19.70	1.449	42.9	1.009	-0.06	0.473	0.691
	LTE Band 38(HPUE)	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 2	38000	2595	1	20.45	22.10	1.462	42.9	1.009	0.13	0.721	1.064
	LTE Band 38(HPUE)	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	38000	2595	1	20.45	22.10	1.462	42.9	1.009	-0.13	0.712	1.050
	LTE Band 38(HPUE)	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	DSI 2	38000	2595	1	20.45	22.10	1.462	42.9	1.009	-0.09	0.281	0.415
	LTE Band 38(HPUE)	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	DSI 2	38000	2595	1	20.45	22.10	1.462	42.9	1.009	-0.16	0.309	0.456
	LTE Band 38(HPUE)	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 1	DSI 2	38000	2595	1	20.46	22.10	1.459	42.9	1.009	-0.01	0.731	1.076
	LTE Band 38(HPUE)	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 1	DSI 2	38000	2595	1	20.46	22.10	1.459	42.9	1.009	0.14	0.721	1.061
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	40620	2593	1	23.21	24.00	1.199	62.9	1.006	-	n/a	n/a
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	DSI 2	40620	2593	1	23.21	24.00	1.199	62.9	1.006	-	n/a	n/a
	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	40620	2593	1	23.21	24.00	1.199	62.9	1.006	-0.1	0.037	0.045
	LTE Band 41C	20M	QPSK	1	99	-	Left Cheek	0mm	Ant 0	DSI 2	40620+40818	2593+2612.8	1	23.49	24.00	1.125	62.9	1.006	0.02	0.033	0.037
	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	DSI 2	40620	2593	1	23.21	24.00	1.199	62.9	1.006	-	n/a	n/a
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 0	DSI 2	40620	2593	1	22.31	23.00	1.172	62.9	1.006	-	n/a	n/a
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 0	DSI 2	40620	2593	1	22.31	23.00	1.172	62.9	1.006	-	n/a	n/a
	LTE Band 41	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 0	DSI 2	40620	2593	1	22.31	23.00	1.172	62.9	1.006	-	n/a	n/a
	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 0	DSI 2	40620	2593	1	22.31	23.00	1.172	62.9	1.006	-	n/a	n/a
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	40620	2593	1	25.60	27.00	1.380	42.9	1.009	0	0.042	0.058
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	DSI 2	40620	2593	1	25.60	27.00	1.380	42.9	1.009	-	n/a	n/a
17	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	40620	2593	1	25.60	27.00	1.380	42.9	1.009	0.09	0.042	0.059
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	DSI 2	40620	2593	1	25.60	27.00	1.380	42.9	1.009	-	n/a	n/a
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 0	DSI 2	40620	2593	1	24.81	26.00	1.315	42.9	1.009	-0.04	0.038	0.050
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 0	DSI 2	40620	2593	1	24.81	26.00	1.315	42.9	1.009	-	n/a	n/a
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 0	DSI 2	40620	2593	1	24.81	26.00	1.315	42.9	1.009	0.02	0.041	0.054
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 0	DSI 2	40620	2593	1	24.81	26.00	1.315	42.9	1.009	-	n/a	n/a
	FR1 n7	40M	BPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	DSI 2	507000	2535	1	23.49	24.00	1.125	-	-	0.13	0.103	0.116
	FR1 n7	40M	BPSK	1	1	DFT-15	Right Tilted	0mm	Ant 0	DSI 2	507000	2535	1	23.49	24.00	1.125	-	-	-0.01	0.050	0.056
	FR1 n7	40M	BPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	507000	2535	1	23.49	24.00	1.125	-	-	-0.16	0.097	0.109
	FR1 n7	40M	BPSK	1	1	DFT-15	Left Tilted	0mm	Ant 0	DSI 2	507000	2535	1	23.49	24.00	1.125	-	-	0.04	0.082	0.092
	FR1 n7	40M	BPSK	108	54	DFT-15	Right Cheek	0mm	Ant 0	DSI 2	507000	2535	1	23.13	24.00	1.222	-	-	0.11	0.091	0.111
	FR1 n7	40M	BPSK	108	54	DFT-15	Right Tilted	0mm	Ant 0	DSI 2	507000	2535	1	23.13	24.00	1.222	-	-	0.15	0.050	0.061
	FR1 n7	40M	BPSK	108	54	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	507000	2535	1	23.13	24.00	1.222	-	-	0.17	0.081	0.099
	FR1 n7	40M	BPSK	108	54	DFT-15	Left Tilted	0mm	Ant 0	DSI 2	507000	2535	1	23.13	24.00	1.222	-	-	-0.02	0.073	0.089
	FR1 n7	40M	BPSK	1	1	DFT-15	Right Cheek	0mm	Ant 1	DSI 2	507000	2535	1	18.31	19.50	1.315	-	-	-0.08	0.782	1.029
18	FR1 n7	40M	BPSK	1	1	DFT-15	Right Tilted	0mm	Ant 1	DSI 2	507000	2535	1	18.31	19.50	1.315	-	-	-0.07	0.885	1.164



FCC SAR Test Report

Report No. : FA253001

	FR1 n7	40M	BPSK	1	1	DFT-15	Left Cheek	0mm	Ant 1	DSI 2	507000	2535	1	18.31	19.50	1.315	-	-	-0.17	0.365	0.480
	FR1 n7	40M	BPSK	1	1	DFT-15	Left Tilted	0mm	Ant 1	DSI 2	507000	2535	1	18.31	19.50	1.315	-	-	0.01	0.408	0.537
	FR1 n7	40M	BPSK	1	1	DFT-15	Right Tilted	0mm	Ant 1	DSI 2(Sim TX)	507000	2535	1	16.10	17.00	1.230	-	-	-0.1	0.560	0.689
	FR1 n7	40M	BPSK	108	54	DFT-15	Right Cheek	0mm	Ant 1	DSI 2	507000	2535	1	18.30	19.50	1.318	-	-	0.19	0.777	1.024
	FR1 n7	40M	BPSK	108	54	DFT-15	Right Tilted	0mm	Ant 1	DSI 2	507000	2535	1	18.30	19.50	1.318	-	-	-0.17	0.860	1.134
	FR1 n7	40M	BPSK	108	54	DFT-15	Left Cheek	0mm	Ant 1	DSI 2	507000	2535	1	18.30	19.50	1.318	-	-	0.14	0.363	0.479
	FR1 n7	40M	BPSK	108	54	DFT-15	Left Tilted	0mm	Ant 1	DSI 2	507000	2535	1	18.30	19.50	1.318	-	-	0.07	0.405	0.534
	FR1 n7	40M	BPSK	216	0	DFT-15	Right Cheek	0mm	Ant 1	DSI 2	507000	2535	1	18.28	19.50	1.324	-	-	0.07	0.762	1.009
	FR1 n7	40M	BPSK	216	0	DFT-15	Right Tilted	0mm	Ant 1	DSI 2	507000	2535	1	18.28	19.50	1.324	-	-	0.11	0.855	1.132
19	FR1 n38	40M	BPSK	1	1	DFT-30	Right Cheek	0mm	Ant 0	DSI 2	519000	2595	1	23.29	24.00	1.178	-	-	0.12	0.108	0.127
	FR1 n38	40M	BPSK	1	1	DFT-30	Right Tilted	0mm	Ant 0	DSI 2	519000	2595	1	23.29	24.00	1.178	-	-	0.06	0.075	0.088
	FR1 n38	40M	BPSK	1	1	DFT-30	Left Cheek	0mm	Ant 0	DSI 2	519000	2595	1	23.29	24.00	1.178	-	-	0.07	0.104	0.122
	FR1 n38	40M	BPSK	1	1	DFT-30	Left Tilted	0mm	Ant 0	DSI 2	519000	2595	1	23.29	24.00	1.178	-	-	-0.03	0.075	0.088
	FR1 n38	40M	BPSK	50	28	DFT-30	Right Cheek	0mm	Ant 0	DSI 2	519000	2595	1	23.28	24.00	1.180	-	-	0.02	0.101	0.119
	FR1 n38	40M	BPSK	50	28	DFT-30	Right Tilted	0mm	Ant 0	DSI 2	519000	2595	1	23.28	24.00	1.180	-	-	0.15	0.063	0.074
	FR1 n38	40M	BPSK	50	28	DFT-30	Left Cheek	0mm	Ant 0	DSI 2	519000	2595	1	23.28	24.00	1.180	-	-	0.1	0.091	0.107
	FR1 n38	40M	BPSK	50	28	DFT-30	Left Tilted	0mm	Ant 0	DSI 2	519000	2595	1	23.28	24.00	1.180	-	-	-0.08	0.063	0.074
3500MHZ~3700MHZ																					
	LTE Band 42	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI 2	42590	3500	1	18.32	19.00	1.169	62.9	1.006	-0.11	0.894	1.052
	LTE Band 42	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 2	DSI 2	42590	3500	1	18.32	19.00	1.169	62.9	1.006	0.18	0.321	0.378
	LTE Band 42	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI 2	42590	3500	1	18.32	19.00	1.169	62.9	1.006	-0.01	0.194	0.228
	LTE Band 42	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 2	DSI 2	42590	3500	1	18.32	19.00	1.169	62.9	1.006	-0.13	0.152	0.179
	LTE Band 42	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI 2	42190	3460	1	18.06	19.00	1.242	62.9	1.006	-0.18	0.745	0.931
20	LTE Band 42	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI 2	42990	3540	1	18.03	19.00	1.250	62.9	1.006	0.07	0.918	1.155
	LTE Band 42	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI 2(Sim TX)	42990	3540	1	15.68	16.50	1.208	62.9	1.006	-0.19	0.490	0.595
	LTE Band 42	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 2	DSI 2	42590	3500	1	18.26	19.00	1.186	62.9	1.006	-0.12	0.826	0.985
	LTE Band 42	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 2	DSI 2	42590	3500	1	18.26	19.00	1.186	62.9	1.006	-0.18	0.362	0.432
	LTE Band 42	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 2	DSI 2	42590	3500	1	18.26	19.00	1.186	62.9	1.006	0.19	0.220	0.262
	LTE Band 42	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 2	DSI 2	42590	3500	1	18.26	19.00	1.186	62.9	1.006	0.07	0.160	0.191
	LTE Band 42	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 2	DSI 2	42190	3460	1	17.92	19.00	1.282	62.9	1.006	-0.11	0.708	0.913
	LTE Band 42	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 2	DSI 2	42990	3540	1	17.86	19.00	1.300	62.9	1.006	-0.13	0.873	1.142
	LTE Band 42	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 2	DSI 2	42590	3500	1	18.20	19.00	1.202	62.9	1.006	-0.05	0.819	0.991
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Right Cheek	0mm	Ant 2	DSI 2	633332	3499.98	1	18.72	19.50	1.197	-	-	0.05	0.994	1.190
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Right Tilted	0mm	Ant 2	DSI 2	633332	3499.98	1	18.72	19.50	1.197	-	-	-0.11	0.508	0.608
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Left Cheek	0mm	Ant 2	DSI 2	633332	3499.98	1	18.72	19.50	1.197	-	-	0.19	0.322	0.385
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Left Tilted	0mm	Ant 2	DSI 2	633332	3499.98	1	18.72	19.50	1.197	-	-	-0.14	0.259	0.310
21	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Right Cheek	0mm	Ant 2	DSI 2	633332	3499.98	1	18.70	19.50	1.202	-	-	0.19	1.030	1.238
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Right Cheek	0mm	Ant 2	DSI 2	633332	3499.98	2	18.70	19.50	1.202	-	-	0.03	0.835	1.004
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Right Tilted	0mm	Ant 2	DSI 2	633332	3499.98	1	18.70	19.50	1.202	-	-	-0.13	0.506	0.608
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Left Cheek	0mm	Ant 2	DSI 2	633332	3499.98	1	18.70	19.50	1.202	-	-	0.15	0.329	0.396
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Left Tilted	0mm	Ant 2	DSI 2	633332	3499.98	1	18.70	19.50	1.202	-	-	0.07	0.264	0.317
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Right Cheek	0mm	Ant 2	DSI 2(Sim TX)	633332	3499.98	1	16.22	17.00	1.197	-	-	-0.05	0.584	0.699
	FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Right Cheek	0mm	Ant 2	DSI 2	633332	3499.98	1	18.69	19.50	1.205	-	-	-0.16	1.000	1.205
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Right Cheek	0mm	Ant 4	DSI 2	633332	3499.98	1	18.62	19.50	1.225	-	-	0.07	0.574	0.703
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Right Tilted	0mm	Ant 4	DSI 2	633332	3499.98	1	18.62	19.50	1.225	-	-	-0.03	0.762	0.933
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Left Cheek	0mm	Ant 4	DSI 2	633332	3499.98	1	18.62	19.50	1.225	-	-	0.18	0.683	0.836
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Left Tilted	0mm	Ant 4	DSI 2	633332	3499.98	1	18.62	19.50	1.225	-	-	0.17	1.010	1.237
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Left Tilted	0mm	Ant 4	DSI 2(Sim TX)	633332	3499.98	1	16.02	17.00	1.253	-	-	-0.19	0.428	0.536
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Right Cheek	0mm	Ant 4	DSI 2	633332	3499.98	1	18.59	19.50	1.233	-	-	0.1	0.565	0.697
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Right Tilted	0mm	Ant 4	DSI 2	633332	3499.98	1	18.59	19.50	1.233	-	-	0.15	0.754	0.930
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Left Cheek	0mm	Ant 4	DSI 2	633332	3499.98	1	18.59	19.50	1.233	-	-	0.13	0.682	0.841
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Left Tilted	0mm	Ant 4	DSI 2	633332	3499.98	1	18.59	19.50	1.233	-	-	-0.19	0.989	1.220
	FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Right Tilted	0mm	Ant 4	DSI 2	633332	3499.98	1	18.57	19.50	1.239	-	-	-0.01	0.745	0.923
	FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Left Cheek	0mm	Ant 4	DSI 2	633332	3499.98	1	18.57	19.50	1.239	-	-	-0.02	0.663	0.821
	FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Left Tilted	0mm	Ant 4	DSI 2	633332	3499.98	1	18.57	19.50	1.239	-	-	-0.02	0.975	1.208
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Right Cheek	0mm	Ant 5	DSI 2	633332	3499.98	1	18.15	19.00	1.216	-	-	-0.01	0.360	0.438



FCC SAR Test Report

Report No. : FA253001

FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Right Tilted	0mm	Ant 5	DSI 2	633332	3499.98	1	18.15	19.00	1.216	-	-	-0.05	0.284	0.345
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Left Cheek	0mm	Ant 5	DSI 2	633332	3499.98	1	18.15	19.00	1.216	-	-	-0.11	1.010	1.228
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Left Tilted	0mm	Ant 5	DSI 2	633332	3499.98	1	18.15	19.00	1.216	-	-	0.19	0.547	0.665
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Left Cheek	0mm	Ant 5	DSI 2(Sim TX)	633332	3499.98	1	15.56	16.50	1.242	-	-	-0.1	0.463	0.575
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Right Cheek	0mm	Ant 5	DSI 2	633332	3499.98	1	18.13	19.00	1.222	-	-	-0.01	0.351	0.429
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Right Tilted	0mm	Ant 5	DSI 2	633332	3499.98	1	18.13	19.00	1.222	-	-	-0.03	0.278	0.340
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Left Cheek	0mm	Ant 5	DSI 2	633332	3499.98	1	18.13	19.00	1.222	-	-	-0.14	0.984	1.202
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Left Tilted	0mm	Ant 5	DSI 2	633332	3499.98	1	18.13	19.00	1.222	-	-	0.17	0.529	0.646
FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Left Cheek	0mm	Ant 5	DSI 2	633332	3499.98	1	18.12	19.00	1.225	-	-	0.03	0.992	1.215
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Right Cheek	0mm	Ant 7	DSI 2	633332	3499.98	1	23.32	25.00	1.472	-	-	-0.03	0.068	0.100
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Right Tilted	0mm	Ant 7	DSI 2	633332	3499.98	1	23.32	25.00	1.472	-	-	-0.12	0.078	0.115
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Left Cheek	0mm	Ant 7	DSI 2	633332	3499.98	1	23.32	25.00	1.472	-	-	0.14	0.029	0.043
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Left Tilted	0mm	Ant 7	DSI 2	633332	3499.98	1	23.32	25.00	1.472	-	-	-0.06	0.043	0.063
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Right Cheek	0mm	Ant 7	DSI 2	633332	3499.98	1	23.28	25.00	1.486	-	-	-0.13	0.102	0.152
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Right Tilted	0mm	Ant 7	DSI 2	633332	3499.98	1	23.28	25.00	1.486	-	-	-0.14	0.124	0.184
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Left Cheek	0mm	Ant 7	DSI 2	633332	3499.98	1	23.28	25.00	1.486	-	-	0.07	0.195	0.290
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Left Tilted	0mm	Ant 7	DSI 2	633332	3499.98	1	23.28	25.00	1.486	-	-	-0.06	0.080	0.119

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
2450MHz																		
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 3	Standalone	6	2437	1	17.90	19.50	1.445	99.3	1.007	-0.1	0.253	0.368	
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 3	Standalone	6	2437	1	17.90	19.50	1.445	99.3	1.007	-0.14	0.298	0.434	
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 3	Standalone	6	2437	1	17.90	19.50	1.445	99.3	1.007	0.1	0.845	1.230	
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 3	Standalone	6	2437	1	17.90	19.50	1.445	99.3	1.007	0.19	0.961	1.399	
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 3	Standalone	1	2412	1	17.80	19.50	1.479	99.3	1.007	0.1	0.913	1.360	
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 3	Standalone	11	2462	1	17.60	19.50	1.549	99.3	1.007	0.15	0.745	1.162	
22	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 3	Standalone	1	2412	1	17.80	19.50	1.479	99.3	1.007	-0.11	0.967	1.440	
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 3	Standalone	1	2412	2	17.80	19.50	1.479	99.3	1.007	0.04	0.925	1.378	
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 3	Standalone	11	2462	1	17.60	19.50	1.549	99.3	1.007	0.03	0.793	1.237	
	WLAN2.4GHz	802.11g 6Mbps	Left Cheek	0mm	Ant 3	Standalone	6	2437	1	17.90	19.50	1.445	99.3	1.007	0.01	0.849	1.236	
	WLAN2.4GHz	802.11g 6Mbps	Left Cheek	0mm	Ant 3	Standalone	1	2412	1	17.70	19.50	1.514	99.3	1.007	0.02	0.889	1.355	
	WLAN2.4GHz	802.11g 6Mbps	Left Cheek	0mm	Ant 3	Standalone	11	2462	1	17.30	19.00	1.479	99.3	1.007	-0.05	0.678	1.010	
	WLAN2.4GHz	802.11g 6Mbps	Left Tilted	0mm	Ant 3	Standalone	6	2437	1	17.90	19.50	1.445	99.3	1.007	0.03	0.882	1.284	
	WLAN2.4GHz	802.11g 6Mbps	Left Tilted	0mm	Ant 3	Standalone	1	2412	1	17.70	19.50	1.514	99.3	1.007	0.02	0.916	1.396	
	WLAN2.4GHz	802.11g 6Mbps	Left Tilted	0mm	Ant 3	Standalone	11	2462	1	17.30	19.00	1.479	99.3	1.007	-0.05	0.722	1.075	
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 3	Simultaneous	6	2437	1	14.60	16.00	1.380	99.3	1.007	0.03	0.123	0.171	
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 3	Simultaneous	6	2437	1	14.60	16.00	1.380	99.3	1.007	0.02	0.152	0.211	
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 3	Simultaneous	6	2437	1	14.60	16.00	1.380	99.3	1.007	0.03	0.401	0.557	
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 3	Simultaneous	6	2437	1	14.60	16.00	1.380	99.3	1.007	0.09	0.450	0.626	
	Bluetooth	DH5 1Mbps	Right Cheek	0mm	Ant 3	Full power	39	2441	1	10.30	12.00	1.479	76.74	1.303	-	n/a	n/a	
	Bluetooth	DH5 1Mbps	Right Tilted	0mm	Ant 3	Full power	39	2441	1	10.30	12.00	1.479	76.74	1.303	-0.11	0.048	0.093	
	Bluetooth	DH5 1Mbps	Left Cheek	0mm	Ant 3	Full power	39	2441	1	10.30	12.00	1.479	76.74	1.303	-0.02	0.093	0.179	
23	Bluetooth	DH5 1Mbps	Left Tilted	0mm	Ant 3	Full power	39	2441	1	10.30	12.00	1.479	76.74	1.303	-0.15	0.145	0.279	
5000MHz																		
	WLAN5.3GHz	802.11n-HT40 MCS0	Right Cheek	0mm	Ant 5	Standalone	54	5270	1	16.57	18.50	1.560	96.34	1.038	0.09	0.230	0.372	
	WLAN5.3GHz	802.11n-HT40 MCS0	Right Tilted	0mm	Ant 5	Standalone	54	5270	1	16.57	18.50	1.560	96.34	1.038	-0.03	0.223	0.361	
24	WLAN5.3GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 5	Standalone	54	5270	1	16.57	18.50	1.560	96.34	1.038	-0.16	0.734	1.188	
	WLAN5.3GHz	802.11n-HT40 MCS0	Left Tilted	0mm	Ant 5	Standalone	54	5270	1	16.57	18.50	1.560	96.34	1.038	-0.19	0.483	0.782	
	WLAN5.3GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 5	Standalone	62	5310	1	14.22	16.00	1.507	96.34	1.038	-0.04	0.354	0.554	
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 5	Simultaneous	58	5290	1	12.22	14.00	1.507	92.81	1.077	0.03	0.085	0.138	
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 5	Simultaneous	58	5290	1	12.22	14.00	1.507	92.81	1.077	0.02	0.101	0.164	
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 5	Simultaneous	58	5290	1	12.22	14.00	1.507	92.81	1.077	-0.11	0.272	0.441	
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 5	Simultaneous	58	5290	1	12.22	14.00	1.507	92.81	1.077	0.05	0.162	0.263	
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 5	Standalone	106	5530	1	15.03	16.50	1.403	92.81	1.077	-0.19	0.162	0.245	



FCC SAR Test Report

Report No. : FA253001

	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 5	Standalone	106	5530	1	15.03	16.50	1.403	92.81	1.077	-0.1	0.134	0.202
25	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 5	Standalone	106	5530	1	15.03	16.50	1.403	92.81	1.077	-0.14	0.791	1.195
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 5	Standalone	106	5530	2	15.03	16.50	1.403	92.81	1.077	0.12	0.743	1.123
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 5	Standalone	106	5530	1	15.03	16.50	1.403	92.81	1.077	-0.12	0.289	0.437
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 5	Simultaneous	106	5530	1	11.27	13.00	1.489	92.81	1.077	0.05	0.074	0.119
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 5	Simultaneous	106	5530	1	11.27	13.00	1.489	92.81	1.077	0.04	0.054	0.087
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 5	Simultaneous	106	5530	1	11.27	13.00	1.489	92.81	1.077	-0.14	0.283	0.454
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 5	Simultaneous	106	5530	1	11.27	13.00	1.489	92.81	1.077	0.02	0.123	0.197
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 5	Standalone	155	5775	1	14.42	16.00	1.439	92.81	1.077	-0.01	0.138	0.214
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 5	Standalone	155	5775	1	14.42	16.00	1.439	92.81	1.077	0.17	0.107	0.166
26	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 5	Standalone	155	5775	1	14.42	16.00	1.439	92.81	1.077	-0.09	0.642	0.995
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 5	Standalone	155	5775	1	14.42	16.00	1.439	92.81	1.077	-0.06	0.274	0.425
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 5	Simultaneous	155	5775	1	10.56	12.00	1.393	92.81	1.077	0.02	0.058	0.087
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 5	Simultaneous	155	5775	1	10.56	12.00	1.393	92.81	1.077	0.05	0.042	0.063
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 5	Simultaneous	155	5775	1	10.56	12.00	1.393	92.81	1.077	-0.03	0.254	0.381
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 5	Simultaneous	155	5775	1	10.56	12.00	1.393	92.81	1.077	-0.01	0.101	0.152



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)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750MHz																					
27	LTE Band 12	10M	QPSK	1	0	-	Front	5mm	Ant 0	DSI 3(Sim TX)	23095	707.5	1	22.79	24.00	1.321	-	-	-0.13	0.147	0.194
	LTE Band 12	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3(Sim TX)	23095	707.5	1	22.79	24.00	1.321	-	-	-0.12	0.297	0.392
	LTE Band 12	10M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	23095	707.5	1	22.79	24.00	1.321	-	-	-0.09	0.053	0.070
	LTE Band 12	10M	QPSK	1	0	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	23095	707.5	1	22.79	24.00	1.321	-	-	0.18	0.138	0.182
	LTE Band 12	10M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	23095	707.5	1	22.79	24.00	1.321	-	-	0.09	0.229	0.303
	LTE Band 12	10M	QPSK	25	0	-	Front	5mm	Ant 0	DSI 3(Sim TX)	23095	707.5	1	21.82	23.00	1.312	-	-	-0.02	0.142	0.186
	LTE Band 12	10M	QPSK	25	0	-	Back	5mm	Ant 0	DSI 3(Sim TX)	23095	707.5	1	21.82	23.00	1.312	-	-	0.04	0.255	0.335
	LTE Band 12	10M	QPSK	25	0	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	23095	707.5	1	21.82	23.00	1.312	-	-	-0.16	0.000	0.000
	LTE Band 12	10M	QPSK	25	0	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	23095	707.5	1	21.82	23.00	1.312	-	-	-0.14	0.102	0.134
	LTE Band 12	10M	QPSK	25	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	23095	707.5	1	21.82	23.00	1.312	-	-	0.09	0.195	0.256
28	LTE Band 13	10M	QPSK	1	0	-	Front	5mm	Ant 0	DSI 3(Sim TX)	23230	782	1	22.65	24.00	1.365	-	-	-0.04	0.291	0.397
	LTE Band 13	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3(Sim TX)	23230	782	1	22.65	24.00	1.365	-	-	0.01	0.501	0.684
	LTE Band 13	10M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	23230	782	1	22.65	24.00	1.365	-	-	0.08	0.173	0.236
	LTE Band 13	10M	QPSK	1	0	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	23230	782	1	22.65	24.00	1.365	-	-	0	0.214	0.292
	LTE Band 13	10M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	23230	782	1	22.65	24.00	1.365	-	-	0.03	0.318	0.434
	LTE Band 13	10M	QPSK	25	0	-	Front	5mm	Ant 0	DSI 3(Sim TX)	23230	782	1	21.68	23.00	1.355	-	-	-0.06	0.237	0.321
	LTE Band 13	10M	QPSK	25	0	-	Back	5mm	Ant 0	DSI 3(Sim TX)	23230	782	1	21.68	23.00	1.355	-	-	0.01	0.371	0.503
	LTE Band 13	10M	QPSK	25	0	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	23230	782	1	21.68	23.00	1.355	-	-	-0.15	0.137	0.186
	LTE Band 13	10M	QPSK	25	0	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	23230	782	1	21.68	23.00	1.355	-	-	0.18	0.184	0.249
	LTE Band 13	10M	QPSK	25	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	23230	782	1	21.68	23.00	1.355	-	-	0.07	0.250	0.339
835MHz																					
29	GSM850	-	-	-	-	GPRS 4 Tx slots	Front	5mm	Ant 0	DSI 3(Sim TX)	189	836.4	1	26.84	28.50	1.466	-	-	-0.13	0.538	0.788
	GSM850	-	-	-	-	GPRS 4 Tx slots	Back	5mm	Ant 0	DSI 3(Sim TX)	189	836.4	1	26.84	28.50	1.466	-	-	-0.09	0.620	0.909
	GSM850	-	-	-	-	GPRS 4 Tx slots	Left Side	5mm	Ant 0	DSI 3(Sim TX)	189	836.4	1	26.84	28.50	1.466	-	-	-0.14	0.193	0.283
	GSM850	-	-	-	-	GPRS 4 Tx slots	Right Side	5mm	Ant 0	DSI 3(Sim TX)	189	836.4	1	26.84	28.50	1.466	-	-	0.19	0.299	0.438
	GSM850	-	-	-	-	GPRS 4 Tx slots	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	189	836.4	1	26.84	28.50	1.466	-	-	-0.07	0.581	0.851
	GSM850	-	-	-	-	GPRS 4 Tx slots	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	128	824.2	1	26.81	28.50	1.476	-	-	0.08	0.469	0.692
	GSM850	-	-	-	-	GPRS 4 Tx slots	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	251	848.8	1	26.75	28.50	1.496	-	-	0.16	0.525	0.786
	GSM850	-	-	-	-	GPRS 4 Tx slots	Back	5mm	Ant 0	DSI 3(Sim TX)	128	824.2	1	26.81	28.50	1.476	-	-	0.13	0.611	0.902
	GSM850	-	-	-	-	GPRS 4 Tx slots	Back	5mm	Ant 0	DSI 3(Sim TX)	251	848.8	1	26.75	28.50	1.496	-	-	0.07	0.675	1.010
	GSM850	-	-	-	-	GPRS 4 Tx slots	Back	5mm	Ant 0	DSI 3(Sim TX)	251	848.8	1	26.75	28.50	1.496	-	-	0.07	0.675	1.010
30	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	DSI 3(Sim TX)	4182	836.4	1	23.12	24.00	1.225	-	-	0.13	0.559	0.685
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3(Sim TX)	4182	836.4	1	23.12	24.00	1.225	-	-	0.03	0.884	1.083
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 0	DSI 3(Sim TX)	4182	836.4	1	23.12	24.00	1.225	-	-	-0.14	0.201	0.246
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Side	5mm	Ant 0	DSI 3(Sim TX)	4182	836.4	1	23.12	24.00	1.225	-	-	0.11	0.316	0.387
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	4182	836.4	1	23.12	24.00	1.225	-	-	0.08	0.607	0.743
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3(Sim TX)	4132	826.4	1	23.05	24.00	1.245	-	-	0.09	0.802	0.998
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3(Sim TX)	4233	846.6	1	23.02	24.00	1.253	-	-	-0.01	0.941	1.179
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3(Sim TX)	4233	846.6	2	23.02	24.00	1.253	-	-	0.02	0.782	0.980
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3(Sim TX)	4233	846.6	2	23.02	24.00	1.253	-	-	0.02	0.782	0.980
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3(Sim TX)	4233	846.6	2	23.02	24.00	1.253	-	-	0.02	0.782	0.980
31	LTE Band 26	15M	QPSK	1	0	-	Front	5mm	Ant 0	DSI 3(Sim TX)	26865	831.5	1	22.58	24.00	1.387	-	-	-0.12	0.330	0.458
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3(Sim TX)	26865	831.5	1	22.58	24.00	1.387	-	-	0.09	0.557	0.772
	LTE Band 26	15M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	26865	831.5	1	22.58	24.00	1.387	-	-	0.01	0.123	0.171
	LTE Band 26	15M	QPSK	1	0	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	26865	831.5	1	22.58	24.00	1.387	-	-	0.11	0.185	0.257
	LTE Band 26	15M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	26865	831.5	1	22.58	24.00	1.387	-	-	0.09	0.402	0.557
	LTE Band 26	15M	QPSK	36	0	-	Front	5mm	Ant 0	DSI 3(Sim TX)	26865	831.5	1	21.91	23.00	1.285	-	-	-0.02	0.285	0.366
	LTE Band 26	15M	QPSK	36	0	-	Back	5mm	Ant 0	DSI 3(Sim TX)	26865	831.5	1	21.91	23.00	1.285	-	-	-0.19	0.470	0.604
	LTE Band 26	15M	QPSK	36	0	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	26865	831.5	1	21.91	23.00	1.285	-	-	0.06	0.102	0.131
	LTE Band 26	15M	QPSK	36	0	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	26865	831.5	1	21.91	23.00	1.285	-	-	0.17	0.154	0.198
	LTE Band 26	15M	QPSK	36	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	26865	831.5	1	21.91	23.00	1.285	-	-	0.11	0.327	0.420
32	FR1 n5	20M	BPSK	1	1	-	Front	5mm	Ant 0	DSI 3(Sim TX)	167300	836.5	1	23.19	24.00	1.205	-	-	-0.05	0.363	0.437
	FR1 n5	20M	BPSK	1	1	-	Back	5mm	Ant 0	DSI 3(Sim TX)	167300	836.5	1	23.19	24.00	1.205	-	-	0.07	0.604	0.728



FCC SAR Test Report

Report No. : FA253001

	FR1 n5	20M	BPSK	1	1	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	167300	836.5	1	23.19	24.00	1.205	-	-	0.15	0.139	0.167
	FR1 n5	20M	BPSK	1	1	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	167300	836.5	1	23.19	24.00	1.205	-	-	-0.14	0.214	0.258
	FR1 n5	20M	BPSK	1	1	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	167300	836.5	1	23.19	24.00	1.205	-	-	-0.09	0.417	0.502
	FR1 n5	20M	BPSK	50	28	-	Front	5mm	Ant 0	DSI 3(Sim TX)	167300	836.5	1	22.94	24.00	1.276	-	-	-0.12	0.368	0.470
	FR1 n5	20M	BPSK	50	28	-	Back	5mm	Ant 0	DSI 3(Sim TX)	167300	836.5	1	22.94	24.00	1.276	-	-	-0.16	0.561	0.716
	FR1 n5	20M	BPSK	50	28	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	167300	836.5	1	22.94	24.00	1.276	-	-	0.11	0.134	0.171
	FR1 n5	20M	BPSK	50	28	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	167300	836.5	1	22.94	24.00	1.276	-	-	0.05	0.210	0.268
	FR1 n5	20M	BPSK	50	28	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	167300	836.5	1	22.94	24.00	1.276	-	-	-0.15	0.493	0.629
1750MHz																					
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	DSI 3(Sim TX)	1413	1732.6	1	17.31	18.00	1.172	-	-	0.08	0.589	0.690
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3(Sim TX)	1413	1732.6	1	17.31	18.00	1.172	-	-	0.1	0.688	0.806
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 0	DSI 3(Sim TX)	1413	1732.6	1	17.31	18.00	1.172	-	-	0.15	0.055	0.064
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Side	5mm	Ant 0	DSI 3(Sim TX)	1413	1732.6	1	17.31	18.00	1.172	-	-	0.03	0.105	0.123
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	1413	1732.6	1	17.31	18.00	1.172	-	-	-0.19	1.010	1.184
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	1312	1712.4	1	17.01	18.00	1.256	-	-	0.09	0.906	1.138
33	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	1513	1752.6	1	17.30	18.00	1.175	-	-	0.18	1.070	1.257
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	1513	1752.6	2	17.30	18.00	1.175	-	-	0.16	1.050	1.234
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3(Sim TX)	1312	1712.4	1	17.01	18.00	1.256	-	-	0.09	0.624	0.784
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3(Sim TX)	1513	1752.6	1	17.30	18.00	1.175	-	-	0.18	0.653	0.767
	LTE Band 66	20M	QPSK	1	0	-	Front	5mm	Ant 0	DSI 3(Sim TX)	132322	1745	1	16.06	17.00	1.242	-	-	-0.09	0.297	0.369
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3(Sim TX)	132322	1745	1	16.06	17.00	1.242	-	-	0.17	0.508	0.631
	LTE Band 66	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	132322	1745	1	16.06	17.00	1.242	-	-	-	n/a	n/a
	LTE Band 66	20M	QPSK	1	0	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	132322	1745	1	16.06	17.00	1.242	-	-	-0.18	0.076	0.094
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	132322	1745	1	16.06	17.00	1.242	-	-	0.13	0.708	0.879
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	132072	1720	1	15.84	17.00	1.306	-	-	-0.16	0.653	0.853
34	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	132572	1770	1	15.83	17.00	1.309	-	-	-0.14	0.804	1.053
	LTE Band 66	20M	QPSK	50	0	-	Front	5mm	Ant 0	DSI 3(Sim TX)	132322	1745	1	15.89	17.00	1.291	-	-	-0.19	0.296	0.382
	LTE Band 66	20M	QPSK	50	0	-	Back	5mm	Ant 0	DSI 3(Sim TX)	132322	1745	1	15.89	17.00	1.291	-	-	0.08	0.554	0.715
	LTE Band 66	20M	QPSK	50	0	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	132322	1745	1	15.89	17.00	1.291	-	-	-	n/a	n/a
	LTE Band 66	20M	QPSK	50	0	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	132322	1745	1	15.89	17.00	1.291	-	-	-0.18	0.084	0.108
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	132322	1745	1	15.89	17.00	1.291	-	-	0.15	0.728	0.940
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	132072	1720	1	15.78	17.00	1.324	-	-	-0.16	0.638	0.845
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	132572	1770	1	15.62	17.00	1.374	-	-	-0.14	0.732	1.006
	LTE Band 66	20M	QPSK	100	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	132322	1745	1	15.92	17.00	1.282	-	-	-0.11	0.721	0.925
	LTE Band 66	20M	QPSK	1	0	-	Front	5mm	Ant 1	DSI 3(Sim TX)	132322	1745	1	18.09	19.00	1.233	-	-	0.01	0.285	0.351
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3(Sim TX)	132322	1745	1	18.09	19.00	1.233	-	-	0.13	0.503	0.620
	LTE Band 66	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	DSI 3(Sim TX)	132322	1745	1	18.09	19.00	1.233	-	-	0.12	0.230	0.284
	LTE Band 66	20M	QPSK	1	0	-	Top Side	5mm	Ant 1	DSI 3(Sim TX)	132322	1745	1	18.09	19.00	1.233	-	-	0.01	0.510	0.629
	LTE Band 66	20M	QPSK	50	0	-	Front	5mm	Ant 1	DSI 3(Sim TX)	132322	1745	1	17.99	19.00	1.262	-	-	-0.04	0.288	0.363
	LTE Band 66	20M	QPSK	50	0	-	Back	5mm	Ant 1	DSI 3(Sim TX)	132322	1745	1	17.99	19.00	1.262	-	-	-0.1	0.496	0.626
	LTE Band 66	20M	QPSK	50	0	-	Left Side	5mm	Ant 1	DSI 3(Sim TX)	132322	1745	1	17.99	19.00	1.262	-	-	0.04	0.230	0.290
	LTE Band 66	20M	QPSK	50	0	-	Top Side	5mm	Ant 1	DSI 3(Sim TX)	132322	1745	1	17.99	19.00	1.262	-	-	-0.06	0.505	0.637
	FR1 n66	40M	BPSK	1	1	DFT-15	Front	5mm	Ant 0	DSI 3(Sim TX)	349000	1745	1	16.73	17.50	1.194	-	-	-0.03	0.520	0.621
	FR1 n66	40M	BPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 3(Sim TX)	349000	1745	1	16.73	17.50	1.194	-	-	-0.02	0.654	0.781
	FR1 n66	40M	BPSK	1	1	DFT-15	Left Side	5mm	Ant 0	DSI 3(Sim TX)	349000	1745	1	16.73	17.50	1.194	-	-	-0.17	0.052	0.062
	FR1 n66	40M	BPSK	1	1	DFT-15	Right Side	5mm	Ant 0	DSI 3(Sim TX)	349000	1745	1	16.73	17.50	1.194	-	-	-0.1	0.093	0.111
	FR1 n66	40M	BPSK	1	1	DFT-15	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	349000	1745	1	16.73	17.50	1.194	-	-	0.1	0.969	1.157
	FR1 n66	40M	BPSK	108	54	DFT-15	Front	5mm	Ant 0	DSI 3(Sim TX)	349000	1745	1	16.71	17.50	1.199	-	-	-0.14	0.516	0.619
	FR1 n66	40M	BPSK	108	54	DFT-15	Back	5mm	Ant 0	DSI 3(Sim TX)	349000	1745	1	16.71	17.50	1.199	-	-	-0.06	0.655	0.786
	FR1 n66	40M	BPSK	108	54	DFT-15	Left Side	5mm	Ant 0	DSI 3(Sim TX)	349000	1745	1	16.71	17.50	1.199	-	-	0.04	0.054	0.065
	FR1 n66	40M	BPSK	108	54	DFT-15	Right Side	5mm	Ant 0	DSI 3(Sim TX)	349000	1745	1	16.71	17.50	1.199	-	-	-0.05	0.098	0.118
35	FR1 n66	40M	BPSK	108	54	DFT-15	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	349000	1745	1	16.71	17.50	1.199	-	-	0.03	0.980	1.176
	FR1 n66	40M	BPSK	216	0	DFT-15	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	349000	1745	1	16.70	17.50	1.202	-	-	0.04	0.958	1.152
1900MHz																					
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Front	5mm	Ant 0	DSI 3(Sim TX)	661	1880	1	19.45	20.20	1.189	-	-	0.1	0.281	0.334
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Back	5mm	Ant 0	DSI 3(Sim TX)	661	1880	1	19.45	20.20	1.189	-	-	-0.06	0.379	0.450



FCC SAR Test Report

Report No. : FA253001

	GSM1900	-	-	-	-	GPRS 4 Tx slots	Left Side	5mm	Ant 0	DSI 3(Sim TX)	661	1880	1	19.45	20.20	1.189	-	-	-	n/a	n/a
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Right Side	5mm	Ant 0	DSI 3(Sim TX)	661	1880	1	19.45	20.20	1.189	-	-	-0.09	0.063	0.075
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	661	1880	1	19.45	20.20	1.189	-	-	0	0.728	0.865
36	GSM1900	-	-	-	-	GPRS 4 Tx slots	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	512	1850.2	1	19.15	20.20	1.274	-	-	-0.14	0.742	0.945
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	810	1909.8	1	19.37	20.20	1.211	-	-	-0.16	0.535	0.648
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	DSI 3(Sim TX)	9400	1880	1	17.45	18.00	1.135	-	-	-0.08	0.395	0.448
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3(Sim TX)	9400	1880	1	17.45	18.00	1.135	-	-	-0.05	0.577	0.655
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 0	DSI 3(Sim TX)	9400	1880	1	17.45	18.00	1.135	-	-	-	n/a	n/a
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Side	5mm	Ant 0	DSI 3(Sim TX)	9400	1880	1	17.45	18.00	1.135	-	-	-0.17	0.074	0.084
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	9400	1880	1	17.45	18.00	1.135	-	-	0.06	0.726	0.824
37	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	9262	1852.4	1	17.08	18.00	1.236	-	-	-0.01	0.996	1.231
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	9538	1907.6	1	16.93	18.00	1.279	-	-	0.09	0.746	0.954
	LTE Band 25	20M	QPSK	1	0	-	Front	5mm	Ant 0	DSI 3(Sim TX)	26340	1880	1	16.91	18.00	1.285	-	-	0.08	0.392	0.504
	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3(Sim TX)	26340	1880	1	16.91	18.00	1.285	-	-	0.17	0.477	0.613
	LTE Band 25	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	26340	1880	1	16.91	18.00	1.285	-	-	-	n/a	n/a
	LTE Band 25	20M	QPSK	1	0	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	26340	1880	1	16.91	18.00	1.285	-	-	-0.12	0.061	0.078
	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	26340	1880	1	16.91	18.00	1.285	-	-	0.05	0.771	0.991
38	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	26140	1860	1	16.73	18.00	1.340	-	-	-0.11	0.877	1.175
	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	26590	1905	1	16.76	18.00	1.330	-	-	-0.03	0.650	0.865
	LTE Band 25	20M	QPSK	50	0	-	Front	5mm	Ant 0	DSI 3(Sim TX)	26340	1880	1	16.77	18.00	1.327	-	-	-0.01	0.390	0.518
	LTE Band 25	20M	QPSK	50	0	-	Back	5mm	Ant 0	DSI 3(Sim TX)	26340	1880	1	16.77	18.00	1.327	-	-	-0.15	0.486	0.645
	LTE Band 25	20M	QPSK	50	0	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	26340	1880	1	16.77	18.00	1.327	-	-	-	n/a	n/a
	LTE Band 25	20M	QPSK	50	0	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	26340	1880	1	16.77	18.00	1.327	-	-	0.02	0.062	0.082
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	26340	1880	1	16.77	18.00	1.327	-	-	0.16	0.755	1.002
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	26140	1860	1	16.53	18.00	1.403	-	-	-0.11	0.791	1.110
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	26590	1905	1	16.57	18.00	1.390	-	-	-0.03	0.636	0.884
	LTE Band 25	20M	QPSK	100	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	26340	1880	1	16.74	18.00	1.337	-	-	-0.19	0.749	1.001
	LTE Band 2	20M	QPSK	1	0	-	Front	5mm	Ant 1	DSI 3(Sim TX)	18900	1880	1	19.38	20.50	1.294	-	-	0.09	0.226	0.292
	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3(Sim TX)	18900	1880	1	19.38	20.50	1.294	-	-	0.03	0.410	0.531
	LTE Band 2	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	DSI 3(Sim TX)	18900	1880	1	19.38	20.50	1.294	-	-	-0.1	0.178	0.230
39	LTE Band 2	20M	QPSK	1	0	-	Top Side	5mm	Ant 1	DSI 3(Sim TX)	18900	1880	1	19.38	20.50	1.294	-	-	-0.18	0.515	0.667
	LTE Band 2	20M	QPSK	50	0	-	Front	5mm	Ant 1	DSI 3(Sim TX)	18900	1880	1	19.23	20.50	1.340	-	-	0.12	0.225	0.301
	LTE Band 2	20M	QPSK	50	0	-	Back	5mm	Ant 1	DSI 3(Sim TX)	18900	1880	1	19.23	20.50	1.340	-	-	0.07	0.399	0.535
	LTE Band 2	20M	QPSK	50	0	-	Left Side	5mm	Ant 1	DSI 3(Sim TX)	18900	1880	1	19.23	20.50	1.340	-	-	0.17	0.174	0.233
	LTE Band 2	20M	QPSK	50	0	-	Top Side	5mm	Ant 1	DSI 3(Sim TX)	18900	1880	1	19.23	20.50	1.340	-	-	-0.08	0.404	0.541
	FR1 n2	20M	BPSK	1	1	DFT-15	Front	5mm	Ant 0	DSI 3(Sim TX)	376000	1880	1	17.21	18.00	1.199	-	-	-0.07	0.362	0.434
	FR1 n2	20M	BPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 3(Sim TX)	376000	1880	1	17.21	18.00	1.199	-	-	-0.05	0.491	0.589
	FR1 n2	20M	BPSK	1	1	DFT-15	Left Side	5mm	Ant 0	DSI 3(Sim TX)	376000	1880	1	17.21	18.00	1.199	-	-	-	n/a	n/a
	FR1 n2	20M	BPSK	1	1	DFT-15	Right Side	5mm	Ant 0	DSI 3(Sim TX)	376000	1880	1	17.21	18.00	1.199	-	-	0.11	0.077	0.092
	FR1 n2	20M	BPSK	1	1	DFT-15	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	376000	1880	1	17.21	18.00	1.199	-	-	0.1	0.909	1.090
40	FR1 n2	20M	BPSK	1	1	DFT-15	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	372000	1860	1	17.12	18.00	1.225	-	-	0.19	1.010	1.237
	FR1 n2	20M	BPSK	1	1	DFT-15	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	380000	1900	1	17.14	18.00	1.219	-	-	-0.05	0.933	1.137
	FR1 n2	20M	BPSK	50	28	DFT-15	Front	5mm	Ant 0	DSI 3(Sim TX)	376000	1880	1	17.20	18.00	1.202	-	-	0.12	0.359	0.432
	FR1 n2	20M	BPSK	50	28	DFT-15	Back	5mm	Ant 0	DSI 3(Sim TX)	376000	1880	1	17.20	18.00	1.202	-	-	-0.13	0.483	0.581
	FR1 n2	20M	BPSK	50	28	DFT-15	Left Side	5mm	Ant 0	DSI 3(Sim TX)	376000	1880	1	17.20	18.00	1.202	-	-	-	n/a	n/a
	FR1 n2	20M	BPSK	50	28	DFT-15	Right Side	5mm	Ant 0	DSI 3(Sim TX)	376000	1880	1	17.20	18.00	1.202	-	-	0.05	0.075	0.090
	FR1 n2	20M	BPSK	50	28	DFT-15	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	376000	1880	1	17.20	18.00	1.202	-	-	0.11	0.882	1.060
	FR1 n2	20M	BPSK	50	28	DFT-15	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	372000	1860	1	17.10	18.00	1.230	-	-	-0.13	0.985	1.212
	FR1 n2	20M	BPSK	50	28	DFT-15	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	380000	1900	1	17.11	18.00	1.227	-	-	0.08	0.916	1.124
	FR1 n2	20M	BPSK	100	0	DFT-15	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	376000	1880	1	17.18	18.00	1.208	-	-	0.07	0.879	1.062
2600MHz																					
	LTE Band 7	20M	QPSK	1	0	-	Front	5mm	Ant 0	DSI 3(Sim TX)	21100	2535	1	15.19	16.00	1.205	-	-	-0.18	0.232	0.280
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3(Sim TX)	21100	2535	1	15.19	16.00	1.205	-	-	0.1	0.290	0.349
	LTE Band 7	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	21100	2535	1	15.19	16.00	1.205	-	-	-	n/a	n/a
	LTE Band 7	20M	QPSK	1	0	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	21100	2535	1	15.19	16.00	1.205	-	-	-0.06	0.258	0.311
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	21100	2535	1	15.19	16.00	1.205	-	-	0.03	0.679	0.818



FCC SAR Test Report

Report No. : FA253001

	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	20850	2510	1	14.98	16.00	1.265	-	-	-0.13	0.642	0.812
41	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	21350	2560	1	15.13	16.00	1.222	-	-	0.15	0.798	0.975
	LTE Band 7C	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	21350+ 21152	2560+ 2540.2	1	14.73	16.00	1.340	-	-	0.12	0.706	0.946
	LTE Band 7	20M	QPSK	50	0	-	Front	5mm	Ant 0	DSI 3(Sim TX)	21100	2535	1	15.05	16.00	1.245	-	-	-0.04	0.243	0.302
	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 0	DSI 3(Sim TX)	21100	2535	1	15.05	16.00	1.245	-	-	-0.1	0.437	0.544
	LTE Band 7	20M	QPSK	50	0	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	21100	2535	1	15.05	16.00	1.245	-	-	-	n/a	n/a
	LTE Band 7	20M	QPSK	50	0	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	21100	2535	1	15.05	16.00	1.245	-	-	0.07	0.265	0.330
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	21100	2535	1	15.05	16.00	1.245	-	-	-0.04	0.730	0.908
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	20850	2510	1	14.94	16.00	1.276	-	-	-0.13	0.633	0.808
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	21350	2560	1	15.03	16.00	1.250	-	-	0.15	0.756	0.945
	LTE Band 7	20M	QPSK	100	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	21100	2535	1	14.98	16.00	1.265	-	-	-0.16	0.725	0.917
	LTE Band 7	20M	QPSK	1	0	-	Front	5mm	Ant 1	DSI 3(Sim TX)	21100	2535	1	15.82	17.00	1.312	-	-	-0.03	0.216	0.283
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3(Sim TX)	21100	2535	1	15.82	17.00	1.312	-	-	0.07	0.390	0.512
	LTE Band 7	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	DSI 3(Sim TX)	21100	2535	1	15.82	17.00	1.312	-	-	-0.1	0.185	0.243
	LTE Band 7	20M	QPSK	1	0	-	Top Side	5mm	Ant 1	DSI 3(Sim TX)	21100	2535	1	15.82	17.00	1.312	-	-	-0.16	0.506	0.664
	LTE Band 7C	20M	QPSK	1	99	-	Top Side	5mm	Ant 1	DSI 3(Sim TX)	21100+ 21298	2535+ 2554.8	1	14.53	16.00	1.403	-	-	0.03	0.450	0.631
	LTE Band 7	20M	QPSK	50	0	-	Front	5mm	Ant 1	DSI 3(Sim TX)	21100	2535	1	15.64	17.00	1.368	-	-	0.17	0.212	0.290
	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 1	DSI 3(Sim TX)	21100	2535	1	15.64	17.00	1.368	-	-	-0.05	0.377	0.516
	LTE Band 7	20M	QPSK	50	0	-	Left Side	5mm	Ant 1	DSI 3(Sim TX)	21100	2535	1	15.64	17.00	1.368	-	-	0	0.181	0.248
	LTE Band 7	20M	QPSK	50	0	-	Top Side	5mm	Ant 1	DSI 3(Sim TX)	21100	2535	1	15.64	17.00	1.368	-	-	0.03	0.446	0.610
	LTE Band 38	20M	QPSK	1	0	-	Front	5mm	Ant 1	DSI 3(Sim TX)	38000	2595	1	16.59	18.40	1.517	-	-	-0.04	0.212	0.322
	LTE Band 38	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3(Sim TX)	38000	2595	1	16.59	18.40	1.517	-	-	0	0.370	0.561
	LTE Band 38	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	DSI 3(Sim TX)	38000	2595	1	16.59	18.40	1.517	-	-	-0.11	0.185	0.281
42	LTE Band 38	20M	QPSK	1	0	-	Top Side	5mm	Ant 1	DSI 3(Sim TX)	38000	2595	1	16.59	18.40	1.517	-	-	-0.14	0.417	0.633
	LTE Band 38C	20M	QPSK	1	99	-	Top Side	5mm	Ant 1	DSI 3(Sim TX)	37901+ 38099	2585.1+ 2604.9	1	16.83	18.40	1.435	-	-	0.02	0.410	0.589
	LTE Band 38	20M	QPSK	50	0	-	Front	5mm	Ant 1	DSI 3(Sim TX)	38000	2595	1	16.54	18.40	1.535	-	-	0.03	0.210	0.322
	LTE Band 38	20M	QPSK	50	0	-	Back	5mm	Ant 1	DSI 3(Sim TX)	38000	2595	1	16.54	18.40	1.535	-	-	0.02	0.365	0.560
	LTE Band 38	20M	QPSK	50	0	-	Left Side	5mm	Ant 1	DSI 3(Sim TX)	38000	2595	1	16.54	18.40	1.535	-	-	-0.15	0.181	0.278
	LTE Band 38	20M	QPSK	50	0	-	Top Side	5mm	Ant 1	DSI 3(Sim TX)	38000	2595	1	16.54	18.40	1.535	-	-	-0.05	0.402	0.617
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Front	5mm	Ant 1	DSI 3(Sim TX)	38000	2595	1	18.39	20.00	1.449	-	-	-0.01	0.213	0.309
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3(Sim TX)	38000	2595	1	18.39	20.00	1.449	-	-	0.13	0.390	0.565
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	DSI 3(Sim TX)	38000	2595	1	18.39	20.00	1.449	-	-	0.06	0.187	0.271
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Top Side	5mm	Ant 1	DSI 3(Sim TX)	38000	2595	1	18.39	20.00	1.449	-	-	-0.05	0.430	0.623
	LTE Band 38(HPUE)	20M	QPSK	50	0	-	Front	5mm	Ant 1	DSI 3(Sim TX)	38000	2595	1	18.38	20.00	1.452	-	-	-0.18	0.212	0.308
	LTE Band 38(HPUE)	20M	QPSK	50	0	-	Back	5mm	Ant 1	DSI 3(Sim TX)	38000	2595	1	18.38	20.00	1.452	-	-	-0.19	0.381	0.553
	LTE Band 38(HPUE)	20M	QPSK	50	0	-	Left Side	5mm	Ant 1	DSI 3(Sim TX)	38000	2595	1	18.38	20.00	1.452	-	-	0.08	0.162	0.235
	LTE Band 38(HPUE)	20M	QPSK	50	0	-	Top Side	5mm	Ant 1	DSI 3(Sim TX)	38000	2595	1	18.38	20.00	1.452	-	-	0.16	0.425	0.617
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	17.18	17.90	1.180	62.9	1.006	-0.07	0.266	0.316
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	17.18	17.90	1.180	62.9	1.006	0.03	0.399	0.474
	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	17.18	17.90	1.180	62.9	1.006	-	n/a	n/a
	LTE Band 41	20M	QPSK	1	0	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	17.18	17.90	1.180	62.9	1.006	0.11	0.210	0.249
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	17.18	17.90	1.180	62.9	1.006	0.02	0.857	1.018
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	39750	2506	1	17.13	17.90	1.194	62.9	1.006	-0.13	0.626	0.752
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	40185	2549.5	1	16.88	17.90	1.265	62.9	1.006	-0.04	0.751	0.956
43	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	41055	2636.5	1	16.93	17.90	1.250	62.9	1.006	-0.19	0.963	1.211
	LTE Band 41C	20M	QPSK	1	99	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	41055+ 41253	2636.5+ 2655.3	1	17.02	17.90	1.225	62.9	1.006	0.03	0.823	1.014
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	41490	2680	1	17.15	17.90	1.189	62.9	1.006	-0.12	0.818	0.978
	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	17.07	17.90	1.211	62.9	1.006	0.15	0.269	0.328
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	17.07	17.90	1.211	62.9	1.006	-0.16	0.405	0.493
	LTE Band 41	20M	QPSK	50	0	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	17.07	17.90	1.211	62.9	1.006	-	n/a	n/a
	LTE Band 41	20M	QPSK	50	0	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	17.07	17.90	1.211	62.9	1.006	0.03	0.199	0.242
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	17.07	17.90	1.211	62.9	1.006	0.17	0.867	1.056
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	39750	2506	1	17.04	17.90	1.219	62.9	1.006	-0.13	0.711	0.872
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	40185	2549.5	1	16.88	17.90	1.265	62.9	1.006	0.05	0.816	1.038
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	41055	2636.5	1	16.89	17.90	1.262	62.9	1.006	-0.01	0.827	1.050



FCC SAR Test Report

Report No. : FA253001

	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	41490	2680	1	17.01	17.90	1.227	62.9	1.006	0.02	0.792	0.978
	LTE Band 41	20M	QPSK	100	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	17.02	17.90	1.225	62.9	1.006	0.15	0.932	1.148
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Front	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	18.77	19.50	1.183	42.9	1.009	-0.03	0.248	0.296
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	18.77	19.50	1.183	42.9	1.009	0.17	0.365	0.436
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	18.77	19.50	1.183	42.9	1.009	-	n/a	n/a
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	18.77	19.50	1.183	42.9	1.009	0.07	0.218	0.260
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	18.77	19.50	1.183	42.9	1.009	-0.17	0.785	0.937
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	39750	2506	1	18.67	19.50	1.211	42.9	1.009	0.08	0.619	0.756
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	40185	2549.5	1	18.71	19.50	1.199	42.9	1.009	0.05	0.681	0.824
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	41055	2636.5	1	18.76	19.50	1.186	42.9	1.009	-0.02	0.924	1.106
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	41490	2680	1	18.72	19.50	1.197	42.9	1.009	0.16	0.772	0.932
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Front	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	18.71	19.50	1.199	42.9	1.009	-0.08	0.248	0.300
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Back	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	18.71	19.50	1.199	42.9	1.009	0.03	0.368	0.445
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Left Side	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	18.71	19.50	1.199	42.9	1.009	-	n/a	n/a
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Right Side	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	18.71	19.50	1.199	42.9	1.009	0.02	0.223	0.270
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	18.71	19.50	1.199	42.9	1.009	0.01	0.799	0.967
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	39750	2506	1	18.58	19.50	1.236	42.9	1.009	0.08	0.684	0.853
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	40185	2549.5	1	18.70	19.50	1.202	42.9	1.009	0.1	0.768	0.932
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	41055	2636.5	1	18.56	19.50	1.242	42.9	1.009	-0.09	0.863	1.081
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	41490	2680	1	18.59	19.50	1.233	42.9	1.009	-0.02	0.835	1.039
	LTE Band 41(HPUE)	20M	QPSK	100	0	-	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	40620	2593	1	18.70	19.50	1.202	42.9	1.009	-0.02	0.865	1.049
	FR1 n7	40M	BPSK	1	1	DFT-15	Front	5mm	Ant 0	DSI 3(Sim TX)	507000	2535	1	15.60	16.50	1.230	-	-	0.15	0.322	0.396
	FR1 n7	40M	BPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 3(Sim TX)	507000	2535	1	15.60	16.50	1.230	-	-	-0.14	0.568	0.699
	FR1 n7	40M	BPSK	1	1	DFT-15	Left Side	5mm	Ant 0	DSI 3(Sim TX)	507000	2535	1	15.60	16.50	1.230	-	-	-	n/a	n/a
	FR1 n7	40M	BPSK	1	1	DFT-15	Right Side	5mm	Ant 0	DSI 3(Sim TX)	507000	2535	1	15.60	16.50	1.230	-	-	0.07	0.361	0.444
44	FR1 n7	40M	BPSK	1	1	DFT-15	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	507000	2535	1	15.60	16.50	1.230	-	-	0.14	0.928	1.142
	FR1 n7	40M	BPSK	108	54	DFT-15	Front	5mm	Ant 0	DSI 3(Sim TX)	507000	2535	1	15.58	16.50	1.236	-	-	-0.06	0.313	0.387
	FR1 n7	40M	BPSK	108	54	DFT-15	Back	5mm	Ant 0	DSI 3(Sim TX)	507000	2535	1	15.58	16.50	1.236	-	-	-0.19	0.552	0.682
	FR1 n7	40M	BPSK	108	54	DFT-15	Left Side	5mm	Ant 0	DSI 3(Sim TX)	507000	2535	1	15.58	16.50	1.236	-	-	-	n/a	n/a
	FR1 n7	40M	BPSK	108	54	DFT-15	Right Side	5mm	Ant 0	DSI 3(Sim TX)	507000	2535	1	15.58	16.50	1.236	-	-	0.02	0.360	0.445
	FR1 n7	40M	BPSK	108	54	DFT-15	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	507000	2535	1	15.58	16.50	1.236	-	-	0.14	0.914	1.130
	FR1 n7	40M	BPSK	216	0	DFT-15	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	507000	2535	1	15.57	16.50	1.239	-	-	0.07	0.905	1.121
	FR1 n7	40M	BPSK	1	1	DFT-15	Front	5mm	Ant 1	DSI 3(Sim TX)	507000	2535	1	15.97	17.00	1.268	-	-	-0.15	0.264	0.335
	FR1 n7	40M	BPSK	1	1	DFT-15	Back	5mm	Ant 1	DSI 3(Sim TX)	507000	2535	1	15.97	17.00	1.268	-	-	-0.16	0.477	0.605
	FR1 n7	40M	BPSK	1	1	DFT-15	Left Side	5mm	Ant 1	DSI 3(Sim TX)	507000	2535	1	15.97	17.00	1.268	-	-	0.14	0.209	0.265
	FR1 n7	40M	BPSK	1	1	DFT-15	Top Side	5mm	Ant 1	DSI 3(Sim TX)	507000	2535	1	15.97	17.00	1.268	-	-	0.06	0.512	0.649
	FR1 n7	40M	BPSK	108	54	DFT-15	Front	5mm	Ant 1	DSI 3(Sim TX)	507000	2535	1	15.95	17.00	1.274	-	-	-0.01	0.271	0.345
	FR1 n7	40M	BPSK	108	54	DFT-15	Back	5mm	Ant 1	DSI 3(Sim TX)	507000	2535	1	15.95	17.00	1.274	-	-	0.09	0.490	0.624
	FR1 n7	40M	BPSK	108	54	DFT-15	Left Side	5mm	Ant 1	DSI 3(Sim TX)	507000	2535	1	15.95	17.00	1.274	-	-	0.04	0.215	0.274
	FR1 n7	40M	BPSK	108	54	DFT-15	Top Side	5mm	Ant 1	DSI 3(Sim TX)	507000	2535	1	15.95	17.00	1.274	-	-	0.19	0.527	0.671
	FR1 n38	40M	BPSK	1	1	DFT-30	Front	5mm	Ant 0	DSI 3(Sim TX)	519000	2595	1	15.84	16.50	1.164	-	-	0.15	0.335	0.390
	FR1 n38	40M	BPSK	1	1	DFT-30	Back	5mm	Ant 0	DSI 3(Sim TX)	519000	2595	1	15.84	16.50	1.164	-	-	-0.06	0.502	0.584
	FR1 n38	40M	BPSK	1	1	DFT-30	Left Side	5mm	Ant 0	DSI 3(Sim TX)	519000	2595	1	15.84	16.50	1.164	-	-	-	n/a	n/a
	FR1 n38	40M	BPSK	1	1	DFT-30	Right Side	5mm	Ant 0	DSI 3(Sim TX)	519000	2595	1	15.84	16.50	1.164	-	-	0.09	0.277	0.322
	FR1 n38	40M	BPSK	1	1	DFT-30	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	519000	2595	1	15.84	16.50	1.164	-	-	-0.15	1.040	1.211
	FR1 n38	40M	BPSK	50	28	DFT-30	Front	5mm	Ant 0	DSI 3(Sim TX)	519000	2595	1	15.82	16.50	1.169	-	-	0.06	0.341	0.399
	FR1 n38	40M	BPSK	50	28	DFT-30	Back	5mm	Ant 0	DSI 3(Sim TX)	519000	2595	1	15.82	16.50	1.169	-	-	0.03	0.510	0.596
	FR1 n38	40M	BPSK	50	28	DFT-30	Left Side	5mm	Ant 0	DSI 3(Sim TX)	519000	2595	1	15.82	16.50	1.169	-	-	0.14	0.000	0.000
	FR1 n38	40M	BPSK	50	28	DFT-30	Right Side	5mm	Ant 0	DSI 3(Sim TX)	519000	2595	1	15.82	16.50	1.169	-	-	0.07	0.289	0.338
45	FR1 n38	40M	BPSK	50	28	DFT-30	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	519000	2595	1	15.82	16.50	1.169	-	-	0.02	1.070	1.251
	FR1 n38	40M	BPSK	50	28	DFT-30	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	519000	2595	2	15.82	16.50	1.169	-	-	0.01	0.935	1.093
	FR1 n38	40M	BPSK	100	0	DFT-30	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	519000	2595	1	15.80	16.50	1.175	-	-	0.04	1.000	1.175
3500MHz~3700MHz																					
	LTE Band 42	20M	QPSK	1	0	-	Front	5mm	Ant 2	DSI 3(Sim TX)	42590	3500	1	15.59	16.30	1.178	62.9	1.006	-0.08	0.189	0.224
	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 2	DSI 3(Sim TX)	42590	3500	1	15.59	16.30	1.178	62.9	1.006	-0.15	0.352	0.417
46	LTE Band 42	20M	QPSK	1	0	-	Left Side	5mm	Ant 2	DSI 3(Sim TX)	42590	3500	1	15.59	16.30	1.178	62.9	1.006	0.18	0.477	0.565



FCC SAR Test Report

Report No. : FA253001

	LTE Band 42	20M	QPSK	1	0	-	Top Side	5mm	Ant 2	DSI 3(Sim TX)	42590	3500	1	15.59	16.30	1.178	62.9	1.006	0.07	0.088	0.104
	LTE Band 42	20M	QPSK	50	0	-	Front	5mm	Ant 2	DSI 3(Sim TX)	42590	3500	1	15.40	16.30	1.230	62.9	1.006	0.01	0.252	0.312
	LTE Band 42	20M	QPSK	50	0	-	Back	5mm	Ant 2	DSI 3(Sim TX)	42590	3500	1	15.40	16.30	1.230	62.9	1.006	0	0.232	0.287
	LTE Band 42	20M	QPSK	50	0	-	Left Side	5mm	Ant 2	DSI 3(Sim TX)	42590	3500	1	15.40	16.30	1.230	62.9	1.006	0.12	0.452	0.559
	LTE Band 42	20M	QPSK	50	0	-	Top Side	5mm	Ant 2	DSI 3(Sim TX)	42590	3500	1	15.40	16.30	1.230	62.9	1.006	0.06	0.358	0.443
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Front	5mm	Ant 2	DSI 3(Sim TX)	633332	3499.98	1	16.24	17.00	1.191	-	-	-0.07	0.245	0.292
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	5mm	Ant 2	DSI 3(Sim TX)	633332	3499.98	1	16.24	17.00	1.191	-	-	-0.12	0.414	0.493
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Left Side	5mm	Ant 2	DSI 3(Sim TX)	633332	3499.98	1	16.24	17.00	1.191	-	-	0.14	0.569	0.678
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Top Side	5mm	Ant 2	DSI 3(Sim TX)	633332	3499.98	1	16.24	17.00	1.191	-	-	-0.15	0.110	0.131
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Front	5mm	Ant 2	DSI 3(Sim TX)	633332	3499.98	1	16.22	17.00	1.197	-	-	-0.02	0.251	0.300
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	5mm	Ant 2	DSI 3(Sim TX)	633332	3499.98	1	16.22	17.00	1.197	-	-	0.14	0.432	0.517
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Left Side	5mm	Ant 2	DSI 3(Sim TX)	633332	3499.98	1	16.22	17.00	1.197	-	-	-0.13	0.580	0.694
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Top Side	5mm	Ant 2	DSI 3(Sim TX)	633332	3499.98	1	16.22	17.00	1.197	-	-	-0.03	0.116	0.139
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Front	5mm	Ant 4	DSI 3(Sim TX)	633332	3499.98	1	11.55	12.50	1.245	-	-	-0.09	0.124	0.154
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	5mm	Ant 4	DSI 3(Sim TX)	633332	3499.98	1	11.55	12.50	1.245	-	-	0.18	0.336	0.418
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Right Side	5mm	Ant 4	DSI 3(Sim TX)	633332	3499.98	1	11.55	12.50	1.245	-	-	-	n/a	n/a
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Top Side	5mm	Ant 4	DSI 3(Sim TX)	633332	3499.98	1	11.55	12.50	1.245	-	-	0.13	0.543	0.676
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Front	5mm	Ant 4	DSI 3(Sim TX)	633332	3499.98	1	11.53	12.50	1.250	-	-	0.07	0.117	0.146
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	5mm	Ant 4	DSI 3(Sim TX)	633332	3499.98	1	11.53	12.50	1.250	-	-	-0.13	0.332	0.415
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Right Side	5mm	Ant 4	DSI 3(Sim TX)	633332	3499.98	1	11.53	12.50	1.250	-	-	-	n/a	n/a
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Top Side	5mm	Ant 4	DSI 3(Sim TX)	633332	3499.98	1	11.53	12.50	1.250	-	-	-0.05	0.535	0.669
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Front	5mm	Ant 5	DSI 3(Sim TX)	633332	3499.98	1	18.15	19.00	1.216	-	-	0.16	0.466	0.567
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	5mm	Ant 5	DSI 3(Sim TX)	633332	3499.98	1	18.15	19.00	1.216	-	-	0.17	0.389	0.473
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Left Side	5mm	Ant 5	DSI 3(Sim TX)	633332	3499.98	1	18.15	19.00	1.216	-	-	-	n/a	n/a
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Right Side	5mm	Ant 5	DSI 3(Sim TX)	633332	3499.98	1	18.15	19.00	1.216	-	-	0.04	0.557	0.677
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Top Side	5mm	Ant 5	DSI 3(Sim TX)	633332	3499.98	1	18.15	19.00	1.216	-	-	-0.12	0.158	0.192
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Front	5mm	Ant 5	DSI 3(Sim TX)	633332	3499.98	1	18.13	19.00	1.222	-	-	0.1	0.453	0.553
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	5mm	Ant 5	DSI 3(Sim TX)	633332	3499.98	1	18.13	19.00	1.222	-	-	0.14	0.367	0.448
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Left Side	5mm	Ant 5	DSI 3(Sim TX)	633332	3499.98	1	18.13	19.00	1.222	-	-	-	n/a	n/a
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Right Side	5mm	Ant 5	DSI 3(Sim TX)	633332	3499.98	1	18.13	19.00	1.222	-	-	0.14	0.551	0.673
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Top Side	5mm	Ant 5	DSI 3(Sim TX)	633332	3499.98	1	18.13	19.00	1.222	-	-	0.1	0.152	0.186
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Front	5mm	Ant 7	DSI 3(Sim TX)	633332	3499.98	1	19.09	20.50	1.384	-	-	-0.17	0.362	0.501
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	5mm	Ant 7	DSI 3(Sim TX)	633332	3499.98	1	19.09	20.50	1.384	-	-	-0.1	0.834	1.154
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Left Side	5mm	Ant 7	DSI 3(Sim TX)	633332	3499.98	1	19.09	20.50	1.384	-	-	0.07	0.456	0.631
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Bottom Side	5mm	Ant 7	DSI 3(Sim TX)	633332	3499.98	1	19.09	20.50	1.384	-	-	0.04	0.642	0.888
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Front	5mm	Ant 7	DSI 3(Sim TX)	633332	3499.98	1	19.07	20.50	1.390	-	-	0.19	0.385	0.535
47	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	5mm	Ant 7	DSI 3(Sim TX)	633332	3499.98	1	19.07	20.50	1.390	-	-	-0.01	0.856	1.190
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	5mm	Ant 7	DSI 3(Sim TX)	633332	3499.98	2	19.07	20.50	1.390	-	-	0.05	0.821	1.141
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Left Side	5mm	Ant 7	DSI 3(Sim TX)	633332	3499.98	1	19.07	20.50	1.390	-	-	-0.09	0.466	0.648
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Bottom Side	5mm	Ant 7	DSI 3(Sim TX)	633332	3499.98	1	19.07	20.50	1.390	-	-	0.13	0.653	0.908
	FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Back	5mm	Ant 7	DSI 3(Sim TX)	633332	3499.98	1	19.05	20.50	1.396	-	-	0.04	0.833	1.163
	FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Bottom Side	5mm	Ant 7	DSI 3(Sim TX)	633332	3499.98	1	19.05	20.50	1.396	-	-	0.12	0.645	0.901



Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
2450MHz																		
	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	Ant 3	Hotspot on	6	2437	1	15.50	17.00	1.413	99.3	1.007	0.05	0.227	0.323	
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 3	Hotspot on	6	2437	1	15.50	17.00	1.413	99.3	1.007	-0.06	0.375	0.533	
	WLAN2.4GHz	802.11b 1Mbps	Right Side	5mm	Ant 3	Hotspot on	6	2437	1	15.50	17.00	1.413	99.3	1.007	0.01	0.237	0.337	
48	WLAN2.4GHz	802.11b 1Mbps	Top Side	5mm	Ant 3	Hotspot on	6	2437	1	15.50	17.00	1.413	99.3	1.007	-0.1	0.494	0.703	
	Bluetooth	DH5 1Mbps	Front	5mm	Ant 3	Full Power	39	2441	1	10.30	12.00	1.479	76.74	1.303	0.11	0.046	0.089	
	Bluetooth	DH5 1Mbps	Back	5mm	Ant 3	Full Power	39	2441	1	10.30	12.00	1.479	76.74	1.303	0.18	0.115	0.222	
	Bluetooth	DH5 1Mbps	Right Side	5mm	Ant 3	Full Power	39	2441	1	10.30	12.00	1.479	76.74	1.303	-0.02	0.062	0.119	
49	Bluetooth	DH5 1Mbps	Top Side	5mm	Ant 3	Full Power	39	2441	1	10.30	12.00	1.479	76.74	1.303	-0.17	0.130	0.251	
5000MHz																		
	WLAN5.2GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 5	Hotspot on	42	5210	1	13.88	15.50	1.452	92.81	1.077	0.01	0.212	0.332	
	WLAN5.2GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 5	Hotspot on	42	5210	1	13.88	15.50	1.452	92.81	1.077	0.07	0.241	0.377	
50	WLAN5.2GHz	802.11ac-VHT80 MCS0	Right Side	5mm	Ant 5	Hotspot on	42	5210	1	13.88	15.50	1.452	92.81	1.077	0	0.263	0.411	
	WLAN5.2GHz	802.11ac-VHT80 MCS0	Top Side	5mm	Ant 5	Hotspot on	42	5210	1	13.88	15.50	1.452	92.81	1.077	-0.05	0.114	0.178	
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 5	Hotspot on	155	5775	1	12.96	14.50	1.426	92.81	1.077	-0.12	0.159	0.244	
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 5	Hotspot on	155	5775	1	12.96	14.50	1.426	92.81	1.077	-0.08	0.117	0.180	
51	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Side	5mm	Ant 5	Hotspot on	155	5775	1	12.96	14.50	1.426	92.81	1.077	0.04	0.285	0.438	
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Side	5mm	Ant 5	Hotspot on	155	5775	2	12.96	14.50	1.426	92.81	1.077	0.01	0.242	0.372	
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Top Side	5mm	Ant 5	Hotspot on	155	5775	1	12.96	14.50	1.426	92.81	1.077	-0.16	0.111	0.170	



16.3 Body Worn Accessory SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Headset	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750MHz																						
	LTE Band 12	10M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	23095	707.5	1	22.79	24.00	1.321	-	-	-0.13	0.147	0.194
52	LTE Band 12	10M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	23095	707.5	1	22.79	24.00	1.321	-	-	-0.12	0.297	0.392
	LTE Band 12	10M	QPSK	25	0	-	Front	5mm	Ant 0	-	DSI 3	23095	707.5	1	21.82	23.00	1.312	-	-	-0.02	0.142	0.186
	LTE Band 12	10M	QPSK	25	0	-	Back	5mm	Ant 0	-	DSI 3	23095	707.5	1	21.82	23.00	1.312	-	-	0.04	0.255	0.335
	LTE Band 13	10M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	23230	782	1	22.65	24.00	1.365	-	-	-0.04	0.291	0.397
53	LTE Band 13	10M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	23230	782	1	22.65	24.00	1.365	-	-	0.01	0.501	0.684
	LTE Band 13	10M	QPSK	25	0	-	Front	5mm	Ant 0	-	DSI 3	23230	782	1	21.68	23.00	1.355	-	-	-0.06	0.237	0.321
	LTE Band 13	10M	QPSK	25	0	-	Back	5mm	Ant 0	-	DSI 3	23230	782	1	21.68	23.00	1.355	-	-	0.01	0.371	0.503
835MHz																						
	GSM850	-	-	-	-	GPRS 4 Tx slots	Front	5mm	Ant 0	-	DSI 3	189	836.4	1	26.84	28.50	1.466	-	-	-0.13	0.538	0.788
	GSM850	-	-	-	-	GPRS 4 Tx slots	Back	5mm	Ant 0	-	DSI 3	189	836.4	1	26.84	28.50	1.466	-	-	-0.09	0.620	0.909
	GSM850	-	-	-	-	GPRS 4 Tx slots	Back	5mm	Ant 0	-	DSI 3	128	824.2	1	26.81	28.50	1.476	-	-	0.13	0.611	0.902
54	GSM850	-	-	-	-	GPRS 4 Tx slots	Back	5mm	Ant 0	-	DSI 3	251	848.8	1	26.75	28.50	1.496	-	-	0.07	0.675	1.010
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	-	DSI 3	4182	836.4	1	23.12	24.00	1.225	-	-	0.13	0.559	0.685
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	4182	836.4	1	23.12	24.00	1.225	-	-	0.03	0.884	1.083
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	4132	826.4	1	23.05	24.00	1.245	-	-	0.09	0.802	0.998
55	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	4233	846.6	1	23.02	24.00	1.253	-	-	-0.01	0.941	1.179
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	4233	846.6	2	23.02	24.00	1.253	-	-	0.02	0.782	0.980
	LTE Band 26	15M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	26865	831.5	1	22.58	24.00	1.387	-	-	-0.12	0.330	0.458
56	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	26865	831.5	1	22.58	24.00	1.387	-	-	0.09	0.557	0.772
	LTE Band 26	15M	QPSK	36	0	-	Front	5mm	Ant 0	-	DSI 3	26865	831.5	1	21.91	23.00	1.285	-	-	-0.02	0.285	0.366
	LTE Band 26	15M	QPSK	36	0	-	Back	5mm	Ant 0	-	DSI 3	26865	831.5	1	21.91	23.00	1.285	-	-	-0.19	0.470	0.604
	FR1 n5	20M	BPSK	1	1	-	Front	5mm	Ant 0	-	DSI 3	167300	836.5	1	23.19	24.00	1.205	-	-	-0.05	0.363	0.437
57	FR1 n5	20M	BPSK	1	1	-	Back	5mm	Ant 0	-	DSI 3	167300	836.5	1	23.19	24.00	1.205	-	-	0.07	0.604	0.728
	FR1 n5	20M	BPSK	50	28	-	Front	5mm	Ant 0	-	DSI 3	167300	836.5	1	22.94	24.00	1.276	-	-	-0.12	0.368	0.470
	FR1 n5	20M	BPSK	50	28	-	Back	5mm	Ant 0	-	DSI 3	167300	836.5	1	22.94	24.00	1.276	-	-	-0.16	0.561	0.716
1750MHz																						
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	-	DSI 3	1413	1732.6	1	19.16	19.80	1.159	-	-	-0.15	0.889	1.030
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	1413	1732.6	1	19.16	19.80	1.159	-	-	0.12	1.050	1.217
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	-	DSI 3	1312	1712.4	1	18.98	19.80	1.208	-	-	-0.05	0.881	1.064
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	-	DSI 3	1513	1752.6	1	19.15	19.80	1.161	-	-	0.03	0.910	1.057
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	1312	1712.4	1	18.98	19.80	1.208	-	-	-0.15	1.010	1.220
58	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	1513	1752.6	1	19.15	19.80	1.161	-	-	-0.16	1.080	1.254
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	1513	1752.6	2	19.15	19.80	1.161	-	-	0.03	1.020	1.185
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	Headset	DSI 3	1513	1752.6	1	19.15	19.80	1.161	-	-	0.09	0.980	1.138
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	14mm	Ant 0	-	DSI 4	1312	1712.4	1	23.19	24.00	1.205	-	-	-0.14	0.645	0.777
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	19mm	Ant 0	-	DSI 4	1513	1752.6	1	23.41	24.00	1.146	-	-	0	0.542	0.621
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	-	DSI 3(Sim TX)	1413	1732.6	1	17.31	18.00	1.172	-	-	0.08	0.589	0.690
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3(Sim TX)	1413	1732.6	1	17.31	18.00	1.172	-	-	0.1	0.688	0.806
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3(Sim TX)	1312	1712.4	1	17.01	18.00	1.256	-	-	0.09	0.624	0.784
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3(Sim TX)	1513	1752.6	1	17.30	18.00	1.175	-	-	0.18	0.653	0.767
	LTE Band 66	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	132322	1745	1	18.49	19.60	1.291	-	-	-0.14	0.742	0.958
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	132322	1745	1	18.49	19.60	1.291	-	-	-0.05	0.950	1.227
	LTE Band 66	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	132072	1720	1	18.39	19.60	1.321	-	-	-0.05	0.713	0.942
	LTE Band 66	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	132572	1770	1	18.29	19.60	1.352	-	-	-0.14	0.726	0.982
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	132072	1720	1	18.39	19.60	1.321	-	-	-0.05	0.912	1.205
59	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	132572	1770	1	18.29	19.60	1.352	-	-	0.13	0.921	1.245
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 0	Headset	DSI 3	132572	1770	1	18.29	19.60	1.352	-	-	-0.17	0.876	1.184
	LTE Band 66	20M	QPSK	1	0	-	Front	14mm	Ant 0	-	DSI 4	132572	1770	1	22.90	24.00	1.288	-	-	0.03	0.651	0.839
	LTE Band 66	20M	QPSK	1	0	-	Back	19mm	Ant 0	-	DSI 4	132572	1770	1	22.90	24.00	1.288	-	-	-0.1	0.692	0.891



FCC SAR Test Report

Report No. : FA253001

	LTE Band 66	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3	132322	1745	1	18.36	19.60	1.330	-	-	0.04	0.730	0.971
	LTE Band 66	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	132322	1745	1	18.36	19.60	1.330	-	-	-0.05	0.930	1.237
	LTE Band 66	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3	132072	1720	1	18.30	19.60	1.349	-	-	0.17	0.710	0.958
	LTE Band 66	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3	132572	1770	1	18.22	19.60	1.374	-	-	-0.12	0.723	0.993
	LTE Band 66	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	132072	1720	1	18.30	19.60	1.349	-	-	-0.05	0.893	1.205
	LTE Band 66	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	132572	1770	1	18.22	19.60	1.374	-	-	0.14	0.901	1.238
	LTE Band 66	20M	QPSK	50	0	-	Back	5mm	Ant 0	Headset	DSI 3	132572	1770	1	18.22	19.60	1.374	-	-	-0.17	0.885	1.216
	LTE Band 66	20M	QPSK	100	0	-	Front	5mm	Ant 0	-	DSI 3	132322	1745	1	18.46	19.60	1.300	-	-	-0.18	0.721	0.937
	LTE Band 66	20M	QPSK	100	0	-	Back	5mm	Ant 0	-	DSI 3	132322	1745	1	18.46	19.60	1.300	-	-	-0.17	0.912	1.186
	LTE Band 66	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3(Sim TX)	132322	1745	1	16.06	17.00	1.242	-	-	-0.09	0.297	0.369
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3(Sim TX)	132322	1745	1	16.06	17.00	1.242	-	-	0.17	0.508	0.631
	LTE Band 66	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3(Sim TX)	132322	1745	1	15.89	17.00	1.291	-	-	-0.19	0.296	0.382
	LTE Band 66	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3(Sim TX)	132322	1745	1	15.89	17.00	1.291	-	-	0.08	0.485	0.626
	LTE Band 66	20M	QPSK	1	0	-	Front	5mm	Ant 1	-	DSI 3	132322	1745	1	21.16	22.10	1.242	-	-	0.17	0.589	0.731
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3	132322	1745	1	21.16	22.10	1.242	-	-	-0.12	0.917	1.139
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3	132072	1720	1	20.94	22.10	1.306	-	-	0.19	0.863	1.127
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3	132572	1770	1	21.06	22.10	1.271	-	-	0.15	0.857	1.089
	LTE Band 66	20M	QPSK	1	0	-	Front	14mm	Ant 1	-	DSI 4	132322	1745	1	23.20	24.00	1.202	-	-	0.14	0.271	0.326
	LTE Band 66	20M	QPSK	1	0	-	Back	19mm	Ant 1	-	DSI 4	132322	1745	1	23.20	24.00	1.202	-	-	-0.13	0.220	0.264
	LTE Band 66	20M	QPSK	50	0	-	Front	5mm	Ant 1	-	DSI 3	132322	1745	1	21.10	22.10	1.259	-	-	0.12	0.603	0.759
	LTE Band 66	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3	132322	1745	1	21.10	22.10	1.259	-	-	0.03	0.851	1.071
	LTE Band 66	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3	132072	1720	1	21.03	22.10	1.279	-	-	0.19	0.871	1.114
	LTE Band 66	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3	132572	1770	1	20.92	22.10	1.312	-	-	0.15	0.837	1.098
	LTE Band 66	20M	QPSK	100	0	-	Back	5mm	Ant 1	-	DSI 3	132322	1745	1	21.08	22.10	1.265	-	-	-0.05	0.831	1.051
	LTE Band 66	20M	QPSK	1	0	-	Front	5mm	Ant 1	-	DSI 3(Sim TX)	132322	1745	1	18.09	19.00	1.233	-	-	0.01	0.285	0.351
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3(Sim TX)	132322	1745	1	18.09	19.00	1.233	-	-	0.13	0.503	0.620
	LTE Band 66	20M	QPSK	50	0	-	Front	5mm	Ant 1	-	DSI 3(Sim TX)	132322	1745	1	17.99	19.00	1.262	-	-	-0.04	0.288	0.363
	LTE Band 66	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3(Sim TX)	132322	1745	1	17.99	19.00	1.262	-	-	-0.1	0.496	0.626
	FR1 n66	40M	BPSK	1	1	DFT-15	Front	5mm	Ant 0	-	DSI 3	349000	1745	1	18.60	19.50	1.230	-	-	0.19	0.749	0.921
	FR1 n66	40M	BPSK	1	1	DFT-15	Back	5mm	Ant 0	-	DSI 3	349000	1745	1	18.60	19.50	1.230	-	-	-0.17	0.951	1.170
	FR1 n66	40M	BPSK	108	54	DFT-15	Front	5mm	Ant 0	-	DSI 3	349000	1745	1	18.58	19.50	1.236	-	-	0.08	0.756	0.934
60	FR1 n66	40M	BPSK	108	54	DFT-15	Back	5mm	Ant 0	-	DSI 3	349000	1745	1	18.58	19.50	1.236	-	-	0.04	0.961	1.188
	FR1 n66	40M	BPSK	108	54	DFT-15	Front	14mm	Ant 0	-	DSI 4	349000	1745	1	23.23	24.00	1.194	-	-	0.05	0.635	0.758
	FR1 n66	40M	BPSK	108	54	DFT-15	Back	19mm	Ant 0	-	DSI 4	349000	1745	1	23.23	24.00	1.194	-	-	0.03	0.540	0.645
	FR1 n66	40M	BPSK	216	0	DFT-15	Front	5mm	Ant 0	-	DSI 3	349000	1745	1	18.56	19.50	1.242	-	-	-0.08	0.747	0.928
	FR1 n66	40M	BPSK	216	0	DFT-15	Back	5mm	Ant 0	-	DSI 3	349000	1745	1	18.56	19.50	1.242	-	-	0.16	0.948	1.177
	FR1 n66	40M	BPSK	1	1	DFT-15	Front	5mm	Ant 0	-	DSI 3(Sim TX)	349000	1745	1	16.73	17.50	1.194	-	-	-0.03	0.520	0.621
	FR1 n66	40M	BPSK	1	1	DFT-15	Back	5mm	Ant 0	-	DSI 3(Sim TX)	349000	1745	1	16.73	17.50	1.194	-	-	-0.02	0.654	0.781
	FR1 n66	40M	BPSK	108	54	DFT-15	Front	5mm	Ant 0	-	DSI 3(Sim TX)	349000	1745	1	16.71	17.50	1.199	-	-	-0.14	0.516	0.619
	FR1 n66	40M	BPSK	108	54	DFT-15	Back	5mm	Ant 0	-	DSI 3(Sim TX)	349000	1745	1	16.71	17.50	1.199	-	-	-0.06	0.655	0.786
1900MHz																						
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Front	5mm	Ant 0	-	DSI 3	661	1880	1	22.15	23.20	1.274	-	-	0.06	0.467	0.595
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Back	5mm	Ant 0	-	DSI 3	661	1880	1	22.15	23.20	1.274	-	-	0.08	0.673	0.857
61	GSM1900	-	-	-	-	GPRS 4 Tx slots	Back	5mm	Ant 0	-	DSI 3	512	1850.2	1	22.03	23.20	1.309	-	-	-0.19	0.859	1.125
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Back	5mm	Ant 0	-	DSI 3	810	1909.8	1	22.14	23.20	1.276	-	-	-0.02	0.582	0.743
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Front	14mm	Ant 0	-	DSI 4	661	1880	1	24.56	26.00	1.393	-	-	0.04	0.221	0.308
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Back	19mm	Ant 0	-	DSI 4	512	1850.2	1	24.52	26.00	1.406	-	-	-0.15	0.171	0.240
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Front	5mm	Ant 0	-	DSI 3(Sim TX)	661	1880	1	19.45	20.20	1.189	-	-	0.1	0.281	0.334
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Back	5mm	Ant 0	-	DSI 3(Sim TX)	661	1880	1	19.45	20.20	1.189	-	-	-0.06	0.379	0.450
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	-	DSI 3	9400	1880	1	19.51	20.00	1.119	-	-	0.16	0.526	0.589
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	9400	1880	1	19.51	20.00	1.119	-	-	0	0.744	0.833
62	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	9262	1852.4	1	19.18	20.00	1.208	-	-	-0.19	1.030	1.244
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	9538	1907.6	1	19.08	20.00	1.236	-	-	-0.03	0.729	0.901
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	Headset	DSI 3	9262	1852.4	1	19.18	20.00	1.208	-	-	0.09	0.930	1.123
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	14mm	Ant 0	-	DSI 4	9400	1880	1	23.50	24.00	1.122	-	-	0.08	0.474	0.532
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	19mm	Ant 0	-	DSI 4	9262	1852.4	1	23.29	24.00	1.178	-	-	0.05	0.395	0.465



FCC SAR Test Report

Report No. : FA253001

	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	-	DSI 3(Sim TX)	9400	1880	1	17.45	18.00	1.135	-	-	-0.08	0.395	0.448
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3(Sim TX)	9400	1880	1	17.45	18.00	1.135	-	-	-0.05	0.577	0.655
	LTE Band 25	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	26340	1880	1	18.62	19.50	1.225	-	-	-0.06	0.477	0.584
	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	26340	1880	1	18.62	19.50	1.225	-	-	0.09	0.825	1.010
63	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	26140	1860	1	17.98	19.50	1.419	-	-	-0.02	0.805	1.142
	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	26590	1905	1	18.08	19.50	1.387	-	-	-0.11	0.689	0.955
	LTE Band 25	20M	QPSK	1	0	-	Front	14mm	Ant 0	-	DSI 4	26340	1880	1	23.03	24.00	1.250	-	-	0.05	0.495	0.619
	LTE Band 25	20M	QPSK	1	0	-	Back	19mm	Ant 0	-	DSI 4	26140	1860	1	22.83	24.00	1.309	-	-	0.09	0.393	0.515
	LTE Band 25	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3	26340	1880	1	18.29	19.50	1.321	-	-	0.18	0.471	0.622
	LTE Band 25	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	26340	1880	1	18.29	19.50	1.321	-	-	-0.08	0.831	1.098
	LTE Band 25	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	26140	1860	1	17.98	19.50	1.419	-	-	-0.02	0.793	1.125
	LTE Band 25	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	26590	1905	1	17.98	19.50	1.419	-	-	-0.11	0.662	0.939
	LTE Band 25	20M	QPSK	100	0	-	Back	5mm	Ant 0	-	DSI 3	26340	1880	1	18.11	19.50	1.377	-	-	-0.19	0.822	1.132
	LTE Band 25	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3(Sim TX)	26340	1880	1	16.91	18.00	1.285	-	-	0.08	0.392	0.504
	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3(Sim TX)	26340	1880	1	16.91	18.00	1.285	-	-	0.17	0.477	0.613
	LTE Band 25	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3(Sim TX)	26340	1880	1	16.77	18.00	1.327	-	-	-0.01	0.390	0.518
	LTE Band 25	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3(Sim TX)	26340	1880	1	16.77	18.00	1.327	-	-	-0.15	0.486	0.645
	LTE Band 2	20M	QPSK	1	0	-	Front	5mm	Ant 1	-	DSI 3	18900	1880	1	23.05	24.00	1.245	-	-	-0.11	0.505	0.628
64	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3	18900	1880	1	23.05	24.00	1.245	-	-	-0.12	0.843	1.049
	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3	18700	1860	1	22.92	24.00	1.282	-	-	0.03	0.765	0.981
	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3	19100	1900	1	23.04	24.00	1.247	-	-	0.02	0.771	0.962
	LTE Band 2	20M	QPSK	50	0	-	Front	5mm	Ant 1	-	DSI 3	18900	1880	1	22.19	23.00	1.205	-	-	0.09	0.398	0.480
	LTE Band 2	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3	18900	1880	1	22.19	23.00	1.205	-	-	0.16	0.682	0.822
	LTE Band 2	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3	18700	1860	1	22.09	23.00	1.233	-	-	-0.05	0.751	0.926
	LTE Band 2	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3	19100	1900	1	22.12	23.00	1.225	-	-	0.03	0.762	0.933
	LTE Band 2	20M	QPSK	100	0	-	Back	5mm	Ant 1	-	DSI 3	18900	1880	1	22.08	23.00	1.236	-	-	0.16	0.662	0.818
	LTE Band 2	20M	QPSK	1	0	-	Front	5mm	Ant 1	-	DSI 3(Sim TX)	18900	1880	1	19.38	20.50	1.294	-	-	0.09	0.226	0.292
	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3(Sim TX)	18900	1880	1	19.38	20.50	1.294	-	-	0.03	0.410	0.531
	LTE Band 2	20M	QPSK	50	0	-	Front	5mm	Ant 1	-	DSI 3(Sim TX)	18900	1880	1	19.23	20.50	1.340	-	-	0.12	0.225	0.301
	LTE Band 2	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3(Sim TX)	18900	1880	1	19.23	20.50	1.340	-	-	0.07	0.385	0.516
	FR1 n2	20M	BPSK	1	1	DFT-15	Front	5mm	Ant 0	-	DSI 3	376000	1880	1	18.75	19.50	1.189	-	-	-0.03	0.508	0.604
	FR1 n2	20M	BPSK	1	1	DFT-15	Back	5mm	Ant 0	-	DSI 3	376000	1880	1	18.75	19.50	1.189	-	-	0.14	0.686	0.815
65	FR1 n2	20M	BPSK	1	1	DFT-15	Back	5mm	Ant 0	-	DSI 3	372000	1860	1	18.58	19.50	1.236	-	-	-0.05	0.984	1.216
	FR1 n2	20M	BPSK	1	1	DFT-15	Back	5mm	Ant 0	Headset	DSI 3	380000	1900	1	18.64	19.50	1.219	-	-	-0.17	0.708	0.863
	FR1 n2	20M	BPSK	1	1	DFT-15	Back	5mm	Ant 0	Headset	DSI 3	372000	1860	1	18.58	19.50	1.236	-	-	0.17	0.868	1.073
	FR1 n2	20M	BPSK	1	1	DFT-15	Front	14mm	Ant 0	-	DSI 4	376000	1880	1	23.29	24.00	1.178	-	-	0.12	0.430	0.506
	FR1 n2	20M	BPSK	1	1	DFT-15	Back	19mm	Ant 0	-	DSI 4	372000	1860	1	23.08	24.00	1.236	-	-	0.01	0.371	0.459
	FR1 n2	20M	BPSK	50	28	DFT-15	Front	5mm	Ant 0	-	DSI 3	376000	1880	1	18.73	19.50	1.194	-	-	-0.06	0.502	0.599
	FR1 n2	20M	BPSK	50	28	DFT-15	Back	5mm	Ant 0	-	DSI 3	376000	1880	1	18.73	19.50	1.194	-	-	0.19	0.683	0.815
	FR1 n2	20M	BPSK	50	28	DFT-15	Back	5mm	Ant 0	-	DSI 3	372000	1860	1	18.55	19.50	1.245	-	-	0.19	0.971	1.208
	FR1 n2	20M	BPSK	50	28	DFT-15	Back	5mm	Ant 0	Headset	DSI 3	380000	1900	1	18.62	19.50	1.225	-	-	-0.15	0.701	0.858
	FR1 n2	20M	BPSK	50	28	DFT-15	Back	5mm	Ant 0	Headset	DSI 3	372000	1860	1	18.55	19.50	1.245	-	-	-0.01	0.855	1.064
	FR1 n2	20M	BPSK	100	0	DFT-15	Back	5mm	Ant 0	-	DSI 3	376000	1880	1	18.72	19.50	1.197	-	-	-0.03	0.640	0.766
	FR1 n2	20M	BPSK	1	1	DFT-15	Front	5mm	Ant 0	-	DSI 3(Sim TX)	376000	1880	1	17.21	18.00	1.199	-	-	-0.07	0.362	0.434
	FR1 n2	20M	BPSK	1	1	DFT-15	Back	5mm	Ant 0	-	DSI 3(Sim TX)	376000	1880	1	17.21	18.00	1.199	-	-	-0.05	0.491	0.589
	FR1 n2	20M	BPSK	50	28	DFT-15	Front	5mm	Ant 0	-	DSI 3(Sim TX)	376000	1880	1	17.20	18.00	1.202	-	-	0.12	0.359	0.432
	FR1 n2	20M	BPSK	50	28	DFT-15	Back	5mm	Ant 0	-	DSI 3(Sim TX)	376000	1880	1	17.20	18.00	1.202	-	-	-0.13	0.483	0.581
2600MHz																						
	LTE Band 7	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	21100	2535	1	18.21	19.20	1.256	-	-	0.17	0.506	0.636
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	21100	2535	1	18.21	19.20	1.256	-	-	0.14	0.869	1.091
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	20850	2510	1	18.11	19.20	1.285	-	-	-0.1	0.872	1.121
	LTE Band 7C	20M	QPSK	1	99	-	Back	5mm	Ant 0	-	DSI 3	20850+21048	2510+2529.8	1	17.88	19.20	1.355	-	-	0.04	0.778	1.054
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	21350	2560	1	18.19	19.20	1.262	-	-	0.13	0.871	1.099
	LTE Band 7	20M	QPSK	1	0	-	Front	14mm	Ant 0	-	DSI 4	21100	2535	1	23.06	24.00	1.242	-	-	0	0.601	0.746
	LTE Band 7	20M	QPSK	1	0	-	Back	19mm	Ant 0	-	DSI 4	20850	2510	1	22.86	24.00	1.300	-	-	-0.13	0.411	0.534
	LTE Band 7	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3	21100	2535	1	18.10	19.20	1.288	-	-	0.08	0.502	0.647



FCC SAR Test Report

Report No. : FA253001

	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	21100	2535	1	18.10	19.20	1.288	-	-	-0.04	0.861	1.109
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	20850	2510	1	18.01	19.20	1.315	-	-	0.02	0.867	1.140
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	21350	2560	1	18.09	19.20	1.291	-	-	0.11	0.865	1.117
	LTE Band 7	20M	QPSK	100	0	-	Back	5mm	Ant 0	-	DSI 3	21100	2535	1	18.04	19.20	1.306	-	-	0	0.832	1.087
	LTE Band 7	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3(Sim TX)	21100	2535	1	15.19	16.00	1.205	-	-	-0.18	0.232	0.280
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3(Sim TX)	21100	2535	1	15.19	16.00	1.205	-	-	0.1	0.290	0.349
	LTE Band 7C	20M	QPSK	1	99	-	Back	5mm	Ant 0	-	DSI 3(Sim TX)	21100+21298	2535+2554.8	1	14.70	16.00	1.349	-	-	0.02	0.256	0.345
	LTE Band 7	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3(Sim TX)	21100	2535	1	15.05	16.00	1.245	-	-	-0.04	0.243	0.302
	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3(Sim TX)	21100	2535	1	15.05	16.00	1.245	-	-	-0.1	0.437	0.544
	LTE Band 7	20M	QPSK	1	0	-	Front	5mm	Ant 1	-	DSI 3	21100	2535	1	19.27	20.40	1.297	-	-	-0.14	0.482	0.625
66	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3	21100	2535	1	19.27	20.40	1.297	-	-	0.16	0.960	1.245
	LTE Band 7C	20M	QPSK	1	99	-	Back	5mm	Ant 1	-	DSI 3	21100+21298	2535+2554.8	1	17.84	19.40	1.432	-	-	0.02	0.708	1.014
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3	20850	2510	1	19.11	20.40	1.346	-	-	-0.1	0.865	1.164
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3	21350	2560	1	19.13	20.40	1.340	-	-	-0.13	0.905	1.212
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	Headset	DSI 3	21100	2535	1	19.27	20.40	1.297	-	-	0.16	0.937	1.215
	LTE Band 7	20M	QPSK	1	0	-	Front	14mm	Ant 1	-	DSI 4	21100	2535	1	22.76	24.00	1.330	-	-	-0.15	0.203	0.270
	LTE Band 7	20M	QPSK	1	0	-	Back	19mm	Ant 1	-	DSI 4	21100	2535	1	22.76	24.00	1.330	-	-	-0.08	0.240	0.319
	LTE Band 7	20M	QPSK	50	0	-	Front	5mm	Ant 1	-	DSI 3	21100	2535	1	19.06	20.40	1.361	-	-	-0.16	0.473	0.644
	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3	21100	2535	1	19.06	20.40	1.361	-	-	-0.11	0.852	1.160
	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3	20850	2510	1	18.94	20.40	1.400	-	-	-0.1	0.843	1.180
	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3	21350	2560	1	18.95	20.40	1.396	-	-	0.07	0.855	1.194
	LTE Band 7	20M	QPSK	100	0	-	Back	5mm	Ant 1	-	DSI 3	21100	2535	1	19.02	20.40	1.374	-	-	-0.13	0.836	1.149
	LTE Band 7	20M	QPSK	1	0	-	Front	5mm	Ant 1	-	DSI 3(Sim TX)	21100	2535	1	15.82	17.00	1.312	-	-	-0.03	0.216	0.283
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3(Sim TX)	21100	2535	1	15.82	17.00	1.312	-	-	0.07	0.390	0.512
	LTE Band 7C	20M	QPSK	1	99	-	Back	5mm	Ant 1	-	DSI 3(Sim TX)	21100+21298	2535+2554.8	1	14.53	16.00	1.403	-	-	0.02	0.322	0.452
	LTE Band 7	20M	QPSK	50	0	-	Front	5mm	Ant 1	-	DSI 3(Sim TX)	21100	2535	1	15.64	17.00	1.368	-	-	0.17	0.212	0.290
	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3(Sim TX)	21100	2535	1	15.64	17.00	1.368	-	-	-0.05	0.352	0.481
	LTE Band 38	20M	QPSK	1	0	-	Front	5mm	Ant 1	-	DSI 3	38000	2595	1	18.89	20.60	1.483	-	-	0.05	0.369	0.547
67	LTE Band 38	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3	38000	2595	1	18.89	20.60	1.483	-	-	0.01	0.762	1.130
	LTE Band 38C	20M	QPSK	1	99	-	Back	5mm	Ant 1	-	DSI 3	37901+38099	2585.1+2604.9	1	19.04	20.60	1.432	-	-	0.03	0.584	0.836
	LTE Band 38	20M	QPSK	1	0	-	Front	14mm	Ant 1	-	DSI 4	38000	2595	1	21.38	23.00	1.452	-	-	0.16	0.111	0.161
	LTE Band 38	20M	QPSK	1	0	-	Back	19mm	Ant 1	-	DSI 4	38000	2595	1	21.38	23.00	1.452	-	-	0.15	0.134	0.195
	LTE Band 38	20M	QPSK	50	0	-	Front	5mm	Ant 1	-	DSI 3	38000	2595	1	18.77	20.60	1.524	-	-	0.15	0.382	0.582
	LTE Band 38	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3	38000	2595	1	18.77	20.60	1.524	-	-	0.14	0.623	0.949
	LTE Band 38	20M	QPSK	100	0	-	Back	5mm	Ant 1	-	DSI 3	38000	2595	1	18.67	20.60	1.560	-	-	0.03	0.632	0.986
	LTE Band 38	20M	QPSK	1	0	-	Front	5mm	Ant 1	-	DSI 3(Sim TX)	38000	2595	1	16.59	18.40	1.517	-	-	-0.04	0.212	0.322
	LTE Band 38	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3(Sim TX)	38000	2595	1	16.59	18.40	1.517	-	-	0	0.370	0.561
	LTE Band 38C	20M	QPSK	1	99	-	Back	5mm	Ant 1	-	DSI 3(Sim TX)	37901+38099	2585.1+2604.9	1	16.83	18.40	1.435	-	-	0	0.365	0.524
	LTE Band 38	20M	QPSK	50	0	-	Front	5mm	Ant 1	-	DSI 3(Sim TX)	38000	2595	1	16.54	18.40	1.535	-	-	0.03	0.210	0.322
	LTE Band 38	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3(Sim TX)	38000	2595	1	16.54	18.40	1.535	-	-	0.02	0.365	0.560
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Front	5mm	Ant 1	-	DSI 3	38000	2595	1	20.59	22.20	1.449	-	-	0.08	0.353	0.511
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3	38000	2595	1	20.59	22.20	1.449	-	-	-0.18	0.639	0.926
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Front	14mm	Ant 1	-	DSI 4	38000	2595	1	23.79	25.50	1.483	-	-	-0.14	0.134	0.199
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Back	19mm	Ant 1	-	DSI 4	38000	2595	1	23.79	25.50	1.483	-	-	0.09	0.160	0.237
	LTE Band 38(HPUE)	20M	QPSK	50	0	-	Front	5mm	Ant 1	-	DSI 3	38000	2595	1	20.51	22.20	1.476	-	-	0.15	0.355	0.524
	LTE Band 38(HPUE)	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3	38000	2595	1	20.51	22.20	1.476	-	-	0.06	0.617	0.911
	LTE Band 38(HPUE)	20M	QPSK	100	0	-	Back	5mm	Ant 1	-	DSI 3	38000	2595	1	20.49	22.20	1.483	-	-	-0.18	0.621	0.921
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Front	5mm	Ant 1	-	DSI 3(Sim TX)	38000	2595	1	18.39	20.00	1.449	-	-	-0.01	0.213	0.309
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3(Sim TX)	38000	2595	1	18.39	20.00	1.449	-	-	0.13	0.390	0.565
	LTE Band 38(HPUE)	20M	QPSK	50	0	-	Front	5mm	Ant 1	-	DSI 3(Sim TX)	38000	2595	1	18.38	20.00	1.452	-	-	-0.18	0.212	0.308
	LTE Band 38(HPUE)	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3(Sim TX)	38000	2595	1	18.38	20.00	1.452	-	-	-0.19	0.381	0.553
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	40620	2593	1	20.73	21.40	1.167	62.9	1.006	0.07	0.627	0.736
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	40620	2593	1	20.73	21.40	1.167	62.9	1.006	0.03	0.851	0.999
	LTE Band 41C	20M	QPSK	1	99	-	Back	5mm	Ant 0	-	DSI 3	40620+40818	2593+2612.8	1	20.52	21.40	1.225	62.9	1.006	0.01	0.809	0.997
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	39750	2506	1	20.71	21.40	1.172	62.9	1.006	-0.03	0.470	0.554



FCC SAR Test Report

Report No. : FA253001

	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	40185	2549.5	1	20.48	21.40	1.236	62.9	1.006	0.01	0.483	0.601
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	41055	2636.5	1	20.56	21.40	1.213	62.9	1.006	-0.12	0.597	0.729
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	41490	2680	1	20.72	21.40	1.169	62.9	1.006	0.11	0.578	0.680
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	39750	2506	1	20.71	21.40	1.172	62.9	1.006	0.12	0.810	0.955
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	40185	2549.5	1	20.48	21.40	1.236	62.9	1.006	0.17	0.786	0.977
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	41055	2636.5	1	20.56	21.40	1.213	62.9	1.006	-0.04	0.802	0.979
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	41490	2680	1	20.72	21.40	1.169	62.9	1.006	-0.03	0.756	0.889
	LTE Band 41	20M	QPSK	1	0	-	Front	14mm	Ant 0	-	DSI 4	40620	2593	1	23.21	24.00	1.199	62.9	1.006	-0.19	0.295	0.356
	LTE Band 41	20M	QPSK	1	0	-	Back	19mm	Ant 0	-	DSI 4	40620	2593	1	23.21	24.00	1.199	62.9	1.006	-0.07	0.237	0.286
	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3	40620	2593	1	20.67	21.40	1.183	62.9	1.006	-0.1	0.630	0.750
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	40620	2593	1	20.67	21.40	1.183	62.9	1.006	-0.15	0.821	0.977
	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3	39750	2506	1	20.61	21.40	1.199	62.9	1.006	-0.03	0.474	0.572
	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3	40185	2549.5	1	20.48	21.40	1.236	62.9	1.006	0.01	0.500	0.622
	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3	41055	2636.5	1	20.51	21.40	1.227	62.9	1.006	0.01	0.606	0.748
	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3	41490	2680	1	20.66	21.40	1.186	62.9	1.006	-0.12	0.591	0.705
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	39750	2506	1	20.61	21.40	1.199	62.9	1.006	0.15	0.786	0.948
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	40185	2549.5	1	20.48	21.40	1.236	62.9	1.006	-0.16	0.800	0.995
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	41055	2636.5	1	20.51	21.40	1.227	62.9	1.006	-0.12	0.802	0.990
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	41490	2680	1	20.66	21.40	1.186	62.9	1.006	0.11	0.801	0.955
	LTE Band 41	20M	QPSK	100	0	-	Front	5mm	Ant 0	-	DSI 3	40620	2593	1	20.59	21.40	1.205	62.9	1.006	0.15	0.570	0.691
	LTE Band 41	20M	QPSK	100	0	-	Back	5mm	Ant 0	-	DSI 3	40620	2593	1	20.59	21.40	1.205	62.9	1.006	-0.16	0.795	0.964
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3(Sim TX)	40620	2593	1	17.18	17.90	1.180	62.9	1.006	-0.07	0.266	0.316
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3(Sim TX)	40620	2593	1	17.18	17.90	1.180	62.9	1.006	0.03	0.399	0.474
	LTE Band 41C	20M	QPSK	1	99	-	Back	5mm	Ant 0	-	DSI 3(Sim TX)	40620+40818	2593+2612.8	1	16.85	17.90	1.274	62.9	1.006	0.02	0.363	0.465
	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3(Sim TX)	40620	2593	1	17.07	17.90	1.211	62.9	1.006	0.15	0.269	0.328
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3(Sim TX)	40620	2593	1	17.07	17.90	1.211	62.9	1.006	-0.16	0.382	0.465
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	40620	2593	1	22.34	23.00	1.164	42.9	1.009	-0.14	0.612	0.719
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	40620	2593	1	22.34	23.00	1.164	42.9	1.009	0.01	0.861	1.011
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	39750	2506	1	22.30	23.00	1.175	42.9	1.009	0.01	0.453	0.537
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	40185	2549.5	1	22.32	23.00	1.169	42.9	1.009	0.01	0.486	0.573
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	41055	2636.5	1	22.30	23.00	1.175	42.9	1.009	-0.12	0.581	0.689
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	41490	2680	1	22.29	23.00	1.178	42.9	1.009	0.03	0.561	0.667
68	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	39750	2506	1	22.30	23.00	1.175	42.9	1.009	-0.12	0.873	1.035
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	40185	2549.5	1	22.32	23.00	1.169	42.9	1.009	0.11	0.810	0.956
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	41055	2636.5	1	22.30	23.00	1.175	42.9	1.009	0.05	0.862	1.022
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	41490	2680	1	22.29	23.00	1.178	42.9	1.009	0.03	0.804	0.955
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Front	14mm	Ant 0	-	DSI 4	40620	2593	1	25.60	27.00	1.380	42.9	1.009	0.1	0.333	0.464
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Back	19mm	Ant 0	-	DSI 4	39750	2506	1	25.56	27.00	1.393	42.9	1.009	-0.02	0.265	0.373
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3	40620	2593	1	22.24	23.00	1.191	42.9	1.009	0.04	0.620	0.745
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	40620	2593	1	22.24	23.00	1.191	42.9	1.009	-0.08	0.858	1.031
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3	39750	2506	1	22.15	23.00	1.216	42.9	1.009	0.01	0.466	0.572
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3	40185	2549.5	1	22.22	23.00	1.197	42.9	1.009	0.1	0.498	0.601
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3	41055	2636.5	1	22.14	23.00	1.219	42.9	1.009	-0.09	0.601	0.739
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3	41490	2680	1	22.16	23.00	1.213	42.9	1.009	0.01	0.578	0.708
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	39750	2506	1	22.15	23.00	1.216	42.9	1.009	0.05	0.832	1.021
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	40185	2549.5	1	22.22	23.00	1.197	42.9	1.009	0.11	0.801	0.967
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	41055	2636.5	1	22.14	23.00	1.219	42.9	1.009	-0.08	0.785	0.966
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	41490	2680	1	22.16	23.00	1.213	42.9	1.009	0.03	0.731	0.895
	LTE Band 41(HPUE)	20M	QPSK	100	0	-	Front	5mm	Ant 0	-	DSI 3	40620	2593	1	22.21	23.00	1.199	42.9	1.009	-0.09	0.570	0.690
	LTE Band 41(HPUE)	20M	QPSK	100	0	-	Back	5mm	Ant 0	-	DSI 3	40620	2593	1	22.21	23.00	1.199	42.9	1.009	0.01	0.785	0.950
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3(Sim TX)	40620	2593	1	18.77	19.50	1.183	42.9	1.009	-0.03	0.248	0.296
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3(Sim TX)	40620	2593	1	18.77	19.50	1.183	42.9	1.009	0.17	0.365	0.436
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3(Sim TX)	40620	2593	1	18.71	19.50	1.199	42.9	1.009	-0.08	0.248	0.300
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3(Sim TX)	40620	2593	1	18.71	19.50	1.199	42.9	1.009	0.03	0.368	0.445
	FR1 n7	40M	BPSK	1	1	DFT-15	Front	5mm	Ant 0	-	DSI 3	507000	2535	1	18.03	19.00	1.250	-	-	0.1	0.508	0.635
	FR1 n7	40M	BPSK	1	1	DFT-15	Back	5mm	Ant 0	-	DSI 3	507000	2535	1	18.03	19.00	1.250	-	-	-0.09	0.928	1.160



	FR1 n7	40M	BPSK	1	1	DFT-15	Front	14mm	Ant 0	-	DSI 4	507000	2535	1	23.49	24.00	1.125	-	-	0.01	0.580	0.652
	FR1 n7	40M	BPSK	1	1	DFT-15	Back	19mm	Ant 0	-	DSI 4	507000	2535	1	23.49	24.00	1.125	-	-	0.05	0.488	0.549
	FR1 n7	40M	BPSK	108	54	DFT-15	Front	5mm	Ant 0	-	DSI 3	507000	2535	1	18.00	19.00	1.259	-	-	-0.06	0.498	0.627
	FR1 n7	40M	BPSK	108	54	DFT-15	Back	5mm	Ant 0	-	DSI 3	507000	2535	1	18.00	19.00	1.259	-	-	-0.01	0.920	1.158
	FR1 n7	40M	BPSK	216	0	DFT-15	Back	5mm	Ant 0	-	DSI 3	507000	2535	1	17.98	19.00	1.265	-	-	0.02	0.915	1.157
	FR1 n7	40M	BPSK	1	1	DFT-15	Front	5mm	Ant 0	-	DSI 3(Sim TX)	507000	2535	1	15.60	16.50	1.230	-	-	0.15	0.322	0.396
	FR1 n7	40M	BPSK	1	1	DFT-15	Back	5mm	Ant 0	-	DSI 3(Sim TX)	507000	2535	1	15.60	16.50	1.230	-	-	-0.14	0.568	0.699
	FR1 n7	40M	BPSK	108	54	DFT-15	Front	5mm	Ant 0	-	DSI 3(Sim TX)	507000	2535	1	15.58	16.50	1.236	-	-	-0.06	0.313	0.387
	FR1 n7	40M	BPSK	108	54	DFT-15	Back	5mm	Ant 0	-	DSI 3(Sim TX)	507000	2535	1	15.58	16.50	1.236	-	-	-0.19	0.552	0.682
	FR1 n7	40M	BPSK	1	1	DFT-15	Front	5mm	Ant 1	-	DSI 3	507000	2535	1	19.44	20.50	1.276	-	-	0.12	0.553	0.706
	FR1 n7	40M	BPSK	1	1	DFT-15	Back	5mm	Ant 1	-	DSI 3	507000	2535	1	19.44	20.50	1.276	-	-	-0.17	0.967	1.234
	FR1 n7	40M	BPSK	1	1	DFT-15	Back	5mm	Ant 1	Headset	DSI 3	507000	2535	1	19.44	20.50	1.276	-	-	0.07	0.951	1.214
	FR1 n7	40M	BPSK	108	54	DFT-15	Front	5mm	Ant 1	-	DSI 3	507000	2535	1	19.42	20.50	1.282	-	-	0.1	0.556	0.713
69	FR1 n7	40M	BPSK	108	54	DFT-15	Back	5mm	Ant 1	-	DSI 3	507000	2535	1	19.42	20.50	1.282	-	-	-0.15	0.972	1.246
	FR1 n7	40M	BPSK	108	54	DFT-15	Back	5mm	Ant 1	Headset	DSI 3	507000	2535	1	19.42	20.50	1.282	-	-	-0.16	0.965	1.237
	FR1 n7	40M	BPSK	108	54	DFT-15	Front	14mm	Ant 1	-	DSI 4	507000	2535	1	22.83	24.00	1.309	-	-	0.02	0.270	0.353
	FR1 n7	40M	BPSK	108	54	DFT-15	Back	19mm	Ant 1	-	DSI 4	507000	2535	1	22.83	24.00	1.309	-	-	0.05	0.311	0.407
	FR1 n7	40M	BPSK	216	0	DFT-15	Back	5mm	Ant 1	-	DSI 3	507000	2535	1	19.40	20.50	1.288	-	-	-0.17	0.958	1.234
	FR1 n7	40M	BPSK	216	0	DFT-15	Back	5mm	Ant 1	Headset	DSI 3	507000	2535	1	19.40	20.50	1.288	-	-	-0.17	0.802	1.033
	FR1 n7	40M	BPSK	1	1	DFT-15	Front	5mm	Ant 1	-	DSI 3(Sim TX)	507000	2535	1	15.97	17.00	1.268	-	-	-0.15	0.264	0.335
	FR1 n7	40M	BPSK	1	1	DFT-15	Back	5mm	Ant 1	-	DSI 3(Sim TX)	507000	2535	1	15.97	17.00	1.268	-	-	-0.16	0.477	0.605
	FR1 n7	40M	BPSK	108	54	DFT-15	Front	5mm	Ant 1	-	DSI 3(Sim TX)	507000	2535	1	15.95	17.00	1.274	-	-	-0.01	0.271	0.345
	FR1 n7	40M	BPSK	108	54	DFT-15	Back	5mm	Ant 1	-	DSI 3(Sim TX)	507000	2535	1	15.95	17.00	1.274	-	-	0.09	0.490	0.624
	FR1 n38	40M	BPSK	1	1	DFT-30	Front	5mm	Ant 0	-	DSI 3	519000	2595	1	18.76	19.50	1.186	-	-	-0.08	0.630	0.747
	FR1 n38	40M	BPSK	1	1	DFT-30	Back	5mm	Ant 0	-	DSI 3	519000	2595	1	18.76	19.50	1.186	-	-	0.17	1.010	1.198
	FR1 n38	40M	BPSK	50	28	DFT-30	Front	5mm	Ant 0	-	DSI 3	519000	2595	1	18.75	19.50	1.189	-	-	0.04	0.629	0.748
70	FR1 n38	40M	BPSK	50	28	DFT-30	Back	5mm	Ant 0	-	DSI 3	519000	2595	1	18.75	19.50	1.189	-	-	-0.07	1.050	1.248
	FR1 n38	40M	BPSK	50	28	DFT-30	Back	5mm	Ant 0	Headset	DSI 3	519000	2595	1	18.75	19.50	1.189	-	-	-0.1	0.841	1.000
	FR1 n38	40M	BPSK	50	28	DFT-30	Front	14mm	Ant 0	-	DSI 4	519000	2595	1	23.28	24.00	1.180	-	-	0.03	0.762	0.899
	FR1 n38	40M	BPSK	50	28	DFT-30	Back	19mm	Ant 0	-	DSI 4	519000	2595	1	23.28	24.00	1.180	-	-	0.02	0.566	0.668
	FR1 n38	40M	BPSK	100	0	DFT-30	Back	5mm	Ant 0	-	DSI 3	519000	2595	1	18.73	19.50	1.194	-	-	0.02	0.953	1.138
	FR1 n38	40M	BPSK	1	1	DFT-30	Front	5mm	Ant 0	-	DSI 3(Sim TX)	519000	2595	1	15.84	16.50	1.164	-	-	0.15	0.335	0.390
	FR1 n38	40M	BPSK	1	1	DFT-30	Back	5mm	Ant 0	-	DSI 3(Sim TX)	519000	2595	1	15.84	16.50	1.164	-	-	-0.06	0.502	0.584
	FR1 n38	40M	BPSK	50	28	DFT-30	Front	5mm	Ant 0	-	DSI 3(Sim TX)	519000	2595	1	15.82	16.50	1.169	-	-	0.06	0.341	0.399
	FR1 n38	40M	BPSK	50	28	DFT-30	Back	5mm	Ant 0	-	DSI 3(Sim TX)	519000	2595	1	15.82	16.50	1.169	-	-	0.03	0.510	0.596
3500MHz~3700MHz																						
	LTE Band 42	20M	QPSK	1	0	-	Front	5mm	Ant 2	-	DSI 3	42590	3500	1	19.27	20.00	1.183	62.9	1.006	-0.15	0.463	0.551
71	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	DSI 3	42590	3500	1	19.27	20.00	1.183	62.9	1.006	0.16	0.946	1.126
	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	DSI 3	42190	3460	1	18.97	20.00	1.268	62.9	1.006	-0.05	0.802	1.023
	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	DSI 3	42990	3540	1	18.99	20.00	1.262	62.9	1.006	0.08	0.750	0.952
	LTE Band 42	20M	QPSK	1	0	-	Front	14mm	Ant 2	-	DSI 4	42590	3500	1	23.18	24.00	1.208	62.9	1.006	0.05	0.314	0.382
	LTE Band 42	20M	QPSK	1	0	-	Back	19mm	Ant 2	-	DSI 4	42590	3500	1	23.18	24.00	1.208	62.9	1.006	0.18	0.250	0.304
	LTE Band 42	20M	QPSK	50	0	-	Front	5mm	Ant 2	-	DSI 3	42590	3500	1	19.16	20.00	1.213	62.9	1.006	-0.14	0.479	0.585
	LTE Band 42	20M	QPSK	50	0	-	Back	5mm	Ant 2	-	DSI 3	42590	3500	1	19.16	20.00	1.213	62.9	1.006	-0.11	0.788	0.962
	LTE Band 42	20M	QPSK	50	0	-	Back	5mm	Ant 2	-	DSI 3	42190	3460	1	19.01	20.00	1.256	62.9	1.006	0.05	0.820	1.036
	LTE Band 42	20M	QPSK	50	0	-	Back	5mm	Ant 2	-	DSI 3	42990	3540	1	19.09	20.00	1.233	62.9	1.006	0.04	0.851	1.056
	LTE Band 42	20M	QPSK	100	0	-	Back	5mm	Ant 2	-	DSI 3	42590	3500	1	19.14	20.00	1.219	62.9	1.006	0.01	0.811	0.995
	LTE Band 42	20M	QPSK	1	0	-	Front	5mm	Ant 2	-	DSI 3(Sim TX)	42590	3500	1	15.59	16.30	1.178	62.9	1.006	-0.08	0.189	0.224
	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	DSI 3(Sim TX)	42590	3500	1	15.59	16.30	1.178	62.9	1.006	-0.15	0.352	0.417
	LTE Band 42	20M	QPSK	50	0	-	Front	5mm	Ant 2	-	DSI 3(Sim TX)	42590	3500	1	15.40	16.30	1.230	62.9	1.006	0.01	0.252	0.312
	LTE Band 42	20M	QPSK	50	0	-	Back	5mm	Ant 2	-	DSI 3(Sim TX)	42590	3500	1	15.40	16.30	1.230	62.9	1.006	0	0.232	0.287
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Front	5mm	Ant 2	-	DSI 3	633332	3499.98	1	20.27	21.00	1.183	-	-	0.04	0.659	0.780
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	5mm	Ant 2	-	DSI 3	633332	3499.98	1	20.27	21.00	1.183	-	-	-0.05	0.987	1.168
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Front	5mm	Ant 2	-	DSI 3	633332	3499.98	1	20.26	21.00	1.186	-	-	0.18	0.668	0.792
72	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	5mm	Ant 2	-	DSI 3	633332	3499.98	1	20.26	21.00	1.186	-	-	-0.12	1.010	1.198
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	5mm	Ant 2	-	DSI 3	633332	3499.98	2	20.26	21.00	1.186	-	-	0.03	0.980	1.162



FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Front	14mm	Ant 2	-	DSI 4	633332	3499.98	1	26.03	27.00	1.250	-	-	-0.01	0.875	1.094
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	19mm	Ant 2	-	DSI 4	633332	3499.98	1	26.03	27.00	1.250	-	-	0.07	0.683	0.854
FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Back	5mm	Ant 2	-	DSI 3	633332	3499.98	1	20.24	21.00	1.191	-	-	-0.1	0.966	1.151
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Front	5mm	Ant 2	-	DSI 3(Sim TX)	633332	3499.98	1	16.24	17.00	1.191	-	-	-0.07	0.245	0.292
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	5mm	Ant 2	-	DSI 3(Sim TX)	633332	3499.98	1	16.24	17.00	1.191	-	-	-0.12	0.414	0.493
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Front	5mm	Ant 2	-	DSI 3(Sim TX)	633332	3499.98	1	16.22	17.00	1.197	-	-	-0.02	0.251	0.300
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	5mm	Ant 2	-	DSI 3(Sim TX)	633332	3499.98	1	16.22	17.00	1.197	-	-	0.14	0.432	0.517
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Front	5mm	Ant 4	-	DSI 3	633332	3499.98	1	17.06	18.00	1.242	-	-	-0.13	0.363	0.451
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	5mm	Ant 4	-	DSI 3	633332	3499.98	1	17.06	18.00	1.242	-	-	-0.19	0.949	1.178
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Front	14mm	Ant 4	-	DSI 4	633332	3499.98	1	17.60	18.50	1.230	-	-	0.18	0.078	0.096
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	19mm	Ant 4	-	DSI 4	633332	3499.98	1	17.60	18.50	1.230	-	-	0.1	0.134	0.165
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Front	5mm	Ant 4	-	DSI 3	633332	3499.98	1	17.04	18.00	1.247	-	-	-0.07	0.345	0.430
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	5mm	Ant 4	-	DSI 3	633332	3499.98	1	17.04	18.00	1.247	-	-	-0.04	0.930	1.160
FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Back	5mm	Ant 4	-	DSI 3	633332	3499.98	1	17.03	18.00	1.250	-	-	0.07	0.917	1.146
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Front	5mm	Ant 4	-	DSI 3(Sim TX)	633332	3499.98	1	11.55	12.50	1.245	-	-	-0.09	0.124	0.154
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	5mm	Ant 4	-	DSI 3(Sim TX)	633332	3499.98	1	11.55	12.50	1.245	-	-	0.18	0.336	0.418
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Front	5mm	Ant 4	-	DSI 3(Sim TX)	633332	3499.98	1	11.53	12.50	1.250	-	-	0.07	0.117	0.146
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	5mm	Ant 4	-	DSI 3(Sim TX)	633332	3499.98	1	11.53	12.50	1.250	-	-	-0.13	0.332	0.415
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Front	5mm	Ant 5	-	DSI 3	633332	3499.98	1	20.96	22.00	1.271	-	-	-0.01	0.906	1.151
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	5mm	Ant 5	-	DSI 3	633332	3499.98	1	20.96	22.00	1.271	-	-	-0.14	0.782	0.994
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Front	14mm	Ant 5	-	DSI 4	633332	3499.98	1	25.81	27.00	1.315	-	-	0.04	0.664	0.873
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	19mm	Ant 5	-	DSI 4	633332	3499.98	1	25.81	27.00	1.315	-	-	0.17	0.353	0.464
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Front	5mm	Ant 5	-	DSI 3	633332	3499.98	1	20.94	22.00	1.276	-	-	-0.05	0.869	1.109
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	5mm	Ant 5	-	DSI 3	633332	3499.98	1	20.94	22.00	1.276	-	-	-0.08	0.748	0.955
FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Front	5mm	Ant 5	-	DSI 3	633332	3499.98	1	20.92	22.00	1.282	-	-	-0.01	0.887	1.137
FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Back	5mm	Ant 5	-	DSI 3	633332	3499.98	1	20.92	22.00	1.282	-	-	0.1	0.752	0.964
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Front	5mm	Ant 5	-	DSI 3(Sim TX)	633332	3499.98	1	18.15	19.00	1.216	-	-	0.16	0.466	0.567
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	5mm	Ant 5	-	DSI 3(Sim TX)	633332	3499.98	1	18.15	19.00	1.216	-	-	0.17	0.389	0.473
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Front	5mm	Ant 5	-	DSI 3(Sim TX)	633332	3499.98	1	18.13	19.00	1.222	-	-	0.1	0.453	0.553
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	5mm	Ant 5	-	DSI 3(Sim TX)	633332	3499.98	1	18.13	19.00	1.222	-	-	0.14	0.367	0.448
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Front	5mm	Ant 7	-	DSI 3	633332	3499.98	1	19.09	20.50	1.384	-	-	-0.17	0.362	0.501
FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	5mm	Ant 7	-	DSI 3	633332	3499.98	1	19.09	20.50	1.384	-	-	-0.1	0.834	1.154
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Front	5mm	Ant 7	-	DSI 3	633332	3499.98	1	19.07	20.50	1.390	-	-	0.19	0.385	0.535
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	5mm	Ant 7	-	DSI 3	633332	3499.98	1	19.07	20.50	1.390	-	-	-0.01	0.856	1.190
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Front	14mm	Ant 7	-	DSI 4	633332	3499.98	1	21.19	22.50	1.352	-	-	-0.1	0.148	0.200
FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	19mm	Ant 7	-	DSI 4	633332	3499.98	1	21.19	22.50	1.352	-	-	0.1	0.258	0.349
FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Back	5mm	Ant 7	-	DSI 3	633332	3499.98	1	19.05	20.50	1.396	-	-	0.04	0.833	1.163



Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Headset	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
2450MHz																			
	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	Ant 3	-	Standalone	6	2437	1	18.90	20.50	1.445	99.3	1.007	0.17	0.498	0.725	
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 3	-	Standalone	6	2437	1	18.90	20.50	1.445	99.3	1.007	0.12	0.814	1.185	
73	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 3	-	Standalone	1	2412	1	18.80	20.50	1.479	99.3	1.007	-0.06	0.883	1.315	
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 3	-	Standalone	1	2412	2	18.80	20.50	1.479	99.3	1.007	-0.04	0.773	1.151	
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 3	-	Standalone	11	2462	1	18.70	20.50	1.514	99.3	1.007	0.03	0.719	1.096	
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 3	Headset	Standalone	1	2412	1	18.80	20.50	1.479	99.3	1.007	0.02	0.876	1.305	
	WLAN2.4GHz	802.11b 1Mbps	Front	14mm	Ant 3	-	Full Power	6	2437	1	19.40	21.00	1.445	99.3	1.007	0.11	0.139	0.202	
	WLAN2.4GHz	802.11b 1Mbps	Back	19mm	Ant 3	-	Full Power	1	2412	1	19.20	21.00	1.514	99.3	1.007	-0.12	0.085	0.130	
	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	Ant 3	-	Simultaneous	6	2437	1	15.50	17.00	1.413	99.3	1.007	0.05	0.227	0.323	
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 3	-	Simultaneous	6	2437	1	15.50	17.00	1.413	99.3	1.007	-0.06	0.375	0.533	
	Bluetooth	DH5 1Mbps	Front	5mm	Ant 3	-	Full Power	39	2441	1	10.30	12.00	1.479	76.74	1.303	0.11	0.046	0.089	
74	Bluetooth	DH5 1Mbps	Back	5mm	Ant 3	-	Full Power	39	2441	1	10.30	12.00	1.479	76.74	1.303	0.18	0.115	0.222	
5000MHz																			
75	WLAN5.2GHz	802.11a 6Mbps	Front	5mm	Ant 5	-	Full Power	36	5180	1	18.31	20.00	1.475	98.1	1.019	-0.05	0.715	1.074	
	WLAN5.2GHz	802.11a 6Mbps	Back	5mm	Ant 5	-	Full Power	36	5180	1	18.31	20.00	1.475	98.1	1.019	-0.16	0.710	1.067	
	WLAN5.2GHz	802.11a 6Mbps	Front	5mm	Ant 5	-	Full Power	40	5200	1	18.22	20.00	1.507	98.1	1.019	0.16	0.506	0.777	
	WLAN5.2GHz	802.11a 6Mbps	Back	5mm	Ant 5	-	Full Power	40	5200	1	18.22	20.00	1.507	98.1	1.019	-0.11	0.494	0.758	
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 5	-	Simultaneous	58	5290	1	13.63	15.50	1.538	92.81	1.077	0	0.246	0.408	
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 5	-	Simultaneous	58	5290	1	13.63	15.50	1.538	92.81	1.077	0.01	0.230	0.381	
	WLAN5.3GHz	802.11a 6Mbps	Front	14mm	Ant 5	-	Full Power	36	5180	1	18.31	20.00	1.475	98.1	1.019	0.02	0.152	0.228	
	WLAN5.3GHz	802.11a 6Mbps	Back	19mm	Ant 5	-	Full Power	36	5180	1	18.31	20.00	1.475	98.1	1.019	0.08	0.099	0.149	
76	WLAN5.5GHz	802.11a 6Mbps	Front	5mm	Ant 5	-	Full Power	116	5580	1	18.13	20.00	1.537	98.1	1.019	-0.17	0.705	1.104	
	WLAN5.5GHz	802.11a 6Mbps	Back	5mm	Ant 5	-	Full Power	116	5580	1	18.13	20.00	1.537	98.1	1.019	-0.16	0.399	0.625	
	WLAN5.5GHz	802.11a 6Mbps	Front	5mm	Ant 5	-	Full Power	100	5500	1	17.78	19.50	1.485	98.1	1.019	-0.05	0.519	0.785	
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 5	-	Simultaneous	106	5530	1	14.09	15.50	1.384	92.81	1.077	-0.09	0.268	0.399	
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 5	-	Simultaneous	106	5530	1	14.09	15.50	1.384	92.81	1.077	0.03	0.152	0.226	
	WLAN5.5GHz	802.11a 6Mbps	Front	14mm	Ant 5	-	Full Power	116	5580	1	18.13	20.00	1.537	98.1	1.019	-0.03	0.136	0.213	
	WLAN5.5GHz	802.11a 6Mbps	Back	19mm	Ant 5	-	Full Power	116	5580	1	18.13	20.00	1.537	98.1	1.019	0.01	0.079	0.124	
77	WLAN5.8GHz	802.11a 6Mbps	Front	5mm	Ant 5	-	Full Power	157	5785	1	18.82	20.50	1.471	98.1	1.019	-0.11	0.746	1.118	
	WLAN5.8GHz	802.11a 6Mbps	Front	5mm	Ant 5	-	Full Power	157	5785	2	18.82	20.50	1.471	98.1	1.019	-0.05	0.740	1.109	
	WLAN5.8GHz	802.11a 6Mbps	Back	5mm	Ant 5	-	Full Power	157	5785	1	18.82	20.50	1.471	98.1	1.019	0.1	0.437	0.655	
	WLAN5.8GHz	802.11a 6Mbps	Front	5mm	Ant 5	-	Full Power	165	5825	1	18.46	20.00	1.424	98.1	1.019	-0.14	0.632	0.917	
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 5	-	Simultaneous	155	5775	1	12.96	14.50	1.426	92.81	1.077	0.12	0.220	0.338	
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 5	-	Simultaneous	155	5775	1	12.96	14.50	1.426	92.81	1.077	0.03	0.183	0.281	
	WLAN5.8GHz	802.11a 6Mbps	Front	14mm	Ant 5	-	Full Power	157	5785	1	18.82	20.50	1.471	98.1	1.019	0.06	0.144	0.216	
	WLAN5.8GHz	802.11a 6Mbps	Back	19mm	Ant 5	-	Full Power	157	5785	1	18.82	20.50	1.471	98.1	1.019	0.02	0.098	0.147	



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)	Sample	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)
835MHz																					
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	4182	836.4	1	23.12	24.00	1.225	-	-	-0.18	1.680	2.057
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	4132	826.4	1	23.05	24.00	1.245	-	-	0	1.660	2.066
78	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	4233	846.6	1	23.02	24.00	1.253	-	-	0.11	1.680	2.105
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	4233	846.6	2	23.02	24.00	1.253	-	-	0.03	1.520	1.905
835MHz																					
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	0mm	Ant 0	DSI 6	1413	1732.6	1	20.46	21.00	1.132	-	-	0.04	1.440	1.631
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	1413	1732.6	1	20.46	21.00	1.132	-	-	0.01	1.710	1.936
79	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	1413	1732.6	1	20.46	21.00	1.132	-	-	0.16	2.780	3.148
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	1413	1732.6	2	20.46	21.00	1.132	-	-	0.13	2.150	2.435
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	1312	1712.4	1	20.13	21.00	1.222	-	-	0.01	2.020	2.468
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	1513	1752.6	1	20.35	21.00	1.161	-	-	-0.07	2.090	2.427
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	7mm	Ant 0	DSI 4	1413	1732.6	1	23.42	24.00	1.143	-	-	0.14	0.347	0.397
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	9mm	Ant 0	DSI 4	1413	1732.6	1	23.42	24.00	1.143	-	-	-0.07	0.378	0.432
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	12mm	Ant 0	DSI 4	1413	1732.6	1	23.42	24.00	1.143	-	-	0.06	0.145	0.166
835MHz																					
	LTE Band 66	20M	QPSK	1	0	-	Front	0mm	Ant 0	DSI 6	132322	1745	1	20.55	21.50	1.245	-	-	0.01	1.450	1.805
	LTE Band 66	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	132322	1745	1	20.55	21.50	1.245	-	-	-0.02	1.810	2.253
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	132322	1745	1	20.55	21.50	1.245	-	-	0.04	2.330	2.900
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	132072	1720	1	20.53	21.50	1.250	-	-	-0.04	2.150	2.688
80	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	132572	1770	1	20.45	21.50	1.274	-	-	0.02	2.450	3.120
	LTE Band 66	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	132072	1720	1	20.53	21.50	1.250	-	-	-0.04	1.730	2.163
	LTE Band 66	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	132572	1770	1	20.45	21.50	1.274	-	-	0.02	1.880	2.394
	LTE Band 66	20M	QPSK	1	0	-	Front	7mm	Ant 0	DSI 4	132322	1745	1	23.09	24.00	1.233	-	-	-0.05	0.984	1.213
	LTE Band 66	20M	QPSK	1	0	-	Back	9mm	Ant 0	DSI 4	132572	1770	1	22.90	24.00	1.288	-	-	-0.11	0.983	1.266
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	12mm	Ant 0	DSI 4	132572	1770	1	22.90	24.00	1.288	-	-	0.15	1.230	1.585
	LTE Band 66	20M	QPSK	50	0	-	Front	0mm	Ant 0	DSI 6	132322	1745	1	20.36	21.50	1.300	-	-	0.07	1.500	1.950
	LTE Band 66	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	132322	1745	1	20.36	21.50	1.300	-	-	-0.03	1.900	2.470
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	132322	1745	1	20.36	21.50	1.300	-	-	0.19	2.320	3.016
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	132072	1720	1	20.35	21.50	1.303	-	-	0.13	2.280	2.971
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	132572	1770	1	20.20	21.50	1.349	-	-	0.04	2.250	3.035
	LTE Band 66	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	132072	1720	1	20.35	21.50	1.303	-	-	-0.04	1.650	2.150
	LTE Band 66	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	132572	1770	1	20.20	21.50	1.349	-	-	-0.14	1.720	2.320
	LTE Band 66	20M	QPSK	100	0	-	Back	0mm	Ant 0	DSI 6	132322	1745	1	20.31	21.50	1.315	-	-	-0.03	1.700	2.236
	LTE Band 66	20M	QPSK	100	0	-	Bottom Side	0mm	Ant 0	DSI 6	132322	1745	1	20.31	21.50	1.315	-	-	0.19	2.210	2.907
	LTE Band 66	20M	QPSK	1	0	-	Back	0mm	Ant 1	DSI 6	132322	1745	1	23.20	24.00	1.202	-	-	-0.18	1.620	1.948
	LTE Band 66	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DSI 6	132322	1745	1	23.20	24.00	1.202	-	-	-0.12	1.710	2.056
	LTE Band 66	20M	QPSK	50	0	-	Back	0mm	Ant 1	DSI 6	132322	1745	1	22.28	23.00	1.180	-	-	0.07	1.570	1.853
	LTE Band 66	20M	QPSK	50	0	-	Top Side	0mm	Ant 1	DSI 6	132322	1745	1	22.28	23.00	1.180	-	-	-0.04	1.330	1.570
	LTE Band 66	20M	QPSK	100	0	-	Top Side	0mm	Ant 1	DSI 6	132322	1745	1	22.12	23.00	1.225	-	-	-0.04	1.470	1.800
835MHz																					
	FR1 n66	40M	BPSK	1	1	DFT-15	Front	0mm	Ant 0	DSI 6	349000	1745	1	20.84	21.50	1.164	-	-	-0.14	1.710	1.991
	FR1 n66	40M	BPSK	1	1	DFT-15	Back	0mm	Ant 0	DSI 6	349000	1745	1	20.84	21.50	1.164	-	-	0.01	2.240	2.608
81	FR1 n66	40M	BPSK	1	1	DFT-15	Bottom Side	0mm	Ant 0	DSI 6	349000	1745	1	20.84	21.50	1.164	-	-	-0.03	2.700	3.143
	FR1 n66	40M	BPSK	1	1	DFT-15	Front	7mm	Ant 0	DSI 4	349000	1745	1	23.48	24.00	1.127	-	-	0.14	0.774	0.872
	FR1 n66	40M	BPSK	1	1	DFT-15	Back	9mm	Ant 0	DSI 4	349000	1745	1	23.48	24.00	1.127	-	-	-0.07	0.810	0.913
	FR1 n66	40M	BPSK	1	1	DFT-15	Bottom Side	12mm	Ant 0	DSI 4	349000	1745	1	23.48	24.00	1.127	-	-	0.03	0.707	0.797
	FR1 n66	40M	BPSK	108	54	DFT-15	Front	0mm	Ant 0	DSI 6	349000	1745	1	20.82	21.50	1.169	-	-	0.18	1.700	1.988
	FR1 n66	40M	BPSK	108	54	DFT-15	Back	0mm	Ant 0	DSI 6	349000	1745	1	20.82	21.50	1.169	-	-	0.06	2.180	2.550
	FR1 n66	40M	BPSK	108	54	DFT-15	Bottom Side	0mm	Ant 0	DSI 6	349000	1745	1	20.82	21.50	1.169	-	-	0.19	2.620	3.064
	FR1 n66	40M	BPSK	216	0	DFT-15	Back	0mm	Ant 0	DSI 6	349000	1745	1	20.81	21.50	1.172	-	-	-0.02	2.150	2.520
	FR1 n66	40M	BPSK	216	0	DFT-15	Bottom Side	0mm	Ant 0	DSI 6	349000	1745	1	20.81	21.50	1.172	-	-	0.09	2.600	3.048
1900MHz																					



FCC SAR Test Report

Report No. : FA253001

	GSM1900	-	-	-	-	GPRS 4 Tx slots	Back	0mm	Ant 0	DSI 6	810	1909.8	1	23.36	24.50	1.300	-	-	-0.19	1.320	1.716
82	GSM1900	-	-	-	-	GPRS 4 Tx slots	Bottom Side	0mm	Ant 0	DSI 6	810	1909.8	1	23.36	24.50	1.300	-	-	0.19	2.350	3.055
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Bottom Side	0mm	Ant 0	DSI 6	512	1850.2	1	23.21	24.50	1.346	-	-	0.13	1.530	2.059
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Bottom Side	0mm	Ant 0	DSI 6	661	1880	1	22.55	24.50	1.567	-	-	-0.11	1.840	2.883
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Back	9mm	Ant 0	DSI 4	810	1909.8	1	24.53	26.00	1.403	-	-	-0.15	0.274	0.384
	GSM1900	-	-	-	-	GPRS 4 Tx slots	Bottom Side	12mm	Ant 0	DSI 4	810	1909.8	1	24.53	26.00	1.403	-	-	-0.09	0.280	0.393
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	0mm	Ant 0	DSI 6	9400	1880	1	21.48	22.00	1.127	-	-	0.08	1.200	1.353
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	9400	1880	1	21.48	22.00	1.127	-	-	0.1	1.620	1.826
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	9400	1880	1	21.48	22.00	1.127	-	-	-0.01	2.390	2.694
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	9262	1852.4	1	21.17	22.00	1.211	-	-	-0.04	2.280	2.760
83	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	9538	1907.6	1	21.12	22.00	1.225	-	-	0.04	2.420	2.964
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	7mm	Ant 0	DSI 4	9400	1880	1	23.50	24.00	1.122	-	-	-0.14	0.341	0.383
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	9mm	Ant 0	DSI 4	9400	1880	1	23.50	24.00	1.122	-	-	0.02	0.462	0.518
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	12mm	Ant 0	DSI 4	9538	1907.6	1	23.22	24.00	1.197	-	-	-0.01	0.486	0.582
	LTE Band 25	20M	QPSK	1	0	-	Front	0mm	Ant 0	DSI 6	26340	1880	1	21.64	22.60	1.247	-	-	0.15	1.530	1.908
	LTE Band 25	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	26340	1880	1	21.64	22.60	1.247	-	-	-0.06	1.810	2.258
	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	26340	1880	1	21.64	22.60	1.247	-	-	0.15	2.480	3.094
	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	26140	1860	1	21.52	22.60	1.282	-	-	0.12	2.410	3.090
84	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	26590	1905	1	21.62	22.60	1.253	-	-	0.12	2.500	3.133
	LTE Band 25	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	26140	1860	1	21.52	22.60	1.282	-	-	-0.08	1.930	2.475
	LTE Band 25	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	26590	1905	1	21.62	22.60	1.253	-	-	0.19	1.670	2.093
	LTE Band 25	20M	QPSK	1	0	-	Front	7mm	Ant 0	DSI 4	26340	1880	1	23.03	24.00	1.250	-	-	0.12	0.464	0.580
	LTE Band 25	20M	QPSK	1	0	-	Back	9mm	Ant 0	DSI 4	26140	1860	1	22.83	24.00	1.309	-	-	0.1	0.670	0.877
	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	12mm	Ant 0	DSI 4	26590	1905	1	22.89	24.00	1.291	-	-	-0.06	0.455	0.588
	LTE Band 25	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	26340	1880	1	21.40	22.60	1.318	-	-	-0.08	1.860	2.452
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	26340	1880	1	21.40	22.60	1.318	-	-	0.19	2.120	2.795
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	26140	1860	1	21.22	22.60	1.374	-	-	0.1	2.150	2.954
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	26590	1905	1	21.28	22.60	1.355	-	-	0.12	2.210	2.995
	LTE Band 25	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	26140	1860	1	21.22	22.60	1.374	-	-	-0.1	1.890	2.597
	LTE Band 25	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	26590	1905	1	21.28	22.60	1.355	-	-	-0.18	1.730	2.344
	LTE Band 25	20M	QPSK	100	0	-	Back	0mm	Ant 0	DSI 6	26340	1880	1	21.31	22.60	1.346	-	-	-0.08	1.780	2.396
	LTE Band 25	20M	QPSK	100	0	-	Bottom Side	0mm	Ant 0	DSI 6	26340	1880	1	21.31	22.60	1.346	-	-	-0.08	2.100	2.826
85	LTE Band 2	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DSI 6	18900	1880	1	23.05	24.00	1.247	-	-	-0.08	1.190	1.484
	LTE Band 2	20M	QPSK	50	0	-	Top Side	0mm	Ant 1	DSI 6	18900	1880	1	22.19	23.00	1.205	-	-	0.17	0.904	1.089
	FR1 n2	20M	BPSK	1	1	DFT-15	Front	0mm	Ant 0	DSI 6	376000	1880	1	21.12	22.00	1.225	-	-	0.12	1.100	1.347
	FR1 n2	20M	BPSK	1	1	DFT-15	Back	0mm	Ant 0	DSI 6	376000	1880	1	21.12	22.00	1.225	-	-	-0.13	1.650	2.021
	FR1 n2	20M	BPSK	1	1	DFT-15	Back	0mm	Ant 0	DSI 6	372000	1860	1	21.04	22.00	1.247	-	-	-0.1	1.860	2.320
	FR1 n2	20M	BPSK	1	1	DFT-15	Back	0mm	Ant 0	DSI 6	380000	1900	1	20.95	22.00	1.274	-	-	0.13	1.690	2.152
	FR1 n2	20M	BPSK	1	1	DFT-15	Bottom Side	0mm	Ant 0	DSI 6	376000	1880	1	21.12	22.00	1.225	-	-	-0.09	2.480	3.037
	FR1 n2	20M	BPSK	1	1	DFT-15	Bottom Side	0mm	Ant 0	DSI 6	372000	1860	1	21.04	22.00	1.247	-	-	-0.15	1.540	1.921
	FR1 n2	20M	BPSK	1	1	DFT-15	Bottom Side	0mm	Ant 0	DSI 6	380000	1900	1	20.95	22.00	1.274	-	-	-0.11	2.400	3.056
	FR1 n2	20M	BPSK	50	28	DFT-15	Front	0mm	Ant 0	DSI 6	376000	1880	1	21.10	22.00	1.230	-	-	0.13	1.090	1.341
	FR1 n2	20M	BPSK	50	28	DFT-15	Back	0mm	Ant 0	DSI 6	376000	1880	1	21.10	22.00	1.230	-	-	-0.04	1.680	2.067
	FR1 n2	20M	BPSK	50	28	DFT-15	Back	0mm	Ant 0	DSI 6	372000	1860	1	21.01	22.00	1.256	-	-	0.12	1.880	2.361
	FR1 n2	20M	BPSK	50	28	DFT-15	Back	0mm	Ant 0	DSI 6	380000	1900	1	20.93	22.00	1.279	-	-	-0.01	1.680	2.149
86	FR1 n2	20M	BPSK	50	28	DFT-15	Bottom Side	0mm	Ant 0	DSI 6	376000	1880	1	21.10	22.00	1.230	-	-	0.05	2.550	3.137
	FR1 n2	20M	BPSK	50	28	DFT-15	Bottom Side	0mm	Ant 0	DSI 6	372000	1860	1	21.01	22.00	1.256	-	-	-0.04	1.590	1.997
	FR1 n2	20M	BPSK	50	28	DFT-15	Bottom Side	0mm	Ant 0	DSI 6	380000	1900	1	20.93	22.00	1.279	-	-	0.05	2.430	3.109
	FR1 n2	20M	BPSK	50	28	DFT-15	Front	7mm	Ant 0	DSI 4	376000	1880	1	23.16	24.00	1.213	-	-	0.13	0.394	0.478
	FR1 n2	20M	BPSK	50	28	DFT-15	Back	9mm	Ant 0	DSI 4	372000	1860	1	23.09	24.00	1.233	-	-	0.02	0.436	0.538
	FR1 n2	20M	BPSK	50	28	DFT-15	Bottom Side	12mm	Ant 0	DSI 4	376000	1880	1	23.16	24.00	1.213	-	-	0.05	0.408	0.495
	FR1 n2	20M	BPSK	100	0	DFT-15	Back	0mm	Ant 0	DSI 6	376000	1880	1	21.09	22.00	1.233	-	-	0.11	1.650	2.035
	FR1 n2	20M	BPSK	100	0	DFT-15	Bottom Side	0mm	Ant 0	DSI 6	376000	1880	1	21.09	22.00	1.233	-	-	-0.07	2.420	2.984
2600MHz																					
	LTE Band 7	20M	QPSK	1	0	-	Front	0mm	Ant 0	DSI 6	21100	2535	1	20.95	21.90	1.245	-	-	0	1.170	1.456
	LTE Band 7	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	21100	2535	1	20.95	21.90	1.245	-	-	0.19	1.920	2.389



FCC SAR Test Report

Report No. : FA253001

	LTE Band 7	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	20850	2510	1	20.81	21.90	1.285	-	-	0.09	1.960	2.519
	LTE Band 7	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	21350	2560	1	20.92	21.90	1.253	-	-	-0.12	1.940	2.431
	LTE Band 7	20M	QPSK	1	0	-	Right Side	0mm	Ant 0	DSI 4	21100	2535	1	23.06	24.00	1.242	-	-	-0.17	0.910	1.130
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	21100	2535	1	20.95	21.90	1.245	-	-	-0.06	1.920	2.389
87	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	20850	2510	1	20.81	21.90	1.285	-	-	-0.16	2.420	3.110
	LTE Band 7C	20M	QPSK	1	99	-	Bottom Side	0mm	Ant 0	DSI 6	20850+21048	2510+2529.8	1	20.59	21.90	1.352	-	-	0.07	1.940	2.623
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	21350	2560	1	20.92	21.90	1.253	-	-	-0.15	1.890	2.368
	LTE Band 7	20M	QPSK	1	0	-	Front	7mm	Ant 0	DSI 4	21100	2535	1	23.06	24.00	1.242	-	-	0.07	0.715	0.888
	LTE Band 7	20M	QPSK	1	0	-	Back	9mm	Ant 0	DSI 4	20850	2510	1	22.86	24.00	1.300	-	-	-0.05	0.707	0.919
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	12mm	Ant 0	DSI 4	20850	2510	1	22.86	24.00	1.300	-	-	0.04	0.646	0.840
	LTE Band 7	20M	QPSK	50	0	-	Front	0mm	Ant 0	DSI 6	21100	2535	1	20.79	21.90	1.291	-	-	0.02	1.200	1.549
	LTE Band 7	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	21100	2535	1	20.79	21.90	1.291	-	-	0.13	1.990	2.570
	LTE Band 7	20M	QPSK	50	0	-	Right Side	0mm	Ant 0	DSI 4	21100	2535	1	22.47	23.00	1.130	-	-	0	0.943	1.065
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	21100	2535	1	20.79	21.90	1.291	-	-	-0.12	2.050	2.647
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	20850	2510	1	20.66	21.90	1.330	-	-	-0.16	2.210	2.940
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	21350	2560	1	20.67	21.90	1.327	-	-	-0.1	1.960	2.602
	LTE Band 7	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	20850	2510	1	20.66	21.90	1.330	-	-	-0.06	1.760	2.342
	LTE Band 7	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	21350	2560	1	20.67	21.90	1.327	-	-	-0.15	1.980	2.628
	LTE Band 7	20M	QPSK	100	0	-	Back	0mm	Ant 0	DSI 6	21100	2535	1	20.78	21.90	1.294	-	-	-0.16	1.930	2.498
	LTE Band 7	20M	QPSK	100	0	-	Bottom Side	0mm	Ant 0	DSI 6	21100	2535	1	20.78	21.90	1.294	-	-	0	2.010	2.601
	LTE Band 7	20M	QPSK	1	0	-	Front	0mm	Ant 1	DSI 6	21100	2535	1	20.48	21.60	1.294	-	-	-0.06	1.050	1.359
	LTE Band 7	20M	QPSK	1	0	-	Back	0mm	Ant 1	DSI 6	21100	2535	1	20.48	21.60	1.294	-	-	0.17	1.460	1.890
	LTE Band 7	20M	QPSK	1	0	-	Left Side	0mm	Ant 1	DSI 6	21100	2535	1	20.48	21.60	1.294	-	-	0	1.530	1.980
	LTE Band 7	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DSI 6	21100	2535	1	20.48	21.60	1.294	-	-	-0.08	2.100	2.718
	LTE Band 7	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DSI 6	20850	2510	1	20.32	21.60	1.343	-	-	0.15	2.210	2.968
	LTE Band 7	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DSI 6	21350	2560	1	20.34	21.60	1.337	-	-	0.19	2.260	3.021
	LTE Band 7C	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DSI 6	21350+21152	2560+2540.2	1	19.16	20.60	1.393	-	-	0.02	1.720	2.396
	LTE Band 7	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DSI 6(Sim TX)	21350	2560	1	19.65	21.00	1.365	-	-	0.02	1.970	2.688
	LTE Band 7C	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DSI 6(Sim TX)	21350+21152	2560+2540.2	1	18.58	20.00	1.387	-	-	0.05	1.450	2.011
	LTE Band 7	20M	QPSK	1	0	-	Front	6mm	Ant 1	DSI 4	21100	2535	1	22.76	24.00	1.330	-	-	0.01	0.352	0.468
	LTE Band 7	20M	QPSK	1	0	-	Back	13mm	Ant 1	DSI 4	21100	2535	1	22.76	24.00	1.330	-	-	-0.09	0.208	0.277
	LTE Band 7	20M	QPSK	1	0	-	Left Side	7mm	Ant 1	DSI 4	21100	2535	1	22.76	24.00	1.330	-	-	-0.12	0.274	0.365
	LTE Band 7	20M	QPSK	1	0	-	Top Side	9mm	Ant 1	DSI 4	21350	2560	1	22.69	24.00	1.352	-	-	-0.07	0.413	0.558
	LTE Band 7	20M	QPSK	50	0	-	Front	0mm	Ant 1	DSI 6	21100	2535	1	20.19	21.60	1.384	-	-	-0.16	1.040	1.439
	LTE Band 7	20M	QPSK	50	0	-	Back	0mm	Ant 1	DSI 6	21100	2535	1	20.19	21.60	1.384	-	-	0.07	1.410	1.951
	LTE Band 7	20M	QPSK	50	0	-	Left Side	0mm	Ant 1	DSI 6	21100	2535	1	20.19	21.60	1.384	-	-	-0.15	1.520	2.103
	LTE Band 7	20M	QPSK	50	0	-	Top Side	0mm	Ant 1	DSI 6	21100	2535	1	20.19	21.60	1.384	-	-	0.06	2.070	2.864
	LTE Band 7	20M	QPSK	50	0	-	Top Side	0mm	Ant 1	DSI 6	20850	2510	1	20.13	21.60	1.403	-	-	0.15	2.100	2.946
	LTE Band 7	20M	QPSK	50	0	-	Top Side	0mm	Ant 1	DSI 6	21350	2560	1	20.10	21.60	1.413	-	-	0.02	2.120	2.995
	LTE Band 7	20M	QPSK	50	0	-	Left Side	0mm	Ant 1	DSI 6	20850	2510	1	20.13	21.60	1.403	-	-	0.03	1.520	2.132
	LTE Band 7	20M	QPSK	50	0	-	Left Side	0mm	Ant 1	DSI 6	21350	2560	1	20.10	21.60	1.413	-	-	0.19	1.580	2.232
	LTE Band 7	20M	QPSK	100	0	-	Left Side	0mm	Ant 1	DSI 6	21100	2535	1	20.16	21.60	1.393	-	-	0.15	1.540	2.145
	LTE Band 7	20M	QPSK	100	0	-	Top Side	0mm	Ant 1	DSI 6	21100	2535	1	20.16	21.60	1.393	-	-	-0.11	2.050	2.856
	LTE Band 38	20M	QPSK	1	0	-	Back	0mm	Ant 1	DSI 6	38000	2595	1	21.38	23.00	1.452	-	-	0.14	1.360	1.975
	LTE Band 38	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DSI 6	38000	2595	1	21.38	23.00	1.452	-	-	-0.16	1.950	2.832
	LTE Band 38C	20M	QPSK	1	99	-	Top Side	0mm	Ant 1	DSI 6	37901+38099	2585.1+2604.9	1	22.16	23.00	1.213	-	-	0.02	2.280	2.767
	LTE Band 38	20M	QPSK	50	0	-	Back	0mm	Ant 1	DSI 6	38000	2595	1	20.48	22.00	1.419	-	-	-0.02	1.120	1.589
	LTE Band 38	20M	QPSK	50	0	-	Top Side	0mm	Ant 1	DSI 6	38000	2595	1	20.48	22.00	1.419	-	-	0.07	1.540	2.185
	LTE Band 38	20M	QPSK	100	0	-	Top Side	0mm	Ant 1	DSI 6	38000	2595	1	20.46	22.00	1.426	-	-	0.06	1.480	2.110
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Back	0mm	Ant 1	DSI 6	38000	2595	1	23.79	25.50	1.483	-	-	0.12	1.570	2.328
88	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DSI 6	38000	2595	1	23.79	25.50	1.483	-	-	-0.05	2.120	3.143
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DSI 6	38000	2595	2	23.79	25.50	1.483	-	-	0.03	2.010	2.980
	LTE Band 38(HPUE)	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DSI 6(Sim TX)	38000	2595	1	23.02	24.60	1.439	-	-	0.18	1.910	2.748
	LTE Band 38(HPUE)	20M	QPSK	50	0	-	Back	0mm	Ant 1	DSI 6	38000	2595	1	22.98	24.50	1.419	-	-	0.04	1.420	2.015
	LTE Band 38(HPUE)	20M	QPSK	50	0	-	Top Side	0mm	Ant 1	DSI 6	38000	2595	1	22.98	24.50	1.419	-	-	-0.13	1.960	2.781



FCC SAR Test Report

Report No. : FA253001

	LTE Band 38(HPUE)	20M	QPSK	100	0	-	Back	0mm	Ant 1	DSI 6	38000	2595	1	22.87	24.50	1.455	-	-	-0.13	1.350	1.965
	LTE Band 38(HPUE)	20M	QPSK	100	0	-	Top Side	0mm	Ant 1	DSI 6	38000	2595	1	22.87	24.50	1.455	-	-	-0.04	1.940	2.824
	LTE Band 41	20M	QPSK	1	0	-	Front	0mm	Ant 0	DSI 6	40620	2593	1	22.91	23.50	1.146	62.9	1.006	0.09	0.860	0.991
	LTE Band 41	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	40620	2593	1	22.91	23.50	1.146	62.9	1.006	-0.16	1.940	2.236
	LTE Band 41	20M	QPSK	1	0	-	Right Side	0mm	Ant 0	DSI 4	40620	2593	1	23.21	24.00	1.199	62.9	1.006	0.15	0.731	0.882
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	40620	2593	1	22.91	23.50	1.146	62.9	1.006	0.08	1.830	2.109
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	39750	2506	1	22.87	23.50	1.156	62.9	1.006	0.05	2.090	2.431
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	40185	2549.5	1	22.73	23.50	1.194	62.9	1.006	-0.01	1.760	2.114
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	41055	2636.5	1	22.79	23.50	1.178	62.9	1.006	0.02	1.720	2.038
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	41490	2680	1	22.87	23.50	1.156	62.9	1.006	0.02	1.540	1.791
89	LTE Band 41	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	39750	2506	1	22.87	23.50	1.156	62.9	1.006	-0.12	2.310	2.687
	LTE Band 41C	20M	QPSK	1	99	-	Back	0mm	Ant 0	DSI 6	39750+39948	2506+2525.8	1	22.40	23.50	1.288	62.9	1.006	0.02	1.690	2.190
	LTE Band 41	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	40185	2549.5	1	22.73	23.50	1.194	62.9	1.006	0.05	1.960	2.354
	LTE Band 41	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	41055	2636.5	1	22.79	23.50	1.178	62.9	1.006	0	1.840	2.180
	LTE Band 41	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	41490	2680	1	22.87	23.50	1.156	62.9	1.006	-0.17	1.620	1.884
	LTE Band 41	20M	QPSK	1	0	-	Front	7mm	Ant 0	DSI 4	40620	2593	1	23.21	24.00	1.199	62.9	1.006	0.19	0.367	0.443
	LTE Band 41	20M	QPSK	1	0	-	Back	9mm	Ant 0	DSI 4	39750	2506	1	23.17	24.00	1.211	62.9	1.006	0.05	0.326	0.397
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	12mm	Ant 0	DSI 4	39750	2506	1	23.17	24.00	1.211	62.9	1.006	0.05	0.315	0.384
	LTE Band 41	20M	QPSK	50	0	-	Front	0mm	Ant 0	DSI 6	40620	2593	1	22.31	23.00	1.172	62.9	1.006	-0.13	0.700	0.825
	LTE Band 41	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	40620	2593	1	22.31	23.00	1.172	62.9	1.006	-0.06	1.570	1.851
	LTE Band 41	20M	QPSK	50	0	-	Right Side	0mm	Ant 0	DSI 4	40620	2593	1	22.31	23.00	1.172	62.9	1.006	0.19	0.731	0.862
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	40620	2593	1	22.31	23.00	1.172	62.9	1.006	0.13	1.490	1.757
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	39750	2506	1	22.26	23.00	1.186	62.9	1.006	0.05	1.730	2.064
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	40185	2549.5	1	22.28	23.00	1.180	62.9	1.006	-0.01	1.590	1.888
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	41055	2636.5	1	22.17	23.00	1.211	62.9	1.006	-0.03	1.410	1.717
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	41490	2680	1	22.28	23.00	1.180	62.9	1.006	0.17	1.210	1.437
	LTE Band 41	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	39750	2506	1	22.26	23.00	1.186	62.9	1.006	-0.12	1.680	2.004
	LTE Band 41	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	40185	2549.5	1	22.28	23.00	1.180	62.9	1.006	0.05	1.610	1.912
	LTE Band 41	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	41055	2636.5	1	22.17	23.00	1.211	62.9	1.006	-0.17	1.440	1.754
	LTE Band 41	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	41490	2680	1	22.28	23.00	1.180	62.9	1.006	-0.12	1.330	1.579
	LTE Band 41	20M	QPSK	100	0	-	Back	0mm	Ant 0	DSI 6	40620	2593	1	22.30	23.00	1.175	62.9	1.006	-0.17	1.510	1.785
	LTE Band 41	20M	QPSK	100	0	-	Back	0mm	Ant 0	DSI 6	40620	2593	1	22.30	23.00	1.175	62.9	1.006	0.02	1.590	1.879
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Front	0mm	Ant 0	DSI 6	40620	2593	1	24.45	25.10	1.161	42.9	1.009	-0.13	0.816	0.956
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	40620	2593	1	24.45	25.10	1.161	42.9	1.009	-0.14	2.080	2.438
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	39750	2506	1	24.38	25.10	1.180	42.9	1.009	-0.14	1.830	2.179
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	40185	2549.5	1	24.40	25.10	1.175	42.9	1.009	-0.18	1.820	2.158
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	41055	2636.5	1	24.32	25.10	1.197	42.9	1.009	0.04	1.710	2.065
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	41490	2680	1	24.42	25.10	1.169	42.9	1.009	0.1	1.480	1.746
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Right Side	0mm	Ant 0	DSI 4	40620	2593	1	25.60	27.00	1.380	42.9	1.009	-0.09	0.905	1.260
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	40620	2593	1	24.45	25.10	1.161	42.9	1.009	-0.02	1.580	1.852
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	39750	2506	1	24.38	25.10	1.180	42.9	1.009	0.16	1.720	2.048
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	40185	2549.5	1	24.40	25.10	1.175	42.9	1.009	-0.06	1.580	1.873
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	41055	2636.5	1	24.32	25.10	1.197	42.9	1.009	0.1	1.490	1.799
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	41490	2680	1	24.42	25.10	1.169	42.9	1.009	0.14	1.340	1.581
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Front	7mm	Ant 0	DSI 4	40620	2593	1	25.60	27.00	1.380	42.9	1.009	-0.08	0.415	0.578
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Back	9mm	Ant 0	DSI 4	40620	2593	1	25.60	27.00	1.380	42.9	1.009	0.11	0.463	0.645
	LTE Band 41(HPUE)	20M	QPSK	1	0	-	Bottom Side	12mm	Ant 0	DSI 4	39750	2506	1	25.56	27.00	1.393	42.9	1.009	0.16	0.347	0.488
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Front	0mm	Ant 0	DSI 6	40620	2593	1	24.37	25.10	1.183	42.9	1.009	0.03	0.864	1.031
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	40620	2593	1	24.37	25.10	1.183	42.9	1.009	-0.13	1.900	2.268
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Right Side	0mm	Ant 0	DSI 4	40620	2593	1	24.81	26.00	1.315	42.9	1.009	-0.13	0.724	0.961
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	40620	2593	1	24.37	25.10	1.183	42.9	1.009	-0.15	1.640	1.958
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	39750	2506	1	24.27	25.10	1.211	42.9	1.009	0.16	1.950	2.382
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	40185	2549.5	1	24.26	25.10	1.213	42.9	1.009	-0.06	1.800	2.204
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	41055	2636.5	1	24.29	25.10	1.205	42.9	1.009	0.1	1.580	1.921
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	41490	2680	1	24.32	25.10	1.197	42.9	1.009	0.14	1.380	1.666
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	39750	2506	1	24.27	25.10	1.211	42.9	1.009	0.16	1.950	2.382



FCC SAR Test Report

Report No. : FA253001

	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	40185	2549.5	1	24.26	25.10	1.213	42.9	1.009	-0.06	1.900	2.326
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	41055	2636.5	1	24.29	25.10	1.205	42.9	1.009	0.1	1.770	2.152
	LTE Band 41(HPUE)	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	41490	2680	1	24.32	25.10	1.197	42.9	1.009	0.14	1.580	1.908
	LTE Band 41(HPUE)	20M	QPSK	100	0	-	Back	0mm	Ant 0	DSI 6	40620	2593	1	24.37	25.10	1.183	42.9	1.009	-0.15	1.910	2.280
	LTE Band 41(HPUE)	20M	QPSK	100	0	-	Bottom Side	0mm	Ant 0	DSI 6	40620	2593	1	24.37	25.10	1.183	42.9	1.009	-0.14	1.790	2.137
90	FR1 n7	40M	BPSK	1	1	DFT-15	Front	0mm	Ant 0	DSI 6	507000	2535	1	21.03	22.00	1.250	-	-	0.01	1.330	1.663
	FR1 n7	40M	BPSK	1	1	DFT-15	Back	0mm	Ant 0	DSI 6	507000	2535	1	21.03	22.00	1.250	-	-	-0.16	2.480	3.101
	FR1 n7	40M	BPSK	1	1	DFT-15	Right Side	0mm	Ant 0	DSI 4	507000	2535	1	23.49	24.00	1.125	-	-	0.17	1.860	2.092
	FR1 n7	40M	BPSK	1	1	DFT-15	Bottom Side	0mm	Ant 0	DSI 6	507000	2535	1	21.03	22.00	1.250	-	-	-0.13	2.060	2.576
	FR1 n7	40M	BPSK	1	1	DFT-15	Front	7mm	Ant 0	DSI 4	507000	2535	1	23.49	24.00	1.125	-	-	0.05	0.708	0.796
	FR1 n7	40M	BPSK	1	1	DFT-15	Back	9mm	Ant 0	DSI 4	507000	2535	1	23.49	24.00	1.125	-	-	0.03	0.692	0.778
	FR1 n7	40M	BPSK	1	1	DFT-15	Bottom Side	12mm	Ant 0	DSI 4	507000	2535	1	23.49	24.00	1.125	-	-	0.01	0.642	0.722
	FR1 n7	40M	BPSK	108	54	DFT-15	Front	0mm	Ant 0	DSI 6	507000	2535	1	21.02	22.00	1.253	-	-	0.15	1.290	1.617
	FR1 n7	40M	BPSK	108	54	DFT-15	Back	0mm	Ant 0	DSI 6	507000	2535	1	21.02	22.00	1.253	-	-	0.13	2.410	3.020
	FR1 n7	40M	BPSK	108	54	DFT-15	Right Side	0mm	Ant 0	DSI 4	507000	2535	1	23.13	24.00	1.222	-	-	0.08	1.820	2.224
	FR1 n7	40M	BPSK	108	54	DFT-15	Bottom Side	0mm	Ant 0	DSI 6	507000	2535	1	21.02	22.00	1.253	-	-	0.14	2.020	2.531
	FR1 n7	40M	BPSK	216	0	DFT-15	Back	0mm	Ant 0	DSI 6	507000	2535	1	21.00	22.00	1.259	-	-	0.06	2.370	2.984
	FR1 n7	40M	BPSK	216	0	DFT-15	Right Side	0mm	Ant 0	DSI 4	507000	2535	1	22.89	23.50	1.151	-	-	0.11	1.750	2.014
	FR1 n7	40M	BPSK	216	0	DFT-15	Bottom Side	0mm	Ant 0	DSI 6	507000	2535	1	21.00	22.00	1.259	-	-	0.08	2.000	2.518
	FR1 n7	40M	BPSK	1	1	DFT-15	Front	0mm	Ant 1	DSI 6	507000	2535	1	20.92	22.00	1.282	-	-	-0.15	1.050	1.346
	FR1 n7	40M	BPSK	1	1	DFT-15	Back	0mm	Ant 1	DSI 6	507000	2535	1	20.92	22.00	1.282	-	-	0.04	0.736	0.944
	FR1 n7	40M	BPSK	1	1	DFT-15	Left Side	0mm	Ant 1	DSI 6	507000	2535	1	20.92	22.00	1.282	-	-	-0.18	1.650	2.116
	FR1 n7	40M	BPSK	1	1	DFT-15	Top Side	0mm	Ant 1	DSI 6	507000	2535	1	20.92	22.00	1.282	-	-	-0.01	2.280	2.924
	FR1 n7	40M	BPSK	108	54	DFT-15	Front	0mm	Ant 1	DSI 6	507000	2535	1	20.90	22.00	1.288	-	-	-0.02	1.090	1.404
	FR1 n7	40M	BPSK	108	54	DFT-15	Back	0mm	Ant 1	DSI 6	507000	2535	1	20.90	22.00	1.288	-	-	0.11	0.775	0.998
FR1 n7	40M	BPSK	108	54	DFT-15	Left Side	0mm	Ant 1	DSI 6	507000	2535	1	20.90	22.00	1.288	-	-	0.02	1.710	2.203	
FR1 n7	40M	BPSK	108	54	DFT-15	Top Side	0mm	Ant 1	DSI 6	507000	2535	1	20.90	22.00	1.288	-	-	0.13	2.330	3.002	
FR1 n7	40M	BPSK	108	54	DFT-15	Top Side	0mm	Ant 1	DSI 6(Sim TX)	507000	2535	1	20.46	21.50	1.271	-	-	0.15	2.170	2.757	
FR1 n7	40M	BPSK	108	54	DFT-15	Front	6mm	Ant 1	DSI 4	507000	2535	1	22.83	24.00	1.309	-	-	0.05	0.493	0.645	
FR1 n7	40M	BPSK	108	54	DFT-15	Back	13mm	Ant 1	DSI 4	507000	2535	1	22.83	24.00	1.309	-	-	0.03	0.294	0.385	
FR1 n7	40M	BPSK	108	54	DFT-15	Left Side	7mm	Ant 1	DSI 4	507000	2535	1	22.83	24.00	1.309	-	-	0.02	0.383	0.501	
FR1 n7	40M	BPSK	108	54	DFT-15	Top Side	9mm	Ant 1	DSI 4	507000	2535	1	22.83	24.00	1.309	-	-	0.01	0.577	0.755	
FR1 n7	40M	BPSK	216	0	DFT-15	Left Side	0mm	Ant 1	DSI 6	507000	2535	1	20.89	22.00	1.291	-	-	-0.09	1.650	2.131	
FR1 n7	40M	BPSK	216	0	DFT-15	Top Side	0mm	Ant 1	DSI 6	507000	2535	1	20.89	22.00	1.291	-	-	0.05	2.270	2.931	
91	FR1 n38	40M	BPSK	1	1	DFT-30	Front	0mm	Ant 0	DSI 6	519000	2595	1	21.65	22.50	1.216	-	-	-0.18	1.350	1.642
	FR1 n38	40M	BPSK	1	1	DFT-30	Back	0mm	Ant 0	DSI 6	519000	2595	1	21.65	22.50	1.216	-	-	-0.09	2.510	3.053
	FR1 n38	40M	BPSK	1	1	DFT-30	Right Side	0mm	Ant 0	DSI 4	519000	2595	1	23.29	24.00	1.178	-	-	-0.1	1.810	2.131
	FR1 n38	40M	BPSK	1	1	DFT-30	Bottom Side	0mm	Ant 0	DSI 6	519000	2595	1	21.65	22.50	1.216	-	-	-0.15	2.160	2.627
	FR1 n38	40M	BPSK	1	1	DFT-30	Front	7mm	Ant 0	DSI 4	519000	2595	1	23.29	24.00	1.178	-	-	0.11	0.906	1.067
	FR1 n38	40M	BPSK	1	1	DFT-30	Back	9mm	Ant 0	DSI 4	519000	2595	1	23.29	24.00	1.178	-	-	0.13	0.853	1.004
	FR1 n38	40M	BPSK	1	1	DFT-30	Bottom Side	12mm	Ant 0	DSI 4	519000	2595	1	23.29	24.00	1.178	-	-	-0.12	0.816	0.961
	FR1 n38	40M	BPSK	50	28	DFT-30	Front	0mm	Ant 0	DSI 6	519000	2595	1	21.63	22.50	1.222	-	-	0.12	1.230	1.503
	FR1 n38	40M	BPSK	50	28	DFT-30	Back	0mm	Ant 0	DSI 6	519000	2595	1	21.63	22.50	1.222	-	-	-0.14	2.440	2.981
	FR1 n38	40M	BPSK	50	28	DFT-30	Right Side	0mm	Ant 0	DSI 4	519000	2595	1	23.28	24.00	1.180	-	-	-0.08	1.750	2.066
FR1 n38	40M	BPSK	50	28	DFT-30	Bottom Side	0mm	Ant 0	DSI 6	519000	2595	1	21.63	22.50	1.222	-	-	-0.04	2.080	2.541	
FR1 n38	40M	BPSK	100	0	DFT-30	Back	0mm	Ant 0	DSI 6	519000	2595	1	21.61	22.50	1.227	-	-	-0.04	2.420	2.970	
FR1 n38	40M	BPSK	100	0	DFT-30	Right Side	0mm	Ant 0	DSI 4	519000	2595	1	22.76	23.50	1.186	-	-	0.15	1.650	1.957	
FR1 n38	40M	BPSK	100	0	DFT-30	Bottom Side	0mm	Ant 0	DSI 6	519000	2595	1	21.61	22.50	1.227	-	-	-0.1	2.020	2.479	
3500MHz~3700MHz																					
	LTE Band 42	20M	QPSK	1	0	-	Front	0mm	Ant 2	DSI 6	42590	3500	1	20.75	21.50	1.189	62.9	1.006	-0.05	1.020	1.220
	LTE Band 42	20M	QPSK	1	0	-	Back	0mm	Ant 2	DSI 6	42590	3500	1	20.75	21.50	1.189	62.9	1.006	-0.1	1.750	2.092
92	LTE Band 42	20M	QPSK	1	0	-	Left Side	0mm	Ant 2	DSI 6	42590	3500	1	20.75	21.50	1.189	62.9	1.006	0.19	2.360	2.822
	LTE Band 42	20M	QPSK	1	0	-	Left Side	0mm	Ant 2	DSI 6	42190	3460	1	20.53	21.50	1.250	62.9	1.006	0.09	2.150	2.704
	LTE Band 42	20M	QPSK	1	0	-	Left Side	0mm	Ant 2	DSI 6	42990	3540	1	20.55	21.50	1.245	62.9	1.006	-0.15	2.020	2.529
	LTE Band 42	20M	QPSK	1	0	-	Back	0mm	Ant 2	DSI 6	42190	3460	1	20.53	21.50	1.250	62.9	1.006	0.09	1.600	2.012
	LTE Band 42	20M	QPSK	1	0	-	Back	0mm	Ant 2	DSI 6	42990	3540	1	20.55	21.50	1.245	62.9	1.006	0.02	1.590	1.991



FCC SAR Test Report

Report No. : FA253001

	LTE Band 42	20M	QPSK	1	0	-	Left Side	0mm	Ant 2	DSI 6(Sim TX)	42590	3500	1	20.26	21.00	1.186	62.9	1.006	0.07	1.940	2.314
	LTE Band 42	20M	QPSK	1	0	-	Front	4mm	Ant 2	DSI 4	42590	3500	1	23.18	24.00	1.208	62.9	1.006	0.08	0.522	0.634
	LTE Band 42	20M	QPSK	1	0	-	Back	7mm	Ant 2	DSI 4	42590	3500	1	23.18	24.00	1.208	62.9	1.006	0.17	0.638	0.775
	LTE Band 42	20M	QPSK	1	0	-	Left Side	12mm	Ant 2	DSI 4	42590	3500	1	23.18	24.00	1.208	62.9	1.006	0.11	0.205	0.249
	LTE Band 42	20M	QPSK	50	0	-	Front	0mm	Ant 2	DSI 6	42590	3500	1	20.63	21.50	1.222	62.9	1.006	0.08	1.020	1.254
	LTE Band 42	20M	QPSK	50	0	-	Back	0mm	Ant 2	DSI 6	42590	3500	1	20.63	21.50	1.222	62.9	1.006	0.02	1.820	2.237
	LTE Band 42	20M	QPSK	50	0	-	Left Side	0mm	Ant 2	DSI 6	42590	3500	1	20.63	21.50	1.222	62.9	1.006	-0.12	2.250	2.766
	LTE Band 42	20M	QPSK	50	0	-	Left Side	0mm	Ant 2	DSI 6	42190	3460	1	20.43	21.50	1.279	62.9	1.006	-0.12	2.120	2.729
	LTE Band 42	20M	QPSK	50	0	-	Left Side	0mm	Ant 2	DSI 6	42990	3540	1	20.46	21.50	1.271	62.9	1.006	0.09	2.080	2.659
	LTE Band 42	20M	QPSK	50	0	-	Back	0mm	Ant 2	DSI 6	42190	3460	1	20.43	21.50	1.279	62.9	1.006	0.07	1.700	2.188
	LTE Band 42	20M	QPSK	50	0	-	Back	0mm	Ant 2	DSI 6	42990	3540	1	20.46	21.50	1.271	62.9	1.006	0.14	1.700	2.173
	LTE Band 42	20M	QPSK	100	0	-	Back	0mm	Ant 2	DSI 6	42590	3500	1	20.67	21.50	1.211	62.9	1.006	0.07	1.760	2.143
	LTE Band 42	20M	QPSK	100	0	-	Left Side	0mm	Ant 2	DSI 6	42590	3500	1	20.67	21.50	1.211	62.9	1.006	0.14	2.010	2.448
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Front	0mm	Ant 2	DSI 6	633332	3499.98	1	20.03	21.00	1.250	-	-	0.09	0.962	1.203
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	0mm	Ant 2	DSI 6	633332	3499.98	1	20.03	21.00	1.250	-	-	0.07	1.460	1.825
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Left Side	0mm	Ant 2	DSI 6	633332	3499.98	1	20.03	21.00	1.250	-	-	-0.12	2.350	2.938
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Top Side	0mm	Ant 2	DSI 4	633332	3499.98	1	26.17	27.00	1.211	-	-	0.18	1.660	2.010
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Front	0mm	Ant 2	DSI 6	633332	3499.98	1	20.01	21.00	1.256	-	-	0.04	0.998	1.254
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	0mm	Ant 2	DSI 6	633332	3499.98	1	20.01	21.00	1.256	-	-	-0.11	1.490	1.871
93	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Left Side	0mm	Ant 2	DSI 6	633332	3499.98	1	20.01	21.00	1.256	-	-	0.01	2.440	3.065
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Left Side	0mm	Ant 2	DSI 6	633332	3499.98	2	20.01	21.00	1.256	-	-	0.01	1.940	2.437
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Top Side	0mm	Ant 2	DSI 4	633332	3499.98	1	26.03	27.00	1.250	-	-	-0.09	1.760	2.200
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Left Side	0mm	Ant 2	DSI 6(Sim TX)	633332	3499.98	1	19.60	20.50	1.230	-	-	0.09	2.100	2.584
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Front	4mm	Ant 2	DSI 4	633332	3499.98	1	26.03	27.00	1.250	-	-	0.09	1.500	1.875
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	7mm	Ant 2	DSI 4	633332	3499.98	1	26.03	27.00	1.250	-	-	0.14	1.230	1.538
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Left Side	12mm	Ant 2	DSI 4	633332	3499.98	1	26.03	27.00	1.250	-	-	0.12	0.629	0.786
	FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Left Side	0mm	Ant 2	DSI 6	633332	3499.98	1	19.99	21.00	1.262	-	-	0.08	2.330	2.940
	FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Top Side	0mm	Ant 2	DSI 4	633332	3499.98	1	25.07	26.50	1.390	-	-	0.06	1.510	2.099
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	0mm	Ant 4	DSI 4	633332	3499.98	1	17.60	18.50	1.230	-	-	0.18	0.696	0.856
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Top Side	0mm	Ant 4	DSI 4	633332	3499.98	1	17.60	18.50	1.230	-	-	0.11	2.250	2.768
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	0mm	Ant 4	DSI 4	633332	3499.98	1	17.58	18.50	1.236	-	-	-0.13	0.681	0.842
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Top Side	0mm	Ant 4	DSI 4	633332	3499.98	1	17.58	18.50	1.236	-	-	0.17	2.180	2.694
	FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Top Side	0mm	Ant 4	DSI 4	633332	3499.98	1	17.56	18.50	1.242	-	-	0.05	2.140	2.657
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Front	0mm	Ant 5	DSI 6	633332	3499.98	1	23.08	24.00	1.236	-	-	-0.06	2.030	2.509
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	0mm	Ant 5	DSI 6	633332	3499.98	1	23.08	24.00	1.236	-	-	-0.18	0.632	0.781
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Right Side	0mm	Ant 5	DSI 6	633332	3499.98	1	23.08	24.00	1.236	-	-	0.17	2.400	2.966
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Right Side	0mm	Ant 5	DSI 6(Sim TX)	633332	3499.98	1	22.54	23.50	1.247	-	-	-0.1	2.100	2.620
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Front	4mm	Ant 5	DSI 4	633332	3499.98	1	25.81	27.00	1.315	-	-	0.02	1.400	1.841
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	5mm	Ant 5	DSI 4	633332	3499.98	1	25.81	27.00	1.315	-	-	0.03	0.727	0.956
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Right Side	10mm	Ant 5	DSI 4	633332	3499.98	1	25.81	27.00	1.315	-	-	0.01	0.454	0.597
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Front	0mm	Ant 5	DSI 6	633332	3499.98	1	23.03	24.00	1.250	-	-	0.08	1.920	2.400
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	0mm	Ant 5	DSI 6	633332	3499.98	1	23.03	24.00	1.250	-	-	0.17	0.622	0.778
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Right Side	0mm	Ant 5	DSI 6	633332	3499.98	1	23.03	24.00	1.250	-	-	0.04	2.330	2.913
	FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Front	0mm	Ant 5	DSI 6	633332	3499.98	1	22.96	24.00	1.271	-	-	0.02	1.950	2.478
	FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Right Side	0mm	Ant 5	DSI 6	633332	3499.98	1	22.96	24.00	1.271	-	-	0.11	2.320	2.948
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Back	0mm	Ant 7	DSI 4	633332	3499.98	1	21.19	22.50	1.352	-	-	-0.15	2.150	2.907
	FR1 n78 Part27Q	100M	BPSK	1	1	DFT-30	Bottom Side	0mm	Ant 7	DSI 4	633332	3499.98	1	21.19	22.50	1.352	-	-	0.13	1.450	1.961
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Back	0mm	Ant 7	DSI 4	633332	3499.98	1	21.18	22.50	1.355	-	-	0.16	2.200	2.981
	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Bottom Side	0mm	Ant 7	DSI 4	633332	3499.98	1	21.18	22.50	1.355	-	-	-0.17	1.530	2.073
	FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Back	0mm	Ant 7	DSI 4	633332	3499.98	1	21.16	22.50	1.361	-	-	0.05	2.120	2.886
	FR1 n78 Part27Q	100M	BPSK	270	0	DFT-30	Bottom Side	0mm	Ant 7	DSI 4	633332	3499.98	1	21.16	22.50	1.361	-	-	0.16	1.310	1.783



Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)	
2450MHz																		
	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	Ant 3	Full Power	6	2437	1	19.40	21.00	1.445	99.3	1.007	-0.03	0.612	0.891	
94	WLAN2.4GHz	802.11b 1Mbps	Top Side	0mm	Ant 3	Full Power	6	2437	1	19.40	21.00	1.445	99.3	1.007	-0.05	1.310	1.907	
	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	Ant 3	Simultaneous	6	2437	1	15.50	17.00	1.413	99.3	1.007	0.02	0.253	0.360	
	WLAN2.4GHz	802.11b 1Mbps	Top Side	0mm	Ant 3	Simultaneous	6	2437	1	15.50	17.00	1.413	99.3	1.007	-0.12	0.567	0.807	
5000MHz																		
	WLAN5.3GHz	802.11a 6Mbps	Front	0mm	Ant 5	Full Power	52	5260	1	17.74	19.50	1.498	98.1	1.019	0.1	0.655	1.000	
	WLAN5.3GHz	802.11a 6Mbps	Back	0mm	Ant 5	Full Power	52	5260	1	17.74	19.50	1.498	98.1	1.019	0.11	0.263	0.402	
95	WLAN5.3GHz	802.11a 6Mbps	Right Side	0mm	Ant 5	Full Power	52	5260	1	17.74	19.50	1.498	98.1	1.019	0.06	0.848	1.295	
	WLAN5.3GHz	802.11a 6Mbps	Top Side	0mm	Ant 5	Full Power	52	5260	1	17.74	19.50	1.498	98.1	1.019	-0.07	0.348	0.531	
	WLAN5.3GHz	802.11n-HT40 MCS0	Front	0mm	Ant 5	Simultaneous	54	5270	1	16.02	17.50	1.406	96.34	1.038	0.03	0.432	0.630	
	WLAN5.3GHz	802.11n-HT40 MCS0	Back	0mm	Ant 5	Simultaneous	54	5270	1	16.02	17.50	1.406	96.34	1.038	-0.02	0.185	0.270	
	WLAN5.3GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 5	Simultaneous	54	5270	1	16.02	17.50	1.406	96.34	1.038	0.05	0.480	0.701	
	WLAN5.3GHz	802.11a 6Mbps	Top Side	0mm	Ant 5	Full Power	52	5260	1	17.74	19.50	1.498	98.1	1.019	-0.07	0.348	0.531	
	WLAN5.5GHz	802.11a 6Mbps	Front	0mm	Ant 5	Full Power	116	5580	1	18.13	20.00	1.537	98.1	1.019	0.01	0.714	1.118	
	WLAN5.5GHz	802.11a 6Mbps	Back	0mm	Ant 5	Full Power	116	5580	1	18.13	20.00	1.537	98.1	1.019	-0.06	0.258	0.404	
96	WLAN5.5GHz	802.11a 6Mbps	Right Side	0mm	Ant 5	Full Power	116	5580	1	18.13	20.00	1.537	98.1	1.019	0.08	0.947	1.483	
	WLAN5.5GHz	802.11a 6Mbps	Top Side	0mm	Ant 5	Full Power	116	5580	1	18.13	20.00	1.537	98.1	1.019	0.11	0.366	0.573	
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	0mm	Ant 5	Simultaneous	106	5530	1	15.03	16.50	1.403	92.81	1.077	0.03	0.323	0.488	
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	0mm	Ant 5	Simultaneous	106	5530	1	15.03	16.50	1.403	92.81	1.077	0.02	0.123	0.186	
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Ant 5	Simultaneous	106	5530	1	15.03	16.50	1.403	92.81	1.077	0.01	0.428	0.647	
	WLAN5.5GHz	802.11a 6Mbps	Top Side	0mm	Ant 5	Full Power	116	5580	1	18.13	20.00	1.537	98.1	1.019	0.11	0.366	0.573	
97	WLAN5.8GHz	802.11a 6Mbps	Right Side	0mm	Ant 5	Full Power	157	5785	1	18.82	20.50	1.471	98.1	1.019	0.01	1.230	1.844	
	WLAN5.8GHz	802.11a 6Mbps	Right Side	0mm	Ant 5	Full Power	157	5785	2	18.82	20.50	1.471	98.1	1.019	0.06	1.140	1.709	
	WLAN5.8GHz	802.11a 6Mbps	Right Side	0mm	Ant 5	Full Power	165	5825	1	18.46	20.00	1.424	98.1	1.019	0.15	1.000	1.452	
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Ant 5	Simultaneous	155	5775	1	14.42	16.00	1.439	92.81	1.077	0.06	0.471	0.730	



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)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Left Tilted	0mm	Ant 3	Standalone	1	2412	1	17.80	19.50	1.479	99.3	1.007	-0.11	0.967	1	1.440
2nd	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Left Tilted	0mm	Ant 3	Standalone	1	2412	1	17.80	19.50	1.479	99.3	1.007	-0.11	0.962	1.005	1.433
1st	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Right Cheek	0mm	Ant 2	DSI 2	633332	3499.98	1	18.70	19.50	1.202	-	-	0.19	1.030	1	1.238
2nd	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Right Cheek	0mm	Ant 2	DSI 2	633332	3499.98	1	18.70	19.50	1.202	-	-	0.19	1.010	1.020	1.214
1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3(Sim TX)	4233	846.6	1	23.02	24.00	1.253	-	-	-0.01	0.941	1	1.179
2nd	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3(Sim TX)	4233	846.6	1	23.02	24.00	1.253	-	-	-0.01	0.926	1.016	1.160
1st	FR1 n38	40M	BPSK	50	28	DFT-30	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	519000	2595	1	15.82	16.50	1.169	-	-	0.02	1.070	1	1.251
2nd	FR1 n38	40M	BPSK	50	28	DFT-30	Bottom Side	5mm	Ant 0	DSI 3(Sim TX)	519000	2595	1	15.82	16.50	1.169	-	-	0.02	1.030	1.039	1.205
1st	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	1513	1752.6	1	19.15	19.80	1.161	-	-	-0.16	1.080	1	1.254
2nd	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	1513	1752.6	1	19.15	19.80	1.161	-	-	-0.16	1.020	1.059	1.185
1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	9262	1852.4	1	19.18	20.00	1.208	-	-	-0.19	1.030	1	1.244
2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	9262	1852.4	1	19.18	20.00	1.208	-	-	-0.19	1.020	1.010	1.232

<10g>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Ratio	Reported 10g SAR (W/kg)
1st	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	1413	1732.6	1	20.46	21.00	1.132	-	-	0.16	2.780	1	3.148
2nd	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	1413	1732.6	1	20.46	21.00	1.132	-	-	0.16	2.730	1.018	3.091
1st	FR1 n2	20M	BPSK	50	28	DFT-15	Bottom Side	0mm	Ant 0	DSI 6	376000	1880	1	21.10	22.00	1.230	-	-	0.05	2.550	1	3.137
2nd	FR1 n2	20M	BPSK	50	28	DFT-15	Bottom Side	0mm	Ant 0	DSI 6	376000	1880	1	21.10	22.00	1.230	-	-	0.05	2.520	1.012	3.100
1st	FR1 n38	40M	BPSK	1	1	DFT-30	Back	0mm	Ant 0	DSI 6	519000	2595	1	21.65	22.50	1.216	-	-	-0.09	2.510	1	3.053
2nd	FR1 n38	40M	BPSK	1	1	DFT-30	Back	0mm	Ant 0	DSI 6	519000	2595	1	21.65	22.50	1.216	-	-	-0.09	2.480	1.012	3.016
1st	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Left Side	0mm	Ant 2	DSI 6	633332	3499.98	1	20.01	21.00	1.256	-	-	0.01	2.440	1	3.065
2nd	FR1 n78 Part27Q	100M	BPSK	135	69	DFT-30	Left Side	0mm	Ant 2	DSI 6	633332	3499.98	1	20.01	21.00	1.256	-	-	0.01	2.420	1.008	3.040

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is $\geq 0.8W/kg$.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR $< 1.45W/kg$, only one repeated measurement is required.
3. 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.	WWAN + NFC				Yes
5.	WLAN5GHz+ Bluetooth	Yes	Yes	Yes	Yes
6.	NFC + Bluetooth				Yes
7.	NFC + WLAN2.4GHz				Yes
8.	NFC + WLAN5GHz				Yes
9.	WWAN + WLAN5GHz + NFC				Yes
10.	WWAN + WLAN5GHz+ Bluetooth	Yes	Yes	Yes	Yes
11.	WWAN + WLAN5GHz+ Bluetooth + NFC				Yes

General Note:

- This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
- WWAN above includes 5G NR bands and and EN-DC combination.
- EUT will choose each GSM, WCDMA, LTE and 5GNR according to the network signal condition; therefore, they will not operate simultaneously at any moment.
- 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.
- This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.
- 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)..
- The worst case 5 GHz WLAN SAR for each configuration was used for SAR summation.
- WLAN 2.4GHz and Bluetooth share the same antenna, and they cannot transmit simultaneously each other.
- According to the EUT characteristic, WLAN 5GHz and Bluetooth can transmit simultaneously.
- According to the EUT characteristic, WLAN 5GHz and WLAN 2.4GHz cannot transmit simultaneously.
- According to the EUT characteristic, NFC and WLAN 2.4GHz/5GHz/Bluetooth can transmit simultaneously.
- The maximum SAR summation is calculated based on the same configuration and test position.
- For simultaneously analysis, since the SAR summation of 3 transmitters can cover others combination of 2 transmitters, therefore in this section did not additional to evaluate 2TX combination of simultaneously transmission.
- Per KDB 447498 D04, simultaneous transmission SAR is compliant if,
 - 1g Scalar SAR summation < 1.6W/kg and 10g Scalar SAR summation < 4.0W/kg.
 - $SPLSR = (SAR1 + SAR2)^{1.5} / (\text{min. separation distance, mm})$, and the peak separation distance is determined from the square root of $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$, where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
 - If $SPLSR \leq 0.04$ for 1g SAR and $SPLSR \leq 0.10$ for 10g SAR , simultaneously transmission SAR measurement is not necessary.
 - Simultaneously transmission SAR measurement, and the reported multi-band 1g SAR < 1.6W/kg and 10g SAR < 4.0W/kg.
 - The SPLSR calculated results please refer to section 17.6.

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

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

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

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

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

if $A + C \leq 1.0$ and $B + C \leq 1.0$ can be proven, then “ $x\% * A + (100-x)\% * B + C \leq 1.0$ ”. 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

Above analysis is also apply to LTE inter-band uplink, LTE1 + LTE2 + WLAN + BT simultaneous transmission, So inter-band CA uplink 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	6	9	1+3	1+6	1+9	1+6+9
		WWAN	WLAN2.4GHz Ant 3	WLAN5GHz Ant 5	Bluetooth Ant 3	Summed	Summed	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
LTE Band 12 Ant 0	Right Cheek	0.088	0.171	0.138		0.26	0.23	0.09	0.23
	Right Tilted		0.211	0.164	0.093	0.21	0.16	0.09	0.26
	Left Cheek	0.079	0.557	0.454	0.179	0.64	0.53	0.26	0.71
	Left Tilted		0.626	0.263	0.279	0.63	0.26	0.28	0.54
LTE Band 13 Ant 0	Right Cheek	0.158	0.171	0.138		0.33	0.30	0.16	0.30
	Right Tilted	0.121	0.211	0.164	0.093	0.33	0.29	0.21	0.38
	Left Cheek	0.130	0.557	0.454	0.179	0.69	0.58	0.31	0.76
	Left Tilted	0.113	0.626	0.263	0.279	0.74	0.38	0.39	0.66
GSM850 Ant 0	Right Cheek	0.201	0.171	0.138		0.37	0.34	0.20	0.34
	Right Tilted	0.141	0.211	0.164	0.093	0.35	0.31	0.23	0.40
	Left Cheek	0.152	0.557	0.454	0.179	0.71	0.61	0.33	0.79
	Left Tilted	0.148	0.626	0.263	0.279	0.77	0.41	0.43	0.69
WCDMA V Ant 0	Right Cheek	0.268	0.171	0.138		0.44	0.41	0.27	0.41
	Right Tilted	0.181	0.211	0.164	0.093	0.39	0.35	0.27	0.44
	Left Cheek	0.244	0.557	0.454	0.179	0.80	0.70	0.42	0.88
	Left Tilted	0.146	0.626	0.263	0.279	0.77	0.41	0.43	0.69
LTE Band 26 Ant 0	Right Cheek	0.148	0.171	0.138		0.32	0.29	0.15	0.29
	Right Tilted	0.105	0.211	0.164	0.093	0.32	0.27	0.20	0.36
	Left Cheek	0.126	0.557	0.454	0.179	0.68	0.58	0.31	0.76
	Left Tilted	0.089	0.626	0.263	0.279	0.72	0.35	0.37	0.63
FR1 n5 Ant 0	Right Cheek	0.167	0.171	0.138		0.34	0.31	0.17	0.31
	Right Tilted	0.111	0.211	0.164	0.093	0.32	0.28	0.20	0.37
	Left Cheek	0.143	0.557	0.454	0.179	0.70	0.60	0.32	0.78
	Left Tilted	0.094	0.626	0.263	0.279	0.72	0.36	0.37	0.64
WCDMA IV Ant 0	Right Cheek	0.161	0.171	0.138		0.33	0.30	0.16	0.30
	Right Tilted	0.107	0.211	0.164	0.093	0.32	0.27	0.20	0.36
	Left Cheek	0.182	0.557	0.454	0.179	0.74	0.64	0.36	0.82
	Left Tilted	0.097	0.626	0.263	0.279	0.72	0.36	0.38	0.64
LTE Band 66 Ant 0	Right Cheek	0.186	0.171	0.138		0.36	0.32	0.19	0.32
	Right Tilted	0.148	0.211	0.164	0.093	0.36	0.31	0.24	0.41
	Left Cheek	0.252	0.557	0.454	0.179	0.81	0.71	0.43	0.89
	Left Tilted	0.123	0.626	0.263	0.279	0.75	0.39	0.40	0.67
LTE Band 66 Ant 1	Right Cheek	0.683	0.171	0.138		0.85	0.82	0.68	0.82
	Right Tilted	0.997	0.211	0.164	0.093	1.21	1.16	1.09	1.25
	Left Cheek	0.505	0.557	0.454	0.179	1.06	0.96	0.68	1.14
	Left Tilted	0.718	0.626	0.263	0.279	1.34	0.98	1.00	1.26
FR1 n66 Ant 0	Right Cheek	0.152	0.171	0.138		0.32	0.29	0.15	0.29
	Right Tilted	0.121	0.211	0.164	0.093	0.33	0.29	0.21	0.38
	Left Cheek	0.181	0.557	0.454	0.179	0.74	0.64	0.36	0.81
	Left Tilted	0.093	0.626	0.263	0.279	0.72	0.36	0.37	0.64
GSM1900 Ant 0	Right Cheek		0.171	0.138		0.17	0.14	0.00	0.14
	Right Tilted		0.211	0.164	0.093	0.21	0.16	0.09	0.26
	Left Cheek	0.068	0.557	0.454	0.179	0.63	0.52	0.25	0.70
	Left Tilted		0.626	0.263	0.279	0.63	0.26	0.28	0.54
WCDMA II Ant 0	Right Cheek	0.064	0.171	0.138		0.24	0.20	0.06	0.20
	Right Tilted	0.047	0.211	0.164	0.093	0.26	0.21	0.14	0.30
	Left Cheek	0.096	0.557	0.454	0.179	0.65	0.55	0.28	0.73
	Left Tilted	0.050	0.626	0.263	0.279	0.68	0.31	0.33	0.59
LTE Band 25 Ant 0	Right Cheek	0.059	0.171	0.138		0.23	0.20	0.06	0.20
	Right Tilted		0.211	0.164	0.093	0.21	0.16	0.09	0.26



	Left Cheek	0.082	0.557	0.454	0.179	0.64	0.54	0.26	0.72
	Left Tilted	0.053	0.626	0.263	0.279	0.68	0.32	0.33	0.60
LTE Band 2 Ant 1	Right Cheek	1.163	0.171	0.138		1.33	1.30	1.16	1.30
	Right Tilted	0.664	0.211	0.164	0.093	0.88	0.83	0.76	0.92
	Left Cheek	0.397	0.557	0.454	0.179	0.95	0.85	0.58	1.03
	Left Tilted	0.576	0.626	0.263	0.279	1.20	0.84	0.86	1.12
FR1 n2 Ant 0	Right Cheek	0.074	0.171	0.138		0.25	0.21	0.07	0.21
	Right Tilted	0.053	0.211	0.164	0.093	0.26	0.22	0.15	0.31
	Left Cheek	0.110	0.557	0.454	0.179	0.67	0.56	0.29	0.74
	Left Tilted	0.048	0.626	0.263	0.279	0.67	0.31	0.33	0.59
LTE Band 7 Ant 0	Right Cheek	0.101	0.171	0.138		0.27	0.24	0.10	0.24
	Right Tilted	0.073	0.211	0.164	0.093	0.28	0.24	0.17	0.33
	Left Cheek	0.112	0.557	0.454	0.179	0.67	0.57	0.29	0.75
	Left Tilted	0.096	0.626	0.263	0.279	0.72	0.36	0.38	0.64
LTE Band 7 Ant 1	Right Cheek	1.151	0.171	0.138		1.32	1.29	1.15	1.29
	Right Tilted	0.688	0.211	0.164	0.093	0.90	0.85	0.78	0.95
	Left Cheek	0.441	0.557	0.454	0.179	1.00	0.90	0.62	1.07
	Left Tilted	0.494	0.626	0.263	0.279	1.12	0.76	0.77	1.04
LTE Band 38 Ant 1	Right Cheek	0.698	0.171	0.138		0.87	0.84	0.70	0.84
	Right Tilted	1.088	0.211	0.164	0.093	1.30	1.25	1.18	1.35
	Left Cheek	0.468	0.557	0.454	0.179	1.03	0.92	0.65	1.10
	Left Tilted	0.505	0.626	0.263	0.279	1.13	0.77	0.78	1.05
LTE Band 38(HPUE) Ant 1	Right Cheek	0.691	0.171	0.138		0.86	0.83	0.69	0.83
	Right Tilted	1.061	0.211	0.164	0.093	1.27	1.23	1.15	1.32
	Left Cheek	0.421	0.557	0.454	0.179	0.98	0.88	0.60	1.05
	Left Tilted	0.456	0.626	0.263	0.279	1.08	0.72	0.74	1.00
LTE Band 41 Ant 0	Right Cheek		0.171	0.138		0.17	0.14	0.00	0.14
	Right Tilted		0.211	0.164	0.093	0.21	0.16	0.09	0.26
	Left Cheek	0.045	0.557	0.454	0.179	0.60	0.50	0.22	0.68
	Left Tilted		0.626	0.263	0.279	0.63	0.26	0.28	0.54
LTE Band 41(HPUE) Ant 0	Right Cheek	0.058	0.171	0.138		0.23	0.20	0.06	0.20
	Right Tilted		0.211	0.164	0.093	0.21	0.16	0.09	0.26
	Left Cheek	0.059	0.557	0.454	0.179	0.62	0.51	0.24	0.69
	Left Tilted		0.626	0.263	0.279	0.63	0.26	0.28	0.54
FR1 n7 Ant 0	Right Cheek	0.116	0.171	0.138		0.29	0.25	0.12	0.25
	Right Tilted	0.061	0.211	0.164	0.093	0.27	0.23	0.15	0.32
	Left Cheek	0.109	0.557	0.454	0.179	0.67	0.56	0.29	0.74
	Left Tilted	0.092	0.626	0.263	0.279	0.72	0.36	0.37	0.63
FR1 n7 Ant 1	Right Cheek	1.029	0.171	0.138		1.20	1.17	1.03	1.17
	Right Tilted	0.689	0.211	0.164	0.093	0.90	0.85	0.78	0.95
	Left Cheek	0.480	0.557	0.454	0.179	1.04	0.93	0.66	1.11
	Left Tilted	0.537	0.626	0.263	0.279	1.16	0.80	0.82	1.08
FR1 n38 Ant 0	Right Cheek	0.127	0.171	0.138		0.30	0.27	0.13	0.27
	Right Tilted	0.088	0.211	0.164	0.093	0.30	0.25	0.18	0.35
	Left Cheek	0.122	0.557	0.454	0.179	0.68	0.58	0.30	0.76
	Left Tilted	0.088	0.626	0.263	0.279	0.71	0.35	0.37	0.63
LTE Band 42 Ant 2	Right Cheek	0.595	0.171	0.138		0.77	0.73	0.60	0.73
	Right Tilted	0.432	0.211	0.164	0.093	0.64	0.60	0.53	0.69
	Left Cheek	0.262	0.557	0.454	0.179	0.82	0.72	0.44	0.90
	Left Tilted	0.191	0.626	0.263	0.279	0.82	0.45	0.47	0.73
FR1 n78 Part27Q Ant 2	Right Cheek	0.699	0.171	0.138		0.87	0.84	0.70	0.84
	Right Tilted	0.608	0.211	0.164	0.093	0.82	0.77	0.70	0.87
	Left Cheek	0.396	0.557	0.454	0.179	0.95	0.85	0.58	1.03
	Left Tilted	0.317	0.626	0.263	0.279	0.94	0.58	0.60	0.86
FR1 n78 Part27Q Ant 4	Right Cheek	0.703	0.171	0.138		0.87	0.84	0.70	0.84
	Right Tilted	0.933	0.211	0.164	0.093	1.14	1.10	1.03	1.19



FCC SAR Test Report

Report No. : FA253001

	Left Cheek	0.841	0.557	0.454	0.179	1.40	1.30	1.02	1.47
	Left Tilted	0.536	0.626	0.263	0.279	1.16	0.80	0.82	1.08
FR1 n78 Part27Q Ant 5	Right Cheek	0.438	0.171	0.138		0.61	0.58	0.44	0.58
	Right Tilted	0.345	0.211	0.164	0.093	0.56	0.51	0.44	0.60
	Left Cheek	0.575	0.557	0.454	0.179	1.13	1.03	0.75	1.21
	Left Tilted	0.665	0.626	0.263	0.279	1.29	0.93	0.94	1.21
FR1 n78 Part27Q Ant 7	Right Cheek	0.152	0.171	0.138		0.32	0.29	0.15	0.29
	Right Tilted	0.184	0.211	0.164	0.093	0.40	0.35	0.28	0.44
	Left Cheek	0.290	0.557	0.454	0.179	0.85	0.74	0.47	0.92
	Left Tilted	0.119	0.626	0.263	0.279	0.75	0.38	0.40	0.66



17.3 Hotspot Exposure Conditions

WWAN Band	Exposure Position	1	3	6	9	1+3	1+6	1+9	1+6+9	Case No
		WWAN	WLAN2.4GHz Ant 3	WLAN5GHz Ant 5	Bluetooth Ant 3	Summed	Summed	Summed	Summed	
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
LTE Band 12 Ant 0	Front	0.194	0.323	0.332	0.089	0.52	0.53	0.28	0.62	
	Back	0.392	0.533	0.377	0.222	0.93	0.77	0.61	0.99	
	Left side	0.070				0.07	0.07	0.07	0.07	
	Right side	0.182	0.337	0.438	0.119	0.52	0.62	0.30	0.74	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	0.303				0.30	0.30	0.30	0.30	
LTE Band 13 Ant 0	Front	0.397	0.323	0.332	0.089	0.72	0.73	0.49	0.82	
	Back	0.684	0.533	0.377	0.222	1.22	1.06	0.91	1.28	
	Left side	0.236				0.24	0.24	0.24	0.24	
	Right side	0.292	0.337	0.438	0.119	0.63	0.73	0.41	0.85	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	0.434				0.43	0.43	0.43	0.43	
GSM850 Ant 0	Front	0.788	0.323	0.332	0.089	1.11	1.12	0.88	1.21	
	Back	1.010	0.533	0.377	0.222	1.54	1.39	1.23	1.61	Case 1
	Left side	0.283				0.28	0.28	0.28	0.28	
	Right side	0.438	0.337	0.438	0.119	0.78	0.88	0.56	1.00	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	0.851				0.85	0.85	0.85	0.85	
WCDMA V Ant 0	Front	0.685	0.323	0.332	0.089	1.01	1.02	0.77	1.11	
	Back	1.179	0.533	0.377	0.222	1.71	1.56	1.40	1.78	Case 2,3
	Left side	0.246				0.25	0.25	0.25	0.25	
	Right side	0.387	0.337	0.438	0.119	0.72	0.83	0.51	0.94	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	0.743				0.74	0.74	0.74	0.74	
LTE Band 26 Ant 0	Front	0.458	0.323	0.332	0.089	0.78	0.79	0.55	0.88	
	Back	0.772	0.533	0.377	0.222	1.31	1.15	0.99	1.37	
	Left side	0.171				0.17	0.17	0.17	0.17	
	Right side	0.257	0.337	0.438	0.119	0.59	0.70	0.38	0.81	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	0.557				0.56	0.56	0.56	0.56	
FR1 n5(NSA) Ant 0	Front	0.470	0.323	0.332	0.089	0.79	0.80	0.56	0.89	
	Back	0.728	0.533	0.377	0.222	1.26	1.11	0.95	1.33	
	Left side	0.171				0.17	0.17	0.17	0.17	
	Right side	0.268	0.337	0.438	0.119	0.61	0.71	0.39	0.83	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	0.629				0.63	0.63	0.63	0.63	
WCDMA IV Ant 0	Front	0.690	0.323	0.332	0.089	1.01	1.02	0.78	1.11	
	Back	0.806	0.533	0.377	0.222	1.34	1.18	1.03	1.41	
	Left side	0.064				0.06	0.06	0.06	0.06	
	Right side	0.123	0.337	0.438	0.119	0.46	0.56	0.24	0.68	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	1.257				1.26	1.26	1.26	1.26	
LTE Band 66 Ant 0	Front	0.382	0.323	0.332	0.089	0.71	0.71	0.47	0.80	
	Back	0.715	0.533	0.377	0.222	1.25	1.09	0.94	1.31	
	Left side					0.00	0.00	0.00	0.00	
	Right side	0.108	0.337	0.438	0.119	0.45	0.55	0.23	0.67	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	1.053				1.05	1.05	1.05	1.05	
LTE Band 66 Ant 1	Front	0.363	0.323	0.332	0.089	0.69	0.70	0.45	0.78	
	Back	0.626	0.533	0.377	0.222	1.16	1.00	0.85	1.23	



	Left side	0.290				0.29	0.29	0.29	0.29	
	Right side		0.337	0.438	0.119	0.34	0.44	0.12	0.56	
	Top side	0.637	0.703	0.178	0.251	1.34	0.82	0.89	1.07	
	Bottom side					0.00	0.00	0.00	0.00	
FR1 n66 Ant 0	Front	0.621	0.323	0.332	0.089	0.94	0.95	0.71	1.04	
	Back	0.786	0.533	0.377	0.222	1.32	1.16	1.01	1.39	
	Left side	0.065				0.07	0.07	0.07	0.07	
	Right side	0.118	0.337	0.438	0.119	0.46	0.56	0.24	0.68	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	1.176				1.18	1.18	1.18	1.18	
GSM1900 Ant 0	Front	0.334	0.323	0.332	0.089	0.66	0.67	0.42	0.76	
	Back	0.450	0.533	0.377	0.222	0.98	0.83	0.67	1.05	
	Left side					0.00	0.00	0.00	0.00	
	Right side	0.075	0.337	0.438	0.119	0.41	0.51	0.19	0.63	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	0.945				0.95	0.95	0.95	0.95	
WCDMA II Ant 0	Front	0.448	0.323	0.332	0.089	0.77	0.78	0.54	0.87	
	Back	0.655	0.533	0.377	0.222	1.19	1.03	0.88	1.25	
	Left side					0.00	0.00	0.00	0.00	
	Right side	0.084	0.337	0.438	0.119	0.42	0.52	0.20	0.64	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	1.231				1.23	1.23	1.23	1.23	
LTE Band 25 Ant 0	Front	0.518	0.323	0.332	0.089	0.84	0.85	0.61	0.94	
	Back	0.645	0.533	0.377	0.222	1.18	1.02	0.87	1.24	
	Left side					0.00	0.00	0.00	0.00	
	Right side	0.082	0.337	0.438	0.119	0.42	0.52	0.20	0.64	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	1.175				1.18	1.18	1.18	1.18	
LTE Band 2 Ant 1	Front	0.301	0.323	0.332	0.089	0.62	0.63	0.39	0.72	
	Back	0.535	0.533	0.377	0.222	1.07	0.91	0.76	1.13	
	Left side	0.233				0.23	0.23	0.23	0.23	
	Right side		0.337	0.438	0.119	0.34	0.44	0.12	0.56	
	Top side	0.667	0.703	0.178	0.251	1.37	0.85	0.92	1.10	
	Bottom side					0.00	0.00	0.00	0.00	
FR1 n2 Ant 0	Front	0.434	0.323	0.332	0.089	0.76	0.77	0.52	0.86	
	Back	0.589	0.533	0.377	0.222	1.12	0.97	0.81	1.19	
	Left side					0.00	0.00	0.00	0.00	
	Right side	0.092	0.337	0.438	0.119	0.43	0.53	0.21	0.65	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	1.237				1.24	1.24	1.24	1.24	
LTE Band 7 Ant 0	Front	0.302	0.323	0.332	0.089	0.63	0.63	0.39	0.72	
	Back	0.544	0.533	0.377	0.222	1.08	0.92	0.77	1.14	
	Left side					0.00	0.00	0.00	0.00	
	Right side	0.330	0.337	0.438	0.119	0.67	0.77	0.45	0.89	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	0.975				0.98	0.98	0.98	0.98	
LTE Band 7 Ant 1	Front	0.290	0.323	0.332	0.089	0.61	0.62	0.38	0.71	
	Back	0.516	0.533	0.377	0.222	1.05	0.89	0.74	1.12	
	Left side	0.248				0.25	0.25	0.25	0.25	
	Right side		0.337	0.438	0.119	0.34	0.44	0.12	0.56	
	Top side	0.664	0.703	0.178	0.251	1.37	0.84	0.92	1.09	
	Bottom side					0.00	0.00	0.00	0.00	
LTE Band 38 Ant 1	Front	0.322	0.323	0.332	0.089	0.65	0.65	0.41	0.74	
	Back	0.561	0.533	0.377	0.222	1.09	0.94	0.78	1.16	
	Left side	0.281				0.28	0.28	0.28	0.28	
	Right side		0.337	0.438	0.119	0.34	0.44	0.12	0.56	



	Top side	0.633	0.703	0.178	0.251	1.34	0.81	0.88	1.06	
	Bottom side					0.00	0.00	0.00	0.00	
LTE Band 38(HPUE) Ant 1	Front	0.309	0.323	0.332	0.089	0.63	0.64	0.40	0.73	
	Back	0.565	0.533	0.377	0.222	1.10	0.94	0.79	1.16	
	Left side	0.271				0.27	0.27	0.27	0.27	
	Right side		0.337	0.438	0.119	0.34	0.44	0.12	0.56	
	Top side	0.623	0.703	0.178	0.251	1.33	0.80	0.87	1.05	
	Bottom side					0.00	0.00	0.00	0.00	
LTE Band 41 Ant 0	Front	0.328	0.323	0.332	0.089	0.65	0.66	0.42	0.75	
	Back	0.493	0.533	0.377	0.222	1.03	0.87	0.72	1.09	
	Left side					0.00	0.00	0.00	0.00	
	Right side	0.249	0.337	0.438	0.119	0.59	0.69	0.37	0.81	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	1.211				1.21	1.21	1.21	1.21	
LTE Band 41(HPUE) Ant 0	Front	0.300	0.323	0.332	0.089	0.62	0.63	0.39	0.72	
	Back	0.445	0.533	0.377	0.222	0.98	0.82	0.67	1.04	
	Left side					0.00	0.00	0.00	0.00	
	Right side	0.270	0.337	0.438	0.119	0.61	0.71	0.39	0.83	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	1.106				1.11	1.11	1.11	1.11	
FR1 n7 Ant 0	Front	0.396	0.323	0.332	0.089	0.72	0.73	0.49	0.82	
	Back	0.699	0.533	0.377	0.222	1.23	1.08	0.92	1.30	
	Left side					0.00	0.00	0.00	0.00	
	Right side	0.445	0.337	0.438	0.119	0.78	0.88	0.56	1.00	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	1.142				1.14	1.14	1.14	1.14	
FR1 n7 Ant 1	Front	0.345	0.323	0.332	0.089	0.67	0.68	0.43	0.77	
	Back	0.624	0.533	0.377	0.222	1.16	1.00	0.85	1.22	
	Left side	0.274				0.27	0.27	0.27	0.27	
	Right side		0.337	0.438	0.119	0.34	0.44	0.12	0.56	
	Top side	0.671	0.703	0.178	0.251	1.37	0.85	0.92	1.10	
	Bottom side					0.00	0.00	0.00	0.00	
FR1 n38 Ant 0	Front	0.399	0.323	0.332	0.089	0.72	0.73	0.49	0.82	
	Back	0.596	0.533	0.377	0.222	1.13	0.97	0.82	1.20	
	Left side					0.00	0.00	0.00	0.00	
	Right side	0.338	0.337	0.438	0.119	0.68	0.78	0.46	0.90	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	1.251				1.25	1.25	1.25	1.25	
LTE Band 42 Ant 2	Front	0.312	0.323	0.332	0.089	0.64	0.64	0.40	0.73	
	Back	0.417	0.533	0.377	0.222	0.95	0.79	0.64	1.02	
	Left side	0.565				0.57	0.57	0.57	0.57	
	Right side		0.337	0.438	0.119	0.34	0.44	0.12	0.56	
	Top side	0.443	0.703	0.178	0.251	1.15	0.62	0.69	0.87	
	Bottom side					0.00	0.00	0.00	0.00	
FR1 n78 Part27Q Ant 2	Front	0.300	0.323	0.332	0.089	0.62	0.63	0.39	0.72	
	Back	0.517	0.533	0.377	0.222	1.05	0.89	0.74	1.12	
	Left side	0.694				0.69	0.69	0.69	0.69	
	Right side		0.337	0.438	0.119	0.34	0.44	0.12	0.56	
	Top side	0.139	0.703	0.178	0.251	0.84	0.32	0.39	0.57	
	Bottom side					0.00	0.00	0.00	0.00	
FR1 n78 Part27Q Ant 4	Front	0.154	0.323	0.332	0.089	0.48	0.49	0.24	0.58	
	Back	0.418	0.533	0.377	0.222	0.95	0.80	0.64	1.02	
	Left side					0.00	0.00	0.00	0.00	
	Right side		0.337	0.438	0.119	0.34	0.44	0.12	0.56	
	Top side	0.676	0.703	0.178	0.251	1.38	0.85	0.93	1.11	
	Bottom side					0.00	0.00	0.00	0.00	



FCC SAR Test Report

Report No. : FA253001

FR1 n78 Part27Q Ant 5	Front	0.567	0.323	0.332	0.089	0.89	0.90	0.66	0.99	
	Back	0.473	0.533	0.377	0.222	1.01	0.85	0.70	1.07	
	Left side					0.00	0.00	0.00	0.00	
	Right side	0.677	0.337	0.438	0.119	1.01	1.12	0.80	1.23	
	Top side	0.192	0.703	0.178	0.251	0.90	0.37	0.44	0.62	
	Bottom side					0.00	0.00	0.00	0.00	
FR1 n78 Part27Q Ant 7	Front	0.535	0.323	0.332	0.089	0.86	0.87	0.62	0.96	
	Back	1.190	0.533	0.377	0.222	1.72	1.57	1.41	1.79	Case 4,5
	Left side	0.648				0.65	0.65	0.65	0.65	
	Right side		0.337	0.438	0.119	0.34	0.44	0.12	0.56	
	Top side		0.703	0.178	0.251	0.70	0.18	0.25	0.43	
	Bottom side	0.908				0.91	0.91	0.91	0.91	



17.4 Body-Worn Accessory Exposure Conditions

WWAN Band	Exposure Position	1	3	6	9	1+3	1+6	1+9	1+6+9	Case No
		WWAN	WLAN2.4GHz Ant 3	WLAN5GHz Ant 5	Bluetooth Ant 3	Summed	Summed	Summed	Summed	
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
LTE Band 12 Ant 0	Front	0.194	0.323	0.408	0.089	0.52	0.60	0.28	0.69	
	Back	0.392	0.533	0.381	0.222	0.93	0.77	0.61	1.00	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
LTE Band 13 Ant 0	Front	0.397	0.323	0.408	0.089	0.72	0.81	0.49	0.89	
	Back	0.684	0.533	0.381	0.222	1.22	1.07	0.91	1.29	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
GSM850 Ant 0	Front	0.788	0.323	0.408	0.089	1.11	1.20	0.88	1.29	
	Back	1.010	0.533	0.381	0.222	1.54	1.39	1.23	1.61	Case 6
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
WCDMA V Ant 0	Front	0.685	0.323	0.408	0.089	1.01	1.09	0.77	1.18	
	Back	1.179	0.533	0.381	0.222	1.71	1.56	1.40	1.78	Case 7,8
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
LTE Band 26 Ant 0	Front	0.458	0.323	0.408	0.089	0.78	0.87	0.55	0.96	
	Back	0.772	0.533	0.381	0.222	1.31	1.15	0.99	1.38	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
FR1 n5 Ant 0	Front	0.470	0.323	0.408	0.089	0.79	0.88	0.56	0.97	
	Back	0.728	0.533	0.381	0.222	1.26	1.11	0.95	1.33	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
WCDMA IV Ant 0	Front	0.690	0.323	0.408	0.089	1.01	1.10	0.78	1.19	
	Back	0.806	0.533	0.381	0.222	1.34	1.19	1.03	1.41	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
LTE Band 66 Ant 0	Front	0.382	0.323	0.408	0.089	0.71	0.79	0.47	0.88	
	Back	0.631	0.533	0.381	0.222	1.16	1.01	0.85	1.23	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
LTE Band 66 Ant 1	Front	0.363	0.323	0.408	0.089	0.69	0.77	0.45	0.86	
	Back	0.626	0.533	0.381	0.222	1.16	1.01	0.85	1.23	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
FR1 n66 Ant 0	Front	0.621	0.323	0.408	0.089	0.94	1.03	0.71	1.12	
	Back	0.786	0.533	0.381	0.222	1.32	1.17	1.01	1.39	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
GSM1900 Ant 0	Front	0.334	0.323	0.408	0.089	0.66	0.74	0.42	0.83	
	Back	0.450	0.533	0.381	0.222	0.98	0.83	0.67	1.05	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
WCDMA II Ant 0	Front	0.448	0.323	0.408	0.089	0.77	0.86	0.54	0.95	
	Back	0.655	0.533	0.381	0.222	1.19	1.04	0.88	1.26	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
LTE Band 25 Ant 0	Front	0.518	0.323	0.408	0.089	0.84	0.93	0.61	1.02	
	Back	0.645	0.533	0.381	0.222	1.18	1.03	0.87	1.25	



FCC SAR Test Report

Report No. : FA253001

	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
LTE Band 2 Ant 1	Front	0.301	0.323	0.408	0.089	0.62	0.71	0.39	0.80	
	Back	0.531	0.533	0.381	0.222	1.06	0.91	0.75	1.13	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
FR1 n2 Ant 0	Front	0.434	0.323	0.408	0.089	0.76	0.84	0.52	0.93	
	Back	0.589	0.533	0.381	0.222	1.12	0.97	0.81	1.19	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
LTE Band 7 Ant 0	Front	0.302	0.323	0.408	0.089	0.63	0.71	0.39	0.80	
	Back	0.544	0.533	0.381	0.222	1.08	0.93	0.77	1.15	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
LTE Band 7 Ant 1	Front	0.290	0.323	0.408	0.089	0.61	0.70	0.38	0.79	
	Back	0.512	0.533	0.381	0.222	1.05	0.89	0.73	1.12	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
LTE Band 38 Ant 1	Front	0.322	0.323	0.408	0.089	0.65	0.73	0.41	0.82	
	Back	0.561	0.533	0.381	0.222	1.09	0.94	0.78	1.16	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
LTE Band 38(HPU) Ant 1	Front	0.309	0.323	0.408	0.089	0.63	0.72	0.40	0.81	
	Back	0.565	0.533	0.381	0.222	1.10	0.95	0.79	1.17	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
LTE Band 41 Ant 0	Front	0.328	0.323	0.408	0.089	0.65	0.74	0.42	0.83	
	Back	0.474	0.533	0.381	0.222	1.01	0.86	0.70	1.08	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
LTE Band 41(HPU) Ant 0	Front	0.300	0.323	0.408	0.089	0.62	0.71	0.39	0.80	
	Back	0.445	0.533	0.381	0.222	0.98	0.83	0.67	1.05	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
FR1 n7 Ant 0	Front	0.396	0.323	0.408	0.089	0.72	0.80	0.49	0.89	
	Back	0.699	0.533	0.381	0.222	1.23	1.08	0.92	1.30	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
FR1 n7 Ant 1	Front	0.345	0.323	0.408	0.089	0.67	0.75	0.43	0.84	
	Back	0.624	0.533	0.381	0.222	1.16	1.01	0.85	1.23	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
FR1 n38 Ant 0	Front	0.399	0.323	0.408	0.089	0.72	0.81	0.49	0.90	
	Back	0.596	0.533	0.381	0.222	1.13	0.98	0.82	1.20	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
LTE Band 42 Ant 2	Front	0.312	0.323	0.408	0.089	0.64	0.72	0.40	0.81	
	Back	0.417	0.533	0.381	0.222	0.95	0.80	0.64	1.02	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
FR1 n78 Part27Q Ant 2	Front	0.300	0.323	0.408	0.089	0.62	0.71	0.39	0.80	
	Back	0.517	0.533	0.381	0.222	1.05	0.90	0.74	1.12	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
FR1 n78 Part27Q Ant	Front	0.154	0.323	0.408	0.089	0.48	0.56	0.24	0.65	
	Back	0.418	0.533	0.381	0.222	0.95	0.80	0.64	1.02	



4	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
FR1 n78 Part27Q Ant 5	Front	0.567	0.323	0.408	0.089	0.89	0.98	0.66	1.06	
	Back	0.473	0.533	0.381	0.222	1.01	0.85	0.70	1.08	
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	
FR1 n78 Part27Q Ant 7	Front	0.535	0.323	0.408	0.089	0.86	0.94	0.62	1.03	
	Back	1.190	0.533	0.381	0.222	1.72	1.57	1.41	1.79	Case 9,10
	Front with Headset					0.00	0.00	0.00	0.00	
	Back with Headset					0.00	0.00	0.00	0.00	

Sensor Off

WWAN Band	Exposure Position	1	3	6	9	1+3	1+6	1+9	1+6+9
		WWAN	WLAN2.4GHz Ant 3	WLAN5GHz Ant 5	Bluetooth Ant 3	Summed	Summed	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
WCDMA IV Ant 0	Front	0.777	0.323	0.408	0.089	1.10	1.19	0.87	1.27
	Back	0.621	0.533	0.381	0.222	1.15	1.00	0.84	1.22
LTE Band 66 Ant 0	Front	0.839	0.323	0.408	0.089	1.16	1.25	0.93	1.34
	Back	0.891	0.533	0.381	0.222	1.42	1.27	1.11	1.49
LTE Band 66 Ant 1	Front	0.326	0.323	0.408	0.089	0.65	0.73	0.42	0.82
	Back	0.264	0.533	0.381	0.222	0.80	0.65	0.49	0.87
FR1 n66 Ant 0	Front	0.758	0.323	0.408	0.089	1.08	1.17	0.85	1.26
	Back	0.645	0.533	0.381	0.222	1.18	1.03	0.87	1.25
GSM1900 Ant 0	Front	0.308	0.323	0.408	0.089	0.63	0.72	0.40	0.81
	Back	0.240	0.533	0.381	0.222	0.77	0.62	0.46	0.84
WCDMA II Ant 0	Front	0.532	0.323	0.408	0.089	0.86	0.94	0.62	1.03
	Back	0.465	0.533	0.381	0.222	1.00	0.85	0.69	1.07
LTE Band 25 Ant 0	Front	0.619	0.323	0.408	0.089	0.94	1.03	0.71	1.12
	Back	0.515	0.533	0.381	0.222	1.05	0.90	0.74	1.12
FR1 n2 Ant 0	Front	0.506	0.323	0.408	0.089	0.83	0.91	0.60	1.00
	Back	0.459	0.533	0.381	0.222	0.99	0.84	0.68	1.06
LTE Band 7 Ant 0	Front	0.746	0.323	0.408	0.089	1.07	1.15	0.84	1.24
	Back	0.534	0.533	0.381	0.222	1.07	0.92	0.76	1.14
LTE Band 7 Ant 1	Front	0.270	0.323	0.408	0.089	0.59	0.68	0.36	0.77
	Back	0.319	0.533	0.381	0.222	0.85	0.70	0.54	0.92
LTE Band 38 Ant 1	Front	0.161	0.323	0.408	0.089	0.48	0.57	0.25	0.66
	Back	0.195	0.533	0.381	0.222	0.73	0.58	0.42	0.80
LTE Band 38(HPUE) Ant 1	Front	0.199	0.323	0.408	0.089	0.52	0.61	0.29	0.70
	Back	0.237	0.533	0.381	0.222	0.77	0.62	0.46	0.84
LTE Band 41 Ant 0	Front	0.356	0.323	0.408	0.089	0.68	0.76	0.45	0.85
	Back	0.286	0.533	0.381	0.222	0.82	0.67	0.51	0.89
LTE Band 41(HPUE) Ant 0	Front	0.464	0.323	0.408	0.089	0.79	0.87	0.55	0.96
	Back	0.373	0.533	0.381	0.222	0.91	0.75	0.60	0.98
FR1 n7 Ant 0	Front	0.652	0.323	0.408	0.089	0.98	1.06	0.74	1.15
	Back	0.549	0.533	0.381	0.222	1.08	0.93	0.77	1.15
FR1 n7 Ant 1	Front	0.353	0.323	0.408	0.089	0.68	0.76	0.44	0.85
	Back	0.407	0.533	0.381	0.222	0.94	0.79	0.63	1.01
FR1 n38 Ant 0	Front	0.899	0.323	0.408	0.089	1.22	1.31	0.99	1.40
	Back	0.668	0.533	0.381	0.222	1.20	1.05	0.89	1.27
LTE Band 42 Ant 2	Front	0.382	0.323	0.408	0.089	0.71	0.79	0.47	0.88
	Back	0.304	0.533	0.381	0.222	0.84	0.69	0.53	0.91
FR1 n78 Part27Q Ant 2	Front	1.094	0.323	0.408	0.089	1.42	1.50	1.18	1.59
	Back	0.854	0.533	0.381	0.222	1.39	1.24	1.08	1.46
FR1 n78 Part27Q Ant 4	Front	0.096	0.323	0.408	0.089	0.42	0.50	0.19	0.59
	Back	0.165	0.533	0.381	0.222	0.70	0.55	0.39	0.77



FR1 n78 Part27Q Ant 5	Front	0.873	0.323	0.408	0.089	1.20	1.28	0.96	1.37
	Back	0.464	0.533	0.381	0.222	1.00	0.85	0.69	1.07
FR1 n78 Part27Q Ant 7	Front	0.200	0.323	0.408	0.089	0.52	0.61	0.29	0.70
	Back	0.349	0.533	0.381	0.222	0.88	0.73	0.57	0.95

17.5 Product specific 10g SAR Exposure Conditions

Remark:

1. For 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	6	10	1+3+10	1+6+10
		WWAN	WLAN2.4GHz Ant 3	WLAN5GHz Ant 5	NFC	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)
WCDMA V Ant 0	Front			0.630	0.001	0.00	0.63
	Back	2.105	0.360	0.270	0.026	2.49	2.40
	Left side				0.001	0.00	0.00
	Right side			0.730	0.001	0.00	0.73
	Top side		0.807	0.573	0.001	0.81	0.57
	Bottom side				0.001	0.00	0.00
WCDMA IV Ant 0	Front	1.631		0.630	0.001	1.63	2.26
	Back	1.936	0.360	0.270	0.026	2.32	2.23
	Left side				0.001	0.00	0.00
	Right side			0.730	0.001	0.00	0.73
	Top side		0.807	0.573	0.001	0.81	0.57
	Bottom side	3.148			0.001	3.15	3.15
LTE Band 66 Ant 0	Front	1.950		0.630	0.001	1.95	2.58
	Back	2.470	0.360	0.270	0.026	2.86	2.77
	Left side				0.001	0.00	0.00
	Right side			0.730	0.001	0.00	0.73
	Top side		0.807	0.573	0.001	0.81	0.57
	Bottom side	3.120			0.001	3.12	3.12
LTE Band 66 Ant 1	Front			0.630	0.001	0.00	0.63
	Back	1.948	0.360	0.270	0.026	2.33	2.24
	Left side				0.001	0.00	0.00
	Right side			0.730	0.001	0.00	0.73
	Top side	2.056	0.807	0.573	0.001	2.86	2.63
	Bottom side				0.001	0.00	0.00
FR1 n66 Ant 0	Front	1.991		0.630	0.001	1.99	2.62
	Back	2.608	0.360	0.270	0.026	2.99	2.90
	Left side				0.001	0.00	0.00
	Right side			0.730	0.001	0.00	0.73
	Top side		0.807	0.573	0.001	0.81	0.57
	Bottom side	3.143			0.001	3.14	3.14
GSM1900 Ant 0	Front			0.630	0.001	0.00	0.63
	Back	1.716	0.360	0.270	0.026	2.10	2.01
	Left side				0.001	0.00	0.00
	Right side			0.730	0.001	0.00	0.73
	Top side		0.807	0.573	0.001	0.81	0.57
	Bottom side	3.055			0.001	3.06	3.06
WCDMA II Ant 0	Front	1.353		0.630	0.001	1.35	1.98
	Back	1.826	0.360	0.270	0.026	2.21	2.12
	Left side				0.001	0.00	0.00
	Right side			0.730	0.001	0.00	0.73
	Top side		0.807	0.573	0.001	0.81	0.57
	Bottom side	2.964			0.001	2.97	2.97
LTE Band 25 Ant 0	Front	1.908		0.630	0.001	1.91	2.54



	Back	2.597	0.360	0.270	0.026	2.98	2.89
	Left side				0.001	0.00	0.00
	Right side			0.730	0.001	0.00	0.73
	Top side		0.807	0.573	0.001	0.81	0.57
	Bottom side	3.133			0.001	3.13	3.13
LTE Band 2 Ant 1	Front			0.630	0.001	0.00	0.63
	Back		0.360	0.270	0.026	0.39	0.30
	Left side				0.001	0.00	0.00
	Right side			0.730	0.001	0.00	0.73
	Top side	1.484	0.807	0.573	0.001	2.29	2.06
FR1 n2 Ant 0	Bottom side				0.001	0.00	0.00
	Front	1.347		0.630	0.001	1.35	1.98
	Back	2.361	0.360	0.270	0.026	2.75	2.66
	Left side				0.001	0.00	0.00
	Right side			0.730	0.001	0.00	0.73
LTE Band 7 Ant 0	Top side		0.807	0.573	0.001	0.81	0.57
	Bottom side	3.137			0.001	3.14	3.14
	Front	1.549		0.630	0.001	1.55	2.18
	Back	2.628	0.360	0.270	0.026	3.01	2.92
	Left side				0.001	0.00	0.00
LTE Band 7 Ant 1	Right side	1.130		0.730	0.001	1.13	1.86
	Top side		0.807	0.573	0.001	0.81	0.57
	Bottom side	3.110			0.001	3.11	3.11
	Front	1.439		0.630	0.001	1.44	2.07
	Back	1.951	0.360	0.270	0.026	2.34	2.25
LTE Band 38 Ant 1	Left side	2.232			0.001	2.23	2.23
	Right side			0.730	0.001	0.00	0.73
	Top side	2.688	0.807	0.573	0.001	3.50	3.26
	Bottom side				0.001	0.00	0.00
	Front			0.630	0.001	0.00	0.63
LTE Band 38(HPUE) Ant 1	Back	1.975	0.360	0.270	0.026	2.36	2.27
	Left side				0.001	0.00	0.00
	Right side			0.730	0.001	0.00	0.73
	Top side	2.832	0.807	0.573	0.001	3.64	3.41
	Bottom side				0.001	0.00	0.00
LTE Band 41 Ant 0	Front			0.630	0.001	0.00	0.63
	Back	2.328	0.360	0.270	0.026	2.71	2.62
	Left side				0.001	0.00	0.00
	Right side			0.730	0.001	0.00	0.73
	Top side	2.748	0.807	0.573	0.001	3.56	3.32
LTE Band 41(HPUE) Ant 0	Bottom side				0.001	0.00	0.00
	Front	0.991		0.630	0.001	0.99	1.62
	Back	2.687	0.360	0.270	0.026	3.07	2.98
	Left side				0.001	0.00	0.00
	Right side	0.882		0.730	0.001	0.88	1.61
FR1 n7 Ant 0	Top side		0.807	0.573	0.001	0.81	0.57
	Bottom side	2.431			0.001	2.43	2.43
	Front	1.031		0.630	0.001	1.03	1.66
	Back	2.438	0.360	0.270	0.026	2.82	2.73
	Left side				0.001	0.00	0.00
FR1 n7 Ant 0	Right side	1.260		0.730	0.001	1.26	1.99
	Top side		0.807	0.573	0.001	0.81	0.57
	Bottom side	2.382			0.001	2.38	2.38
FR1 n7 Ant 0	Front	1.663		0.630	0.001	1.66	2.29
	Back	3.101	0.360	0.270	0.026	3.49	3.40
	Left side				0.001	0.00	0.00



	Right side	2.224		0.730	0.001	2.23	2.96
	Top side		0.807	0.573	0.001	0.81	0.57
	Bottom side	2.576			0.001	2.58	2.58
FR1 n7 Ant 1	Front	1.404		0.630	0.001	1.41	2.04
	Back	0.998	0.360	0.270	0.026	1.38	1.29
	Left side	2.203			0.001	2.20	2.20
	Right side			0.730	0.001	0.00	0.73
	Top side	2.757	0.807	0.573	0.001	3.57	3.33
	Bottom side				0.001	0.00	0.00
FR1 n38 Ant 0	Front	1.642		0.630	0.001	1.64	2.27
	Back	3.053	0.360	0.270	0.026	3.44	3.35
	Left side				0.001	0.00	0.00
	Right side	2.131		0.730	0.001	2.13	2.86
	Top side		0.807	0.573	0.001	0.81	0.57
	Bottom side	2.627			0.001	2.63	2.63
LTE Band 42 Ant 2	Front	1.254		0.630	0.001	1.26	1.89
	Back	2.237	0.360	0.270	0.026	2.62	2.53
	Left side	2.314			0.001	2.32	2.32
	Right side			0.730	0.001	0.00	0.73
	Top side		0.807	0.573	0.001	0.81	0.57
	Bottom side				0.001	0.00	0.00
FR1 n78 Part27Q Ant 2	Front	1.254		0.630	0.001	1.26	1.89
	Back	1.871	0.360	0.270	0.026	2.26	2.17
	Left side	2.584			0.001	2.59	2.59
	Right side			0.730	0.001	0.00	0.73
	Top side	2.200	0.807	0.573	0.001	3.01	2.77
	Bottom side				0.001	0.00	0.00
FR1 n78 Part27Q Ant 4	Front			0.630	0.001	0.00	0.63
	Back	0.856	0.360	0.270	0.026	1.24	1.15
	Left side				0.001	0.00	0.00
	Right side			0.730	0.001	0.00	0.73
	Top side	2.768	0.807	0.573	0.001	3.58	3.34
	Bottom side				0.001	0.00	0.00
FR1 n78 Part27Q Ant 5	Front	2.509		0.630	0.001	2.51	3.14
	Back	0.781	0.360	0.270	0.026	1.17	1.08
	Left side				0.001	0.00	0.00
	Right side	2.620		0.730	0.001	2.62	3.35
	Top side		0.807	0.573	0.001	0.81	0.57
	Bottom side				0.001	0.00	0.00
FR1 n78 Part27Q Ant 7	Front			0.630	0.001	0.00	0.63
	Back	2.981	0.360	0.270	0.026	3.37	3.28
	Left side				0.001	0.00	0.00
	Right side			0.730	0.001	0.00	0.73
	Top side		0.807	0.573	0.001	0.81	0.57
	Bottom side	2.073			0.001	2.07	2.07



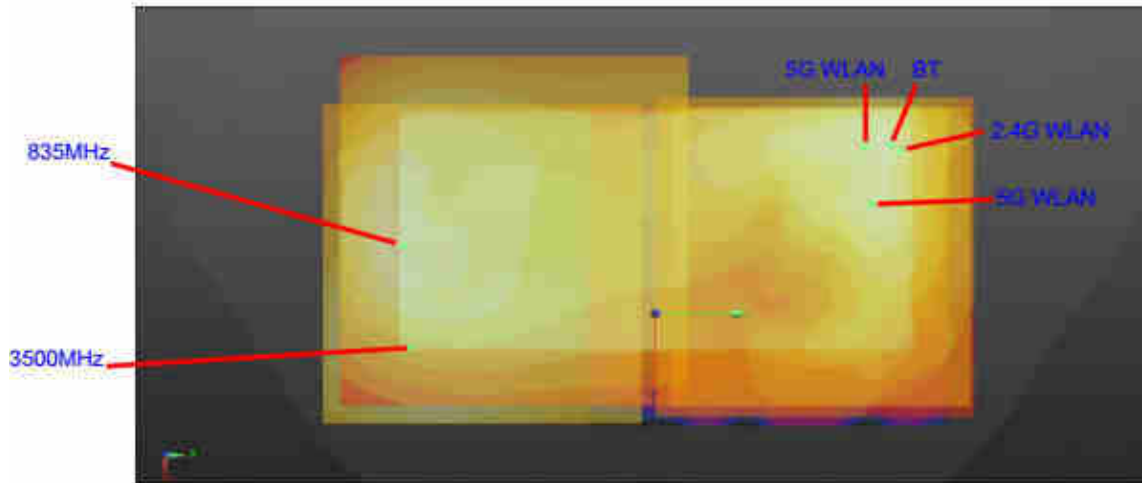
Sensor Off

WWAN Band	Exposure Position	1	3	6	10	1+3+10	1+6+10
		WWAN	WLAN2.4GHz Ant 3	WLAN5GHz Ant 5	NFC	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)
WCDMA IV Ant 0	Front	0.397		0.630	0.001	0.40	1.03
	Back	0.432	0.360	0.270	0.026	0.82	0.73
	Bottom side	0.166			0.001	0.17	0.17
LTE Band 66 Ant 0	Front	1.213		0.630	0.001	1.21	1.84
	Back	1.266	0.360	0.270	0.026	1.65	1.56
	Bottom side	1.585			0.001	1.59	1.59
FR1 n66 Ant 0	Front	0.872		0.630	0.001	0.87	1.50
	Back	0.913	0.360	0.270	0.026	1.30	1.21
	Bottom side	0.797			0.001	0.80	0.80
GSM1900 Ant 0	Back	0.384	0.360	0.270	0.026	0.77	0.68
	Bottom side	0.393			0.001	0.39	0.39
WCDMA II Ant 0	Front	0.383		0.630	0.001	0.38	1.01
	Back	0.518	0.360	0.270	0.026	0.90	0.81
	Bottom side	0.582			0.001	0.58	0.58
LTE Band 25 Ant 0	Front	0.580		0.630	0.001	0.58	1.21
	Back	0.877	0.360	0.270	0.026	1.26	1.17
	Bottom side	0.588			0.001	0.59	0.59
FR1 n2 Ant 0	Front	0.478		0.630	0.001	0.48	1.11
	Back	0.538	0.360	0.270	0.026	0.92	0.83
	Bottom side	0.495			0.001	0.50	0.50
LTE Band 7 Ant 0	Front	0.888		0.630	0.001	0.89	1.52
	Back	0.919	0.360	0.270	0.026	1.31	1.22
	Bottom side	0.840			0.001	0.84	0.84
LTE Band 7 Ant 1	Front	0.468		0.630	0.001	0.47	1.10
	Back	0.277	0.360	0.270	0.026	0.66	0.57
	Left side	0.365			0.001	0.37	0.37
	Top side	0.558	0.807	0.323	0.001	1.37	0.88
LTE Band 41 Ant 0	Front	0.443		0.630	0.001	0.44	1.07
	Back	0.397	0.360	0.270	0.026	0.78	0.69
	Bottom side	0.384			0.001	0.39	0.39
LTE Band 41(HPUE) Ant 0	Front	0.578		0.630	0.001	0.58	1.21
	Back	0.645	0.360	0.270	0.026	1.03	0.94
	Bottom side	0.488			0.001	0.49	0.49
FR1 n7 Ant 0	Front	0.796		0.630	0.001	0.80	1.43
	Back	0.778	0.360	0.270	0.026	1.16	1.07
	Bottom side	0.722			0.001	0.72	0.72
FR1 n7 Ant 1	Front	0.645		0.630	0.001	0.65	1.28
	Back	0.385	0.360	0.270	0.026	0.77	0.68
	Left side	0.501			0.001	0.50	0.50
	Top side	0.755	0.807	0.323	0.001	1.56	1.08
FR1 n38 Ant 0	Front	1.067		0.630	0.001	1.07	1.70
	Back	1.004	0.360	0.270	0.026	1.39	1.30
	Bottom side	0.961			0.001	0.96	0.96
LTE Band 42 Ant 2	Front	0.634		0.630	0.001	0.64	1.27
	Back	0.775	0.360	0.270	0.026	1.16	1.07
	Left side	0.249			0.001	0.25	0.25
FR1 n78 Part27Q Ant 2	Front	1.875		0.630	0.001	1.88	2.51
	Back	1.538	0.360	0.270	0.026	1.92	1.83
	Left side	0.786			0.001	0.79	0.79
FR1 n78 Part27Q Ant 5	Front	1.841		0.630	0.001	1.84	2.47
	Back	0.956	0.360	0.270	0.026	1.34	1.25
	Right side	0.597		0.730	0.001	0.60	1.33

17.6 SPLSR Evaluation and Analysis

General Note:

- When standalone SAR is measured for both antennas in the pair, the peak location separation distance is computed by the square root of $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$, where (x1, y1, z1) and (x2, y2, z2) are the coordinates in the area scans or extrapolated peak SAR locations in the zoom scans, as appropriate.
- $SPLSR = (SAR1 + SAR2)1.5 / (\text{min. separation distance, mm})$. If $SPLSR \leq 0.04$ for 1g SAR, simultaneously transmission SAR measurement is not necessary.



WWAN+WLAN Back 5mm

	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
					Case 1	GSM850	Back				
WLAN5GHz	0.377	5mm	-0.038	0.069	-0.206						
Case 1	GSM850	Back	1.01	5mm	-0.0205	-0.0755	-0.209	154.3	1.23	0.01	Not required
	Bluetooth		0.222	5mm	-0.0506	0.0758	-0.206				
Case 1	WLAN5GHz	Back	0.377	5mm	-0.038	0.069	-0.206	14.3	0.60	0.03	Not required
	Bluetooth		0.222	5mm	-0.0506	0.0758	-0.206				
Case 2	WCDMA V	Back	1.179	5mm	-0.022	-0.0755	-0.21	156.5	1.71	0.01	Not required
	WLAN2.4GHz		0.533	5mm	-0.0488	0.0786	-0.205				
Case 3	WCDMA V	Back	1.179	5mm	-0.022	-0.0755	-0.21	145.4	1.56	0.01	Not required
	WLAN5GHz		0.377	5mm	-0.038	0.069	-0.206				
	WCDMA V	Back	1.179	5mm	-0.022	-0.0755	-0.21	154.0	1.40	0.01	Not required
	Bluetooth		0.222	5mm	-0.0506	0.0758	-0.206				
Case 4	FR1 n78 Part27Q	Back	1.19	5mm	0.0102	-0.0686	-0.206	158.6	1.72	0.01	Not required
	WLAN2.4GHz		0.533	5mm	-0.0488	0.0786	-0.205				
Case 5	FR1 n78 Part27Q	Back	1.19	5mm	0.0102	-0.0686	-0.206	145.8	1.57	0.01	Not required
	WLAN5GHz		0.377	5mm	-0.038	0.069	-0.206				



FCC SAR Test Report

Report No. : FA253001

Case	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
	FR1 n78 Part27Q	Back	1.19	5mm	0.0102	-0.0686	-0.206	156.7	1.41	0.01	Not required
	Bluetooth		0.222	5mm	-0.0506	0.0758	-0.206				
Case 6	Band	Back	SAR (W/kg)	Gap (mm)	SAR peak location (m)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850		1.01	5mm	-0.0205	-0.0755	-0.209				
	WLAN5GHz	Back	0.381	5mm	-0.035	0.07	-0.206	146.3	1.39	0.01	Not required
	GSM850		1.01	5mm	-0.0205	-0.0755	-0.209				
	Bluetooth	Back	0.222	5mm	-0.0506	0.0758	-0.206	154.3	1.23	0.01	Not required
	WLAN5GHz		0.381	5mm	-0.035	0.07	-0.206				
Bluetooth	Back	0.222	5mm	-0.0506	0.0758	-0.206	16.6	0.60	0.03	Not required	
Case 7	Band	Back	SAR (W/kg)	Gap (mm)	SAR peak location (m)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA V		1.179	5mm	-0.022	-0.0755	-0.21				
	WLAN2.4GHz	0.533	5mm	-0.0488	0.0786	-0.205	156.5	1.71	0.01	Not required	
Case 8	Band	Back	SAR (W/kg)	Gap (mm)	SAR peak location (m)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA V		1.179	5mm	-0.022	-0.0755	-0.21				
	WLAN5GHz	Back	0.381	5mm	-0.035	0.07	-0.206	146.1	1.56	0.01	Not required
	WCDMA V		1.179	5mm	-0.022	-0.0755	-0.21				
Bluetooth	Back	0.222	5mm	-0.0506	0.0758	-0.206	154.0	1.40	0.01	Not required	
Case 9	Band	Back	SAR (W/kg)	Gap (mm)	SAR peak location (m)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	FR1 n78 Part27Q		1.19	5mm	0.0102	-0.0686	-0.206				
	WLAN2.4GHz	0.533	5mm	-0.0488	0.0786	-0.205	158.6	1.72	0.01	Not required	
Case 10	Band	Back	SAR (W/kg)	Gap (mm)	SAR peak location (m)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	FR1 n78 Part27Q		1.19	5mm	0.0102	-0.0686	-0.206				
	WLAN5GHz	Back	0.381	5mm	-0.035	0.07	-0.206	145.8	1.57	0.01	Not required
	FR1 n78 Part27Q		1.19	5mm	0.0102	-0.0686	-0.206				
Bluetooth	Back	0.222	5mm	-0.0506	0.0758	-0.206	156.7	1.41	0.01	Not required	

18. Supplemental tuner tests results

General Note:

1. This device impedance tuner (233 status) antenna tuning techniques in the WCDMA II/IV/V, LTE Band 2/4/5/7/12/13 /17/25/26/66/38/41, 5G NR n2/n5/n7/n38/n66 for ANT0.
2. LTE B38 / B2 / B4 / B5 / B17 SAR test was covered by LTE B41 / B25 / B66 / B26 / B12; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced.
3. SAR test proposal was measured according to the normally required SAR configurations with the tuner active and worst tune state (auto tune) was used for SAR testing and this design will provide the highest power at different user scenarios and would not influence to the antenna characteristics other than impedance matching.
4. The following test procedure was followed to demonstrate that the SAR results in this report represent the appropriate SAR test conditions. For bands with dynamic tuning implemented, SAR will be measured according to the required FCC SAR test procedures with the dynamic tuner active to allow the device to automatically tune to the antenna state for the respective RF exposure test configurations. Additional single point SAR time-sweep measurements will be evaluated for other tuner states to determine that the other tuner configurations would result in equivalent or lower SAR values.
5. To evaluate all of the tuner states, the 233 tuner states for ANT0 are divided evenly among band, mode and exposure combinations so that at least one single point SAR measurement is measured in each configuration. Single point time-sweep measurements will be performed at the peak SAR location determined by the zoom scan of the configuration with the highest reported SAR for each combination. The tuner state will be established remotely so that the device is not moved for the entire series of single point SAR for the tuner states in each combination. The SAR probe will remain stationary at the same position throughout the entire series of single point measurements for each combination.
6. According to April 2019 TCB workshop, total number tuner states divided evenly among each supported band / air interface and exposure condition combination.
7. The tuner state was established remotely through Wi-Fi so that the device is not moved for the entire series of single point SAR for the tuner states in each combination (band, mode, exposure conditions).

18.1 Supplemental Tuner Head & Body SAR Results

Please refer to Appendix F.

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



19. Uncertainty Assessment

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

20. 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 D04 v01, “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”, Nov 2021

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